

Anne McEnerny-Ogle, Mayor

Bart Hansen • Ty Stober • Erik Paulsen • Sarah J. Fox • Diana H. Perez • Kim D. Harless

December 18, 2023

WORKSHOPS: 3:00 - 6:00 p.m.

Vancouver City Hall - Council Chambers - 415 W 6th Street, Vancouver WA

Workshops were conducted in person in the Council Chambers of City Hall. Members of the public were invited to view the meeting in person, via the live broadcast on www.cvtv.org and CVTV cable channels 23 or HD 323, or on the City's Facebook page, or www.facebook.com/VancouverUS.

View the CVTV video recording, including presentations and discussion, for workshops at: https://www.cvtv.org/vid_link/36119?startStreamAt=0&stopStreamAt=10194

Vancouver Police Department Update (Approximately 1 hr.)

Jeff Mori, Police Chief, 360-487-7472

Summary

Staff led Council through a discussion of the Vancouver Police Department Update.

Councilmembers Perez and Fox were late to the first workshop. Councilmembers Harless and Hansen were absent from the first workshop.

Critical Areas Ordinance (Starting immediately after the previous workshop and lasting approximately 1 hr.)

Domenique Martinelli, Senior Planner, 360-487-7943

Summary

Staff led Council through a discussion of the Critical Areas Ordinance.

Councilmembers Harless and Hansen were late to the second workshop.

Water Quality Update - PFAS (Starting immediately after the previous workshop and lasting approximately 1 hr.)

Tyler Clary, Engineering Program Manager, 360-487-7169

Summary

Staff led Council through a discussion of the Water Quality Update - PFAS.

COUNCIL DINNER/ADMINISTRATIVE UPDATES

COUNCIL REGULAR MEETING

This meeting was conducted as a hybrid meeting with in person and remote viewing and participation over video conference utilizing a GoToMeeting platform. Members of the public were invited to view the meeting in person, via the live broadcast on www.cvtv.org and CVTV cable channels 23 or HD 323, or on the City's Facebook page, www.facebook.com/VancouverUS. Public access and testimony on Consent Agenda items and under the Community Forum were also facilitated in person and via the GoToMeeting conference call.

Vancouver City Council meeting minutes are a record of the action taken by Council. To view the CVTV video recording, including presentations, testimony and discussion, for this meeting please visit: https://www.cvtv.org/vid_link/36121?startStreamAt=0&stopStreamAt=11184 Electronic audio recording of City Council meetings are kept on file in the office of the City Clerk for a period of six years.

Pledge of Allegiance

Call to Order and Roll Call

The regular meeting of the Vancouver City Council was called to order at 6:30 p.m. by Mayor McEnerny-Ogle. This meeting was conducted as a hybrid meeting, including both in person and remotely over video conference.

Present: Councilmembers Harless, Perez, Fox, Paulsen, Stober,
Hansen, and Mayor McEnerny-Ogle

Absent: None

Council Oaths of Office; Councilmembers Bart Hansen, Ty Stober, and Sarah Fox

City Attorney Jonathan Young administered the oaths of office to Councilmember Hansen and Councilmember Fox for their new terms of office.

Clark County Superior Court Judge Camara L.J. Banfield administered the oaths of office to

Councilmember Stober for his new term of office.

Approval of Minutes

Minutes - November 13, 2023

Motion by Councilmember Stober, seconded by Councilmember Hansen, and carried unanimously to approve the meeting minutes of November 13, 2023.

Minutes - November 20, 2023

Motion by Councilmember Paulsen, seconded by Councilmember Stober, and carried unanimously to approve the meeting minutes of November 20, 2023.

Proclamations: Honoring the Work of All Fort Vancouver Regional Library Staff; Homeless Memorial Proclamation

Mayor McEnerny-Ogle read and presented a proclamation to Jamie Spinelli, Homeless Response Manager, proclaiming December 21, 2023, as Homeless Persons' Memorial Day.

Community Communications

Mayor McEnerny-Ogle opened Community Communication and received testimony from the following community members regarding any matter on the agenda not scheduled for a Public Hearing:

- Kimberlee Goheen Elbon, La Center, WA
- Jacob Billingsley, Vancouver
- Mike Moore, Vancouver
- Dmitri Stoyanoff, Vancouver
- Peter Bracchi, Vancouver

There being no further testimony, Mayor McEnerny-Ogle closed Community Communication.

Consent Agenda (Items 1-14)

Motion by Councilmember Hansen, seconded by Councilmember Stober, and carried unanimously to approve items 1-4, 6-10, 13, and 14 on the Consent Agenda.

Motion by Councilmember Stober, seconded by Councilmember Hansen, and carried unanimously to approve item 5 on the Consent Agenda.

Motion by Councilmember Fox, seconded by Councilmember Paulsen, and carried 6-1 to approve item 11 on the Consent Agenda. Councilmember Stober voted No.

Motion by Councilmember Stober, seconded by Councilmember Hansen, and carried unanimously to approve item 12 on the Consent Agenda. Councilmember Harless abstained.

1. Bid award for Blandford Drive Subbasins LID Retrofits, ITB 23-21

Staff Report: 230-23

Runoff from the plateau area adjacent to the northern end of the Blandford Canyon drains untreated and undetained to the canyon storm system, which flows to a stormwater pond along Columbia House Boulevard and ultimately drains to the Columbia River. Localized flooding occurs downstream along Columbia House

Boulevard upstream of the stormwater pond. This project will install 21 underground filter media cartridge units, two bioretention facilities and associated underground infiltration facilities. These new facilities will treat and infiltrate stormwater from approximately 22 acres of impervious surfaces reducing flows to the Blandford Canyon system.

On 11/28/2023, the City received 11 bids for the subject project. The bids ranged between \$1,456,546 and \$2,669,480. The low bidder was responsive. The bids are as follows:

SUMMARY OF BIDS	
BIDDER	AMOUNT
<i>Rotschy, Inc., Vancouver, Washington</i>	<i>\$1,456,546.00.</i>
<i>Inland Company, Battle Ground, Washington</i>	<i>\$1,565,907.00</i>
<i>Jeffries Company, Woodland, Washington</i>	<i>\$1,645,273.40</i>
<i>McDonald Excavating, Washougal, Washington</i>	<i>\$1,654,826.00</i>
<i>Tapani, Inc., Battle Ground, Washington</i>	<i>\$1,871,017.81</i>
<i>Advanced Excavating, Kelso, Washington</i>	<i>\$1,941,010.00</i>
<i>New X Inc., Monroe, Washington</i>	<i>\$1,942,341.50</i>
<i>Halme Excavating, Inc., Battle Ground, Washington</i>	<i>\$1,982,855.00</i>
<i>Nutter Corporation Vancouver, Washington</i>	<i>\$2,204,850.00</i>
<i>Clark and Sons, Battle Ground, Washington</i>	<i>\$2,273,769.00</i>
<i>North Cascade, Woodland, Washington</i>	<i>\$2,669,480.00</i>
<i>Engineers' Estimate</i>	<i>\$2,287,000.00</i>

The Contractor plans to exceed the Apprenticeship Utilization goal of 4% by using 300 apprenticeship hours out of the total 5669 project hours.

Request: On December 18, 2023, award a construction contract for the Blandford Drive Stormwater Retrofits project to the lowest responsive and responsible bidder, Rotschy, Inc. of Vancouver, Washington, USA at their bid price of \$1,456,546.00, and authorize the City Manager or designee to execute the same.

Mike Swanson, Civil Engineer, 360-487-7182; Kris Olinger, Utility Engineering Program Manager, 360-487-7188

Motion approved the request.

2. **Purchase and Sale Agreement between City of Vancouver and the Housing Authority of the City of Vancouver**

Staff Report: 231-23

As the City of Vancouver continues to grow, so do the public safety needs of our residents. As part of our continued efforts to maintain the best public safety policies and practices and to assist in the Heights Development Project, the City of Vancouver' General Services and Fire Departments, determined that the City would best be served by re-locating Fire Station #3, currently located at 1110 N. Devine Road, to a larger property within the service area.

Upon purchase of the old Lieser Elementary School site by VHA, the City and VHA agreed to the development of a new fire station at this location, which is situated on the east side of South Lieser Road, generally between SR-14 and East Mill Plain Boulevard. VHA performed the remediation and demolition of the former elementary school building and completed a boundary line adjustment from the original 8.42 acre tax parcel #0379010-411 to create a separately marketable vacant land parcel. VHA is independently proceeding with housing development on its retained 6.42 acre parcel. The purchase of this parcel will allow for a site that is larger than the existing site; allow

Fire Station #3 to serve the most miles traveled in the fewest minutes of response and better serve our firefighting and emergency medical incident response requirements.

The City will be purchasing approximately 2 acres of property and will have a purchase option for an additional half-acre of contiguous real property at a cost of \$150,000 if required to provide an adequately sized and accessible Fire Station site.

The City was provided a due diligence period and has conducted an investigation of the properties, satisfying that contingency. The Purchase and Sale Agreements contemplate a closing date on or before December 31, 2023.

Request: Ratify the purchase and sale agreement entered into between the City of Vancouver and the Housing Authority of the City of Vancouver to for the City's acquisition of the subject real property. Authorize the City Manager or his designee to take actions and execute documents necessary to close this transaction.

Linda Carlson, Property Management Specialist, 360-487-8423

Motion approved the request.

3. **Fruit Valley Freight Access and Safety Improvement Project - Property Acquisition**

Staff Report: 232-23

The City has negotiated the acquisition of approximately 22.90 acres of property located adjacent to Fruit Valley Road and NW Whitney Road. The City's interest in acquiring this property comes as a result of the Fruit Valley Freight Access and Safety Improvement Project. This project provides a much-needed improved freight connection between Interstate 5 and the Port of Vancouver and reduces the volume of freight traffic on the southern portions of Fruit Valley Road within the Fruit Valley neighborhood, school and park areas.

A Purchase and Sale Agreement (PSA) has been developed between the City and the property owners with a negotiated sale price of \$5,020,000. This amount is included in the current 2023-2024 approved budget.

Request: Authorize the City Manager to execute the attached Purchase and Sale Agreement.

Ryan Lopossa, Transportation Division Manager, 360-487-7706

Motion approved the request.

4. **Main Street Promise Project - Professional Services Agreement Amendment**

Staff Report: 233-23

On August 8, 2022, City Council approved a professional services agreement (Agreement No. C-100969) with Mackay & Sposito in the amount of \$2,512,543. The agreement covers the design, environmental permitting and public outreach services needed to advance the Main Street Promise Project into the construction phase.

Due to the nature of the design process and how the design of Main Street has evolved from a traditional road improvement project to a project focused on the movement of people, the City has added additional work to the agreement. This includes additional design efforts focused on multimodal transportation, the design of consolidated solid

waste facilities, additional archeological exploration work needed for the proposed contractor staging area, and additional public outreach. In addition, the consultant team will be providing technical support to the City during the construction phase.

Attached is a contract addendum that reflects the additional services being provided to the City. The amount of the addendum is \$367,451.91.

Request: Authorize the City Manager or their designee to execute Addendum 1 to the Professional Services Agreement No. C-100969 in the amount of \$367,451.91.

Ryan Lopossa, Transportation Division Manager, 360-487-7706

Motion approved the request.

5. Primary Public Defense Services Contract - Vancouver Defenders

Staff Report: 234-23

The City is constitutionally mandated to provide public defense services to all financially qualified persons who have been arrested or charged under any City ordinance which has a possible jail sentence. These services are provided through contracts with private attorneys.

The Primary public defense firm is the main provider of these services for indigent defendants, handling between 3,000 to 4,200 cases per year. Vancouver Defenders has been a longstanding and reliable service provider for the City, having served the City in this capacity since 2007.

On November 15, 2023, the City received one proposal (from Vancouver Defenders) in response to RFP 68-23 for Primary public defense services.

The \$1.7M annual cost for this new contract with Vancouver Defenders remains within an acceptable price range for the services provided and reflects a cost adjustment on the City's part to account for several factors:

- 1. The increased amount of time required for evidence review as a result of the Vancouver Police Department's new body camera program.*
- 2. The anticipated increase in case filings anticipated in 2024 due to an increase in the number of crimes likely to be charged relating to being unhoused (through the new Community Court program) that were not previously charged, the recent reclassification of Possession of Drug charges from felonies to gross misdemeanors, and other factors.*
- 3. Compliance with Standard One of Washington Defender Association Standards for Public Defense Services, which states that compensation and benefit levels should be comparable to those of attorneys and staff in prosecutorial offices in the area.*
- 4. Remaining competitive with rates paid by the County and other jurisdictions for similar services in an environment where qualified public defenders are in short supply and high demand.*

Therefore, City staff recommends approving this contract with Vancouver Defenders under the terms set forth in the proposed agreement.

Request: On December 18, 2023, authorize the City Manager or designee to execute the contract for Primary public defense services to Vancouver Defenders of Vancouver, WA, USA for the terms set forth in the proposed agreement.

Rebecca Small, Senior Policy Analyst, 360-487-8601

Motion approved the request.

6. Conflict Public Defense Services Contract - Andrews Terry Jeffers LLP

Staff Report: 235-23

The City is constitutionally mandated to provide public defense services to all financially qualified persons who have been arrested or charged under any City ordinance which has a possible jail sentence. These services are provided through contracts with private attorneys.

On occasion, the Primary public defense firm may have a conflict of interest with a defendant and/or there are co-defendants for a particular case. On these occasions, the case will be referred to a Conflict public defense firm to provide the necessary legal defense services. The annual caseload for Conflict public defense firm has averaged approximately 150 cases per year over the past several years in Vancouver.

On November 15, 2023, the City received 1 proposal (from Andrews Terry Jeffers LLP) in response to RFP 69-23 for conflict public defense services. Staff negotiated with the firm to arrive at a mutually agreeable rate, which is presented here.

Over the past several years, the per-case fee for this contract has been approximately \$350 - \$375 per case. The \$450 per case rate for this new contract with Andrews Terry Jeffers LLP remains within an acceptable price range for the services provided and reflects a cost adjustment on the City's part to a.) account for the increased amount of time required for evidence review as a result of the Vancouver Police Department's new body camera program; b.) to meet Standard One of Washington Defender Association Standards for Public Defense Services, which states that compensation and benefit levels should be comparable to those of attorneys and staff in prosecutorial offices in the area; and c.) to remain competitive with rates paid by the County and other jurisdictions for similar services in an environment where qualified public defenders are in short supply and high demand.

Therefore, City staff recommends approving this contract with Andrews Terry Jeffers LLP under the terms set forth in the proposed agreement.

Request: On December 18, 2023, authorize the City Manager or designee to execute the contract for Conflict public defense services to Andrews Terry Jeffers LLP of Vancouver, WA, USA for the terms set forth in the proposed agreement.

Rebecca Small, Senior Policy Analyst, 360-487-8601

Motion approved the request.

7. Professional Service Contracts with Four Vendors for Yard Debris and Leaves Receiving and Processing Services

Staff Report: 236-23

Since 2002, the City of Vancouver has maintained contracts with local processors of yard debris to provide services for the neighborhood cleanup programs and for regular City maintenance and operations. Under the contracts, local facilities accept clean yard debris, leaves, woody debris and other organic materials collected at neighborhood cleanup events, through coupon programs funded by the City's Solid Waste program or in part by Clark County Public Works, and by City Operations crews as a regular part of maintaining parks, medians and rights-of-ways for diverting to composting or other

beneficial uses.

The City's Spring Cleanup coupons, Fall Neighborhood Leaf Box program, and the Saturday Cleanup and Chipper events offered to all active City neighborhoods are effective in collecting segregated organics, diverting this material from landfill disposal in a cost-effective manner, while also managing seasonal leaves that burden the storm water system. In addition, City Solid Waste manages the regional Fall Leaves Coupon program that relies on these contracted sites to benefit both city and county residents in disposing of seasonal leafy debris at local yard debris disposal sites.

This year, four prospective vendors/processors - Columbia Resource Company, City Bark, H&H Wood Recyclers Inc. and Triangle Resources - responded to a request for proposals (RFP #54-23) to provide these services. All of the processors have experience with providing environmentally appropriate yard debris and leaves disposal and processing, at a reasonable cost, for loads delivered from residents and businesses. The RFP solicitation and formal evaluation of proposals helped ensure a competitive opportunity for securing these services and allow for prospective new vendors to propose. Contracted disposal rates will allow for price stability in City budget planning for these programs.

These processors are located in areas that can be easily accessed by all residents of Vancouver and City crews and fall within an acceptable price range per unit (per cubic yard or per ton depending on whether the facility has scales to weigh incoming loads). Therefore, City staff recommends awarding contracts to all four who responded to the RFP.

The value of these proposed contracts is driven by users, comprising mostly of community members from Vancouver, Clark County and some City staff. Users typically dispose of their leaves and debris based on the proximity to their residence. These are based on reasonable estimates at the time of evaluating proposals and prior three years of actual disposal expenditures with existing contracted vendors. Also, the contract amount for each prospective vendor is dependent upon the volume of processed leaves and debris delivered by the community or City crews.

Over the past four years or less, these are the solid waste expenditures for the three current and proposed new vendors:

Columbia Resource Company: \$132,979

The figure above reflects costs over the current contract period, 2020 to current.

City Bark: \$228,496

The figure above reflects costs while participating under contract prior to 2018.

H&H Wood Recyclers, Inc.: \$311,872

The figure above reflects costs over the current contract period, 2020 to current.

Triangle Resources: \$105,630

The figure above reflects costs over the current contract period, 2020 to current.

Detailed below in the Action Requested section, are the projected expenditures by each proposed contracted vendor over the full 5-year contract term based upon the above history and the newly proposed contract rates, factoring in potential for increases in disposal cost and/or increases volumes of material delivered to the vendor.

In summary, City staff recommend approving the four contracts.

Request: Authorize the City Manager, or designee, to enter into contracts for Yard Debris and Leaves Receiving and Processing Services for as-needed

yard debris and leaves receiving and processing services effective January 1, 2024, as follows:

- CRC (C-101500): Total 5-year contract projected not to exceed \$350,000.
- City Bark (C-101501): Total 5-year contract projected not to exceed \$750,000.
- H & H Wood Recyclers (C-101502): Total 5-year contract projected not to exceed \$750,000.
- Triangle Resources (C-101503): Total 5-year contract projected not to exceed \$350,000.

Julie Gilbertson, Solid Waste Supervisor, 360-487-7162

Motion approved the request.

8. Grant Agreement for Litter Collection and Cleanup Services

Staff Report: 237-23

Presently, Share assists the City in removing litter, bulky debris and illegal dumping from City right-of-ways, City owned property and public spaces through a five-year grant agreement for litter collection and cleanup services. Through City grant funds, Share administers the Talkin' Trash program, which provides a low barrier employment pathway to connect individuals experiencing homelessness or housing insecurity with connected, engaged supportive employment and opportunities to build self-sufficiency.

Share's Talkin' Trash program participants enter as Community Cleaners gaining on the job training and tailored support. They serve an essential role in supporting community health and livability, highlighted in this video: Talkin' Trash program. Through the current five-year grant agreement Share's Talkin' Trash program has removed a total of 965 tons of litter and debris.

In September 2019, the Nonprofit Network of Southwest Washington recognized Share's Talkin' Trash program with the Nonprofit Excellence Award for Excellence in Innovation for the program's creative approach to helping those affected by homelessness while providing critical cleanup services to the City. Furthermore, Share was recently awarded a private grant to purchase a second, more reliable vehicle for the crew. The additional vehicle positioned the program to be able to have reliable vehicles when running two teams and available to work full time and cover more areas of the City of Vancouver.

The City's current five-year grant agreement with Share ends December 31, 2023. In recognition that this service plays a critical role to further the City's commitment to a cleaner and more livable community, and to continue to advance the City's Homeless Response Plan and efforts to address unsheltered homelessness, a next iteration of the grant agreement is needed to be in place to address the City's ongoing needs.

Next Five Year Agreement

This proposed agreement builds off the City and Share's prior agreement and works to retain and expand critical services for litter abatement, provide bag services to unsheltered homeless and deliver cleanup services communitywide, while adding staffing capacity and resources.

The proposed scope of work will continue to be provided by Share through a new agreement for a five-year term, beginning January 1, 2024 through December 31, 2028.

Key Provisions:

- Share will be responsible for recruiting and hiring additional individuals

experiencing homelessness or housing insecurity, ensuring regular trainings and job experience, and connecting employees to housing.

- 80% of Community Cleaner time (32 hours per week) dedicated to litter cleanup. 20% of their time (8 hours per week) dedicated to workforce readiness - job skills and training, housing connections and case management.*
- Benefits include paid sick leave and vacation time. Competitive and locally comparable wages, at Washington state minimum wage for crew members, with subsequent higher wage for up to two driver positions, a manager position and new case management role to provide support and individualized support to program participants to support employment transitions.*
- Retains the ability for the City and Share to further partner should the occasion or need arise to remove limited and select litter items from private property that present an immediate public health and/or safety concern to the benefit of these entities and the broader community, consistent with City policy.*
- Provides basic sanitation services and peer support to individuals experiencing unsheltered homelessness offering bags and bulky waste removal to address basic sanitation need, and closes service equity gaps to enhance community trust and respect to our more vulnerable community members.*
- In addition, Share will be required to collect data, provide administrative and program costs, and submit monthly reports, consistent with the current agreement.*

In summary, through this grant agreement, Share will deliver a program that provides individuals opportunities to re-enter the workforce, who are most likely facing employment barriers that contribute to homelessness. Through this partnership, participants will also receive case management support, on-the-job training, shelter and housing stability, and further develop transferable skills.

If authorized by Council, the City and Share agree to perform the expanded scope of work at the new grant funded level effective January 1, 2024.

Based on favorable performance and an existing community need, City staff recommends approving the new five-year grant agreement with Share for Litter Collection and Cleanup Services.

Request: Authorize the City Manager, or designee, to enter into the new Grant Agreement for Litter Collection and Cleanup in Vancouver between Share and City of Vancouver effective January 1, 2024, for up to five years.

Julie Gilbertson, Solid Waste Supervisor, 360-487-7162

Motion approved the request.

9. **Comprehensive Plan Update – Equity Framework, Community Partnership Framework, and Goals Framework**

Staff Report: 238-23

A RESOLUTION endorsing the Equity Framework, Community Partnership Framework, and Goals Framework for the Comprehensive Plan Update, as described below in subsequent exhibits attached herein.

The City of Vancouver's comprehensive plan provides the overall long-term vision and policy direction for managing the built and natural environment in Vancouver and providing necessary public facilities to achieve that vision. The City adopted its first comprehensive plan under Washington's Growth Management Act in 1994 (Chapter 36.70A RCW), with a major re-write occurring in 2004, and a less substantive update occurring most recently in 2011.

On February 27, City Council endorsed a project charter for the Comprehensive Plan process, which identified three initial frameworks that would outline how we do the work and what our long-term desired outcomes are, to be finalized during the initial phase of the project:

- Equity Framework – Establishes a structure for ensuring disproportionately impacted and historically marginalized communities drive the policy design process.*
- Community Partnership Framework – Provides details on how we inform, consult, involve, collaborate, and empower co-creative partners and community members during the plan development process. This also outlines overall community engagement goals and objectives, and provides details on the who, what, where and why of engagement.*
- Goals Framework – provides an overall framework and structure for goals within the plan, including the outline of plan chapters and key themes for each chapter that reflect existing policy guidance and Council universal policy priorities.*

Equity Framework

The equity framework formally identifies a definition of equity for the plan effort, identifies a set of equity principles, and establishes three initial priority equity outcomes for the plan effort:

- 1. As Vancouver grows, anyone who wants to can afford to live in the city in safe, stable housing.*
- 2. Public transportation is a viable alternative to owning a personal vehicle and offers connectivity across destinations in Vancouver.*
- 3. Create reparative policies that account for the ongoing harm caused by past racist policies, including those related to land use, housing, and the criminal legal system.*

The framework at its core establishes a process for evaluating proposed policies and decision making processes during the planning effort, as well as future implementation of the plan.

Community Partnership Framework

The community partnership framework provides an overview of the co-creative process outlined in the public involvement plan, highlights the key advisory groups engaged in the project, the public involvement goals, and the tools that will be used throughout the project to engage community members. It also describes how input will be tracked and inform the overall process.

Since the kickoff of the plan update in May of 2023, in partnership with the project's Equity team, draft versions of the three frameworks have been developed, and reviewed by City Council during workshops in June, July and October, as well as being reviewed in detail with Planning Commission in November.

In addition to Council and the Planning Commission, the project Community Partners, which are the core committee of City residents who are tasked with co-creating policy with the City, held their first meeting in June. Over the course of eight meetings, the Community Partners have helped develop the overall goals framework, provided input and helped develop the community partnership framework, and established the equity priority outcomes in the equity framework.

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Goals Framework

The Our Vancouver Goals Framework was developed in alignment with the project vision statement, feedback received during the community visioning process, and input from the community partners. In addition, it reflects existing adopted policy directives, including the Climate Action Framework, 2023-2029 Strategic Plan, the Transportation System Plan, the Parks, Recreation and Cultural Services Comprehensive Plan and the Urban Forestry Management Plan. The goals framework outlines twelve individual chapters for the Comprehensive Plan, and associated themes from which more specific goals, policies and implementation measures will be developed during subsequent phases of the plan effort.

Upon adoption, these three frameworks will inform and shape the development of land use alternatives that outline how and where growth could occur over the next 20 years during the next phase of the Plan update process, and well as the development of chapter-specific goals and policies. Each alternative will reflect Council's core policy priorities of safety, equity and climate action and the final version of the draft vision statement including above.

Request: Approve a resolution formally endorsing the Equity, Community Partnership, and Goals Frameworks.

Domenique Martinelli, Senior Planner, 360-487-7943

Motion adopted Resolution M-4262 to approve the request.

10. Adopting the 2024 - Transportation System Plan

Staff Report: 239-23

AN ORDINANCE of the City of Vancouver, Washington relating to the mandatory transportation element of comprehensive planning in compliance with the Washington Growth Management Act, as identified in RCW 36.70A.020, adopting the 2024 – 2044 Transportation System Plan for the City of Vancouver, Washington; providing for severability and an effective date.

The Vancouver Transportation System Plan is our 20-year vision for maintaining and growing a transportation system that supports a safe, equitable, and resilient city. Transportation investment during the past 75 years focused primarily on cars. This TSP expands the focus to walking, rolling, bicycling and small mobility, taking transit, and moving freight. The policies, programs, and capital projects in the TSP will be integrated into the City's adopted roadway projects and programs, and some will be implemented through future updates to Title 9 and Title 11 of the Vancouver Municipal Code.

The TSP serves as the transportation element of the Comprehensive Plan. The Washington State Growth Management Act (GMA) requires adoption of a transportation plan consistent with land use, population, and job growth targets. Land uses coordinated with transportation result in mixed-use places where it is easy to walk, bicycle, use small mobility devices or take transit. The TSP process began before the Comprehensive Plan update but has been crafted to serve forecasted areas of growth. The 2045 Comprehensive Plan update will be complete in 2025, and at that time the TSP will undergo a minor update to ensure alignment with the goals and growth needs of the Plan.

Request: On December 18, 2023, approve ordinance adopting the 2024-2044 Transportation System Plan, setting date of second reading and public hearing for January 8, 2024.

Kate Drennan, Principal Planner, 360-487-7959

Mayor McEnerny-Ogle read the title of the ordinance into the record.

Motion approved the request.

11. 192nd Avenue - 2023 Comprehensive Plan and Zoning Map and Text Changes

Staff Report: 224A-23

Ordinance A

AN ORDINANCE relating to zoning for the City of Vancouver and Vancouver Municipal Code (VMC) Title 20; amending the Vancouver Comprehensive Plan and Zoning map designation for adjacent tax lots 177224000, 177224005, 177224010, 177240000, 177242000, 177238000, and 177239000, and approximately 12,015 square feet of unimproved right-of-way, all located at the northwest corner of SE 192nd Avenue and SE 15th Street; authorizing the City Manager to enter into a Development Agreement related to future use of the site; and providing for severability; and providing for an effective date.

Ordinance B

AN ORDINANCE relating to zoning for the City of Vancouver and Vancouver Municipal Code (VMC) Title 20; amending the Vancouver Comprehensive Plan and Zoning map designation for adjacent tax lots 177224000, 177224005, 177224010, 177240000, 177242000, 177238000, and 177239000, and approximately 12,015 square feet of unimproved right-of-way, all located at the northwest corner of SE 192nd Avenue and SE 15th Street; authorizing the City Manager to enter into a Development Agreement related to future use of the site; and providing for severability; and providing for an effective date.

Citizen testimony at the December 4 First Reading raised continued concern about incomplete sidewalks on the north side of 15th Street west of the site. There are two stretches of roadway on the north side of 15th to the west of the proposed development totaling approximately 1,100 lineal feet that currently lack sidewalk. Involved properties are six oversized residential lots of 1-3 acres in size each, which would be required to construct sidewalk at the time of redevelopment or land division. The short to mid-term redevelopment potential of these properties is unclear as they contain predominantly 1970's ranch homes, although new HB 1110 requirements to effectively allow 4-6 units on most single-family zoned properties will enhance this potential. Full development of the 192nd Avenue rezone site under proposed R-22 zoning in 2024 would result in approximately \$420,000 in Transportation Impact Fees, but under the current TIF program sidewalk improvements are not eligible for funding. Short to mid-term sidewalk improvement on the north side of 15th would require City right-of-way acquisition and construction, and realization would be contingent on owner willingness to sell.

A secondary citizen concern was raised about ensuring that future non-emergency vehicle and pedestrian access be prohibited on SE 191st Avenue and SE 13th Street as shown at the north and west edges of the rezone site conceptual site plan. Per City transportation policy, non-emergency vehicular access is typically not provided from multi-family development through abutting single-family development. Pedestrian and bike access is however typically not prohibited, and in this case is particularly needed to allow direct access from the rezone site to Hanna Acres Park to the north without needing to use 192nd Avenue.

Two ordinance options are presented for Council consideration:

Ordinance A (Recommendation of Transportation and Planning Staff)

- *Does not address 15th Street sidewalk issues in the D.A., but leaves construction of enhanced crosswalk at 15th Street and 189th Avenue to be required as a condition of site plan review. This would provide safe access near the site to the south side of 15th Street containing complete sidewalk, would more likely result in short term improvements, and would forego the need to spend limited public funds on 15th Street sidewalks at the expense of other areas of the City with greater sidewalk need.*
- *Includes new D.A. language that's prohibits non-emergency vehicular access on the 191st Avenue and 13th Street stub roads on the north and west edges of the rezone site, but do not prohibit pedestrian access on 191st Street, and prohibit pedestrian access on 13th Street contingent on it not being required at the time of site plan review.*
- *Includes other previously established D.A. provisions as described herein.*

Ordinance B

- *Includes D.A. language requiring the City to acquire right-of-way and complete sidewalk improvements, unless the TIF program is changed to make sidewalk improvements creditable. Enhanced crossing improvements at 189th Avenue will likely also be required during site plan review.*
- *Same provisions as Ordinance A for stub road access and other D.A. provisions.*

Links

October 24, 2023 Planning Commission public hearing staff report

192nd Avenue rezone traffic analysis

192nd Avenue rezone applicant submittal

Request: On December 18, 2023, approve either Ordinance A or Ordinance B, setting date of second reading and public hearing for January 8, 2024.

Bryan Snodgrass, Principal Planner, 360-487-7946

Mayor McEnerny-Ogle read the title of the ordinance into the record.

Motion approved the request.

12. Addendum to City Manager Employment Agreement

Staff Report: 240-23

Council Policy 100-31A, as well as the employment agreement between the City and the City Manager, calls for an annual performance evaluation and compensation adjustment. Council initiated the Manager Evaluation. Based on the evaluation, a compensation adjustment of 8.5% is reflected in the addendum.

Request: Approve the Addendum to City Manager Employment Agreement and authorize the Mayor to execute the same.

Jonathan Young, City Attorney, 360-487-8511

Motion approved the request.

13. Appointments to the Downtown Redevelopment Authority Board

Request: Appoint to the Downtown Redevelopment Authority Board of Directors Marc Fazio and Dyann Bernatz to terms beginning Jan. 1, 2024, and expiring Dec. 31, 2027, and Tom Donovan to a term beginning immediately and expiring Dec. 31, 2024.

Motion approved the request.

14. **Approval of Claim Vouchers**

Request: Approve claim vouchers for December 18, 2023.

Motion approved claim vouchers in the amount of \$7,472,195.29.

Public Hearings (Item 15-18)

15. **Vancouver Municipal Code Title 14 changes**

Staff Report: 223-23

AN ORDINANCE relating to the water, sewer and surface water utility miscellaneous fees and regulations, amending Chapters 14.04, 14.08, 14.10, and 14.24 of the Vancouver Municipal Code; providing for savings, severability and an effective date.

Staff regularly proposes code updates, clarifications, and changes as needed. VMC Title 14 pertains to water and sewer utilities. staff is proposing a number of changes that will update miscellaneous fees, improve accuracy, comply with current practices, correct inaccuracy, and provide additional clarity. The attached summary provides a complete list of the proposed amendments to Title 14.

Request: On Monday, December 18, 2023, subject to second reading and a public hearing, approve the ordinance.

Chris Malone, Public Works Finance & Asset Manager, 360-487-7711

Chris Malone, Public Works Finance and Asset Manager, provided an overview of the Vancouver Municipal Code Title 14 Changes.

Council discussed the item briefly with staff.

Mayor McEnerny-Ogle opened the public hearing and received testimony from the following community members:

- Kimberlee Goheen Elbon, La Center, WA

There being no further testimony, Mayor McEnerny-Ogle closed the public hearing.

Motion by Councilmember Hansen, seconded by Councilmember Fox, and carried unanimously to approve Ordinance M-4431. Councilmember Perez abstained.

16. **2023 Second Supplemental Budget**

Staff Report: 228-23

AN ORDINANCE relating to the 2023-24 Biennial Budget and making various appropriations in various funds; declaring an emergency.

The second supplemental of 2023 includes administrative items, expenditures

associated with new external revenues, adjustments to capital projects as well as a small number of other high priority items.

The recommended expenditure appropriation increases for the City's Operating and Capital funds included in the 2023 Second Supplemental Budget totals \$150.4 million. An increase of \$87 million relates to recommended changes in the Operating budget, with the remaining appropriation increase of \$63.4 million representing changes in capital projects and supporting funding transfers. The Supplemental will result in utilizing \$53.2 million in city resources; of that amount, the General Fund's share is \$9 million.

Appropriation increases to the General, Street and Fire funds total \$44.3 million over the biennium. Major items are summarized below.

- Miscellaneous grants include: Justice Assistance Grants (JAG) for adult and child CPR training and leadership conferences; Internet Crimes Against Children Grant providing training and supplies; Fire Project Home Safe grants to support the zero-ignition fire initiative and risk reduction efforts within high-risk and vulnerable populations; State Homeland Security Program and Assistance to Firefighters grants for equipment and training; Department of Commerce (DOC) grant to conduct feasibility studies on solar and storage system; DOC grants to support climate policy development, middle housing code development and growth management act work; and Washington State Department of Transportation (WSDOT) grant to support Homeless Assistance and Resources Team (HART) outreach on WSDOT right of ways and operations of Safe Stay Communities.
- New administrative items include: reclassification of 56 Firefighters to Fire Engineers and other compensation changes consistent with the ratified 2023-25 Fire Suppression contract; increase of Clark Regional Emergency Services Agency (CRESA) fees in 2024, driven by the City's Public Safety needs; additional funding for street light materials and an upgrade of street lights in the Downtown; police callback and overtime increase due to all vacancies being filled and increased call volume; replacing/upgrading Public Order Specialist Team (POST) equipment; increase of health insurance rates in 2024, coupled with the City's one time contribution towards the cost increase for 2024; an appropriation for recording fees associated with leasing city-owned parcels for development (Waterfront Gateway Ground Lease); updated appropriation for Safe Parks and Safe Stay 1, 2, and 3, driven by a significant cost increase to manage the sites; one-time property acquisition funding for economic development and an increase for the Southwest Humane Society Contract.

The remaining appropriation increase relates to changes in other operating city funds. Major changes are summarized below:

- Significant increase in the City's 2024 health insurance rates; increase in 2023 Workers Compensation claims and the significant cost increase on liability insurance; increased costs to purchase or replace a number of large vehicles, including the Bucket Truck, TV Van, Easement Machine, Wastewater Pump Truck, Special Weapons and Tactics (SWAT) Bearcat vehicle, as well as an increase in appropriation for fleet maintenance parts; buy back of City Hall Permit Center Condo from the Building Fund; sale of half of 521 Chkalov Building to Building Fund; Construction Services relocation from East Precinct to a newly leased facility; and design funding to update the Water Center Exhibits.

The total net Capital Budget appropriation of \$63.4 million (including capital funding) is included in the Second Supplemental of 2023. Expenditures by project are outlined in Attachment C to the ordinance. Capital funding transfers supporting the City's capital

projects budget totals \$17.7 million. Highlights of major capital changes are listed below:

- General Capital/Asset Management projects totaling \$32.3 million:
 - Esther Short Park Bell Tower Remodel
 - Chkalov Building Remodel
 - Allocation of ARPA funds to specific Fourth Plain for All projects after extensive public outreach to residents Economic Development Acquisition
 - Economic Development Acquisition
 - Police Training Center Facility Evaluation
 - East Precinct Police Building Remodel
 - Howard House Roof Replacement
- Parks Capital projects totaling a \$4.1 million reduction:
 - Vancouver Innovation Center Land Acquisition Increase
 - Shaffer Community Park Development Increase
 - Fisher Basin Community Park Sport Court Conversion
 - Bagley Community Park Development Cost Reduction
- Streets/Transportation Capital projects totaling \$15 million:
 - Main Street – 5th to 15th (ARPA)
 - Fourth Plain for All (ARPA / Reallocation)
 - 137th Ave Corridor – 49th to Fourth Plain
 - Fourth Plain – 62nd – Andresen Multiuse Path
 - Main Street – 5th to 15th (ARPA)
- Water and Wastewater Capital projects totaling \$2.1 million.

Attachment B of the ordinance outlines changes to full-time equivalent (FTE) employees, with an overall net new increase of 12.0 FTEs recommended in the 2023 Second Supplemental. Staffing changes are listed below:

- Updating Public Works FTE count to support the first phase of the reorganization, which includes adding a Deputy Public Works Director, a Wastewater Treatment Civil Engineer, and a Wastewater Operations Superintendent, as well as eliminating two vacant positions (Solid Waste Senior Support Specialist and Water Facilities Assistant).
- Converting seven part-time Customer Service Representatives to 3.5 FTEs within Parks, Recreation, & Cultural Services and converting two part-time Clark Vancouver Television Video (CVTV) Video Director/Editors and one Associate Video Producer to 1.5 FTEs.
- New (1.0 FTE) Transportation Planning Program Manager to better support new Complete Streets planning project needs.
- New (1.0 FTE) Police Records Specialist to support the additional public disclosure requests related to the footage captured by the body worn cameras within the Police Department.
- New (1.0 FTE) Plans Review Supervisor within the Development Review division of Community Development.
- New (1.0 FTE) Homeless Response Coordinator to support current and future homeless response programs.
- New (1.0 FTE) Capital Projects Manager in the Facilities Maintenance division of General Services to better manage smaller contractors working on City capital projects.
- New (1.0 FTE) Human Resources Analyst to support an upcoming City-wide classification and compensation project currently slated for 2024.

Attachment D to the Ordinance includes recommended 2024 adjustments to the non-union pay ranges.

Request: On Monday, December 18, subject to second reading and a public hearing, approve the ordinance.

Shannon Olsen, Budget Manager, 360-487-8497

Shannon Olsen, Budget Manager, provided an overview of the 2023 Second Supplemental Budget.

Council discussed the item briefly with staff.

Mayor McEnerny-Ogle opened the public hearing and received testimony from the following community members:

- Kimberlee Goheen Elbon, La Center, WA

There being no further testimony, Mayor McEnerny-Ogle closed the public hearing.

Motion by Councilmember Perez, seconded by Councilmember Harless, and carried unanimously to approve Ordinance M-4432.

17. **Short-Term Rental Ordinance**

Staff Report: 122-23

AN ORDINANCE of the City of Vancouver, Washington related to regulations and a permitting process for short-term rental of residential real property by amending Vancouver Municipal Code (VMC) 20.150, VMC 20.160, VMC 20.180.060, VMC 20.210, 20.410, VMC 20.420, VMC 20.430, VMC 20.440, and VMC 20.835; providing for savings, severability, and an effective date.

Background

At a September 20th, 2021 workshop, staff presented information on the Housing Code Changes project, a set of proposed code changes to support more diverse housing types that included new regulations for short-term rentals (STRs). In their deliberations, Council directed staff to develop and execute a separate, stand-alone process focusing on STRs and the unique issues and opportunities associated with this activity.

Following this direction, staff enlisted the services of Host Compliance, a platform of Granicus to assist with gathering current data on the existing STR market in Vancouver. In February of 2022, the City began reaching out to owners of known STRs to advise them of the existing restrictions and to invite their participation in a broader community engagement process around STRs. Between March and June 2022, the project team led an extensive outreach campaign consisting of two community wide surveys and several small group conversations.

Development of code language to regulate short-term rentals began in October of 2022 and was finalized in February 2023. In addition to the Planning Commission workshops, staff presented at two City Council workshops, on June 27, 2022, and April 3rd, 2023.

On April 11, 2023, the Planning Commission recommended approval of the proposed short-term regulations and permit process based on the findings outlined in VMC 20.285.070.

Existing Conditions

A short-term rental is defined as a residential property or portion of a residential property (room, guesthouse, Accessory Dwelling Units, etc.) that is available to rent for stays of less than 30 days. This includes rentals available on websites such as Airbnb and VRBO. Within the last decade, the popularity of STRs has increased dramatically as a

substitute for (or preferred option to) traditional lodging like hotel rooms across many jurisdictions in the county. This increase has not been as dramatic in Vancouver as other cities, but the number of STRs here has risen over time.

Currently, the City's Land Use and Development Code, VMC Title 20, is silent on and thus does not allow STRs in residential zones except as expressly authorized under the bed-and-breakfast provisions of VMC 20.830. A bed-and-breakfast also provides an alternative form of lodging for visitors who prefer a residential setting. The Development Code considers bed-and-breakfast establishments as Commercial and Transient Lodging, which includes uses such as hotels, motels, and homeless shelters where stays are typically less than 30 days. Bed-and-breakfast establishments, which envision a host in residence with guests and the provision of food in conjunction with lodging, don't capture the typical Airbnb-type STR arrangement that has emerged in recent years. Staff believes creating separate short-term rental regulations is required to properly govern this type of land use.

The overview of the short-term rental landscape as of November 1, 2023, includes:

- There are approximately 425 STR units in the City of Vancouver.*
- Short-term rentals represent roughly 0.5% of Vancouver's approximately 87,000 residential units.*
- 85% of STRs are in single family homes, 14% in multi-family homes, with the remaining 1% undetermined.*
- 87% of STRs rent out an entire home, rather than a room or portion of an occupied home.*
- 30% of STRs are 3-bedroom rentals, 30% are 2-bedroom rentals, 24% are 1-bedroom rentals, 6% are 5 or more-bedroom rentals, and 10% are unknown.*
- The median nightly rental rate is \$118.*
- Geographically, STRs are spread throughout the City with a modest concentration in downtown and west side neighborhoods.*
- Approximately 75% of STRs are advertised through Airbnb with the remaining quarter listed through Expedia/VRBO and other platforms.*

The City continues to monitor the number of short-term rental units through the online platform Host Compliance, provided by the project consultant Granicus. Host Compliance is an industry leader in STR monitoring and compliance and was able to provide a comprehensive list of all current STRs located in the City, including parcel and owner information. In addition, Host Compliance now provides the City with ongoing monthly updates on the current number of rentals in the City, including location, property type, room type, average duration of stay and rental platform(s) used.

Outreach

In February 2022, the City began communicating with owners of known STRs to advise them of the existing restrictions and to invite their participation in a broader community engagement process around STRs. The intent of the City's outreach was to alert operators to the current situation of noncompliance with existing code, bring awareness to the City's efforts to determine the extent to which STRs should be regulated, and invite existing STR operators into that process. Between March and June 2022, the project team engaged in an extensive outreach campaign consisting of two community-wide surveys and several small group conversations. The specific intent of this effort was to learn more about community experiences, attitudes, concerns, and ideas related to STRs in Vancouver.

The City conducted an online community survey from February 3 to March 6, 2022 using the City's BeHeard Vancouver website. A total of 783 community members took the STR survey. The responses were varied, with most respondents being in favor of allowing

short-term rentals with regulations, including a majority of respondents (55.8%) saying they would like to see the City allow STRs with regulations. 23.6% said that they would like to see the City allow STRs with no regulations; 19.4% said that they would like to see STRs banned in all circumstances. When respondents were asked where STRs should be allowed, 70% of community responses would allow STRs in single-family homes; 69.5% would allow in Accessory Dwelling Units (ADUs); 36.30% would allow in apartments, 40.70% would allow in mobile or manufactured homes; 56.72% would allow in townhomes; 53.75% in condominiums. 18.48% of respondents said that STRs should not be allowed anywhere. Note that for this question respondents were allowed to choose more than one answer.

Since March 2022, 85 community members have also shared their thoughts about STRs through an online comment box on the City's BeHeard Vancouver website. The responses received are both in favor and against of regulations STRs.

The City also conducted small group conversations with housing advocates, short-term rental hosts and operators, hotel and tourism industry professionals, small business owners, real estate agents, and housing advocates including Evergreen Habitat for Humanity, Council for the Homeless, and Fourth Plain Forward. The housing advocates noted that STRs pose a real threat by removing housing stock from the market. While the City may not have thousands of units, any unit being taken of the market for a vacation home instead of a permanent residence is exacerbating the affordable housing crisis. The hotel and tourism industry felt STRs should be required to have the same inspections and regulations as hotels, including requirements related to the federal Occupational Safety and Health Administration (OSHA), fire life and safety inspections, electrical, plumbing, ADA, and the state tourism office. Participants expressed concern that allowing too many STRs in any given neighborhood could have a lasting impact on the community, citing the potential impacts of a transition from a fully residential neighborhood to one that has businesses operating in it. Short-term rental hosts offered why they chose to operate a STR, including many who said it provided supplemental income that is used to pay for mortgages, provide retirement income, pay medical bills and other monthly expenses, and in general increases disposable income. Hosts shared that they feel STRs bring a value, asset, and benefit to the City & local economy.

Council and Planning Commission Direction

City Council directed staff to develop changes to VMC Title 20 Land Use and Development Regulations that would allow STRs as a permitted use in residential zones subject to a defined permit process and appropriate standards. Council also asked staff take a closer look at implementing regulations that pay specific attention to:

Policy Consideration	Council & PC comments	Staff Response	Proposed Approach
Owner occupancy requirement	General opposition to such a requirement	Studied owner occupancy requirement but did not include due to challenges with monitoring, enforcement, and legal concerns	Not currently included in proposed regulations
Lodging tax collection	Ensure that lodging taxes are being collected and remitted by the rental platform to the City	The City received approximately \$140k in lodging taxes generated from short term rentals in 2022. City lodging tax is set at 4%	Continue to work with legal and finance to monitor appropriate collection.

<i>Life/Safety inspection standards</i>	<i>Want standards without being overly burdensome</i>	<i>Mirroring building code regulations – not proposing to automatically retire building inspections for short-term rentals, but retain the option to inspect any STR at the Building Official's discretion</i>	<i>STRs required to meet state and local health, safety and building code regulations; language located in code and operator packet</i>
<i>Impacts to housing availability</i>	<i>City Council and Planning Commission both expressed concerns regarding STRs impact to the housing stock in Vancouver</i>	<i>Current impact to Vancouver housing market is minimal; however, staff will continue to monitor for impacts to housing availability during the proposed pilot period, and will share this data with Council to determine if additional regulations are necessary</i>	<i>Proposed code language excludes STRs from any development receiving the Multifamily Tax Exemption incentive; caps total number of permits at 870, or 1% of the City's current housing stock</i>
<i>Changes to Bed & Breakfast regulations</i>	<i>Update bed & breakfast regulations to ensure clarity and fairness with any STR regulations</i>	<i>Staff believe current regulations are adequate, but will review as part of the Comprehensive Plan and Title 20 Update, when more information from the pilot period is available</i>	<i>Not included in draft code</i>

On March 14, 2023, staff presented a draft of potential regulations for STRs to the Planning Commission as a workshop item. Planning Commission was supportive of the proposed regulations. The Planning Commission asked staff to consider the following items:

- *Requiring STR permits to be renewed after 24 months*
- *Ongoing compliance monitoring to ensure all STRs have COV STR permit*
- *Define code compliance process for STR violations*
- *Consider requiring inspections for all new STR permit applicants*
- *Create an operator packet for all new STR applications*

In response, staff will be monitoring and reporting permit findings at 12 and 24 months and requiring permit renewal at 24 months. The data collected via the city permit and provided by Host Compliance will be used to monitor all STRs and ensure they are operating legally. The short-term rental application now includes the process for responding to code violations. As of this report, staff is not recommending inspecting all new permitted STRs, as the influx of new permits would be administratively burdensome, and we do not inspect other existing residential units regularly. The proposed regulations do maintain the ability of the City to inspect any STR at the discretion of the City's Building Official and Fire Marshall, and there are examples from other jurisdictions that can inform how and when we may pursue STR inspections. And lastly, staff has created and updated the operator packet in alignment with discussion at the last Planning Commission workshop on this topic (Attachments D-G). Additions to the operator packet

include more specificity around fire & life safety items including proper address identification, fire protection and safety equipment.

City Council also provided additional direction at a workshop on April 3, 2023, which included the following:

- Return to Council with updates on the process after one year and again at 24 months.*
- Establish goals for the STR program during 24-month period.*
- Get clarity from STR platforms what recourse the City has for STRs that are operating illegally in any way, in addition to local remedies like revoking permits and code enforcement.*
- Explore if permit fees could apply to the affordable housing fund or housing production.*
- Clarify that a new permit application and fee are required each time a unit has a new owner/operator, even if it has previously been operated as an STR prior to transfer/sale of the property.*

Regulations

Following feedback from City Council and Planning Commission as well as community feedback and comparative jurisdiction research, staff has prepared draft code language to regulate short-term rentals (Attachments C and D). The regulations are a response to the level of activity currently seen in the short-term rental market in Vancouver and the intent of the regulation is to strike a balance between community housing needs with individual property rights and the financial stability that additional revenue generated from STRs can provide. As another means to preserve the city's available housing stock staff is proposing to place a cap on the total number of STRs not to exceed 870 permits or 1% of the city's total housing stock (approximately 87,000 units).

Staff also recognizes the need to ensure new housing types mandated under recent state laws HB 1110 and HB 1337 are not used as STRs. Staff will address the new housing requirements in the following ways:

- Starting in early 2024, initiate a process to put in place an interim control ordinance that implements HB 1337 Accessory Dwelling Units in advance of Title 20 changes that will occur as part of the Comprehensive Plan Update. As part of this, prohibit ADUs from being used as STRs going forward.*
- Establish new regulations for HB 1110 Middle Housing and refine/make permanent regulations implementing HB 1337 Accessory Dwelling Units, including prohibiting units developed under these regulations from being used as STRs.*

The proposed STR regulations would allow short-term rentals in all residential and commercial zones, and in two industrial zones (OCI and ECX) as a limited use that must follow regulations in new code section 20.835. STRs must register with the Washington State Department of Revenue. STRs must follow all relevant short-term rental provisions listed in the Revised Code of Washington, Chapter 64.37 and Consumer Safety measures listed in 67.37.030.

Short-term rentals must obtain a City of Vancouver business license. The regulations create a short-term rental permit with a one-time \$250 fee. Staff is proposing to review the performance of the permitting system after a 24-month monitoring period and require permit renewal as part of the transition from the pilot program to a permanent regulatory structure. In order to obtain a permit an applicant would need to provide an affidavit showing proof of mailing a letter of notification to property owners abutting and adjacent to the proposed short-term rental, copy of liability insurance for the rental property, and a completed permit application including the signed acknowledgement by the owner stating that the short-term rental will comply with the required standards in 20.835.050 VMC and allowing the City to inspect the premises in accordance with VMC 17.08. A STR permit would expire if property ownership changes.

Please refer to Attachment B and C for the full proposed code language. In addition to the development of regulations, staff has created an Operator Packet that would provide detailed information to STR operators, including an updated FAQ, good neighbor fact sheet, short-term rental permit application and neighbor notification letter (see Attachments D-G). The FAQ is meant to serve as a resource to educate STR operators and the broader public on the City's policies and how to handle issues. The good neighbor fact sheet is a resource for short-term rental operators, hosts, and guests, outlining the regulations around noise, parking, fire safety, garbage, and overall guest responsibilities. It also includes information about an online fire & life safety training opportunity our Fire Department is in the process of creating. The permit application requires short-term rentals to comply with all required standards in 20.835.050 VMC, include their City of Vancouver business license number and short-term permit number in all advertising, and register any short-term rental business with the City. The notification letter is meant to serve as a template letter that short-term rental operators can use to notify neighbors of their operations. The letter provides a way for neighbors to notify the owner/operator directly if/when issues occur, as a first option for resolution.

Implementation

If adopted, staff recommends that the regulations be "tested" for a 24-month pilot period to assess their effectiveness and determine what changes may be needed. During this time STR counts, including the 1% cap, will be collected through the City permitting process in addition to the monthly report received from the City's consultant Host Compliance. If the proposed regulations or modified regulations are adopted, staff would return to Council within a year to provide an update, and again at the 24-month mark to determine if the permitting process, development standards or code compliance process need any refinements. As directed by Council, during the pilot period staff will explore options for potentially adding an affordable housing fee to the STR permit to help mitigate impacts to housing availability, if there needs to be an annual or biannual renewal fee for a short-term rental permit to ensure cost-recovery and if applicable determine what the renewal fee would be, and if any additional restrictions should be added to the operation of short-term rentals.

Following adoption all current short-term rentals operating in the City of Vancouver will be notified of these regulations and be directed to follow the permitting process. Due to the initial surge of applications that are anticipated after the ordinance goes into effect, we are proposing allowing applicants a 30-day grace period to come into compliance.

Program Goals

In order to gauge the effectiveness of the short-term rental program during the 24-month pilot program we have established a set of goals including but not limited to:

- Limiting the total number of STRs to not exceed 870 total units- equivalent to 1% of the City's total housing stock at the time of adoption- in an effort to preserve available housing for long term housing needs.*
- Ongoing compliance monitoring to ensure all STRs are compliant with required regulations.*
- Ongoing monitoring of impacts to long-term rental market including impacts to housing affordability.*
- Minimize public safety risks and possible noise and trash problems without creating additional work for the local police department and code enforcement personnel.*
- Monitor the responsiveness of code compliance cases.*

Ongoing stakeholder outreach to determine program effectiveness and inform future refinements.

Request: On Monday, December 18, 2023, subject to second reading and a public hearing, approve the ordinance.

Jason Nortz, Development Review Manager, 360-487-7844

Jason Nortz, Development Review Manager, provided an overview of the Short-Term Rental Ordinance.

Council discussed the item with staff.

Mayor McEnerny-Ogle opened the public hearing and received testimony from the following community members:

- Kimberlee Goheen Elbon, La Center, WA
- Erica Ash, Vancouver
- Scott Dickinson, Vancouver
- Jeff Pond, Vancouver
- Sheila Dickinson, Vancouver
- Patricia Mayes, Vancouver
- Bill Chapman, Vancouver
- Tony Pryor, Vancouver

There being no further testimony, Mayor McEnerny-Ogle closed the public hearing.

Motion by Councilmember Fox, seconded by Councilmember Stober, and carried unanimously to approve Ordinance M-4433.

18. **2023 Comprehensive Plan and Zoning Map and Text Changes**

Staff Report: 224-23

Ordinance A

AN ORDINANCE relating to zoning for the City of Vancouver and Vancouver Municipal Code (VMC) Title 20; amending the Vancouver Comprehensive Plan and Zoning map designation for adjacent tax lots 105145000, 105150000, and 105155000, at 7318 NE 63rd Street, Vancouver, WA 98662; providing for severability; and providing for an effective date.

Ordinance B

AN ORDINANCE relating to zoning for the City of Vancouver and Vancouver Municipal Code (VMC) Title 20; amending the Vancouver Comprehensive Plan and Zoning map designation for adjacent tax lots 105241000, 105242000, 105190005, 105190010, and 105190000 at 8208 and 8122 NE 63rd St. & 6506 and 6510 NE 82nd Ct, and unaddressed tax lot 986042813 providing for severability; and providing for an effective date.

Ordinance C

AN ORDINANCE relating to zoning for the City of Vancouver and Vancouver Municipal Code (VMC) Title 20; amending the Vancouver Comprehensive Plan and Zoning map designation for adjacent tax lots 29373013, 29373062, 986034665, and 29283002 at 3607, 3701 and 3701 ½ E 18th St Vancouver, WA 98661; authorizing the City Manager to enter into a Development Agreement related to future use of the site; and providing for severability; and providing for an effective date.

Ordinance D

AN ORDINANCE relating to zoning for the City of Vancouver and Vancouver Municipal Code (VMC) Title 20; amending the Vancouver Zoning map designation for tax lot 159112000 at 6103 NE 152nd Avenue; providing for severability; and providing for an effective date.

Ordinance E

AN ORDINANCE relating to Comprehensive Plan and Zoning for the City of Vancouver, Vancouver Municipal Code (VMC) Title 20, and the Vancouver Parks, Recreation & Cultural Services Comprehensive Plan; amending Chapter 5 and Appendix E of the Vancouver Comprehensive Plan 2011-2030; amending VMC 20.150, 20.160, 20.170, 20.180, 20.210, 20.245, 20.270, 20.330, 20.410, 20.740, 20.790, and 20.950; amending the Vancouver Parks, Recreation & Cultural Services Comprehensive Plan (2022-2031); providing for severability; and establishing an effective date.

The following are proposed:

1. Map Change - Miller – Urban Low Density/R-9 to Urban High Density/R-30 on 4 acres at the northeast corner of NE 63rd Street and 72nd Avenue. If approved future application for roughly 102 market rate apartment units anticipated, although yield may differ pending site plan review of stormwater needs. Planning Commission recommended approval 4-2, citing need for housing, nearby commercial and public services, and ability to address stormwater specifics at site plan review stage.
2. Map Change – Wood Duck Springs - Urban Low Density/R-9 to Urban High Density R-22 and Commercial/CC on 13 acres on the north side of NE 63rd Avenue at NE 82nd Court. If approved future application for development of 244 market rate townhome and apartment units with a commercial component anticipated. Planning Commission unanimously recommended approval of the rezone based on need for housing, and applicant's conceptual future site plan proposing townhomes on the site perimeter abutting existing residential, with apartment buildings and commercial development in the interior.
3. Map Change – Datepark - R-18 to R-30 on 1.2 acre on the south side of 18th Street near Todd Road. If approved future application for development of 72 affordable housing units anticipated. Planning Commission unanimously recommended approval based on need for housing, and proposed Development Agreement ensuring future development will be consistent with conceptual site plan locating proposed apartment building on east portion of site abutting park and ensuring affordability.
4. Map Change – Burnt Bridge Creek West - OCI to IL on 33 acres west of 162nd Avenue and south of Fourth Plain Boulevard. If approved future application for development of 275,000 square foot warehouse had been contemplated, but property owner indicates potential developer has withdrawn. Planning Commission voted 4-2 to approve based on prevalence of IL zoning surrounding the site, opportunity for site development, and fact that City Critical Areas Protection standards would apply under either existing or proposed zoning. Dissenting votes noted proposal was premature pending finalization of City warehousing standards, green building policy, and Comprehensive Plan update.
5. Text Changes – Comprehensive Plan - Amend reference to parks service area distances, and parks capital facilities summary table; Update Appendix E list of documents adopted by reference to include updated parks and Urban Forestry Management Plan; Add two capital parking projects to citywide capital project list. Planning Commission unanimously recommended approval.
6. Text Changes – Title 20 Zoning code - Changes to definitions and use classifications,

measurements, outdated references, submittal requirements, effective dates, and pre-existing home allowances in cluster developments. As allowed by recent statutory changes, also increase SEPA categorical exemption thresholds for residential projects based on number of units, while retaining SEPA review requirements for residential projects of any size if critical lands are present. Planning Commission unanimously recommended approval.

7. Text Changes - Parks, Recreation and Cultural Services Comprehensive Plan (2022-2031) - Updates to capital facilities plans, service area provisions, and other amendments. These were recommended by the Parks and Recreation Advisory Committee on September 20, as well as by the Planning Commission.

The 192nd Avenue rezone, originally part of this list, is moving forward on a separate schedule with First Reading December 18 and public hearing on January 8, 2024.

Request: On December 18, 2023, subject to second reading and a public hearing, approve Ordinance A (Miller Map Change), B (Wood Duck Springs Map Change), C (Datepark Map Change), D (Burnt Bridge Creek West Map Change) and E (Text Changes).

Bryan Snodgrass, Principal Planner, 360-487-7946

Bryan Snodgrass, Principal Planner, provided an overview of the 2023 Comprehensive Plan and Zoning Map and Text Changes.

Council discussed the item with staff.

Mayor McEnerny-Ogle opened the public hearing and received testimony from the following community members:

- Kimberlee Goheen, La Center, WA - testimony provided for all the Ordinances
- Margaret Milem, Vancouver - testimony provided for Ordinance E

There being no further testimony, Mayor McEnerny-Ogle closed the public hearing.

Applicants and Applicant Representatives were provided a total of 15 minutes each to provide testimony regarding each ordinance.

- Jason Taylor provided testimony regarding Ordinance A.
- Dan Wizer provided testimony regarding Ordinance B.
- David Toyer provided testimony regarding Ordinance D.

Ordinance A

Motion by Councilmember Paulsen, seconded by Councilmember Perez, and carried 6-1 to approve Ordinance M-4434. Councilmember Stober voted No.

Ordinance B

Motion by Councilmember Paulsen, seconded by Councilmember Fox, and carried unanimously to approve Ordinance M-4435.

Ordinance C

Motion by Councilmember Paulsen, seconded by Councilmember Hansen, and carried unanimously to approve Ordinance M-4436.

Ordinance D

Motion by Councilmember Paulsen, seconded by Councilmember Hansen, and carried unanimously to approve Ordinance M-4437.

Ordinance E

Motion by Councilmember Paulsen, seconded by Councilmember Fox, and carried unanimously to approve Ordinance M-4438.

Communications

- A. From the Council**
- B. From the Mayor**
- C. From the City Manager**

Adjournment

9:36 p.m.

Anne McEnery-Ogle, Mayor

Attest:

Natasha Ramras, City Clerk

The written comments below are those of the submitter alone and are not representative of the views of CVTV or the City of Vancouver, its elected or appointed officials, or its employees.

From: [City Council](#)
To: [Dollar, Sarah](#)
Subject: FW: Comprehensive Plan Update
Date: Monday, December 18, 2023 1:18:26 PM

From: Bev & Ken Tyler <[REDACTED]>
Sent: Monday, December 18, 2023 11:58 AM
To: City Council <council@cityofvancouver.us>
Subject: Comprehensive Plan Update

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Hello

My name is Beverly Tyler and I live at [REDACTED], Vancouver, Wa 98684. I wish to enter this email as public testimony re: the Comprehensive Plan Update.

Although I serve on Fircrest Neighborhood Association Steering Committee and as Development Chair, I am entering this testimony as a private citizen.

I believe this information is subject to Title 20 policy changes. I wish to request that prior to construction, developers are **REQUIRED** to meet with residents and/or attend a neighborhood meetings to obtain input from established residents. Currently this is **NOT** a requirement. I have experienced first hand what happens when developers do not involve established neighbors.. The designs are made with no consideration for residential traffic flow, trees, set-backs or other concerns of neighbors. Meetings held in advance incorporating established neighborhood input improves livability for all. New changes to proposed designs developed in partnership enhance neighborly acceptance to construction while improving developmental outcomes.

Thank You,

Beverly Tyler

From: [Kathy Deturk](#)
To: [City Council](#)
Subject: Proposal for number of Airbnb listings in Vancouver
Date: Monday, December 18, 2023 12:48:41 AM

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I have visited with many guests who commented on their decision for Airbnb bookings versus a motel or other accommodations. All of their answers were a preference to a home setting with a welcoming host. They have more living space inside and outside and space for socializing and that is what makes my home inviting. I have had guests come to mainly relax and spend time on my patio.

I take time getting to know my guests, making sure their needs are met and amenities are available. I have even invited some guests to a family gathering happening during their stay. Some guests have chosen to keep in touch through the years and we have become friends. I have some return guests that remember something as simple as an amazing comfortable bed. I have had many guests that stayed during a hard time in their life and appreciated someone just checking in as they entered or exited. There were so many guests that left comments of appreciation for the services I provided.

I am in a quiet neighborhood and I have never come across any inconveniences of others because of my Airbnb. I have driveway parking available which also makes my guests feel safe. During the last year there were guests that chose my Airbnb mainly because they felt safer in a home versus a motel.

I am glad that I provide this service for people visiting Vancouver and those that consider Vancouver their home.

Airbnb is an amazing company and they have guidelines for respecting other guests and for surrounding neighborhoods. I hope through this letter you can see the value to this service Airbnb provides.

Thank you for listening to me and what I provide to Vancouver, Washington.

Kathy Deturk

From: [Margaret Milem](#)
To: [City Council](#)
Cc: [Bev and Ken Tyler](#)
Subject: Public Comment re Proposed Changes in SEPA Thresholds
Date: Sunday, December 17, 2023 3:38:17 PM
Attachments: [SEPA Statement - Final FNA Version.docx.pdf](#)

You don't often get email from [REDACTED]. [Learn why this is important](#)

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Hello --

Please find attached a public comment by the Fircrest Neighborhood Association regarding the proposed changes to SEPA Thresholds being considered by the City Council at the December 18th meeting.

Thanks!

Wishing you a good day.

-- Margaret Milem
Chair, Fircrest Neighborhood Association
[REDACTED]

FIRCREST NEIGHBORHOOD ASSOCIATION’S STATEMENT RE:
PROPOSED SEPA THRESHOLD CHANGES

The Fircrest Neighborhood Association met on June 6, 2023, to discuss the proposal to adopt loosened state environmental regulations for new residential developments.

The Fircrest Neighborhood Association understands the need for increased housing in the City of Vancouver and recognizes that these changes would increase the construction of single- and multi-family housing projects.

However, one role of government is to balance competing goals, and the goals that are supported by the SEPA process are important.

The State Environmental Policy Act known as SEPA has been around since 1971. The SEPA process helps cities analyze the environmental impacts of proposed construction projects while (1) protecting environmental impacts on floodplains, wetlands, trees, archeology and water and (2) mitigating impacts from traffic and surface run-off. These issues can affect other residents in the area.

The SEPA process acts as a safeguard, providing another “**pair of eyes**” to ensure our environmental and archeological treasures are preserved. SEPA offers an explicit “**guideline**” for environmental protection as well as providing an important process to appeal decisions. Changing the thresholds, especially the multi-family housing threshold from 20 units to 200, increases the probability that environmental and archeological issues will be overlooked, resulting in damages in the very areas that SEPA is intending to protect. It is also very concerning that there would be **no opportunity to appeal decisions in order to address SEPA-related concerns**.

The memo presented by the City Manager states that developments under 200 units rarely have issues arise through the SEPA process, but “rarely” indicates that there have in fact been instances when the SEPA process has discovered problems and led to mitigation measures.

The Fircrest Neighborhood Association (FNA) has consistently advocated for the environment and supported Vancouver’s rich culture of caring for the natural resources around us. The City of Vancouver has shown time and time again the value it places on green spaces and the environment. Loosening the state environmental regulations tilts the balance too much toward development and away from protecting the environment. It would be sad and concerning to see the City of Vancouver shift away from its own principles of environmental sustainability and the value it places on “parks, green spaces, and other natural systems” (December, 2022 Climate Action Framework).

Votes in favor - 14

+ 2 who had to leave the meeting early before all the revising/editing was done.

Votes opposed - 0

+1 who had to leave the meeting early before all revising/editing was done.

Reasons for opposition: Concerns about limited housing in the city and the resulting high cost of housing

Abstained - 0

From: [Vicki Coles](#)
To: [City Council](#)
Subject: Short Term Rentals
Date: Sunday, December 17, 2023 12:44:07 PM

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CAUTION: This email originated from outside of the City of Vancouver. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Dear Mayor and City Council,

My name may be familiar in connection with the subject of short term rentals as I have written multiple letters to the editor of The Columbian over the past few years. I was also interviewed by Will Campbell on the topic for an article in The Columbian published on February 27, 2022.

Much of the coverage on short term rentals has been favorable to those who rent their properties. Simple explanation - those who rent their properties profit and thus are willing to go to any length to market their "product". The article published in The Columbian on December 14, 2023 included remarks from two property rental beneficiaries, Tony Pryor and Scott Dickinson. These two gentlemen make money renting their properties, that's great for them, but what about the neighbors of their properties? How do neighbors feel about the rentals?

I'd like to shed some light on the subject as a neighbor of two short term rentals, On a cul-de-sac of nine homes, two are short term rentals. (One of these rentals is owned by man who resides in Portland so none of his proceeds benefit Vancouver.) Both of the properties have been disruptive on a regular basis. Increased traffic, parking in front of our homes, noise, arguments in the street are the milder offenses. More outrageous behavior includes a strip tease done by a woman on the deck of a rental next door to a home that includes a young child. Then, there was the orgy (yes, an orgy) around the pool of a home in full view of the neighborhood. (The participants in the orgy actually flaunted their behavior to the neighbors whose living room windows overlook the house.)

I urge the city council to take a broad view of the subject and **consider the neighbors** of short term rentals. I fear if/when I decide to sell my home any prospective buyers will learn of the rentals and that will diminish the value of my home in their eyes. Not a good scenario for a retiree. AND I would never consider turning my home into a short term rental. I simply could not do that to my neighbors.

Thank you for your consideration,

Vicki Coles
[REDACTED]

From: [City of Vancouver - Office of the City Manager](#)
To: [Dollar, Sarah](#)
Subject: FW: Strengthen enforcement please!
Date: Monday, December 18, 2023 8:43:44 AM

Good morning! I got a couple emails for council in the CMO inbox

-Amelia Pilipchuk

From: Janet Doutre [REDACTED]
Sent: Friday, December 15, 2023 6:27 PM
To: City of Vancouver - Office of the City Manager <CMO@cityofvancouver.us>
Subject: Fwd: Strengthen enforcement please!

You don't often get email from [REDACTED]. [Learn why this is important](#)

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----- Forwarded message -----

From: **Janet Doutre** <[REDACTED]>
Date: Fri, Dec 15, 2023 at 18:25
Subject: Strengthen enforcement please!
To: Janet Fang <[REDACTED]>

Our whole family are victims of short-term rental issues in Vancouver. We had a peaceful life until our upstairs neighbour decided to rent out her entire unit in Airbnb in a quiet residential neighborhood.

The owner doesn't live in her unit while her airbnb guests have been making ridiculous noises at midnight, parking in our driveway, and leaving garbages rotten in hot summer days. Their guests tried to unlock our door at midnight! It has been a nightmare.

In a city where people are experiencing a housing crisis, the owner's short term activities are directly contradicting the following regulations (<https://vancouver.ca/doing-business/short-term-rentals.aspx>):

1. Causing negative community impact through noise, garbage, and parking
2. Operating a short-term rental in a home that is not your principal residence
3. Using the same licence for multiple properties

We would really appreciate it if the City could tighten the rules and strengthen enforcement regarding short term rental violations. This is a typical case where multiple property owners do not do any real

work but only profit from short term rentals. It is at the price of hard working professionals/model citizens trying to survive the Vancouver housing crisis.

Thanks for listening and looking forward to your feedback!

Warmly,
Janet doutre

From: [City of Vancouver - Office of the City Manager](#)
To: [Dollar, Sarah](#)
Subject: FW: Short term vacation rentals
Date: Monday, December 18, 2023 8:44:03 AM

-CMO Inbox

-Amelia Pilipchuk

From: Amy Asivido [REDACTED]
Sent: Friday, December 15, 2023 8:54 PM
To: City of Vancouver - Office of the City Manager <CMO@cityofvancouver.us>
Subject: Fwd: Short term vacation rentals

You don't often get email from [REDACTED]. [Learn why this is important](#)

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To Whom it may Concern:

After living in my condo for 1 year, I rented it for another year (2023) as a short term rental. My neighbors on each side are both aware and have indicated that even though it's an attached home on both sides, it has had no impact on them. I have a no-party policy and cameras installed. After one full year concluding this month, its been a great experience for myself, my neighbors and my guests. I chose to rent instead of sell because my family sometimes stays there and I may move back in the future, so keeping it as a long term rental doesn't allow me to have the freedom I need. I feel that a well-managed property should have minimal impact on neighbors and overall helps bring visitors to experience the growing area here in SW Washington. My home is beautifully decorated and well appointed, and appeals to a quality demographic of guests. I only rent to guests with good ratings.

I am a strong advocate FOR short term rentals in the area as long as protections are in place. I believe it helps our economy, tourism and helps the owners build wealth.

Respectfully,
Amy Asivido

--



From: [City of Vancouver - Office of the City Manager](#)
To: [Dollar, Sarah](#)
Subject: FW: Submission for City Council Meeting 12/18/2023
Date: Monday, December 18, 2023 9:03:59 AM
Attachments: [Bracchi City Council 12-18-2023.pdf](#)

We got this in the CMO inbox

-Amelia Pilipchuk

From: [REDACTED] <[REDACTED]>
Sent: Sunday, December 17, 2023 6:24 PM
To: City Council <council@cityofvancouver.us>; City of Vancouver - Office of the City Manager <CMO@cityofvancouver.us>
Cc: Cook, Nena <Nena.Cook@cityofvancouver.us>
Subject: Submission for City Council Meeting 12/18/2023

You don't often get email from [REDACTED]. [Learn why this is important](#)

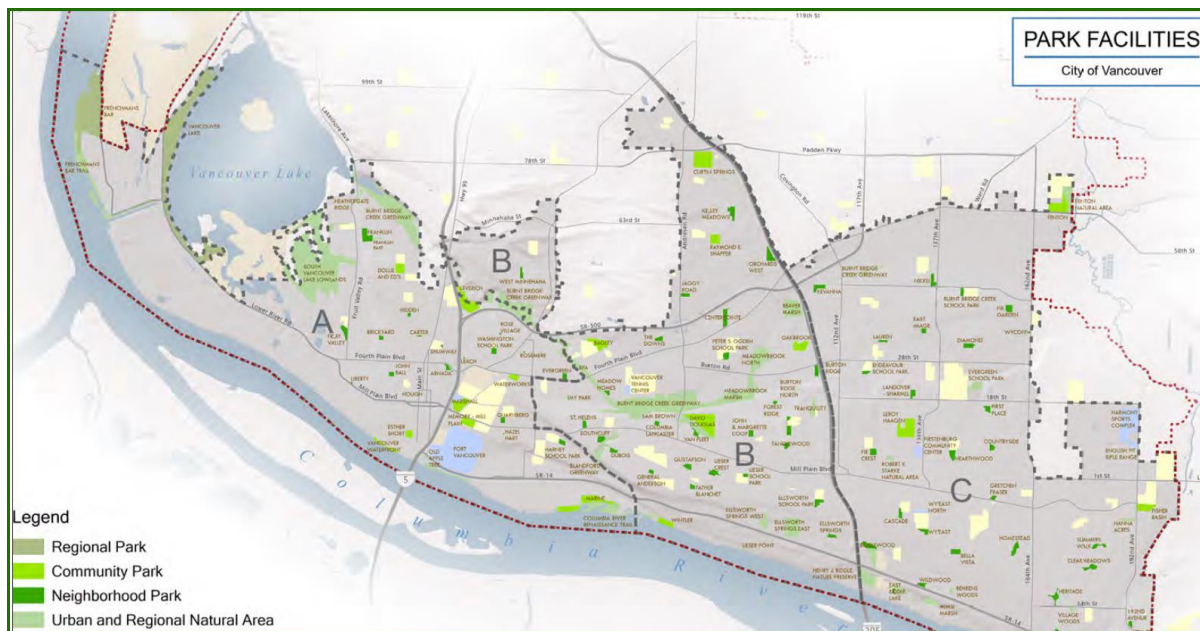
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See Attached PDF

Thanks, Peter

From: Peter Bracchi
To: Vancouver City Council 12/18/2013
Subject: **Critical Area Destruction/Pollution Burnt Bridge Creek Critical Area Amend 8.22.040 Unlawful camping and outside habitation to Not Allow Outside in Critical Areas along Burnt Bridge Creek**

The city of Vancouver has allowed 7 years of outside habitation within the Critical areas identified by the Washington state growth management RCW 36.70A.030 along our Regional Park/303d List Burnt Bridge Creek Recreational Water. The BBC Greenway is identified as Regional Natural Area in our City of Vancouver [Park Comprehensive Plan](#) classifications.



The years of habitation in our Critical Area has resulted in Land Cleared, Trees cut down or Meliaceous Destroyed, our Urban Forest Destroyed by Habitation Fires, Water Pollution from potentially harmful materials and Human Waste, Shorelines destroyed, destruction of Salmon Habitat Environment through increased silting, Shade loss and building of Dams/Bridges, Animal habitat environment has decreased through the removal of brush, tress, land clearings and Fires. The list of Environmental Destruction goes continues on. [See Attached Document: Loss Recreation Area Plan Required.PDF](#)

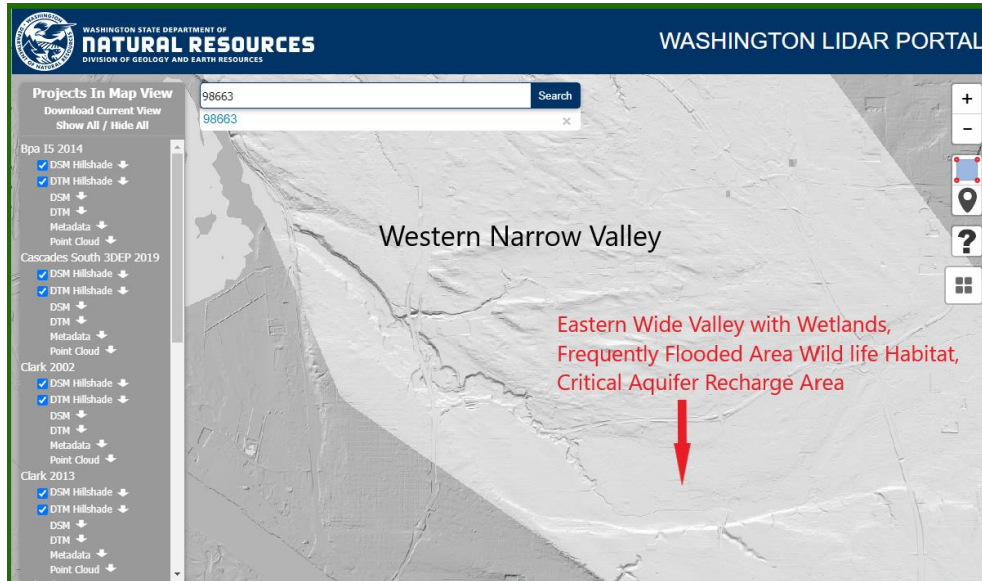
MAP of Critical Area Destruction

RCW 36.70A.030 identifies these Critical Areas. All these areas are adjacent to Burnt Bridge Creek
1) Wetlands 2) Frequently flooded areas 3) Fish and wildlife Riparian & habitat conservation areas
4) Critical Aquifer Recharge Area 5) Geologically hazardous areas

In the Western Portion of Burnt Bridge Creek from Lake Vancouver to Fourth Plain has Narrow Valley Profile. No Outside Habitation is allowed. The No Habitation Fire Zone and 200 Feet from BBC Close this area.

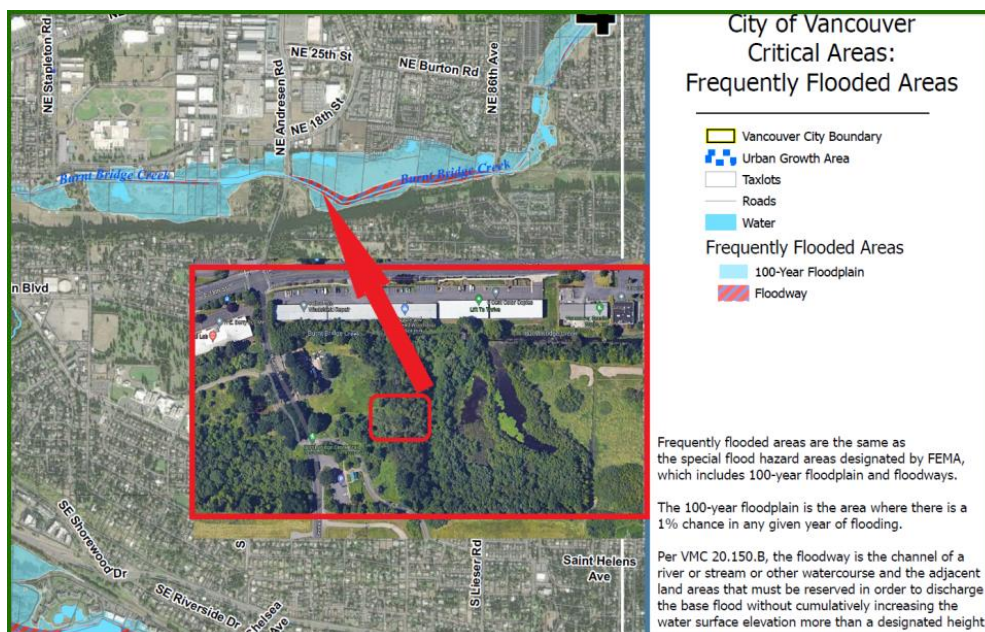
The Eastern portion of BBC is wider Valley Profile. Between the Creek 200 Foot Limit and Forested Hillside No Habitation fire Zone are: Wetlands, Frequently Flooded Areas, Animal Habitat Conservation Areas, and the Critical Aquifer Recharge Area underlies the Entire area.

[Lidar Map Vancouver WA](#)



To see the Destruction and Pollution of all these Critical Areas here are some recent examples from the December rainstorm of an Oil Spill and flooded Camps. This has contributed to the most recent pollution and environmental destruction to these Critical Areas: Wetlands, Frequently Flooded Areas, Animal Habitat Conservation Areas, and the Critical Aquifer Recharge Area underlies the Entire area.

Oil Spill in Flooded Camp <https://photos.app.goo.gl/4YyToXG28f7YiyZa7>



Flooded Camps <https://photos.app.goo.gl/vq2JqYxEeG32xFzLA>



I would like to ask Council to STOP the Continuous destruction and pollution of 303d BBC our Regional Park.

The City is failing to meet its Commitment to Clean Water

The City is failing to meet its Commitment to "Not Net Loss" to Critical Areas

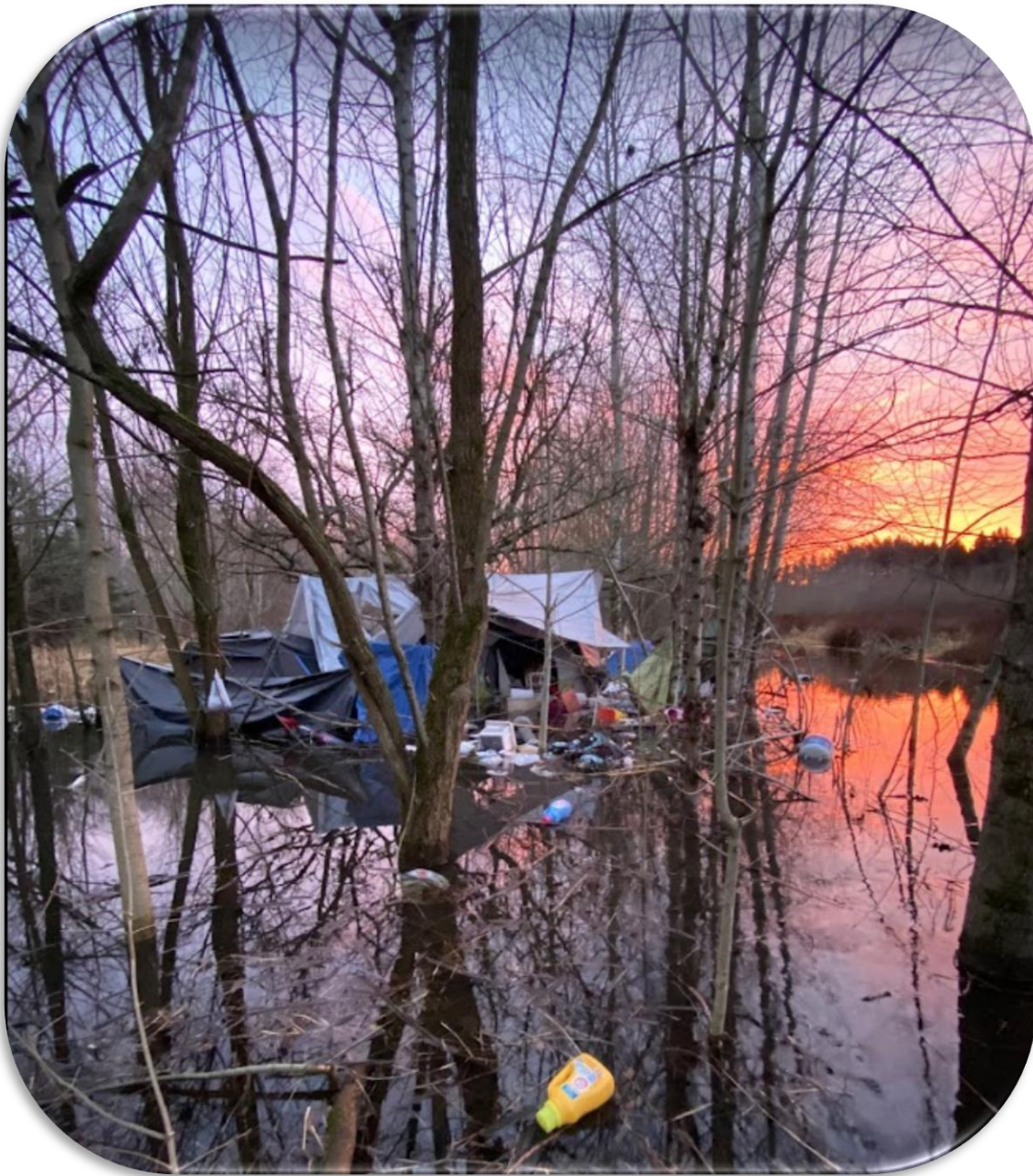
The City is failing to enforce its own City Codes for Environmental Protection

I would like to ask council to Please amend the Camping Code and NOT Allow Outside habitation in the Critical Areas along our Regional Park and Recreational Water way Burnt Bridge Creek.

Peter Bracchi
peterbracchi@aol.com
June 1, 2022

Request

We have a need for a land restoration and water pollution mitigation Plan for the Burnt Bridge Creek Watershed Critical Area.



This document is designed to be viewed Electronically - Titles and Pictures contain Hyperlinks

Environmental Summary

Burnt Bridge is a regulated waterway it does not meet the Washington Department of Ecology standards for fecal coliform bacteria, temperature, acidity, and levels of dissolved oxygen. By not meeting the state standards, it has placed Burnt Bridge Creek on the federal 303(d) list of water quality impaired waterbodies.

The City is failing to bring Burnt Bridge Creek into compliance with state water quality standards.

Along the BBC trail most of the Land in the Critical Area belongs to the City of Vancouver and designated for Recreation. Land Zoning is *Park, Open Space, Greenway, or Lettuce Field*.

The quality of Stream water is related to Land Use Quality and Pollution.

What are Critical Areas

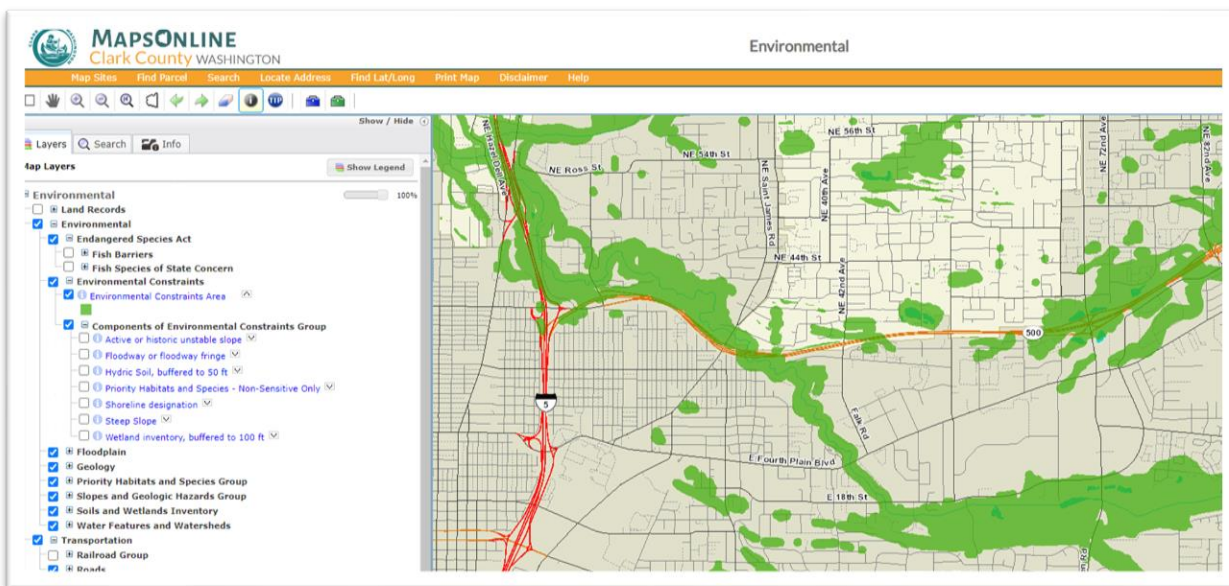
The Growth Management Act (GMA) requires all cities and counties in Washington to adopt regulations protecting “critical areas” in order to preserve the natural environment, wildlife habitats, and sources of fresh drinking water.

Protecting critical areas also helps reduce exposure to risks, such as landslides or flooding, and maintains the natural elements of our landscape. It can be costly, or even impossible, to replace critical area functions and values once they are lost.

RCW 36.70A.030(5) defines five types of critical areas:

- 1) Wetlands
- 2) Frequently flooded areas
- 3) Geologically hazardous areas
- 4) Fish and wildlife habitat conservation areas
- 5) Areas with a critical recharging effect on aquifers used for potable water

Environmental Constraints layer – summary of Items 1-4



Problem Description

The City of Vancouver Failed to perform a **SEPA** study when [Camping Laws](#) were initiated or update. The City has, and still allows camping within the Critical Area.

The [State Environmental Policy Act](#) (SEPA) process identifies and analyzes environmental impacts associated with governmental decisions. These decisions may be related to issuing permits for private projects, constructing public facilities, or adopting regulations, policies, and plans. The SEPA review process helps agency decision-makers, applicants, and the public understand how the entire proposal will affect the environment

By the City failing to perform the required SEPA Study, the result has been Environmental Destruction to the Critical Area with additional Fecal Matter and Water Pollution to the existing 303(d) list stream.

Potentially Harmful Materials from continuous habitation and Fires been a contributing problem. Stream shade has been reduced by the Cutting of Trees. Silting has Increased due to digging, vegetation removal, Tree cutting and habitation on steep slopes.

Critical Area land has had residential occupation for the last 6 years. The land has had the ground cover removed and trees cut down to establish cleared living areas. The result has been years of Environment Devastation, water pollution and increased devastation caused by Fires, and Water Pollution.

The City is failing to meet it Commitment to Clean Water

The City is failing to meet its Commitment to “Not Net Loss” to Critical Areas

The City is failing to enforce it own City Codes for Environmental Protection

15.04	Park Code
15.04.040	Removal or Destruction of Park Property
15.04.100	Depositing Litter
15.04.110	Fires
15.04.150	Closing Hours--Unlawful Entry
8.22	Camping
8.22.040	Unlawful Camping
8.22.050	Unlawful Storage of Personal Property in Public Places
14.26	Water Resources Protection
14.26.115	Prohibits “Municipal Waste Disposal Sites”
14.26.117	Discharges to Water Resources. “Potentially Harmful Materials”
20.740	Critical Areas Protection
20.740.020	General Provisions - No Net Loss of Functions
20.760	Shoreline Management Area

6 Years of Environmental Destruction & Water Pollution to BBC

[Shoreline Destruction and Pollution - East Side](#)



[Shoreline Destruction and Pollution West Side](#)



Frequently Flooded Areas

Bicycle Chop shop Camp. ground compacted, trees cut and Water Pollution



Clark County Geographic Information Services - Environmental Constraints Layer Flood Plain

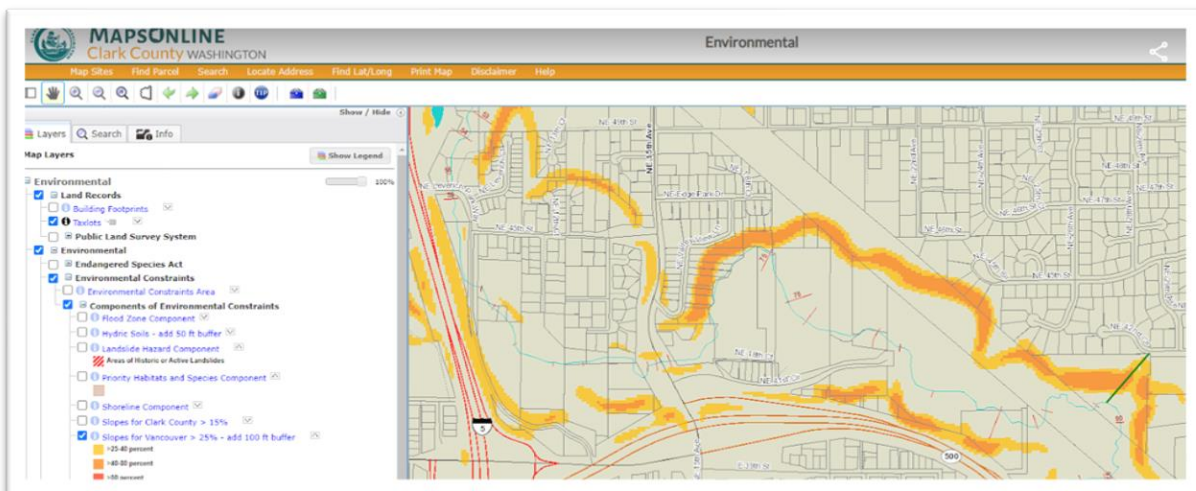


Geologic Hazzard Areas 6 Years of Environmental Destruction

Removal of Vegetation causes Erosion on Steep slopes, silting into creek

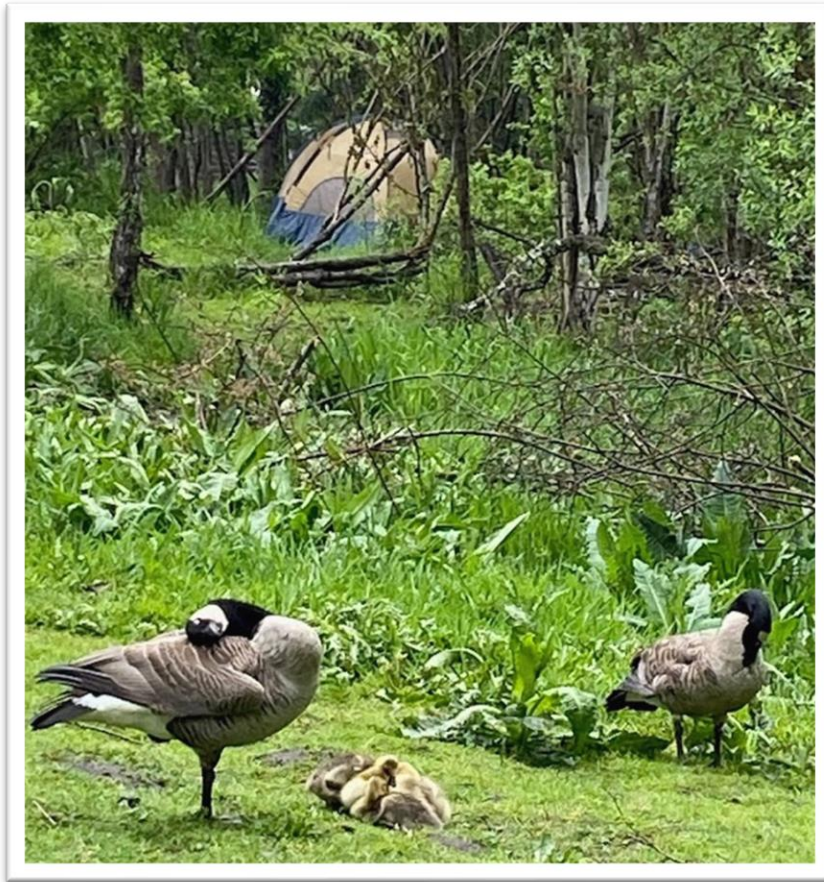


Steep Slopes 40%-80% along Burt Bridge Creek

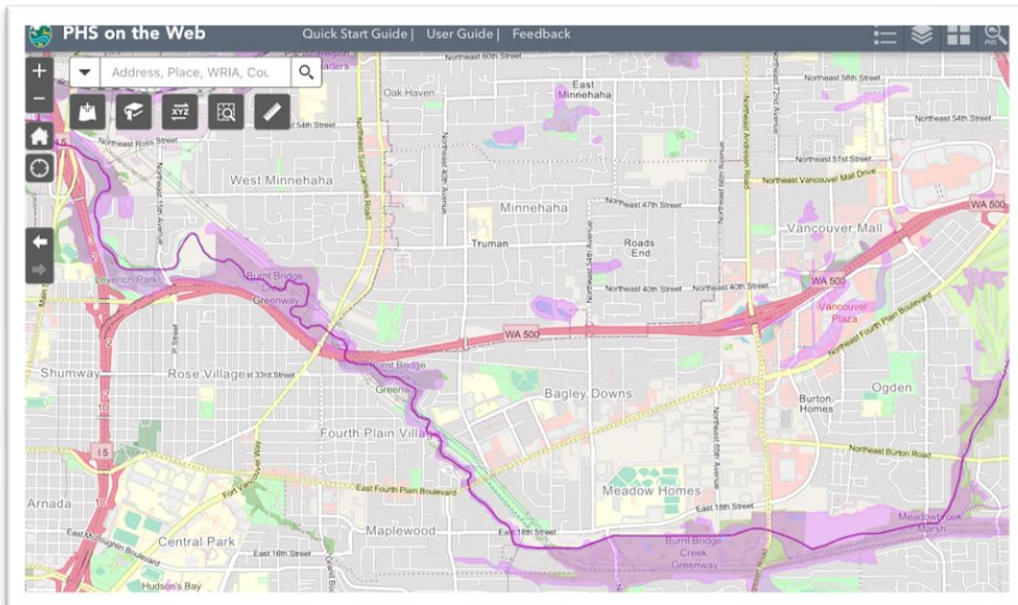


Priority habitat conservation areas over 6 years of Destruction

Priority Habitat Species Area



Map to Priority Habitat Species Area

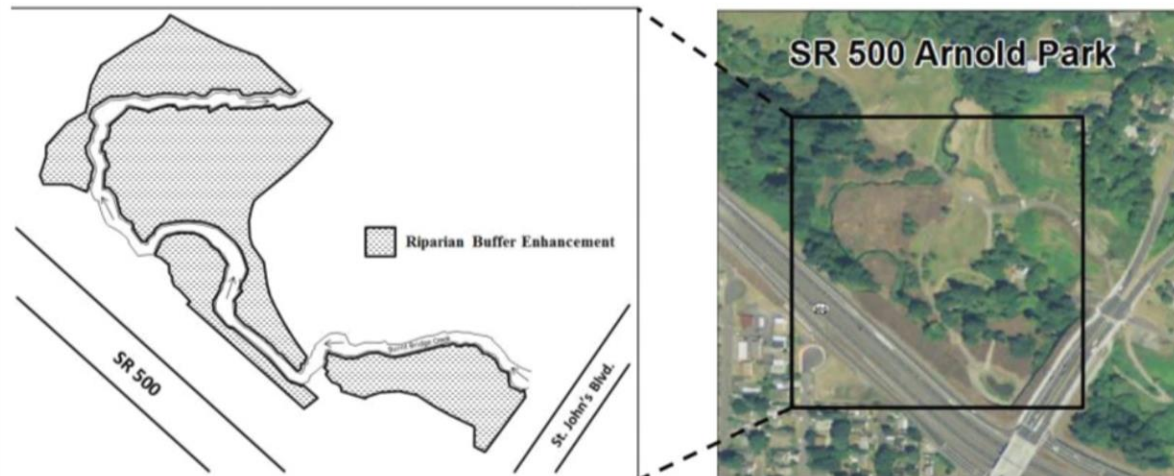


Arnold Park-Mitigation continuous destruction over 6 years

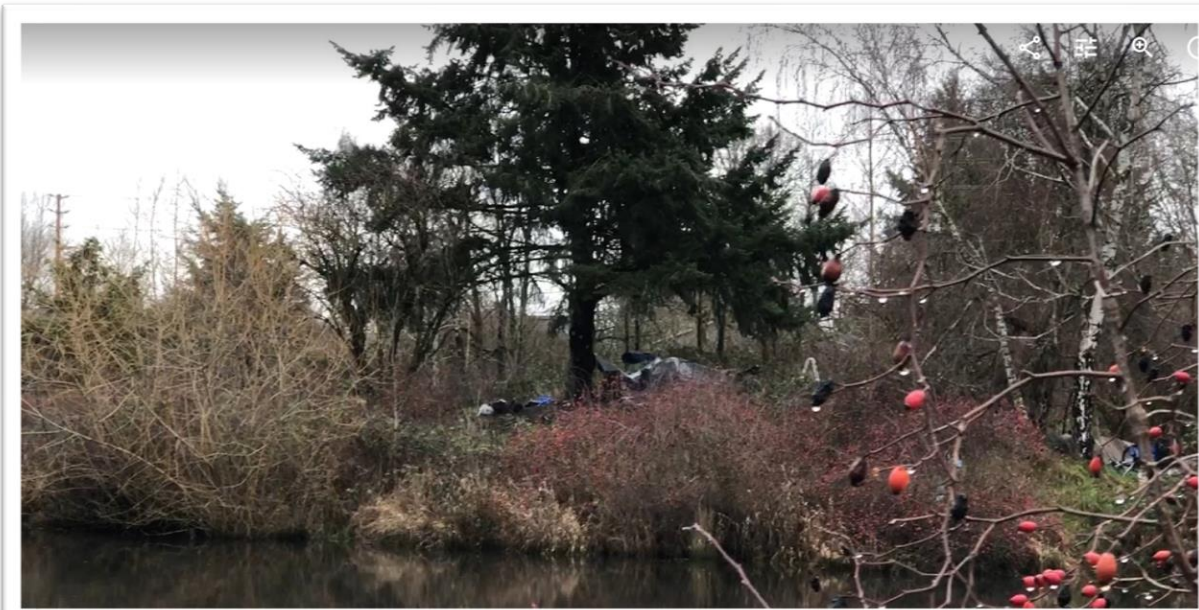
USACE NWP (23) NWS-2009-1104 - Southwest Region Wetlands Program

What is the 500 Arnold Park Mitigation Site?

This 4.42-acre mitigation site (Figure 1) is located along Burnt Bridge Creek west of St. John's Boulevard, north of SR 500, and entirely within Arnold Park. This site was created as partial compensation for impacts to 4.30 acres of disturbed riparian buffer due to mobility and safety improvements within the vicinity of the SR 500 and St. John's Boulevard interchange. The riparian enhancement area is located adjacent to and within the overall project boundaries, and shares the same watershed characteristics as the impacted areas. The site is designed to provide mitigation for lost wetland functions and is anticipated to provide stream shading, flood flow attenuation, water quality, and general habitat functions.



Meadowbrook Marsh Park Destruction and Pollution

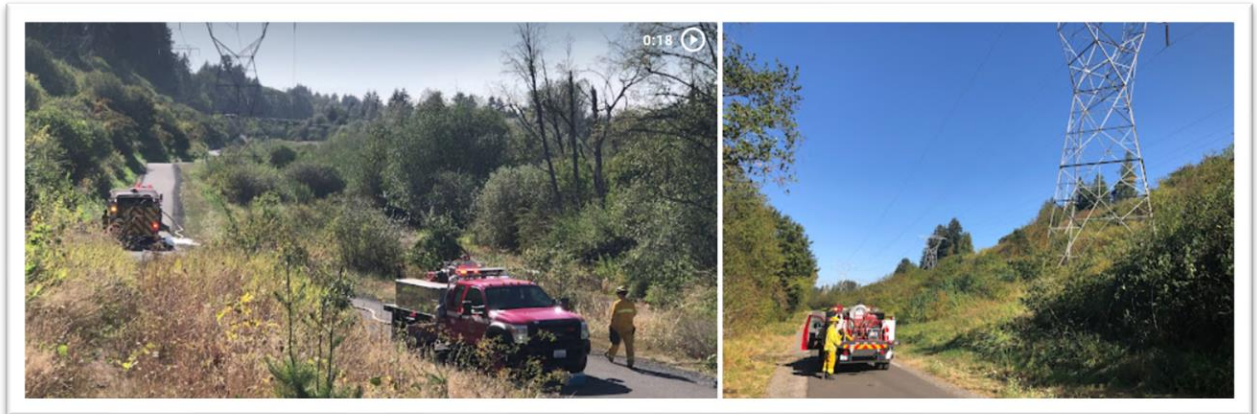


Continous Habitat lissues with FIREs over 6 years

[Fire in Anrold Park Mitigation Site](#)



[Fire in Riparian Area](#)



Continous Habitat Problems with FIREs over 6 years (continued)

SR500 Wetlands Fire - Riparian area



SR500 Wetland Fire Riparian Area & Steep Slopes



Pollution from Potentially Harmful Materials Into BBC over 6 years

Chapter 14.26 WATER RESOURCES PROTECTION

“Potentially Harmful Materials” means hazardous materials as defined at VMC Section 14.26.110 as well as other materials including, but not limited to, the following which, if discharged or improperly disposed, may present a risk to water resources:

Petroleum products including but not limited to petroleum fuel and petroleum-based coating and preserving materials; oils containing PCBs; antifreeze and other liquid automotive products; metals, either in particulate or dissolved form, in concentrations above established regulatory standards; flammable or explosive materials; radioactive material; used batteries; corrosives, acids, alkalis or bases; paints, stains, resins, lacquers or varnishes; degreasers; solvents; construction materials; drain cleaners and other toxic liquid household products; pesticides, herbicides, fungicides or fertilizers unless applied in accordance with local, state and federal standards; steam cleaning and carpet cleaning wastes; pressure cleaning wastes; car wash water; laundry wastewater; soaps, detergents, ammonia; swimming pool backwash; chlorine, bromine, and other disinfectants; heated water; domestic animal wastes; sewage; recreational vehicle waste; animal carcasses, excluding salmonids; food wastes; collected lawn clippings, leaves or branches; trash or debris; silt, sediment or gravel; dyes; and untreated or unapproved wastewater from industrial processes

Potentially Harmful Material Pollution in Critical Area



Additional Fecal Matter pollution over 6 Years

Continuous habitation has contributed additional Fecal Matter into the problem 303(d) Creek that already has problem with Fecal Coliform Bacteria. *(no links to additional pictures provided)*



From: [City Council](#)
To: [Dollar, Sarah](#)
Subject: FW: vote on new short term rental regulations
Date: Monday, December 11, 2023 3:40:04 PM

From: Ellen Gyberg <[REDACTED]>
Sent: Monday, December 11, 2023 2:25 PM
To: City Council <council@cityofvancouver.us>
Subject: Re: vote on new short term rental regulations

You don't often get email from [REDACTED]. [Learn why this is important](#)

CAUTION: This email originated from outside of the City of Vancouver. Do not click links or open attachments unless you recognize the sender and know the content is safe.

To whom this may concern,

I am a local Airbnb super host. I manage an Airbnb for a friend of mine who owns a house here in Vancouver. She lives in Texas with her family. She was born and raised in Vancouver and desperately wants to move back here but is currently unable to due to her husband's health issues.

I have been managing her house as an Airbnb since 2020. We only rent it to guests who has their identity verified through Airbnb coupled with good reviews from other stays with Airbnb.

We have strict rules against having parties as well as pets, and we have quiet hours between 10pm and 7am always keeping our neighbors in mind.

We have never had any complaints from the neighbors.

Working as an Airbnb host has been a huge blessing in my life. I left my abusive husband of 27 years in 2019. He refused to let me go unless I let him have everything, the house, the money, the RV, etc. He took away my debit and credit cards and opened a new bank account at a different bank without my knowledge and had the direct deposit from his work changed to the new account. I had no access to any money.

I I was forced to come to terms with being homeless when I left him.

Luckily I was contacted by my friend about turning her house in to an Airbnb and manage it for her until she can come back here and live. She wants the freedom to come a visit whenever possible and for that reason renting the house long term would not work. She also does not want the house to sit empty, so the best option wants to rent it as an Airbnb.

I had no experience but I was determined to make it a success for myself, my friend and for people wanting to visit Vancouver and needing a safe, clean and comfortable place to stay.

We have excellent reviews and this work has saved my life. I'm now able to live on my own, I have

other part time jobs that compliment my Airbnb income. The Airbnb has allowed me to become a productive member of society and successful Airbnb super host.

I would be devastated if it was taken away from me with new short term rental regulations.

I understand that there may be a lot of complaints against some Airbnb's and I'm not opposed to stricter regulations, but PLEASE do not cap the number of listings that would be allowed. It would be absolutely devastating for me personally as this is my main source of income and how I've been able to overcome being homeless.

The struggle is real out here, rent is high, food is expensive, gas is expensive, please do not take away my main income source

Thank you for your time.

Sincerely,
Ellen Gyberg

A solid black rectangular box used to redact the signature of Ellen Gyberg.

From: [City Council](#)
To: [Dollar, Sarah](#)
Subject: FW: Do Not Limit number of AirBNB
Date: Monday, December 11, 2023 3:40:13 PM

From: Alison Pinetti <[REDACTED]>
Sent: Monday, December 11, 2023 2:27 PM
To: City Council <council@cityofvancouver.us>
Subject: Do Not Limit number of AirBNB

You don't often get email from [REDACTED]. [Learn why this is important](#)

CAUTION: This email originated from outside of the City of Vancouver. Do not click links or open attachments unless you recognize the sender and know the content is safe.

After suffering losses during covid Moratorium on Evictions it has been hard to recoup losses exacerbated by non paying tenants that were neither sick nor suffered a loss of employment. In a capitalist society it seems like city governments are keen on telling landlords how to make money when as small-time investors we have chosen to earn money in real estate as landlords, not flippers and make money by renting out our homes. I believe that when you can earn money by having short term rentals without the damage to the home that you have with long term rentals, sometimes as a business owner you have to do what is right for you. As a landlord it has been a tough past three years and I am just starting to see my way out of the hole that 2020 left behind with losing my bartending job and many regulations due to covid restrictions. If I could attend tonight's meeting that would be great but in the meantime I think this is a horrible idea for the city of Vancouver government to further restrict how I earn.

--



From: [City of Vancouver - Office of the City Manager](#)
To: [Dollar, Sarah](#)
Subject: FW: Short-Term Rental Ordinance: Clark County Assoc. of REALTORS®
Date: Monday, December 11, 2023 4:25:05 PM
Attachments: [image001.png](#)
[image003.png](#)
[image004.png](#)
[image005.png](#)
[image006.png](#)
[image007.png](#)
[COV STR Public Comment 12.11.2023 .pdf](#)
[image008.png](#)

Hi Sarah,

We received this in the CMO inbox

-Amelia Pilipchuk

From: Justin Wood <[REDACTED]>
Sent: Monday, December 11, 2023 3:50 PM
To: City of Vancouver - Office of the City Manager <CMO@cityofvancouver.us>
Subject: FW: Short-Term Rental Ordinance: Clark County Assoc. of REALTORS®

You don't often get email from [REDACTED]. [Learn why this is important](#)

CAUTION: This email originated from outside of the City of Vancouver. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Thank you,

Justin Wood

AHWD,

Government Affairs Director



Clark County Association of Realtors®

Office: [REDACTED]
Direct: [REDACTED]
www.ccrealtors.com
[REDACTED], Vancouver WA 98663



From: Justin Wood
Sent: Monday, December 11, 2023 1:50 PM
To: anne.mcenerny-ogle@cityofvancouver.us; Fox, Sarah <S.Fox@cityofvancouver.us>;
marie.perez@cityofvancouver.us; kim.harless@cityofvancouver.us; ty.stober@cityofvancouver.us;

Bart.Hansen@cityofvancouver.us; Paulsen, Erik <E.Paulsen@cityofvancouver.us>

Cc: anna.quintrell@cityofvancouver.us; Delapena, Amanda

<Amanda.Delapena@cityofvancouver.us>; eric.holmes@cityofvancouver.us;

lisa.brandl@cityofvancouver.us; Nortz, Jason <Jason.Nortz@cityofvancouver.us>

Subject: Short-Term Rental Ordinance: Clark County Assoc. of REALTORS®

Good Afternoon, Mayor McEnery-Ogle and Council

Please find attached our association's public comment addressing the short-term rental ordinance on tonight's consent agenda. We have appreciated the opportunity for feedback thus far.

Unfortunately, two recently added regulations have us concerned about the future of lodging and housing in the City of Vancouver. Included in our comment are some questions the council may want to consider before adopting the 24-month pilot program.

We understand these are complicated issues and we hope the Council will consider our comments and use our association as a resource moving forward.

Thank you,

Justin Wood

AHWD,

Government Affairs Director





December 11, 2023

Vancouver City Council

415 W 6th St.

Vancouver, WA 98660

Public Comment: Short-Term Rental Ordinance

Dear Mayor McEnerny-Ogle, City Council, City Manager, & Staff

Over the past 2 years, the City has considered policies to allow and regulate short-term rental use and operation. This is taking place in a region, state, and country grappling with a housing supply & affordability crisis. Our association understands this and appreciates the balance the City is trying to achieve and has agreed with reasonable regulation thus far. However, the hasty addition of two policies to the regulatory framework has us concerned:

- Limiting the total number of STRs to not exceed 870 total units- equivalent to 1% of the City's total housing stock at the time of adoption.
- Prohibit future units developed according to HB 1110 and HB 1337 from being used as short-term rentals.

There are approximately 425 STR units in the City of Vancouver. This represents roughly 0.5% of Vancouver's approximately 87,000 residential units. Based on this data, the City is not facing an emergency of short-term rentals taking up housing stock. We fear unintended consequences for the housing ecosystem within the City if these additional regulations are added. Please review the following questions before considering adoption:

- How will short-term rental restrictions on new units built according to HB 1337 & 1110 impact the production of those units? Would restricting the use of these units stifle investment?

- Would all future ADU units be banned from STR use or just new units built according to HB 1337?
- By limiting the number of STR permits within the City, would this increase the median nightly rate for all STRs in the City?
- What is the difference in median nightly rate between multinational hotels and motels compared to locally owned STR units?
- By restricting STR use are we making lodging more expensive in the City of Vancouver?
- How will the city enforce restrictions on future middle housing and ADU units? Who and what will be grandfathered in?
- If the City chooses to annex in the future how will this impact the 1% cap or restriction on new units?
- Given the I-5 bridge replacement will take nearly a decade or more to complete, are we shunning future contract workers who prefer lodging types like short-term rentals?
- If the council moves forward with the 1% cap, is there an estimate of lost lodging tax revenue over a given period?
- How will this impact homeowners, some of whom use short-term rental use to afford their home?
- Is the City unintentionally concentrating tourism dollars to the downtown core? How will it impact tourism dollars in other parts of the City?

With these questions in mind, the City would be best served to use the 24-month pilot program as it was intended, to collect data and formulate an encompassing regulatory framework. The addition of the two policies above seems like a preemptive overreaction. The Department of Commerce estimates the State of Washington will need an additional 1.1 million new housing units within the next 20 years. Any policy that may negatively impact the production of new units should include careful consideration. Just because a unit is built for one use doesn't mean that use is permanent. Housing is an ecosystem, and The City of Vancouver needs more information to assess the impacts of these new regulations.

Our association has been supportive of reasonable regulation throughout this process. Our over 1,900 members are partners in the community helping people move and invest into our City. Please use our association as a resource during this pilot program. We would also encourage the council to continue to have conversations with guests, residents, and operators alongside organizations like Identity Clark County (ICC), Clark County Rental Association (CCRA), The Building Industry Association of Clark County (BIA), and the Greater Vancouver Chamber of Commerce (GVC) to assess what additional impacts these regulations may have. The council is well within its right to amend the ordinance to include additional regulations during or after the pilot program. Currently, this hasty approach may exacerbate unintended consequences.

Sincerely,

Justin Wood

Government Affairs Director

From: [Amy Asivido](#)
To: [City Council](#)
Subject: Short term vacation rentals
Date: Monday, December 11, 2023 1:31:07 PM

You don't often get email from [REDACTED]. [Learn why this is important](#)

CAUTION: This email originated from outside of the City of Vancouver. Do not click links or open attachments unless you recognize the sender and know the content is safe.

To Whom it may Concern:

After living in my condo for 1 year, I have rented it for another year (2023) as a short term rental. My neighbors on each side are both aware and have indicated that even though it's an attached home on both sides, it has had no impact on them. I have a no-party policy and cameras installed. After one full year concluding this month, its been a great experience for myself, my neighbors and my guests. I chose to rent instead of sell because my family sometimes stays there and I may move back in the future, so keeping it as a long term rental doesn't allow me to have the freedom I need.

I feel that a well-managed property should have minimal impact on neighbors and overall helps bring visitors to experience the growing area here in SW Washington. My home is beautifully decorated and well appointed, and appeals to a quality demographic of guests. I only rent to guests with good ratings.

I am a strong advocate FOR short term rentals in the area as long as protections are in place. I believe it helps our economy, tourism and helps the owners build wealth.

Respectfully,
Amy Asivido

--



From: [City of Vancouver - Office of the City Manager](#)
To: [City Council](#)
Subject: FW: Short-Term Rentals
Date: Monday, December 11, 2023 12:15:14 PM

We received the comment below in the CMO inbox.

From: Vicki Coles <[REDACTED]>
Sent: Monday, December 11, 2023 11:51 AM
To: City of Vancouver - Office of the City Manager <CMO@cityofvancouver.us>
Subject: Short-Term Rentals

You don't often get email from [REDACTED] [Learn why this is important](#)

CAUTION: This email originated from outside of the City of Vancouver. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Ms. Mayor and City Council,
I sincerely hope those properties currently operating ILLEGALLY as short term rentals will be required to go through the permitting process. Please do not "Grandfather" them in!

On my cul-de-sac of 9 homes, we currently have two short term rentals, both of which have been the sight for loud parties and in one case a public orgy. Yes, **an orgy**, in full view of the neighbors.

Which raises the question - what recourse do we, as neighbors of these properties, have when things get "out of hand" (as they certainly will)?

Vicki Coles
[REDACTED]

From: [City Council](#)
To: [Dollar, Sarah](#)
Subject: FW: A citizen in support of allowing short-term rentals in Vancouver, WA
Date: Monday, December 11, 2023 1:44:16 PM

From: Jerrad Isch [REDACTED]
Sent: Monday, December 11, 2023 1:36 PM
To: City Council <council@cityofvancouver.us>
Subject: A citizen in support of allowing short-term rentals in Vancouver, WA

You don't often get email from [REDACTED]. [Learn why this is important](#)

CAUTION: This email originated from outside of the City of Vancouver. Do not click links or open attachments unless you recognize the sender and know the content is safe.

To the City Council of Vancouver, Washington:

I am a long-time resident of Vancouver, and I am in support of relaxing policies on allowing short-term rentals in Vancouver. I believe that they are an economic benefit to our area, as many out of area visitors can stay near the center of our city, and support our local businesses.

I support rules that allow homes to share rooms or accessory dwelling units with guests without restriction on the length of stay. We need to make density a priority to accommodate the growth that our area is experiencing. I believe that short-term rentals are one part of the solution.

Sincerely,
Jerrad Isch
(He/Him/His)

From: [Bridget Driscoll](#)
To: [City Council](#)
Subject: Support for Short Term Rentals
Date: Monday, December 11, 2023 1:49:43 PM

You don't often get email from [REDACTED]. [Learn why this is important](#)

CAUTION: This email originated from outside of the City of Vancouver. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Dear Vancouver City Council,

I hope this email finds you well. I am writing to express my support for short-term rentals in Vancouver. As a proud Airbnb host with three listings in the Fourth Plain Village area since early 2022, I have witnessed firsthand the positive impact that short-term rentals can have on our lives and the local economy.

Firstly, I would like to highlight the vibrant food scene in Fourth Plain Village, which has been a significant attraction for guests staying at my Airbnb listings. Many visitors comment on the diverse culinary experiences available, contributing to the overall appeal of our neighborhood. The positive reviews and recommendations from guests undoubtedly help promote local businesses, boosting the economic vitality of the area.

Additionally, the easy, affordable, and safe access to the Portland International Airport (PDX) has been a key factor for many of my guests. The proximity to both the airport, city of Portland, and walkable access to grocery stores and restaurants makes Fourth Plain Village an attractive location for travelers, further enhancing our standing as a desirable destination.

One of the most rewarding aspects of being an Airbnb host in this neighborhood is providing a comfortable, flexible, and amenity-filled option for travelers who may be in town for various reasons. Many of my guests are visiting family, taking care of loved ones, or participating in multi-month medical rotation assignments. For them, the alternative option of living in a hotel and relying on takeout is not as conducive to their needs, especially when they are unable to commit to a 12-month lease of an apartment — a common requirement in the area.

I take pride in recommending local food establishments and tourist attractions, especially those in the newly constructed Vancouver Waterfront. The positive feedback I receive from guests regarding the quality of their stay speaks to the positive impact that short-term rentals can have on our community.

With hundreds of travelers hosted and a consistent 4.9 rating, I have been recognized as a Superhost across my listings. Two of my units, specifically the one-bedroom options, are particularly popular among young people, professionals on business trips, and couples. This diverse demographic further demonstrates the versatility and inclusivity that short-term rentals bring to our neighborhood. I have never received a complaint regarding noise or other disturbances from neighboring homes and have several rules, screening procedures and penalties in place to maintain the good will of the neighborhood.

In conclusion, I urge the City Council to consider the numerous benefits that short-term rentals, such as Airbnb, bring to Vancouver and Fourth Plain Village. The economic boost to

local businesses, the convenience for travelers, and the positive impact on our community's image all contribute to making short-term rentals an essential and positive aspect of our neighborhood.

Thank you for your time and consideration. I am happy to provide any additional information or answer any questions you may have.

Sincerely,

Bridget Driscoll

[REDACTED]

From: [Holley TYLER](#)
To: [City Council](#)
Subject: Airbnb
Date: Monday, December 11, 2023 1:58:31 PM

[You don't often get email from [REDACTED]. Learn why this is important at <https://aka.ms/LearnAboutSenderIdentification>]

CAUTION: This email originated from outside of the City of Vancouver. Do not click links or open attachments unless you recognize the sender and know the content is safe.

This should not be limited!
Holley Tyler
Sent from my iPhone

From: [Bev Questad](#)
To: [City Council](#)
Subject: Pro Airbnb
Date: Monday, December 11, 2023 2:02:00 PM

You don't often get email from [REDACTED]. [Learn why this is important](#)

CAUTION: This email originated from outside of the City of Vancouver. Do not click links or open attachments unless you recognize the sender and know the content is safe.

I have run an Airbnb since 2017. I am a 74-year-old woman. What I earn pays my property tax which is about \$9,000.00 a year. I rent out one portion of my home that includes a bedroom, bathroom and living room with petite kitchen. There is also a designated patio area. I charge \$70/nt and do my own cleaning.

This financial opportunity allows me to pay my property taxes and HOA dues so that I can keep my house.

There is no impact on my Mt. Vista neighborhood as I live up a long horseshoe driveway that cannot be seen from my house. Guests park in a designated parking area. I do not allow additional guests, parking, smoking, etc.

As a matter of fact, my Airbnb is a benefit to my neighborhood as many guests are relatives of the neighbors in the area. My Airbnb has provided extra accommodations for neighbors having weddings, new babies born, grandparent visits, holiday relative events, reunions and graduations (I live close to WSUV as well as Skyview High School).

From: [Delapena, Amanda](#)
To: [DL, City Council Members](#)
Cc: [Quintrell, Anna](#); [Holmes, Eric](#); [Brandl, Lisa](#); [Nortz, Jason](#); [Dollar, Sarah](#)
Subject: FW: Short-Term Rental Ordinance: Clark County Assoc. of REALTORS®
Date: Monday, December 11, 2023 2:21:08 PM
Attachments: [image001.png](#)
[image003.png](#)
[image004.png](#)
[image005.png](#)
[image006.png](#)
[image007.png](#)
[COV STR Public Comment 12.11.2023 .pdf](#)
[image002.png](#)

Council,

Attached and below please find written comment from the Clark County Association of Realtors regarding the Short-Term Rental ordinance on your agenda this evening.

Amanda Delapena

Executive Assistant to the Mayor and City Manager

From: Justin Wood [REDACTED]
Sent: Monday, December 11, 2023 1:50 PM
To: anne.mcenerny-ogle@cityofvancouver.us; Fox, Sarah <S.Fox@cityofvancouver.us>; marie.perez@cityofvancouver.us; kim.harless@cityofvancouver.us; ty.stober@cityofvancouver.us; Bart.Hansen@cityofvancouver.us; Paulsen, Erik <E.Paulsen@cityofvancouver.us>
Cc: Quintrell, Anna <Anna.Quintrell@cityofvancouver.us>; Delapena, Amanda <Amanda.Delapena@cityofvancouver.us>; Holmes, Eric <Eric.Holmes@cityofvancouver.us>; Brandl, Lisa <Lisa.Brandl@cityofvancouver.us>; Nortz, Jason <Jason.Nortz@cityofvancouver.us>
Subject: Short-Term Rental Ordinance: Clark County Assoc. of REALTORS®

CAUTION: This email originated from outside of the City of Vancouver. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Good Afternoon, Mayor McEnery-Ogle and Council

Please find attached our association's public comment addressing the short-term rental ordinance on tonight's consent agenda. We have appreciated the opportunity for feedback thus far. Unfortunately, two recently added regulations have us concerned about the future of lodging and housing in the City of Vancouver. Included in our comment are some questions the council may want to consider before adopting the 24-month pilot program.

We understand these are complicated issues and we hope the Council will consider our comments and use our association as a resource moving forward.

Thank you,

Justin Wood

AHWD,
Government Affairs Director



www.ccrealtors.com



Vancouver WA 98663





December 11, 2023

Vancouver City Council

415 W 6th St.

Vancouver, WA 98660

Public Comment: Short-Term Rental Ordinance

Dear Mayor McEnerny-Ogle, City Council, City Manager, & Staff

Over the past 2 years, the City has considered policies to allow and regulate short-term rental use and operation. This is taking place in a region, state, and country grappling with a housing supply & affordability crisis. Our association understands this and appreciates the balance the City is trying to achieve and has agreed with reasonable regulation thus far. However, the hasty addition of two policies to the regulatory framework has us concerned:

- Limiting the total number of STRs to not exceed 870 total units- equivalent to 1% of the City's total housing stock at the time of adoption.
- Prohibit future units developed according to HB 1110 and HB 1337 from being used as short-term rentals.

There are approximately 425 STR units in the City of Vancouver. This represents roughly 0.5% of Vancouver's approximately 87,000 residential units. Based on this data, the City is not facing an emergency of short-term rentals taking up housing stock. We fear unintended consequences for the housing ecosystem within the City if these additional regulations are added. Please review the following questions before considering adoption:

- How will short-term rental restrictions on new units built according to HB 1337 & 1110 impact the production of those units? Would restricting the use of these units stifle investment?

- Would all future ADU units be banned from STR use or just new units built according to HB 1337?
- By limiting the number of STR permits within the City, would this increase the median nightly rate for all STRs in the City?
- What is the difference in median nightly rate between multinational hotels and motels compared to locally owned STR units?
- By restricting STR use are we making lodging more expensive in the City of Vancouver?
- How will the city enforce restrictions on future middle housing and ADU units? Who and what will be grandfathered in?
- If the City chooses to annex in the future how will this impact the 1% cap or restriction on new units?
- Given the I-5 bridge replacement will take nearly a decade or more to complete, are we shunning future contract workers who prefer lodging types like short-term rentals?
- If the council moves forward with the 1% cap, is there an estimate of lost lodging tax revenue over a given period?
- How will this impact homeowners, some of whom use short-term rental use to afford their home?
- Is the City unintentionally concentrating tourism dollars to the downtown core? How will it impact tourism dollars in other parts of the City?

With these questions in mind, the City would be best served to use the 24-month pilot program as it was intended, to collect data and formulate an encompassing regulatory framework. The addition of the two policies above seems like a preemptive overreaction. The Department of Commerce estimates the State of Washington will need an additional 1.1 million new housing units within the next 20 years. Any policy that may negatively impact the production of new units should include careful consideration. Just because a unit is built for one use doesn't mean that use is permanent. Housing is an ecosystem, and The City of Vancouver needs more information to assess the impacts of these new regulations.

Our association has been supportive of reasonable regulation throughout this process. Our over 1,900 members are partners in the community helping people move and invest into our City. Please use our association as a resource during this pilot program. We would also encourage the council to continue to have conversations with guests, residents, and operators alongside organizations like Identity Clark County (ICC), Clark County Rental Association (CCRA), The Building Industry Association of Clark County (BIA), and the Greater Vancouver Chamber of Commerce (GVC) to assess what additional impacts these regulations may have. The council is well within its right to amend the ordinance to include additional regulations during or after the pilot program. Currently, this hasty approach may exacerbate unintended consequences.

Sincerely,

Justin Wood

Government Affairs Director

From: [Wynn Grcich](#)
To: [Rebecca Messinger](#); [Dollar, Sarah](#)
Subject: Watch "Why They Lied: Del Bigtree on Pharma, mRNA EUA & The COVID Catastrophe Cover-Up – Ask Dr. Drew" on YouTube
Date: Sunday, December 17, 2023 2:59:20 PM

CAUTION: This email originated from outside of the City of Vancouver. Do not click links or open attachments unless you recognize the sender and know the content is safe.

<https://www.youtube.com/live/mc1lID01vuY?si=A63RHKAEgP7CQuhB> . Please send to council members and MELNECK. Put on public record and confirm that you did. Thanks from Wynn.

From: [Wynn Grcich](#)
To: [Rebecca Messinger](#); [Dollar, Sarah](#)
Subject: Watch "Feds PAID Mainstream Media to PUSH Covid-19 VACCINE on Americans: Rav Arora" on YouTube
Date: Wednesday, December 13, 2023 10:15:19 AM

CAUTION: This email originated from outside of the City of Vancouver. Do not click links or open attachments unless you recognize the sender and know the content is safe.

<https://youtu.be/H-cTizTzhXA?si=dM3MfvrjeXXE6lc1> . Please send to council members and MELNECK. Put on public record and confirm that you did. Thanks from Wynn

From: [Wynn Grcich](#)
To: [Rebecca Messinger](#); [Dollar, Sarah](#)
Subject: 5g and cancer
Date: Monday, December 11, 2023 1:02:31 PM
Attachments: [4_5965506366356328962.mp4](#)

CAUTION: This email originated from outside of the City of Vancouver. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Please send to council members and MELNECK. Put on public record and confirm. Thanks from Wynn

12/18/23

City Manager Eric Holmes Community Performance Review - Dec 18th 2023

Tonight you will give City Manger Eric Holmes a \$27,000 raise. To put this into perspective, his raise is about the same as a minimum wage workers entire annual salary. Would you please share what your goals were for our City Manger last year & wether he met, exceeded or failed to meet your expectations.

Here are 3 Community Concerns in regards to his job performance:

#1 - Equitable Pay For All City Workers

Eric Holmes Salary next year will be \$344,000. He'll be the highest paid City Leader in the Region and all total will have received over \$2.75 Million from Vancouver Residents.

In contrast he has bargained against City Workers and Labor Unions fighting for better conditions and equitable pay for themselves and their families. His own staff isn't paid enough to live in Vancouver and yet had to prepare His exorbitant pay raise request for Council this evening. Some PUBLIC WORKS EMPLOYEES ARE ON FOOD STAMPS AND STATE ASSISTANCE.

We want All our Cities Workers paid equitably. This community recognizes and is proud of these essential workers who make our city function. We want you to make Diversity, Equity and Inclusion mean something to all Workers, not just Eric Holmes.

#2 - Prioritizing the Most Vulnerable in Our Community

If you looked out the windows of this Council Chambers last month, you would have seen people living in the field by the parking lot. Eric Holmes Declared a State of Emergency and had them removed. He Ignored Service Providers like Council for the Houseless, SW WA Equity Coalition and YWCA. These groups provide life saving services to our most vulnerable neighbors. If the City will not prioritize the Houseless community needs, it cannot have a City Manger that works against the Service Providers giving life saving supplies and care.

#3 - Public Safety

Eric has refused to meet our communities Public Safety needs. He attempted to reform the Police Dept. 4 years ago and admitted he had ignored the problem for too long. In fact, because Eric has allowed VPD to control and manage its own accountability, they continue to commit violence in our communities. VPD data shows rates of misconduct have risen steadily from 5% in 2013 to 34% in 2022.

We give 30% of our \$2 billion budget to the Vancouver Police, yet the Cops aren't required or ordered to assist the public, only enforce the law.

Neighborhoods have invited the City Manger to come meet with them for over a year. He has refused the invitation. Vancouver Police kill our neighbors, they shoot people who are suicidal, they leave cop cars running with windows down and Loaded Assault Rifles within arms reach near our schools, they point their guns into our homes making families take shelter on their floors. When they have the time to alert the public of their activities, they instead ignore calls for public safety and escalate situations.

These are facts that you've chosen to ignore or hold Eric Holmes accountable for. We believe rewarding him with a \$27,000 pay raise isn't helping. The question that City Workers and residents of Vancouver have is simple: why do you disagree with us?

12/18/23 Michael Moore



Guest Services <laquinta6288@gmail.com>

Fwd: Public record/Vancouver City Council meeting 12/18/2023

1 message

Michael Moore <mssmpy3.14moore@gmail.com>
To: "laquinta6288@gmail.com" <laquinta6288@gmail.com>

Mon, Dec 18, 2023 at 9:15 AM

----- Forwarded message -----

From: **Michael Moore** <mssmpy3.14moore@gmail.com>
Date: Mon, Dec 18, 2023, 9:02 AM
Subject: Public record/Vancouver City Council meeting 12/18/2023
To: <news@koin.com>

My statement to be read into public record.

" Funding for Talking Trash, under 'Protection of States Interests ' RCW 43. 185 c. 130. 2013 Omnibus Rule Equal protection for insurance reporting, if Patterns of activity exist, anything suspicious, report it. Information in Washington Attorney General complaint files 642780, 653087 and 657005 show Patterns of activity. Share.org, Council for the Homeless, Catholic Community Services, Outsiders Inn, Cowlitz Tribe and Peacehealth Sw included in complaint files. May 4th this year Vancouver Police department gave me a case file number, 23-9998. In attempting a fraud report to WA Department of Commerce, Dan Lloyd with City attorney said City can't investigate, sent me email with file number 23-9998. Share.org made a project change, RCW 43. 185 C. 130 (2) requires a lump sum repayment and 3 year Debarment for any grants. Sharehouse Men's shelter clients denied Equal food security. Shares 2022 IRS 990 supplemental statement, \$2,288,627, Part III, Line 4D. 990 Part IV, Statement "Share reviews expenses and monitors monthly invoices to ensure Grants are being used for intended purposes ". November 14th calls with Kayla Williams and Greg Kimsey were productive, Clark County is all about compliance and due diligence. Claims of exemption by Executive Directors and Boards, D and O insurance, hinge on 'Anything clearly wrong headed that causes harm '. Complaint file 657005 includes " to neither confirm or deny the existence of an ongoing investigation ". A text included in files, October 11th from Adam Kravitz regarding Outsiders Inn public health complaint shows 'Clearly wrong thinking, " well the Mayor met with Dr Melnik of Clark County Public Health and Churches don't have the same rules etc. October 24th I called the FBI because of Racketeering concerns, Adam Kravitz disconnected phone # 360-830-6647, pulled Outsiders Inn Facebook page but left phone number on Outsiders website, False Advertising equals Patterns of activity. The Mayor's big heart meant well, Adam manipulated the Mayor, I know it's true. Taking time to Gaslight me with claims of extreme mental health problems, the HART TEAM even believed Slandorous claims. Please, have the Patience of Job, Vancouver is bound to protect the States Interests, Due Diligence, Investigate. I'm not Talking Trash, waiting won't cause harm. Table Funding for Talking Trash, Our Federal and State governments will be watching you.

12/18/23 David LaFayette

Dec-18-2023

City of Vancouver Short-Term Rentals

Hello,

My name is David Lafayette. I've lived in the Hough neighborhood for 25 years now.

A few years ago, my wife and I started the process of converting the unfinished basement of our 1911 house into a type-II ADU. We completed this project last fall.

We have family from all over that visits often and we thought it would be convenient to have a separate space for them while they were visiting.

At nearly \$100k, the project was expensive and we planned on leveraging the ADU as a short-term rental between family visits.

This seemed like a win for everyone:

- We get a place for visiting family
- Short-term rental fees help fund the project
- The City gets an improved structure and higher property taxes

Unfortunately, after reading the current short-term rental rules I discovered that I can not do this. It's my understanding that I can only provide short-term rentals if I am the resident of the dwelling I am renting. My basement unit is now considered a separate dwelling from my main house so I'm prohibited from short-term rentals.

This doesn't make sense to me. This kind of short-term rental is the most unobtrusive to everyone — the owner of the property actually lives in the same structure as the rental, making it extremely unlikely there will be issues with neighbors. Nor am I taking an existing long-term rental out of inventory.

I would like to propose allowances be made for this kind of short-term rental. When the owner's primary residence has an ADU on the premises it makes sense that the owner should be allowed to leverage that additional space as a short-term rental.

Thank you,

David Lafayette

dave@hotelLafayette.com

██████████ - Vancouver WA 98660

██████████



CITY OF
Vancouver
WASHINGTON



Vancouver Innovation Center Revised Master Plan and DA

Mark Person, Senior Planner
Community Development Department

Patrick Quinton, Director
Economic Prosperity and Housing
January 22, 2024

Agenda



Site History



**Approved and
Proposed Plan**



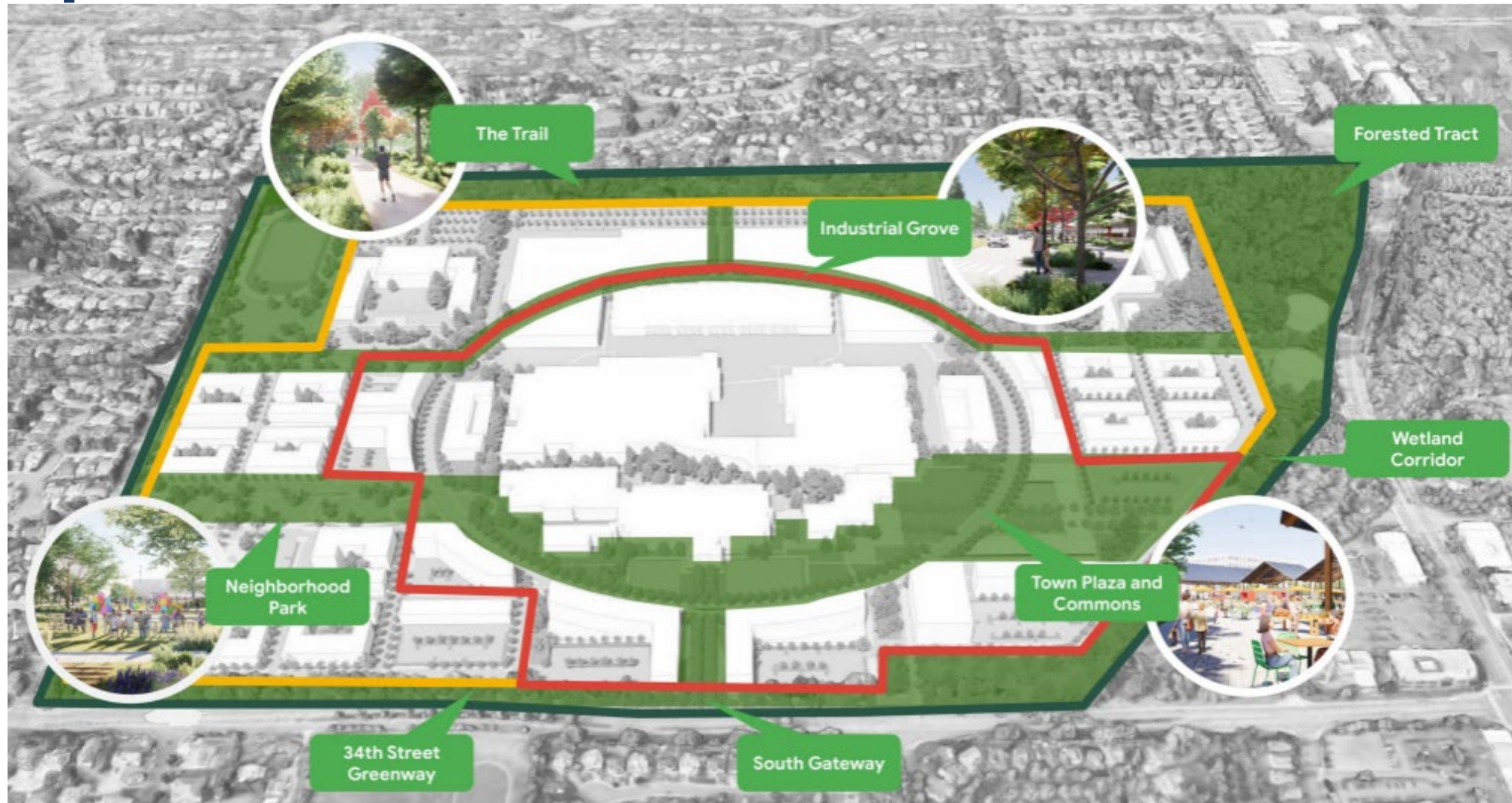
Policy Context



Next Steps



Proposed Site Plan



Site History

- 179-acre site originally developed by Hewlett-Packard, approximately 715,000 square feet of existing buildings onsite
- Rezone and Comprehensive Plan Amendment (changed from IL to MX) and Master Plan and associated development agreement approved in 2021
- 200,981 square foot industrial building approved north of the existing building under the master plan



Revisions to the Master Plan/Development Agreement

Original Master Plan	Proposed Revisions
Main East-West Road	Central Loop/ Ring Road
Defined Open Space LUA	Open Space as an overlay throughout the campus
Detached Single-Family Residential LUA	Removal of detached Single-Family Residential
Density- up to 1,200 Residential Units	Increased density to 1,800 Residential Units
No Affordable Housing Commitment	Commitment to Affordable Housing through MFTE
Commercial node/Town Center (subject to future master plan amendment)	Commercial node/corridor extending from the Town Center through the Central Loop/ Ring Road



Revisions to the Master Plan/Development Agreement

Original Master Plan	Proposed Revisions
Specifically defined Residential LUAs	Consolidated Residential LUA / R-LUA
Forested area access acquisition – no clarity on ownership, development and management	Clarity on Forested area acquisition, timeline for development and City management
Hotel and Community space allowed as Type III application	Hotel and Community Space allowed as a Type II application
School as part of the Master Plan	School removed – Sold to Evergreen School District
Specifically defined phasing of development	Phasing to follow infrastructure and market needs (complying with the vision of a walkable neighborhood)



Approved vs. Proposed LUAs

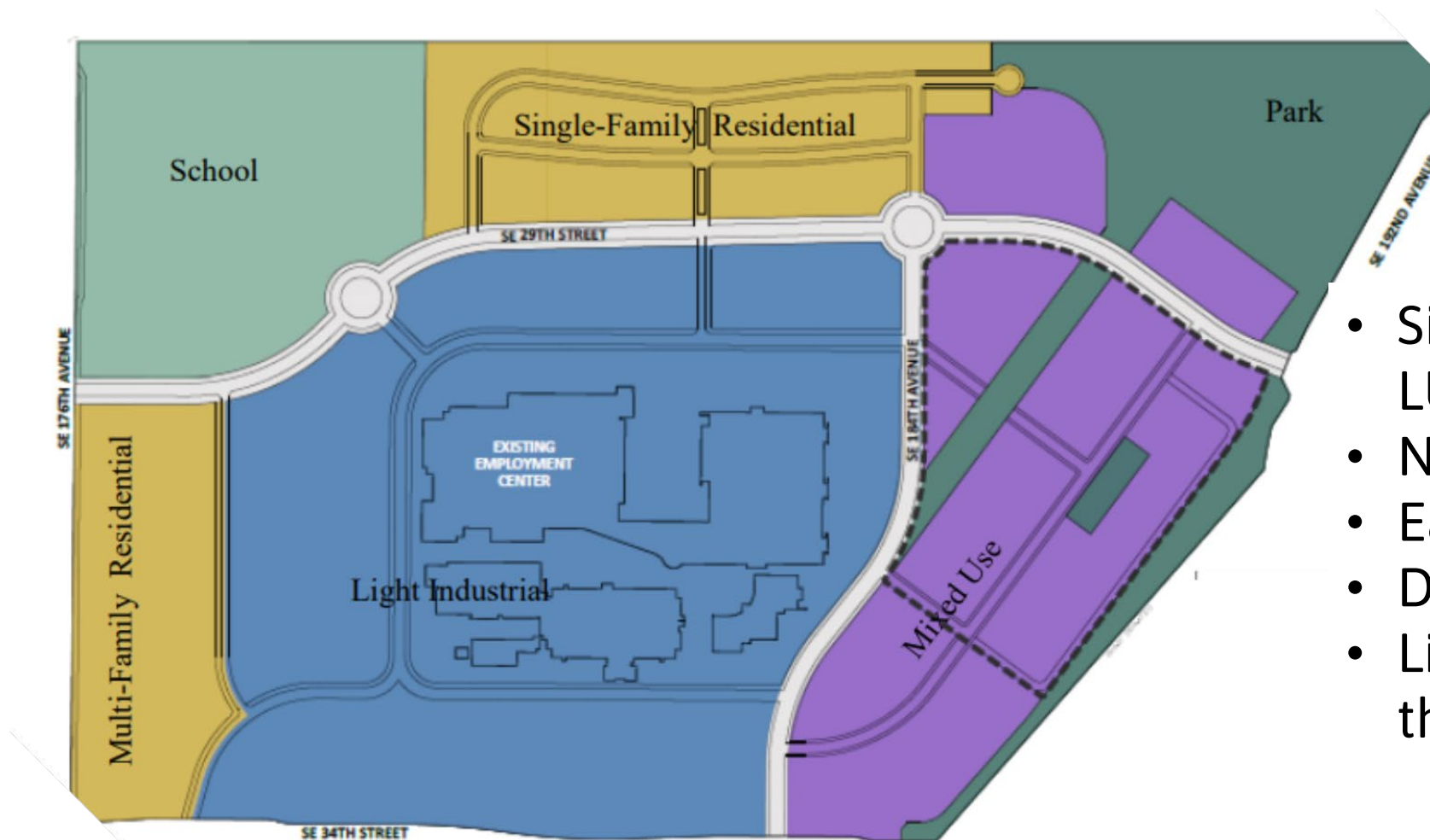
Approved	
LUA	Acres
School	20
Open Space	19.1
LI	67.2
Residential	30.4
Mixed Use	31.9
ROW	10.5
Total	179.1

Proposed	
LUA	Acres
School	20
Forested Tract	13.704
LI	74.12
Residential	38.11
Mixed Use	33.14
ROW	Within the LUA
Total	179.1

7 | Open Space, outside of the Forested Area, is within each LUA. 24 Acres total proposed Open Space



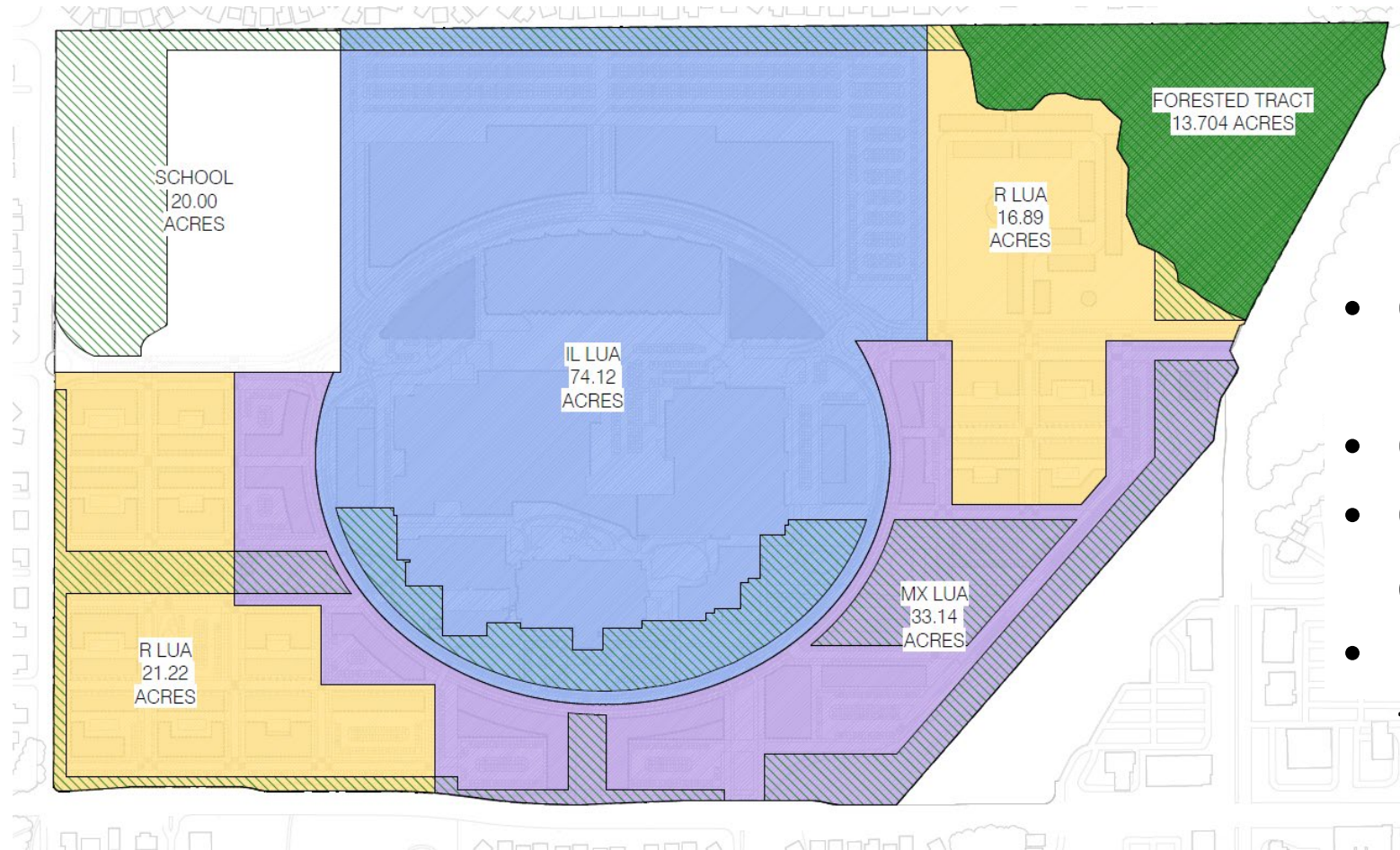
Approved Master Plan



- Single-Family Residential LUA
- Non-integrated LUAs
- East- West Main Road
- Defined Open Area
- Light Industrial dividing the campus



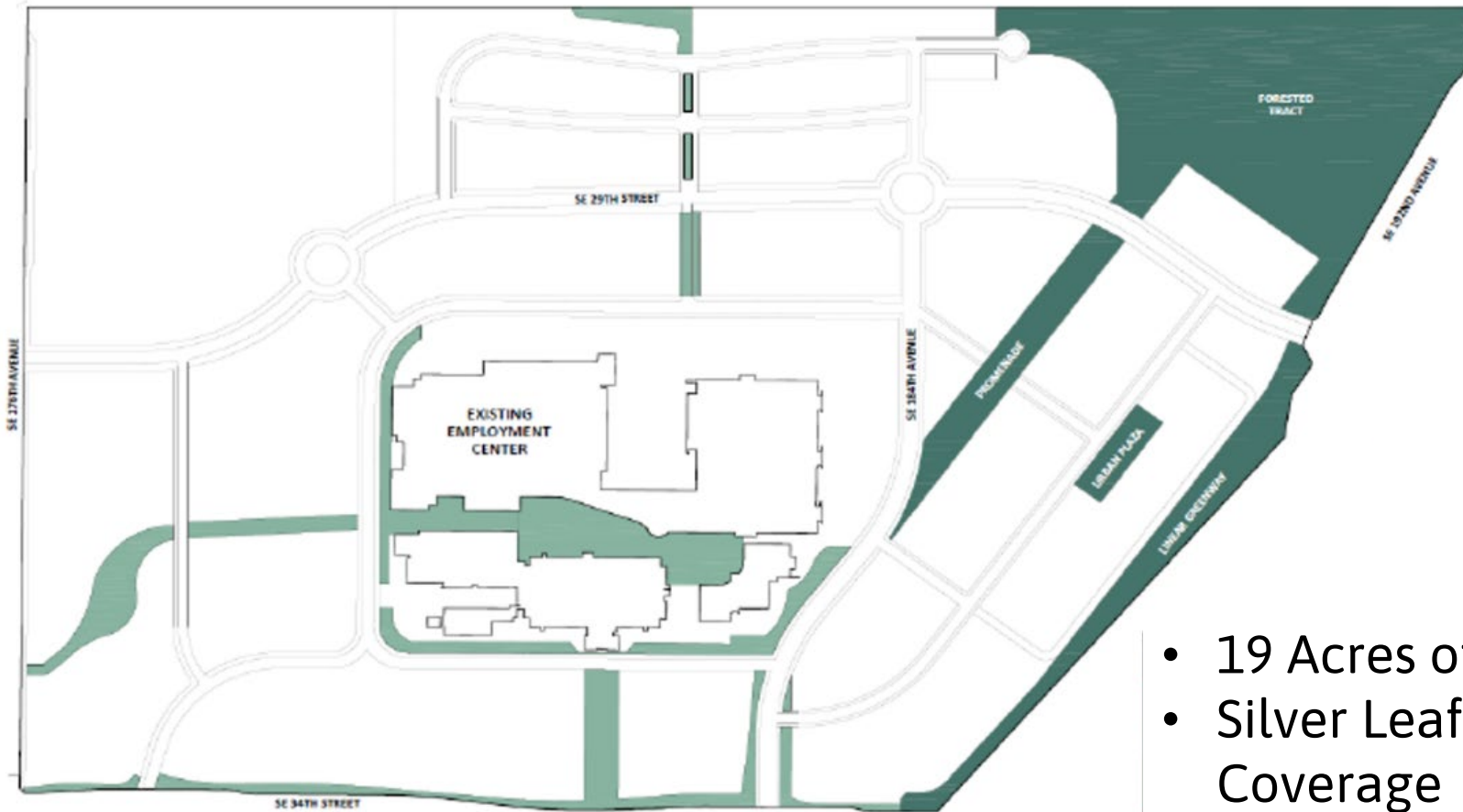
Revised Master Plan



- Consolidated Residential (R) LUA
- Central Loop/ Ring Road
- Open Areas throughout the campus
- Mixed-use Area connecting the different areas



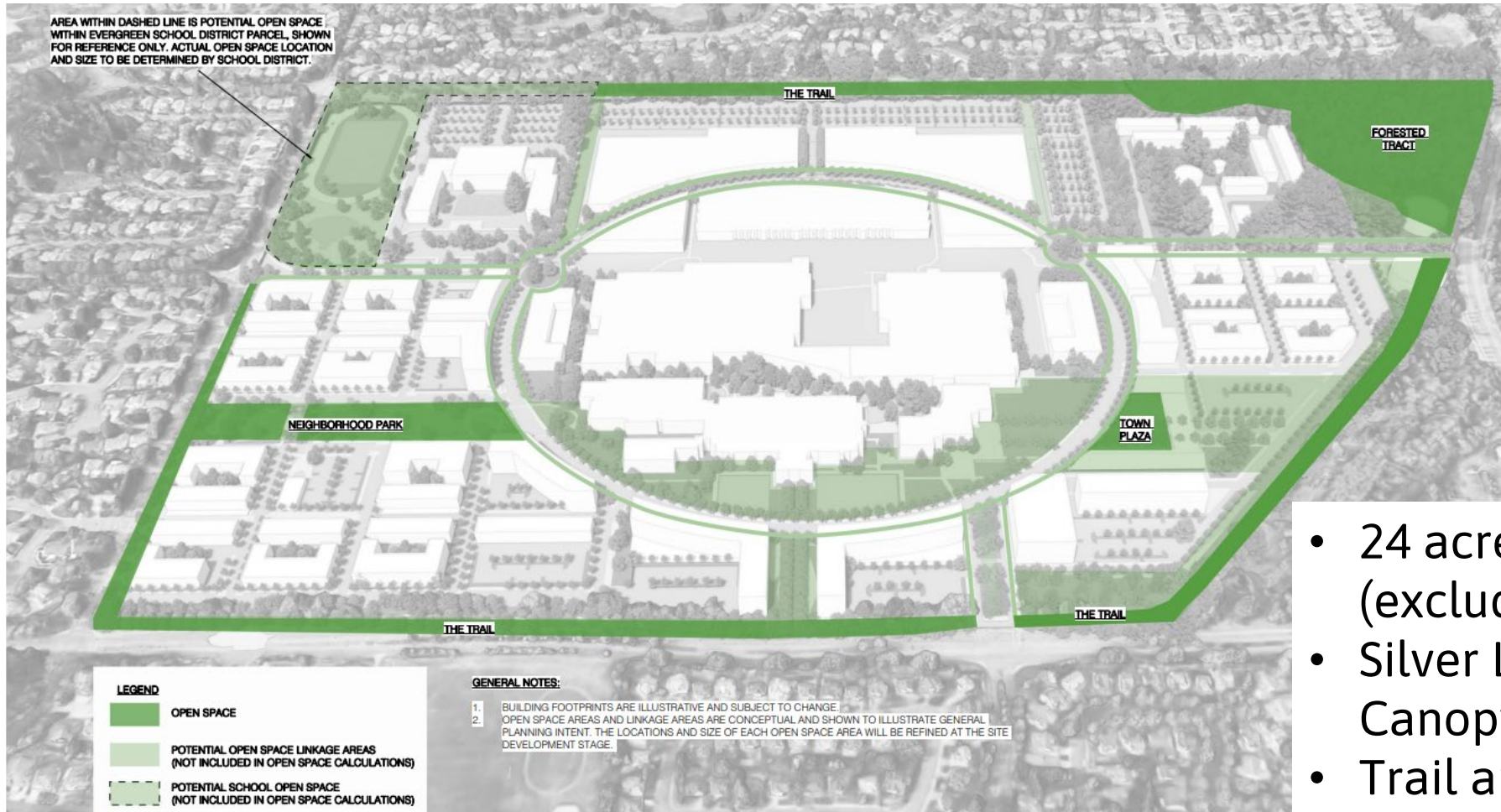
Approved Open Space



- 19 Acres of Open Space
- Silver Leaf Tree Canopy – 30% Coverage



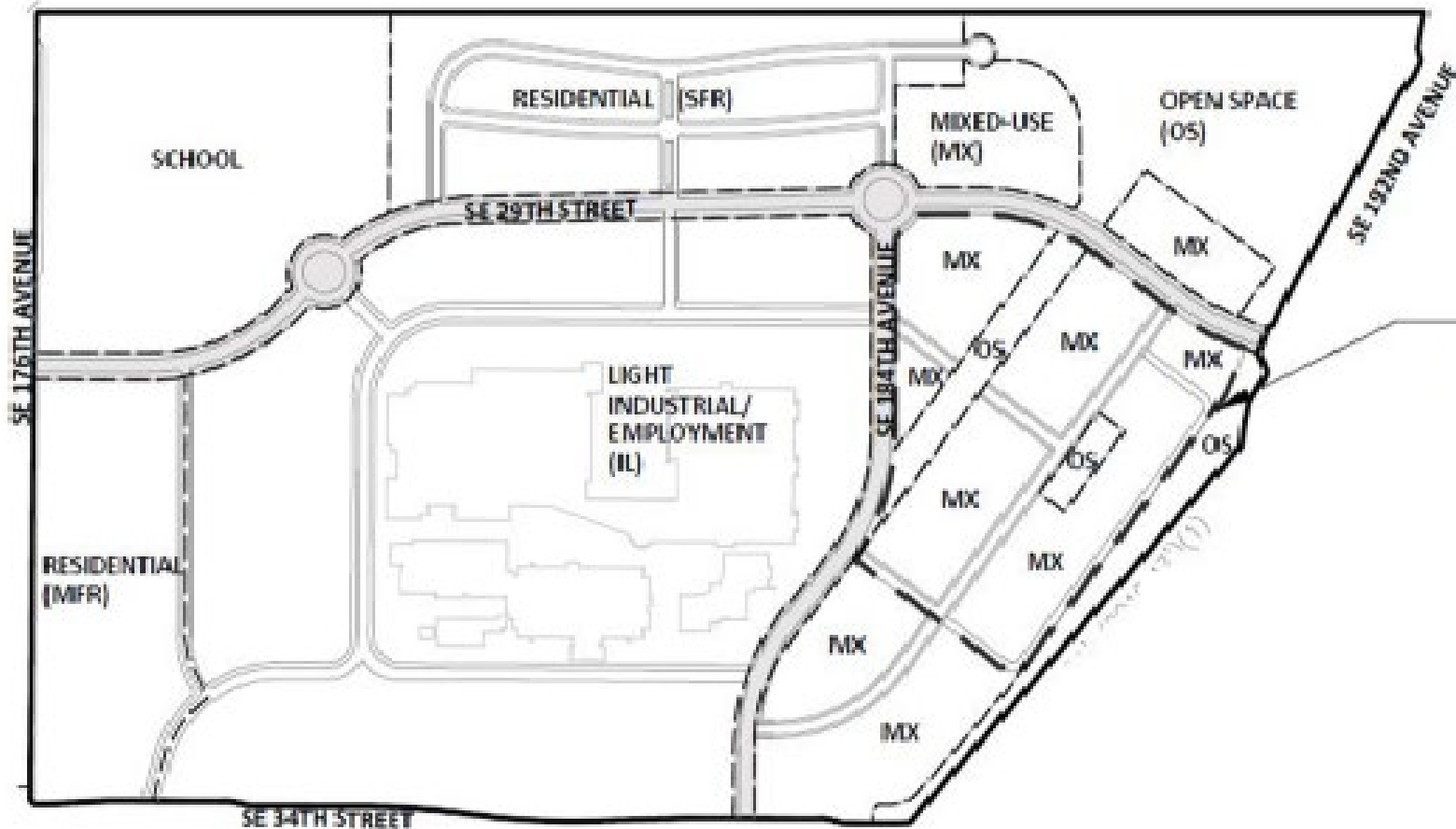
Proposed Open Space



- 24 acres of Open Space (excluding school area)
- Silver Leaf Tree Cap Canopy – 30% coverage
- Trail around campus



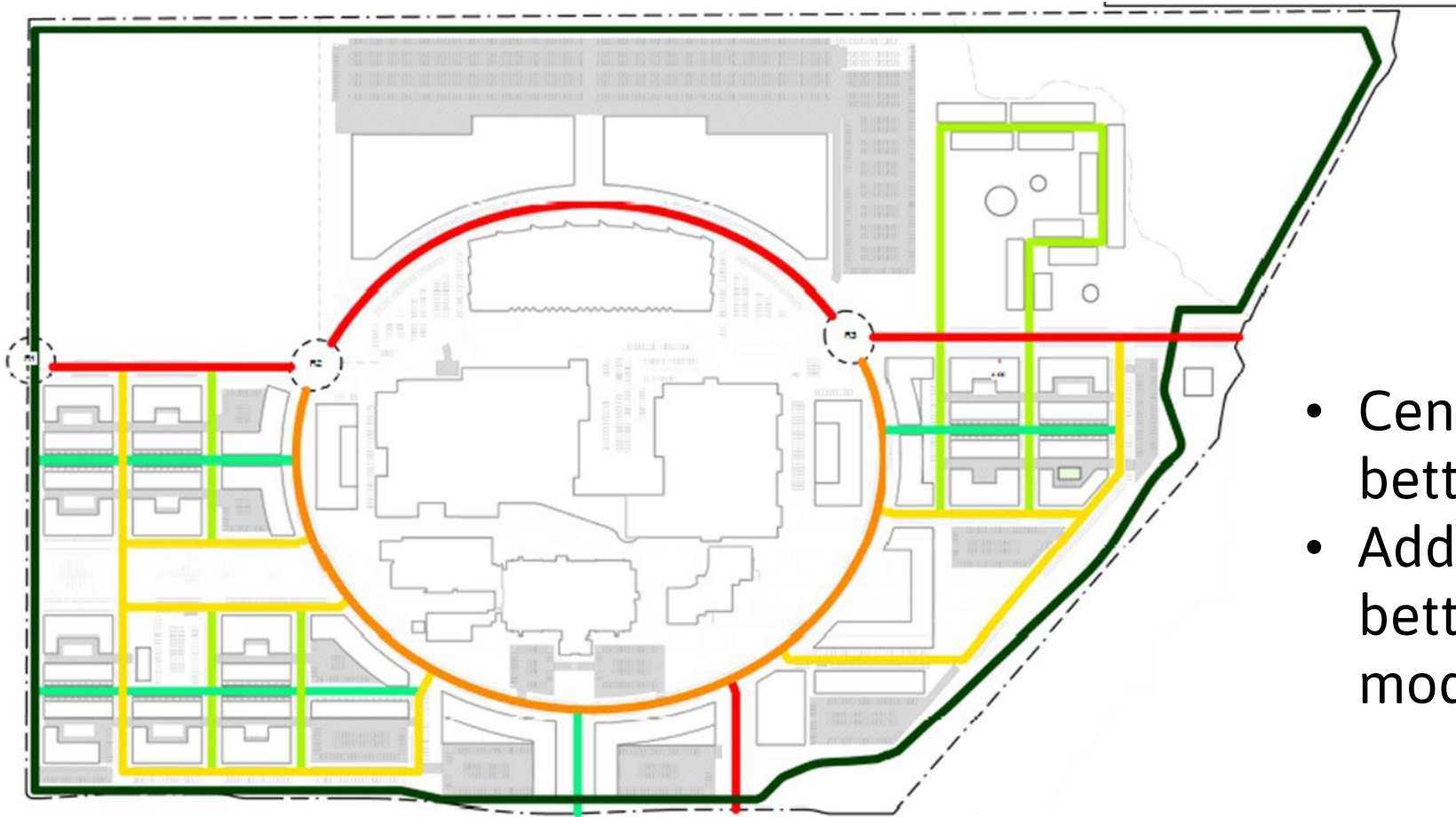
Approved Transportation Network



- East- West/ North- South main roads



Proposed Transportation Network



- Central Loop/ Ring Road for better connectivity and traffic
- Additional local roads for better connectivity and multi-modal access



Sustainability

- Optimizing Green performance of existing building
- Electrification of all residential building systems
- EV charging availability throughout the campus
- 30% Tree Canopy - Silver Cap
- Compliance with Green Building Policy



Next Steps

- Tentative February Planning Commission Hearing
- Council Workshop
- Council Hearing



Discussion



Site/Aerial Photo



DATE: January 22, 2024

TO: Mayor and City Council

FROM: Eric Homes, City Manager

Subject **Vancouver Innovation Center Master Plan and Development Agreement Revision**

Background and History

The Vancouver Innovation Center (VIC) encompasses approximately 179 acres and is located at 8110 SE 34th Street. The site was originally developed by Hewlett-Packard prior to annexation to Vancouver in 1997 and was acquired by New Blueprint Partners in 2020.

The existing Master Plan, Comprehensive Plan Change and Zone Change was approved by City Council on August 16, 2021.

Proposed Changes to Original Plan

New Blueprint Partners and Rabina LLC are proposing changes to the approved master plan and the Development Agreement dated September 15, 2021 to optimize opportunity for employment-generating development, create higher integration of uses, allow for greater density, and create additional open space.

Planning Commission has had two workshops on the Revised Plan and DA, on September 12, 2023 and December 12, 2023. A Planning Commission public hearing is expected on February 13, 2024.

Proposed changes to the approved master plan and development agreement are listed below and summarized on the attached table (Attachment A):

- Central loop/ring road to provide better connectivity, traffic flow and multi-modal accessibility
- Open space revisions to provide more open space throughout the site – forested tract at the northeast corner continues to be preserved
- Town center concept replaced by mixed use corridor
- Revised Land Use Areas to create a more integrated neighborhood
- Increased density from 1,200 residential units to 1,800
- Removal of Single-Family Residential (SFR) and Multi-Family Residential (MFR) areas updated to Residential Land Use Area (R LUA) that may include single-family attached

and multi-family

- Remove phasing of development
- Hotel and community center allowed as a Type II application.
- Applicant commitment to apply for the Multi-Family Tax Exemption (MFTE) for all residential buildings and designate 20% of residential units to be affordable to households earning 80% of Area Median Income (AMI). This designation will be in effect for 12 years
- Forested Area Acquisition and timeline for Park development

ATTACHMENT A

Vancouver Innovation Center Master Plan and Development Agreement (DA) Revisions Summary of Changes

Original Master Plan/ DA	Proposed Master Plan/ DA	Notes on Revised Plan
Main East-West Road – 29 th Street	Central Loop/ Ring Road	Provides better connectivity, traffic flow, and multi-modal accessibility
Defined Open Space	Open Space as overlay throughout the campus	Provides an additional 5 acres of open space, compared to the approved plan – from 19 to 24 acres, not including the school space; also spreads open space throughout the campus.
Detached Single-Family Residential (SFR) LUA	Removal of Single-Family Detached uses	Single- family attached (townhouses) are still permitted. That helps increase the campus density while maintaining open space area.
Maximum residential density 1,200 units	Increase maximum residential units to 1,800 units	Additional 600 residential units on campus, a 50% increase.
No affordable housing commitment	Commitment to Affordable housing through MFTE	Commitment to apply for MFTE and designate 20% of units across all residential buildings to be affordable for households at 80% AMI.
Commercial node located by the Town Center	Commercial expands throughout the Central Loop/ Ring Road	A focal point Town Center remains but the Central Loop/ Ring Road provides a commercial corridor that connects the different areas within the campus.

Original Master Plan/ DA	Proposed Master Plan/ DA	Notes on Revised Plan
Specifically defined Residential LUAs – MFR and SFR	Consolidated Residential LUAs into R-LUA	Single-family attached and multi-family can be developed within the same LUA
Forested Area Access acquisition – no clarity on ownership, development and management.	Negotiated terms on Forested Area acquisition, development timeline and management.	Clarifies that City will acquire the Forested Area along with additional acreage for parking; establishes the development timeline for the first phase of a community park within 3 years and that the City will manage the park and forested area to its standards.
Hotel and community center allowed as a Type III application	Hotel and community center allowed as a Type II application	Provides an easier path for the development of a hotel and/or community space, by performing a Traffic Impact Analysis.
School as part of the Master Plan and DA	School removed from DA	The school area has been sold to the Evergreen School District and it is still designated to be a school.
Specifically defined phasing of development	Phasing to follow infrastructure and market needs	Revised DA allows development to follow infrastructure development as well as market needs while still complying with the walkable neighborhood concept. Applicant will develop office space once market demand returns.

**RECORDING REQUESTED BY
AND WHEN RECORDED RETURN TO:**

Stephen W. Horenstein, Attorney
Schwabe, Williamson & Wyatt P.C.
700 Washington Street, Suite 701
Vancouver, WA 98660

DRAFT 01/12/2024

**VANCOUVER INNOVATION CENTER (VIC)
FOURTH AMENDED AND RESTATED DEVELOPMENT AGREEMENT**

City (Grantor):	City of Vancouver, a Washington municipal corporation
Developer (Grantee):	The VIC Building Owner LLC, a Delaware limited liability company
Abbreviated Legal:	#5&7 6-1-3E #10 MARTIN DLC,#22N,41,36,13 SIMMONS DLC 52.65A; #5&7 6-1-3E #10 MARTIN DLC,#22N,41,36,13 SIMMONS DLC 104.52A; #172 WM SIMMONS DLC 1.24A
Assessor's Tax Parcel Nos.:	126455000; 126816000; 986056494
Full Legal Description:	See Exhibit A
Reference Numbers of Related Documents:	3343884, 5809816, 5979934 AMD, 6017326 COV

**VANCOUVER INNOVATION CENTER (VIC)
FOURTH AMENDED AND RESTATED DEVELOPMENT AGREEMENT**

This Vancouver Innovation Center (VIC) Fourth Amended and Restated Development Agreement (this "VIC DA") is entered into on this ____ day of _____, 2024, by and among the City of Vancouver, a Washington municipal corporation (the "City" or "Grantor"). The VIC Building Owner LLC, a Delaware limited liability company (the "VIC") and "Developer" or "Grantee." City and Developer are referred to as the "Parties."

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RECITALS

A. WHEREAS, in the 1970's, Hewlett-Packard ("HP") acquired approximately 179 acres of real property, located at 18110 SE 34th Street, Vancouver, Washington, formerly known as the HP Campus and now commonly known as the Vancouver Innovation Center (VIC), for the purpose of developing a large manufacturing campus for its own purposes pursuant to an HP South Campus Master Plan and, after building 715,000 square feet of office space, HP sold the VIC in 2009 to S-E, Inc., a Delaware corporation ("SE"), and SE sold to Developer in 2020, subject to the a development agreement; and

B. WHEREAS, the Property, as legally described on Exhibit A attached hereto, is currently encumbered by that certain Third Amended and Restated Development Agreement by and among SE, the Developer, and the City, dated September 15, 2021 (the "Restated DA") and the Developer is the successor in interest to SE on the Property and the Restated DA, except for any portion designated as the School Property (Clark County Tax Parcel 986060362; abbreviated legal description #17 SEC 6 T1N R3EWM 20.00A), as currently configured and legally described on Exhibit A-3 attached hereto, which SE sold to the Evergreen School District, a Washington municipal corporation ("ESD"), on November 30, 2021 and which is subject to an Agreement Related to Development Infrastructure by and between ESD and the Developer dated November 18, 2021 and recorded under Clark County Auditor's File No. 5994962, as amended by that First Amendment dated _____, 2024 and recorded under Clark County Auditor's File No. _____ (the "ESD Infrastructure Agreement") which, in addition to any required City land use approvals, sets forth those obligations required of ESD in to the development of the School Property; and

C. WHEREAS, on August 16, 2021, the City adopted Ordinance No. M-4346 amending the Property's Vancouver Comprehensive Plan and zoning map designation from Light Industrial (IL) to Mixed Use (MX) (the "Zoning Change"), adopting the Developer's Mixed Use Master Plan (the "VIC Master Plan") and approving the Restated DA; and

D. WHEREAS, as required by the Restated DA, that certain Restrictive Covenant, as corrected and re-recorded February 8, 2022 (6017326 COV) (the "Forested Tract Covenant") was recorded on the real property defined therein as the "Forested Tract" prohibiting development of the Forested Tract for any purpose other than park or open space uses; and

E. WHEREAS, the Property includes six existing connected buildings encompassing approximately 700,000 square feet that were constructed by HP (the "Existing Building") and, subsequent to the Parties entering into the Restated DA, the Developer obtained City approval to construct a 200,981 square foot industrial building pursuant to Type II Site Plan Review; and

F. WHEREAS, on May 5, 2023, Developer submitted a land use application for Major revisions, including but not limited to, the VIC Master Plan (the VIC Master Plan 2.0, as later defined herein) pursuant to Section 7 of the Restated DA requesting to amend certain master plan elements for the purposes of: consolidating industrial areas to optimize opportunities for employment-generating development, increasing residential density and affordable housing; integrating more open space; refining the transportation network to include a central ring road for primary site circulation; better integrating mixed-use elements across the campus by changing from a Town Center District to a mixed-use slow street corridor along the proposed ring road; replacing the Town Center Master Plan Amendment required by the Restated DA with this proposed VIC Masterplan 2.0; allowing for hotel and community center development as a Type II conditional use permit; and updating the land use areas, phasing, and design standards;

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G. WHEREAS, while retaining the Property's MX zoning designation and the Forested Tract Covenant development restrictions, modifications to the Restated DA and the VIC Master Plan currently encumbering the Property are necessary to facilitate development of the Property as proposed, and the Parties desire to facilitate development of the Property under the terms and conditions described below;

NOW, THEREFORE, for good and valuable consideration, the sufficiency of which is acknowledged, the Parties agree set forth in this VIC DA.

AGREEMENT

Section 1. Recitals. The above recitals are incorporated in this VIC DA.

Section 2. History of Development Agreements.

2.1 On June 4, 2001, HP and the City of Vancouver entered into a Development Agreement ("Original DA") for the Property with an initial term of 15 years. This Original DA provided HP with reserved traffic capacity, master plan approval, vesting to existing land use codes, and required dedication of right-of-way on SE 192nd Ave.

2.2 On November 16, 2009, the City approved the First Amendment to the Original DA extending its term to June 4, 2020 ("First Amendment") and a Second Amendment, approved on June 1, 2020, further extended the term another two years ("Second Amendment").

2.3 On May 21, 2020, a pre-application conference was held between City staff, applicant representatives and a local neighborhood representative for consideration of the proposed Zoning Change, Restated DA, and VIC Master Plan. Application materials were submitted beginning on June 15, 2020.

2.4 Duly advertised Planning Commission workshops on the proposed Zoning Change, Restated DA, and VIC Master Plan were held on August 11, 2020, September 8, 2020, November 10, 2020, December 8, 2020, January 26, 2021, and May 11, 2021, and a Planning Commission public hearing was held on July 6, 2021. Duly advertised City Council workshops on the proposed Zoning Change, Restated DA, and VIC Master Plan were held on November 23, 2020, December 21, 2020, and July 12, 2021, followed by a City Council First Reading on August 9, 2021 and public hearing on August 16, 2021.

2.5 Pursuant to the public hearing, on August 16, 2021, the City Council adopted Ordinance M-4346 implementing the Zoning Change by amending the Vancouver Comprehensive Plan and Zoning map designation for parcels adjacent tax lots 126455000 and 126816000, located at 18110 SE 34th Street, adopting the VIC Master Plan, and authorizing the Restated DA, which was originally recorded on October 25, 2021 and re-recorded on February 8, 2022 to correct the cover page to include reference to Parcel 986056494 as it existed on October 25, 2021.

2.6 On October 25, 2021 the Forested Tract Covenant was recorded, and then re-recorded on February 8, 2022 to correct the Assessor's Parcel Number referenced on the first page.

2.7 Duly advertised Planning Commission workshops on this VIC DA and the VIC Master Plan 2.0 were held on September 12, 2023, December 12, 2023, and [TBD], and a Planning Commission hearing was on [DATE]. Duly advertised City Council workshops were held on [DATES], followed by a City Council First Reading on [DATE] and public hearing on [DATE].

Section 3. Effective Date and Purpose. The "Effective Date" of this VIC DA is the date upon which the Vancouver City Council adopts an ordinance approving this VIC DA. That date will be written on the first page of this VIC DA, regardless of the date upon which the Parties' signatures are affixed below. The purpose of this VIC DA is to:

DRAFT 01/12/2024

3.1 Provides an integral and required component of a revised employment centered mixed-use master plan for the Property (“VIC Master Plan 2.0” defined below);

3.2 Continue to reserve a certain amount of traffic capacity set forth in the Original DA for the term of this VIC DA;

3.3 Vest the Property and VIC Master Plan 2.0 approved under those land use regulations as provided herein;

3.4 Identify desired land uses that are approved and outright allowed under the VIC Master Plan 2.0;

3.5 Identify transportation improvements Developer agrees to construct to benefit the community and the Property, pursuant to the implementation of the VIC Master Plan 2.0; and

3.6 Identify the Park Parcel (as defined herein) that City has requested Developer sell to City, contingent upon execution of a mutually satisfactory purchase and sale agreement, and community park improvements the City will develop and operate.

Section 4. Description of the Proposed Development of the Property. The development of the Property will be a mixed use, 20-minute community where business, industry, residences, and the outdoors intersect. The Property will be developed consistent with the terms and provisions of this VIC DA and the VIC Master Plan 2.0, approved pursuant to Section 6 below.

Section 5. Approval and Vesting. The VIC Master Plan 2.0 will be fully and finally approved by the Vancouver City Council simultaneously with the approval of this VIC DA, in accordance with VMC 20.430.060(C)(3), after review and recommendation to the Vancouver City Council by the Vancouver Planning Commission. The Property shall be developed in accordance with the Vancouver Municipal Code (VMC) in effect as of the date the application for the VIC Master Plan 2.0 was received, which was December 1, 2022 (the “VIC 2.0 Application Date”), as modified by this VIC DA (including the VIC Master Plan 2.0), and (b) subject to the exception provided in Section 15, the VIC Master Plan 2.0 shall be vested to existing land use regulations and standards as of the VIC 2.0 Application Date.

5.1 Any permit or approval issued by the City for the Property after the Effective Date and before the termination of this VIC DA must be consistent with this VIC DA.

5.2 Through a Type I land use application process, as defined in the VMC, Developer may request that the Property be subject to later-enacted laws, regulations, and ordinances initiated and adopted by the City. Developer must demonstrate how the later-enacted ordinance(s) will benefit both the project and the City while maintaining consistency with the City’s Comprehensive Plan. Developer must also demonstrate that use of later-enacted ordinances will not conflict with other ordinances to which the development is subject and will not be significantly detrimental to the health, safety, or general welfare of the City. An application to subject a development project to a subsequently enacted development regulation will cause the entire development project to be subject to all subsequently enacted development regulations in effect for the date of that application rather than the Effective Date, unless the City and Developer agree otherwise by amending this VIC DA. The Planning Director shall review and either approve the request, or determine that a new application must be submitted without reference to the later-enacted ordinance(s).

5.3 The amount and type of any impact fees associated with a proposed development will not vest, but rather, will be determined for each project specific development application in accordance with then applicable law. Environmental laws or development requirements, including standards related to sustainability and climate action, also will not vest.

5.4 The Property is located within the City's Multifamily Housing Tax Exemption (MFTE) East Vancouver Residential Target Area defined in VMC Section 3.22.030(C)(4) and Developer must apply for the MFTE tax exemption program for any residential development of the Property, in accordance with the eligibility and application criteria of VMC Chapter 3.22 and will diligently initiate and pursue MFTE applications for all residential units developed on the Property in accordance with the application procedures set forth in VMC 3.22.040(E), issuance of a conditional MFTE certificate in accordance with VMC 3.22.040(G), and application and issuance of a final MFTE certificate in accordance with VMC 3.22.040(J) and VMC 3.22.040(K). For any MFTE application approved by the City on the Property, Developer shall, as an independent obligation of this VIC DA comport with all MFTE program requirements, provided that such program requirements are not more restrictive than those established by the City as of this VIC DA Effective Date.

Section 6. VIC Master Plan 2.0. The VIC Master Plan approved in conjunction with an application for a modified master plan (VIC Master Plan 2.0) includes the information provided in this Section 6 and Exhibits B, C, D, E, F, G, & H (including sub-exhibits) of this VIC DA. Exhibit B-1 provides a Master Plan Proposed Land Use Plan; and Exhibit E-1 (Design Guidelines) provides VIC Master Plan 2.0 renderings, depicting the intended look and feel of the fully developed Property. Any inconsistencies between Exhibit B-1 and its sub-exhibits B-2 through B-5 will be resolved in favor of Exhibit B-1. The VIC Master Plan 2.0, attached hereto as Exhibit B-2, is hereby approved and incorporated fully by reference into this VIC DA.

6.1 Land Use Areas. The VIC Master Plan 2.0 contains three Land Use Areas ("LUAs") as well as the Forested Tract and references the approximately 20-acre School Property now owned by ESD. The three LUAs for the Property are identified as Light Industrial (IL), Mixed Use (MX), and Residential (R). Exhibit B-1 provides a Full Site Utilization Plan for the Property, identifying the location and intended use for each LUA and depicting an open space overlay. With the exception of the MX LUA, Developer shall submit site plans or subdivision applications, as appropriate for development of the LUAs, or portions thereof, in accordance with Title 20 VMC and the synchronicity and phasing provisions outlined in Sections 6.4 and 6.5, below.

6.2 Allowed Uses. Notwithstanding any limitations contained within the mixed-use provisions of VMC Title 20 to the contrary, the permitted uses for each LUA will be those uses that are permitted for each type of LUA specified in section 6.1, as of the VIC 2.0 Application Date, as modified by this VIC DA and Exhibit C.

6.3 Development Standards. Although the entire Property is zoned Mixed Use, each LUA will utilize development standards that more closely match its LUA designation, as modified by this VIC DA. For example, parking and lot size standards for the Light Industrial (IL) LUA will be held to the parking and lot size standards within the IL zoning code, unless otherwise modified by this VIC DA. Parking standards and set back requirements for the Mixed Use (MX) LUA will be subject to the MX zone parking standards, as modified by this VIC DA and the VIC Master Plan 2.0. Attached hereto as Exhibit D is a list of approved development standards for the indicated LUAs that deviate from current VMC and including those that are deemed modified by this DA. Any variations from the applicable VMC development standards (as modified by this VIC DA) will be approved in accordance with VMC Title 20 as of the VIC 2.0 Application Date. Approval of such variations will be granted in accordance with applicable law and sections 7.2e and 7.3 below.

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a. Vesting. The Property will vest to the development standards provided in VMC Title 20, applicable to each type of LUA specified in section 6.1, as of the VIC 2.0 Application Date, as modified by this VIC DA and Exhibit D.

b. New Buildings. Developer shall build 600,000 to 860,000 square feet of new employment square footage (new non-residential, non-parking gross square footage, with approximately 216,000 square feet of that employment square footage to be built in the IL LUA. Developer may build up to 1,800 residential units throughout the Property. Developer may build more than 860,000 square feet of new employment square footage or more than 1,800 residential units only if Developer obtains a new traffic impact analysis, updating the April 28, 2023 *Kittelson & Associates Traffic Impact Analysis for the Revised Vancouver Innovation Center (The VIC) Mixed Use Master Plan* on file with the City.

c. Building Height. Notwithstanding anything contained within VMC Title 20 to the contrary, MX height standards apply to all LUAs throughout the Property (up to 75 feet).

6.4 Synchronicity. The sequencing of development of the various LUAs within the VIC Master Plan 2.0 is critical to achieving a successful mixed-use development and 20-minute community. The VIC Master Plan 2.0 is, at its core, an employment based mixed use development. However, to obtain the on-site traffic recapture and to comply with VMC 20.430.060 (which requires at least 20% of the combined gross floor area of the buildings to be devoted to residential uses), residential development must be properly synchronized with employment land development. Notwithstanding anything to the contrary in VMC chapter 20.430, the following synchronicity rules apply to the timing of development of the LUAs.

a. There is no limit on the timing or pace of development of the **light industrial (IL) LUA** depicted on the Master Plan. Developer has already begun and intends to complete renovations and capital improvements in the Existing Building in the IL LUA by December 31, 2023. Residential units in the IL LUA, if any, shall be on the second floor, or above.

b. In the **mixed-use (MX) LUA** depicted in the VIC Master Plan 2.0 the timing and pace of development needs to include a mix of residential and commercial to support development of 20-minute communities.

c. There is no limit on Developer's ability to submit, entitle, and obtain land use approval for developing residential units in the **residential (R) LUA**.

6.5 Phasing. Developer is focusing current development efforts on the interior of the Existing Building. Subsequent development is expected to occur in phases. Each phase of development may overlap with the other and will follow the infrastructure phasing as described in Figure 2 of the April 28, 2023 *Kittelson & Associates Traffic Impact Analysis for the Revised Vancouver Innovation Center (The VIC) Mixed Use Master Plan* on file with the City (the "2023 VIC TIA"), which provides for development in four phases.

6.6 Design Standards. All new building development must comply with this VIC Master Plan 2.0 and the Design Guidelines provided in Exhibit E to this VIC DA. In addition, all new building development must be consistent with the November 2023 Comprehensive Sustainability Plan outlined in Exhibit E-2.

6.7 Parking Plan. Parking will be provided in accordance with the requirements of each LUA, as may be modified by this VIC DA and the VIC Master Plan 2.0, as set forth in Table 1.0 below. Developer and City may coordinate a residential parking permit program within the R-LUA that limits on-street public parking to permitted residents only during certain hours. Not less than 60 days prior to City's completion of park improvements in the Forested Tract *and* opening that area for public use, Developer will work with each tenant in its commercial and industrial buildings adjacent to the Forested Tract to determine if it is feasible to allow public use of portions of privately constructed parking lots for those buildings during those periods of time employees of tenants are not using such parking lots. If Developer determines in its sole discretion that such parking will not interfere with tenant parking or confidentiality concerns of tenants requiring parking to be limited to employees of tenants only, public use will be allowed in those areas and during hours designated by Developer. As tenants change, lease up of tenant spaces occurs, and the needs of existing tenants change, Developer will reevaluate the availability of parking for public use as provided for herein and notify the City prior to limiting such parking, if any. The City will direct the public to first use the public parking the City provides on land it acquires from Developer adjacent to the Forested Tract that it will make available to the public for parking purposes while accessing the park.

Table 1.0. Revised VIC Master Plan Parking Ratios

Program	VIC Masterplan 2.0
Single Family Attached (TH) within R LUA and MX LUA	1 stall/DU min.
Multifamily within R LUA and MX LUA except for Studios	1.5 stall/DU min.
Senior Housing in all LUAS	0.3 stall/DU min.
Studio units in all LUAs(MP2.0)	1 stall/DU min.
MX LUA (Non-Residential)	2 – 2.5 stalls/ 1,000 SF
IL LUA	Minimum per VMC 20.945.070; no maximum

Developer will be allowed to count on-street public parking immediately adjacent to the respective building for which Developer is seeking to satisfy the LUA parking requirements. Each site plan or subdivision application must demonstrate how it contributes toward compliance of the entire Property with the parking requirements of VMC 20.430.060(C)(2)(h) (including the 25% variance, if necessary) at full Property build out..

6.8 Open Space. Developer shall create various open spaces as an overlay throughout the Property in accordance with the VIC Master Plan 2.0 and in compliance with the MX LUA. Exhibit B-2 to this VIC DA is reflective of how open space may be configured. The developer may change the locations of such open space so long as Developer does not diminish the amount of open space provided on the Property. It may do so without formal approval by the City.

a. In addition to the Forested Tract and any private residential parks, the open space must include one or more outdoor publicly accessible features to encourage interaction and gathering,

centrally located on the Property. Publicly accessible open spaces must equal at least five percent (5%) of the total Property in accordance with VMC 20.430.060(C)(2)(d)(4).

b. Each site plan, subdivision application, or building permit application must demonstrate compliance with requirements as set forth in VMC 20.430.040(B) for the particular LUA in which it is located with the proviso that no less than 15% of the cumulative area of all approved and pending site plan applications within the Property shall be landscaped. Developer shall provide the City a chart demonstrating compliance with this requirement in conjunction with all such applications.

6.9 Community Park. Developer has set aside the approximately 13.70-acre Forested Tract in the northeast corner of the Property as open space for purposes of forest preservation, open space, public recreation, and natural habitat and Developer has reserved the Park Access Area for a future parking and public entryway to the Forested Tract, with both the Forested Tract and the Park Access Area. Although Developer is willing to retain ownership of the Forested Tract for the uses set forth in this section, the City has expressed a desire to acquire the Forested Tract for development by the City as a public community park. The Forested Tract is part of the open space identified in the VIC Master Plan 2.0. The Forested Tract is more specifically depicted on Exhibit A-1. The Park Access Area is generally depicted on Exhibit A-2.

a. *Restrictive Covenant.* Developer and City have recorded the Forested Tract Covenant, prohibiting development of the Forested Tract for any purpose other than open space. Such covenant does not prohibit installation of community park amenities. For the purpose of more effective tree canopy preservation, Developer and City shall modify the Forested Tract Covenant within thirty (30) business days of the Effective Date to update the Forested Tract legal description to that attached hereto on Exhibit A-1. The Forested Tract Covenant cannot be otherwise modified or removed without Vancouver City Council approval.

b. *Creditable.* Whether or not the City acquires the Forested Tract, it will count toward the open space requirements under applicable chapters of the VMC for a mixed-use master plan. The trees existing within the Forested Tract will be evaluated for any requirement of the VMC and the VIC Master Plan 2.0 applicable to tree preservation, tree unit calculation, tree canopy calculations. Tree density calculations will be based upon a Tree Plan developed by the Developer's project arborist in conjunction with the City of Vancouver Urban Forester and submitted by Developer to the City for review designating trees in the Forested Tract and on the Property either for retention or removal (the "Tree Plan"). Based upon the Tree Plan, tree density calculations for the Property will be established in accordance with VMC Section 20.770.080(B).

c. *Creation of Park Parcel.* If Developer and the City reach agreement as to the Sale of the Forested Tract, Developer shall cause the creation of separate legal lot from the existing Property, which separate lot will consist of the combined Forested Tract and Park Access Area (the "Park Parcel").

d. *Public Acquisition.* Provided that the City determines to provide improvements for public use and enjoyment consistent with the community park designated in the City's Capital Facility Plan and consistent with the VIC Master Plan 2.0, the City may seek to acquire the Park Parcel utilizing budgeted and reserved Park Impact Fee funds from the park service area in which the Park Parcel is located (formerly District 4, now designated as District C) in accordance with RCW 82.02.070 for this purpose.

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Developer and City will negotiate in good faith to enter into a purchase and sale agreement for the Park Parcel pursuant to this VIC DA (“Park PSA”). However, if the Developer and the City cannot reasonably enter into a Park PSA, then the exercise of City’s power of eminent domain in order to fulfill a fundamental public purpose by causing the Park Parcel to become a community park will be imminent. Notwithstanding the foregoing, the City must comply with Chapter 8.12 RCW and all applicable laws and procedures for any condemnation action. If Developer and City negotiate and enter into the Park PSA, Developer and City agree as follows:

(i) Fair Market Value. The purchase price to be paid by the City for the Park Parcel shall be determined by the fair market value of the real property as determined by an appraisal dated within 24 months of the effective date of the purchase and sale agreement, using the Uniform Standards of Professional Appraisal Practice (“USPAP”) methodologies based on the Park Parcel’s best and highest use as a mixed-use zoned property (the “Appraisal Value”). The purchase price to be paid by the City for the Park Access Area portion of the Park Parcel shall be the Appraisal Value and the purchase price to be paid by the City for the Forested Tract portion of the Park Parcel shall be fifty percent (50%) of the Appraisal Value, calculated on the basis of the per square footage valuation.

(ii) Qualified Appraiser. The parties shall attempt to agree on a single MAI real estate appraiser to conduct the USPAP appraisal and share that cost equally. If the parties are unable to agree upon a single appraiser, then the City shall choose an appraiser who shall be a certified general real estate appraiser licensed by the State of Washington who is a member of the Appraisal Institute of America (MAI) and who has at least five (5) years’ commercial appraisal experience in Clark County and who has not been regularly employed or retained as a consultant, appraiser or agent of either party during the prior twelve (12) months (herein “Qualified Appraiser”) and Developer shall choose an appraiser who shall also be a Qualified Appraiser. Each Party will pay for the cost of their Qualified Appraiser. If the appraisers are unable to agree upon the Appraisal Value within fifteen (15) days, the two Qualified Appraisers so appointed shall select a third Qualified Appraiser within five (5) days (whose cost will be shared equally between the Developer and the City). Within fifteen (15) days following the selection of a third Qualified Appraiser, a majority of the Qualified Appraisers shall attempt to reach agreement on the Appraisal Value of the Park Parcel. If a majority of the Qualified Appraisers are unable to agree on the Appraisal Value, the three appraisals shall be added together, and their total divided by three; the resulting quotient shall be the Appraisal Value. If, however, the low appraisal and/or high appraisal is more than ten percent (10%) lower and/or higher than the middle appraisal, the lower appraisal and/or the higher appraisal shall be disregarded. If only one appraisal is discarded, the remaining two appraisals shall be added together, and their total divided by two and the resulting quotient shall be the Appraisal Value. If both the low appraisal and the high appraisal are disregarded, the middle appraisal shall be the Appraisal Value.

(iii) Park Rules. Upon acquisition by the City, the Park Parcel will be subject to the versions of VMC Chapter 15.04 (“Park Rules”) and VMC Chapter 15.08 that are in effect as of the VIC 2.0 Application Date.

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(iv) Community Park Design. The Park Parcel will be planned to meet the City's current community park standard, as of the Effective Date. The community park master planning and design process for the Park Parcel will consider the Revised Design Standards of this VIC DA, be congruent with the VIC Master Plan 2.0, integrate passive recreation space and natural resource areas, provide public restrooms, accommodate public parking in the Park Access Area, and engage the surrounding community. The Developer shall have input during the Park Parcel planning and design process, which will include a detailed needs and community park site assessment to determine size, scale, and final selection of specific amenities. The Park Parcel design will include a wide variety of amenities that seek to serve all segments of the surrounding community and may include a selection of recreation improvements for organized activities such as sports fields, skate parks, picnic shelters, community gardens, trails, event spaces, and public art and cultural features within the Forested Tract.

(v) Community Park Development. Based on the City's recent community park design efforts, the City anticipates that the following Initial Improvements to the Park Parcel would be constructed within three (3) years of the City's acquisition:

- (1) Preservation of tree canopy and tree density preservation as a design priority;
- (2) Dedicated public parking, including ADA accessible parking, constructed in the Park Access Area;
- (3) Provision for replacement by the City in accordance with VMC 20.770.080 of any tree density removal from the Park Access Area that is necessitated by parking development with trees planted on-site (within the Property) and restricted from future removal;
- (4) Siting and construction of public restrooms;
- (5) Playground installation;
- (6) Hard surface paths making all major amenities pedestrian accessible; and
- (7) Nature trails, which may be soft surface.

The City will issue a Request for Qualification (RFQ) within sixty (60) days following execution of the Park PSA for a qualified landscape architect to create and implement the Park Parcel design. The Developer shall have input on the RFQ specifications and standards for approval in the City's selection of a qualified landscape architect. The RFQ will allow a thirty (30) day response period, and, assuming a qualified response is received, the City will award the contract within sixty (60) days of the RFQ closing. The City will allow eight (8) months from the award of contract for a community park design draft and an additional two (2) months for issuance of Initial Improvements plans and specifications.

The City will report annually to the VIC on progress made to complete the Initial Improvements design, planning, and construction. The City must demonstrate commercially reasonable efforts to meet major milestones and to budget adequate

funds to timely complete the Initial Improvements. The VIC will notify the City of any perceived deficiencies in performance within thirty (30) days of receipt of such progress report.

Should Developer and the City fail for any reason to enter into the Park PSA for the Forested Tract, and further, should the City institute a condemnation proceeding to acquire the Forested Tract, nothing included in this VIC DA may be used by the City as evidence in such proceeding as to the Developer's willingness to sell the Forested Tract to the City or for purposes of demonstrating public use and necessity.

6.10 Landscape Plan. Once developed in accordance with the VIC Master Plan 2.0, the Property will have more tree canopy coverage than the Property currently enjoys, with a target of 47.7 acres of tree canopy, equal to more than the City's aspirational target of 30%. Developer shall submit more detailed landscape plans with each site plan/subdivision application, detailing the drought-resistant, native plants that will be used in each LUA, demonstrating compliance with tree density requirements in VMC 20.770.080, and demonstrating progress toward the 5-, 10-, 15-, and 20-year tree canopy targets. Landscaping throughout the Property will be consistent with and complimentary to the native plants in the Forested Tract.

6.11 Mixed-Use Slow Street Corridor. Within the IL LUA and MX LUA, there is an identified mixed-use corridor created by a loop road that rings the Existing Building and plaza. Improvements adjacent to the ring road within the MX LUA must have predominantly active commercial uses on first floor of frontages facing the ring road. Development of all improvements adjacent to the ring road in the MX LUA must be at least three-stories high and have a setback from the ring road of no more than 20 feet, unless there is a public plaza, market, or pavilion in the setback. Parking for buildings on the ring road must be located behind buildings and/or effectively buffered from the ring road. Notwithstanding the above, the planning official shall have the ability to deviate from specific aspects of these Mixed-Use Slow Street Corridor requirements (including but not limited to building height, number of floors and setback requirements) to the extent that the plan proposed is in keeping with the overall vision of an activated commercial street and otherwise compliant with building code. The mixed-use corridor must be attractive, active and accessible and the Developer must coordinate wayfinding for the ring road with the City.

6.12 Compliance. Developer shall comply with this VIC DA and the VIC Master Plan 2.0 – including but not limited to all associated exhibits. All development proposed by an entity other than Developer will be reviewed by a design review committee, chaired by Developer, to ensure compliance with the VIC Master Plan 2.0, the VIC DA.

Section 7. Master Plan Revisions. There are three categories of VIC Master Plan 2.0 revisions: Major, Minor, and De Minimis revision requests. Developer may request Major revisions to the VIC Master Plan 2.0 no more than once in any calendar year, unless mutually agreed to by the City. All proposed revisions shall be considered under the approval criteria identified below.

7.1 Major Revisions. Requests to modify or revise the VIC Master Plan 2.0 as follows are deemed Major and subject to a Type IV review process, requiring concurrent amendment of this VIC DA.

- a.** Greater than 10% increase in total residential units on the Property, except as provided in Section 6.3;

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- b.** A reduction of non-residential square footage on the Property by more than 10%;
 - c.** Increase of parking by more than 10%;
 - d.** Greater than 10% decrease in the amount of open space approved in the VIC Master Plan 2.0;
 - e.** New uses not included in the VIC Master Plan 2.0 and this VIC DA;
 - f.** Changes in the boundaries between LUAs that alter the total acreage of any LUA by more than 10%;
- and
- g.** A change from a residential use to any other use for structures along the Forested Tract.

7.2 Minor Revisions: The following will be considered Minor Revisions to the VIC Master Plan 2.0, subject to Type II Review:

- a.** Access points of any LUA provided the resulting site plan or subdivision proposal is consistent with the Full Site Utilization Plan;
- b.** New buildings, so long as the additional development can be accommodated with only minor changes to the transportation, water, sewer, storm drainage systems, or the Full Site Utilization Plan, in the approved Master Plan;
- c.** Significant changes to street locations or capacity, as determined by the Planning Director;
- d.** Reduction of parking by more than 10%;
- e.** Approval of development and design standard variations in excess of the variations allowed by applicable VMC; and
- f.** Any other changes that are not Major Revisions, that the Planning Director or Parks and Recreation Director, regarding changes to the Forested Tract, determines are not de minimis.

7.3 De Minimis Revisions: The Planning Director may review and approve any change to the VIC Master Plan 2.0 that are not specifically addressed above, if the Planning Director determines such change to be de minimis.

7.4 Approval Criteria. All Major, Minor, and De Minimis changes to the VIC Master Plan 2.0 will be reviewed according to the following approval criteria:

- a.** The proposed change meets the intent of the adopted VIC Master Plan 2.0;
- b.** The proposed change will not result in a substantial impact to transportation, water, sewer or storm water management systems, after considering all mitigation plans;
- c.** The proposed change will not result in adverse impacts to adjacent properties or uses, after considering all mitigation plans; and
- d.** The proposed change is consistent with the then current Vancouver Municipal Code and Vancouver Comprehensive Plan.

Section 8. Parcelization. Developer may divide the Property into separate legal lots so long as those lots are created utilizing the land division processes or exemptions thereto contained in applicable law and are not inconsistent with the VIC Master Plan 2.0 and this VIC DA. Any new parcel or lot thereby created will be bound by the terms and conditions of the VIC Master Plan 2.0 and this VIC DA.

Section 9. Park Impact Fee Credits and Reductions. Developer shall be entitled to Park Impact Fee exemptions and reductions available by law, including but not limited to VMC 20.915.080 and .090.

Section 10. Traffic and Trips.

10.1 Retained Traffic Capacity. Exhibit F to this VIC DA sets forth the AM peak hour trips, PM peak trips and total vehicle trips per day that were reserved under the Restated DA and remain reserved through this VIC DA, hereunder. Also attached as part of Exhibit F is the VIC Site Trip Generation Estimate provided in Table 4 of the 2023 VIC TIA.

10.2 Surrendered Traffic Capacity. Exhibit G to this VIC DA sets forth the AM peak hour trips, PM peak hour trips and total vehicle trips per day that were vested and reserved under the Restated DA, and trips surrendered to the City through the Original Development Agreement.

10.3 Trip Utilization Accounting. Developer shall prepare a Transportation Compliance Letter for each proposed new development site, in conjunction with site plan application to document the utilization of vested, retained traffic capacity. Trips generated by the Forested Tract will not be charged against the Retained Traffic Capacity. The Transportation Compliance Letter for each proposed new development must provide:

- a.** The number of net new weekday daily, weekday AM peak hour and weekday PM peak hour trips estimated to be generated by the proposed use based on trip rates in the *Trip Generation Manual, 11th Edition* as published by the Institute of Transportation Engineers, or the then-current version as agreed between the parties, for the site. Internal trip allocations will be documented following the assumptions made in the 2023 VIC TIA.
- b.** A debiting summary comparing the total net new weekday AM peak hour and weekday PM peak hour trips vested to the Property (as set forth in Exhibit F attached hereto), net new weekday AM and PM peak hour trips consumed to date, and net new weekday AM and PM peak hour trips remaining for future development after accounting for approved and proposed site development(s).
- c.** The net new Weekday PM peak hour site-generated trips associated with the proposed development, projected to travel through the SR-14/SE 192nd Avenue westbound terminal will be developed using the trip distribution pattern identified in Figure 5 of the 2023 VIC TIA, as set forth on Exhibit F attached hereto as most applicable to the proposed use.
- d.** The net new Weekday PM peak hour site-generated trips associated with the proposed development projected to travel through the SE 20th Street/SE 176th Avenue intersection will be developed using the trip distribution pattern identified in Figure 5 of the 2023 VIC TIA, as set forth on Exhibit F attached hereto as most applicable to the proposed use.
- e.** The net new Weekday PM peak hour site-generated trips associated with the proposed development projected to travel through the SE 34th Street/SE 192nd Avenue will be developed using the trip distribution pattern identified in Figure 5

of the 2023 VIC TIA, as set forth on Exhibit F attached hereto as most applicable to the proposed use.

f. In the event the sum of the total net new trips generated by a development within the Property plus the sum of total net new trips previously allocated to development within the Property exceed the total net new weekday AM and PM peak hour trips vested to the property in Exhibit F, Developer shall prepare a new traffic impact analysis to assess the impact of the excess trips.

Section 11. Transportation Improvements. Developer agrees to construct those transportation improvements and dedicate necessary right of way identified in Exhibit H to this VIC DA. Timelines will be established by the individual project phases identified in Table 1 of the 2023 VIC TIA. Notwithstanding anything to the contrary in this VIC DA, the City Transportation Manager may approve changes to the individual project phases in Table 1; such changes will not be considered revisions to this VIC DA. Developer's efforts to improve the Existing Building will not be contingent upon or require the development of any Transportation Improvements as a condition of approval. Developer may pay to have the City, or a third party, construct the transportation improvements in whole, or in part. If the total number of trips allocated to the Property remain below the vested, Retained Traffic Capacity provided in Exhibit F, Developer shall not be obligated to accomplish any other transportation improvements or other transportation mitigation as a condition of approval for any development on the Property. In the event the total net new trips generated by a proposed development on the Property triggers the requirements of Section 10.3f above, Developer may be required to accomplish transportation improvements or mitigation measures related solely to the impact of those excess trips.

Section 12. "Proportionate Share" Payments. Although the estimated trips for the Property are already vested, and thus future development of the Property pursuant to this VIC DA will not increase the presently calculated burden on the City's transportation system, Developer voluntarily agrees to pay fees as outlined in this section, as if it were participating in a "proportional share" transportation impact overlay area. Notwithstanding anything to the contrary herein, Developer's efforts to improve the Existing Building will not be contingent upon or require the development of any "Proportionate Share" payments. Prior to building occupancy permit issuance for any new building to be built on the Property, Developer shall pay:

12.1 A \$2,000 "proportionate share" fee for each weekday PM peak hour site-generated trip projected to travel through the **SR-14/SE 192nd Avenue** westbound terminal intersection, as documented in the Trip Compliance Letter;

12.2 A \$400 "proportionate share" fee for each weekday PM peak hour site-generated trip projected to travel through the **SE 176th Avenue/SE 20th Street** intersection, as documented in the Trip Compliance Letter.; and

12.3 A \$150 "proportionate share" fee for each weekday PM peak hour site-generated trip projected to travel through the **SE 34th Street/SE 192nd Avenue** intersection, to reconstruct that intersection to a concrete surface, as documented in the Trip Compliance Letter. The precise amount of this fee will be calculated and mutually agreed upon between the City of Vancouver Streets/Transportation Manager and Developer. Such an agreement will not require a revision of this VIC DA.

12.4 Any other proportionate share projects that have been developed by the City as of the Effective Date of this VIC DA to which development of the Property will distribute new peak hour trips and as set forth on Exhibit ____ to this VIC DA.

Section 13. SE 29th Street. The City shall add SE 29th Street between SE 176th Avenue and SE 192nd Avenue, including all roadways, sidewalks, lighting, landscaping roundabout on 176th to access 29th Street

and signalized intersection at 192nd to its Capital Facilities Plan by way of the Spring 2024 Supplemental Budget process and its Transportation Impact Fee (TIF) Program project list, in accordance with VMC 20.915.090(A)(1) and pursuant to Developer timely providing the City with an engineered cost estimate that reflects the value of the public works prevailing wage construction cost unit price. Additionally, although not required for these improvements to qualify for TIF credits, the City will consider adding SE 29th Street (between 176th Avenue and 192nd Avenue) to its 2025-2030 Six-Year Transportation Improvement Program, which will be finalized and approved by City Council on or before June 30, 2024. The Property requires access onto both SE 176th Avenue and SE 192nd Avenue from SE 29th Street and Developer is obligated to design and construct SE 29th Street between SE 176th Avenue and SE 192nd Avenue, including a single lane roundabout at SE 176th Avenue and a traffic signal at SE 192nd Avenue.

Section 14. Traffic Impact Fee Credits and Reductions.

14.1 As provided herein, Developer shall construct SE 29th Street from 176th Avenue through the Property to 192nd Avenue as conceptually shown on the VIC Master Plan 2.0, based on the project phases in the 2023 VIC TIA. Notwithstanding VMC 20.915.090(A)(3), Developer shall be entitled to traffic impact fee credits, for the full value of the impact fee calculated for the SE 29th Street improvements.

14.2 Developer shall be entitled to Traffic Impact Fee credits for any and all other transportation improvements provided by Developer so long as such improvements are located on the Traffic Impact Fee Program's list of projects at the time such improvements are made.

14.3 Developer shall be entitled to Traffic Impact Fee reductions in accordance with VMC 20.915.090(D).

Section 15. Sustainability and Environment. Environmental laws or development requirements shall not vest. Developer shall comply with all current environmental law requirements including standards related to sustainability and climate action such as the City's Interim Green Building Policy as set forth in the Developer's Sustainability Plan (Exhibit E-2), which are in effect and applicable at the time of development approval for any project within the Property.

Section 16. Reserved Authority of City. Anything in this VIC DA to the contrary notwithstanding, the City shall have the authority to impose new or different regulations to the extent required by a serious threat to public health and safety as required by RCW 36.70B.170 to the extent that such threat is proximate cause, or is proximately aggravated by the impacts of the proposed development of the Property, or any portion thereof; provided, however that such action will only be taken by legislative act of the Vancouver City Council after appropriate public process, Developer reserves all rights to contest and/or appeal the implementation of such new or different regulation(s) and further reserves the right to seek any damages they may be lawfully entitled to, to the extent such new or different regulation(s) impact(s) property rights conveyed under this VIC DA.

Section 17. Miscellaneous Provisions

17.1 Counterparts. This VIC DA may be executed in counterparts; however, all signature pages will be recorded together, and the complete recorded VIC DA constitutes the final instrument.

17.2 Termination. This VIC DA will terminate upon the mutual agreement of the Parties in writing, which will be recorded, or upon expiration of the Term, whichever first occurs.

17.3 Authorization. The persons executing this VIC DA on behalf of City and Developer are authorized to do so and, upon execution by such parties, this VIC DA will be a valid and

binding obligation of such parties in accordance with its terms. The Parties have each obtained any and all consents required to enter into this VIC DA and to consummate or cause to be consummated the transactions contemplated hereby.

17.4 Run with the Land. This VIC DA will run with the land and inure to the benefit of and be binding on the Parties' successors and assigns and will be recorded with the County Auditor.

17.5 Public Hearing. The City's authority to execute this VIC DA is granted by the Vancouver City Council in accordance with the requirements of VMC Chapter 20.250.

17.6 Dispute Resolution. Should a disagreement arise between the Parties, the Parties agree to attempt to resolve the disagreement by first meeting and conferring. If such meeting proves unsuccessful to resolve the dispute, the disagreement may be resolved by a civil action.

17.7 Venue. This VIC DA will be construed in accordance with the laws of the State of Washington, and venue is in the Clark County Superior Court.

17.8 Attorneys' Fees. If a suit, action, or other proceeding of any nature whatsoever (including any proceeding under the U. S. Bankruptcy Code) is instituted in connection with any controversy arising out of this VIC DA or to interpret or enforce any rights or obligations hereunder, the prevailing party will be entitled to recover its attorney, paralegal, accountant, and other expert fees and all other fees, costs, and expenses actually incurred and reasonably necessary, as determined by the court at trial or on any appeal, or by any mediator, arbitrator, hearing examiner, or other dispute review, in addition to all other amounts provided by law.

17.9 Performance. In the event either Party fails to perform the terms and provisions of this VIC DA, which failure continues uncured for a period of sixty (60) days following written notice from the other Party (unless the Parties have mutually agreed in writing to extend this period) will constitute a default under this VIC DA. Any notice of default must specify the nature of the alleged default and, where appropriate, the way the alleged default may be satisfactorily cured. If the nature of the alleged default is such that it cannot be reasonably cured within the sixty (60) day period, then the commencement of actions to cure the alleged default within the sixty (60) day period and diligent prosecution of such actions necessary to complete the cure of the alleged default, will be deemed to be a cure within the sixty (60) day period. Upon a default that is not cured as provided above, the non-defaulting Party may institute legal proceedings to enforce the terms of this VIC DA. If the default is cured, then no default exists, and the noticing Party shall take no further action.

17.10 Severability. If any portion of this VIC DA will be invalid or unenforceable to any extent, the validity of the remaining provisions will not be affected thereby. If a material provision of this VIC DA is held invalid or unenforceable such that a Party does not receive the benefit of its bargain, then the other Parties will renegotiate in good faith terms and provisions that will effectuate the spirit and intent of the Parties' agreement herein.

17.11 Inconsistencies. If any provisions of the VMC and land use regulations are deemed inconsistent with this VIC DA, the provisions of this VIC DA will prevail, excepting the City's reserved authority described above and in accordance with VMC 20.250.020(A).

17.12 Amendments. This VIC DA and its Exhibits may only be amended as provided herein. Where specific amendment or revision clauses are not provided in this VIC DA, then all other amendments or revisions to this VIC DA will be made only by mutual written agreement of the Parties, and all amendments will be recorded in the Clark County deed records. Agreement by the City may only be obtained through a Type IV legislative proceeding.

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17.13 Survival. Any covenant or condition set forth in this VIC DA, the full performance of which is not specifically required prior to the expiration or earlier termination but which by its terms is to survive the termination of this VIC DA, will survive the expiration or earlier termination of this VIC DA and will remain fully enforceable thereafter.

17.14 No Benefit to Third Parties. The Parties are the only parties to this VIC DA and are the only parties entitled to enforce its terms, except as otherwise specifically provided in this VIC DA. There are no third-party beneficiaries.

17.15 Entire Agreement. This VIC DA supersedes the Original DA, the First Amendment to DA, the Second Amendment to DA, and the Restated DA in their entirety. This VIC DA, as amended from time to time, constitutes the entire agreement between the Parties as to the subject matter.

17.16 Non-Waiver. Waiver by any Party of strict performance of any provision of this VIC DA will not be deemed a waiver of or prejudice a Party's right to require strict performance of the same or any other provision in the future. A claimed waiver must be in writing and signed by the Party granting a waiver. A waiver of one provision of this VIC DA will be a waiver of only that provision. A waiver of a provision in one instance will be a waiver only for that instance, unless the waiver explicitly waives that provision for all instances.

17.17 Interpretation of VIC DA; Status of Parties. This VIC DA is the result of arm's-length negotiations between the Parties and will not be construed against any Party by reason of its preparation of this VIC DA. Nothing contained in this VIC DA will be construed as creating the relationship of principal and agent, partners, joint ventures, or any other similar relationship between the Parties.

17.18 Future Assurances. Each of the Parties will promptly execute and deliver such additional documents and will do such acts that are reasonably necessary, in connection with the performance of their respective obligations under this VIC DA to carry out the intent of this VIC DA.

17.19 Term. The Term of this VIC DA continues the Term of the Restated DA and therefore is 15 years from the effective date of the Restated DA, commencing on September 15, 2021 and expiring on September 14, 2036. The Term of this VIC DA may be extended after public hearing by the Vancouver City Council.

17.20 List of Exhibits

- A Property Legal Descriptions
 - A-1 Legal Description of Forested Tract
 - A-2 Diagram of the Proposed Park Access Area
 - A-3 Legal description of the School Property
- B VIC Master Plan 2.0
 - B-1 VIC Master Plan 2.0
 - B-2 Site Open Space Plan
 - B-3 Site Plan Mobility
 - B-4 Site Streetscape Plan
 - B-5 Site Trail Sections Plan
- C Allowed Uses
- D Approved Development Standards
- E Design Standards
 - E-1 Revised Design Guidelines (Appendix F)
 - E-2 November 2023 Comprehensive Sustainability Plan
- F Retained Traffic Capacity

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G Restated DA Surrendered Traffic Capacity
H Transportation Improvements

[SIGNATURE PAGES FOLLOW]

DRAFT 01/12/2024

CITY OF VANCOUVER, a Washington municipal corporation

By: _____

Date: _____

By: Eric Holmes, City Manager

PO Box 1995

Vancouver, WA 98668-1995

Attest:

By: _____

By: Natasha Ramras, City Clerk (or designee)

Approved as to form only:

By: _____

By: Jonathan Young, City Attorney (or designee)

STATE OF WASHINGTON }
 }
 } SS
COUNTY OF CLARK }

I certify that I know or have satisfactory evidence that Eric Holmes is the person who appeared before me, acknowledged that they signed this instrument, and on oath stated that they were authorized to execute the instrument and acknowledged it as the City Manager of the City of Vancouver, a Washington municipal corporation, to be the free and voluntary act of such party for the uses and purposes mentioned in the instrument.

Dated this ____ day of _____, 20 ____.

By: _____

Notary Public in and for the State of Washington

My appointment expires: _____

DRAFT 01/12/2024

THE VIC BUILDING OWNER, LLC, a Delaware limited liability company

By: _____

Date: _____

By: Joshua Rabina, Manager

505 5th Avenue, FL 27

New York, NY 10017-4907

STATE OF _____ }
 } SS
COUNTY OF _____ }

I certify that I know or have satisfactory evidence that Joshua Rabina is the person who appeared before me, acknowledged that they signed this instrument, and on oath stated that they were authorized to execute the instrument and acknowledged it as the Manager of The VIC Building Owner LLC, a Delaware limited liability company, to be the free and voluntary act of such party for the uses and purposes mentioned in the instrument.

Dated this ____ day of _____, 20 ____.

By: _____

Notary Public in and for the State of _____

My appointment expires: _____

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EXHIBIT A – Property Legal Descriptions

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EXHIBIT A-1 – Forested Tract Legal Description



17356LD_FOREST PARCEL
1/23/2023
GAH

VANCOUVER OFFICE

18405 SE Mill Plain Blvd #100 • Vancouver, WA 98683
360.695.3411 • info@mackaysposito.com

EXHIBIT A
VANCOUVER INNOVATION CENTER
FOREST PARCEL DESCRIPTION

A TRACT OF LAND SITUATED IN THE NORTHEAST QUARTER OF SECTION 6, TOWNSHIP 1 NORTH, RANGE 3 EAST OF THE WILLAMETTE MERIDIAN, IN CLARK COUNTY, WASHINGTON, BEING DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTHEAST CORNER OF SAID SECTION 6; THENCE SOUTH 01°12'07" WEST ALONG THE EAST LINE OF SAID SECTION 6, A DISTANCE OF 1,298.25 FEET TO A POINT ON THE NORTH LINE OF THAT TRACT OF LAND AS SURVEYED BY MACKAY AND SPOSITO JANUARY 9, 1979 AND RECORDED IN BOOK 9 OF SURVEYS, PAGE 116 OF CLARK COUNTY RECORDS; THENCE NORTH 89°09'22" WEST ALONG SAID NORTH LINE, A DISTANCE OF 146.43 FEET TO THE WESTERLY RIGHT-OF-WAY LINE OF SE 192ND AVENUE, AS DEDICATED TO THE CITY OF VANCOUVER BY STATUTORY WARRANTY DEED RECORDED JULY 2, 2001 AS AUDITOR'S FILE NO. 3340502, CLARK COUNTY DEED RECORDS AND THE **POINT OF BEGINNING**;

THENCE CONTINUING ALONG THE NORTH LINE OF SAID TRACT NORTH 89°09'22" WEST 1,309.26 FEET; THENCE LEAVING SAID NORTH LINE SOUTH 28°27'56" EAST 116.02 FEET; THENCE SOUTH 08°31'19" EAST 130.88 FEET; THENCE SOUTH 54°26'09" EAST 32.52 FEET; THENCE SOUTH 81°09'42" EAST 34.55 FEET;

THENCE SOUTH 86°53'01" EAST 38.46 FEET; THENCE NORTH 88°58'07" EAST 63.55 FEET; THENCE NORTH 44°50'55" EAST 54.57 FEET; THENCE NORTH 70°20'16" EAST 19.00 FEET;

THENCE NORTH 88°58'30" EAST 45.84 FEET; THENCE SOUTH 68°10'17" EAST 47.96 FEET; THENCE SOUTH 86°13'08" EAST 59.13 FEET; THENCE SOUTH 42°13'51" EAST 42.32 FEET; THENCE SOUTH 47°27'34" EAST 46.27 FEET;

THENCE SOUTH 10°03'09" WEST 86.58 FEET; THENCE SOUTH 30°16'57" EAST 65.57 FEET; THENCE SOUTH 03°45'52" WEST 141.65 FEET; THENCE SOUTH 22°10'44" EAST 93.49 FEET; THENCE SOUTH 64°39'09" EAST 66.26 FEET;

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THENCE SOUTH 52°42'23" EAST 55.11 FEET; THENCE SOUTH 19°16'23" EAST 29.23 FEET; THENCE SOUTH 04°58'07" EAST 26.82 FEET; THENCE SOUTH 59°04'57" EAST 53.41 FEET; THENCE SOUTH 48°14'21" EAST 31.31 FEET;

THENCE SOUTH 59°35'41" EAST 57.85 FEET; THENCE SOUTH 55°08'35" EAST 28.97 FEET; THENCE SOUTH 65°30'39" EAST 61.99 FEET TO A POINT ON A NON-TANGENT CURVE WITH A 1,235.00 FOOT RADIUS AND A TANGENT BEARING OF NORTH 25°20'21" EAST INTO SAID CURVE; SAID POINT BEING ON THE WESTERLY RIGHT-OF-WAY LINE OF SE 192ND AVENUE, AS DEDICATED TO THE CITY OF VANCOUVER BY STATUTORY WARRANTY DEED RECORDED JULY 2, 2001 AS AUDITOR'S FILE NO. 3340502, CLARK COUNTY DEED RECORDS;

THENCE ALONG SAID WESTERLY RIGHT-OF-WAY LINE OF SE 192ND AVENUE THE FOLLOWING 7 COURSES:

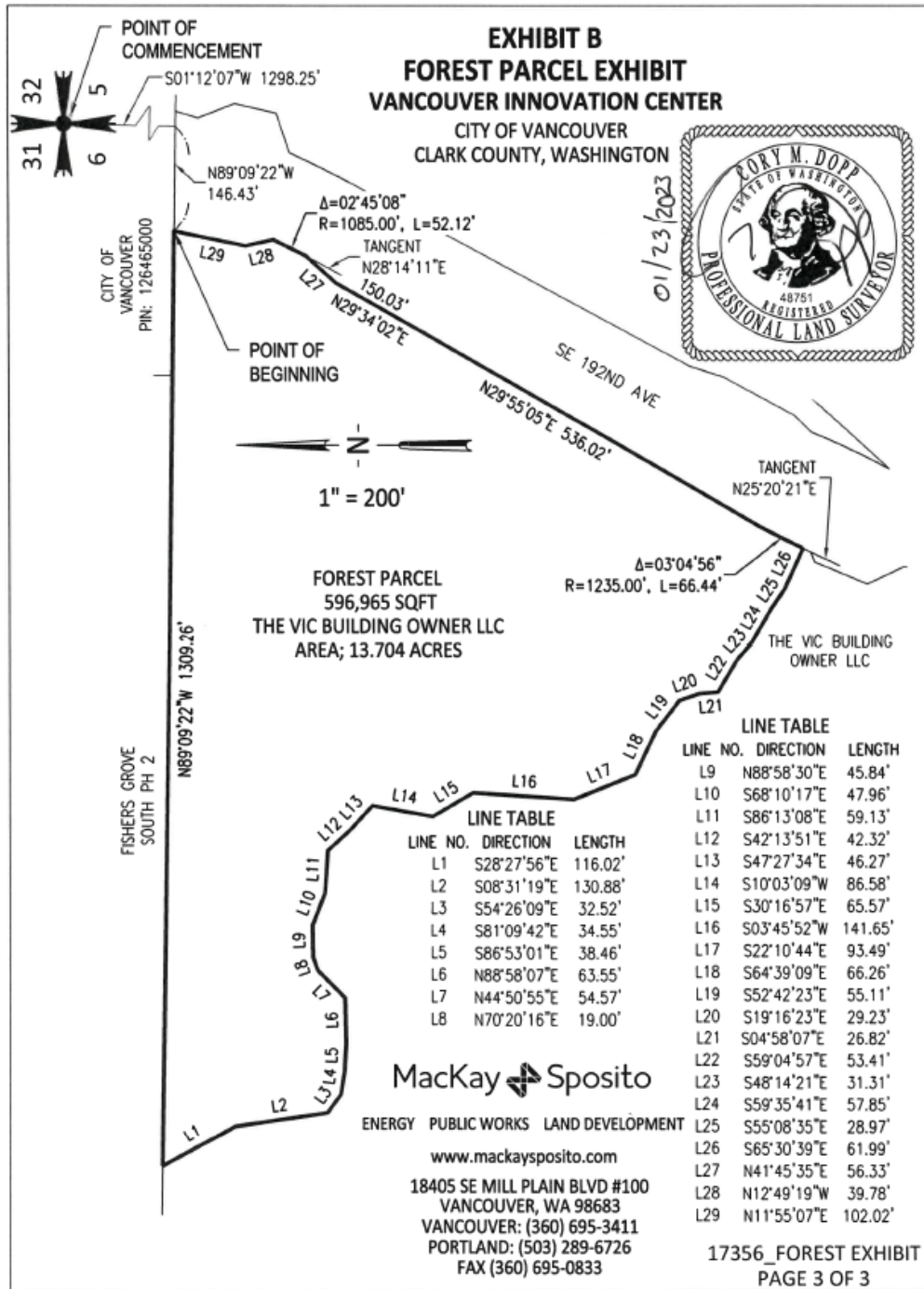
THENCE ALONG SAID CURVE TO THE RIGHT, THROUGH A CENTRAL ANGLE OF 03°04'56", AN ARC DISTANCE OF 66.44 FEET; THENCE NORTH 29°55'05" EAST 536.02 FEET; THENCE NORTH 29°34'02" EAST 150.03 FEET; THENCE NORTH 41°45'35" EAST 56.33 FEET TO A POINT ON A NON-TANGENT CURVE WITH A 1,085.00 RADIUS AND A TANGENT BEARING OF NORTH 28°14'11" EAST INTO SAID CURVE; THENCE ALONG SAID CURVE TO THE LEFT, THROUGH A CENTRAL ANGLE OF 02°45'08" AN ARC DISTANCE OF 52.12 FEET; THENCE NORTH 12°49'19" WEST 39.78 FEET; THENCE NORTH 11°55'07" EAST 102.02 FEET TO THE **POINT OF BEGINNING**.

EXCEPTING THERE FROM ANY PORTION LYING WITHIN SE 192ND AVENUE.

CONTAINING 13.704 ACRES, MORE OR LESS.



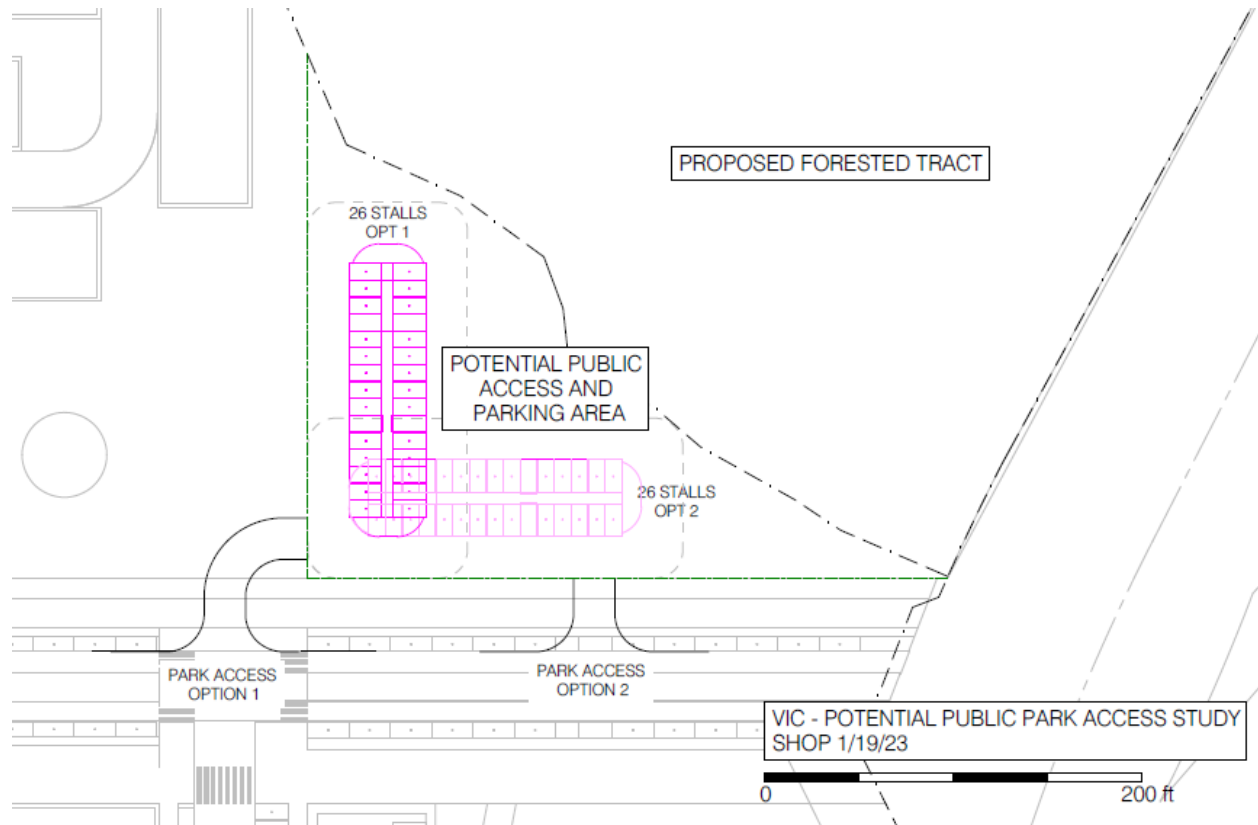
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EXHIBIT A-2 – Park Access Area Legal Description

[Insert legal description of the property adjacent to the Forested Tract but exempt from the covenant, intended for use as park parking to be acquired at Fair Market Value (MX) and improved by the City.]



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EXHIBIT A-3 – School Property Legal Description (Parcel 986060362)



17356LD1
10/29/2020
GAH

VANCOUVER OFFICE

1325 SE Tech Center Drive, Suite 140 • Vancouver, WA 98683
360.695.3411 • info@mackaysposito.com

EXHIBIT A
VANCOUVER INNOVATION CENTER
PROPOSED EVERGREEN PARCEL DESCRIPTION

REAL PROPERTY SITUATED WITHIN THAT TRACT OF LAND CONVEYED TO S-E INC., UNDER AUDITOR'S FILE NO. 4577169, CLARK COUNTY DEED RECORDS, LOCATED IN SECTION 6, TOWNSHIP 1 NORTH, RANGE 3 EAST OF THE WILLAMETTE MERIDIAN, IN THE CITY OF VANCOUVER, CLARK COUNTY, WASHINGTON, BEING DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTHWEST CORNER OF SAID S-E INC. PARCEL AS SHOWN ON A MACKAY AND SPOSITO RECORD-OF-SURVEY, DATED JANUARY 9, 1979 AND RECORDED IN BOOK 9 OF SURVEYS, PAGE 116 OF CLARK COUNTY RECORDS; THENCE SOUTH 89°09'22" EAST ALONG THE NORTH LINE OF SAID S-E INC. PARCEL 30.00 FEET TO THE EAST RIGHT-OF-WAY LINE OF SE 176TH AVENUE AND THE **POINT OF BEGINNING**; THENCE CONTINUING ALONG SAID NORTH LINE, SOUTH 89°09'22" EAST 1048.46 FEET; THENCE LEAVING SAID NORTH LINE SOUTH 00°00'00" EAST 500.54 FEET TO A POINT ON A NON-TANGENT CURVE WITH A 384.00 FOOT RADIUS AND A TANGENT BEARING OF SOUTH 62°34'05" WEST INTO SAID CURVE; THENCE ALONG SAID CURVE TO THE LEFT, THROUGH A CENTRAL ANGLE OF 10°21'40" AN ARC DISTANCE OF 69.44 FEET TO A POINT OF TANGENCY; THENCE SOUTH 52°12'25" WEST 178.45 FEET; THENCE NORTH 82°47'35" WEST 70.71 FEET; THENCE SOUTH 52°12'25" WEST 94.58 FEET; THENCE SOUTH 07°12'25" WEST 70.71 FEET; THENCE SOUTH 52°12'25" WEST 146.08 FEET TO A POINT ON A 459.00 FOOT RADIUS CURVE TO THE RIGHT; THENCE ALONG SAID CURVE TO THE RIGHT, THROUGH A CENTRAL ANGLE OF 38°39'23" AN ARC DISTANCE OF 309.68 FEET TO A POINT OF TANGENCY; THENCE NORTH 89°08'12" WEST 315.12 FEET TO SAID EAST RIGHT-OF-WAY LINE; THENCE NORTH 01°24'06" EAST ALONG SAID EAST LINE 963.24 FEET TO THE **POINT OF BEGINNING**.

EXCEPTING THEREFROM ANY PORTION LYING WITHIN SE 176TH AVENUE.

CONTAINING 20.00 ACRES



**SKETCH TO ACCOMPANY LEGAL DESCRIPTION FOR
VANCOUVER INNOVATION CENTER
PROPOSED EVERGREEN SCHOOL DISTRICT 114 PARCEL
CITY OF VANCOUVER, CLARK COUNTY, WASHINGTON**



EXHIBIT B-2 – SITE PLAN OPEN SPACE

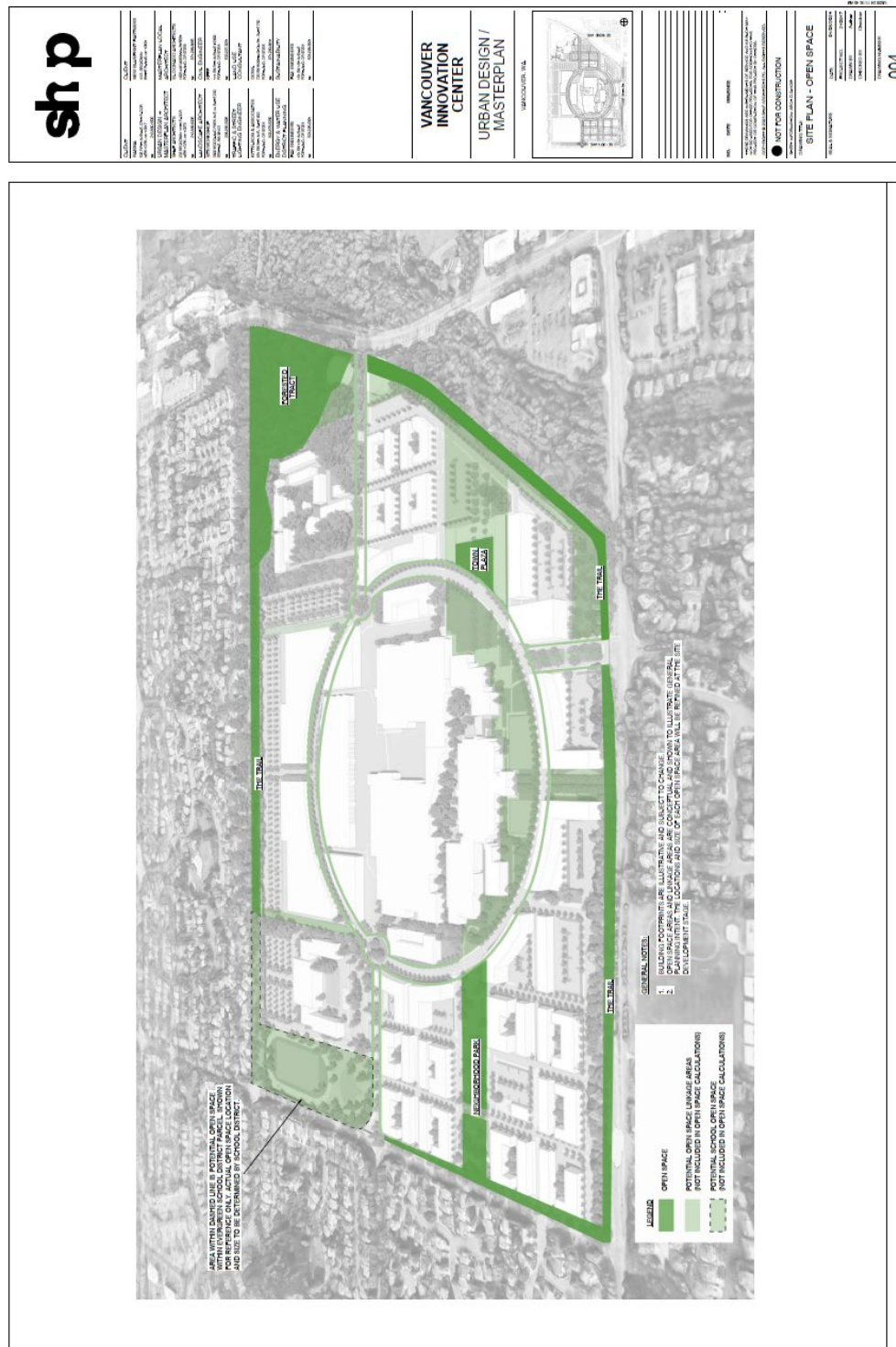


EXHIBIT B-3 – SITE PLAN MOBILITY

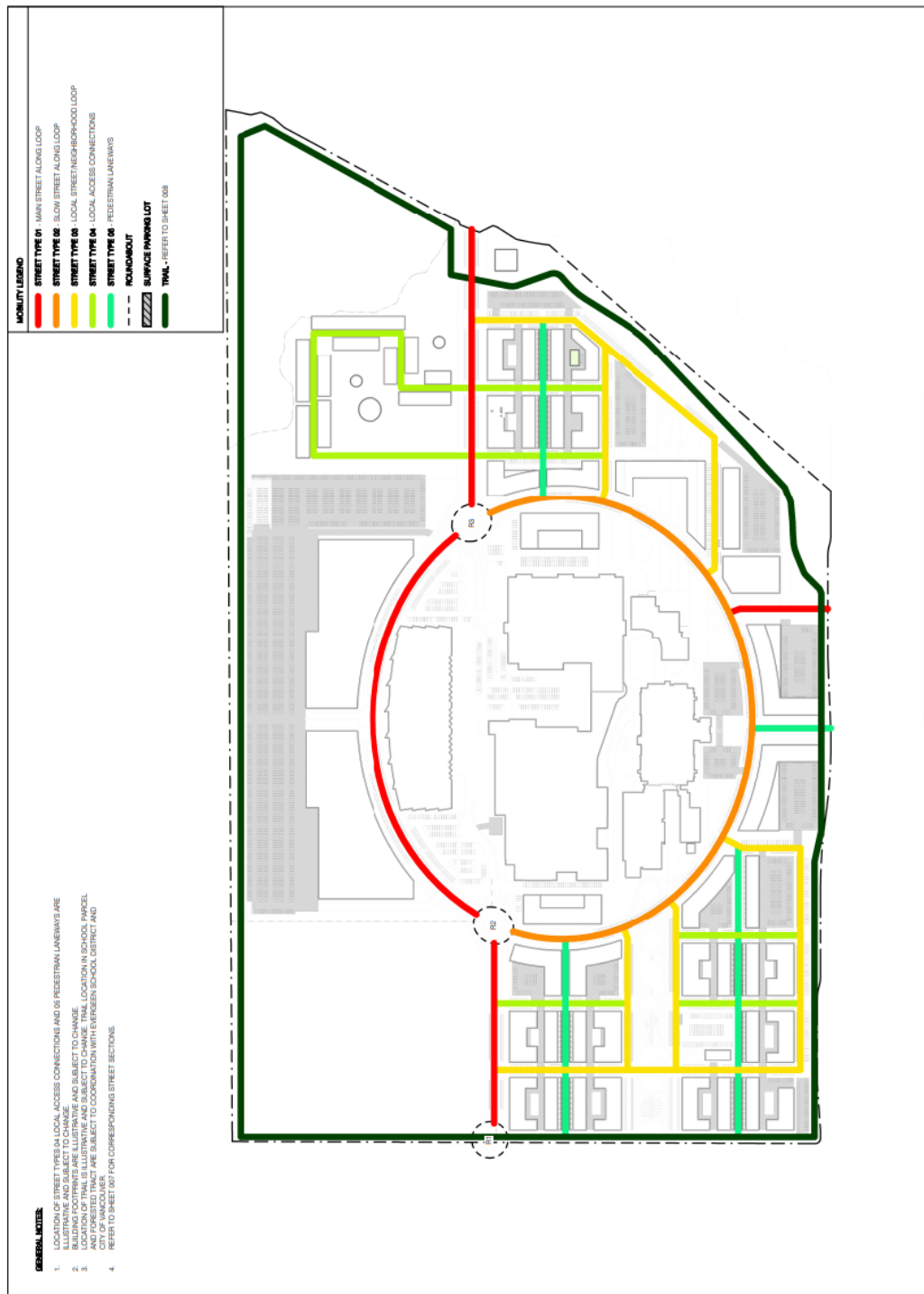
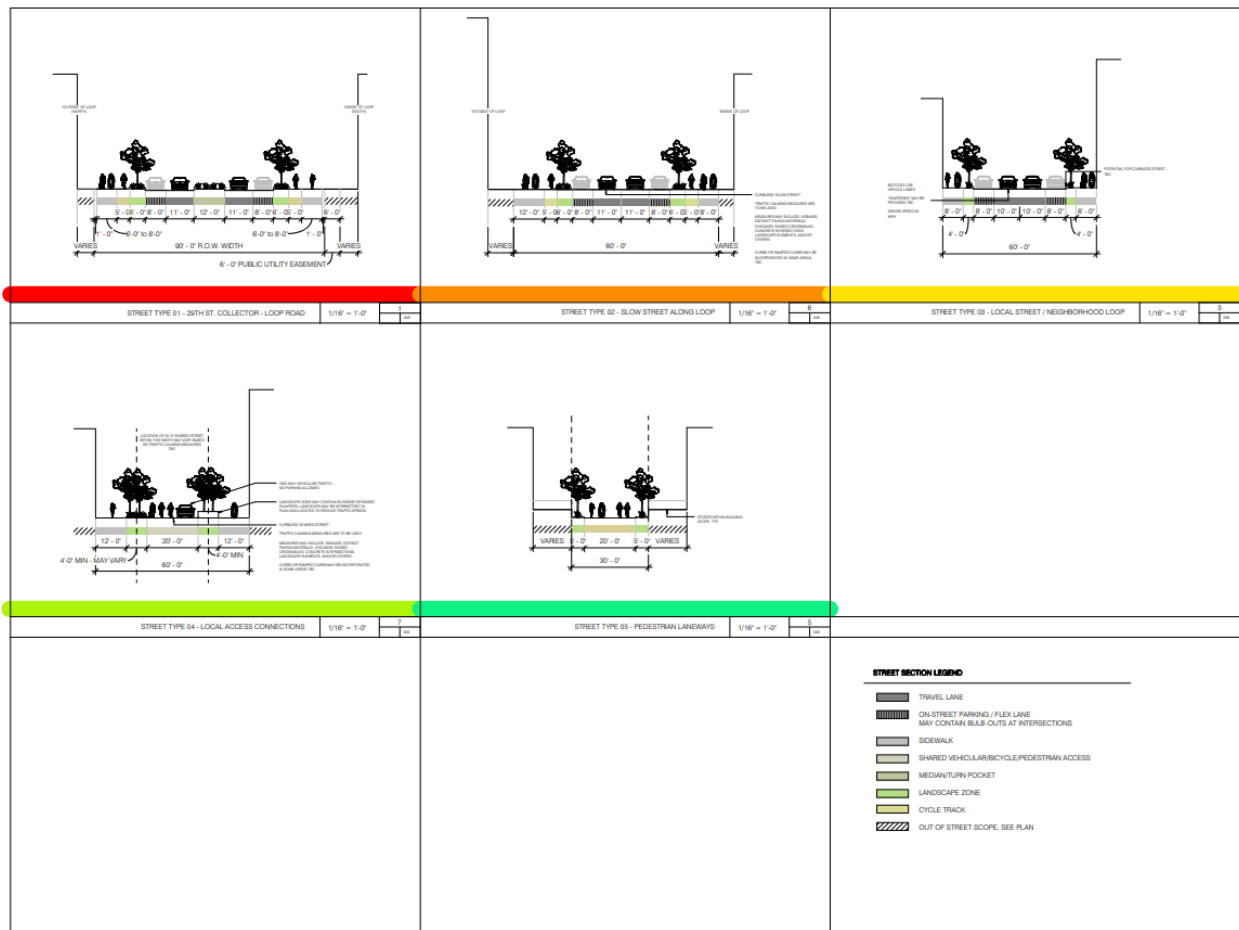


EXHIBIT B-4 – STREETSCAPE



EXHBIT B-5 – TRAIL SECTIONS

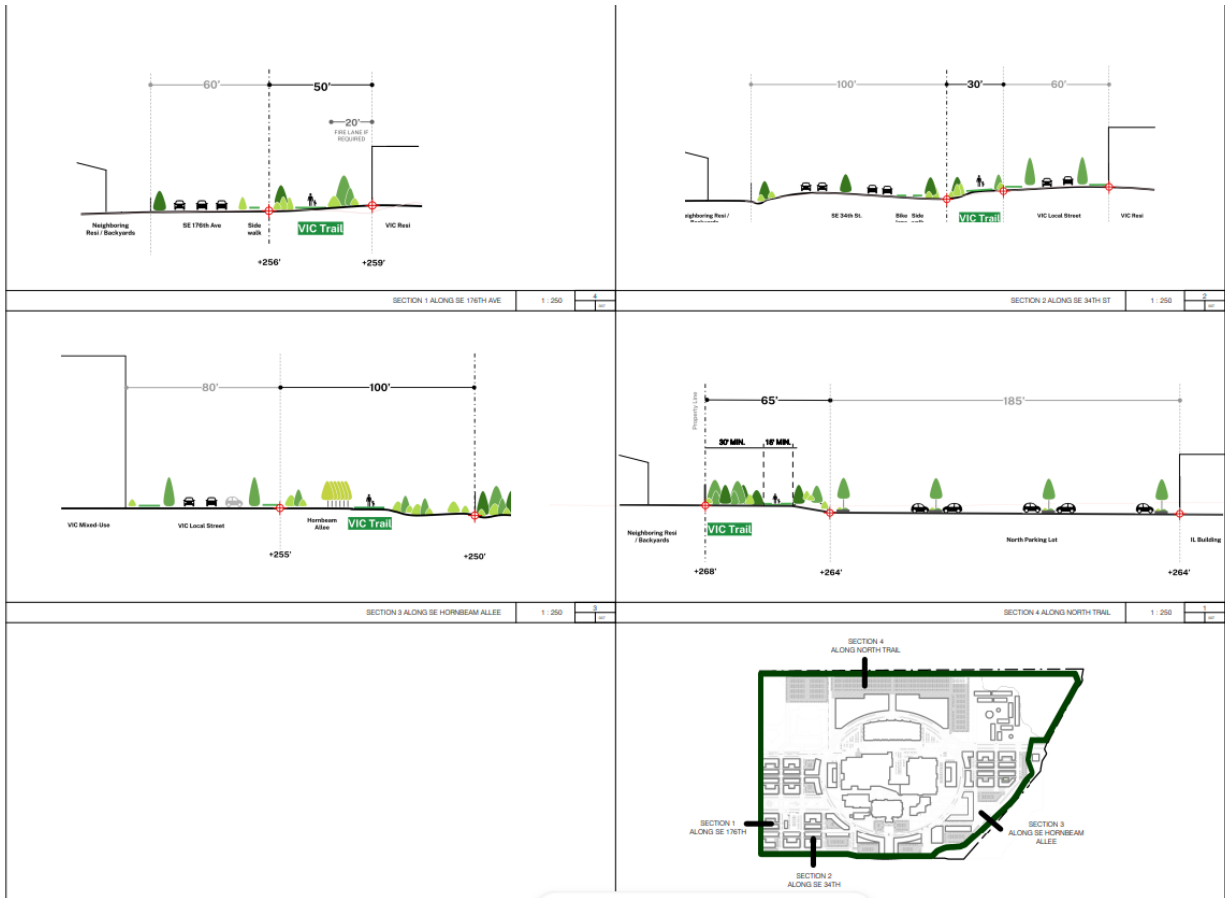


EXHIBIT C - Allowed Uses

R LUA – Uses are those identified in VMC Table 20.420.030-1 for R-30 zoned properties, as of the VIC 2.0 Application Date. Family Child Day Care Homes and Child Care Centers are permitted uses, subject to the provisions of VMC chapter 20.840.

MX LUA – Uses are those identified in VMC Table 20.430.030-1, as of the VIC 2.0 Application Date, as modified here. Family Child Day Care Homes and Child Care Centers are permitted uses, subject to the provisions of VMC chapter 20.840. In addition to those uses allowed by VMC Table 20.430.030-1, the following uses are also allowed:

Use	MX LUA
Commercial	
Artisan and Specialty Goods Production	P
Office	
• Extended	P
-Community Center	P
-Hotel	P
Industrial	
Industrial Services	P
Manufacturing and Production	P
Research and Development	P
Warehouse/Freight Movement (as ancillary use)	P
Other	
Wireless Communication Facilities	
• Subject to the limitations on this use provided in VMC Table 20.430.030-1;	P

[see next page for IL LUA]

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IL LUA – Uses are those identified in VMC Table 20.440.030-1 as of the VIC 2.0 Application Date, as modified here. Family Child Day Care Homes and Child Care Centers are permitted uses, subject to the provisions of VMC chapter 20.840. In addition to the uses allowed by VMC Table 20.440.030-1, the following uses are also allowed, as a permitted or limited use, as indicated below:

Use	IL LUA
Residential	
Multi-Dwelling Units - Allowed above ground floor only as specified by VMC 20.430.060(B)(2). - One caretaker residence permitted per use. - May be permitted only after 125,000 square feet of new construction in the LI LUA has been built and if Developer demonstrates residential units will not limit or interfere with Developer's ability to construct the light industrial square footage identified in the VIC Master Plan 2.0	L
Civic	
Colleges - Provided they have a functional relationship with existing industrial uses, and do not exceed 25,000 square feet in aggregate	L
Child Care Center - Child care centers allowed, subject to a Type II procedure. - Child care centers are permitted in order to provide service for those employees working or residents living anywhere on the Property, subject to provisions in Chapter 20.840 VMC, Child Care Centers.	L
Commercial	
Eating/Drinking Establishments - Provided they are located within an industrial building and consume no more than [15] percent of the building's total gross square footage.	L
Artisan Small Scale Manufacturing	P
Industrial	
Warehouse/Freight Movement (as ancillary use) - Permitted as limited use provided all activities, except outdoor storage of materials, are wholly contained within building(s).	L
Warehouse/Freight Movement (as primary use): • Permitted as limited use provided all activities, except outdoor storage of materials, are wholly contained within building(s). • Limited to 50,000 sf aggregate cap for any new construction after January 1, 2021. • Building 4 in the northeast portion of the Existing Building, has 24 to 35 foot ceilings and is designed as a large bay warehouse. This 130,000 sf area shall be allowed to continue as a preexisting nonconforming use for warehouse/freight movement.	L
Wireless Communication Facilities - Subject to requirements in Chapter 20.890 VMC, Wireless Telecommunications Facilities.	L

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Conditional Use	
Warehouse/Freight Movement (as ancillary use) - Permitted as limited use provided all activities, except outdoor storage of materials, are wholly contained within building(s).	L

EXHIBIT D – Approved Development Standards

The following standards supplement the requirements of the City of Vancouver, Title 20, Land Use and Development Code. To the extent there is a conflict between the Development Standards outlined in the VIC DA and this Exhibit D, and VMC Title 20, the provisions of this VIC DA and Exhibit D control.

1. Mixed Use (MX) LUA. The standards outlined in VMC 20.430.060.C.2 apply to the Property, except as outlined below:
 - a. Subsection 2.a. does not apply;
 - b. The last sentence of Subsection 2.d.1 (“Complete segregation of use types, such as placement of multiple commercial structures all on one side of a mixed-use site and multiple residential structures all on the other shall be prohibited”) does not apply; Subsection 2.e.3 applies only in the MX LUA; and
 - c. Subsection 2.f. does not apply to the R LUA
2. Buffer Standards. The buffer requirements outlined in VMC 20.925.030 and subsequent buffer setbacks in table 20.925.030-1 do not apply to adjacent land use areas within the VIC Masterplan 2.0. Along the perimeter of the masterplan site, these buffer requirements will still apply.
3. Residential (R) LUA - Development standards of the R LUA are those of the R-30 zoning district pursuant to VMC chapter 20.420 unless stated otherwise herein.
 - a. Building Design
 - i. 30-foot setback for the primary structure from the western Park Parcel boundary for the adjacent building perimeter to create a residential unit buffer
 - ii. 50% of street frontage occupied space
 - iii. No minimum lot size required
 - iv. Maximum lot coverage is 90%
 - b. Residential Unit Density
 - i. Minimum residential unit density shall be R-30 (22.1 units per net acre as measured by the total number of residential units divided by the portion of the site devoted to residential use, not including public or private streets, or critical areas and associated buffers on that portion) and maximum residential unit density is R-35 (35 units per net acre as measured by the total number of residential units divided by the portion of the site devoted to residential use, not including public or private streets, or critical areas and associated buffers on that portion).
 - ii. Density calculations are based the overall R-LUA acreage
 - c. Bicycle Parking
 - i. One covered, long term bicycle parking space is required per two dwelling units.
 - ii. Balcony or patio bicycle storage is discouraged and if proposed must be screened from street review.
 - d. Building Height – per VIC DA Section 6.3(c)
 - e. Frontage Standards - The R LUA shall not be required to comply with frontage standards requirements in VMC 20.430.060(C)(2)(f)(1).
4. Light Industrial (IL) LUA - Development standards of the IL LUA are those of the IL zoning district pursuant to VMC Chapter 20.440 unless stated otherwise herein. The following supplemental development standards apply to buildings and sites developed in the IL LUA after 2020:

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- a. Exterior building design.
 - i. Publicly identifiable entry/office on street wall required on ground floor on streets and Outdoor Public Spaces.
 - ii. Exteriors should be no more than 4 stories in height to be on scale with adjacent uses.
 - b. Fences - Maximum 10% of property may be fenced or walled for concealment of trash/recycling and storage.
 - c. Building Height – per VIC DA Section 6.3(c)
5. Mixed Use (MX) LUA - Development standards are those of the MX zoning district pursuant to VMC Chapter 20.430 unless stated otherwise herein. The standards outlined in VMC 20.430.060(C)(2) apply to the MX LUA, except as outlined below:
- a. VMC 20.430.060(C)(2)(a) does not apply;
 - b. The last sentence of VMC 20.430.060(C)(2)(d)(1) (“Complete segregation of use types, such as placement of multiple commercial structures all on one side of a mixed use site and multiple residential structures all on the other shall be prohibited”) does not apply;
 - c. VMC 20.430.060(C)(2)(e)(1) does not apply; required minimum residential density is 22.1 units per net acre, as measured by the total number of residential units divided by the portion of the site devoted to residential use, not including public or private streets, or critical areas and associated buffers on that portion

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EXHIBIT E-1 – DESIGN Guidelines



EXHIBIT E DESIGN GUIDELINES

Vancouver Innovation Center Master Plan

Updated April 2023

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Appendix A

 Single Family Residential Design Reference Guide

Appendix B

 Placemaking Goals

PURPOSE

These design guidelines are intended to ensure that development within the Vancouver Innovation Center is cohesive in both form and function and is consistent with the brand pillars of the VIC. These brand pillars form the foundation of the design principles that will guide project implementation. These brand pillars and the associated VIC design principles are described further below:



Natural

Connected to nature in all that we do

Design Principle

Provide a network of both passive and active open space areas that utilize existing trees and natural resources for recreation and relaxation.



Balanced

physical, mental, and spiritual

Design Principle

Provide a balance of community gathering spaces and areas for personal escape.



Authentic

Urban style and refinement, built with taste, personalization and ease in mind

Design Principle

Create a compact urban form composed of well-articulated buildings and ample pedestrian areas to encourage multi-modal travel throughout the site between the various on-site uses and open space areas.



Blended

Contemporary convenience, modern collaboration

Design Principle

Design buildings to encourage pedestrian access, ground floor visibility and community spaces for socialization and collaboration.



Community

Inclusivity and shared knowledge, energy and passion

Design Principle

Design with an eye towards the future. Incorporate sustainability and energy efficiency measures including things such as vehicle charging stations, solar panels, and low impact development (LID) stormwater management approaches. Continuously evaluate project performance related to parking and space efficiency, vehicular trips and sustainability with the goal of design refinements and improvements throughout project buildout, with the goal of the project becoming a "living laboratory." Provide a network of well defined and accessible pedestrian corridors to encourage access through the site for all individuals.

APPLICABILITY

These guidelines will apply to new development and remodels of existing development within the Residential, Light Industrial, Mixed-Use, and Open Space LUAs within the VIC masterplan. Demonstration of project adherence to these guidelines will be required with land use permit submittals for new development on the site.



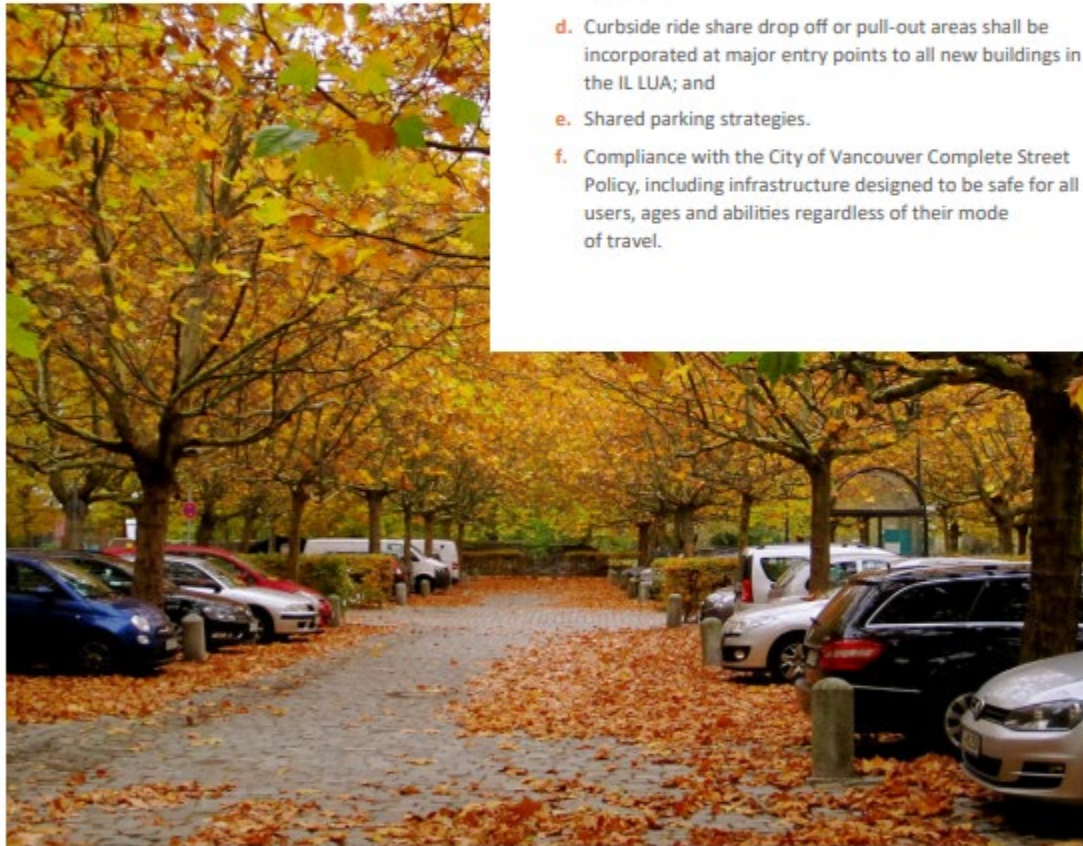
DESIGN GUIDELINES



Mobility

All new developments will demonstrate:

- a. Support for a 20-Minute Neighborhood by providing means to reduce need for vehicle trips;
- b. Functional connections to the site-wide bicycle and walking path network outlined in the Masterplan;
- c. Compliance with Washington State electric vehicle charging standards in effect at the time of land use application;
- d. Curbside ride share drop off or pull-out areas shall be incorporated at major entry points to all new buildings in the IL LUA; and
- e. Shared parking strategies.
- f. Compliance with the City of Vancouver Complete Street Policy, including infrastructure designed to be safe for all users, ages and abilities regardless of their mode of travel.



Energy

Developer is installing HVAC and lighting upgrades for the Existing Building. All new developments will demonstrate:

- a. Compliance with the 2018 Washington State Energy Code, at a minimum;
- b. Compliance with environmental standards in effect at the time of building permit application (i.e. environmental development standards do not vest on the Restated DA Effective Date;
- c. That every new building is designed to accommodate ready access for installation of solar panels that would occupy at least 10% of the building footprint. This includes the necessary structural and electrical infrastructure to accommodate the solar panels; and
- d. Infrastructure for electric vehicle charging stations.
- e. Advancement of "District Energy Conditions" as identified in Appendix A – Vancouver Innovation Center Master Plan Sustainability Framework.

Water

The VIC will prioritize use reductions, efficiency strategies, and surface water quality in its design. All new development applications will include:

- a. Water-saving plumbing fixtures in all new buildings;
- b. Native and adaptive plant selections that do not require excessive irrigation; and
- c. A surface stormwater strategy synopsis describing anticipated collection, treatment, and discharge strategies including any Low Impact Development (LID) BMPs planned for the project.
- d. An evaluation of means to reduce potable water use consistent with Appendix A – Vancouver Innovation Center Master Plan Sustainability Framework.





Building Design

a. Blank Walls

- i. At least 75% of the width of any new first-story building wall facing a street shall be devoted to interest-creating features, pedestrian entrances, transparent show or display windows, or windows affording views into retail, office or lobby space.
- ii. In all areas other than the IL LUA, building surfaces over 2,000 sf shall be broken up with window openings and/or changes in material.
- iii. Blank walls longer than 20 feet without windows or an unbroken series of garage doors are not permitted on any street frontage.
- iv. Any face of a building that is over 50' wide shall have varied horizontal plane and/or vertical façade shifts to break up the building's mass.

b. Corner Buildings

- i. New IL LUA buildings on a corner will have an entrance within 75 feet of the corner.

c. Ground Floor

- i. Buildings should engage with the "sidewalk zone" to bring visual interest, variation, and intimacy to the streetscape, while maintaining the pedestrian through-routes that link the land use areas on the site.
- ii. Pedestrian access to primary building entrances should be close to and visible from circulation facilities that include a pedestrian component such as a sidewalk, trail, or pedestrian plaza. Primary building entrances may not be from non-pedestrian oriented areas. Each primary building entrance should be attractive and have weather protection and highlight the presence of the entrance to pedestrians through the use of architectural treatments such as changes in the street-facing wall and lighting. Entrances from primary pedestrian corridors should be visually more prominent than
- iii. The design of buildings, above and below should be pedestrian scaled, intimate, and inviting.

d. Roofs

- i. Roof materials shall screen roof top mechanical equipment from ground-level views
- ii. Buildings shall have primarily flat roofs - architectural detailing and rooftop decks shall be allowed.



Exterior Building Finishes

To create a unique identity for the VIC, material selection and application is required to adhere to exterior finish standards.

- a. Major color themes are to predominantly be earth tones of grey, brown, and tan.
- b. Materials exhibiting patina are encouraged – including weathered wood, rusted steel, singed wood.
- c. Material changes shall be offset by a minimum 3 ½" horizontal or vertical relief.
- d. Materials that expose their natural state are encouraged such as exposed wood and concrete.
- e. First floor window framing shall be either wood or aluminum (does not apply to Residential LUAs)
- f. Opportunity for more industrial and technological materials, such as steel, aluminum, and heavy timber.

Maximum Building Heights

See Development Standards applicable to each LUA under Exhibit D of the Restated DA.

Single Family Residential

Single family residential attached designs should incorporate the material and pedestrian orientation provisions of these guidelines. See Appendix B – Single Family Residential Design Reference Guide.

Signage

- a. Monument signs will have a uniform color and typeface throughout the property.





Tree canopy

Every development application must demonstrate how it complies with the Tree Canopy Plan (Section 6.10 of the Restated DA) and provide an tree canopy assessment for its site and a 5-, 10-, 15-, and 20-year forecast for the tree canopy on the entire Property.

Open Space

All site plans will demonstrate adherence to the Masterplan and Appendix C - Placemaking Goals.

- a. Open spaces shall be directly accessible from all buildings in the development (building occupants should not have to walk around the building to get outside)
- b. Avoid inconvenient or circuitous ped access to amenities.
- c. Both greenscaping and useable accessible hardscaping elements shall count as open space
- d. Hardscape open spaces shall be designed for four season use and durable for urban intensity.
- e. Neighborhood open spaces
 - i. Refer to Circulation and Open Public Space Plan for targeted locations.
 - ii. Neighborhood open spaces shall be a minimum of 2,000 sf.
 - iii. Neighborhood open spaces shall incorporate interactive amenities such as pavilions, picnic facilities, and play structures.

Street Cross Sections

See DA for street section implementation options for the Vancouver Innovation Center.

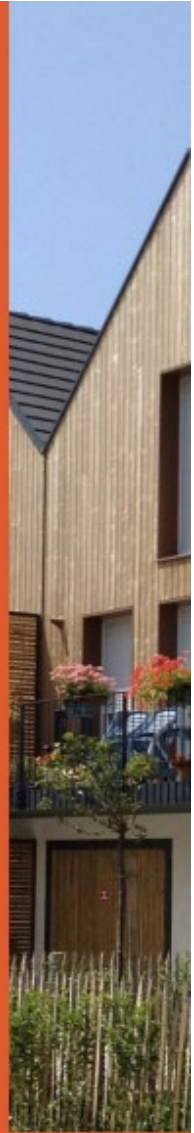
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APPENDIX A

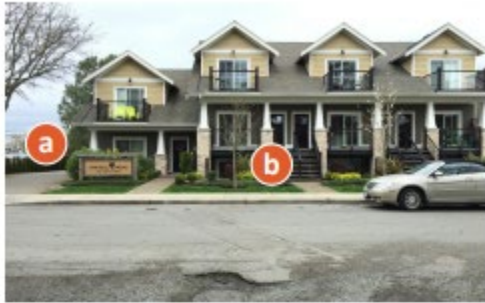
Single Family Residential Design Reference Guide

Vancouver Innovation Center Master Plan

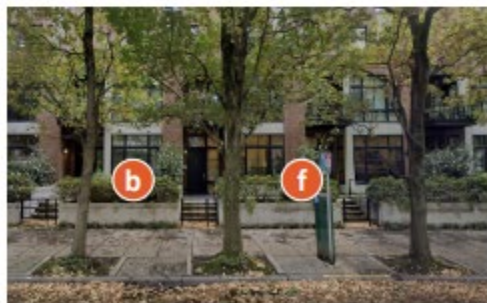
Updated April 2023



SINGLE FAMILY ATTACHED

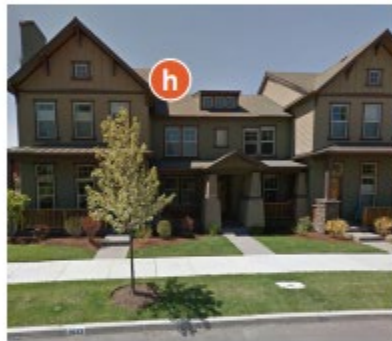


- a. Find opportunities to alley-load attached single family residential units to minimize driveway and garage exposure.
- b. Orient residential buildings to the "sidewalk zone" through the use of front porch features.
- c. Incorporate a range of natural color tones, architectural styles and horizontal and vertical relief.
- d. Seek opportunities to orient units to courtyards and open spaces.
- e. Create visual interest through horizontal and vertical relief and variation of architectural styles of adjoining attached units.
- f. Encourage reduced setbacks for residential units to engage entrances with the sidewalk.



SINGLE FAMILY ATTACHED – CONTINUED

- g.** Allow front-loaded attached units when accessed from a local street and when the garage exposure is minimized by site and building design features.
- h.** Allow for a mix of scale and size of attached product including larger duplexes.
- i.** Natural material elements including wood and stone should be prioritized for use.
- j.** Provide substantial window and trim relief on units to break up the potential for monolithic appearances on taller units.
- k.** For continuous banks of attached units, provide vertical, horizontal and roof relief variation to minimize the scale of the structures.



APPENDIX B

Placemaking Goals

Vancouver Innovation Center Master Plan

Updated April 2023



Placemaking // District "Layers"

Outdoor Recreation

Low-Rise Residential/ Industrial

Mixed-Use Center

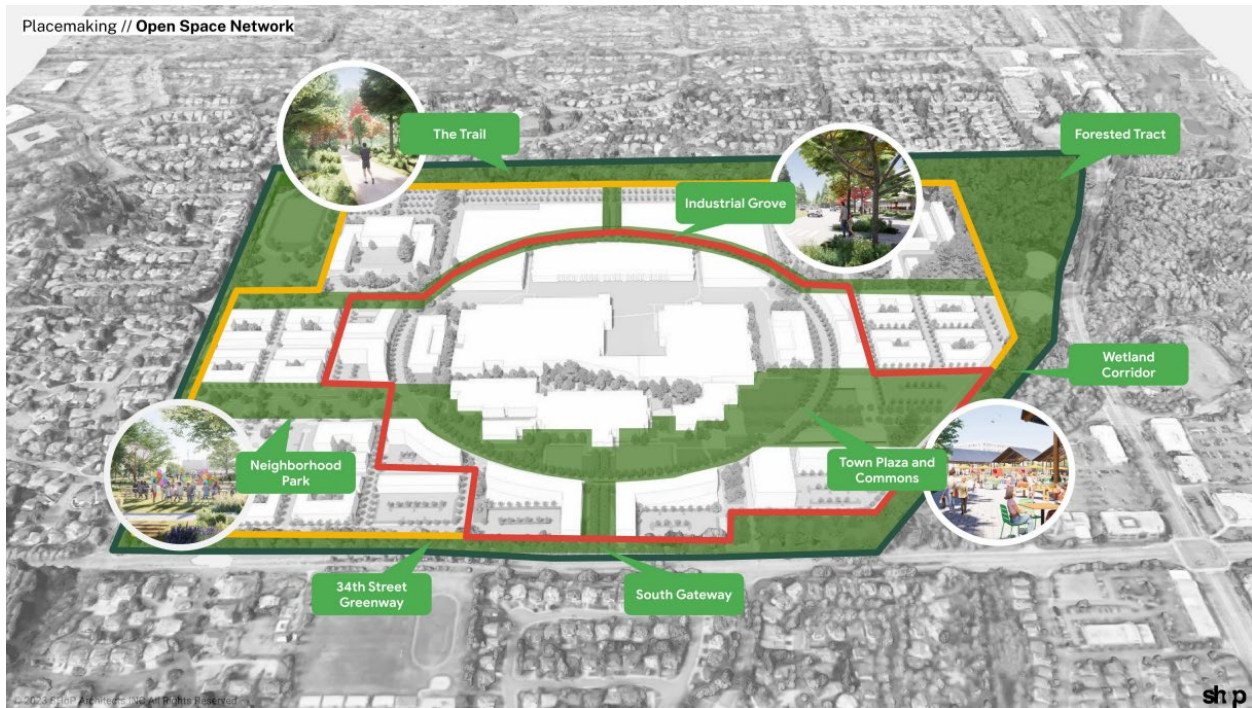
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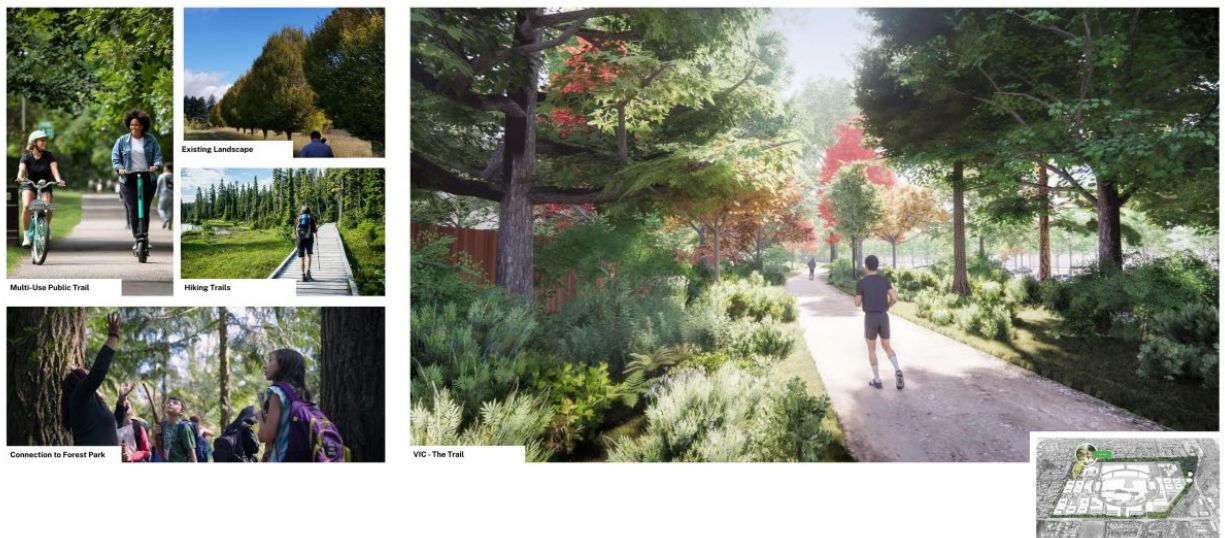
Placemaking // Program + Use



Placemaking // Open Space Network



Placemaking // **The Trail**



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Placemaking // **The Loop**



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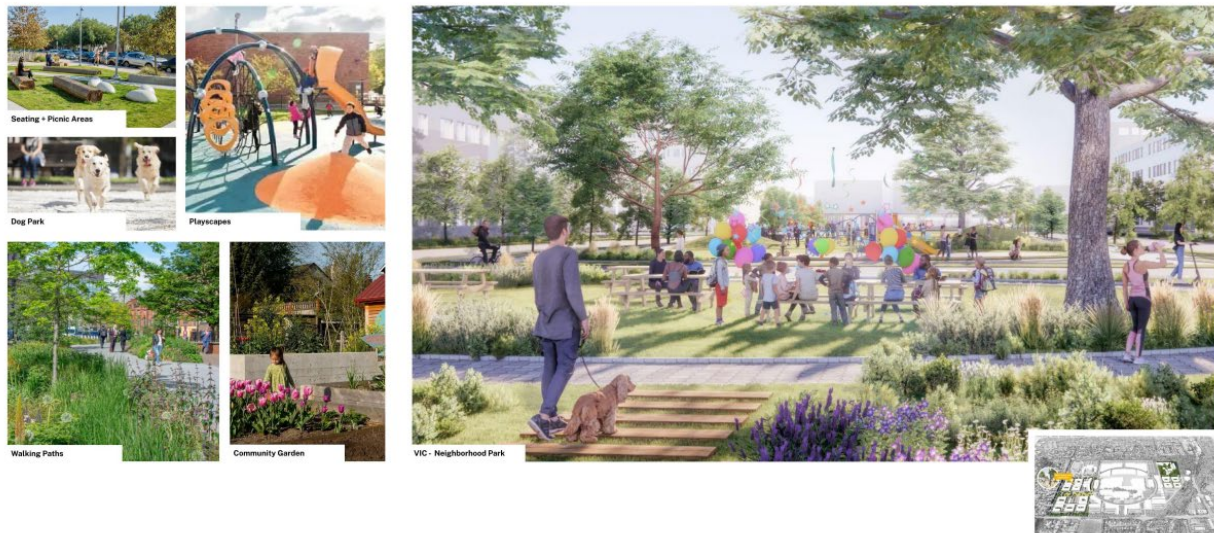
Placemaking // Town Plaza and VIC Commons



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Placemaking // Multi-family and Townhomes - Neighborhood Park



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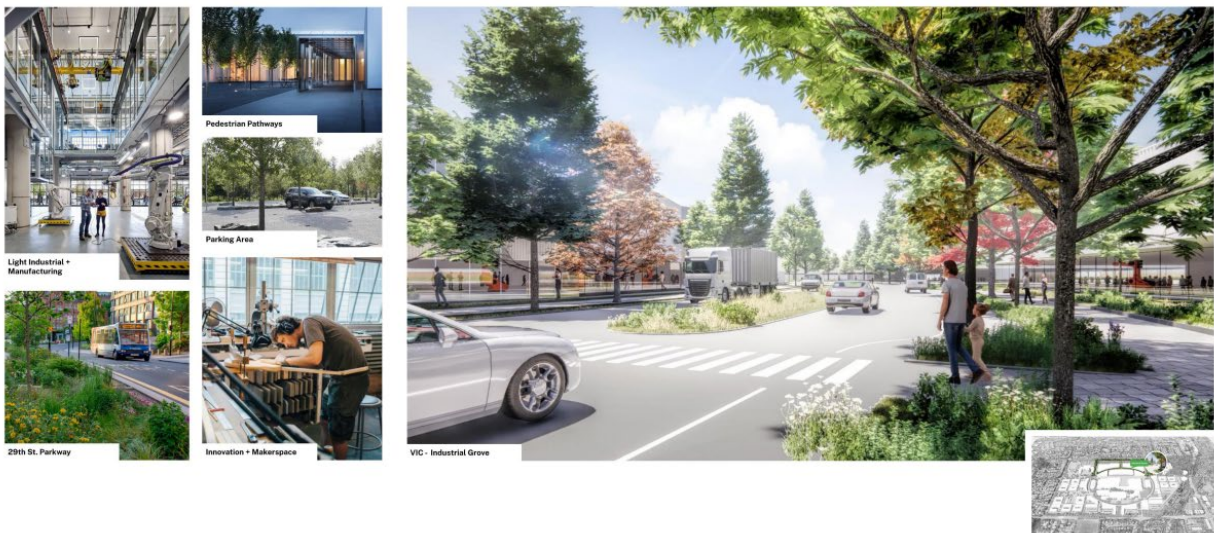
Placemaking // Multi-family and Townhomes - Pedestrian Laneways



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Placemaking // Industrial Grove



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EXHIBIT E-2 – November 2023 Comprehensive Sustainability Plan

Sustainability Improvements Implemented for Existing 715,000 SF Industrial Buildings:

- **Energy Efficiency Improvements:** Developer has worked with Clark PUD and Energy Trust of Oregon to improve energy efficiency at the existing industrial buildings as follows:
 - Installed new, more efficient chillers.
 - Replaced pumps and installed new VFDs in central plant.
 - Installed new building HVAC control systems.
 - Converting point controls from pneumatic to digital.
 - Installed exterior LED lighting.
 - Replacing all common area and house lighting with state-of-the-art LED and lighting control system.

The total estimated annual savings from the above installed improvements is estimated to be 6,300,000 KWh and 345,000 Therms.

- Additional energy efficiency upgrades and sustainability initiatives to date include:
 - Upgraded bathrooms with waterless and reduced flow systems to achieve **indoor water use reduction**.
 - Replaced water fountains with bottle filling stations.
 - Installed new electrical sub-metering system for better monitoring of electrical and water usage.
 - Participant in Clark PUD's Community Solar Program.
- All new tenants are required to install LED lighting and controls within their space.
- Installed showers and bicycle storage space to promote biking to work.
 - Creating long term program to replace a portion of current landscaping with native plants species.
- **Adaptive Reuse, Access to Recreation Facilities:**
 - The existing 715,000 SF of buildings is at the heart of this campus and substantial sustainability investments have been made as noted above. The Developer also renovated underutilized former corporate cafeteria into an activated community space with an upscale café and coffee bar, living room/lounge space, conference rooms, expanded fitness center with fully renovated locker rooms, a yoga and meditation studio, etc.

Sustainability Plan for New Development (VIC Masterplan 2.0)

Overall Campus & Vision:

- **Walkable Streets, Compact Development, Mixed-Use Neighborhoods, Smart Location, Access to Recreation Facilities:** The campus is designed as a 20-minute, walkable, mixed-use neighborhood providing convenient, safe pedestrian-oriented access to places and services that residents, employees, and neighbors need every day – including work, transit, shopping, quality food, school, parks, open space, and social activities.

DRAFT 01/12/2024

- **Neighborhood Schools:** The campus includes a 20-acre parcel that is owned by the Evergreen School District and will be home to a future middle school.
- **Site Design for Habitat Conservation:** A 13.7-acre Forested Tract that has a restrictive covenant to remain as open space. The Developer intends to sell this Forested Tract to the City of Vancouver.
- **Housing Types and Affordability, Housing and Jobs Proximity:** Developer commits to participating in the MFTE program whereby 20% of the 1,800 units (i.e. 360 units) will be available at 80% AMI. All residential units are within walking distance of all employment opportunities on campus.
- **Connected and Open Community, Access to Civic and Public Space, Access to Recreation Facilities, Local Food Production:** Developer will provide a perimeter trail and neighborhood park open to the general public. The trail will be connected to the Forested Tract. The trail will also link together all of the developments within the campus. Community gardens will be available to residents and tenants. The Town Plaza is an optimal location for a local farmers market to operate on the campus.
- **Community Outreach and Involvement:** _Masterplan 2.0 was developed in concert with community and municipal input through feedback from the Masterplan 1.0 approval process, community engagement sessions on the proposed Masterplan 2.0, and ongoing conversations with City staff.

Building Design:

- **Optimize Building Energy Performance:** Developer will achieve GHG emissions reduction targets stated in the City's Climate Action Framework as outlined in the March 27, 2023 Sustainability Goals for City of Vancouver CAF Alignment Memorandum included below.
- **Optimize Building Energy Performance:** All new buildings will include the following:
 - All electric heating, cooling and domestic hot water.
 - Efficient heat pump selections for space heating and domestic hot water
 - o for all new residential buildings, all electric appliances
- **Solar Orientation:** All new buildings will be solar ready per code.
- **Rainwater Management:** For new buildings, Developer will be infiltrating all runoff on site.
- **Electric Vehicles:** Developer will comply with City code for EV infrastructure requirements with each project's site plan approval.

Transportation and Mobility:

- **Compact Development, Walkable Streets, Mixed-Use Neighborhoods, Connected and Open Community, Transportation Demand Management, Housing and Jobs Proximity, Smart Location:** Masterplan 2.0 allows for greater integration of uses than Masterplan 1.0. The entire campus will be walkable/bikeable with ample opportunities to live and work on campus. Small retail and commercial services will be within a 5-minute walk of any residential neighborhood or commercial/industrial tenant. The reconfiguration of Masterplan 2.0 also achieves added density with the same amount of vested trips in Masterplan 1.0. Masterplan 2.0 also creates a more efficient street network that allows for separation of industrial related truck traffic from residential and mixed-use traffic.

DRAFT 01/12/2024

- **Walkable Streets, Transit Facilities, Bike Facilities, Smart Location:** Road networks will be designed and coordinated with City transportation staff to ensure safe, comfortable and complete connections for various modes of transportation (vehicular, pedestrian, bicycles, etc.) o Once ESD develops the school, Developer will have bikeable/walkable laneways for students to be able to walk or bike to school safely.
- **Bicycle Facilities, Smart Location:** Developer will include infrastructure to support bike parking and will have bike sharing programs. Developer renovated locker rooms, showers and changing facilities at the existing buildings to help encourage habitual biking for its tenants. The perimeter trail and bike paths throughout the campus will encourage recreational physical activity.
- **Transportation Demand Management, Smart Location:** Developer will deploy shared parking strategies where applicable. The campus design encourages multimodal travel. Developer is eliminating an entrance on 34th Street to reduce traffic congestion at 176th Avenue and 34th Street. Campus entrances/exits at 34th Street are being coordinated with the City's efforts along that corridor to ensure offsite improvements result in a smooth and safe pedestrian experience.
- **Access to Quality Transit and Transit Facilities, Smart Location:** Developer will work with CTran, ESD and City staff to coordinate safe and efficient placement of bus stops within the campus. The VIC campus already has a bus stop along 34th Street and the campus will have pedestrian laneways to provide safe access to the existing bus stop.

Open Space, Natural Systems, and Water Resources:

- **Site Design for Habitat Conservation and Long-Term Conservation Management of Habitat, Connected and Open Community, Access to Recreation Facilities:** Preservation of 13.7 acre Forested Tract o Developer worked with a local arborist to adjust the boundary line of the Forested Tract to create a better edge condition for the trees allowing for a more resilient tree canopy and preservation of native and climate resilient species.
- **Connected and Open Community, Access to Civic and Public Space, Access to Recreation Facilities, Connected and Open Community, Access to Recreation Facilities:** Masterplan 2.0 increases the amount of open space/parks/trails by 26% from 19 acres of open space to 24 acres.
- **Tree Lined and Shaded Streetscapes and Heat Island Reduction:** Canopy coverage per Restated DA which is above and beyond the code minimum for all use types. Developer also commits to achieving Tree CAP certification for all projects (minimum Silver Leaf Achievement). Both canopy coverage & Tree Cap Silver will reduce the heat island effects within the campus.
- **Outdoor Water Use Reduction:** Developer will favor nature scaping in lieu of high maintenance turf for streetscapes.
- **Rainwater Management:** For new buildings, Developer will be infiltrating all runoff on site.

Memo

Date: March 27, 2023
Project: VIC Sustainability Master Planning
Project Number: 22-1362
To: Pedro Polanco, Jennifer Rabina, Marc Esrig
From: Forest Tanier-Gesner, Ned Greene
Subject: Sustainability Goals for City of Vancouver CAF Alignment

The Vancouver Innovation Center (VIC) development is determining sustainability goals for site infrastructure and future phase developments and is working to align to the Vancouver Climate Action Framework (CAF) that has recently been released by the City of Vancouver.

GOALS OF THE CLIMATE ACTION FRAMEWORK

One of the primary goals of the City of Vancouver's Climate Action Framework is aggressive reductions in the Greenhouse Gas (GHG) emissions associated with the City and Community operations:

- By 2025 – Achieve 80% Reduction in GHG emissions associated with municipal operations.
- By 2030 – Achieve 80% Reduction in GHG emissions associated with community operations.
- By 2040 – Achieve 100% Reduction in GHG emissions (Carbon Neutrality) associated with municipal and community operations.

PAE understands that the VIC development team is in favor of these performance-based standards over arbitrary certification programs that do not guarantee the City's desired outcome for emission reduction as set forth in the CAF.

To that end, PAE has developed life-cycle emissions and life-cycle cost assessments of several heating, cooling, and domestic hot water (DHW) system options and cooking appliance options for the VIC campus. PAE's recommended baseline design option was then benchmarked against the City of Vancouver's CAF. Based on this analysis it is estimated that the non-industrial process loads¹ on the VIC campus could be within 2% of the CAF reduction targets by 2030 and within 1% of the total CAF target by 2040.

PAE identified additional potential measures to address the minor gap in the emissions reductions estimates versus the CAF targets. These measures serve as a menu of options and can be implemented incrementally and discretely during the course of the VIC development. The quantifiable impacts of these options are also summarized in the following table.

¹ It is understood that the campus currently houses industrial processes that rely on natural gas fuel. These operations are currently outside of the scope of the systems options analysis and emissions reduction estimates. Alternate fuel sources should be considered by the Development Team as these become more readily available for the types of industrial processes.

March 27, 2023



	Reference Year	2024	2030	2040
BENCHMARK:				
Existing Building Stock and Forecasting Future buildings per today's Standards				
	MT CO2e/year	20,743	20,743	20,743
BASELINE DESIGN for new buildings:				
All Electric heating, cooling, and domestic hot water for all asset types.				
All Electric appliance requirements for all residential buildings (all-electric cooking and laundry)				
Efficient heat pump selections for space heating and domestic hot water (DHW) in all new buildings				
	MT CO2e/year	7,075	4,530	289
	(% reduction from benchmark)	66%	78%	99%
UPGRADES BY 2030 - OPTIONS TO CONSIDER				
Increase campus Photovoltaic (Solar) installations as needed to reach emission reduction goal. Consider exceeding code minimum if needed.			A	
Material selections and construction practices could further reduce the emissions associated with the campus development, through reductions in the embodied emissions for the buildings and site infrastructure. Design teams could help address marginal reductions needed to achieve goal by 2030			B	
Consider committing to provide more EV charging for residential parking and/or more residential spaces provisioned as EV ready if market demand supports that investment			C	
A+B+C = 390 MT CO2e/year	MT CO2e/year	7,075	4,140	289
	(% reduction from benchmark)	66%	80.0%	99%
UPGRADES BY 2040				
Phase out use of non-industrial gas use from the VIC Campus - enforce all electric cooking in commercial buildings, upgrade existing buildings, phase out other gas uses by 2040 if required by code.				-289
	MT CO2e/year	7,075	4,140	0
	(% reduction from benchmark)	66%	80%	100%

Table 1: Emissions Reduction Estimates for VIC Campus

March 27, 2023



VIC SUSTAINABILITY GOALS

As shown in Table 1, site emissions estimates for the recommended baseline design approach closely aligns with the City's CAF emissions reductions targets. Below is a summary of PAE's recommended baseline design for the campus:

- BOD - "Building by Building Heating and Cooling – All Electric" systems approach for all new construction.
- Efficient heat pump selections for space heating and domestic hot water (DHW) in all new buildings
- Electrification phase in plan for all existing buildings heating and DHW heating systems by 2040, if required under City CAF.
 - Central heating update requires consideration of low temp heating coils for end-of-life upgrades with current heat pump technology.
- All Electric appliance requirements for all residential buildings (all-electric cooking and laundry)

To close the minor gap between the baseline design approach and the CAF targets, PAE recommends the following possible options to be evaluated at the time of each new development project:

- Recommend to future commercial tenants to strive for All Electric appliance requirements for all commercial buildings (i.e. all-electric commercial cooking by 2040 if required by code). It is understood that restaurants and some industrial tenants who have commercial grade kitchens within their premises, may not be willing to comply with this requirement today given current industry standards.
- Increase onsite Photovoltaic (solar) installations as needed to reach emission reduction goal. This may require exceeding code minimum to achieve the desired target.
- Material selections and construction practices could further reduce the emissions associated with the campus development, through reductions in the embodied emissions for the buildings and site infrastructure. Design teams could help address marginal reductions needed to achieve goal by 2030.
- Evaluate demand for Increasing percentage of Electrical Vehicle charging stations for residential neighborhoods. Exceeding existing code if demand warranted that could help meet the CAF targets.

EXHIBIT F – Retained Traffic Capacity

Total Vested Average Daily Trips: 26,982

- Total vested trips reflect those trips expected to be utilized by and reserved for the VIC Master Plan 2.0 after reductions for internal trips within the VIC Master Plan 2.0 and pass by trips for the VIC Master Plan 2.0 retail uses.
- Total vested trips include trips utilized by existing onsite buildings.

Total Vested AM Peak Hour Trips: 2,229

Total Vested PM Peak Hour Trips: 1,991

VIC Site Trip Generation Estimate

(From Table 4 of the 2023 VIC TIA):

Table 4: Site Trip Generation Estimate

Land Use	ITE Code	Size	Daily Trips	Weekday AM Peak Hour			Weekday PM Peak Hour		
				Total	In	Out	Total	In	Out
Existing The VIC Buildings ¹	1996 Traffic Counts	715,000 Square Feet	10,200 ²	382	262	120	444	76	368
Less Trips Internal to the Campus Area			(236)	(24)	(12)	(12)	(26)	(8)	(18)
Net New			9,964	358	250	108	418	68	350
General Light Industrial	110	600,565 Square Feet	2,925	444	391	53	390	55	335
Less Trips Internal to the Campus Area			(198)	(20)	(10)	(10)	(22)	(7)	(15)
Net New			2,727	424	381	43	368	48	320
General Office Building	710	87,500 Square Feet	949	133	117	16	126	21	105
Less Trips Internal to the Campus Area			(29)	(2)	(1)	(1)	(3)	(1)	(2)
Net New			920	131	116	15	123	20	103
Medical Office Building	720	10,000 square feet	360	31	24	7	39	12	27
Less Trips Internal to the Campus Area			(4)	(1)	(1)	(0)	(0)	(0)	(0)
Net New			356	30	23	7	39	12	27
Shopping Center	820	140,000 square feet	5,181	118	73	45	476	228	248
Less Trips Internal to the Campus Area			(1,607)	(45)	(29)	(16)	(110)	(41)	(69)
Less Pass-by Reduction			(1,036)	(21)	(13)	(8)	(106)	(54)	(52)
Net New			2,538	52	31	21	260	133	127
Multifamily Housing (Mid-Rise)	221	1,248 Units	5,666	538	124	414	487	297	190
Less Trips Internal to the Campus Area			(790)	(14)	(2)	(12)	(80)	(56)	(24)
Net New			4,876	524	122	402	407	241	166
Multifamily Housing (Low-Rise)	220	552 Units	3,720	194	47	147	258	163	98
Less Trips Internal to the Campus Area			(350)	(6)	(1)	(5)	(35)	(25)	(10)
Net New			3,370	188	46	142	223	138	85
Middle School ²	522	900 Students	1,917	522	282	240	153	75	78
Total Trips			30,918	2,362	1,320	1,042	2,373	927	1,446
Less Total Trips Internal to the Campus Area			(3,214)	(112)	(56)	(56)	(276)	(138)	(138)
Less Total Pass-by Reduction			(1,036)	(21)	(13)	(8)	(106)	(54)	(52)
Total Net New Trips			26,668	2,229	1,251	978	1,991	735	1,256
The VIC Development Agreement Vested Net New Trips			26,982	2,088	1,343	745	1,991	627	1,364
Proposed Total Net New – The VIC DA Vested Net New			-314	141	-92	233	0	108	-108
Total Net New Trips – Existing The VIC Building Net New Trips			16,704	1,871	1,001	870	1,573	667	906

¹ Source: Traffic Impact Analysis for The VIC Master Plan dated November 20, 2020.

² Trip estimates from approved 2020 The VIC Traffic Impact Analysis. The potential for internal trips associated with a school could be revisited in conjunction with a more specific school development proposal.

2023 VIC TIA – Figure 5



EXHIBIT G – Surrendered Traffic Capacity

Land Use	Average Daily Trips	Weekday AM Peak Hour Trips	Weekday PM Peak Hour Trips
RETAINED RESTATED DA AND VIC MASTER PLAN TRIPS	26,982	2,229	1,991

Land Use	Average Daily Trips	Weekday AM Peak Hour Trips	Weekday PM Peak Hour Trips
Master Plan Trips from Original HP Development Agreement	30,000	4,200	3,950
Retained VIC Master Plan Trips <i>(Exhibit F net new after reducing for internal and pass-by trips)</i>	26,982	2,088	1,991
Vested Trips Surrendered to City in Restated DA <i>(Original Development Agreement-VIC Master Plan Trips)</i>	3,018	2,112	1,959
Change in Vested Trips with Retained Restated DA and VIC Master Plan 2.0	0	+141	0
Retained Restated DA and VIC Master Plan Trips	26,982	2,229	1,991

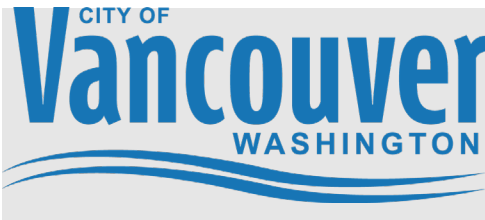
Land Use	Average Daily Trips	Weekday AM Peak Hour Trips	Weekday PM Peak Hour Trips
Master Plan Trips from Original HP Development Agreement	30,000	4,200	3,950
Vested Trips Surrendered to City in Restated DA <i>(Original Development Agreement-VIC Master Plan Trips)</i>	-3,018	-2,112	-1,959
Retained VIC Master Plan Trips <i>(Exhibit F net new after reducing for internal and pass-by trips)</i>	26,982	2,088	1,991
Change in Vested Trips with Retained Restated DA and VIC Master Plan 2.0	0	+141	0
RETAINED RESTATED DA AND VIC MASTER PLAN 2.0 TRIPS	26,982	2,229	1,991

EXHIBIT H – Transportation Improvements

Table 1. Summary of Mitigation Recommendations

Facility	Segment/ Study Intersection ID	Mitigation Recommendation	Needed Pre- VIC Master Plan?	Triggered by VIC Master Plan Trips?	VIC Master Plan Trigger Phase?
On-Site Roadways & Intersections					
SE 29 th Street	<i>Extend collector arterial roadway across the VIC Master Plan site in three segments</i>				
	West Segment	From SE 176 th Avenue to West Loop Road	N/A	Yes	2
	North Segment	From West Loop Road to East Loop Road	N/A	Yes	3
	East Segment	From East Loop Road to SE 192 nd Avenue	N/A	Yes	3
SE 184 th Avenue	N/A	Renovate collector arterial roadway within The VIC Master Plan site from SE 34 th Street to Loop Road	N/A	Yes	2
West Loop Road	N/A	From SE 184 th Avenue to SE 29 th Street	N/A	Yes	2
East Loop Road	N/A	From SE 184 th Avenue to SE 29 th Street	N/A	Yes	4
West Loop Road/ SE 29 th Street	N/A	Construct single lane roundabout	N/A	Yes	2
East Loop Road/ SE 29 th Street	N/A	Construct single lane roundabout	N/A	Yes	3
Site-Access Changes					
West Site Access/ SE 34 th Street	7	Close and vacate motor vehicle site-access (intersection north approach)	No	No	2
SE 29 th Street/ SE 176 th Avenue	9	Reconstruct as a single lane roundabout	No	Yes	2
SE 29 th Street/ SE 192 nd Avenue	4	Install traffic signal with interconnect Construct and stripe separate eastbound left and right turn lanes with 250 feet of storage each Stripe northbound left-turn lane with 200 feet of storage	No	Yes	3
Off-site Intersection Mitigations with Master Plan Development					
SE 29 th Street/ SE 164 th Avenue	11	Modify traffic signal to provide east-west protected/permissive left-turn phasing	No	Yes	2
		Extend westbound left-turn lane striping to provide 225 feet of storage (striping only)	No	Yes	2
		Extend southbound left-turn storage to provide 300 feet of storage (reconstruct center median area)	No	Yes	2
SE 192 nd Avenue/ SR-14 Westbound Ramp Terminal	N/A	Pay proportionate share contribution toward future capacity improvements with each site development application. Estimated total fee of \$430,000 based on assumed Master Plan land use plan.	Yes	No	Each phase based on trips added
SE 20 th Street/ SE 176 th Avenue	10	Pay proportionate share contribution toward future capacity improvements with each site development application. Estimated total fee of \$33,600 based on assumed Master Plan land use plan.	Yes	No	Each phase based on trips added
SE 34 th Street/ SE 192 nd Avenue	5	Pay proportional share contribution towards re-constructing streets with a more durable pavement treatment to reduce maintenance needs. Estimated total fee of \$83,400 based on assumed Master Plan land use plan.	Yes	No	Each phase based on trips added

N/A = Not applicable



MEMORANDUM

DATE: September 12, 2023

TO: Chair Ledell and Planning Commission members
CC: Rebecca Kennedy, Deputy Director, Community Development Department

FROM: Mark Person, Senior Planner, Community Development Department
Joana Filgueiras, Real Estate Project Manager, Economic Prosperity and Housing

RE: **Proposed Revised Vancouver Innovation Center Master Plan and Development Agreement**

SUBJECT SITE

The Vancouver Innovation Center (VIC) encompasses approximately 179 acres and is located at 8110 SE 34th Street. The site consists of parcels 986060362, 986056494, 126455000, and 126816000 within the NE, NW, SW, and SE ¼ of Section 6, Township 1N, Range 3E of the Willamette Meridian.

The site is located among single family neighborhoods on three sides. SE 34th Street, a four-lane arterial road with a center landscaped median, forms the southern edge of the site and the main access point, and is served by the C-Tran #37 bus with 15-minute peak hour service intervals to downtown and the Fisher's Landing Transit center. Below 34th Street are master planned single-family subdivisions, and the Fisher's Landing Elementary School. SE 176th Avenue, a two-lane collector road, forms the western edge of the rezone site, and west of that are additional master planned single family subdivisions. Single family development is also north of the rezone site, but without any separating roadway. To the east the site is bounded by 192nd Avenue and Fisher's Creek. Beyond the creek to the east is a commercial development consisting of a tire store, bank and offices.

The site is located within the Fisher's Landing East Neighborhood Association. The Fisher's Creek Neighborhood Association is directly south of 34th Street.

The 179-acre rezone site was originally developed by Hewlett-Packard prior to annexation to Vancouver in 1997 and was sold to S-E Incorporated in 2009. New Blueprint Partners purchased the site in 2020. The approximately 47-acre light industrial building complex encompasses approximately 715,000 square feet in six linked buildings, surrounded by approximately 2,100 surface parking stalls. The building complex is approximately 80 percent leased, up from 50 percent leased when the development was first proposed, according to the applicant. Since acquiring the site, the applicant has made substantial upgrades to the existing

buildings that include energy efficiency and modernization. Most of the undeveloped portion of the rezone is grasslands, except for the northeast area which remains heavily forested.

PREVIOUS ZONE CHANGE AND EXISTING MASTER PLAN APPROVAL

VMC 20.285 assigns the Vancouver Planning Commission as the review body for Mixed-Use Master Plans greater than 25 acres in size, and Development Agreements accompanying any proposal already before the Commission. The Planning Commission purview is limited to land use matters; budgetary decisions are solely the purview of the City Council. Planning Commission recommendations are forwarded to the Vancouver City Council for further public hearing review and final decision.

The Planning Commission reviewed and recommended approval of the zone change from IL to MX and associated master plan in 2020 and 2021. The proposal was reviewed at six Planning Commission public workshops and approval recommended to the City Council at a public hearing on July 6, 2021. The City Council approved the master plan, zone change and development agreement at a public hearing on August 16, 2021.

The existing master plan and development agreement anticipates 600,000 to 860,000 square feet of new employment buildings and up to 1,200 residential units. Under the existing master plan, the applicant received land use and engineering approval for a 200,981 square foot industrial building north of the existing building onsite.

As part of the new proposed master plan revision and development agreement update, the applicant held two online open houses open to the community, one on January 30th, 2023, and one on January 31, 2023.

PROPOSED MASTER PLAN REVISIONS

The applicant requests the following changes to the master plan:

- Central loop/ring road configuration change
- Town center is now a commercial corridor
- Revised Land Use Areas
- Increased density and the elimination of detached single-family residential
- Consolidated Residential Areas
- Updated Phasing
- Hotel and community center allowed as a Type II instead of Type III CUP application
- Updated Design Guidelines

Land Use Allocation	Existing Master Plan (acres)	Proposed Master Plan (acres)
School	20	20
Open Space	19.1	24 - (13.7 in the forested tract plus 10.3 within LUAs)
Light Industrial/Employment	67.2	74.13

Residential	30.4	38.12
Mixed use	31.9	33.15
Right-of-way	10.5	Incorporated into LUAs

As part of the master plan revision and development agreement update, the applicant held two online open houses, one on January 30th, 2023, and one on January 31, 2023.

Section 7 of the development agreement outlines the process for revisions. The proposed changes are subject to a major revision and subject to a Type IV process. This application is only for revision to the master plan and associated development agreement. No changes to zoning or the comprehensive plan are proposed.

The revised master plan proposes a minimum of 600,000 square feet of employment use and up to 1,800 residential units. Applicant has agreed to include 20% affordable units at 80% AMI.

ALIGNMENT WITH EXISTING POLICY GUIDANCE

Climate Action Framework

- Strategy TLU-1. Create neighborhoods that support clean modes of transportation
 - Action #1 – Mixed-use, transit-oriented development
 - Action #2 – Sustainable neighborhood-scale development
 - Action #3 – Diversified housing options
 - Action #4 – Concentrated development along retail and commercial corridors

Compliance with the Interim Green Building Policy

- LEED for Neighborhood Development Gold standard or equivalent
 - Certification not required, only that the proposal shows equivalency

The Master Plan outlines sustainability initiatives that extend beyond code mandates, aligning with the City's objective of reducing Greenhouse Gas emissions. A comprehensive Sustainability Plan will be submitted to the Planning Commission prior to the workshop on September 26, 2023.

Alignment with the [Strategic Plan](#)

- Livability
- Equity and Inclusion
- Innovation
- Sustainability & Resiliency
- Trust & Relationships

MIXED USE MASTER PLAN APPROVAL CRITERIA

Approval Criteria ([VMC 20.430.060.C.3.a.2](#))

2. *Approval Criteria and Zoning. proposed Mixed Use Master Plans 25 acres or larger in size shall be reviewed as Type IV application by the Planning Commission. Proposals less than 25 acres shall be reviewed as Type IV applications by the Hearings Examiner. Approvals, or approval with conditions shall be granted upon findings that:*

- a. The Master Plan and associated conditions of approval ensure future development will meet all applicable criteria of this chapter; and*
- b. The proposal complies with applicable rezone criteria of VMC [20.285.080](#); and*
- c. There is or will be sufficient capacity within the transportation system and public sewer, water, police, fire, and stormwater services to adequately serve all portions of the site at the time of development; and*
- d. A change in circumstances has occurred since existing zoning designations at the site were originally adopted. For the purposes of a multiple building mixed use plan only, compliance with the development standards of VMC [20.430.060](#)C2 and the applicable Comprehensive Plan policies shall be sufficient to demonstrate that a change in circumstances has occurred.*

Also:

The multiple building mixed use sites standards of VMC [20.430.060.C.2](#) shall apply unless otherwise noted in the development agreement.

VMC 20.430.060.D. Adjustment to Numerical Standards – Single Building and Mixed Use Sites Numerical standards contained in this chapter may be adjusted by up to 25% if a clear demonstration is provided that the proposed mixed use development with the adjustment would fully comply with the purpose statement and all other applicable standards of this chapter, and that the proposal would clearly not be able to comply with those standards without the proposed adjustments.

VMC 20.430.060.E. Incentives – Single Building and Mixed Use Sites Traffic impact fees for mixed use developments shall be reduced to account for internal trips between uses on the site or building as demonstrated by an approved traffic study.

Subsequent applications for development within the master plan will be reviewed under the procedures outlined in VMC [20.210](#), in most cases a Type II Site Plan.

Staff is seeking Planning Commission's input on the updated master plan concept.

VIC Master Plan and DA Revision

September 12, 2023

Page 5 of 5

Next Steps:

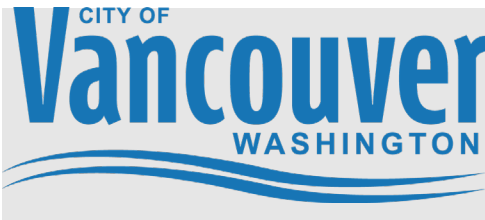
- September 26, Planning Commission Workshop
- October 10, Planning Commission Workshop
- November 14, Planning Commission Workshop (if needed)
- December 12, Tentative Planning Commission Public Hearing

Mark Person, Senior Planner, Community Development Department
mark.person@cityofvancouver.us 360-487-7885

Joana Filgueiras, Real Estate Project Manager, Economic Prosperity and Housing
Joana.filgueiras@cityofvancouver.us 360-601-1196

Attachment(s):

1. Proposed Revised Master Plan
2. Existing Master Plan Map
3. Applicant Narrative
4. Revised Traffic Impact Analysis
5. Applicant Sustainability Goals
6. VIC Renderings
7. [City Council Materials from August 16, 2021 Public Hearing](#)



MEMORANDUM

DATE: December 12, 2023

TO: Chair Ledell and Planning Commission members

CC: Rebecca Kennedy, Deputy Director, Community Development Department

FROM: Mark Person, Senior Planner, Community Development Department
Joana Filgueiras, Real Estate Project Manager, Economic Prosperity and Housing

RE: **Vancouver Innovation Center Master Plan and Development Agreement Revision**

Background and History

The Vancouver Innovation Center (VIC) encompasses approximately 179 acres and is located at 8110 SE 34th Street. The site consists of parcels 986060362, 986056494, 126455000, and 126816000 within the NE, NW, SW, and SE ¼ of Section 6, Township 1N, Range 3E of the Willamette Meridian.

The 179-acre site was originally developed by Hewlett-Packard prior to annexation to Vancouver in 1997 and was sold to S-E Incorporated in 2009. New Blueprint Partners purchased the existing building complex in the center of the site in 2020. The approximately 47-acre light industrial building complex encompasses approximately 715,000 square feet in six linked buildings, surrounded by approximately 2,100 surface parking stalls. Since acquiring the site, the applicant has made substantial upgrades to the existing buildings that include energy efficiency and modernization. Most of the undeveloped portion of the rezone site is grasslands, except for the northeast area which remains heavily forested.

The site is located among single family neighborhoods on three sides. SE 34th Street, a four-lane arterial road with a center landscaped median, forms the southern edge of the site and the main access point, and is served by the C-Tran #37 bus with 15-minute peak hour service intervals to downtown and the Fisher's Landing Transit center. Note that SE 34th Street will be reconfigured in 2024 to one travel lane in each direction and new protected mobility lanes, transit platforms and enhanced crossings, as part of the SE 34th Street Safety & Mobility Project. Traffic modeling conducted as part of this included all trips associated with the updated VIC master plan, and the final design has been endorsed by the Transportation & Mobility Commission and approved by Council. Below 34th Street are master planned single-family subdivisions, and the Fisher's Landing Elementary School. SE 176th Avenue, a two-lane collector road, forms the western edge of the rezone site, and west of that are additional master planned single family subdivisions. Single family development is also north of the

rezone site, but without any separating roadway. To the east the site is bounded by 192nd Avenue and Fisher's Creek. Beyond the creek to the east is a commercial development consisting of a tire store, bank and offices.

Proposed Changes to Original Plan

Vancouver Planning Commission reviewed and recommended approval of the original master plan ("Original Plan") and a zone change in 2021. The Original Plan was reviewed at six Planning Commission public workshops held virtually on August 11, September 8, November 10, and December 8, 2020 and on January 26 and May 11, 2021. At the July 6, 2021 public hearing, Planning Commission recommended approval. Vancouver City Council approved the Original Plan, zone change and an accompanying development agreement at a consent hearing on August 9, 2021 and public hearing on August 16, 2021.

New Blueprint Partners and Rabina LLC ("Developer") are proposing changes to the Original Plan and the development agreement dated September 15, 2021 ("Original Agreement") to optimize opportunity for employment-generating development, create higher integration of uses, allow for greater density, and create additional open space.

Proposed changes to the Original Plan and Original Agreement include:

- Central Loop/ ring road configuration change
 - o A loop in the center of the campus creates a commercial corridor and allows for better mobility throughout the site, eliminating the Town Center described on the previous DA.
 - o Buildings fronting the ring road, within the Mixed-Use LUA, must be at least 3-story tall.
 - o Buildings adjacent to the ring road, within the MX LUA, must have active uses on street level.
 - o Parking lots must be behind buildings within the ring road.
- Revised Land Use Areas
 - o Land Use areas have been revised and moved to create a more integrated neighborhood
 - o A new Open Space LUA is designated as an overlay and not a specific area within the plan.
 - o A minimum of 600,000 SF of new employment space will be maintained but the maximum of 860,000 SF will be removed (a traffic study will be required for employment space development beyond 860,000 SF)
- Increase density and the elimination of detached single-family residential.
 - o Raising the maximum residential units allowed from 1,200 to 1,800.
 - o Residential LUAs will have a minimum density of R-30 and maximum of R-35.
 - o MX Height maximum allowed throughout the campus.
 - o Removing Residential Transfer limitations.

- Consolidate Residential Areas
 - o Removing Single-Family Residential (SFR) and Multi-Family Residential (MFR) areas and replacing it with Residential Land Use Area (R LUA)
- Remove phasing
 - o Allowing applicant to develop office spaces when supported by the market.
 - o Allowing applicant to develop additional employment land if needed, without complying with MX mix requirements.
 - o Ensuring that project still complies with the concept of a 20-minute neighborhood.
- Hotel and community center allowed as a Type II instead of Type III application.
 - o A Traffic Impact Analysis will be required with the application.
- Updated Design Guidelines
 - o Removing balcony requirements for buildings facing the ring road.
 - o Removing Single Family detached guidelines.
- Affordable Housing Requirement
 - o Applicant will apply to the Multi-Family Tax Exemption (MFTE) for all residential buildings and designate 20% of residential units to be affordable to households earning 80% of Area Median Income (AMI). This designation will be in effect for 12 years.
- Green Building Compliance
 - o Applicant is required to meet the City's interim green building policy, which requires projects to meet a LEED Gold or equivalent standard. A sustainability plan meeting the City's interim policy and consistent with the City's adopted Climate Action Framework will be attached to the amended development agreement ("Amended Agreement").
- Shared Parking
 - o Applicant will collaborate on providing shared parking without limiting their ability to comply with tenants' demands.
- Forested Area Acquisition
 - o The applicant will continue negotiating a Purchase and Sale Agreement for the sale of the Forested Area to the City of Vancouver, to be developed by the City into a Community Park.
 - o The first phase of the park is to be developed within 3 years from the PSA execution.
 - o The City will maintain the park to its standards.

Staff and applicant believe that the changes support the project's goal of creating a 20-minute neighborhood by providing access to quality employment, residences, recreation, and supportive services.

On September 12, 2023, the Vancouver Planning Commission held an initial workshop to review proposed changes to the Original Plan. In response to questions raised during that workshop, additional information on the changes to the Original Plan is shared below:

- Number of jobs created on campus - the Original Plan estimated 5,000 jobs being

created on site. The square footage for the employment area has not changed in the proposed master plan, so the potential for job creation remains the same. Market conditions have changed, though, and work-from-home has become more prevalent, which may impact how many employees are on-site on a typical day.

- Difference in size for each land use type from the Original Plan to the proposed one:
 - o Light Industrial – From 67.2 acres to 74.12 acres
 - o Residential – From 30.4 acres to 38.11 acres
 - o Mixed-Use – from 31.9 acres to 33.14 acres
 - o Open Space – From 19.1 acres to 24 acres
- 29th Street Timeline – Once 29th Street is included into the City's Capital Facilities Transportation Plan and becomes eligible for Transportation Improvement Fee Credits, the developer will start the construction of the road.
- Sustainability Plan – A sustainability plan addressing campus-wide initiatives will be attached to the Amended Agreement. The sustainability plan does not address future buildings so the developer will have to comply with the City's green building policy in effect at the time permit applications are submitted for those projects.

Outreach

As part of the master plan revision and development agreement update, the applicant has published a website for public comments, and has held two online open houses, one on January 30th, 2023, and one on January 31, 2023. The site is located within the Fisher's Landing East Neighborhood Association, which is directly south of 34th Street. The applicant has also informed the Fisher's Creek and Fisher's Landing East Neighborhood Associations about the proposed changes to the Original Plan.

Review Authority

VMC 20.285 assigns the Vancouver Planning Commission as the review body for Mixed-Use Master Plans greater than 25 acres in size, and development agreements accompanying any proposal already before the Commission. Planning Commission recommendations are forwarded to the Vancouver City Council for further public hearing review and final decision.

Mixed Use Master Plan standards and approval criteria are included as an attachment to this memorandum.

As per VMC 20.250.050 B, the following procedure applies to the approval of a development agreement:

"If a development agreement is proposed in conjunction with a Type II, III or IV land use application under Chapter 20.210 VMC, Decision-Making Procedures, the development

agreement shall be presented to City Council at a public hearing for approval by ordinance or resolution, after approval of the Type II or III application or after Planning Commission action on a Type IV application. The review body for the Type II, III or IV application shall not make a final decision on that portion of the application related to the development agreement but shall make a recommendation of approval or denial of the development agreement to City Council. If no appeal is filed on the underlying land use application, the Planning Official shall send written notice of the public hearing at least 10 days prior to City Council consideration of the development agreement to all parties entitled to a Notice of Decision for the applicable application under Section 20.210.050(I) VMC or 20.210.120(B)(11) VMC."

Alignment with the [Strategic Plan](#)

- Livability
- Equity and Inclusion
- Innovation
- Sustainability & Resiliency
- Trust & Relationships

Staff is seeking Planning Commission's input on the updated master plan concept.

Next Steps:

- February, Tentative Planning Commission Public Hearing

Mark Person, Senior Planner, Community Development Department
mark.person@cityofvancouver.us 360-487-7885

Joana Filgueiras, Real Estate Project Manager, Economic Prosperity and Housing
Joana.filgueiras@cityofvancouver.us 360-601-1196

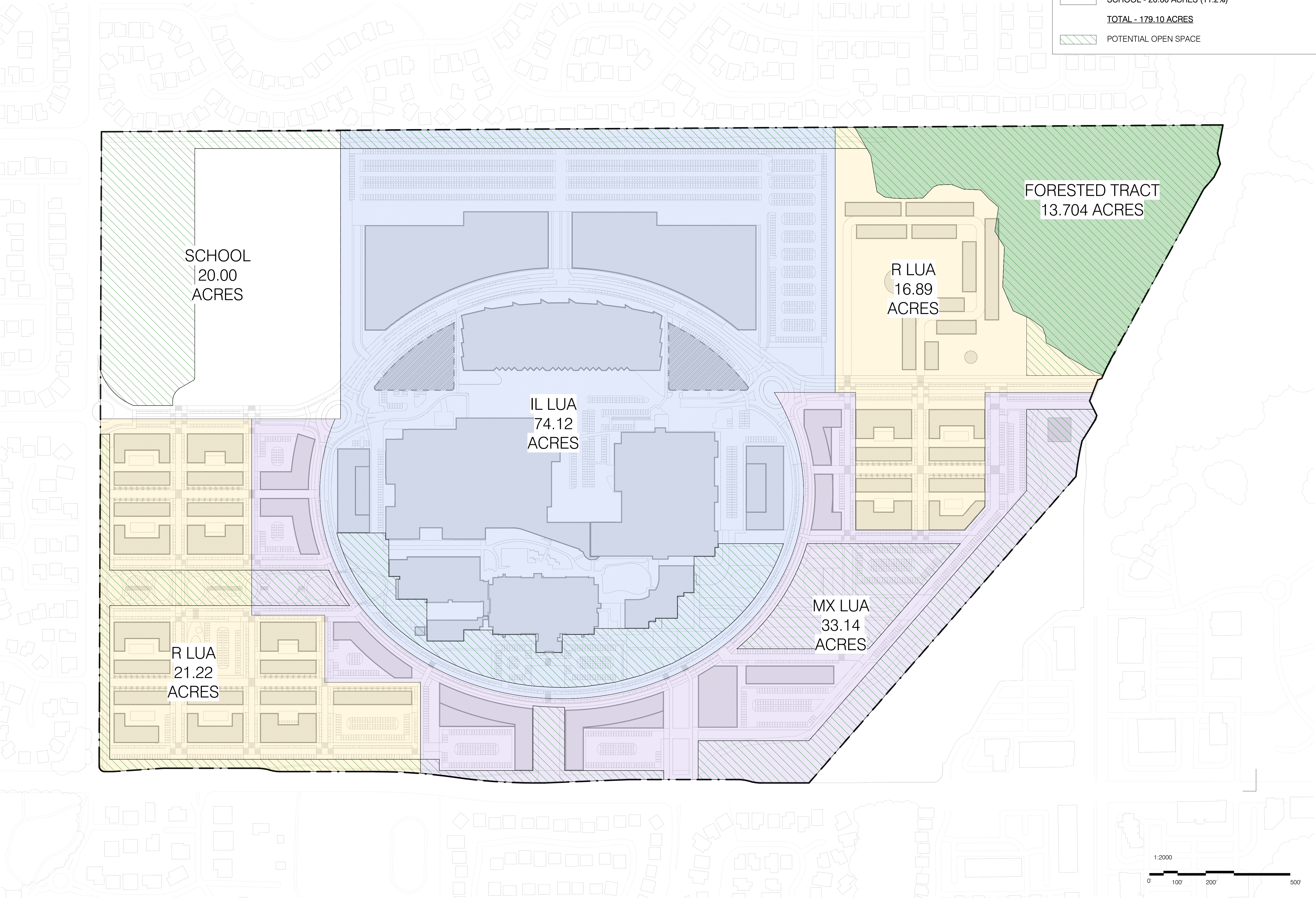
Attachment(s):

Draft Developer Agreement
Proposed Master Plan
Applicant Narrative
Mixed Use Master Plan Standards and Approval Criteria
Revised Traffic Impact Analysis
Sustainability Plan
Revised Design Guidelines

[City Council Materials from August 16, 2021 Public Hearing](#)

GENERAL NOTES:

1. BUILDING FOOTPRINTS ARE ILLUSTRATIVE AND SUBJECT TO CHANGE.
2. OPEN SPACE BOUNDARIES ARE CONCEPTUAL. THE LOCATIONS AND SIZE OF EACH OPEN SPACE AREA WILL BE REFINED AT THE SITE DEVELOPMENT STAGE.

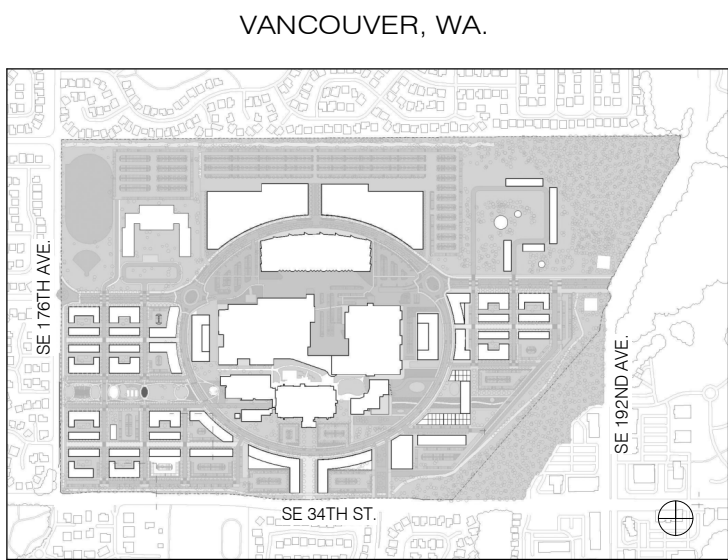


LAND USE LEGEND	
	LIGHT INDUSTRIAL (IL) - 74.13 ACRES (41.4%)
	RESIDENTIAL (R) - 38.12 ACRES (21.3%)
	MIXED-USE (MX) - 33.15 ACRES (18.5%)
	FORESTED TRACT - 13.704 ACRES (7.6%)
	SCHOOL - 20.00 ACRES (11.2%)
TOTAL - 179.10 ACRES	
	POTENTIAL OPEN SPACE

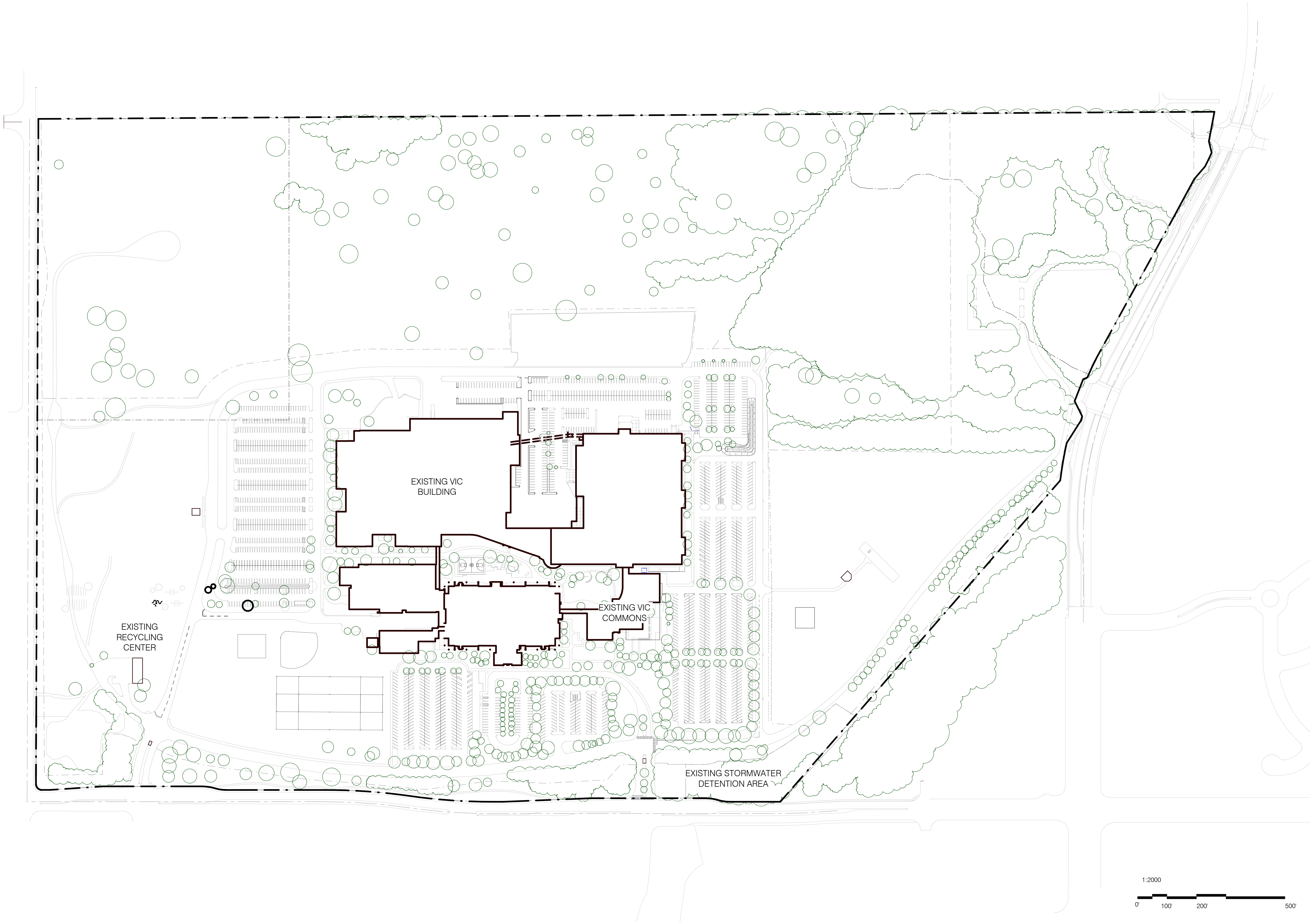
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URBAN DESIGN + MASTERPLAN ARCHITECT ShoP ARCHITECTS 233 BROADWAY 11TH FLOOR NEW YORK, NY 10029 Tel 212.889.9005	MASTERPLAN LOCAL ARCHITECT EL DORADO ARCHITECTS 1623 NW MARSHAL STREET PORTLAND, OR 97209 Tel 971.266.9665
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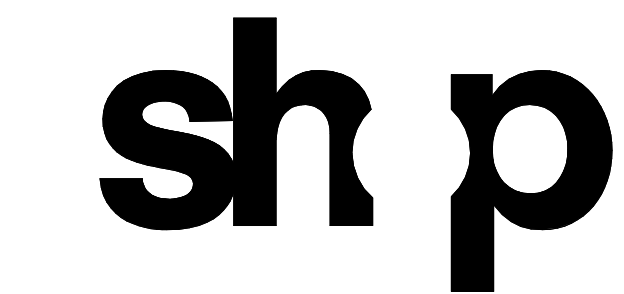
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BOUNDARY LEGEND	
	EXISTING PARCEL BOUNDARY

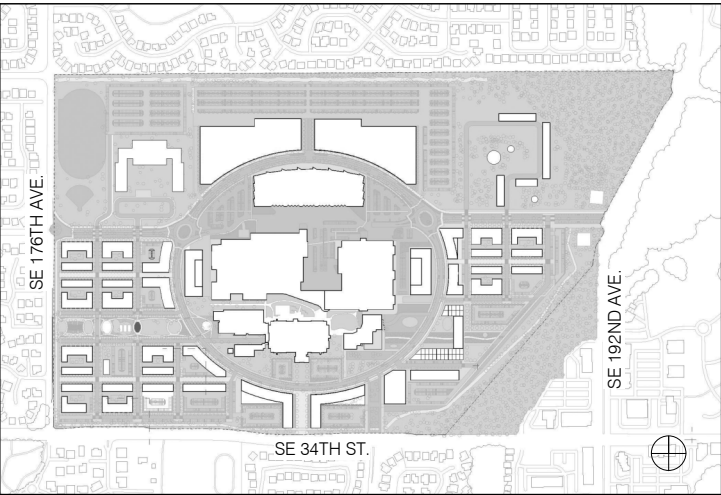


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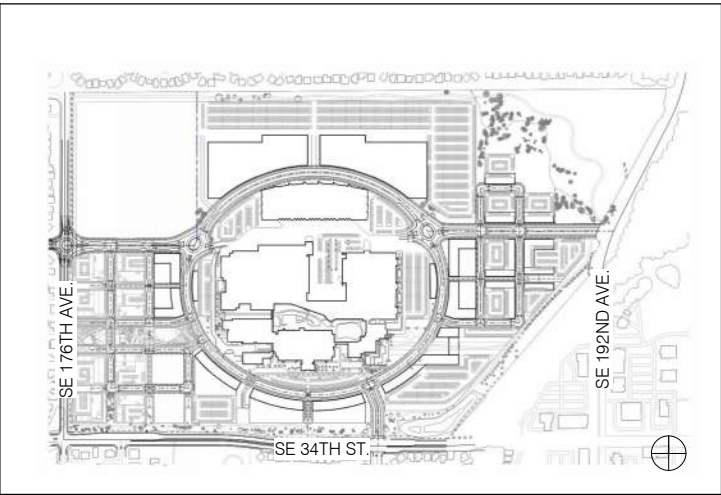
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tel 503.226.2921	tel 503.226.2921

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LEGEND

- OPEN SPACE
- POTENTIAL OPEN SPACE LINKAGE AREAS (NOT INCLUDED IN OPEN SPACE CALCULATIONS)
- POTENTIAL SCHOOL OPEN SPACE (NOT INCLUDED IN OPEN SPACE CALCULATIONS)

GENERAL NOTES:

- BUILDING FOOTPRINTS ARE ILLUSTRATIVE AND SUBJECT TO CHANGE.
- OPEN SPACE AREAS AND LINKAGE AREAS ARE CONCEPTUAL AND SHOWN TO ILLUSTRATE GENERAL PLANNING INTENT. THE LOCATIONS AND SIZE OF EACH OPEN SPACE AREA WILL BE REFINED AT THE SITE DEVELOPMENT STAGE.

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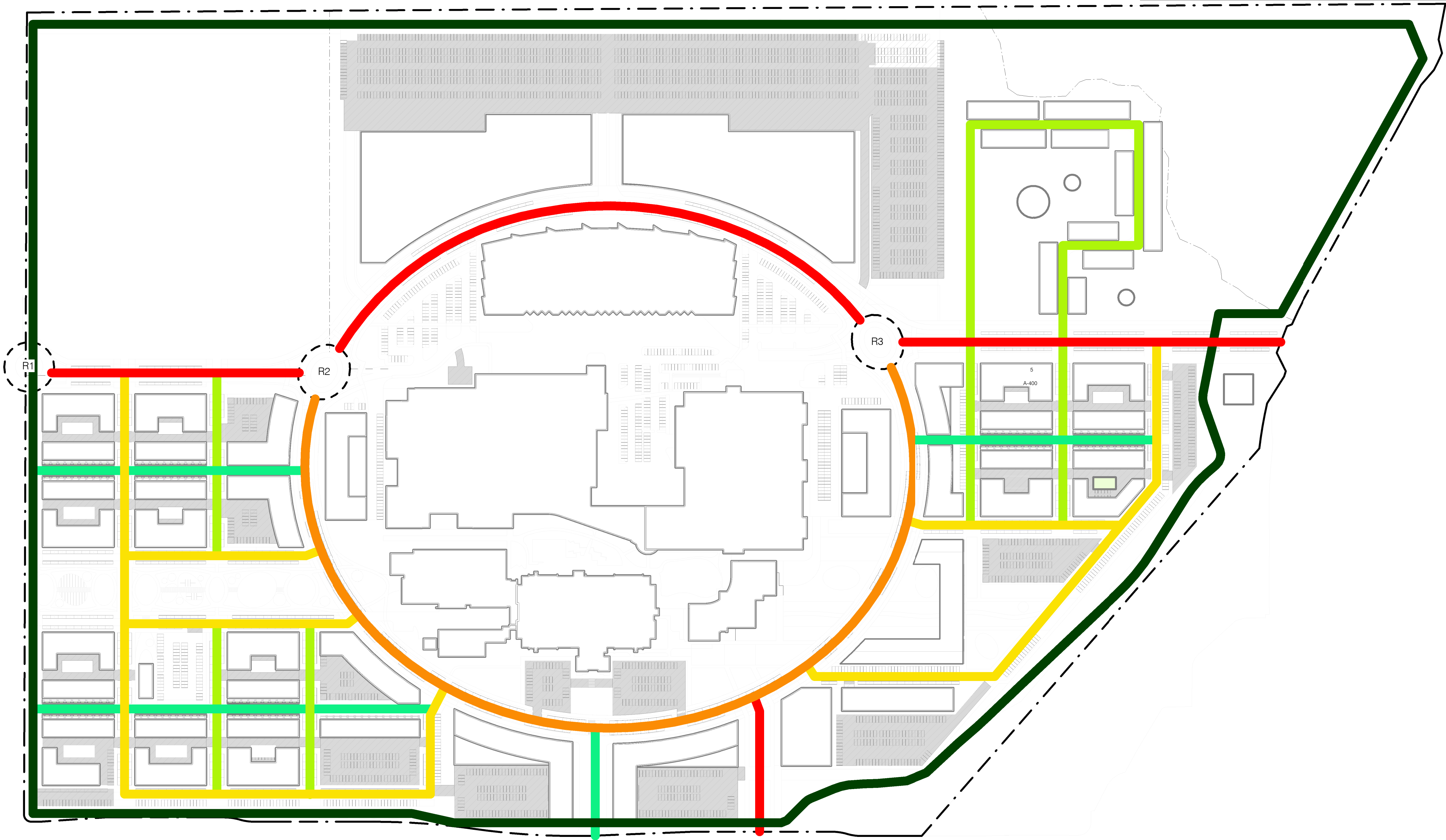
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GENERAL NOTES:

1.
- LOCATION OF STREET TYPES 04 LOCAL ACCESS CONNECTIONS AND 05 PEDESTRIAN LANEWAYS ARE ILLUSTRATIVE AND SUBJECT TO CHANGE.
2.
- BUILDING FOOTPRINTS ARE ILLUSTRATIVE AND SUBJECT TO CHANGE.
3.
- LOCATION OF TRAIL IS ILLUSTRATIVE AND SUBJECT TO CHANGE. TRAIL LOCATION IN SCHOOL PARCEL AND FORESTED TRACT ARE SUBJECT TO COORDINATION WITH EVERGREEN SCHOOL DISTRICT AND CITY OF VANCOUVER.
4.
- REFER TO SHEET 007 FOR CORRESPONDING STREET SECTIONS.

MOBILITY LEGEND

- STREET TYPE 01 - MAIN STREET ALONG LOOP
- STREET TYPE 02 - SLOW STREET ALONG LOOP
- STREET TYPE 03 - LOCAL STREET/NEIGHBORHOOD LOOP
- STREET TYPE 04 - LOCAL ACCESS CONNECTIONS
- STREET TYPE 05 - PEDESTRIAN LANEWAYS
- ROUNDBABOUT
- SURFACE PARKING LOT
- TRAIL - REFER TO SHEET 008



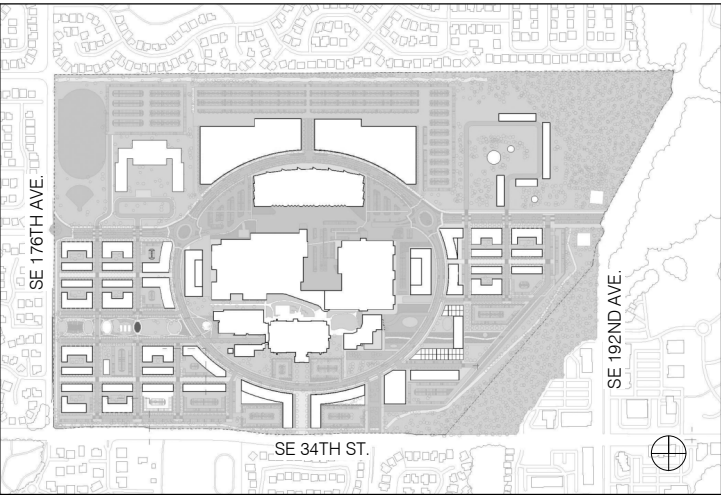
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STREET SECTION LEGEND

- | | |
|---|---|
|  | TRAVEL LANE |
|  | ON-STREET PARKING / FLEX LANE
MAY CONTAIN BULB-OUTS AT INTERSECTIONS |
|  | SIDEWALK |
|  | SHARED VEHICULAR/BICYCLE/PEDESTRIAN ACCESS |
|  | MEDIAN/TURN POCKET |
|  | LANDSCAPE ZONE |
|  | CYCLE TRACK |
|  | OUT OF STREET SCOPE, SEE PLAN |

APPENDIX B

NARRATIVE

Vancouver Innovation Center Master Plan Revision

Vancouver, Washington

A Land Use Application For:
**Major Revisions to the
Vancouver Innovation Center Master Plan**

Submitted: May 5, 2023

Prepared for:
The VIC Building Owner LLC
505 Fifth Avenue, 27th Floor
New York, NY 10017
Contact: Jennifer Rabina
Phone: 212-680-4500

Prepared by:
DOWL
7200 NE 41st Street, Suite 204
Vancouver, WA 98662
Contact: Jessica Herceg, Senior Planner
Phone: 971-280-8653



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Figure 4. North Edge Condition with Single Family Uses – Current VIC Master Plan

Figure 5. North Edge Condition with Proposed Open Space – Revised VIC Master Plan

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Table 1. Revised VIC Master Plan Parking Ratio

I. Introduction

General Information

Applicant:	The VIC Building Owner LLC 505 Fifth Avenue, 27 th Floor New York, NY 10017 Contact: Jennifer Rabina Phone: 212-680-4500 Email: jrabina@rabina.com
Prepared by:	DOWL 7200 NE 41 st Street, Suite 204 Vancouver, WA 98662 Contact: Jessica Herceg Phone: 971-280-8653 Email: jherceg@dowl.com
Property Owner:	The VIC Building Owner LLC 505 Fifth Avenue, 27 th Floor New York, NY 10017 Contact: Josh Rabina Phone: 212-398-2030 Email: josh@rabina.com
Project Location	18110 SE 34 th Street
Parcel ID Numbers:	126455-000; 126816-000; 986056-494 and 986060-362
Zoning:	Mixed Use (MX)
Comprehensive Plan:	Commercial (COM)
Project Site Area:	Approximately 179 acres

II. Mixed Use Master Plan Executive Summary

Existing Conditions

The Vancouver Innovation Center (VIC) is the site of a mixed-use master plan located at the former Hewlett Packard (HP) industrial complex, encompassing an approximately 179-acre site located at 18110 SE 34th Street. The site is bound on the north by the Clearmeadows and Fisher's Grove residential subdivisions, on the south by SE 34th Street, on the east by SE 192nd Avenue and on the west by SE 176th Avenue. The site currently has six (6) existing buildings totaling approximately 715,000 square feet (SF), along with associated surface parking and circulation. These buildings were built in the 1980s and 1990s by Hewlett-Packard. Since Hewlett Packard's departure from the site, the interior of these buildings has been updated and leased to a variety of tenants with operations ranging from research and development, light manufacturing, high-tech machinery repair, and other industrial/commercial employment uses. Access to the site is provided via SE 34th Street. A private vehicle circulation route extends north into the site from the signalized intersection of SE Hiddenbrook Drive and SE 34th Street along the site frontage. The private road loops around the existing VIC building and connects with SE 34th Street at a stop-controlled intersection near the southwest corner of the site.

The former Hewlett Packard campus was subject to a Development Agreement beginning in 2001. A series of amendments occurred prior to the applicant's purchase of the property in 2020. The VIC multiple building employment focused Mixed-Use Master Plan, Comprehensive Plan Amendment (CPA), Zone Change Request and Third Amended and Restated Development Agreement (Restated DA) were approved concurrently by the Vancouver City Council by Ordinance 4346 on August 16, 2021. With the approval of the development agreement and an associated Comprehensive Plan Amendment/Zone Change, the zoning designation changed to Mixed Use (MX) with a Commercial (COM) comprehensive plan designation. See Figure 1 below for the current VIC Master Plan.

Since approval of the current VIC Master Plan, the VIC Building Owner LLC (applicant) has received Site Plan Review and construction document approvals for a new 200,981 square foot industrial building, referred to as VIC Building North, to be located immediately north of the existing buildings. The applicant completed an exempt land division to establish a discrete parcel for VIC Building North on December 6, 2022, however a new parcel number has not yet been assigned by Clark County. The documentation was recorded under Clark County Auditor's File Number 6094243 and is on file with the City of Vancouver under File LUP #82838.

Project Description

The applicant is requesting City of Vancouver (City) approval for master plan revisions to amend elements of the current VIC Master Plan. The revised master plan design consolidates industrial areas to optimize opportunities for employment-generating development without reducing the number of jobs provided for in the current master plan, provides a higher level of integration of uses to allow for greater density, thus creating an opportunity to provide more open space, and introduces a new roadway loop geometry at the center of the VIC that establishes a mixed-use center at the core of the site. The revised master plan is included as Sheet 003 of the Master Plan Design Set (Appendix E) and reflects the proposed land use area configuration.

The land use areas (LUAs) on the site include a school (approximately 20 acres), residential area (approximately 38 acres), light industrial/employment area (approximately 74 acres), mixed use area (approximately 33 acres) and a 13.7-acre forested tract. Potential open space areas are reflected across the Residential LUA (RLUA), Mixed-Use LUA (MX LUA), and Light Industrial LUA (IL LUA), and School LUA (S LUA),

but acreage and boundaries for these future open space areas are conceptual and will be refined at site development.

Noteworthy changes to the master plan include:

- A central right-of-way loop or “ring road” is proposed for main site circulation. The northern arc of the loop will serve as the SE 29th Street collector.
- Reconfiguration and relocation of land use areas to achieve the desired product type mix and scale in each LUA and provide greater integration of uses throughout the site. The consolidation allows for the development of large-footprint light industrial buildings in the IL LUA to optimize opportunities for employment-generating development and is critical to achieve both the Project’s and the City’s employment generation goals.
- The plan improves the integration of the mixed-use elements of the project by changing from the “Town Center District” within the MX LUA to a mixed-use corridor along the proposed ring road which serves as the gravitational center of the revised master plan and contemplates a substantial public plaza opposite the existing VIC Commons. The revised master plan will incorporate all necessary changes for the VIC and will not propose a separate/future master plan revision for a Town Center district within the master plan area.
- Single Family Residential (SFR) and Multi-Family Residential (MFR) land use areas (LUAs) are now consolidated and listed as “Residential Land Use Area (R LUA)” and the applicant has removed detached single family residential use from the plan.
- The master plan anticipates an overall increase in open space and will provide approximately 24 acres of open space across the master plan area including an approximately 13.7-acre forested tract. Open space projections in the revised plan represent a 26% increase over the 19 acres proposed in the current master plan. To allow greater design discretion in the precise limits of open space with future site development, the applicant is proposing to represent open space within the plan as an overlay rather than a discrete Open Space LUA, a common approach with master plan entitlements.
- The forested tract and the school parcel are identified independent of other LUA’s to reflect the separate ownership of the school parcel by the Evergreen School District and the applicant’s establishment of a tract for forest preservation. While the forested tract boundary has been altered in the revised master plan—a project arborist has made recommendations to better preserve key tree stands—the acreage of the tract has been retained.
- As opposed to the current master plan, which segregated rights of way for SE 29th Street and SE 184th Avenue from LUA acreages, the proposed revision plan has assumed that all rights of way will be internal to land use areas, similar to how rights of way would be treated in a zoning context.
- The revised master plan proposes a more fluid approach to phasing, whereby the size, location, and order of development within the property be determined by the applicant so that they may respond in real time to market conditions and demand.

New Employment Square Footage

The master plan revision proposes construction of a minimum of 600,000 square feet of gross floor area for employment uses.

Open Space

The applicant anticipates providing approximately 24 acres of open space, including the approximately 13.7-acre Forested Tract. Sheet 004 of the Master Plan Design Set (Appendix E) illustrates potential open spaces, including a two-mile multi-use trail around the entire perimeter of the property. Distinct cross sections are provided as Sheet 007 (Appendix E) to illustrate the open space design at key locations in the site, including the northern site edge. Other open space features include a neighborhood park within the Residential LUA in the southwest corner of the site and a town plaza in the southeast corner.

Residential Units and Density

The revised master plan will consolidate the Single-Family Residential LUA and Multi-Family Residential LUA into a single, non-contiguous Residential LUA. The revised master plan proposes a maximum of 1,800 dwelling units which can be constructed within either the R LUA, the MX LUA, or the IL LUA, with a maximum of 100 dwelling units allowable within the IL LUA. The proposed increase in residential density is in response to the City's continuing concern about housing availability, as well as to market demands for housing co-located with the future businesses on the site. In addition, rather than specify quantities of distinct housing types (apartments, townhomes, etc.) within each LUA, the revised master plan proposes to build housing types in response to market demand, limited to the residential housing types permitted within the VMC. Single-family detached homes, however, will be removed from the master plan.

The current and revised master plans are classified as "multiple building mixed use master plan" pursuant to VMC 20.430.060.C. Figures 1 and 2 are the Current VIC Master Plan and the proposed Revised VIC Master Plan, respectively. The figures reflect the requested changes to the land use area configuration within the site.

Figure 1. Current VIC Master Plan

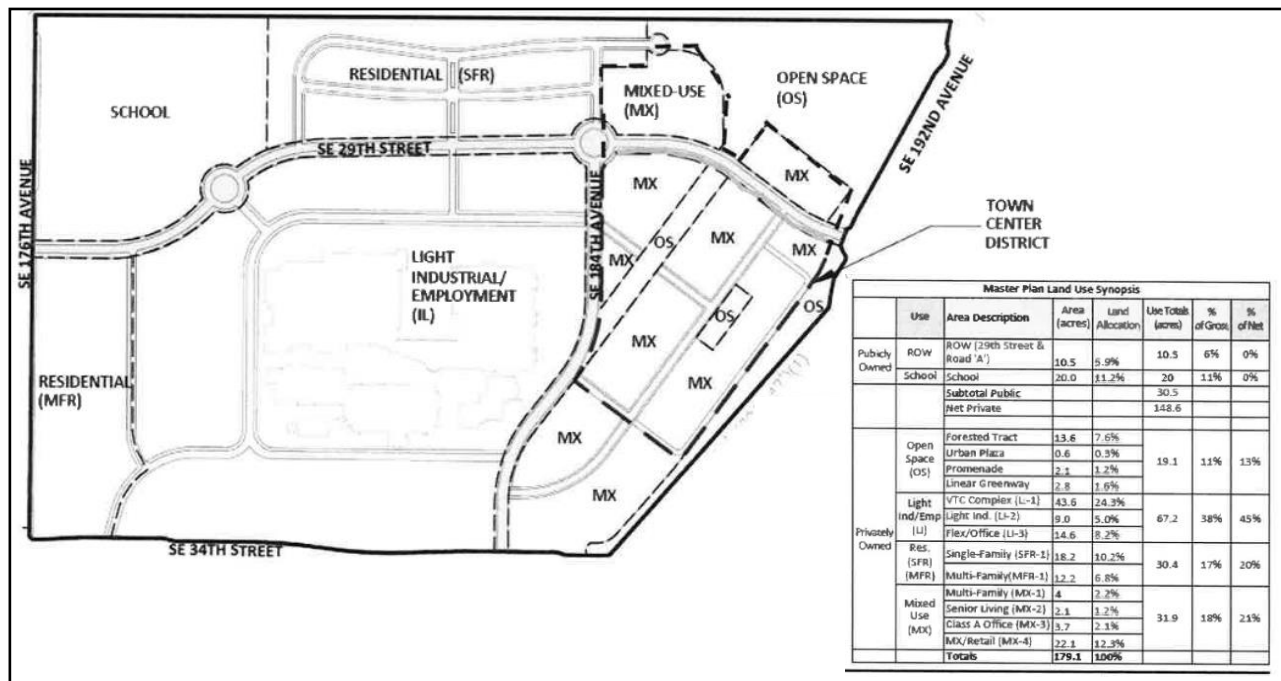
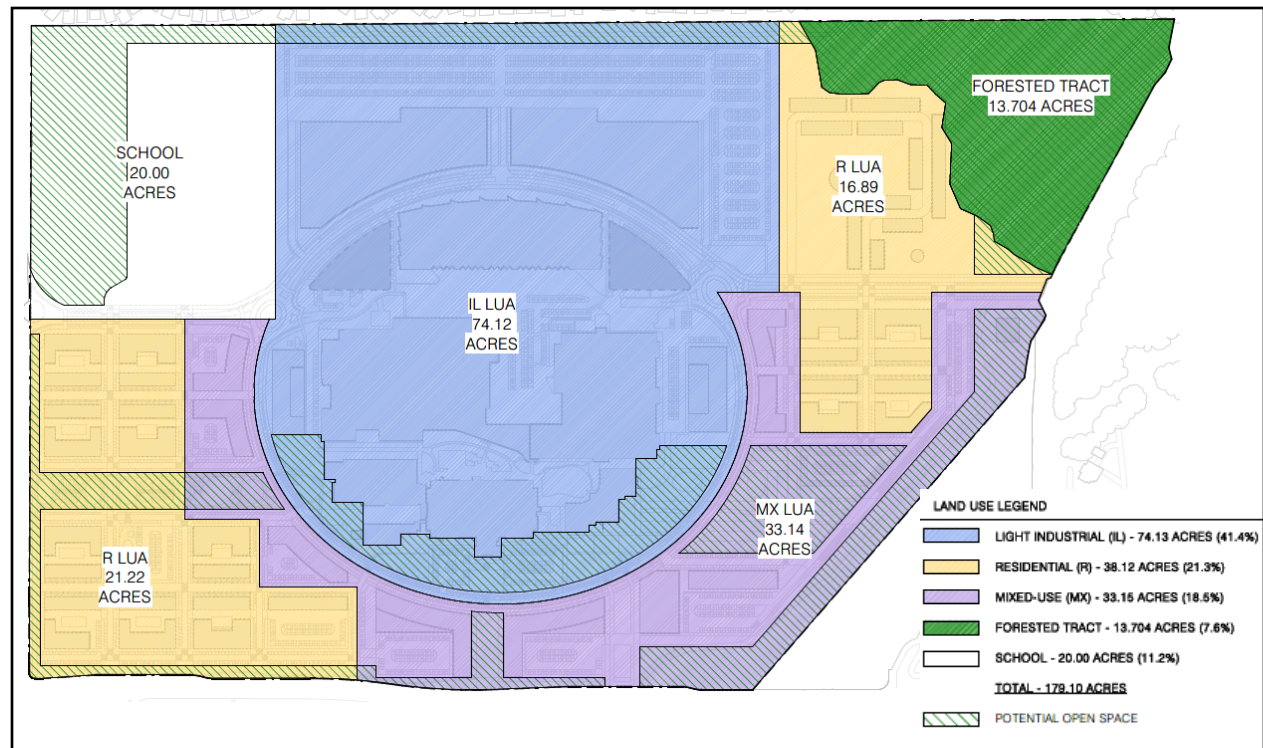


Figure 2. Revised VIC Master Plan



Phasing and Timing of Transportation Improvements

The Revised VIC Master Plan proposes a more fluid approach to phasing to provide flexibility to pursue discrete developments in response to market conditions and needs. Synchronicity standards outlined in Section 6.4 of the Restated DA will be amended to align with updated unit counts but will largely be maintained. It should be noted that a phasing plan is reflected in the Traffic Impact Analysis (TIA), prepared by Kittelson and Associates (Appendix D) to better understand the timing and trigger for transportation improvements. The plan is not intended to suggest that phases must build out in the sequence shown.

III. Applicable Review Criteria

The proposal is subject to the Section 7 Master Plan Revision provisions of the 2021 Vancouver Innovation Center Third Amended and Restated Development Agreement (Restated DA), and applicable goals and policies within the Vancouver Strategic Plan, and Vancouver Comprehensive Plan, respectively and Memorandum of Understanding between the City and the Developer proposing modifications to the Development Agreement currently being finalized. The applicable approval criteria of the Vancouver Municipal Code (VMC) Section 20.430 Mixed Use Standards and District are set forth below with findings demonstrating the project's consistency with these provisions that govern the respective request. Provisions that are not applicable to this proposal are not included.

Vancouver Innovation Center Third Amended and Restated Development Agreement

DA Section 7 Master Plan Revisions

There shall be three categories of Master Plan revisions: Major, Minor, and De Minimis Revision requests. Developer may request Major revisions to the Master Plan (including the Town Center Amendment discussed in section 6.11 of the Restated DA) no more than once in any calendar year, unless mutually agreed to by the City. All proposed revisions shall be considered under the approval criteria identified below.

Response: Pursuant to the Restated DA Section 7, the applicant is requesting a major master plan revision to the current VIC master plan. The primary objectives of the proposed changes to the master plan are to (a) consolidate industrial areas to optimize opportunities for employment-generating development and (b) more substantially integrate development types to allow for greater density, which is a key goal for the City, thus creating an opportunity to provide more open spaces throughout the site to enhance design and placemaking opportunities. As stated in the project summary, the applicant has integrated the "Town Center District" into the mixed-use corridor along the proposed ring road. The Revised VIC Master Plan will incorporate all necessary changes for the VIC and will not propose a separate/future master plan revision for a Town Center district within the master plan area. Responses to the applicable approval criteria for plan revisions are provided below.

DA Section 7.1 Major Revisions

Requests to modify or revise the Master Plan as follows shall be subject to a Type IV review process.

- a. **Greater than 10% increase in total residential units on the Property;**
- b. **A reduction of non-residential square footage on the Property by more than 10%;**
- c. **Reduction or increase of parking square footage by more than 10%;**
- d. **Greater than 10% decrease in the amount of open space approved in the Master Plan;**
- e. **New uses not included in the Master Plan and this Restated DA;**
- f. **Changes in the boundaries between LUAs that alter the total acreage of any LUA by more than 10%;**
- g. **Development of the School LUA for any purpose other than School, to modify the use limitations in Exhibit D and address the requirements of RCW 20.430.060.C.2.e.4;**
- h. **A change from a single family detached home to any other structure, along the northern boundary of the SFR LUA and the abutting neighborhood; and**

i. A reduction in size, change of location, or removal of the open space (treed) area between the SFR LUA and the abutting neighborhood.

Response: As detailed in the project summary above, a series of changes are proposed to the master plan site which meet criteria noted above and thus require a major revision subject to a Type IV process. Specific adjustments which require a major revision include:

- Increasing the maximum residential dwelling unit count from 1,200 units in the current VIC Master Plan, to a maximum of 1,800 residential dwelling units in the Revised VIC Master Plan represents a 50% increase in total residential units on the site.
- The Revised Master Plan proposes removal of the SFR LUA along the northern boundary of the site and the removal of single family detached homes from the master plan.
- The Revised Master Plan proposes significant changes to the street network, most notably the addition of a ring road at the center of the site. Further, the plan does not segregate rights of way for SE 29th and SE 184th Avenue from LUA acreages but rather assumes that all rights of way will be internal to land use areas. The combination of these refinements results in a change to the boundaries and total acreage of the MX, R and IL LUAs beyond 10%.

The applicant presented these changes to City staff through a pre-application conference. Upon review staff concluded that the proposed adjustments to the plan require a major modification subject to a Type IV process and City Council approval.

DA Section 7.4 Approval Criteria

All major, minor, and de minimis changes shall be reviewed according to the following approval criteria:

a. The proposed change meets the intent of the adopted Master Plan;

Response: The intent of the adopted master plan was (a) to reimagine the approximately 179-acre site as a “20-minute” mixed use neighborhood, (b) to meet the growing demand for light industrial, manufacturing, and commercial spaces, (c) to develop a distinct, authentic identity on the site, (d) to create a community with that connects both new and existing neighborhoods and (e) to design sustainably.

The revised master plan continues to achieve the intent of the adopted master plan with the primary objectives being (a) the consolidation of the industrial areas to optimize opportunities for employment-generating development, (b) more substantially integrate uses on campus, including the provision of additional multi-family housing, to align with the City’s density goals, (c) provide a larger, more contiguous open space network throughout the site to enhance design and placemaking opportunities, and (d) streamline the internal street network, and separation of traffic flow to enhance integration of the master plan site and neighboring residential subdivisions.

b. The proposed change will not result in a substantial impact to transportation, water, sewer or storm water management systems, after considering all mitigation plans;

Response: The Revised VIC Master Plan does not anticipate significant impact or demand to transportation, water, sewer or stormwater management systems and infrastructure as further described below.

The Restated DA between the applicant and the City vested trips for the Current VIC Master Plan. Per the Restated DA, vested net new trips include a total of 26,982 average daily trips (ADTs), 2,088 AM peak hour trips, and 1,991 PM peak hour trips. On- and off-site transportation capacity mitigation is predicated on the number of AM and PM peak hour trips while transportation concurrency corridor mitigation is determined based on PM peak hour trips.

The April 28, 2023, Traffic Impact Analysis (TIA) prepared by Kittelson and Associates, Inc. (Appendix D) demonstrates that the proposed uses within the Revised VIC Master Plan will result in a modest increase in weekday AM peak hour trip generation (141 net new trips added) and will not change the total net new PM peak hour trip generation compared to the Current VIC Master Plan. As indicated on Table 4 of the TIA, the Revised VIC Master Plan is estimated to generate 2,229 net new weekday AM peak hour trips and 1,991 net new PM peak hour trips. The TIA updated on- and off-site impacts of the project based upon the revised peak hour trip generation and recalibrated identified mitigation as appropriate. No new off-site traffic mitigation improvements were identified.

As requested by City Transportation staff in the December 1, 2022, Pre-Application Conference Summary, the TIA addresses compatibility and coordination with the City of Vancouver's on-going *SE 34th Street Safety & Mobility Project*. Future conditions in the TIA are modeled to reflect City-anticipated transportation system changes along SE 34th Street to enhance safety-based mitigation needs and mobility for all users on the SE 34th Street corridor. The applicant also coordinated with staff to provide early opportunities to review and offer feedback on the proposed street network and roadway cross sections, including modifications to SE 29th Street, a major east west collector. The proposed Mobility Plan Streetscape Summary sheets included in Appendix B reflect comments offered by staff.

Water utilities are readily available to the overall VIC site and can be feasibly extended to provide potable water for the future phased site buildout. Subsequent site plan approval for future phased development will adhere to applicable regulations and charges as necessary. As noted in the Revised Design Standards (Appendix F), the applicant will prioritize potable water use reductions, and efficiency strategies in its design through water-saving plumbing fixtures with future proposed buildings.

Sewer utilities are readily available to the overall VIC site and can be feasibly extended to provide service connections for the future phased site buildout. Subsequent site plan approval for future phased development will adhere to applicable regulations and charges as necessary.

An existing stormwater facility located in the southeast portion of the site treats surface runoff from the existing building and parking areas. The stormwater pond is designed to overflow to Fisher Creek during severe storm events. The existing facility will be maintained, matching the existing condition. New site development and disturbance of impervious surfaces within the approximately 179-acre VIC master plan site will comply with local and state stormwater management requirements including the implementation of erosion control, and low impact development (LID) Best Management Practices (BMPs) to reduce impacts on surface, ground water, runoff, and drainage patterns on the site.

As noted in the Revised Design Guidelines (Appendix F) the applicant is committing to manage stormwater on-site and promote surface water quality through native and adaptive plant selections to reduce irrigation, minimization of impervious surfaces and implementation of a surface stormwater strategy synopsis describing anticipated collection, treatment, and discharge strategies. This includes the implementation of low impact development (LID) Best Management Practices (BMPs) planned for future

development on the site. Subsequent site plan approval for future phased development will include erosion control mitigation measures during construction and post site buildout.

- c. **The proposed change will not result in adverse impacts to adjacent properties or uses, after considering all mitigation plans; and**

Response: The character of the periphery of the master plan site under the revised master plan will be generally consistent with the approved master plan with the exception of the northern boundary, where the plan has been revised to provide greater buffering and open space adjacent to this edge. Where the current master plan formerly proposed single-family uses at the site's northern boundary adjacent to the existing Clearmeadows and Fisher's Grove residential subdivisions, the proposed plan locates the IL LUA north of proposed SE 29th Street. To ensure compatibility with neighbors to the north, the Revised VIC Master Plan includes a significant approximately 65-foot-wide linear open space trail. Further, the plan contemplates placing parking lots to serve the IL between the open space and buildings, resulting in an approximately 265-foot horizontal separation between industrial buildings and the northern edge. Figures 1 and 2 below illustrate the north edge condition under the current and revised master plans.

Figure 3. North Edge Condition with Single Family Uses – Current VIC Master Plan

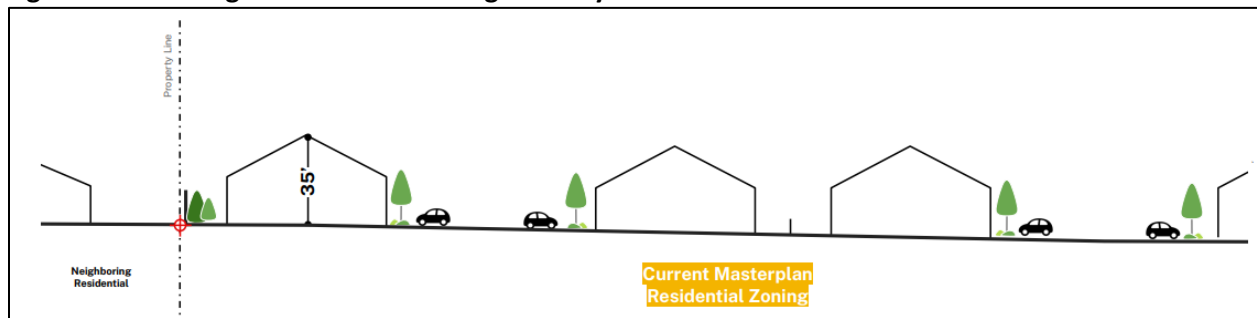


Figure not to scale.

Figure 4. North Edge Condition with Proposed Open Space – Revised VIC Master Plan

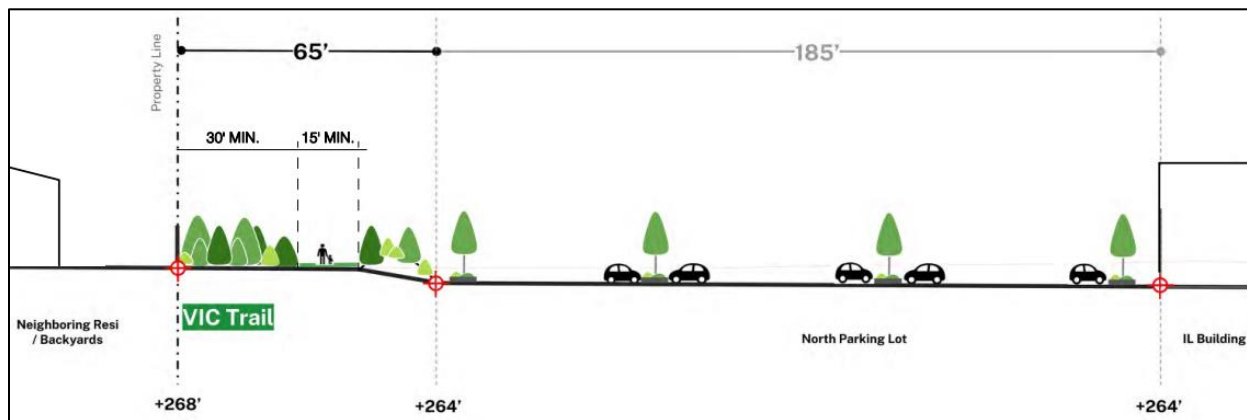


Figure not to scale.

- d. **The proposed change is consistent with Vancouver Municipal Code and Vancouver Comprehensive Plan.**

Response: The applicant demonstrates consistency with applicable criteria of the Vancouver Municipal Code, Vancouver Strategic Plan and Vancouver Comprehensive Plan within this narrative.

Vancouver Municipal Code (VMC)

VMC Title 20 Land Use and Development Code

VMC 20.430.060 Mixed Use Standards and District.

C. Multiple Building Mixed Use Sites

2. Standards – Mixed Use Sites

- a. **Overall uses. Uses shall be allowed as indicated in the MX column of Table 20.430.030-1, except that automobile service stations and drive-through facilities shall be prohibited.**

Response: Similar to the current master plan, the revised master plan envisions employees living and working on the VIC campus within a “20-minute” neighborhood. The revised master plan design creates a better integration of uses whereby those living and/or working on the campus will now be within a five-minute walk of mixed-use opportunities and those living in the nearby neighborhoods will be within a 20-minute walk. Allowed land uses on the site are consistent with those provided in Vancouver Municipal Code for the most-closely analogous land use area. For example, the southwest corner will be designated residential land use area (LUA), near the residential neighborhoods to the west. The northern part of the property, which abuts a residential neighborhood, will have a school land use area, a linear open space that buffers an IL LUA, and an approximately 13.7-acre forested tract to be used as park space. The denser light industrial and mixed-use land use areas (LUAs) will generally be in the core, to the south, and to the east of the property, to ensure a smooth transition toward the more commercial areas along SE 192nd Avenue.

The majority of the proposed land use areas (LUAs) on the site are permitted outright in the MX column of Table 20.430.030-1 (e.g., uses such as general and medical offices, general retail, multi-family housing, parks/open space, and a school) with the exception of light industrial (IL) uses that comprise a large portion of the overall site. Within the IL LUA, the applicant is proposing a variety of light industrial land uses (e.g., research and development, manufacturing, and production) consistent with IL uses in VMC Table 20.440.030-1. These uses are intended to support and attract employment-based businesses on the site, and are consistent with the current tenant mix at the VIC

There are no automobile service stations or drive-through facilities proposed.

- b. **Site Mix. At least 20% of the combined gross floor area of the buildings proposed on the site shall be devoted to residential uses, and at least 20% to nonresidential uses. Parking garages or portions of garages devoted to residential or nonresidential uses may be counted towards this requirement, but surface parking may not.**

Response: The applicant is proposing residential uses throughout the site, primarily within the MX and R LUAs however, as many as 100 residential units may also be constructed within the IL LUA, consistent with

the Current VIC Master Plan. It is anticipated that the revised master plan will include approximately 2,407,798 gross square feet (GSF) of residential uses and 1,703,065 GSF of non-residential uses. Overall, the revised master plan is anticipated to provide a total of 4,110,863 GSF of building area, with approximately 59 percent of total building area for residential uses and approximately 41 percent for non-residential uses. Therefore, this standard is met.

- c. Functional integration of uses. Land uses in mixed use sites shall be selected and designed to encourage interaction among uses. Examples include but are not limited to commercial developments which are significantly used for shopping by on-site or adjacent residents or office workers.**

Response: Like the current approved master plan, the revised master plan has been designed to be a “20-minute neighborhood”, a term used to describe neighborhoods in which all of life’s daily needs—work, recreation, school, commercial services, etc.—are located within a 20-minute walk from home. The reconfigured LUA orientation further integrates uses across the site and as a result has ensured that all residential uses are within a 5-minute walk of a mixed-use site. The design is compatible with on-site and off-site uses while activating the site and optimizing use synergies. Examples of the applicant’s functional integration of uses on the site include:

- *Public schools* – The northwest corner of the development is designated for a 20-acre middle school site for the Evergreen School District. This new site, in combination with the existing Fisher’s Landing Elementary school located on the south side of SE 34th Street opposite the site, will provide K-8 educational services within walking distance of proposed residential uses within the project.
- *Outdoor public spaces* – The applicant has designed the site to provide active and passive recreation including the 13.7-acre forested tract in the northeast corner of the site, and a variable width trail along the perimeter of the project. Other opportunities for open space are contemplated across the site as reflected in the Potential Open Space plan.
- *Shared parking* –Significant expanses of surface parking exist from the former HP facilities. Because the peak parking period for the employment uses and residential uses are not the same, the applicant anticipates that surface parking for the light industrial LUA will be utilized for multiple use areas in an interim basis as the site builds out. As development occurs new parking areas will be constructed in concert with buildings and uses. Shared parking is expected to continue throughout the site including the use of on-street parking as well as the potential development of standalone parking facilities. Note that the City intends to provide dedicated parking for the Forested Tract adjacent to the site on additional land purchased from the applicant.
- *Gradation of use intensity* – The applicant has intentionally located residential-compatible land uses adjacent to the existing single-family residences to the west and north and has located the highest density use, the mixed use towards the center and southeast portion of the site, locations that are substantially shielded from off-site views from the north and from residences farther to the west. The MX LUA and IL LUA are oriented along the loop road and will have convenient access to SE 192nd Avenue, SE 176th Avenue and SE 34th Street which should minimize the need for vehicles to travel through residential areas to exit the site. The northern part of the property, which abuts a residential neighborhood, will have a school land use area, a linear open space feature that buffers IL LUA, and a park. Denser areas of light industrial and mixed-use land use areas are intentionally located in the core, to the south, and to the east of the property, to ensure a smooth transition toward the more commercial areas along SE 192nd Avenue.

d. Physical integration of uses.

- 1. All buildings and improvements on the site shall be located and designed to look and function as an integrated development and to encourage pedestrian travel between buildings and uses. Complete segregation of use types, such as placement of multiple commercial structures all on one side of a mixed use site and multiple residential structures all on the other, shall be prohibited.**

Response: The applicant has planned the project to ensure that uses will look and function as an integrated development. As reflected on the Proposed Land Use plan (Sheet 003) the project features a school site, consolidated IL LUA, two RLUA areas and a MX LUA which is concentrated in the southeast of the site and extends along the south half of the loop road ensuring that residential uses are within a short walk to services. The loop road, coupled with the pedestrian laneways and other proposed infrastructure, provides multi-modal connection between the uses while the Forested Tract, VIC Trail, Town Plaza and other potential open space areas identified on the Potential Open Space plan (Sheet 004) provide alternative connections between LUAs.

The Revised Design Guidelines included in Appendix F provide details regarding the design and character of future buildings to ensure high quality design within the development. In addition, the applicant plans to establish and maintain thematic elements throughout the development to solidify a sense of place throughout the project. These include uniform wayfinding signage, public street furniture elements (benches, waste receptacles, etc.), playground design, bicycle racks, street lighting, street trees and other consistent treatments. The combination of land planning and implementation of district wide design guidelines will produce a well-integrated, cohesive development consistent with this standard.

- 2. Separate buildings shall be connected through pedestrian linkages delineated through landscaping, differentiated surface materials or texture. Delineation through striping alone shall not be considered sufficient.**

Response: Pedestrian linkages through the site will be delineated through designated laneways, landscaping and/or different surface materials. The precise treatments will be defined with future site plan review requests within each LUA.

- 3. One or more similar design characteristics among separate structures shall be provided, including but not limited to similar or complimentary building facades, surface materials, colors, landscaping, or signage.**

Response: The applicant has proposed limited revisions to the design guidelines approved with the current VIC Master Plan, primarily removing references to single-family detached dwellings, and other refinements to better align with the Revised VIC Master Plan. The Revised Design Guidelines are included as Appendix F. With adherence to the revised guidelines structures within the district will have complimentary building facades, surface materials, colors, landscaping, and signage. The Open Space Plan Sheet 004 (Appendix E) and the Mobility Plan Sheet 005 (Appendix E) illustrate the corridors that will facilitate bicycle and pedestrian travel between each development on the property. The applicant will

ensure each site plan, plat or other preliminary entitlement application is consistent with these design standards.

4. **One or more outdoor publicly accessible features shall be provided to encourage interaction among residents or users of the site, including but not limited to courtyards, delineated gathering spaces, or seating areas. These areas may be paved and/or landscaped and must comprise at least 5% of the total site area and be centrally located within the site to fullest extent possible.**

Response: The applicant is proposing numerous outdoor publicly accessible open space areas throughout the project as indicated in the Potential Open Space plan Sheet 004 (Appendix E). Exact dimensions and boundaries of publicly accessible open space areas are not yet known; however, the applicant intends to provide a neighborhood park, town plaza and other open space areas along the south portion of the loop to establish a band of open space and publicly accessible amenities from east to west. A perimeter trail has also been identified and will vary in width and character along different site boundaries as reflected on the Enlarged Trail Sections plan (Sheet 007, Appendix E). The revised plan maintains the 13.7-acre forested tract identified in the prior plan. The applicant is diligently working with the City to negotiate a Purchase and Sale Agreement to sell the Forested Tract to the City to be developed into a municipal park. The applicant previously recorded a deed restriction preserving the Forested Tract and limiting its development as outlined in the current Master Plan. The applicant has committed to providing a minimum of 24 acres of open space features within the master plan site which equates to approximately 13.4 percent thereby exceeding the minimum required.

e. **Development and building density/intensity standards.**

1. **Residential buildings shall achieve a minimum density of at least 12 units per net acre, as measured by the total number of residential units divided by the portion of the site devoted to residential use, not including public or private streets, or critical areas and associated buffers on that portion.**

Response: After subtracting out the school site (20-acres), the proposed forested tract and open space area (24-acres), right of way (21.79-acres) and industrial use area (74.12-acres) from the 179-acre site area total, the net master plan area available for residential use is approximately 39.09 acres and is comprised of both the R LUA and MX LUA. With an anticipated maximum buildout of 1,800 residential dwelling units, the resulting density within residential and/or mixed-use areas is approximately 46.05 units per acre, thereby exceeding the minimum density standard above. Given the availability of the IL LUA for up to 100 dwelling units per this proposed master plan, the density of the residential area may ultimately be slightly below this 46.05 units per acre target but will not affect the project's compliance with this provision. Specific compliance with the 12 units per net acre will be demonstrated with each Site Plan Review request within the master plan.

2. **Non-residential buildings shall achieve a floor area ratio (FAR) of at least .5, as measured by the gross square footage of the nonresidential buildings divided by the site area or areas devoted to nonresidential use. Individual nonresidential buildings and associated attached structures shall be counted as floor space. The site or portion of the site**

devoted to those buildings, not including public right-of-way, parks or pedestrian trails, shall be counted as site area. Parking garages may be counted towards the FAR requirement provided that 60% of the ground floor is devoted to an office or commercial use.

Response: Because the project is planned for highly integrated mixed-use buildings, the only LUAs that will contain minimal to no residential component are the School LUA and the IL LUA. Consistent with the Current VIC Master Plan, the applicant proposes to apply the development standards most analogous to each LUA within each LUA, thus the .5 FAR does not apply to the Residential, School, or Light Industrial LUAs within the Revised VIC Master Plan.

3. Development standards shall be as indicated in the MX column of Table 20.430.040-1.

Response: The applicant is proposing to apply development standards for these areas that align with existing development standards for comparable land use districts in the City as provided for and modified in the Restated DA. For example, the applicant is proposing to apply the light industrial development standards found in VMC 20.440, for intended light industrial uses and R-30 development standards outlined in VMC 20.420 for the RLUA. Limited exceptions to those standards were authorized with the Current VIC Master Plan as detailed in Exhibit D of the Restated DA. Updates to the Restated DA are anticipated to align with the Revised VIC Master Plan proposal.

4. Screening. Non-residential uses, including off-street parking, which directly abut off-site single-family residential zones without an intervening public or private street shall provide screening as per 20.440.030(C)(3).

Response: The only instance in which non-residential uses will abut a single-family zone without an intervening street is along the northern boundary of the VIC site where the School and IL LUA's abut an existing single-family residential neighborhood. As reflected in the Master Plan Design Set (Appendix E) a minimum 65-foot-wide open space area is proposed along the northern boundary of the site and will include a minimum 30-foot-wide vegetative buffer, a minimum 15-foot-wide trail, with an approximate 20-foot transitional area between the trail and future parking areas for buildings within the IL LUA. The combination of buffer and horizontal separation will adequately screen the neighborhood from the non-residential uses proposed within the site.

f. Frontage standards.

1. Buildings shall be placed to encourage pedestrian activity within and along the site. No more than 50% of each site frontage along arterial or collector streets shall be devoted to off-street parking or vehicular access. Portions of site frontages devoted to off-street parking or access shall include design features such as landscaping or columns so as to maintain visual continuity of the street and sidewalk to the fullest extent possible.

Response: All three roads on the perimeter of the site are either a collector (SE 176th Avenue) or an arterial (SE 34th Street and SE 192nd Avenue). In addition, the northern half of the loop road, SE 29th

Street, is proposed as a new urban collector arterial which will run east- through the site. Tentative massing and development diagrams reflected on the Master Plan Design Set (Appendix E) indicate that the use along the site frontages will be predominantly occupied by buildings and will likely incorporate landscaping and pedestrian facilities between buildings and the right of way. While some parking and vehicular access areas will be present, they will not occupy more than 50% of the site frontage. Demonstration of compliance with this provision will be provided at the site plan review stage with each future development request. The applicant has sold the school LUA to Evergreen School District (ESD). ESD will address this frontage requirement as part of its school site development proposal.

- 2. At least one fully functional and visibly identifiable public entrance shall be provided along the frontage of each building adjacent to an arterial or collector street.**

Response: The property will be designed to comply with this provision. The site is bounded by a collector (SE 176th Avenue), and arterial streets (SE 34th Street and SE 192nd Avenue). Due to SE 29th Street's designation as an urban collector arterial, minimal access points have been proposed to facilitate vehicular circulation to the north IL LUA area. Roundabouts along the loop road will provide access to an internal private vehicular accessway to serve the existing VIC and VIC Building North which recently obtained construction plan approval. Buildings fronting these higher classification roadways can incorporate public entrances to comply with this criterion.

- 3. Blank walls longer than 30 feet without windows or an unbroken series of garage doors are not permitted on any street frontage, including frontage to controlled access highways and freeways.**

Response: Per the Revised Design Guidelines (Appendix F), blank walls longer than 20 feet without windows or an unbroken series of garage doors are not to be permitted on any street frontage. Demonstration of compliance with this provision will be provided at the time of site plan review submittal for future developments.

- g. Multiple parcel sites. Mixed use sites may be developed pursuant to this chapter on sites which consist of multiple parcels and internal public or private roads, provided that all applicable standards herein are met. Pedestrian connections required by 20.430.060 (C)(2)(d)(2) crossing internal arterial streets shall not require differentiated surface materials if striping is provided.**

Response: The applicant's request involves a mixed-use master plan on a site with multiple parcels. Demonstration of project compliance with the standards of this chapter is provided throughout this narrative and the remaining application materials.

- h. Parking – The following shall apply in addition to the standards of VMC 20.945.**
 - 1. The maximum number of spaces provided shall be no more than 125% of applicable minimum requirement for sites 10 acres or less, and no more than 115% of the minimum for sites larger than 10 acres.**

Response: The current master plan developed parking strategies centered around utilization of existing surface parking facilities. As reflected in the revised master plan, many of the existing parking facilities

will not be retained. Most of the facilities located to the south, east and west of the existing VIC will be incrementally demolished as development occurs within the site. New parking lots, stalls, and/or facilities will be constructed with each phase of new development. The applicant will provide parking consistent with the ratios specified in the Restated DA with the following exceptions:

- Given that the applicant anticipates having studio apartments on campus, the applicant proposes a parking ratio of 1 stall/studio dwelling unit. The current DA does not specify a parking ratio for studio apartments.
- As noted during the pre-app, there was a scrivener's error in the approved DA stating that parking in the IL LUA was to be at a minimum of 4.5 stalls/1,000 SF. This should have stated that 4.5 stalls/1,000 SF was the maximum allowed. Applicant proposes to adhere to VMC 20.945.070 requirements as the minimum for parking in the IL LUA. The maximum for the light industrial LUA is being removed and not being reinstated as 4.5 stalls/1,000 SF in order to allow the applicant to respond to tenant/market demand
- Uses in all LUAs may count available on-street and off-site parking spaces which are within 1,000-foot walking distance (4 minutes) to the development toward the minimum on-site parking requirement.
- The table below summarizes the proposed parking ratios to be used throughout the Revised VIC Master Plan site.

Table 1. Revised VIC Master Plan Parking Ratio

Program	Prior DA (Masterplan 1.0)	Proposed for Masterplan 2.0	Proposed Change
SFR	1 – 2 stall/DU	1 stall/DU min.	No change
MFR	1.5 - 2 stall/DU	1.5 stall/DU min.	No change
SFR/MFR/MX/IL Senior	0.3 stall/DU	0.3 stall/DU min.	No change
SFR/MFR/MX/IL Studio	N/A	1 stall/DU min.	Masterplan 1.0 did not address parking ratio for studios so proposing to include one
MX Non-residential	2 – 2.5 stalls/1,000 SF	2 – 2.5 stalls/ 1,000 SF	No change
IL Non-Residential	4.5 stalls/1,000 SF	min per VMC 20.945.070; remove maximum	Reduced minimum; removed maximum

2. **The Planning Official may authorize shared or joint use parking among uses which are likely to be visited with a single driving trip and are adequately linked to their parking, provided an adequate legal agreement for the joint parking usage for the duration of the arrangement is recorded.**

Response: The applicant is anticipating the use of shared or joint parking across the site. The variety of uses proposed within the site do not have coinciding peak parking demands and therefore, provide a unique opportunity to allow shared parking. Additionally, as noted above, the applicant is seeking the use

of shared off-site parking facilities and on-street parking to satisfy parking demand for each use. Instances such as these in which the applicant seeks joint parking will be requested in conjunction with site plan review requests for future development actions. As noted previously, the City intends to provide its own dedicated parking for the Forested Tract so shared parking will not be needed for that use.

- 3. The Planning Official may authorize shared or joint use parking among uses which have differing hours of operation or usage, such as residences and offices, provided an adequate legal agreement for the joint parking usage for the duration of the arrangement is recorded.**

Response: As discussed above, the applicant anticipates that joint parking will be utilized in instances where adjoining uses have different peak parking demands.

- 4. The Planning Official may authorize up to a 25% reduction in required parking if transit service is available to the site.**

Response: A request for reduced parking is not anticipated at this time. C-TRAN Route 37 provides loop service between SE 164th Avenue and Mill Plain Boulevard. Bus stops currently exist in both directions on SE 34th Street at SE 189th Avenue and on SE 192nd Avenue at SE 31st Street. The future intersection of SE 29th Street at SE 192nd Avenue is only approximately 800-feet north of the current bus stops at SE 192nd Avenue and SE 31st Street. Pedestrian facilities through the site will facilitate access to these bus stops to encourage the redevelopment of the site, and, in particular, the dense MX LUA at the center of the site. The applicant is interested in facilitating additional bus routes to and through the property, with C-TRAN's concurrence.

- i. Vesting**
Vesting and concurrency provisions shall be as indicated in 20.260.090 and 20.260.100.

Response: Vesting and concurrency has been addressed in previous development agreements for the site. Concurrent with the current VIC Master Plan, the applicant requested City approval of the Restated DA that updated the vesting and transportation concurrency provisions to reflect the specific uses and implemented standards anticipated for future development of the site.

3. Review Process – Mixed Use Sites

- a. Mixed Use Plan. Initial development of a multiple building mixed use site or portions of a mixed use site shall require submittal and approval of a Mixed Use Master Plan, unless already subject to previous Mixed Use or Master Plan approval. The following requirements shall apply:**
 - 2. Approval Criteria and Zoning. Proposed Mixed Use Master Plans 25 acres or larger in size shall be reviewed as Type IV application by the Planning Commission. Proposals less than 25 acres shall be reviewed as Type IV applications by the hearings Examiner. Approvals, or approval with conditions shall be granted upon findings that:**

- a. **The Master Plan and associated conditions of approval ensure future development will meet all applicable criteria of this chapter; and**

Response: Compliance with the provisions of this chapter is demonstrated in the responses provided throughout this narrative and in the associated application materials. Subsequent site plan approval will meet all applicable criteria of the VMC 20.430.060 multiple building mixed use standards unless modified by the Development Agreement and this Master Plan.

- b. **The proposal complies with applicable rezone criteria of VMC 20.285.080; and**

Response: Per Ordinance 4346 on August 6, 2021, the site has been rezoned from Industrial to Mixed Use. Compliance with the rezone criteria found in VMC 20.285.080 is not required to be demonstrated with this application.

- c. **There is or will be sufficient capacity within the transportation system and public sewer, water, police, fire, and stormwater services to adequately serve all portions of the site at the time of development; and**

Response: The revised TIA prepared by Kittelson and Associates, Inc. (Appendix D) demonstrates that the proposed uses within the master plan will generate a modest increase in weekday AM peak hour trips and the same number of weekday PM peak hour trips as compared to those already reserved for the site through the existing development agreement. The combined impact of refinements to the on-site transportation network, closure of one existing VIC campus vehicular access on SE 34th Street and revised site land uses results in changes to off-site proportional share contribution amounts but does not trigger new off-site transportation capacity mitigation construction beyond those measures required of the current VIC Master Plan development agreement. Because the City's transportation planning department has already reserved capacity in the system for the trips associated with the site, sufficient capacity exists within the transportation system with resolution of infrastructure improvements and other mitigation requirements outlined in the revised TIA. Consistent with the current VIC Master Plan, the applicant will improve the long-term capacity of the surrounding road network to address future growth in part by completing a segment of SE 29th Street from SE 192nd Avenue to SE 176th Avenue to provide an alternate east-west corridor to help relieve demands on SE 34th Street between SE 164th and SE 192nd Avenues. The revised TIA finds there will be sufficient capacity within the transportation system to adequately serve all portions of the site at the time of development and identifies implementation timing for each of the recommended mitigation measures associated with project phases. No new off-site mitigation measures were identified in the revised TIA.

Water and sewer utilities are readily available to the site and can be feasibly extended to serve the properties. All stormwater runoff from impervious surfaces on the site will be treated and infiltrated on-site as noted above. Stormwater runoff will be addressed in detail with future development plans and Stormwater Technical Information Report(s) with site plan review requests. Police, fire, and emergency services are generally available to serve the site and project impacts on these services will be incremental over the course of the buildout of the master plan.

- d. **A change in circumstances has occurred since existing zoning designations at the site were originally adopted. For the purposes of a multiple building mixed use plan only, compliance with the development standards of VMC 20.430.060.C.2 and the applicable Comprehensive Plan policies shall be sufficient to demonstrate that a change in circumstances has occurred.**

Response: Per Ordinance 4346 on August 6, 2021, the site has been rezoned from Industrial to Mixed Use. Compliance with the rezone criteria found in VMC 20.285.080 is not required to be demonstrated with this application. The revision to the prior master plan does not change the overall composition of the mixed-use master plan but rather reconfigures land use areas within the boundaries for larger, consolidated industrial sites and increases residential density in response to unprecedented demand for housing.

3. **Proposed modifications to previously approved mixed use concept plans shall require Type I, II or III review depending on the modification required, as specified in VMC 20.260.030.**

Response: The applicant is requesting a modification to an approved mixed use master plan, and pursuant to DA Section 7, the requested changes constitute a major revision thus prompting a Type IV review.

- b. **Development proposals on sites subject to an existing Mixed Use Master Plan or existing mixed use zoning:**

1. **Development on sites or portions of sites subject to Mixed Use Master Plan approval under this chapter, or under equivalent mixed use approval prior to this chapter, shall require site plan approval as Type II review under VMC 20.270. Approval or approval with conditions shall be granted if the proposal is fully consistent with the approved Mixed Use Master Plan or equivalent, applicable portions of this chapter, and VMC 20.270 procedural standards.**

Response: The applicant anticipates site plan review submittals for future development requests within the master plan.

2. **Development on sites or portions of sites zoned MX but not subject to an approved Mixed Use Master Plan under this chapter or other shall submit for master plan review under this chapter as a Type III application for sites less than 25 acres, and a Type IV application for sites 25 acres or larger.**

Response: The entire site area was previously rezoned to Mixed Use (MX) and therefore, will be subject to review under the governing land use entitlements associated with this revised mixed use master plan request.

- 3. No more than 50% of the total square footage envisioned by the Master Plan for any one major use type (commercial, office or residential) can be granted occupancy permit approval until occupancy permit approval is provided for at least 25% of the total square footage of all of the major use types envisioned in the Master Plan. This requirement may be waived by the planning official, if the applicant provides a security or other form of binding assurance that the remaining major use types contemplated in the Master Plan will be built.**

Response: The Restated DA includes “Synchronicity” provisions. These provisions limit the extent of residential uses allowed on the site based on the applicant’s delivery of new employment use square footage within the development. Specifically, Section 6.4(d) of the Restated DA stipulates that the applicant will be unable to construct greater than 50% of the residential units within the project until the developer has built at least 215,000 SF (25%) of the proposed new employment square footage on the site. Refinement of this language is anticipated to address additional housing units proposed with the project. However, as previously stated, the applicant has recently secured final engineering and building permit approvals for a new 200,981 square foot industrial building, VIC Building North, which largely meets this initial obligation for non-residential square footage.

- D. Adjustment to Numerical Standards – Single Building and Mixed Use Sites. Numerical standards contained in this chapter may be adjusted by up to 25% if a clear demonstration is provided that the proposed mixed use development with the adjustment would fully comply with the purpose statement and all other applicable standards of this chapter, and that the proposal would clearly not be able to comply with those standards without the proposed adjustments.**

Response: The applicant proposed land use area-specific development standard adjustments with the Restated DA that was approved by the Vancouver City Council by Ordinance 4346 on August 16, 2021. An adjustment to numerical standards is not proposed as part of the revised master plan request at this time, however, application of this provision may be requested at the time of individual site development.

- E. Incentives – Single Building and Mixed Use Sites. Traffic impact fees for mixes use developments shall be reduced to account for internal trips between uses on the site or building as demonstrated by an approved traffic study.**

Response: The TIA prepared by Kittelson and Associates (Appendix D) has considered an internalization factor for trips that will be retained on site due to the proposed mixture of land uses. It is assumed that any traffic impact fees applicable to future developments within the site would be based on the net increase of trips after this internalization factor is applied.

Vancouver Strategic Plan

GOAL 1: Ensure our built urban environment is one of the safest, most environmentally responsible and well maintained in the Pacific Northwest.

Response: The revision to the VIC mixed use master plan serves Goal 1 as the developer is committed to ensuring a safe, environmentally responsible, and well-maintained property. The applicant demonstrates

this commitment through the Revised Design Guidelines (Appendix F) for the site that promote design principles to incorporate sustainability and energy efficiency measures such as vehicle charging stations, solar panels, low impact development (LID) stormwater management approaches, shared parking strategies, and site design that supports a 20-Minute Neighborhood. The concept of the 20-Minute Neighborhood, and the 5-Minute derivative proposed with the Revised VIC Master Plan is to encourage accessibility, active (walking, cycling) transport and public transport in proximity to housing, employment opportunities, recreational opportunities, and open spaces. The Revised VIC Master Plan proposes a network of passive and active open space areas that utilize existing trees and natural resources, a balance of community gathering spaces and areas, the creation of a compact urban form composed of well-articulated buildings and ample pedestrian areas to encourage multi-modal travel throughout the site between the various on-site uses and open space areas and enable building design that encourages pedestrian access, ground floor visibility and community spaces for socialization and collaboration.

GOAL 4: Ensure that Vancouver's parks and trails system is the highest quality and most complete in the region.

- **Objective 4.1: Increase maintenance levels and accessibility to parks**
- **Objective 4.2: Increase recreational opportunities in our parks**

Response: As demonstrated with the Potential Open Space Site Plan Sheet 004 (Appendix E), the revised master plan serves Goal 4 by promoting a town plaza, neighborhood parks and providing a network of active and passive open space areas on the site including a multi-use trail that connects to 34th Street as part of the City's Complete Streets Program to enhance safety, efficiency, and mobility for all users. The master plan preserves an approximately 13.7-acre designated forested tract at the northeast corner of the site. Additionally, the Mobility Plan Sheet 005 (Appendix E) demonstrates functional connections to the site-wide bicycle and walking path network.

GOAL 6: Facilitate the creation of neighborhoods where residents can walk or bike to essential amenities and services—"20-minute neighborhoods"

- **Objective 6.1: Support a strong, active neighborhood program that enhance livability and community connections**
- **Objective 6.2: Improve amenities and services that allow residents to "age in place"**

Response: As mentioned, the proposed mixed use master plan supports the 20-minute neighborhood concept that encourages accessibility, active (walking, cycling) transport and public transport in proximity to housing, employment opportunities, recreational opportunities, and open spaces. The Mobility Plan Sheet 005 (Appendix E) demonstrates functional connections to the site-wide bicycle and walking path network. This mixed-use community will strengthen east Vancouver's commercial, light industrial, retail and community districts, helping to build a strong, resilient economy.

GOAL 8: Strengthen commercial, retail and community districts throughout the city

- **Objective 8.1: Make downtown Vancouver a vibrant destination for the community and the region**
- **Objective 8.2: Strengthen neighborhood business districts**

Response: The Revised VIC Master Plan proposes a more integrated mixed-use community in east Vancouver in a location where residents can work, shop, go to school and recreate all within a 20-minute walk from home. The diversity of residential housing products will offer a diversity of price points to allow housing opportunities for persons of a wide range of incomes within the community. The increase in residential density within the site will respond to shortages in the market. The additional residential rooftops will help support the neighborhood retail uses within and near the master plan site, supporting the existing and future neighborhood business districts.

GOAL 9: Build the strongest, most resilient economy in the region

- **Objective 9.1: Create infrastructure and policies that support job creation**

Response: The Revised VIC Master Plan reconfigures land use areas to provide greater integration of uses throughout the site including development of large-footprint light industrial buildings which allow for more flexibility to respond to market demands and tenant needs and is critical to achieve both the project and City's employment generation goals. As demonstrated with the Master Plan – Proposed Land Use Sheet 003 (Appendix E), of the approximately 179-acre site, approximately 74 acres of IL land and approximately 33 acres of MX land is proposed to create infrastructure that supports job creation and employment opportunities in research and development, light industrial/manufacturing uses, professional office, medical, retail, education and in the short term, construction and trade industries. The mixed-use environment enhances the experience for residents, employees and patrons by offering a variety of services and amenities which will not only support the immediate businesses within the site but will support other uses in the broader Vancouver area.

In addition, the developer will be constructing a segment of SE 29th Street between SE 192nd Avenue and SE 176th Avenue through the site. The facility is planned as an urban collector arterial and will relieve east-west congestion occurring on SE 34th Street and increase mobility and convenience in east Vancouver. The addition of this facility and other public infrastructure will enhance the marketability and interest in the employment uses on the site. The proposed location for SE 29th Street and the SE 29th Street streetscape will provide a transition between residential, and office/flex uses on the site, provide for truck traffic to and through the IL LUA, and offer safe and convenient pedestrian and bicycle access between the uses on the site.

Vancouver Comprehensive Plan

EC-1 Jobs-housing balance

Increase the ratio of jobs to residents in the City of Vancouver and the region.

Response: The June 30, 2020, Market & Economic Analysis for Vancouver Innovation Center, prepared by Eric Hovee discusses the various market factors influencing the development of the site and the respective benefits of the applicant's proposal to diversify the uses within the site and broaden the array of employment uses allowed. The study estimated that the Current VIC Master Plan could add approximately 3,500 net new jobs at build out. As discussed throughout this narrative and reflected in the various appendices, the Revised VIC Master Plan maintains the nonemployment square footage targets and thus the potential job creation is consistent. The increase in residential density will improve the jobs to residents ratio in the East Vancouver area.

EC-2 Family-wage employment

Promote the formation, recruitment, retention and growth of businesses that provide a wide range of employment opportunities, particularly family-wage employment. Prioritize family-wage employment in land use policies and practices.

Response: New jobs anticipated at build-out will provide a wide range of employment – in tech and light industrial activities, good paying professional/technical office-related occupations, and including entry-level and part-time retail/service employment suited to a range of employee interests and needs.

EC-3 Public revenue enhancement

Promote development that enhances revenue generation for public services.

Response: Per Clark County GIS, from 2006-2019, property taxes paid on the HP property declined by approximately 22%. Re-occupancy of the full existing space should stem this erosion. New development will add substantially to the property values and resulting tax revenues (in amounts not yet estimated). While on-going sales tax potential is greatest for commercial retail, dining and personal service uses (as compared with many industrial or office activities), the City will also generate considerable one-time sales tax revenue from new construction over the course of development to project build-out.

EC-4 Industrial and business park sanctuaries

Provide an adequate supply of industrial and/ or business park areas with opportunities for family-wage employment and revenue generation.

Response: The Revised VIC Master Plan concept can accommodate approximately 5,000 jobs including significant and diverse family-wage employment opportunities consistent with the current master plan. The revised master plan will maintain the mix of residential and commercial uses contemplated in the current plan, uses which yield higher per square foot values than industrial-only uses, resulting in increases to both property and sales tax revenue beyond what would be generated by less-intensely developed industrial-only uses.

EC-5 No net loss of employment capacity

Restrict zone changes or legislative land use approvals that would lessen long-term capacity for high-wage employment unless accompanied by other changes within the same review cycle that would compensate for the lost capacity or unless the proposed change would promote the long-term economic health of the city.

Response: As noted with the current VIC Master Plan, it is expected that a highly integrated mixed-use center that incorporates housing and amenities with employment will result in a greater employment potential on the site and greater business retention. When formerly considering if the property should be zoned from industrial to MX, Jones Lang LaSalle Americas, Inc. prepared a Comparative Valuation Analysis on December 8th, 2020, that concluded: “the property will exceed its current value significantly under the proposed mixed use (MX) zoning due to the added diversity of the asset mix and the construction of retail, lifestyle, and educational amenities for tenants and the surrounding community.” The revised master plan retains the integrity of this assessment and offers an even greater degree of

mixed-use integration, which will further this objective of increasing business and business retention through the creation of place.

EC-6 Efficient use of employment land

Maximize utilization of land designated for employment through more intensive new building construction and redevelopment and intensification of existing sites.

Response: The VIC proposal serves EC-6, efficient use of employment land, by consolidating and reconfiguring the IL LUA and leveraging more shared parking strategies. The Revised VIC Master Plan offers a more efficient overall land plan that provides greater flexibility for site design and development to respond to market drivers.

EC-7 Regional focus

Work with the larger Portland-Vancouver region to leverage opportunities, unique site availability, and marketing to promote the region nationally and globally to attract new business.

Response: The vision of the revised master plan is to honor and build around the innovative roots of the site as a high-tech employment hub, by building around the existing buildings and making that the core of the community. This will create a unique environment unlike others in the region and an environment that can be promoted at both a national and global level. The applicant has already made strides by securing tenants in the existing VIC who have national and international reach in their individual business markets. The implementation of the Revised VIC Master Plan will only improve upon this tenant portfolio.

EC-8 Small business support

Support the growth of new and expanding small business through efficient permitting, incentives, and communication.

Response: The proposed master plan revision will retain the capacity for small business within the site. There is substantial opportunity for new and expanding small businesses to find a home within the existing VIC or one of its future buildings. The variety of spaces provide great flexibility for tenant configurations to meet a wide range of businesses. This is especially critical in the near term as a visible sign that Vancouver is open for business to promote economic recovery over the next 2-3 years. The applicant is interested in collaborating with the City of Vancouver to identify and promote development and employer-based incentives – most ideally with coordination offering features of one-stop permitting that should work with an already approved master plan.

Chapter 4: Housing

H-1 Housing options

Provide for a range of housing types and densities for all economic segments of the population. Encourage equal and fair access to housing for renters and homeowners.

Response: The revised master plan proposes to increase density to a maximum of 1,800 dwelling units and will allow a variety of residential product types including single family attached, garden style apartments and vertical mixed use residential. Considerable effort has been expended to evaluate market needs for the various housing types and building composition including a mix of unit sizes which will serve

demand more efficiently. These product types can provide either rental or ownership opportunities at a variety of price points. This is particularly critical to ensure that housing is available for a variety of workers in various positions within the employment uses on the site and to relieve housing shortage within the broader Vancouver area.

H-2 Affordability

Provide affordable housing by formulating innovative policies, regulations and practices, and establishing secure funding mechanisms. Target affordability programs toward households with incomes below the median.

Response: The Revised VIC Master Plan proposes to increase density to a maximum of 1,800 dwelling units and will allow a variety of residential product types including single family attached, garden style apartments and vertical mixed use residential with a wide range of price points to serve broader economic groups. If the City were to adopt an MFTE zone that included the property, the applicant may seek to participate in the program for some portions of the site.

H-3 Housing improvement

Encourage preservation, rehabilitation and redevelopment of existing housing stock. Support neighborhood based improvement efforts.

Response: There are no existing homes on the master plan site. The Revised VIC Master Plan proposes two non-contiguous R LUAs and anticipates residential uses within the MX LUA. A variety of amenities are proposed throughout the site including publicly accessible open spaces, the perimeter trail, and other pedestrian and bike friendly facilities along roadways within the site. Uses anticipated within the site including office, retail, services, employment and education will add to the nature and feel of the neighborhood and community.

H-4 Innovative zoning

Encourage innovative housing policies that provide for affordable housing and maintain neighborhood character.

Response: The MX master plan allows for higher density housing on the site, thereby increasing housing inventory and allowing new housing at multiple price points. If the City were to adopt an MFTE zone that included the property, the applicant may seek to participate in the program for some portions of the site.

H-5 Housing placement near services and centers

Facilitate siting of higher density housing near public transportation facilities and in designated centers and corridors.

Response: C-TRAN Route 37 provides loop service between SE 164th Avenue and Mill Plain Boulevard. Bus stops currently exist in both directions on SE 34th Street at SE 189th Avenue and on SE 192nd Avenue at SE 31st Street. The future intersection of SE 29th Street at SE 192nd Avenue is only approximately 800-feet north of the current bus stops at SE 192nd Avenue and SE 31st Street. Pedestrian facilities through the site will facilitate access to these bus stops to encourage and will further encourage the redevelopment of the site.

H-6 Special needs housing

Facilitate housing for special needs populations dispersed throughout Vancouver and the region. Such housing may consist of residential-care facilities, shelters, group homes, or low-income housing, and should be located near transportation and other services such as health care, schools, and stores.

Response: While the applicant is not currently planning an affordable housing project on the site, they are willing to explore such a project if the City were to help with incentives such as adopting an MFTE zone for the site.

H-7 Home ownership

Promote opportunities for home ownership and owner occupancy of single- and multifamily housing.

Response: The Revised VIC Master Plan proposes to remove single family detached units from the project and will focus on other housing typologies which will increase housing inventory in the city and will allow for new housing at a variety of price points which may be available for sale or lease.

H-8 Public-private partnerships

Facilitate enhanced partnerships between public, private, and non-profit sectors to address affordable housing.

Response: The applicant is open to pursuing public-private opportunities that would enable an affordable housing project at the site.

H-9 Funding for housing

Pursue funding mechanisms to support affordable housing.

Response: Programs such as the MFTE program, Community Development Block Grants (CDBG), Tax Increment Financing (TIF) and other opportunities exist to help facilitate affordable housing projects. The applicant is open to further dialogue over the course of the development of the Revised VIC Master Plan to develop affordable housing on the site should the City seek to partner to make incentives available for such a project.

Chapter 5: Public Facilities and Services

PFS-1 Service availability

Consider water, sewer, police, transportation, fire, schools, storm water management, and parks as necessary facilities and services. Ensure that facilities are sufficient to support planned development.

Response: The applicant and developer of the VIC will be making significant investments to develop a robust on-site infrastructure system to support the uses on the site. These investments include the development of SE 29th Street to an urban collector arterial standard, and the installation of public water, sanitary sewer, and LID stormwater facilities throughout the project site. In addition, the applicant has sold a 20-acre site to the Evergreen School District for a future middle school. The master plan also calls for significant areas of open space across the campus including the 13.7-acre forested tract identified in the prior plan which the applicant is in negotiations with the City to sell this land to be developed as a

municipal park in the future. Other open space areas are proposed including the VIC Trail which will run along the perimeter of the site, a town plaza and a neighborhood park. In total, the revised master plan proposed 24 acres of open space, approximately five (5) acres more than what was contemplated in the current master plan. Additionally, the payment of system development charges or impact fees applicable for new development as well as property taxes help fund public services including police, fire, emergency management, schools, etc.

PFS-4 Transportation system

Develop and maintain an interconnected and overlapping transportation system grid of pedestrian walkways, bicycle facilities, roadways for automobiles and freight, transit and high-capacity transit service. Include support programs such as traffic operations, transportation demand management, neighborhood traffic management, and the regional trails program. Work towards completing and sustaining individual components and programs to ensure success of the entire system.

Response: Figure 5-3 of the City's Comprehensive Plan illustrates planned connection routes through the City. This map identifies a new east-west route through the VIC site in the alignment of NE 25th Street. Following discussions with the City during the current master plan review, it was determined that this route will be provided in the alignment of NE 29th Street. This route will help ease the number of vehicular trips that have to use SE 34th Street for connectivity between SE 164th Avenue and SE 192nd Avenue so long as the exiting configuration of SE 34th Street is maintained subject to any improvements required for this project. The revised master plan maintains the NE 29th Street extension thus providing of this important link in the regional transportation network.

PFS-5 System balance

Allocate resources to balance transportation choices. Promote development of a broader range of transportation options including pedestrian, bike, and transit systems, rather than focusing all resources on satisfying peak commuting demand with roadway capacity alone.

Response: The revised master plan will include an extensive network of pedestrian pathways or trails, sidewalks, bike lanes, plaza, and promenade areas to help provide alternative routes of travel for pedestrians and bicyclists to travel within the site and to off-site locations, including transit stops located on SE 192nd Avenue at SE 31st Street and on SE 34th Street at SE 189th Avenue.

PFS-8 Transportation circulation and system connectivity

Develop a transportation grid that provides good connections to surrounding land uses and activity centers and allows for multiple circulation routes to/from each location. Close gaps and complete system connections through the development and capital improvement processes.

Response: The applicant's completion of the SE 29th Street link will be an important improvement in the local regional traffic network, which lacks a continuous grid in many areas. The installation of SE 29th Street will relieve the burden currently being placed on existing corridors for vehicular throughput.

PFS-10 Livable streets

Design streets and sidewalks and manage vehicular traffic to encourage livability, interaction, and sense

of neighborhood or district ownership in linkage with adjacent land uses. Encourage multi-modal travel, and provide accessible, human scale opportunities for transferring between travel modes.

Response: The revised master plan will include an extensive network of pedestrian pathways, sidewalks, bike lanes, plaza, and promenade areas to help provide alternative routes of travel for pedestrians and bicyclists to travel within the site and to off-site locations, including transit stops located on SE 192nd Avenue at SE 31st Street and on SE 34th Street at SE 189th Avenue.

PFS-13 Neighborhood traffic

Protect and enhance neighborhoods with an active program that focuses on safety, safe routes to school, traffic calming, education, and enforcement.

Response: The proposed future middle school is located at the northwest corner of the site and near residential uses on the site providing for shorter routes of travel for many of the residents on the site. New public sidewalks and additional trails on the site will further help to facilitate safe pedestrian routes to this school. The Mobility Plan and associated Streetscapes Summary included in the Master Plan Design Set (Appendix E) reflect a thoughtful approach to both vehicular and non-vehicular transportation. For example, the use of laneways in neighborhoods place more emphasis on pedestrian movements and shared space with lower vehicle use, while SE 29th Street is designed for higher volumes of traffic and separated bike and pedestrian facilities to buffer against traffic. The applicant has been working with City staff and has refined the designs to respond to feedback.

PFS-17 Vehicle miles traveled

Use transportation and land use measures to maintain or reduce single occupant motor vehicle miles traveled per capita to increase system efficiency and lower overall environmental impacts.

Response: One of the fundamental goals of the existing master plan was to create a 20-minute community in which residents can fulfill most of their daily trip needs within a 20-minute walk. By establishing a 20-minute community, the applicant can minimize the need for vehicular trips, which in many cases would be conducted in a single-occupant vehicle and with a significantly greater carbon footprint. The revised master plan improves upon the 20-minute community concept and now has mixed use buildings within a five-minute walk for those living and/or working on the campus.

PFS-28 Schools

Work with local school districts to facilitate an adequate supply of schools and associated facilities. Facilitate timely and efficient siting processes which allow for assessment and mitigation of impacts.

Response: The applicant worked with the ESD to reserve an approximately 20-acre site on the property for a future middle school during the entitlement for the current master plan. Since then, ESD has purchased the parcel and the applicant continues to work with them as party and some further boundary adjustments need to be made to the school parcel to align with the proposed roadway network in the revised master plan. ESD staff has indicated that the proposed boundary adjustments provide a more developable parcel for the school district and the total acreage of the parcel remains 20-acres as in the current master plan.

PFS-30 Open spaces and parks

Provide and maintain parks, open spaces, and recreational services for all segments of the community consistent with adopted level-of-service standards. Facilities and services should support recreational activities, environmental or historical resource protection, and should preserve and enhance neighborhood identity and function.

Response: The applicant began discussions with the City to reserve a 13.7-acre location at the northeast corner of the site for a park that will be open to the public during the first master plan entitlement. Discussions have continued as the applicant has refined the master plan. The forested tract is delineated within the Master Plan Design Set and reflects a slightly modified boundary to encapsulate mature and healthy trees which have been surveyed since the current master plan approval.

PFS-31 Trails

Provide a system of trails linking public and private open spaces, parks, recreational uses and transportation facilities within and between jurisdictions. Encourage use of greenspaces and riparian corridors as pedestrian and nonauto-oriented linkages within the urban area, in balance with habitat protection.

Response: The proposed master plan will include an extensive network of pedestrian pathways and trails, sidewalks, a neighborhood park, town plaza, and promenade areas to help provide alternative routes of travel for pedestrians and bicyclists to travel within the site and to off-site locations. See Sheets 004 and 5 of the Master Plan Design Set (Appendix E).

PFS-32 Parks Coordination

Plan for parks, trails, open spaces and recreational services in coordination with other local and regional public agencies and private entities. Facilitate provision of lands and/or impact fees for parks as part of the development review process.

Response: The applicant began discussions with the City during the Current VIC Master Plan entitlement process to reserve an approximately 13.7-acre location at the northeast corner of the site for a park that will be open to the public. The Revised VIC Master Plan reflects the proposed forested tract, and the applicant continues to work with the City to negotiate the terms of this reservation including the potential for additional land which the City will use to provide dedicated off-street parking for the new municipal park.

6.2.2 Coordinate with service providers to identify the land and facility requirements of each and ensure that sufficient land is provided in urban and rural areas to accommodate these uses.

- 2. How the proposal is more consistent than the existing designation with each of the following objectives as applicable:**

Response: The applicant is not proposing a Comprehensive Plan amendment or rezone application with this revised master plan submittal. This standard does not apply.

IV. Conclusion

As demonstrated in this narrative and in the associated application appendices, the proposed major revisions to the current mixed use master plan will further the goals and policies of the City's Comprehensive and Strategic Plans and facilitate investment in the community. As the proposal has been found to meet the approval criteria governing the request, the applicant respectfully requests City approval of these land use applications.

APPENDIX C

SEPA CHECKLIST

**SUBMIT TO:**

City of Vancouver
Community & Economic Development
415 W. 6th ST
Vancouver, WA 98660
www.cityofvancouver.us

SEPA ENVIRONMENTAL CHECKLIST**WAC 197-11-960**

Property Owner: The VIC Building Owner LLC; Attn: Jennifer Rabina Telephone: (212) 680-4500
(Print or Type Name)

Mailing Address: 505 Fifth Avenue, 27th Floor, New York, NY 10017
(No., City, State, ZIP)

Applicant: Same Telephone: Same
(Print or Type Name)

Mailing Address: _____
(No., City, State, ZIP)

Relationship to Owner: _____

Tax Assessor Serial Number(s): 126455000, 126816000, 986056-494, and 986060-362
(Parcel numbers per Clark County GIS 4/24/23. VIC Building North parcel number not yet assigned.)

Legal description: Lot(s) See response to Block(s) _____ Plat name N/A
Question A.12 below

(If a Metes and Bounds description, check here **X**, and attach narrative to this application.)

Site Address (if any): 18110 SE 34th Street, Vancouver WA 98683

② Include 8½" x 11" copies of ☐ Quarter Section Map, ☐ Topographic Map, ☐ Scaled Site Plan. Delineate site on maps.
Notice to Applicants: You must use the current revision of this form or your application will not be accepted. If you use our disk version of this form (MS Word 6.0) you may not alter the format. Make sure you have the current version before submittal.

Purpose of checklist:

Governmental agencies use this checklist to help determine whether the environmental impacts of your proposal are significant. This information is also helpful to determine if available avoidance, minimization or compensatory mitigation measures will address the probable significant impacts or if an environmental impact statement will be prepared to further analyze the proposal.

Instructions for applicants: [\[help\]](#)

This environmental checklist asks you to describe some basic information about your proposal. Please answer each question accurately and carefully, to the best of your knowledge. You may need to consult with an agency specialist or private consultant for some questions. You may use "not applicable" or "does not apply" only when you can explain why it does not apply and not when the answer is unknown. You may also attach or incorporate by reference additional studies reports. Complete and accurate answers to these questions often avoid delays with the SEPA process as well as later in the decision-making process.

The checklist questions apply to all parts of your proposal, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. The agency to which you submit this checklist may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

Instructions for Lead Agencies:

Additional information may be necessary to evaluate the existing environment, all interrelated aspects of the proposal and an analysis of adverse impacts. The checklist is considered the first but not necessarily the only source of information needed to make an adequate threshold determination. Once a threshold determination is made, the lead agency is responsible for the completeness and accuracy of the checklist and other supporting documents.

Use of checklist for nonproject proposals: [\[help\]](#)

For nonproject proposals (such as ordinances, regulations, plans and programs), complete the applicable parts of sections A and B plus the [SUPPLEMENTAL SHEET FOR NONPROJECT ACTIONS \(part D\)](#). Please completely answer all questions that apply and note that the words "project," "applicant," and "property or site" should be read as "proposal," "proponent," and "affected

geographic area," respectively. The lead agency may exclude (for non-projects) questions in Part B - Environmental Elements –that do not contribute meaningfully to the analysis of the proposal.

A. BACKGROUND [\[help\]](#)

1. Name of proposed project, if applicable: [\[help\]](#)
Vancouver Innovation Center Master Plan Revision
2. Name of applicant: [\[help\]](#)
The VIC Building Owner LLC
3. Address and phone number of applicant and contact person: [\[help\]](#)
Applicant/Owner
The VIC Building Owner LLC
505 5th Avenue, 27th Floor
New York, NY 10017
Attn: Jennifer Rabina
Phone: 212-680-4500
Email: jrabina@rabina.com

Applicant Representative (Contact):
DOWL
7200 NW 41st Street, Suite 204
Vancouver, WA 98662
Attn: Jessica Herceg
Phone: 971-280-8653
Email: Jherceg@dowl.com
4. Date checklist prepared: [\[help\]](#)
May 5, 2023
5. Agency requesting checklist: [\[help\]](#)
City of Vancouver
6. Proposed timing or schedule (including phasing, if applicable): [\[help\]](#)
Revised Master Plan Review – Spring/Summer of 2023
Amended and Restated Development Agreement Review – Spring/Summer of 2023
7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain. [\[help\]](#)
The proposed Vancouver Innovation Center Mixed Use Master Plan revision outlines a multi-phase development plan that will be built out over multiple years. Full build-out of the master plan could take 7-15 years, depending on market conditions.
8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal. [\[help\]](#)
Past Studies related to the Vancouver Innovation Center Master Plan include:
 - **Critical Areas Memo for the Vancouver Innovation Center Phase 1 – VIC Building North, prepared by Pacific Habitat Services, Inc., dated September 12, 2022.**
 - **Archaeological Pre-Determination Report, prepared by Archaeological Investigations Northwest, Inc., dated August 18, 2022.**
 - **Preliminary Geotechnical Engineering Report, prepared by NV5, dated August 25, 2021.**

- **Phase 1 Environmental Site Assessment Vancouver Tech Center – 18110 SE 34th Street Vancouver, Washington, prepared by WSP, dated January 2021**
- **Traffic Impact Study, prepared by Kittelson and Associates Inc., dated April 28, 2023**

9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.

[\[help\]](#)

The applicant has recently received Type 2 Site Plan Review approval for a 200,981 square foot light industrial building to be located immediately north of the existing building on the site. Site construction and building permit approvals are in the final issuance stage for that project.

10. List any government approvals or permits that will be needed for your proposal, if known. [\[help\]](#)

The proposed master plan revision request and development agreement will require review and approval from the City of Vancouver through a Type IV Master Plan review process, subject to final approval from the Vancouver City Council.

11. Give brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include additional specific information on project description.) [\[help\]](#)

The applicant is requesting City of Vancouver (City) approval for master plan revisions to amend elements of the current VIC Master Plan. The revised master plan design consolidates industrial areas to optimize opportunities for employment-generating development without reducing the number of jobs provided for in the current master plan, provides a higher level of integration of uses to allow for greater density, thus creating an opportunity to provide more open space, and introduces a new roadway loop geometry at the center of the VIC that establishes a mixed-use center at the core of the site. The revised master plan is included as Sheet 003 of the Master Plan Design Set (Appendix E) and reflects the proposed land use area configuration.

The land use areas (LUAs) on the site include a school (approximately 20 acres), residential area (approximately 38 acres), light industrial/employment area (approximately 74 acres), mixed use area (approximately 33 acres) and a 13.7-acre forested tract. Potential open space areas are reflected across the Residential LUA (RLUA), Mixed-Use LUA (MX LUA), and Light Industrial LUA (IL LUA), and School LUA (S LUA), but acreage and boundaries for these future open space areas are conceptual and will be refined at site development.

Noteworthy changes to the master plan include:

- **A central right-of-way loop or “ring road” is proposed for main site circulation. The northern arc of the loop will serve as the SE 29th Street collector.**
- **Reconfiguration and relocation of land use areas to achieve the desired product type mix and scale in each LUA and provide greater integration of uses throughout the site. The consolidation allows for the development of large-footprint light industrial buildings in the IL LUA to optimize opportunities for employment-generating**

development and is critical to achieve both the Project's and the City's employment generation goals.

- The plan improves the integration of the mixed-use elements of the project by changing from the "Town Center District" within the MX LUA to a mixed-use corridor along the proposed ring road which serves as the gravitational center of the revised master plan and contemplates a substantial public plaza opposite the existing VIC Commons. The revised master plan will incorporate all necessary changes for the VIC and will not propose a separate/future master plan revision for a Town Center district within the master plan area.
- Single Family Residential (SFR) and Multi-Family Residential (MFR) land use areas (LUAs) are now consolidated and listed as "Residential Land Use Area (R LUA)" and the applicant has removed detached single family residential use from the plan.
- The master plan anticipates an overall increase in open space and will provide approximately 24 acres of open space across the master plan area including an approximately 13.7-acre forested tract. Open space projections in the revised plan represent a 26% increase over the 19 acres proposed in the current master plan. To allow greater design discretion in the precise limits of open space with future site development, the applicant is proposing to represent open space within the plan as an overlay rather than a discrete Open Space LUA, a common approach with master plan entitlements.
- The forested tract and the school parcel are identified independent of other LUA's to reflect the separate ownership of the school parcel by the Evergreen School District and the applicant's establishment of a tract for forest preservation. While the forested tract boundary has been altered in the revised master plan—a project arborist has made recommendations to better preserve key tree stands—the acreage of the tract has been retained.
- As opposed to the current master plan, which segregated rights of way for SE 29th Street and SE 184th Avenue from LUA acreages, the proposed revision plan has assumed that all rights of way will be internal to land use areas, similar to how rights of way would be treated in a zoning context.
- The revised main plan proposes a more fluid approach to phasing, whereby the size, location, and order of development within the property be determined by the applicant so that they may respond in real time to market conditions and demand.

New Employment Square Footage

The master plan revision proposes construction of a minimum of 600,000 square feet of gross floor area for employment uses.

Open Space

The applicant anticipates providing approximately 24 acres of open space, including the approximately 13.7-acre Forested Tract. Sheet 004 of the Master Plan Design Set (Appendix E) illustrates potential open spaces, including a two-mile multi-use trail around the entire perimeter of the property. Distinct cross sections are provided as Sheet 007 (Appendix E) to illustrate the open space design at key locations in the site, including the northern site edge. Other open space features include a neighborhood park within the Residential LUA in the southwest corner of the site and a town plaza in the southeast corner.

Residential Units and Density

The revised master plan will consolidate the Single-Family Residential LUA and Multi-Family Residential LUA into a single, non-contiguous Residential LUA. The revised master plan proposes a maximum of 1,800 dwelling units which can be constructed within either the R LUA, the MX LUA, or the IL LUA, with a maximum of 100 dwelling units allowable within the IL LUA. The proposed increase in residential density is in response to the City's continuing concern about housing availability, as well as to market demands for housing co-located with the future businesses on the site. In addition, rather than specify quantities of distinct housing types (apartments, townhomes, etc.) within each LUA, the revised master plan proposes to build housing types in response to market demand, limited to the residential housing types permitted within the VMC. Single-family detached homes, however, will be removed from the master plan.

12. Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist. [\[help\]](#)
- The Vancouver Innovation Center (VIC) Mixed Use Master Plan encompasses an approximately 179-acre site located generally at 18110 SE 34th Street. According to the most recent maps produced by Clark County GIS, the site is composed of four (4) parcels (Parcel IDs 986060362, 986056494, 126455000, and 126816000), however it should be noted that the applicant filed an exempt land division to establish a discrete parcel for a new building, VIC Building North. The documents were recorded December 6, 2022, under Auditor's File Number 6094243 however a parcel number has not yet been assigned. The site is bound on the north by the Clearmeadows and Fisher's Grove Subdivisions, on the south by SE 34th Street, on the east by SE 192nd Avenue and on the west by SE 176th Avenue.**

The abbreviated legal description for each parcel listed in GIS is as follows:

- Parcel 986060362 is Lot #17 Sec 6 T1N R3EWM 20.00A.
- Parcel 986056494 is Lots #5&7 6-1-3E #10 Martin DLC, #22N, 41, 36, 13 Simmons DLC 105.32A.
- Parcel 126455000 is Lots #5&7 6-1-3E #10 Martin DLC, #22N, 41, 36, 13 Simmons DLC 52.65A.
- Parcel 126816000 is #172 WM Simmons DLC 1.24A.

Parcels are located in NE, NW, SE and SW Quarters of Section 6 of Township 1 North, Range 3 East of the Willamette Meridian.

B. ENVIRONMENTAL ELEMENTS [\[help\]](#)

1. Earth

- a. General description of the site [\[help\]](#)
(circle one): Flat, rolling, hilly, steep slopes, mountainous,
other _____

According to Clark County MapsOnline, the site is generally flat with the exception of some rolling berms on the north and northwest portions of the property, which were created from excavation of the site for buildings and from overburden of road building for 176th Avenue.

- b. What is the steepest slope on the site (approximate percent slope)? [\[help\]](#)
The steepest slope on the site is just under an 8 percent grade.
- c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any agricultural land of long-term commercial significance and whether the proposal results in removing any of these soils. [\[help\]](#)
The site contains Hillsboro loam, 0 to 3 percent slopes (H1A), Hillsboro loam, 3 to 8 percent slopes (H1B), and Lauren gravelly loam, 0 to 8 percent slope (LgB). The land is not designated nor identified as agricultural land of long-term commercial significance. The proposal to revise the current VIC Master Plan will not result in any removal of these soils.
- d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe. [\[help\]](#)
There are no indications or history of unstable soils in the immediate vicinity of the project site. The Report of Geotechnical Engineering Services, prepared by NV5 on August 17, 2022, concludes that "based on the mapped groundwater conditions, a non-liquefiable crust at least 30 feet thick is present over the entire site and liquefaction is not a design consideration for the project."
- e. Describe the purpose, type, total area, and approximate quantities and total affected area of any filling, excavation, and grading proposed. Indicate source of fill. [\[help\]](#)
All anticipated areas of improvement throughout the site will require some degree of cut or fill to construct. The total area and quantities of fill/grade or excavation to be completed with the project are not known at this conceptual Master Plan stage. As each phase of development occurs cut and fill quantities will be defined and addressed with future SEPA reviews.
- f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe. [\[help\]](#)
Erosion could occur as a result of clearing and construction of future projects within the master plan, but this potential will be minimized and/or avoided with the implementation of Best Management Practices (BMPs) for erosion control. Specific erosion control methods will be identified and addressed with each individual site development.
- g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)? [\[help\]](#)
The applicant anticipates approximately 2,433,155 square feet (56 acres) of new and replaced hard surfaces including roadways, pedestrian ways, bikeways, parking lot areas, and building to cover approximately 31.03% (+/-) of the master plan site area.
- h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any: [\[help\]](#)
As each phase of development occurs, the developer(s) will employ BMPs to minimize the potential for erosion as a result of clearing and construction. The exact placement of BMPs will be outlined in the Stormwater Pollution Prevention Plans that will be prepared with each site development proposal.

2. Air

- a. What types of emissions to the air would result from the proposal during construction, operation, and maintenance when the project is completed? If any, generally describe and give approximate quantities if known. [\[help\]](#)

Site construction may result in dust emissions. During construction of buildings and site improvements, emissions from some heavy equipment such as concrete trucks, pumper trucks, and material delivery trucks is expected. These emissions will be temporary in nature.

In addition, emissions will occur from vehicular trips generated by the site as the VIC develops. However, it is anticipated that the integrated mixed-use orientation of the site and provision of multi-modal options for residents and employees within the master plan will have a reduce vehicle miles traveled (VMT) resulting from site development, compared to a non-mixed use development scenario on the site. Additionally, the use, operation, and maintenance of buildings throughout the site will result in greenhouse gas emissions. However, consistent with a memorandum dated March 27, 2023, prepared by PAE Engineers (Appendix I), the project intends to implement baseline design guidelines for new buildings that will help achieve the city-wide goals for the reduction of greenhouse gas emissions consistent with the City's 2022 Climate Action Framework.

- b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe. [\[help\]](#)

There are no off-site sources of emissions or odor that affect the proposal.

- c. Proposed measures to reduce or control emissions or other impacts to air, if any: [\[help\]](#)

The applicant will employ air emission BMPs in conjunction with site development activities. Additionally, the applicant will implement baseline design guidelines for GHG reduction that emphasizes electric use for domestic energy needs, efficient heating and cooling systems and other means to help achieve the City's GHG reduction goals of the Climate Action Framework.

3. Water

- a. Surface Water: [\[help\]](#)

- 1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into. [\[help\]](#)

Fisher's Creek meanders south/southwest of the site and flows into the Columbia River approximately one (1) mile south of State Route 14 (SR-14). A potential wetland associated with Fisher Creek was identified outside of the applicant's property. The existing VIC Stormwater Facility located west of the resource area is designed to overflow to Fisher Creek during severe storm events. No changes are proposed to the existing stormwater system.

A Critical Areas Memorandum prepared by Pacific Habitat Services (PHS) was submitted to the City as part of the VIC Building North site plan application. The intent of the memorandum was to demonstrate that the project would have no effect on the unclassified resource area by applying a maximum 300-foot buffer measured laterally from the estimated outer boundary of the resource.

The revised master plan contemplates activity within 300-feet of this off-site resource therefore further field investigation will be required with future site development land use applications to classify the resource and establish resource boundaries and associated regulatory buffers. With subsequent site plan approval, stormwater generated from new site development associated with the master plan will be treated and detained on site consistent with local and state regulations.

- 2) Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans. [\[help\]](#)
The revised master plan contemplates activity within 200-feet of the off-site resource therefore further field investigation will be required with future site development proposals to classify the resource, establish resource boundaries and regulatory buffers and quantify impacts, if any.
- 3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material. [\[help\]](#)
No development, including fill or dredge material(s), will be placed in, or removed from surface water or wetlands.
- 4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known. [\[help\]](#)
Neither the master plan nor subsequent site development will require surface water withdrawals or diversions.
- 5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan. [\[help\]](#)
No portion of the proposal lies within a 100-year floodplain.
- 6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge. [\[help\]](#)
The proposed master plan and future developments within it would not discharge waste materials to surface waters.

b. Ground Water:

- 1) Will groundwater be withdrawn from a well for drinking water or other purposes? If so, give a general description of the well, proposed uses and approximate quantities withdrawn from the well. Will water be discharged to groundwater? Give general description, purpose, and approximate quantities if known. [\[help\]](#)
There is an existing well on the site that has been historically used to support the agricultural use of the property. Its use was converted for irrigation purposes and may continue to be used for irrigation of landscaping throughout the buildout of the master plan. No waters will be discharged to groundwater. All stormwater runoff from impervious surfaces on the site will be treated and infiltrated on-site as noted above. Stormwater runoff will be addressed in detail with future development plans and Stormwater Technical Information Report(s) with site plan review requests.
- 2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals. . . ; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if

applicable), or the number of animals or humans the system(s) are expected to serve. [\[help\]](#)

Future buildout of the master plan site will not result in the discharge of wastewater from sewer systems into the groundwater. There will be no septic systems as part of this master plan and subsequent development proposals.

c. Water runoff (including stormwater):

- 1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow?

Will this water flow into other waters? If so, describe. [\[help\]](#)

An existing stormwater facility located in the southeast portion of the site treats surface runoff from the existing building and parking areas. The stormwater pond is designed to overflow to Fisher Creek during severe storm events. The existing facility will be maintained, matching the existing condition.

Upon future buildout of the VIC Master Plan, stormwater runoff from impervious services (e.g., parking lots, building/rooftops, streets, bikeways, and sidewalks) will be treated and infiltrated on-site. Stormwater runoff will be addressed in detail with future development plans and Stormwater Technical Information Report(s) with site plan review requests.

- 2) Could waste materials enter ground or surface waters? If so, generally describe.

[\[help\]](#)

As noted above, the existing stormwater facility serving the building and parking lots is designed to overflow into Fisher Creek during severe storm events.

New development within the revised master plan site is expected to fully infiltrate runoff from pollution generating impervious surfaces following treatment to City of Vancouver standards. No waste material discharge is to occur within any ground waters. Future stormwater systems are not anticipated to discharge to surface waters off-site.

- 3) Does the proposal alter or otherwise affect drainage patterns in the vicinity of the site? If so, describe.

The master plan site will not alter or otherwise affect drainage patterns in the vicinity of the site. Stormwater from the current development flows to the existing stormwater pond and subsequently to Fisher Creek. Existing flows will be maintained.

- 4) Proposed measures to reduce or control surface, ground, and runoff water, and drainage pattern impacts, if any:

Current stormwater flows to the existing stormwater pond and subsequently to Fisher Creek will be maintained. The master plan site is designed to fully infiltrate stormwater on-site given the high permeability factor of on-site soils. Upon future site buildout, construction and site improvements will occur in compliance with local and state stormwater management requirements. Implementation of erosion control Best Management Practices (BMPs) will ensure that the project will not have any significant effects on surface or ground waters.

4. Plants [\[help\]](#)

- a. Check the types of vegetation found on the site: [\[help\]](#)
☒ deciduous tree: **alder**, maple, aspen, other
☒ evergreen tree: **fir**, cedar, pine, other
☒ shrubs
☒ grass
☒ pasture
☐ crop or grain
☐ Orchards, vineyards or other permanent crops.
☐ wet soil plants: cattail, buttercup, bullrush, skunk cabbage, other
☐ water plants: water lily, eelgrass, milfoil, other
☐ other types of vegetation
- b. What kind and amount of vegetation will be removed or altered? [\[help\]](#)
Of the approximately 179-acre master plan site, approximately 24 acres is devoted to open space area including an approximately 13.7-acre forested tract in the northeast portion of the site. Upon future buildout, any required vegetation to be impacted will be reflected on the development plans and limited to the extent feasible.
- c. List threatened and endangered species known to be on or near the site. [\[help\]](#)
As noted in the Critical Areas Memorandum prepared on September 12, 2022, by PHS, no critical habitat for threatened or endangered species has been mapped within the VIC master plan site.
- d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any: [\[help\]](#)
Approximately 24 acres of the VIC Master Plan site is devoted to open space area including an approximately 13.7-acre forested tract in the northeast portion of the site. Future site development will incorporate landscaping consisting of groundcover, shrubs, and trees in compliance with Vancouver Municipal Code (VMC) requirements to provide plant diversity including native plans and tree canopy.
- e. List all noxious weeds and invasive species known to be on or near the site.
There are no noxious weeds or invasive species known to be on or near the site.

5. Animals

- a. List any birds and other animals which have been observed on or near the site or are known to be on or near the site. Examples include: [\[help\]](#)
 birds: **hawk**, heron, eagle, **songbirds**, other: **osprey**
 mammals: deer, bear, elk, beaver, other: **cows**
 fish: bass, salmon, trout, herring, shellfish, other:
- b. List any threatened and endangered species known to be on or near the site. [\[help\]](#)
As noted in the September 12, 2022, Critical Areas Memorandum prepared by PHS, no critical habitat for threatened or endangered species has been mapped within the Master Plan site.

- c. Is the site part of a migration route? If so, explain. [\[help\]](#)
The Master Plan site is located within the Pacific Flyway but is not known to be used as a critical stopover.
- d. Proposed measures to preserve or enhance wildlife, if any: [\[help\]](#)
As noted in the September 12, 2022, Critical Areas Memorandum prepared by PHS, there are no anticipated impacts to wildlife or wildlife habitat as a result the future buildout of the Master Plan.
- e. List any invasive animal species known to be on or near the site.
There are no invasive animal species known to be on or near the Master Plan site.

6. Energy and natural resources

- a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc. [\[help\]](#)
Energy for future proposed development will include electricity to be used for heating, cooling, and lighting of light industrial buildings, offices, commercial/retail buildings, and residential dwelling units. Use of natural gas within the campus will be limited to commercial and industrial uses.

The applicant has provided Sustainability Goals for City of Vancouver Climate Action Framework (CAF) Alignment, prepared by PAE on March 27, 2023 (Appendix I) for site infrastructure and future phase developments to align to the Vancouver Climate Action Framework (CAF) targeted goals. The memorandum addresses recommended Green House Gas (GHG) reducing measures to be evaluated at the time of each new development project.

- b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe. [\[help\]](#)
Due to planned setbacks from adjacent properties, the Master Plan site is not anticipated to affect the potential use of solar energy by adjacent properties.
- c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any: [\[help\]](#)
Future proposed buildings will conserve energy through compliance with the Washington State Energy Code, and through the implementation of energy efficiency measures and sustainability goals that closely align with the targeted goals of the recently adopted CAF. As described in the Sustainability Goals for City of Vancouver Climate Action Framework (CAF) Alignment, prepared by PAE on March 27, 2023, included as Appendix I with the Master Plan application, build-out of the master plan is intended to include all-electric systems approach for new domestic use, apart from natural gas implemented for proposed light industrial uses as necessary. PAE has recommended other GHG reducing options that will be evaluated at the time of each subsequent site plan request including measures to increase electric use with proposed commercial/retail uses, increase onsite solar installations, material selections and construction practices to reduce emissions for the buildings and site infrastructure, and increasing electrical vehicle charging stations as necessary with change in demand.

The Mixed-Use Master Plan site has the potential to reduce energy impacts, predominantly through the "20 Minute Neighborhood" concept that encourages active (walking, cycling) transport and public transport in order to reduce

dependency on vehicles and gasoline consumption. As demonstrated on the Mobility Plan Sheet 005 of the Master Plan Design Drawings (Appendix E), non-vehicular routes to the site including bicycle and pedestrian pathways are proposed throughout the site.

7. Environmental health

- a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste that could occur as a result of this proposal? If so, describe. [\[help\]](#)

The proposed master plan allows an array of land uses within the various designated land use areas. As the specific uses and their operational needs are unknown at this time, the proposed master plan will not result in any environmental health hazards. Further evaluation of the potential for any site-specific development to pose environmental health hazards will be addressed with site-specific SEPA evaluations.

- 1) Describe any known or possible contamination at the site from present or past uses.

Per the Phase 1 Environmental Site Assessment Vancouver Tech Center – 18110 SE 34th Street Vancouver, Washington, prepared by WSP, dated January 2021, underground waste solvent lines were previously located south of the South Service Building; however, the former location of the lines is currently within a new corridor, and an acoustic chamber has been built in the vicinity. Therefore, it is likely that the piping was removed during construction and activities and any contamination encountered at that time would have been reported and addressed. No investigation is recommended by WSP because the area has been developed.

- 2) Describe existing hazardous chemicals/conditions that might affect project development and design. This includes underground hazardous liquid and gas transmission pipelines located within the project area and in the vicinity.

There are no existing on-site hazardous chemicals or conditions within the master plan site that would affect future site development and design.

- 3) Describe any toxic or hazardous chemicals that might be stored, used, or produced during the project's development or construction, or at any time during the operating life of the project.

Existing tenants within the VIC may store small quantities of hazardous chemicals used in light manufacturing processes. Existing and future tenants are required to comply with applicable regulations related to the use, storage or production of toxic or hazardous waste. A review of toxic or hazardous chemical storage, use or production will be evaluated and addressed at the time of individual site development for each phase within the Master Plan site.

- 4) Describe special emergency services that might be required.

Fire, emergency medical, and police services will be required with future development of the site.

- 5) Proposed measures to reduce or control environmental health hazards, if any:

There are no environmental health hazards anticipated with this site; therefore, no measures are proposed to reduce or control environmental health hazards.

b. Noise

- 1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)? [\[help\]](#)
Existing noise around the site includes loading activities at the existing VIC buildings, movement of vehicles throughout the VIC site, and vehicular traffic on the streets that bound the master plan site – SE 34th Street to the south, SE 192nd Avenue to the east, and SE 176th Avenue to the west. These noise sources are typical ambient urban conditions and will not affect the project.
- 2) What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site. [\[help\]](#)
Heavy equipment used for site improvements and construction will generate noise on the site and will be of short-term duration. The hours of use for heavy equipment will be governed by the City's noise ordinance. In the long-term, noise from vehicular traffic on new roadways within the site will generate noise similar to traffic on the other adjacent streets.
- 3) Proposed measures to reduce or control noise impacts, if any: [\[help\]](#)
Compliance with the City's noise ordinance will reduce and control any temporary and long-term noise impacts.

8. Land and shoreline use

- a. What is the current use of the site and adjacent properties? Will the proposal affect current land uses on nearby or adjacent properties? If so, describe. [\[help\]](#)
The current VIC Mixed Use Master Plan Site consists of an existing approximately 715,000 square foot (SF) multi-tenant light industrial building.

The Master Plan Site abuts the Clear Meadows and Fisher's Grove master planned single family residential communities to the north, SE 34th Street (a four-lane arterial road with a center landscaped median) which separates the site from other master planned single-family residential neighborhoods (Hiddenbrook, The Village, and The Glen). The site is bounded on the east by Fishers Creek and SE 192nd Avenue, with adjacent commercial development. The site is bounded on the west by SE 176th Avenue and adjacent master planned residential subdivisions (The Firs, 4-5 Town Center, and Heritage Park). All the adjacent master planned communities are within City of Vancouver Neighborhood Associations.

The revised Mixed-Use Master Plan has been designed for compatibility with adjacent properties with the inclusion of trails/open space area, and convenient and accessible bike/pedestrian-oriented pathways to navigate to and from the site.

- b. Has the project site been used as working farmlands or working forest lands? If so, describe. How much agricultural or forest land of long-term commercial significance will be converted to other uses as a result of the proposal, if any? If resource lands have not been designated, how many acres in farmland or forest land tax status will be converted to nonfarm or nonforest use? [\[help\]](#)
Historically, northern portions of the site have had limited agriculture and cattle grazing activity. Outside of this limited use, there is no other known agricultural history on the site or forest land of long-term commercial significance on the property.

- 1) Will the proposal affect or be affected by surrounding working farm or forest land normal business operations, such as oversize equipment access, the application of pesticides, tilling, and harvesting? If so, how:
There is no working farmland or forestland in the vicinity of the master plan site. Upon future site development, remaining limited cattle grazing activity will be curtailed and/or eliminated from the site.
- c. Describe any structures on the site. [\[help\]](#)
There are six (6) main structures consisting of approximately 715,000 square feet on the property that are connected either through covered, enclosed walkways or interior corridors.
- d. Will any structures be demolished? If so, what? [\[help\]](#)
The vast majority of existing buildings and structures located within the site will remain. Small ancillary structures including the fire pump house and recycling facility are likely to be demolished and replaced during future build out of the master plan.
- e. What is the current zoning classification of the site? [\[help\]](#)
The VIC Master Plan site is zoned Mixed Use (MX).
- f. What is the current comprehensive plan designation of the site? [\[help\]](#)
The VIC Master Plan site's current comprehensive plan designation is Commercial.
- g. If applicable, what is the current shoreline master program designation of the site? [\[help\]](#)
There are no shoreline master program designations for the site.
- h. Has any part of the site been classified as a critical area by the city or county? If so, specify. [\[help\]](#)
As confirmed in the September 12, 2022, Critical Areas Memorandum, Fisher Creek and associated wetlands have been identified off-site to the east. Buffers associated with the creek and wetlands may extend into the Master Plan site. Additional field investigation will be required with future site development land use applications to classify the resource and establish resource boundaries and associated regulatory buffers.
- i. Approximately how many people would reside or work in the completed project? [\[help\]](#)
The revised master plan will consolidate the Single-Family Residential LUA and Multi-Family Residential LUA into a single, non-contiguous Residential LUA. The revised master plan proposes a maximum of 1,800 dwelling units which can be constructed within either the R LUA, the MX LUA or IL LUA. The United States Census Bureau reports that the City of Vancouver had an average of 2.46 persons per household between 2017-2021. Applying this average household size to the project, the development could have an estimated 4,428 residents.

The applicant proposes approximately 1,703,065 square feet of non-residential building square footage for employment uses within the IL and MX LUAs, which includes 715,000 square feet within the existing VIC building. Overall, the new employment square footage contemplated is consistent with the current master plan and is expected to yield approximately 5,000 jobs, including 3,500 net new jobs across the entire campus at project buildout.

- j. Approximately how many people would the completed project displace? [\[help\]](#)
The proposed buildout of the VIC Master Plan will not result in displacement.
- k. Proposed measures to avoid or reduce displacement impacts, if any: [\[help\]](#)
The proposed buildout of the VIC Master Plan will not result in displacement.
- l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any: [\[help\]](#)
The VIC Mixed Use Master Plan site has a comprehensive plan designation of Commercial and is zoned Mixed Use (MX). The proposed land use areas are compatible with the current City comprehensive plan and applicable zoning code standards for the site as amended by the Third Amended and Restated Development Agreement (Restated DA). Therefore, no mitigation measures are necessary to ensure compatibility with existing and projected land uses and plans.
- m. Proposed measures to ensure the proposal is compatible with nearby agricultural and forest lands of long-term commercial significance, if any:
There are no nearby agricultural or forest lands of long-term commercial significance, so no mitigation measures are needed.

9. Housing

- a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing. [\[help\]](#)
The VIC Mixed Use Master Plan proposes approximately 1,800 residential dwelling units. The Master Plan proposes a mix of building types including low-rise residential units, studio apartments, multi-family units, and townhomes.
- b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing. [\[help\]](#)
There are no dwelling units to be eliminated with this master plan site.
- c. Proposed measures to reduce or control housing impacts, if any: [\[help\]](#)
There are no dwelling units to be eliminated with this master plan site.

10. Aesthetics

- a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed? [\[help\]](#)
Upon future buildout, the applicant anticipates the tallest structure to be approximately six (6) stories, with a maximum height of approximately 75 feet. As noted in the Design Guidelines (Appendix F), a variety of building materials is encouraged throughout the site including weathered wood, rusted steel, singed woods, and other materials that reflect the industrial character of the IL LUA, such as concrete, steel, aluminum, and heavy timber. Additionally, single family attached developments are encouraged to incorporate a variety of natural materials including wood and stone in a range of natural color tones,
- b. What views in the immediate vicinity would be altered or obstructed? [\[help\]](#)
There are no views in the immediate vicinity that would be significantly altered or obstructed. The Master Plan proposes land use areas (LUAs) that are compatible with adjacent property uses. Per the Revised Master Plan Sheet 003 (Appendix E), the southwest corner will be multi-family residential LUA near the adjacent residential neighborhoods to the west. The northern part of the site, which abuts a residential neighborhood, will have a school LUA,

residential LUA, and open space area. The denser, light industrial and mixed-use land use areas will be in the core, to the south, and to the east of the property, to effectively transition to commercial areas along SE 192nd Avenue.

- c. Proposed measures to reduce or control aesthetic impacts, if any: [\[help\]](#)
The orientation of the proposed land uses within the master plan has been designed to mitigate and control potential aesthetic impacts of the project. Light industrial, employment and mixed-use buildings are focused at the center of the property around the existing buildings on the site and residential uses, a school, an open space corridor and forested tract are proposed to the west and northeast closest to the nearest residential subdivisions to ensure the most compatible land uses are adjacent to existing uses.

11. Light and glare

- a. What type of light or glare will the proposal produce? What time of day would it mainly occur? [\[help\]](#)
The future development of the Mixed-Use Master Plan site will produce light or glare associated with residential, light industrial, office, commercial/retail, and school uses. Lighting produced on the site will consist of outdoor lighting for building safety, vehicle circulation and maneuvering areas limited to early morning and evening hours. Streetlights will be proposed in accordance with City Standards with the roads that do not presently have street lighting (e.g., 176th Avenue). Streetlights would result in lighting in early morning and evening hours to enhance safety on-site and to the adjacent properties. Future proposed development under the Master Plan will be designed to avoid producing glare to the extent feasible.
- b. Could light or glare from the finished project be a safety hazard or interfere with views? [\[help\]](#)
Future development of the Master Plan site is not anticipated to produce light or glare that will result in a safety hazard or interfere with views.
- c. What existing off-site sources of light or glare may affect your proposal? [\[help\]](#)
There are no known off-site sources of light or glare that would affect this master plan proposal.
- d. Proposed measures to reduce or control light and glare impacts, if any: [\[help\]](#)
Future development of the VIC Master Plan site will propose on-site lighting elements in compliance with applicable VMC requirements, which will include fixtures designed to minimize any significant light trespassing onto off-site properties.

12. Recreation

- a. What designated and informal recreational opportunities are in the immediate vicinity? [\[help\]](#)
The subdivisions to the west and north have 'pocket parks'. Fisher's Landing Elementary School is located to the south of the site across 34th Street and contains a playfield adjacent to 34th Street. Two neighborhood, public parks, Clear Meadows Park and Heritage Park are in the immediate vicinity of the Master Plan site. Approximately one mile away along 192nd Avenue is Fisher Basin community park, which draws from a wider geographic base to include this site. The VIC Master Plan proposes approximately 24-acres of open space LUA which includes designating an approximately 13.7-acre forested tract for

public recreation at the northeast corner of the Master Plan area. Other open space and recreational features include a perimeter multi-use loop trail, pedestrian/bicycle-oriented pathways, a neighborhood park and town plaza area.

- b. Would the proposed project displace any existing recreational uses? If so, describe. [\[help\]](#)
There are no recreational uses to be displaced as a result of future development of the VIC Master Plan.
- c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any: [\[help\]](#)
The VIC Master Plan proposes approximately 24-acres of open space LUA which includes designating an approximately 13.7-acre forested tract for public recreation at the northeast corner of the Master Plan area. Other open space and recreational features include a two-mile multi-use loop trail around the perimeter of the site, pedestrian/bicycle-oriented pathways, a neighborhood park, and town plaza area. Other open space features include a neighborhood park block within the Residential LUA in the southwest corner of the site and a town plaza in the southeast.

13. Historic and cultural preservation

- a. Are there any buildings, structures, or sites, located on or near the site that are over 45 years old listed in or eligible for listing in national, state, or local preservation registers located on or near the site? If so, specifically describe. [\[help\]](#)
There are no buildings or structures located on-site that are over 45 years old and that are listed or are eligible for listing in national, state, or local preservation registers.
- b. Are there any landmarks, features, or other evidence of Indian or historic use or occupation? This may include human burials or old cemeteries. Are there any material evidence, artifacts, or areas of cultural importance on or near the site? Please list any professional studies conducted at the site to identify such resources. [\[help\]](#)
Archaeological Investigations Northwest (AINW) conducted a cultural resources survey for the revised Vancouver Innovation Center Master Plan site in August of 2022. The report found no known evidence of archaeological or historic resources on the VIC property.
- c. Describe the methods used to assess the potential impacts to cultural and historic resources on or near the project site. Examples include consultation with tribes and the department of archeology and historic preservation, archaeological surveys, historic maps, GIS data, etc. [\[help\]](#)
AINW conducted a review of records available on the Department of Archaeological and Historic Preservation (DAHP) Washington Information System for Architectural and Archaeological Records Data (WISAARD) online database. Historical maps, photographs, and documents were reviewed to assess the potential for pre-contact (Native American) and historic-period archaeological resources. AINW conducted shovel tests distributed across the site. There are no known landmarks or evidence of cultural or historic resources on or near the site.
- d. Proposed measures to avoid, minimize, or compensate for loss, changes to, and disturbance to resources. Please include plans for the above and any permits that may be required.

There are no known archaeological materials identified during AINW's investigation therefore, no measures to avoid, minimize or compensate for loss, changes to, and disturbance to resources are proposed. With future construction activity, the developer will comply with City and State regulations if any archaeological, cultural, and historic resources are discovered.

14. Transportation

- a. Identify public streets and highways serving the site or affected geographic area and describe proposed access to the existing street system. Show on site plans, if any.

[\[help\]](#)

The VIC Master Plan site is served on the south by SE 34th Street (a four lane principal arterial with a center median and sidewalk on both sides, with a meandering sidewalk fronting the subject site), on the west by SE 176th Avenue (a two-lane collector with a center turn lane and sidewalks on both sides), and on the east by SE 192nd Avenue (a four lane principal arterial with a center median, meandering sidewalk on both sides and a bike lane on the south leg). Access to the VIC site is provided via SE 34th Street. A private vehicle circulation route extends north into the site from the signalized intersection of SE Hiddenbrook Drive and SE 34th Street along the site frontage. The private road loops around the building and connects with SE 34th Street at a stop-controlled intersection near the southwest corner of the site.

- b. Is the site or affected geographic area currently served by public transit? If so, generally describe. If not, what is the approximate distance to the nearest transit stop? [\[help\]](#)

C-TRAN bus line Number 37 serves the site along SE 34th Street and SE 192nd Avenue. Bus stops are located at the southeastern corner of the project site at SE 34th Street and Hiddenbrook, and at the intersection of SE 34th Street and 177th Avenue.

- c. How many additional parking spaces would the completed project or non-project proposal have? How many would the project or proposal eliminate? [\[help\]](#)

Several existing parking facilities within the site will be incrementally demolished as development occurs. New parking lots, stalls, and/or facilities will be constructed with each phase of new development. The applicant is anticipating the use of shared or joint parking across the site. The variety of uses proposed within the site do not have coinciding peak parking demands and therefore, provide a unique opportunity to allow shared parking.

Parking capacity requirements are based upon unit type, size and use therefore an estimate of parking capacity is not known at this time. Parking standards will be evaluated at the time of individual site development and will be consistent with applicable regulations.

- d. Will the proposal require any new or improvements to existing roads, streets, pedestrian, bicycle or state transportation facilities, not including driveways? If so, generally describe (indicate whether public or private). [\[help\]](#)

Per the Traffic Impact Analysis (TIA), prepared by Kittelson and Associates Inc., dated April 28, 2023, master plan development is generally anticipated in four phases with phases 2-4 providing new on-site public roadways:

- Phase 1 includes the VIC Building North and up to 300 homes using existing campus access.
- Phase 2 will construct the southwest portion of a new on-site loop road between SE Hiddenbrook Drive and SE 29th Street, SE 29th Street

between the new west loop road roundabout and a new roundabout at SE 176th Avenue and will close the existing VIC campus roadway connection to SE 34th Street aligned with SE 177th Avenue.

- Phase 3 will extend SE 29th Street from the Phase 2 west roundabout terminus east across the VIC campus to a new signalized intersection at SE 192nd Avenue.
- Phase 4 will complete the loop road between a new east roundabout on the loop road and SE Hiddenbrook Drive to the south.

- e. Will the project or proposal use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe. [\[help\]](#)

There are no water, rail, or air transportation facilities located on or in the immediate vicinity of the Master plan site area.

- f. How many vehicular trips per day would be generated by the completed project or proposal? If known, indicate when peak volumes would occur and what percentage of the volume would be trucks (such as commercial and nonpassenger vehicles). What data or transportation models were used to make these estimates? [\[help\]](#)

The revised master plan does not anticipate significant impact or demand to transportation, water, sewer or stormwater management systems and infrastructure as further described below.

The VIC Development Agreement (VIC DA) with the City of Vancouver vested trips for the currently approved Master Plan. Per the DA, vested net new trips include a total of 26,982 average daily trips (ADTs), 2,088 AM peak hour trips, and 1,991 PM peak hour trips. On- and off-site transportation capacity mitigation is predicated on the number of AM and PM peak hour trips while transportation concurrency mitigation is determined based on PM peak hour trips.

The April 28, 2023, Traffic Impact Analysis (TIA) prepared by Kittelson and Associates, Inc. (Appendix D) demonstrates that the proposed uses within the revised master plan will result in a modest increase in weekday AM peak hour trip generation (141 net new trips added) and will not change the total net new PM peak hour trip generation compared to the current master plan. As indicated on Table 4 of the TIA, the revised master plan is estimated to generate 2,229 net new weekday AM peak hour trips and 1,991 net new PM peak hour trips. The TIA updated on- and off-site impacts of the project based upon the revised peak hour trip generation and recalibrated identified mitigation as appropriate. No new off-site traffic mitigation improvements were identified.

- g. Will the proposal interfere with, affect or be affected by the movement of agricultural and forest products on roads or streets in the area? If so, generally describe.
- Future buildout of the site is not expected to interfere with, affect or be affected by the movement of agricultural and/or forest products on roads or streets in the area.**

- h. Proposed measures to reduce or control transportation impacts, if any: [\[help\]](#)
- The proposed master plan revision will result in reduced overall traffic impacts when compared to the current master plan, therefore, no new mitigation measures are proposed. However, it is anticipated that the following mitigation measures will be implemented with buildout of the proposed revised master plan as noted in Table 1 on the following page.**

Table 1. Preliminary Transportation Mitigation – VIC Master Plan

Facility	Segment/ Study Intersection ID	Mitigation Recommendation	Needed Pre- VIC Master Plan?	Triggered by VIC Master Plan Trips?	VIC Master Plan Trigger Phase?
On-Site Roadways & Intersections					
SE 29 th Street	<i>Extend collector arterial roadway across the VIC Master Plan site in three segments</i>				
	West Segment	From SE 176 th Avenue to West Loop Road	N/A	Yes	2
	North Segment	From West Loop Road to East Loop Road	N/A	Yes	3
	East Segment	From East Loop Road to SE 192 nd Avenue	N/A	Yes	3
SE 184 th Avenue	N/A	Renovate collector arterial roadway within The VIC Master Plan site from SE 34 th Street to Loop Road	N/A	Yes	2
West Loop Road	N/A	From SE 184 th Avenue to SE 29 th Street	N/A	Yes	2
East Loop Road	N/A	From SE 184 th Avenue to SE 29 th Street	N/A	Yes	4
West Loop Road/ SE 29 th Street	N/A	Construct single lane roundabout	N/A	Yes	2
East Loop Road/ SE 29 th Street	N/A	Construct single lane roundabout	N/A	Yes	3
Site-Access Changes					
West Site Access/ SE 34 th Street	7	Close and vacate motor vehicle site-access (intersection north approach)	No	No	2
SE 29 th Street/ SE 176 th Avenue	9	Reconstruct as a single lane roundabout	No	Yes	2
SE 29 th Street/ SE 192 nd Avenue		Install traffic signal with interconnect Construct and stripe separate eastbound left and right turn lanes with 250 feet of storage each Stripe northbound left-turn lane with 200 feet of storage		Yes	3
Off-site Intersection Mitigations with Master Plan Development					
SE 29 th Street/ SE 164 th Avenue	11	Modify traffic signal to provide east-west protected/permissive left-turn phasing	No	Yes	2
		Extend westbound left-turn lane striping to provide 225 feet of storage (striping only)	No	Yes	2
		Extend southbound left-turn storage to provide 300 feet of storage (reconstruct center median area)	No	Yes	2
SE 192 nd Avenue/ SR- 14 Westbound Ramp Terminal	N/A	Pay proportionate share contribution toward future capacity improvements with each site development application. Estimated total fee of \$430,000 based on assumed Master Plan land use plan.	Yes	No	Each phase based on trips added
SE 20 th Street/ SE 176 th Avenue	10	Pay proportionate share contribution toward future capacity improvements with each site development application. Estimated total fee of \$33,600 based on assumed Master Plan land use plan.	Yes	No	Each phase based on trips added
SE 34 th Street/ SE 192 nd Avenue	5	Pay proportional share contribution towards re-constructing streets with a more durable pavement treatment to reduce maintenance needs. Estimated total fee of \$83,400 based on assumed Master Plan land use plan.	Yes	No	Each phase based on trips added

15. Public Services

- a. Would the project result in an increased need for public services (for example: fire protection, police protection, public transit, health care, schools, other)? If so, generally describe. [\[help\]](#)

With the VIC Mixed Use Master Plan buildout, residents, employees, and businesses would require fire protection, police protection, public transit, health care, schools, and amenities like parks, open space, and recreational activities.

- b. Proposed measures to reduce or control direct impacts on public services, if any. [\[help\]](#)

No measures are proposed to reduce or control direct impacts on public services as it is anticipated that tax revenues and utility fees generated from the build out of the master plan will address the additional demands created by the project.

16. Utilities

- a. Circle utilities currently available at the site: [\[help\]](#)
electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other _____

Electricity, natural gas, water, refuse services, telephone, and sanitary sewer. Cable and data services are also available to the site.

- b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed. [\[help\]](#)

The VIC Mixed Use Master Plan site will require the following utilities:

Electricity	Clark Public Utilities
Natural Gas	NW Natural Gas
Sewer	City of Vancouver
Water	City of Vancouver
Refuse	Waste Management
Communications	Multiple providers available

C. SIGNATURE [\[HELP\]](#)

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Signature:  _____

Name of signee: Jessica Herceg

Position and Agency/Organization: Senior Planner, DOWL

Date Submitted: May 5, 2023

APPENDIX D

REVISED TRAFFIC IMPACT ANALYSIS

April 28, 2023

Project #: 27715.5

Eric Hahn, PE
City of Vancouver Public Works
4500 SE Columbia Way
Vancouver, WA 97668-1995

RE: Traffic Impact Analysis for the Revised Vancouver Innovation Center (The VIC) Mixed Use Master Plan

Dear Eric,

The VIC Building Owner LLC (the Applicant) proposes revisions to The VIC Mixed Use Master Plan and Development Agreement¹. Primary objectives of the revisions are to 1) consolidate industrial areas to optimize opportunities for employment-generating development and 2) more substantially integrate development types to allow for greater density while creating an opportunity to provide more open spaces throughout the site to enhance design and placemaking opportunities.

From a traffic impact perspective, key changes associated with the revised Master Plan include:

- A small reduction in overall daily campus trip generation, a modest increase in AM peak hour trip generation, and no change in the PM peak hour trip generation compared to the current approvals and trip vesting;
- Refinement of the on-site transportation network;
- Elimination of one existing campus vehicular access on SE 34th Street; and
- Refinement of the on and-off site transportation mitigation measures into four distinct project phases.

In addition to the Master Plan changes noted above, this study incorporates transportation system changes anticipated associated with the City of Vancouver's *SE 34th Street Safety & Mobility Project*². The documentation presented in this report is prepared to inform updates to the Development Agreement, in particular memorialization of The VIC trip vesting and transportation mitigation requirements with additional specificity by each of four master plan phases.

BACKGROUND

The VIC is an approximately 179-acre site located at 18110 SE 34th Street and is developed with approximately 715,000 square feet of campus building area supported by surface parking. Today, the

¹ Third Amended and Restated Development Agreement (Restated DA) approved by the Vancouver City Council by Ordinance 4346 on August 16, 2021.

² <https://www.cityofvancouver.us/cdd/page/se-34th-street-safety-and-mobility-project>

campus is accessible at two locations on SE 34th Street including 1) a private vehicle circulation route that extends north into the site from the signalized intersection of SE Hiddenbrook Drive and 2) a private vehicle route that extends north into the site from the stop-controlled intersection near the southwest corner of the site aligned with SE 177th Avenue to the south. Figure 1 shows the site vicinity map and Figure 2 illustrates the revised Master Plan land use areas.

Master Plan development is generally anticipated in four phases that each have different supporting transportation infrastructure, with Phases 2-4 providing new on-site public roadways:

- Phase 1 includes the VIC Building North and up to 300 homes using existing campus access.
- Phase 2 will construct the southwest portion of a new on-site loop road between SE Hiddenbrook Drive and SE 29th Street, SE 29th Street between the new west loop road roundabout and a new roundabout at SE 176th Avenue, and will close the existing The VIC campus roadway connection to SE 34th Street aligned with SE 177th Avenue upon completion of the on-site loop road and Hiddenbrook Drive renovations.
- Phase 3 will extend SE 29th travel from the Phase 2 west roundabout terminus east across the VIC campus to a new signalized intersection at SE 192nd Avenue.
- Phase 4 will complete the loop road between a new east roundabout on the loop road and SE Hiddenbrook Drive to the south. Upon completion of Phase 4 all roadways shall be complete.

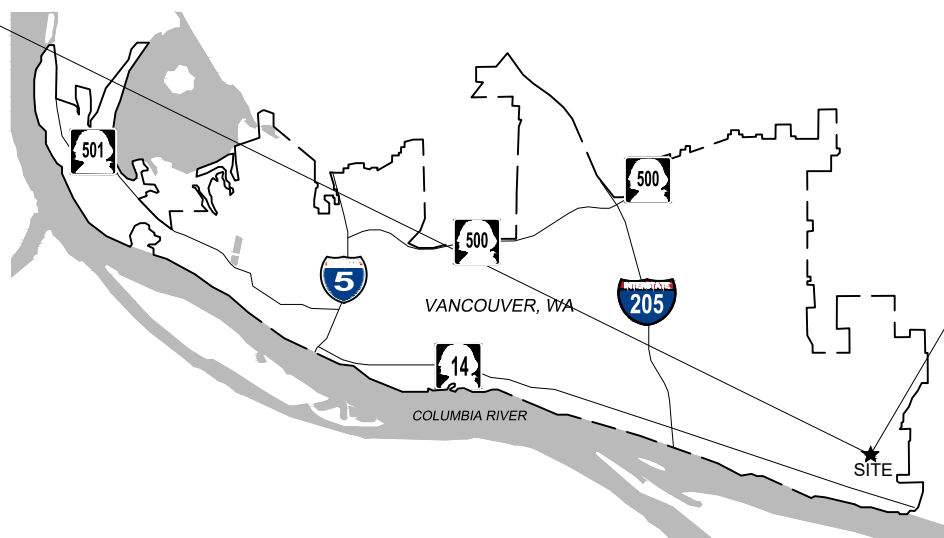
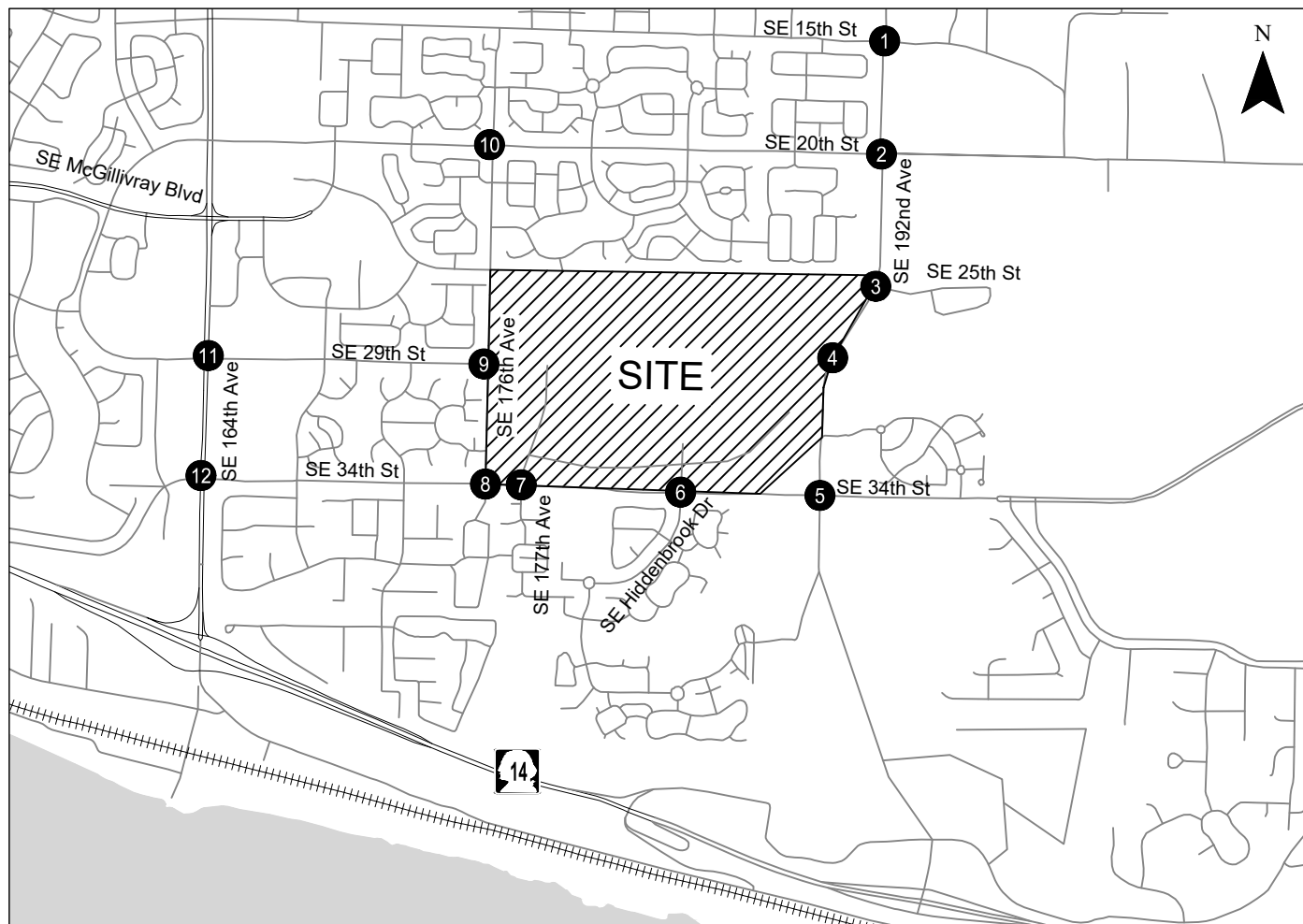
Some site development was already underway at the time this report was prepared consistent with the approved master plan and development agreement. Consistent with the prior master plan, full build-out and occupancy is anticipated to occur over a 15-year period. Accordingly, current and future year 2038 transportation conditions were analyzed.

This letter documents the methodology and findings of a traffic impact analysis (TIA) prepared for the proposed revisions to the Master Plan. Consistent with current obligations, future site development applications under the proposed revised Master Plan and Development Agreement will each be required to demonstrate compliance with the Master Plan transportation requirements through preparation of a Transportation Compliance letter.

TRANSPORTATION MITIGATION SUMMARY

In addition to typical roadway frontage improvements along the streets abutting VIC, several transportation improvements are recommended in conjunction with Master Plan site development (subject to City of Vancouver approval). Table 1 summarizes the recommended transportation improvements and reflects which are triggered by the VIC Master Plan versus those needed regardless of any additional development within the campus. Further details on each improvement are described more fully in later sections of this report.

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 Apr 04, 2023 - 2:20pm - ckleyhans



Study Intersections

Site Vicinity Map
 Vancouver, Washington

Figure
 1



Figure 2

Table 1. Summary of Mitigation Recommendations

Facility	Segment/ Study Intersection ID	Mitigation Recommendation	Needed Pre- VIC Master Plan?	Triggered by VIC Master Plan Trips?	VIC Master Plan Trigger Phase?
On-Site Roadways & Intersections					
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	North Segment	From West Loop Road to East Loop Road	N/A	Yes	3
	East Segment	From East Loop Road to SE 192 nd Avenue	N/A	Yes	3
SE 184 th Avenue	N/A	Renovate collector arterial roadway within The VIC Master Plan site from SE 34 th Street to Loop Road	N/A	Yes	2
West Loop Road	N/A	From SE 184 th Avenue to SE 29 th Street	N/A	Yes	2
East Loop Road	N/A	From SE 184 th Avenue to SE 29 th Street	N/A	Yes	4
West Loop Road/ SE 29 th Street	N/A	Construct single lane roundabout	N/A	Yes	2
East Loop Road/ SE 29 th Street	N/A	Construct single lane roundabout	N/A	Yes	3
Site-Access Changes					
West Site Access/ SE 34 th Street	7	Close and vacate motor vehicle site-access (intersection north approach)	No	No	2
SE 29 th Street/ SE 176 th Avenue	9	Reconstruct as a single lane roundabout	No	Yes	2
SE 29 th Street/ SE 192 nd Avenue	4	Install traffic signal with interconnect Construct and stripe separate eastbound left and right turn lanes with 250 feet of storage each Stripe northbound left-turn lane with 200 feet of storage	No	Yes	3
Off-site Intersection Mitigations with Master Plan Development					
SE 29 th Street/ SE 164 th Avenue	11	Modify traffic signal to provide east-west protected/permissive left-turn phasing	No	Yes	2
		Extend westbound left-turn lane striping to provide 225 feet of storage (striping only)	No	Yes	2
		Extend southbound left-turn storage to provide 300 feet of storage (reconstruct center median area)	No	Yes	2
SE 192 nd Avenue/ SR-14 Westbound Ramp Terminal	N/A	Pay proportionate share contribution toward future capacity improvements with each site development application. Estimated total fee of \$430,000 based on assumed Master Plan land use plan.	Yes	No	Each phase based on trips added
SE 20 th Street/ SE 176 th Avenue	10	Pay proportionate share contribution toward future capacity improvements with each site development application. Estimated total fee of \$33,600 based on assumed Master Plan land use plan.	Yes	No	Each phase based on trips added
SE 34 th Street/ SE 192 nd Avenue	5	Pay proportional share contribution towards re-constructing streets with a more durable pavement treatment to reduce maintenance needs. Estimated total fee of \$83,400 based on assumed Master Plan land use plan.	Yes	No	Each phase based on trips added

N/A = Not applicable

SCOPE OF THE REPORT

The TIA identifies the transportation-related impacts associated with the proposed development. Per Vancouver Municipal Code (VMC) Section 11.80.130, a TIA is needed given the trips collectively generated by the proposed Master Plan land uses will exceed 20 net new weekday PM peak hour trips.

The study intersections and overall study area for the Master Plan were determined based on a review of the prior master plan, existing travel patterns, TIA requirements pursuant to Vancouver Municipal Code (VMC) Sections 11.80.080 and 11.80.130 as well as scoping direction provided by City staff.

Study Intersections

As coordinated with City staff, the following 12 intersections were analyzed:

- 1) SE 15th Street/SE 192nd Avenue
- 2) SE 20th Street/SE 192nd Avenue
- 3) SE 25th Street/SE 192nd Avenue
- 4) SE 29th Street/SE 192nd Avenue (analyzed in year 2038 with Master Plan development only)
- 5) SE 34th Street/SE 192nd Avenue
- 6) SE 34th Street/SE Hiddenbrook Drive-East Site Access
- 7) SE 34th Street/SE 177th Place-West Site Access
- 8) SE 34th Street/SE 176th Avenue
- 9) SE 29th Street/SE 176th Avenue
- 10) SE 20th Street/SE 176th Avenue
- 11) SE 29th Street/SE 164th Avenue
- 12) SE 34th Street/SE 164th Avenue

Additionally, though not a study intersection, future site-generated trips projected to travel through the SR-14/SE 192nd Avenue westbound ramp terminal are documented to estimate proportional share contributions that will be required of future Master Plan development site plan applications.

Analysis Periods

Weekday AM and PM peak hour conditions were assessed for three analysis periods:

- Existing conditions;
- Future 15-year conditions (year 2038) that do not include any Master Plan build-out; and
- Year 2038 Build Out conditions with full Master Plan development and occupancy.

Report Format

The remaining sections of this report address the following transportation issues:

- Existing land use and transportation system conditions near The VIC;
- Study intersection crash history review;
- Trip generation and distribution estimates for the proposed The VIC land uses;
- Concurrency corridor trip assignment;
- Forecast future year (2038) baseline traffic conditions;
- Forecast future year (2038) Phase 1 to Phase 4 build out traffic conditions;
- A review of potential mitigation options;
- Intersection sight distance considerations; and,
- Findings and recommendations.

ANALYSIS METHODOLOGY

Intersection Levels-of-Service

Study intersection performance was evaluated using Synchro 11 and Sidra 9 software. All level-of-service (LOS) analyses for the intersections described in this report were performed in accordance with the procedures stated in the *Highway Capacity Manual 6th Edition* (HCM, Reference 1).

Queuing Analysis

Queuing analyses were prepared by reporting Synchro 95th percentile queues for the peak 15-minute analysis during both the weekday AM and PM peak hours.

Operating Standards

City of Vancouver Municipal Code Section 11.80.130.B states the following:

A proposed development that adds at least five net new peak hour trips to an intersection approach operating at a LOS E or lower within the required traffic impact analysis area may be denied based upon any of the following:

- 1. For signalized intersections, when off-site intersection conditions are at a LOS F, or*
- 2. For signalized intersections, when the LOS E and the volume to capacity ratio is greater than 0.95, or*
- 3. For unsignalized intersections, when the volume to capacity ratio for any lane on any approach is greater than 0.95, and*
- 4. When significant traffic hazards would be caused or materially aggravated by the proposed development.*

The above operating standards are applicable to all study intersections. Existing and year 2038 operational analyses at the study intersections were prepared using Synchro 11 and Sidra 9 software and compared to these standards. Current timing parameters and phasing information for the signalized study intersections was provided by City staff.

Existing Conditions Traffic Volume Development

Turning movement counts were obtained at the study intersections on a mid-week day during the morning (7:00 to 9:00 AM) and evening (4:00 to 6:00 PM) peak hour periods. Traffic counts collected at the SE 34th Street corridor study intersections by the City of Vancouver in early December 2022 were used in this study (the December 2022 counts were conducted as part of the City's *SE 34th Street Safety and Mobility Project* to provide consistency in the base existing conditions analyses presented in this report and the City's study). Traffic counts at the remaining study intersection counts were completed on a mid-week day in January 2023 while local schools were in-session when no inclement weather occurred that would alter traffic patterns³. *Appendix "A" provides the traffic count data sheets.*

EXISTING CONDITIONS

The existing conditions analysis identifies site conditions and the current operational and geometric characteristics of roadways within the study area. These conditions are compared with future conditions later in this report.

³ At the time of the traffic counts, a portion of the existing buildings on the VIC campus had been leased but not yet re-occupied. Trips associated with re-occupancy of the vacant space are addressed in the future 2038 baseline analysis.

Site Conditions and Adjacent Land Uses

Today, a portion of the VIC campus is occupied by a total building area of 715,000 square feet and associated surface parking lots. The campus has two gated accesses to SE 34th Street and is bounded by existing residential developments to the north, west and south with a commercial development and SE 192nd Avenue to the east. Fisher's Landing Elementary School is located south across SE 34th Street and is accessed via SE Hiddenbrook Drive.

Adjacent Roadway Facilities

Table 2 summarizes the existing transportation facilities and roadways in the study area.

Table 2: Existing Transportation Facilities and Roadway Designations

Roadway	Functional Classification ¹	Number of Travel Lanes	Posted Speed (mph)	Sidewalks?	Bicycle Lanes?	Median?	On-Street Parking?
SE 15 th Street	Collector Arterial	2	30	Yes ²	Yes ³	No	No
SE 20 th Street	Minor Arterial	2-3	40	Yes	Yes	Striped	No
SE 192 nd Avenue	Principal Arterial	4-5	40	Yes	Yes	Raised	No
SE 34 th Street	Principal Arterial	4-5	40	Yes	No	Raised	No
SE Hiddenbrook Drive	Local Street	2	25	Yes ⁴	Yes	No	No
SE 177 th Place	Local Street	2	25	Yes	No	No	Yes
SE 176 th Avenue	Collector Arterial	2	35	Yes	No	Striped	No
SE 29 th Street	Collector Arterial	2	25	Yes	Yes	No	No
SE 164 th Avenue	Principal Arterial	5-6	40	Yes	No	Raised	No

¹ Source: *City of Vancouver Arterial Street System and Classification Map*, Adopted June 27, 2022 (Reference 2).

² Continuous sidewalks only provided on the south side of SE 15th Street, west of SE 192nd Avenue. Sidewalks terminate approximately 900 feet east of SE 192nd Avenue.

³ Bicycle lanes are only provided west of SE 192nd Avenue.

⁴ Continuous sidewalks only provided on west side on SE Hiddenbrook Drive.

Transit Facilities

C-Tran currently offers multiple fixed transit routes that service the Fisher's Landing Transit Center (Reference 3) located approximately two-thirds of a mile west of the VIC. Route 30 - *Burton* operates daily along the SE 164th Avenue/NE 162nd Avenue corridor and has a stop located between SE 29th Street and SE 34th Street, approximately ½ mile west of the site. Additionally, Route 37 - *Mill Plain/Fisher's* operates along SE 164th Avenue, SE 192nd Avenue and along the site frontage on SE 34th Street, with daily service. A posted westbound transit stop for Route 37 is provided near both existing The VIC site access points on SE 34th Street. No shelter area is provided at either stop location.

Crash Analysis

Table 3 summarizes the crash frequency at the study intersections. Generally, the City of Vancouver considers a crash rate greater than one crash per million entering vehicles (MEV) to be an indicator that a potential geometric or operational issue may exist, and that further evaluation should be considered.

Table 3: Study Intersection Crash Frequency and Severity (January 2018 through December 2022)

Study Intersection		Crash Type ¹						Severity			Total	Crash Rate ³
ID	Location	Angle	Turn	Rear-End	Side Swipe	Fixed Object	Ped/Bike	PDO ²	Injury	Fatal		
1	SE 15 th Street/ SE 192 nd Avenue	4	1	3	-	-	-	5	3	0	8	0.18
2	SE 20 th Street/ SE 192 nd Avenue	2	1	5	1	1	-	6	4	0	10	0.21
3	SE 25 th Street/ SE 192 nd Avenue	-	-	-	-	-	-	0	0	0	0	0.00
4	SE 29 th Street/ SE 192 nd Avenue	No data reported (Future Intersection)										
5	SE 34 th Street/ SE 192 nd Avenue	3	14	-	-	-	-	8	9	0	17	0.34
6	SE 34 th Street/ SE Hiddenbrook Drive (East Site Access)	-	1	-	-	-	-	1	0	0	1	0.06
7	SE 34 th Street/ SE 177 th Place (West Site Access)	1	-	-	-	-	-	1	0	0	1	0.06
8	SE 34 th Street/ SE 176 th Avenue	1	5	-	-	2	-	4	4	0	8	0.38
9	SE 29 th Street/ SE 176 th Avenue	1	-	-	-	-	1	1	1	0	2	0.24
10	SE 20 th Street/ SE 176 th Avenue	1	1	6	-	-	1	7	2	0	9	0.41
11	SE 29 th Street/ SE 164 th Avenue	-	2	-	-	-	-	2	0	0	2	0.04
12	SE 34 th Street/ SE 164 th Avenue	8	4	11	-	-	-	15	8	0	23	0.33

¹ No backing or head-on crashes were reported.

² PDO = Property Damage Only

³ Crash rate is calculated as the number of crashes per million entering vehicles (Crashes/MEV). Average daily traffic volumes were estimated using PM peak hour total entering volume at the intersection.

As shown in Table 3, there were no reported fatal collisions, and each study intersection experienced a crash rate less than 1.0 per million entering vehicles. Three trends were noted in reviewing the crash data. First, the SE 34th Street/SE 176th Avenue intersection was noted to have two fixed object collisions, both of which involved a median placed traffic sign on the east-west intersection approaches. The median on the west approach to the intersection was observed to interface with the marked crosswalk. Considering the crash history and current median placement, regardless of the proposed Master Plan, the City may consider reinstallation/replacement of the median end treatments nearest the intersection on SE 34th Street, additional median nose striping, or reflective bollards to increase the visibility of the narrow median curb and signs (the existing end treatments are shown in Exhibits 1 and 2 for reference).

Such changes could be evaluated and addressed as part of the City's planned *SE 34th Street Safety & Mobility Project*.

Exhibit 1: Facing East at the SE 34th Street/ SE 176th Avenue intersection (image source Google Earth)



Exhibit 2: Facing West at the SE 34th Street / SE 176th Avenue intersection (image source Google Earth)



A second apparent trend amongst the crash data is that 6 of the reported 11 rear-end crashes at the SE 34th Street/SE 164th Avenue intersection involved southbound vehicles. This pattern may be reflective of the tendency for motorists to congregate towards the right-most through lane to reach the single SR-14 westbound on-ramp lane to the south of the intersection.

The third trend amongst the crash data is that 12 of the reported 14 turning crashes at the SE 34th Street/SE 192nd Avenue intersection involved eastbound (6) and westbound (6) vehicles turning left to travel north and south respectively. This pattern may be reflective of the motorists who error in selecting

gaps to complete their turn during the permissive portion of the protected/permissive left-turn phase. The City's *34th Street Safety & Mobility* project may be changing the intersection lane configuration as discussed later in this report which would impact gap acceptance.

There were two reported crashes involving a cyclist:

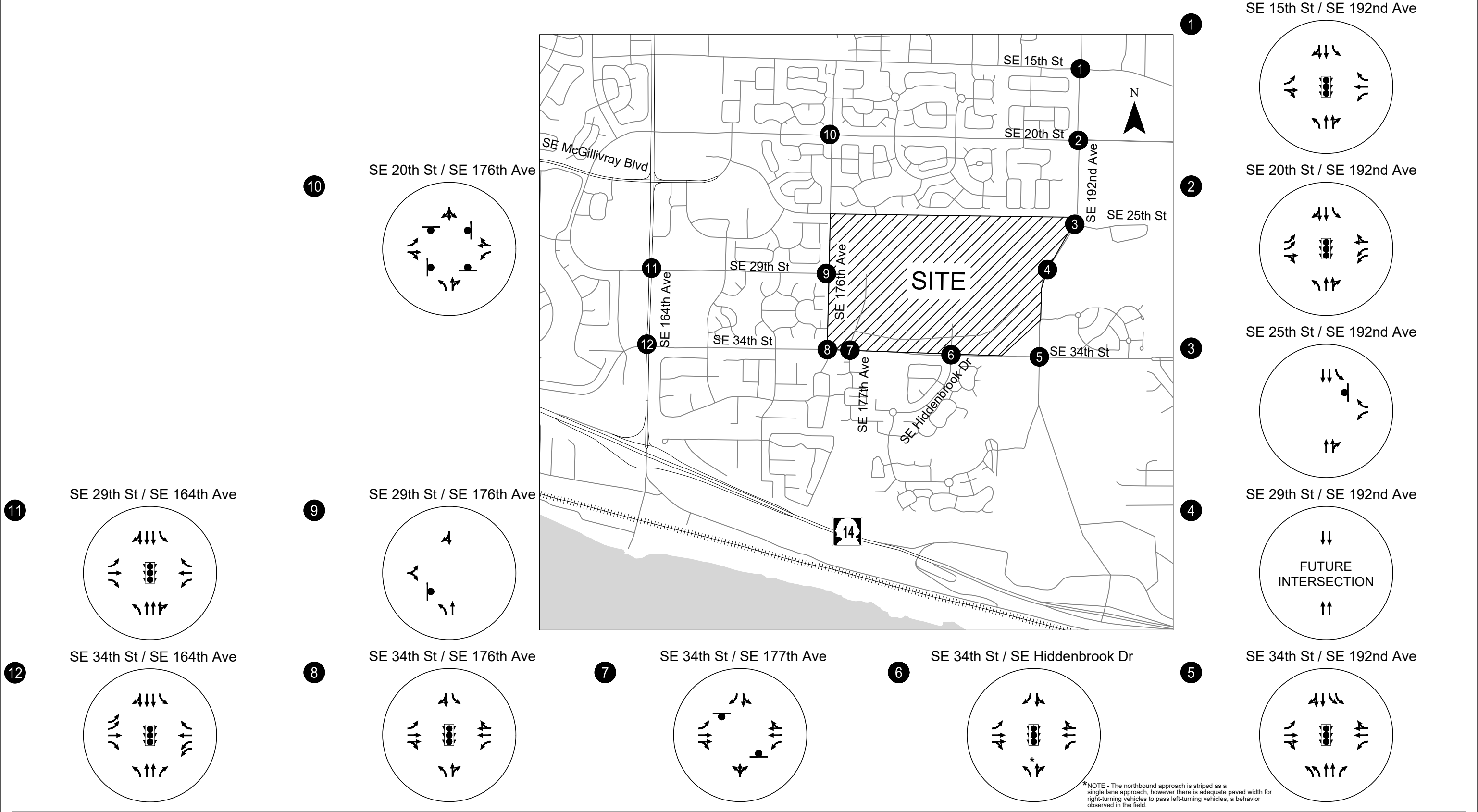
- In July 2020 on a clear dry day, a motorist struck a cyclist at the SE 20th Street/SE 176th Avenue AWSC intersection. No cause of the crash was provided in the crash report.
- In May 2022 on a wet rainy day, a motorist struck a cyclist at the SE 29th Street/SE 176th Avenue TWSC intersection. Per the crash report, the driver was inattentive.

No other safety-based mitigation needs were identified through review of the available crash data. *Appendix "B" includes the crash data provided for each of the study intersections.*

Existing Traffic Conditions

Figure 3 illustrates the existing lane configuration and traffic control devices at each of the study intersections. Figure 4 presents the existing traffic volumes and corresponding intersection operations during the weekday AM and PM peak hours. As shown, all intersections currently satisfy applicable City standards during both peak hours. *Appendix "C" contains the existing conditions operational analysis worksheets.*

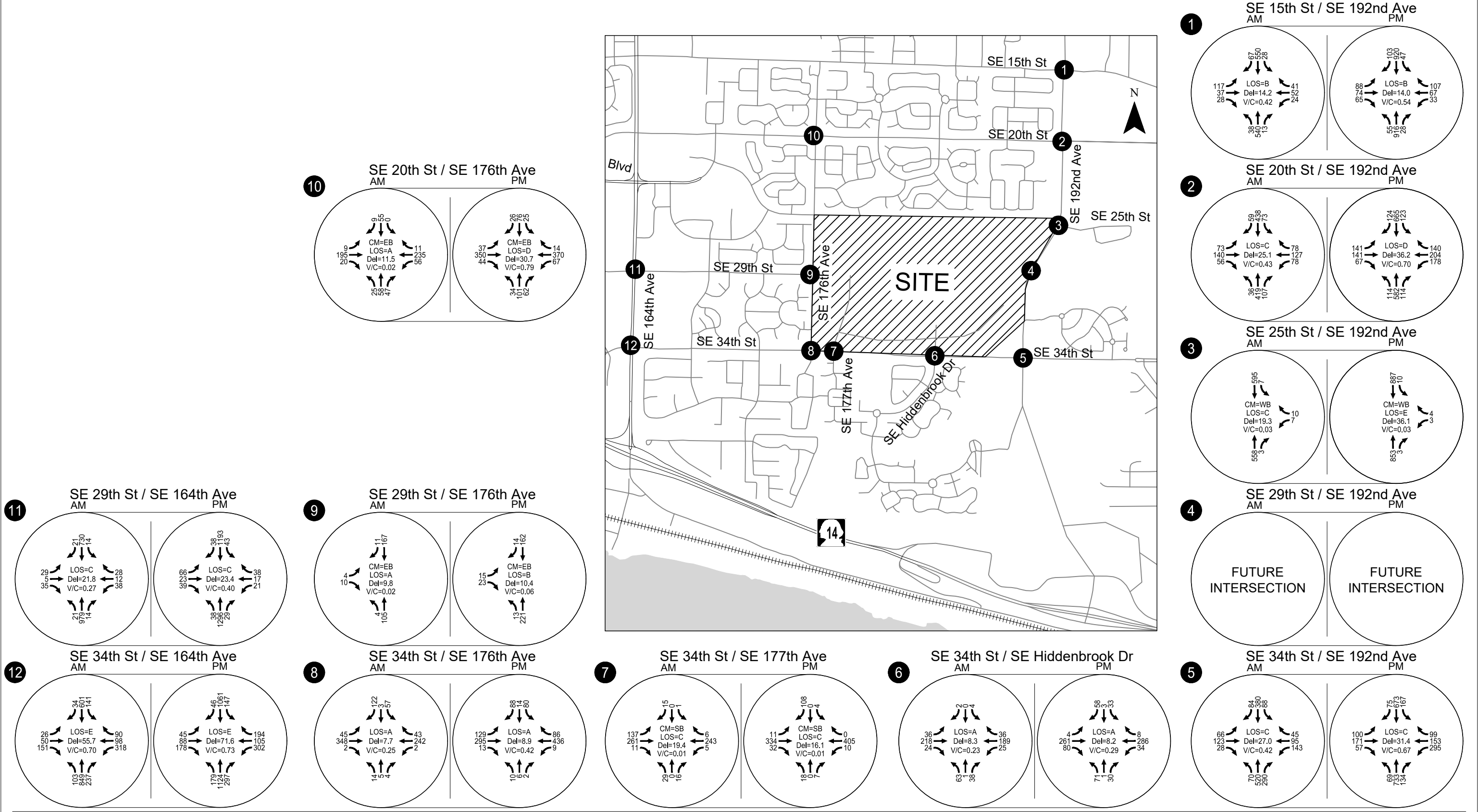
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Existing Lane Configurations and
Traffic Control Devices
Vancouver, WA

Figure
3

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CM = Critical Movement (Unsignalized)
LOS = Intersection Level of Service (Signalized) / Critical Movement Level of Service (Unsignalized)
Del = Intersection Average Control Delay (Signalized) / Critical Movement Control Delay (Unsignalized)
V/C = Intersection Volume-to-Capacity Ratio (Signalized) / Critical Movement Volume-to-Capacity Ratio (Unsignalized)

Existing Year 2023 Traffic Conditions
Weekday AM & PM Peak Hour
Vancouver, WA
Figure 4

PROPOSED MASTER PLAN

The VIC Building Owner LLC is requesting City of Vancouver approval of a major revision to the VIC Mixed Use Master Plan that was approved by the Vancouver City Council by Ordinance 4346 on August 16, 2021. The Revised Master Plan maintains a mixture of uses and land use areas (LUAs) on the site similar to the original plan. The proposed LUAs on the site include a school (approximately 20 acres), residential (approximately 38.12 acres), light industrial/employment area (approximately 74.13 acres), mixed use area (approximately 33.15 acres) and open space (approximately 24 acres) including the approximately 13.7-acre forested tract. The master plan revision proposes a maximum of 1,800 residential dwelling units and a minimum of 1,703,065 square feet of gross floor area for employment uses.

Key transportation elements of the revised Master Plan vision include:

- The east-west extension of SE 29th Street as a new collector arterial across the campus;
- A central right-of-way loop or “ring road” for main site circulation, the northern arc of the loop will serve as the SE 29th Street collector;
- A vibrant and pedestrian friendly mixed-use corridor along the proposed ring road; and
- An enhanced pedestrian and bicycle network.

The SE 29th Street collector arterial extension east-west across the site completes the anticipated network connection identified in the City’s Transportation Plan. The addition of a future traffic signal at the SE 29th Street/SE 192nd Avenue intersection and a single lane roundabout at the SE 29th Street/SE 176th Avenue intersection are planned in conjunction with the new SE 29th Street roadway corridor. SE 29th Street will serve as the designated freight delivery route to and from the campus with trucks entering the campus at SE 192nd Avenue, traveling across SE 29th Street to the industrial areas, completing delivery, and then returning to SE 192nd Avenue across SE 29th Street upon completion of all four phases.

The northern portion of the new ring road will include two single lane roundabouts where the southern segments of the ring road intersect with SE 29th Street. The existing unsignalized western campus access to SE 34th Street aligned with SE 177th Place will be closed and vacated. Vehicular access to SE 34th Street will be via the signalized SE 34th Street/SE Hiddenbrook Drive-East Site Access intersection which will be reconstructed to one travel lane in each direction between SE 34th Street and the loop road on-site with left-turn lanes provided at SE 34th Street and the loop road.

Master Plan development is generally anticipated in four phases. Phase 1, uses by right, will allow for the VIC Building North (previously entitled) and up to 300 homes using the existing site access. Phase 1 access will be via the two existing campus roadway connections to SE 34th Street. Phase 2 will provide the southwest portion of the new on-site loop road between SE Hiddenbrook Drive and SE 29th Street as well as construction of SE 29th Street between the new west loop road roundabout and a new roundabout at SE 176th Avenue. The existing VIC campus roadway connection to SE 34th Street (aligned with SE 177th Avenue to the south) will be closed and vacated with Phase 2 site development. Phase 3 will extend SE 29th Street from the Phase 2 west roundabout terminus east across the VIC campus to a new signalized

intersection at SE 192nd Avenue. Phase 4 will complete the loop road between a new east roundabout on the loop road and SE Hiddenbrook Drive to the south.

Trip Generation Estimates

Trip generation estimates for The VIC Master Plan land uses were developed using trip rates contained within the *Trip Generation Manual, 11th Edition* as published by the Institute of Transportation Engineers (Reference 4)⁴. The trip estimates account for “internal trip-making” that reflects the interaction between the employment, residential, and retail uses within the VIC campus (including the existing VIC buildings but excluding the potential middle school). Table 4 presents the trip estimates. Peak hour trip estimates for the residential uses were developed using the fitted equation trip rates while the average peak hour trip rates were used for the remaining new uses as well as for all the daily trip estimates. Trips associated with the existing VIC buildings are shown for the purpose of tracking internal trip sharing that will occur as a function of the proposed new uses.

Given no new PM peak hour trips are anticipated because of the proposed master plan revisions, the Applicant requests that the current daily and PM peak hour trip vesting in the VIC Development Agreement be retained to allow maximum flexibility to respond to market conditions over the life of the master plan.

⁴ Weekday AM and PM peak hour trips associated with the 715,000 square feet of existing building at VIC were included in the existing conditions analysis based on trip rates previously measured at the campus when it was in full use.

Table 4: Site Trip Generation Estimate

Land Use	ITE Code	Size	Daily Trips	Weekday AM Peak Hour			Weekday PM Peak Hour		
				Total	In	Out	Total	In	Out
Existing The VIC Buildings ¹	1996 Traffic Counts	715,000 Square Feet	10,200 ²	382	262	120	444	76	368
Less Trips Internal to the Campus Area			(236)	(24)	(12)	(12)	(26)	(8)	(18)
Net New			9,964	358	250	108	418	68	350
General Light Industrial	110	600,565 Square Feet	2,925	444	391	53	390	55	335
Less Trips Internal to the Campus Area			(198)	(20)	(10)	(10)	(22)	(7)	(15)
Net New			2,727	424	381	43	368	48	320
General Office Building	710	87,500 Square Feet	949	133	117	16	126	21	105
Less Trips Internal to the Campus Area			(29)	(2)	(1)	(1)	(3)	(1)	(2)
Net New			920	131	116	15	123	20	103
Medical Office Building	720	10,000 square feet	360	31	24	7	39	12	27
Less Trips Internal to the Campus Area			(4)	(1)	(1)	(0)	(0)	(0)	(0)
Net New			356	30	23	7	39	12	27
Shopping Center	820	140,000 square feet	5,181	118	73	45	476	228	248
Less Trips Internal to the Campus Area			(1,607)	(45)	(29)	(16)	(110)	(41)	(69)
Less Pass-by Reduction			(1,036)	(21)	(13)	(8)	(106)	(54)	(52)
Net New			2,538	52	31	21	260	133	127
Multifamily Housing (Mid-Rise)	221	1,248 Units	5,666	538	124	414	487	297	190
Less Trips Internal to the Campus Area			(790)	(14)	(2)	(12)	(80)	(56)	(24)
Net New			4,876	524	122	402	407	241	166
Multifamily Housing (Low-Rise)	220	552 Units	3,720	194	47	147	258	163	98
Less Trips Internal to the Campus Area			(350)	(6)	(1)	(5)	(35)	(25)	(10)
Net New			3,370	188	46	142	223	138	85
Middle School ²	522	900 Students	1,917	522	282	240	153	75	78
Total Trips			30,918	2,362	1,320	1,042	2,373	927	1,446
Less Total Trips Internal to the Campus Area			(3,214)	(112)	(56)	(56)	(276)	(138)	(138)
Less Total Pass-by Reduction			(1,036)	(21)	(13)	(8)	(106)	(54)	(52)
Total Net New Trips			26,668	2,229	1,251	978	1,991	735	1,256
The VIC Development Agreement Vested Net New Trips			26,982	2,088	1,343	745	1,991	627	1,364
Proposed Total Net New – The VIC DA Vested Net New			-314	141	-92	233	0	108	-108
Total Net New Trips – Existing The VIC Building Net New Trips			16,704	1,871	1,001	870	1,573	667	906

¹ Source: Traffic Impact Analysis for The VIC Master Plan dated November 20, 2020.

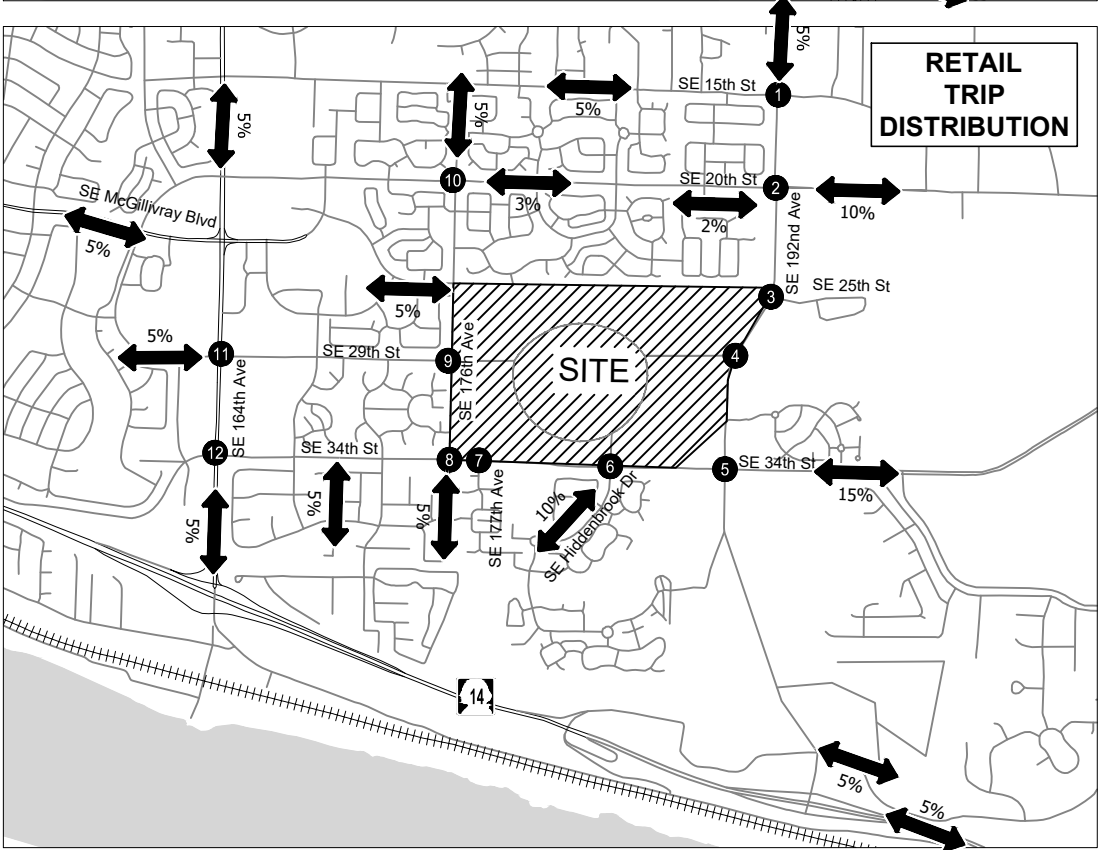
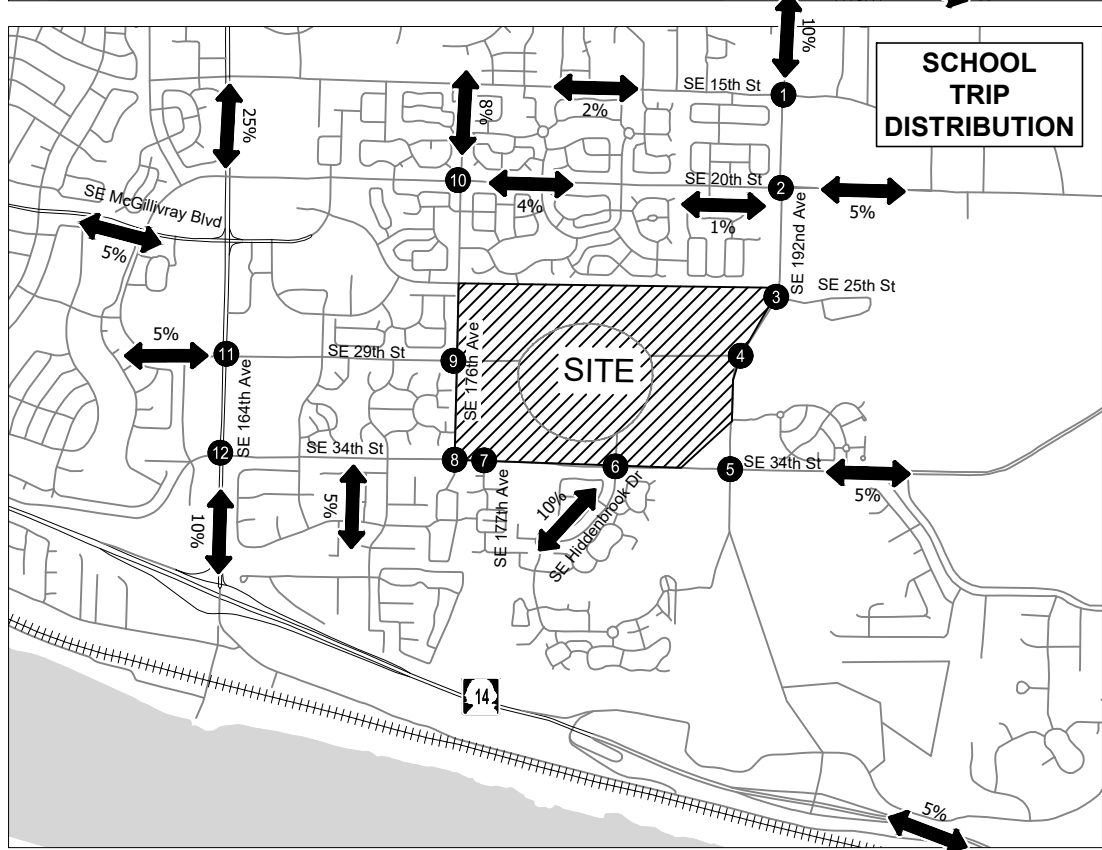
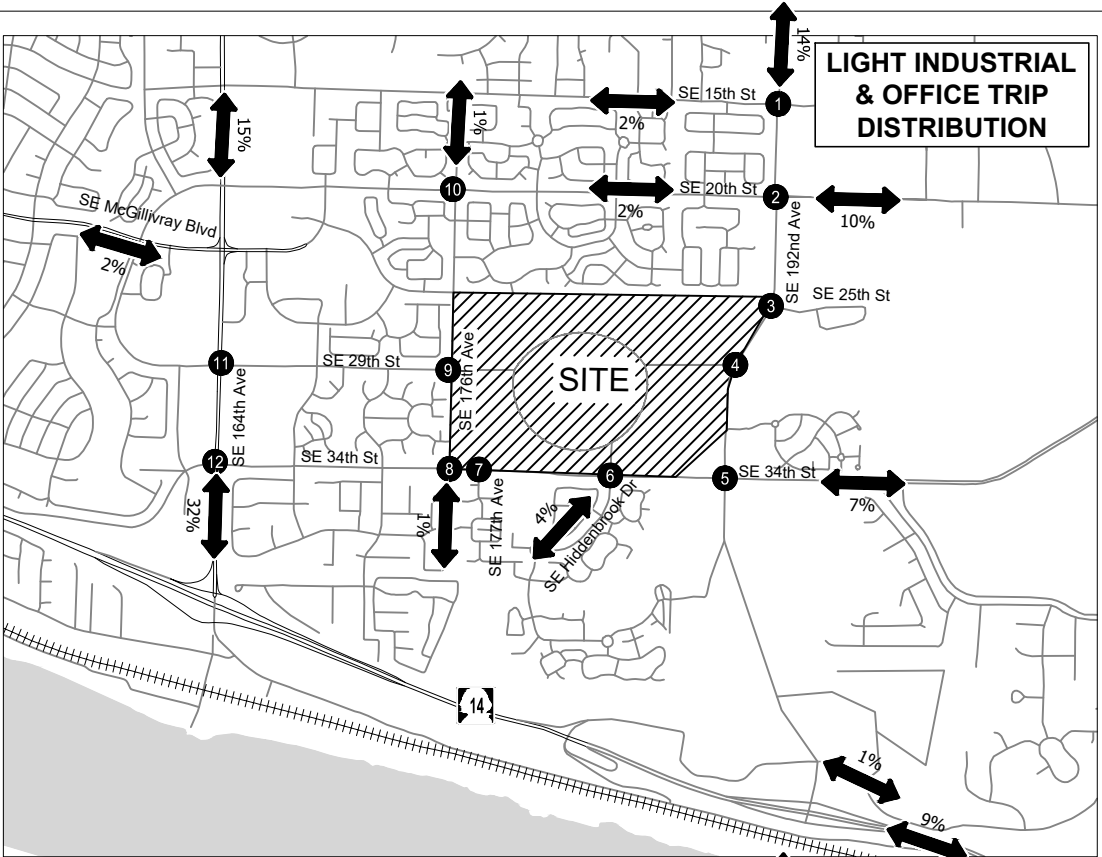
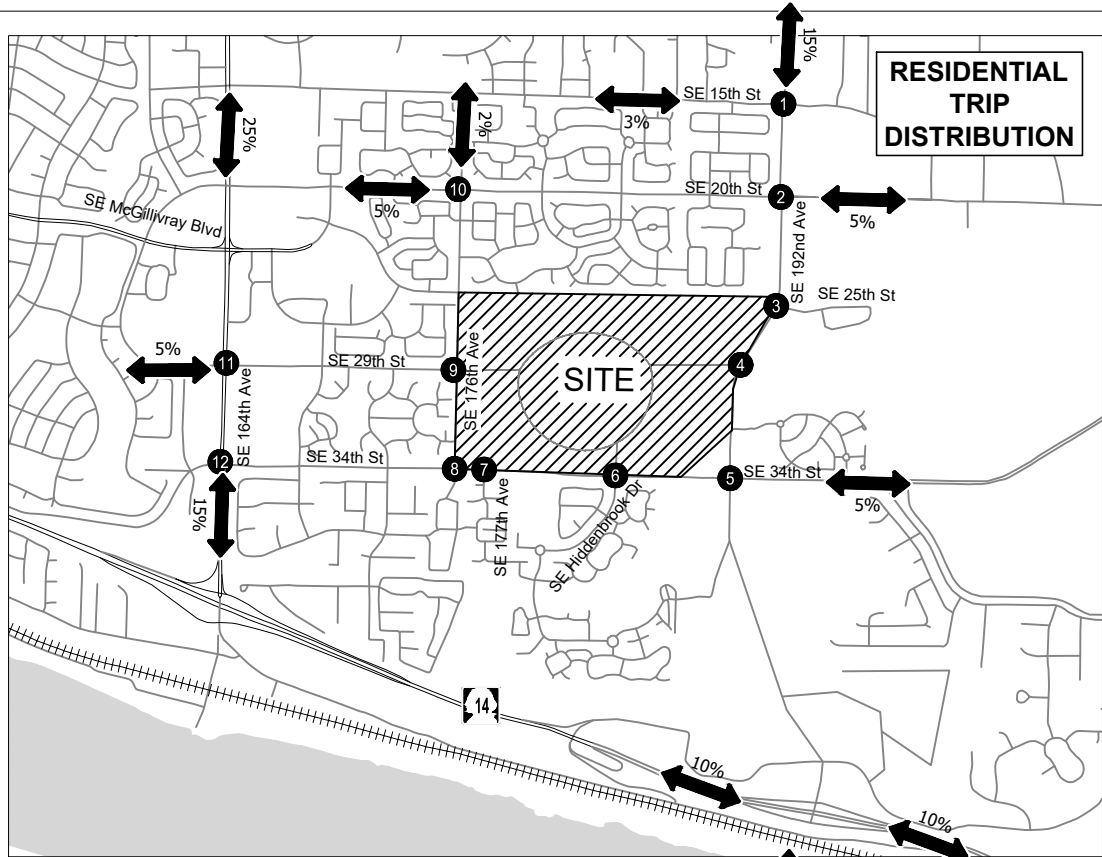
² Trip estimates from approved 2020 The VIC Traffic Impact Analysis. The potential for internal trips associated with a school could be revisited in conjunction with a more specific school development proposal.

Trip Distribution and Assignment

The site-generated trips shown in Table 4 (total net new trips less the existing VIC buildings net new trips along with the pass-by trips) were assigned to the study area roadways based on four trip distribution patterns developed for the VIC campus. The distribution estimates and associated vehicular trips at campus buildout are shown in Figure 5 and Figure 6 and summarized below.

- *On-site employment trip distribution pattern:* applied to office and light industrial uses, this distribution pattern was derived from the Southwest Washington Regional Transportation Council travel demand model transportation analysis zone (TAZ 1758) for the VIC site⁵.
- *Residential trip distribution pattern:* this pattern was estimated based on review of other recent traffic studies prepared for nearby residential areas, review of the surrounding land uses and review of the existing traffic turning movement patterns.
- *Middle school trip distribution pattern:* this pattern was estimated based on review of the existing school district middle schools and boundaries, surrounding residential uses as well as the roadway network (the school distribution estimate is preliminary given there was no specific school proposal or boundary change proposed at the time this study was prepared). No vehicle trips were assigned between the school site and homes within the VIC, rather, these were assumed to be walking trips. The full school site vehicle trip generation was assigned off-site from the VIC.
- *Retail trip distribution pattern:* this pattern was estimated based on the location of other commercial/retail uses in the area and in recognizing that the anticipated retail uses within The VIC are expected to be smaller, locally serving retail type uses (as opposed to destination or “big box” retailers).

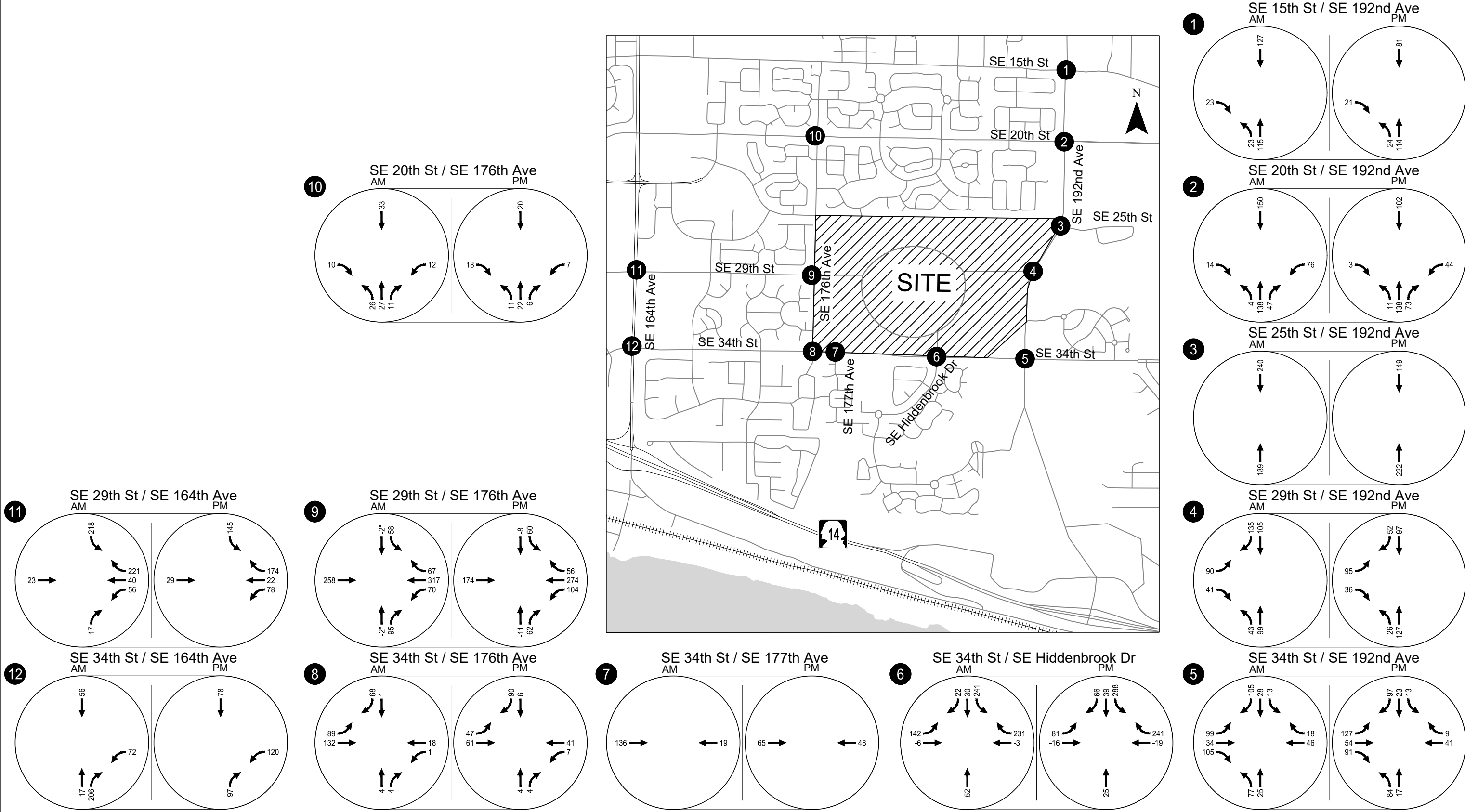
⁵ The land use assumptions in the RTC model for this TAZ were reflective of employment uses only and do not offer insight as to residential or retail use travel patterns.



Estimated Trip Distributions for Future Site Uses
Vancouver, WA

Figure
5

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NOTE - Trips shown include net new trip assignment (all land uses) and pass-by trip assignment (retail use only). Negative trips represent pass-by trips.

Trip Assignment at Campus Buildout (Phase 1 - 4)
Weekday AM & PM Peak Hour
Vancouver, WA

Figure
6

CONCURRENCY CORRIDOR TRIP ASSIGNMENT

Per City of Vancouver requirements, Table 5 summarizes the estimated number of complete build-out site-generated weekday PM peak hour trips entering each of the City's adopted concurrency corridors per development phase. Assigned trips were recorded counting trips only once along each of the specified corridors. Further concurrency corridor tracking by individual buildings or phases can be provided with subsequent trip compliance letters if needed.

Table 5: Concurrency Corridor Weekday PM Peak Hour Trip Assignment

Corridor Name	Corridor Limit	PM Peak Trips to Corridor
Mill Plain Blvd.	Fourth Plain to I-5	0
	I-5 to Andresen	0
	Andresen to I-205	5
	I-205 to 136 th Ave.	9
	136 th Ave. to 164 th Ave.	86
	164 th Ave. to 192 nd Ave.	10
St. Johns / Ft. Van Way	Mill Plain to 63 rd St.	0
Fourth Plain Blvd.	Mill Plain to I-5	0
	I-5 to Andresen	0
	Andresen to I-205	0
	I-205 to 162 nd Ave.	6
Andresen Road	Mill Plain to SR500	2
	SR500 to 78 th St.	2
112 th Avenue	Mill Plain to 28 th St.	2
	28 th St. to 51 st St.	1
164 th /162 nd Avenue	SR14 to SE 1 st St.	388
	SE 1 st St. to Fourth Plain	250
Burton Road / 28 th Street	18 th St. to 112 th Ave.	3
	112 th Ave. to 138 th Ave.	5
	138 th Ave. to 162 nd Ave.	10
18 th Street	112 th Ave. to 138 th Ave.	1
	138 th Ave. to 164 th Ave.	26
136 th /137 th Avenue	Mill Plain to 28 th St.	6
	28 th St. to Fourth Plain	2
192 nd Avenue	SR14 to NE 18 th St.	498

TRAFFIC IMPACT ANALYSIS

The remainder of this report documents intersection operations under future year conditions without and with phased Master Plan development. Four phases of site development were considered to inform the traffic mitigations analysis. While the site land uses will buildout incrementally over the life of the master plan based on market conditions, the traffic impacts were assessed by phase using a common future horizon year of 2038.

FUTURE YEAR 2038 BASELINE TRAFFIC CONDITIONS

The baseline traffic analysis identifies how the study intersections will operate in the proposed 15-year horizon of the Master Plan Development Agreement after accounting for traffic growth from approved in-process developments within the study area and anticipated regional traffic growth, but only assuming full occupancy of the existing VIC site buildings (no additional Master Plan development assumed).

To reflect the anticipated re-use of the vacant existing building space on-site, previously documented trips associated with typical operations of the site were added to the study intersections to arrive at existing AM and PM peak period traffic volumes.⁶

Study Intersection Changes

The City of Vancouver's *SE 34th Street Safety & Mobility Project* proposes to implement several changes at the study intersections to improve safety and mobility on SE 34th Street between SE 164th Avenue and SE 192nd Avenue. The project anticipates repurposing a travel lane in each direction to add dedicated space for people walking, biking, rolling, and using mobility-assistance devices, and other safety improvements in the corridor for all users. The following changes were assumed at the study intersections by year the 2038 as part of the City project:

- Intersection 5, SE 34th Street/SE 192nd Avenue:
 - Remove 1 northbound left-turn lane
 - Remove 1 eastbound and 1 westbound through lane

⁶ For reference, a total of 382 weekday AM peak hour trips (262 in/120 out) and 444 weekday PM peak hour trips (76 in/368 out) were previously documented to be generated by the existing 715,000 square feet of campus buildings. The traffic volumes measured at the campus access points in December 2022 were increased and the additional trips assigned to the study intersections to reflect full occupancy. Further details of the volume adjustments are presented in Appendix "D".

- Intersection 6), SE 34th Street/SE Hiddenbrook Drive-East Site Access
 - Remove 1 eastbound and 1 westbound through lane
- Intersection 7) SE 34th Street/SE 177th Place-West Site Access
 - Remove 1 eastbound and 1 westbound through lane
 - Add 1 westbound right-turn lane
- Intersection 8) SE 34th Street/SE 176th Avenue
 - Remove 1 eastbound and 1 westbound through lane
- Intersection 12) SE 34th Street/SE 164th Avenue
 - Remove 1 eastbound and 1 westbound left-turn lane

Figure 7 illustrates the assumed lane configurations and traffic control devices at the study intersections under year 2038 baseline conditions.



In-process Developments

Trips from the following approved but not yet constructed (in-process) developments were included in the future baseline traffic volumes estimates per coordination with City Transportation staff.

- 192nd Station West II Lofts (located northwest of the SE 192nd Avenue/SE 34th Street intersection);
- Columbia Palisades Subdivision (located within the Columbia Palisades Master Plan area; 30% of the units were assumed to be sold and occupied at the time of the traffic counts for this study);
- Valley View Estates (located near the intersection of SE Grand Ridge Drive and SE 40th Street);
- The Casey (formerly Kate's Woods located along SE 34th Street to the east of SE Payne Road);
- Dawson's Ridge (located near the intersection of NW Sacajawea Street and NW McIntosh Road);
- First Street Village (located near intersection SE 1st Street/NE 197th Avenue);
- Vancouver Clinic Phase 2 (located within the Columbia Palisades master plan area along SE Columbia Palisades Drive);
- Columbia Palisades Lots 2 & 3 (located within the Columbia Palisades master plan area with access via the west leg of the SE Brady Road/SE Columbia Palisades Drive roundabout);
- Fisher's Creek Subdivision (located at 17700 SE Evergreen Highway);
- Kirkland Car Wash and Medical Building (located on the east side of SE 192nd Avenue and north of SE 20th Street);
- Oak Tree Station (located near the intersection of NW Lake Road/NW Friberg-Strunk Street);
- Lacamas Creek Tech Center (located near the intersection of NE 13th Street/NW Friberg-Strunk Street);
- Panattoni Industrial Building Lot 6 (located near the intersection of NE Goodwin Road/NW Camas Meadows Drive);
- Camas Business Center (located at 4704 NW Lake Road); and,
- Parklands Archery Business Center – Commercial component (located at 542 NW 218th Street); Section 30 (located north of SE 1st Street, including HP);
- PeaceHealth Ambulatory Care Center (located at the southeast corner of the SE 1st Street/SE 192nd Avenue intersection

Regional Traffic Growth

In addition to the in-process development trips, a 0.5 percent annual growth rate was identified along public roadway corridors to account for regional growth over the next 15 years. This growth rate was derived based on review of the Travel Demand Model 2015 and 2040 PM peak hour model outputs provided by the Southwest Washington Regional Transportation Council (RTC) for the study area and in consideration of the numerous in-process development trips identified for inclusion by City staff.

FUTURE YEAR 2038 BASELINE TRAFFIC OPERATIONS

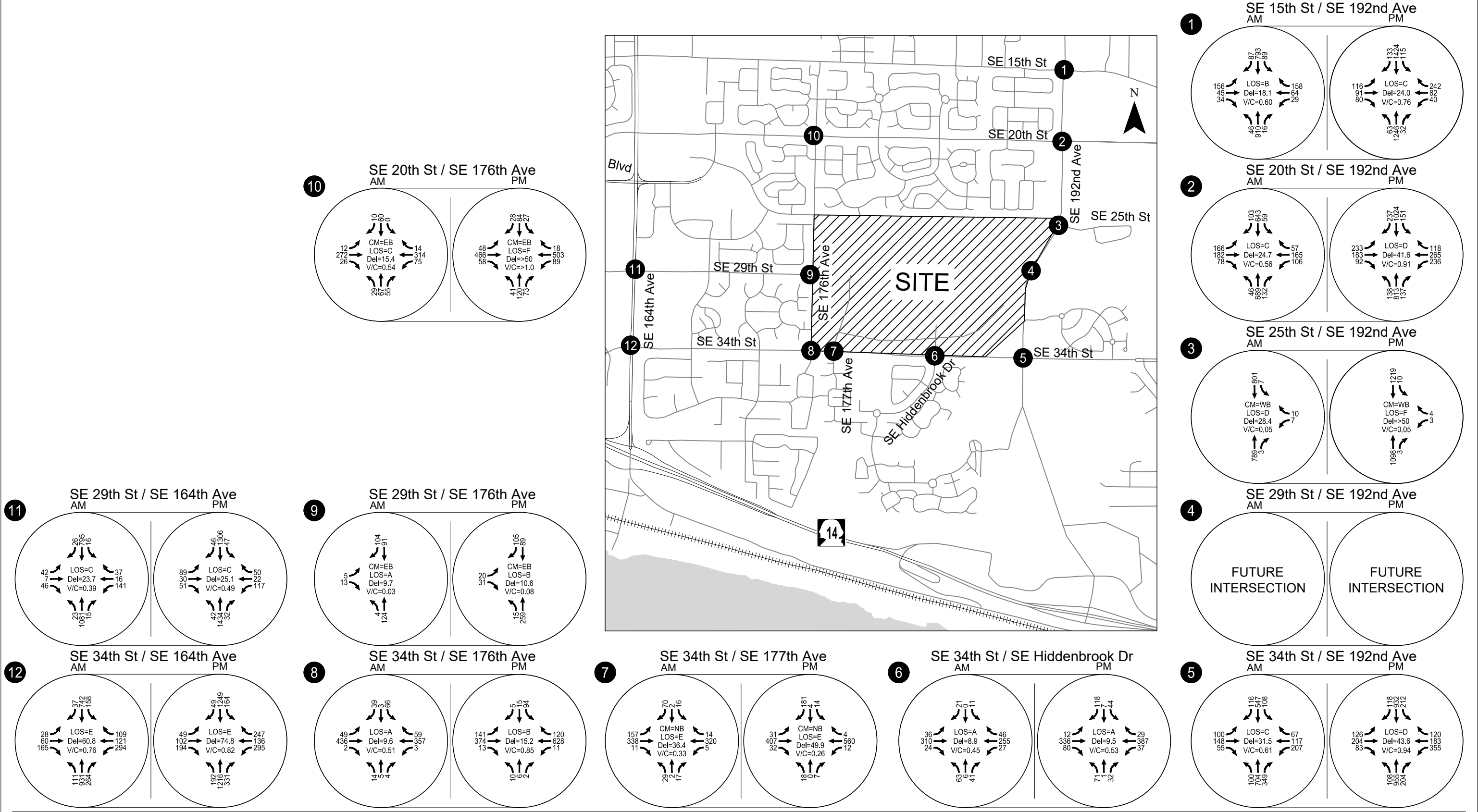
Figure 8 shows the projected 2038 baseline traffic volumes and resulting operations for all study intersections during the weekday AM and PM peak hours. Although the study intersections are projected to operate acceptably per City standards during the AM peak hour, two are projected to exceed City standards during the PM peak hour, including:

- The stop-controlled westbound left-turn movement on SE 25th Street at SE 192nd Avenue (Intersection #3) is projected to operate at LOS F during the PM peak hour but well under capacity (V/C ratio of 0.05). Despite the high delays forecast for this movement, a review of the projected weekday PM peak hour volumes at the intersection confirms that installation of a traffic signal is not warranted.
- The SE 20th Street/SE 176th Avenue intersection (Intersection #10) is forecast to operate at LOS F with the eastbound and westbound approaches over capacity during the weekday PM peak hour. The City of Vancouver is collecting proportional share mitigation fees in the amount of \$400 for each weekday PM peak hour trip added to this intersection.

Note the SE 34th Street/SE 192nd Avenue intersection (Intersection #5) is forecast to operate at an acceptable LOS D with the westbound left-turn lane at capacity (V/C ratio of 1.0). The City of Vancouver is collecting proportional share mitigation fees in the amount of \$150 for each weekday PM peak hour trip added to this intersection. Further, the SE 34th Street/SE 164th Avenue intersection (Intersection #12) is forecast to operate at LOS E during both the AM and PM peak hours. The westbound left-turn V/C ratio is projected to be 1.1 during the AM peak hour and 1.72 with a 35+ vehicle 95th percentile queue during the PM peak hour.

Appendix "E" contains the 2038 baseline operational analysis worksheets and Figure E-1 (a summary of the cumulative in-process trip assignment that was included in the baseline 2038 volumes).

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CM = Critical Movement (Unsignalized)
LOS = Intersection Level of Service (Signalized) / Critical Movement Level of Service (Unsignalized)
Del = Intersection Average Control Delay (Signalized) / Critical Movement Control Delay (Unsignalized)
V/C = Intersection Volume-to-Capacity Ratio (Signalized) / Critical Movement Volume-to-Capacity Ratio (Unsignalized)

Future Year 2038 Baseline Traffic Conditions
Weekday AM & PM Peak Hour
Vancouver, WA

Figure
8

FUTURE YEAR 2038 WITH PROJECT TRAFFIC CONDITIONS

The with project traffic analysis identifies how the study intersections will operate in the proposed 15-year horizon of the Master Plan Development Agreement upon phased development of the VIC. The proposed transportation infrastructure, site trip generation and corresponding traffic impacts associated with each phase of master plan site development were assessed as documented herein.

Master Plan Roadway Network

Multiple roadway network and study intersection changes are anticipated in conjunction with continued The VIC Master Plan development. As previously indicated, implementation is expected to occur in four distinct phases with the following transportation changes anticipated by phase (refer also to Figure 9).

Master Plan Phase 1

- No changes to the transportation system, access to the VIC campus will remain as it exists today.

Master Plan Phase 2

- Construct SE 29th Street between SE 176th Avenue and the west portion of the loop road within the VIC campus;
- Implement the previously identified VIC capacity mitigations at the signalized SE 29th Street/SE 164th Avenue intersection including:
 - Convert the existing east-west left-turn permissive signal phasing on SE 29th Street to protected/permissive left-turn phasing;
 - Extend the westbound left-turn lane striping to provide 225 feet of storage; and
 - Extend the existing southbound left-turn lane on SE 162nd Avenue at SE 29th Street to provide 300 feet of left-turn storage (the existing left-turn storage is approximately 135 feet long; the extension will required reconstruction of the existing median area and drainage facilities within the median).
- Construct the southwest portion of the loop road within the VIC campus between the SE Hiddenbrook site access and SE 29th Street;
- Close and vacate the existing west campus access connection to SE 34th Street (the site access aligned with SE 177th Avenue);
- Reconstruct the existing east campus access connection to SE 34th Street (the site access aligned with SE Hiddenbrook Drive) to have one northbound lane, one southbound left-turn lane and one southbound shared through/right lane at the SE 34th Street traffic signal;
- Construct a new single lane roundabout at SE 29th Street/SE 176th Avenue; and
- Construct a new single lane roundabout at SE 29th Street/west loop road intersection.



Master Plan Phase 3

- Extend SE 29th Street to SE 192nd Avenue, including signalization of the intersection at SE 192nd Avenue.

Master Plan Phase 4

- Construct the southeast portion of the loop road within the VIC campus between the SE Hiddenbrook site access and SE 29th Street, completing the loop road.

Trip Generation

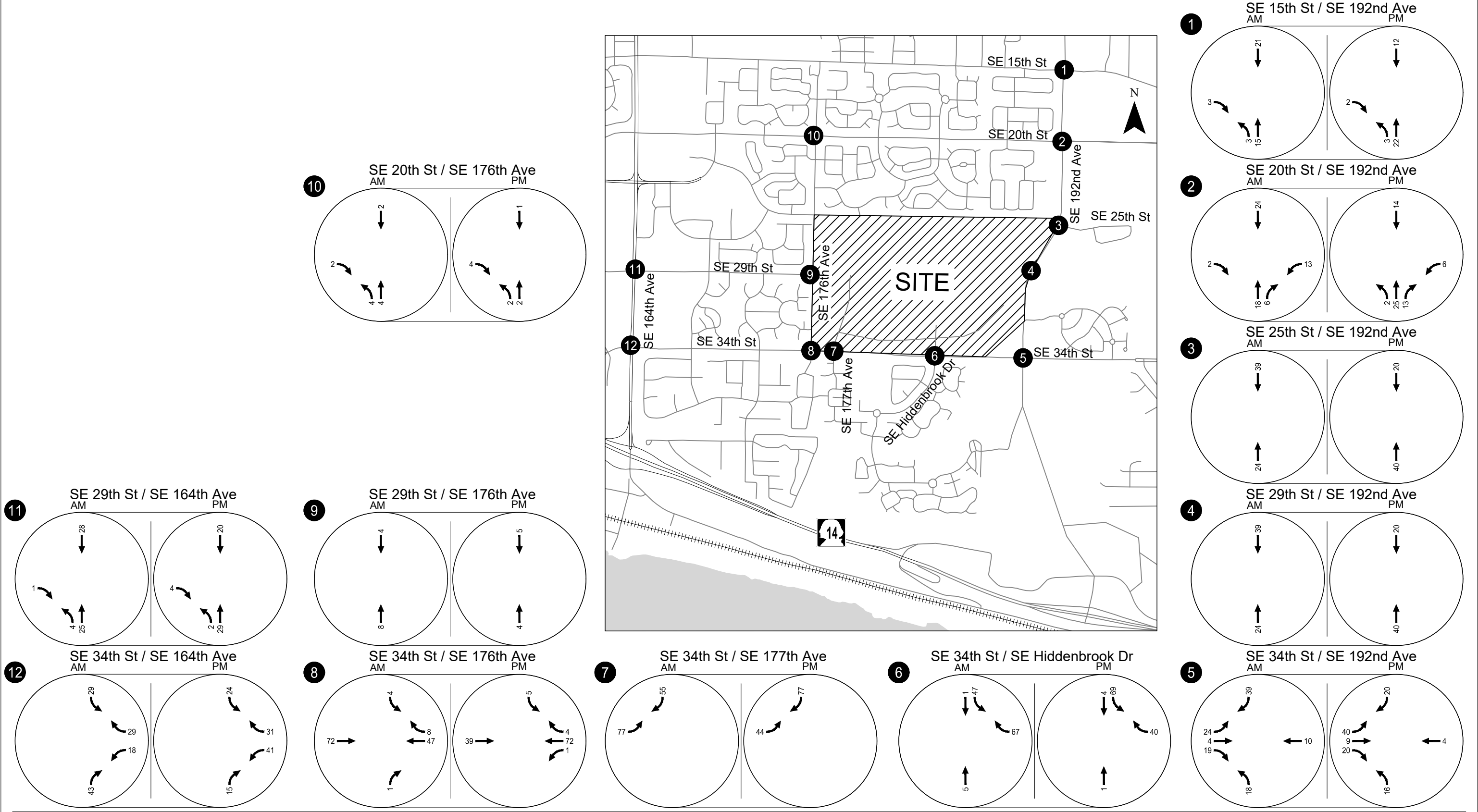
The VIC site trip generation estimates by phase are shown in Tables 6 through 9 and are a subset of the trip generation previously presented in Table 4. Figures 10 through 13 show the corresponding site-generated trip assignment to the study intersections. Note that Master Plan Phase 1 site development reflects uses that are approved “by right” under the current VIC development agreement. The Phase 1 uses and their traffic impacts can be constructed today.

Table 6: Phase 1 Site Trip Generation Estimate

Land Use	ITE Code	Size	Daily Trips	Weekday AM Peak Hour			Weekday PM Peak Hour		
				Total	In	Out	Total	In	Out
General Light Industrial ¹	110	200,700 (Square Feet)	995	140	123	17	126	16	110
Less Trips Internal to the Campus Area			(43)	(4)	(2)	(2)	(4)	(0)	(4)
Net New			952	136	121	15	122	16	106
Multifamily Housing (Mid-Rise)	221	134 units	608	58	13	45	52	32	20
Less Trips Internal to the Campus Area			(85)	(1)	(0)	(1)	(9)	(6)	(3)
Net New			523	57	13	44	43	26	17
Multifamily Housing (Low-Rise)	220	174 units	1,173	61	15	46	81	51	30
Less Trips Internal to the Campus Area			(110)	(2)	(0)	(2)	(11)	(8)	(3)
Net New			1,063	59	15	44	70	43	27
Total Trips			2,776	259	151	108	259	99	160
Less Total Trips Internal to the Campus Area			(238)	(7)	(2)	(5)	(24)	(14)	(10)
Total Net New Trips			2,538	252	149	103	235	85	150

¹ Source: Refer to September 2, 2022 VIC Building North Trip Compliance Letter (PRJ-168116, PIR-82415)

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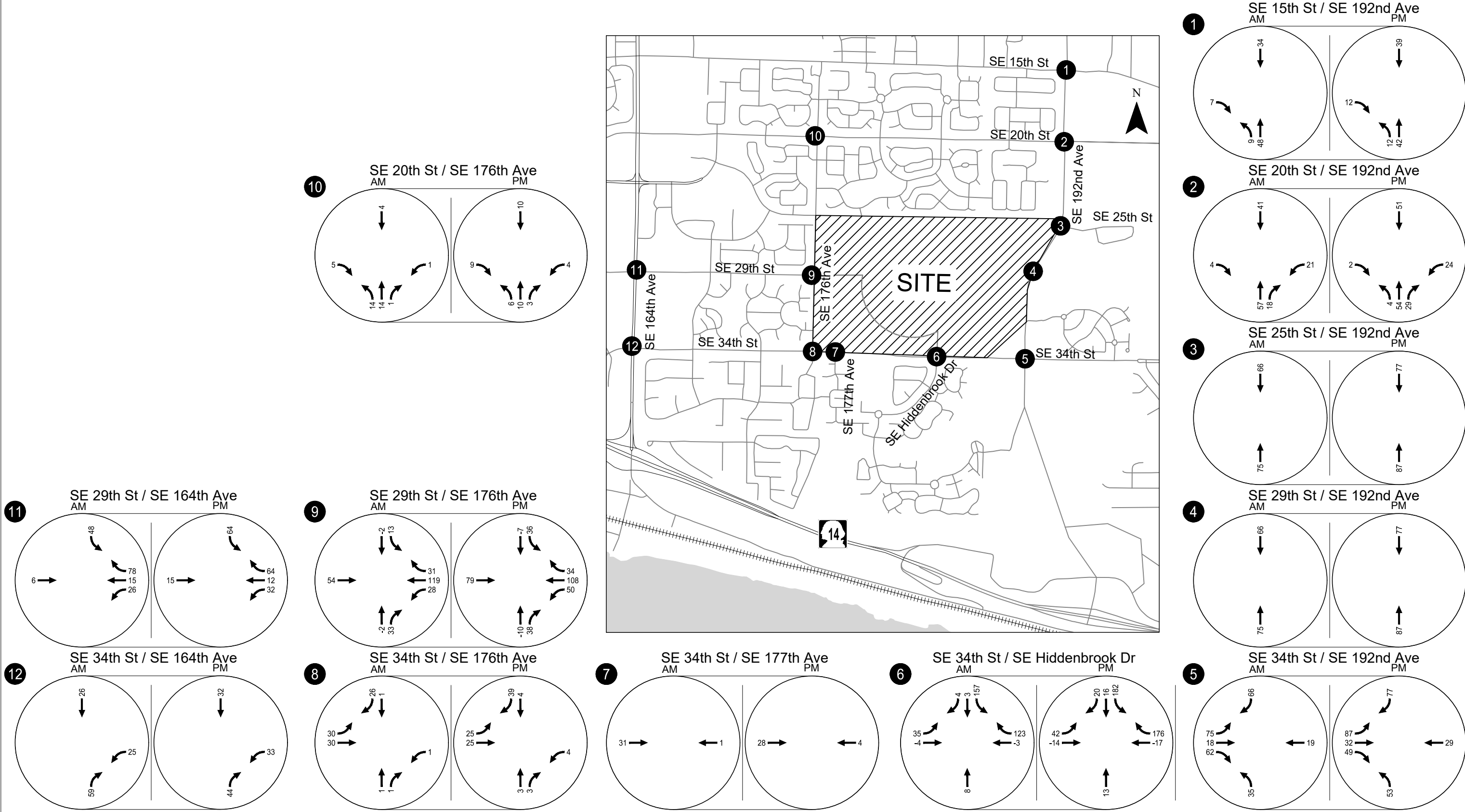
NOTE - Trips shown include net new trip assignment (all land uses) and pass-by trip assignment (retail use only).

Phase 1 Trip Assignment
Weekday AM & PM Peak Hour
Vancouver, WA
Figure 10

Table 7: Phase 2 Site Trip Generation Estimate

Land Use	ITE Code	Size	Daily Trips	Weekday AM Peak Hour			Weekday PM Peak Hour		
				Total	In	Out	Total	In	Out
General Light Industrial	110	34,439 Square Feet	166	26	23	3	22	3	19
Less Trips Internal to the Campus Area			(13)	(2)	(1)	(1)	(2)	(1)	(1)
Net New			153	24	22	2	20	2	18
Medical Office Building	720	8,200 Square Feet	295	26	20	6	32	1	22
Less Trips Internal to the Campus Area			(3)	(1)	(1)	(0)	(0)	(0)	(0)
Net New			292	25	19	6	32	10	22
General Office Building	710	71,750 square feet	778	109	96	13	103	17	86
Less Trips Internal to the Campus Area			(24)	(2)	(1)	(1)	(3)	(1)	(2)
Net New			754	107	95	12	100	16	84
Shopping Center	820	123,200 square feet	4,559	103	64	39	419	201	218
Less Trips Internal to the Campus Area			(1,414)	(40)	(26)	(14)	(97)	(36)	(61)
Less Pass-by Reduction			(912)	(18)	(11)	(7)	(94)	(48)	(46)
Net New			2,233	45	27	18	228	117	111
Multifamily Housing (Mid-Rise)	221	824 Units	3,741	355	82	273	322	196	126
Less Trips Internal to the Campus Area			(522)	(9)	(1)	(8)	(53)	(37)	(16)
Net New			763	43	11	32	51	32	19
Multifamily Housing (Low-Rise)	220	125 Units	842	44	11	33	59	38	21
Less Trips Internal to the Campus Area			(79)	(1)	(0)	(1)	(8)	(6)	(2)
Net New			763	43	11	32	51	32	19
Total Phase 2 Trips			10,381	663	296	367	957	465	492
Less Total Trips Internal to the Campus Area			(2,055)	(55)	(30)	(25)	(163)	(81)	(82)
Less Total Pass-by Reduction			(912)	(18)	(11)	(7)	(94)	(48)	(46)
Total Phase 2 Net New Trips			7,414	590	255	335	700	336	364

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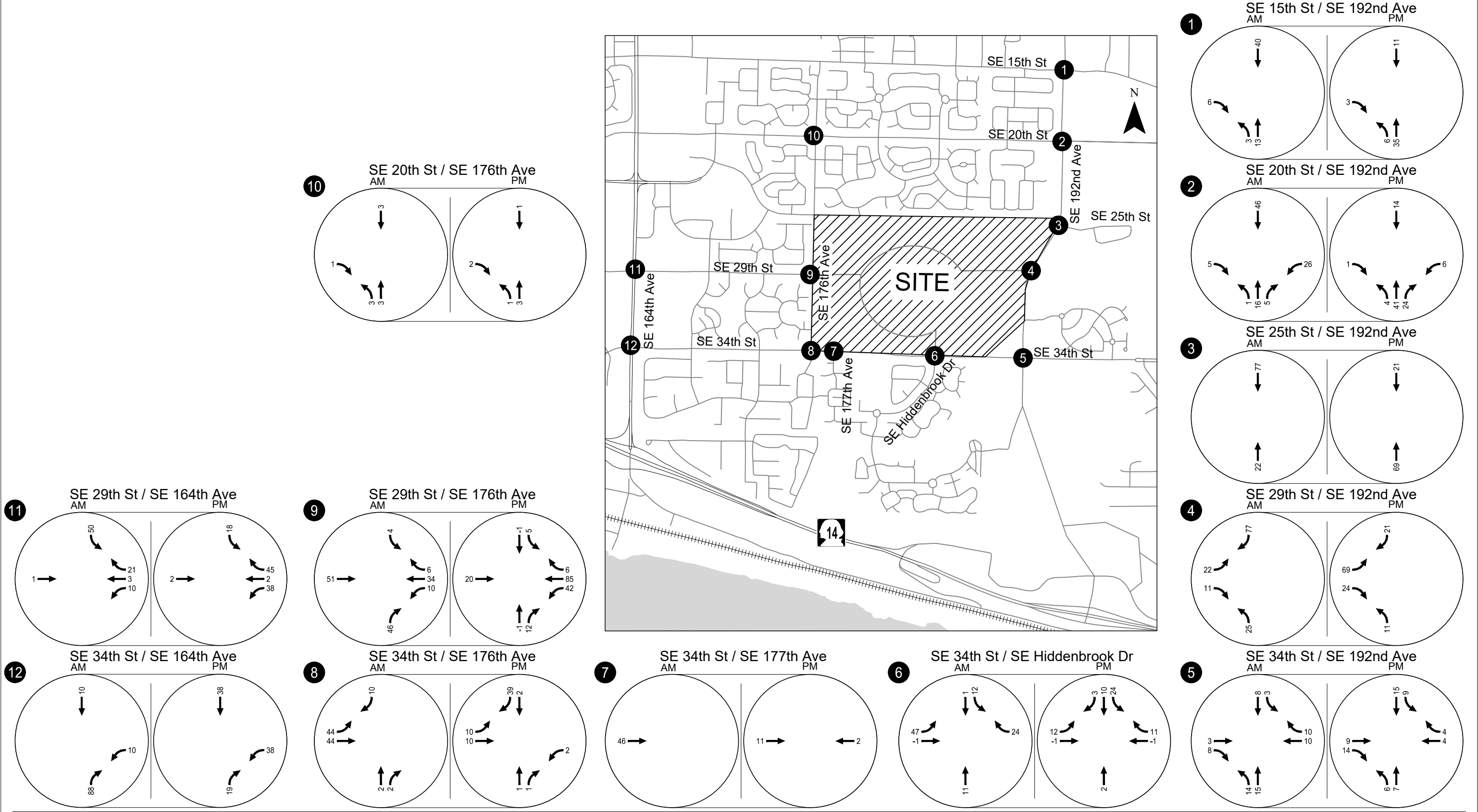
NOTE - Trips shown include net new trip assignment (all land uses) and pass-by trip assignment (retail use only). Negative trips represent pass-by trips.

Phase 2 Trip Assignment
Weekday AM & PM Peak Hour
Vancouver, WA
Figure 11

Table 8: Phase 3 Site Trip Generation Estimate

Land Use	ITE Code	Size	Daily Trips	Weekday AM Peak Hour			Weekday PM Peak Hour		
				Total	In	Out	Total	In	Out
General Light Industrial	110	365,426 Square Feet	1,764	278	245	33	242	36	206
Less Trips Internal to the Campus Area			(142)	(14)	(7)	(7)	(16)	(6)	(10)
Net New			1,622	264	238	26	226	30	196
Medical Office Building	720	1,800 Square Feet	65	5	4	1	7	2	5
Less Trips Internal to the Campus Area			(1)	(0)	(0)	(0)	(0)	(0)	(0)
Net New			64	5	4	1	7	2	5
General Office Building	710	15,750 square feet	171	24	21	3	23	4	19
Less Trips Internal to the Campus Area			(5)	(0)	(0)	(0)	(0)	(0)	(0)
Net New			166	24	21	3	23	4	19
Shopping Center	820	11,200 square feet	415	10	6	4	38	18	20
Less Trips Internal to the Campus Area			(129)	(3)	(2)	(1)	(9)	(3)	(6)
Less Pass-by Reduction			(83)	(2)	(1)	(1)	(8)	(4)	(4)
Net New			203	5	3	2	21	11	10
Multifamily Housing (Mid-Rise)	221	154 Units	699	66	15	51	60	37	23
Less Trips Internal to the Campus Area			(97)	(2)	(0)	(2)	(9)	(7)	(2)
Net New			602	64	15	49	51	30	21
Multifamily Housing (Low-Rise)	220	52 Units	350	18	4	14	24	15	9
Less Trips Internal to the Campus Area			(33)	(1)	(1)	(0)	(3)	(2)	(1)
Net New			317	17	3	14	21	13	8
Total Phase 3 Trips			3,464	401	295	106	394	112	282
Less Total Trips Internal to the Campus Area			(407)	(20)	(10)	(10)	(37)	(18)	(19)
Less Total Pass-by Reduction			(83)	(2)	(1)	(1)	(8)	(4)	(4)
Total Phase 3 Net New Trips			2,974	379	284	95	349	90	259

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NOTE - Trips shown include net new trip assignment (all land uses) and pass-by trip assignment (retail use only).
Negative trips represent pass-by trips.

Phase 3 Trip Assignment
Weekday AM & PM Peak Hour
Vancouver, WA
Figure 12

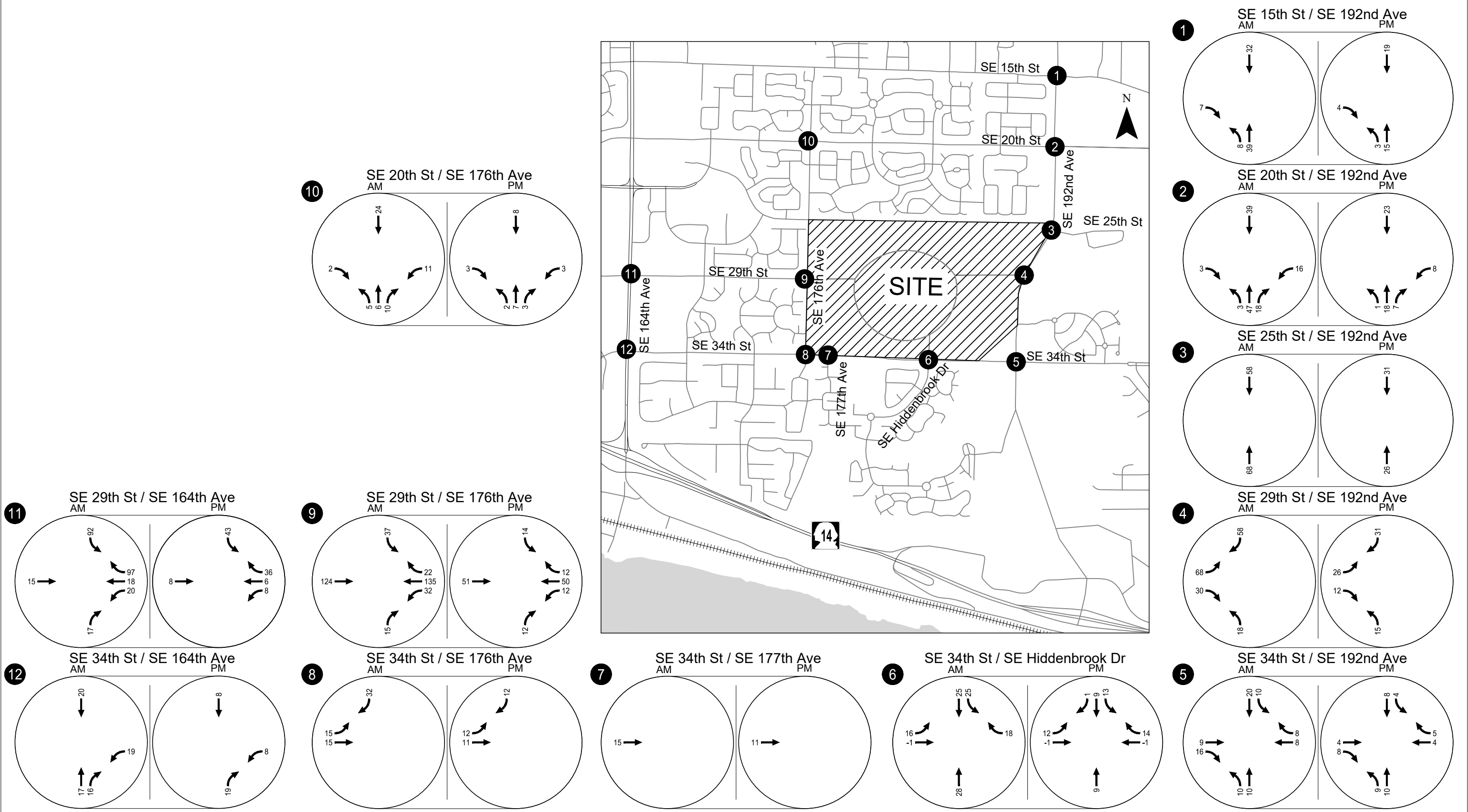
Table 9: Phase 4 Site Trip Generation Estimate

Land Use	ITE Code	Size	Daily Trips	Weekday AM Peak Hour			Weekday PM Peak Hour		
				Total	In	Out	Total	In	Out
Shopping Center	820	5,600 square feet	207	5	3	2	19	9	10
<i>Less Trips Internal to the Campus Area</i>			(64)	(2)	(1)	(1)	(4)	(2)	(2)
<i>Less Pass-by Reduction</i>			(41)	(1)	(1)	(0)	(4)	(2)	(2)
Net New			102	2	1	1	11	5	6
Multifamily Housing (Mid-Rise)	221	136 Units	618	59	14	45	53	32	21
<i>Less Trips Internal to the Campus Area</i>			(86)	(2)	(1)	(1)	(9)	(6)	(3)
Net New			532	57	13	44	44	26	18
Multifamily Housing (Low-Rise)	220	201 Units	1,355	71	17	54	94	59	35
<i>Less Trips Internal to the Campus Area</i>			(128)	(2)	(0)	(2)	(13)	(9)	(4)
Net New			1,227	69	17	52	81	50	31
Middle School ²	522	900 Students	1,917	522	282	240	153	75	78
Total Phase 4 Trips			4,097	657	316	341	319	175	144
<i>Less Total Trips Internal to the Campus Area</i>			(278)	(6)	(2)	(4)	(26)	(17)	(9)
<i>Less Total Pass-by Reduction</i>			(41)	(69)	(17)	(52)	(81)	(50)	(31)
Total Phase 4 Net New Trips			3,778	582	297	285	212	108	104

¹ Source: Traffic Impact Analysis for VIC Master Plan dated November 20, 2020.

² Trip estimates from approved 2020 VIC Traffic Impact Analysis. The potential for internal trips associated with a school could be revisited in conjunction with a more specific school development proposal.

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NOTE - Trips shown include net new trip assignment (all land uses) and pass-by trip assignment (retail use only).
Negative trips represent pass-by trips.

Phase 4 Trip Assignment
Weekday AM & PM Peak Hour
Vancouver, WA
Figure 13

FUTURE YEAR 2038 MASTER PLAN TRAFFIC CONDITIONS

The site-generated trips associated with each phase were added to the baseline traffic volumes to yield with project traffic volumes that were then analyzed. Re-routing of localized trips was assumed in conjunction with the introduction of new road connections by phase where appropriate. The discussion below summarizes key changes and findings by development phase.

Phase 1 With Project Conditions

Vehicle access to and from the VIC campus will remain the same as it is today under Phase 1 master plan development. As such, the Phase 1 site-generated trips (reflected in Figure 10) were added to the baseline traffic volumes in Figure 8 to result in the Master Plan build-out traffic volumes and intersection operations reflected in Figure 14. Note that actual build-out of Phase 1 is allowed by-right today and is anticipated well before 2028 as previously noted.

Two study intersections are projected to not satisfy City performance standards with buildout of the Phase 1 Master Plan land uses:

- SE 25th Street/SE 192nd Avenue (did not satisfy standards under baseline conditions)
- SE 20th Street/SE 176th Avenue (did not satisfy standards under baseline conditions)

Additional details regarding the operations of the two intersections above and mitigation considerations is described below. *Appendix "F" contains the 2038 With Project Phase 1 operational analysis worksheets.*

SE 25th Street/SE 192nd Avenue (Study Intersection #3)

The stop-controlled westbound left-turn lane on SE 25th Street is projected to continue to operate at LOS F during the weekday PM peak hour but well under capacity (V/C ratio of 0.05). The proposed The VIC project is not projected to add any turning movements to the westbound approach and therefore does not trigger mitigation per Vancouver Municipal Code Section 11.80.130.B.

SE 20th Street/SE 176th Avenue (Study Intersection #10)

Consistent with 2038 Baseline conditions, intersection is forecast to continue to operate at LOS F with the eastbound and westbound approaches over capacity during the weekday PM peak hour. As previously noted, the City of Vancouver has previously identified capacity mitigation needs at the intersection and is collecting proportional share mitigation fees from new development (current fee of \$400 per weekday PM peak hour trip added to the intersection) to be used to fund the intersection improvements. Accordingly, the proposed development will be required to pay a proportional share contribution to the SE 20th Street/SE 176th Avenue intersection for mitigation purposes. Further details on the proportionate share amounts to be assessed are documented separately in this report.



Phase 2 With Project Conditions

The Phase 2 site-generated volumes shown in Figure 11 were added to the Phase 1 with project volumes to obtain the Phase 2 Master Plan build-out traffic volumes and intersection operations shown in Figure 15. In addition to assigning the new site-generated trips, some existing VIC campus trips destined to the east were re-routed from the existing SE 34th Street campus access to the assumed new SE 29th Street connection to SE 192nd Avenue (re-routing reflects more direct campus connection to SE 192nd Avenue for buildings on the western portion of the VIC campus, refer to Appendix “G” Figure G-1 and Figure G-2).

Upon buildout of the Phase 2 Master Plan transportation network and land uses, study intersections projected to not satisfy City performance standards and/or that experience projected 95th percentile queues that exceed the available queue storage include:

- SE 25th Street/SE 192nd Avenue (did not satisfy standards under baseline conditions)
- SE 34th Street/SE 192nd Avenue
- SE 20th Street/SE 176th Avenue (did not satisfy standards under baseline conditions)

Additional details regarding the operations of the three intersections above and mitigation considerations are described below. *Appendix “G” contains the 2038 With Project Phase 2 operational analysis worksheets.*

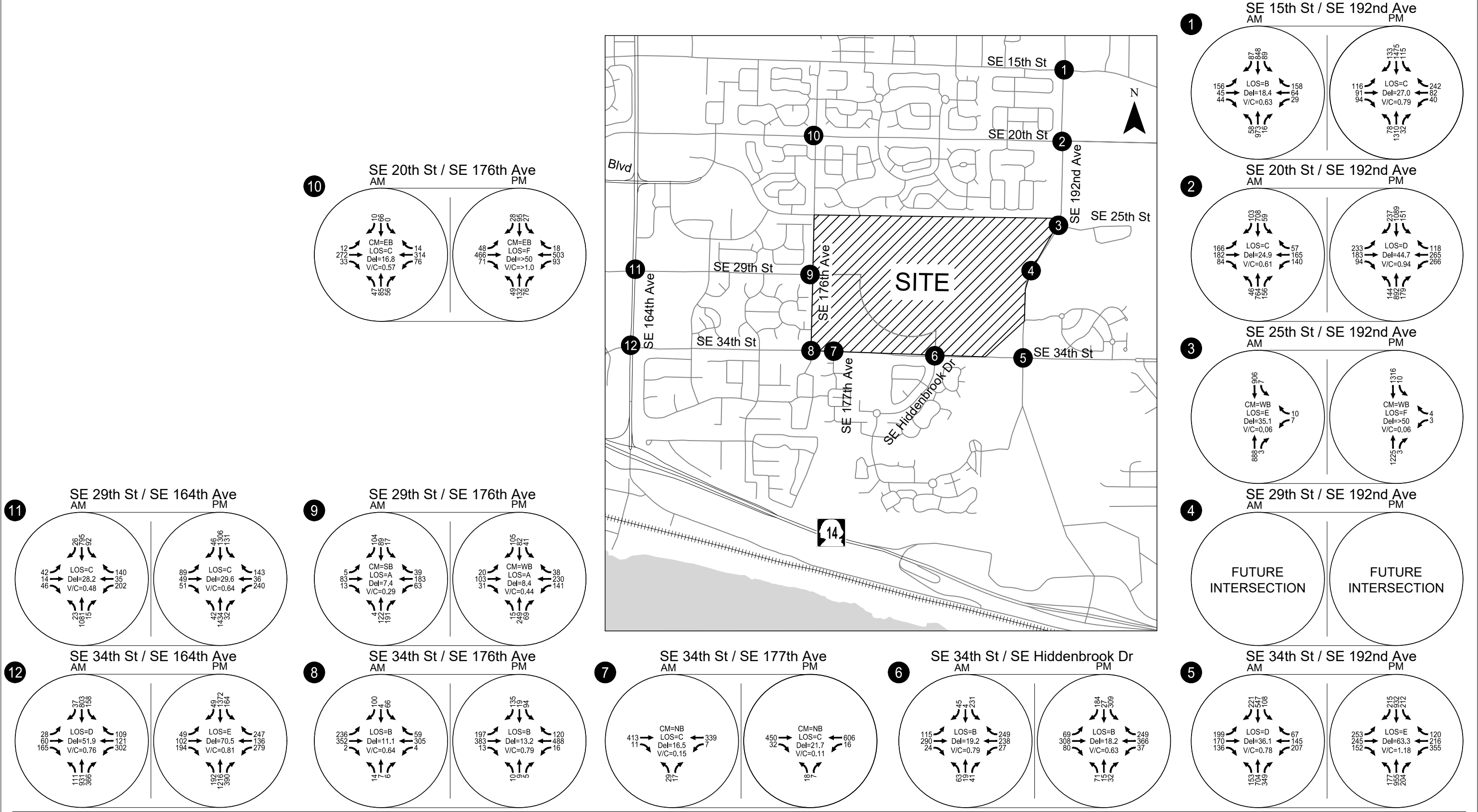
SE 25th Street/SE 192nd Avenue (Study Intersection #3)

The stop-controlled westbound left-turn lane on SE 25th Street is projected to continue to operate at LOS F during the weekday PM peak hour but well under capacity (V/C ratio of 0.06). The proposed The VIC project is not projected to add any turning movements to the westbound approach and therefore does not trigger mitigation per Vancouver Municipal Code Section 11.80.130.B.

SE 34th Street/SE 192nd Avenue (Study Intersection #5)

As shown, the SE 192nd Avenue/SE 34th Street signalized intersection is projected to at LOS E and over capacity during the weekday PM peak hour. The City of Vancouver has previously determined that no additional capacity will be added to the intersection and is collecting proportional share mitigation fees from new development (current fee of \$150 per weekday PM peak hour trip added to the intersection) to be used to reconstruct the intersection with a concrete surface. Accordingly, the proposed development will be required to pay a proportional share contribution to the SE 192nd Avenue/SE 34th Street intersection for mitigation purposes. Further details on the proportionate share amounts to be assessed are documented separately in this report.

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CM = Critical Movement (Unsignalized)
LOS = Intersection Level of Service (Signalized) / Critical Movement Level of Service (Unsignalized)
Del = Intersection Average Control Delay (Signalized) / Critical Movement Control Delay (Unsignalized)
V/C= Intersection Volume-to-Capacity Ratio (Signalized) / Critical Movement Volume-to-Capacity Ratio (Unsignalized)

Future Year 2038 Phase 2 With-Project Traffic Conditions
Weekday AM & PM Peak Hour
Vancouver, WA

Figure
15

SE 20th Street/SE 176th Avenue (Study Intersection #10)

The intersection is forecast to continue to operate over capacity during the weekday PM peak hour and the proposed development will be required to pay a proportional share contribution for mitigation purposes.

It is further noted that northbound vehicles on SE 177th Avenue at SE 34th Street experience much less delay due to closure of the opposing VIC west campus access to SE 34th Street with Master Plan Phase 2.

Phase 3 With Project Conditions

The Phase 3 site-generated volumes shown in Figure 12 were added to the 2038 Phase 2 With Project volumes shown in Figure 14 to obtain the Phase 3 Master Plan build-out traffic volumes and intersection operations shown in Figure 16. In addition to assigning the new site-generated trips, previously assigned The VIC trips were re-routed from the existing SE 34th Street campus access to the assumed new SE 29th Street connection to SE 192nd Avenue (re-routing reflects the more direct campus connection to SE 192nd Avenue for buildings on the eastern portion of the VIC campus, refer to Appendix “H” Figure H-1). Further, some local trips were also re-routed, reflecting the new alternative path compared to prior conditions where local trips use the SE 34th Street corridor to travel to and from SE 192nd Avenue.

Upon buildout of the Phase 3 Master Plan transportation network and land uses, study intersections projected to not satisfy City performance standards and/or that experience projected 95th percentile queues that exceed the available queue storage include:

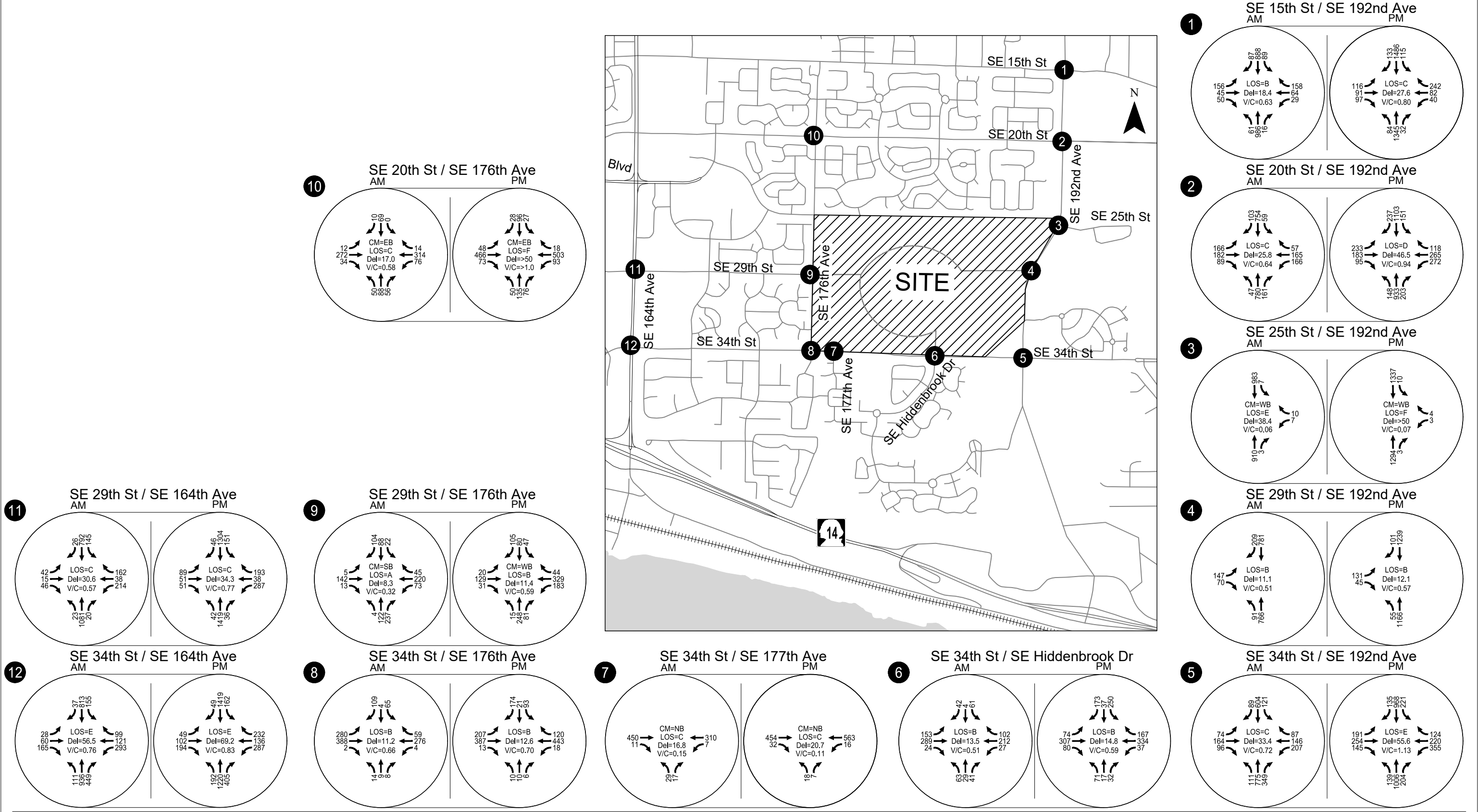
- SE 25th Street/SE 192nd Avenue (did not satisfy standards under baseline conditions)
- SE 34th Street/SE 192nd Avenue (improved compared to Phase 2 conditions)
- SE 20th Street/SE 176th Avenue (did not satisfy standards under baseline conditions)

Additional details regarding the operations of each intersection and mitigation considerations is described below. *Appendix “H” contains the 2038 With Project Phase 3 operational analysis worksheets, the traffic signal warrant analysis worksheets.*

SE 25th Street/SE 192nd Avenue (Study Intersection #3)

The stop-controlled westbound left-turn lane on SE 25th Street is projected to continue to operate at LOS F with a V/C ratio of 0.07 during the weekday PM peak hour. The proposed The VIC project is not projected to add any turning movements to the westbound approach and therefore does not trigger mitigation per Vancouver Municipal Code Section 11.80.130.B.

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CM = Critical Movement (Unsignalized)
LOS = Intersection Level of Service (Signalized) / Critical Movement Level of Service (Unsignalized)
Del = Intersection Average Control Delay (Signalized) / Critical Movement Control Delay (Unsignalized)
V/C= Intersection Volume-to-Capacity Ratio (Signalized) / Critical Movement Volume-to-Capacity Ratio (Unsignalized)

Future Year 2038 Phase 3 With-Project Traffic Conditions
Weekday AM & PM Peak Hour
Vancouver, WA

Figure
16

SE 34th Street/SE 192nd Avenue (Study Intersection #5)

The intersection is forecast to continue to operate over capacity during the weekday PM peak hour but operates comparatively better than under Phase 2 conditions due to the diversion of VIC and local traffic to the new parallel SE 29th Street corridor through the VIC campus. The proposed development will be required to pay a proportional share contribution for mitigation purposes.

SE 20th Street/SE 176th Avenue (Study Intersection #10)

The intersection is forecast to continue to operate over capacity during the weekday PM peak hour and the proposed development will be required to pay a proportional share contribution for mitigation purposes.

Phase 4 With Project Conditions

The Phase 4 site-generated volumes shown in Figure 13 were added to the 2038 Phase 3 With Project volumes shown in Figure 16 to obtain the Phase 4 Master Plan build-out traffic volumes and intersection operations shown in Figure 17.

Upon buildout of the Phase 4 Master Plan (full buildout of the VIC Master Plan uses) transportation network and land uses, study intersections projected to not satisfy City performance standards and/or that experience projected 95th percentile queues that exceed the available queue storage include:

- SE 25th Street/SE 192nd Avenue (did not satisfy standards under baseline conditions)
- SE 34th Street/SE 192nd Avenue
- SE 20th Street/SE 176th Avenue (did not satisfy standards under baseline conditions)

Additional details regarding the operations of each intersection and mitigation considerations is described below. *Appendix "I" contains the 2038 With Project Phase 4 operational analysis worksheets, .*

SE 25th Street/SE 192nd Avenue (Study Intersection #3)

The stop-controlled westbound left-turn lane on SE 25th Street is projected to continue to operate at LOS F with a V/C ratio of 0.08 during the weekday PM peak hour. The proposed The VIC project is not projected to add any turning movements to the westbound approach and therefore does not trigger mitigation per Vancouver Municipal Code Section 11.80.130.B.

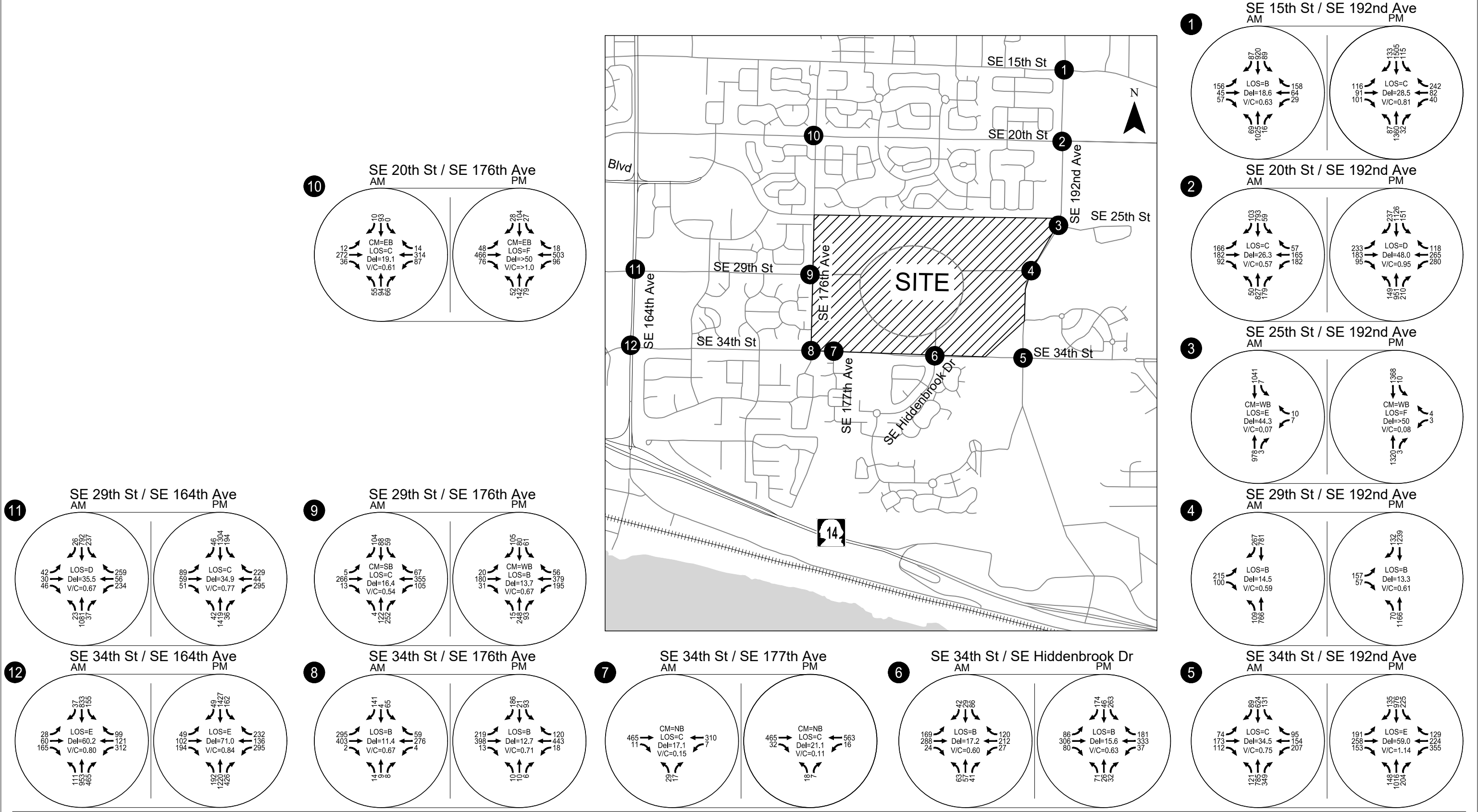
SE 34th Street/SE 192nd Avenue (Study Intersection #5)

The intersection is forecast to continue to operate over capacity during the weekday PM peak hour and proposed development will be required to pay a proportional share contribution for mitigation purposes.

SE 20th Street/SE 176th Avenue (Study Intersection #10)

The intersection is forecast to continue to operate over capacity during the weekday PM peak hour and the proposed development will be required to pay a proportional share contribution for mitigation purposes.

H:\27\2715 - VIC Implementation\005 - Master Plan Update TIA\report\figs\2715-Figures_Fig 17 - Phase 4 Total Layout Tab: Fig 17 - Phase 4 Total



CM = Critical Movement (Unsignalized)
LOS = Intersection Level of Service (Signalized) / Critical Movement Level of Service (Unsignalized)
Del = Intersection Average Control Delay (Signalized) / Critical Movement Control Delay (Unsignalized)
V/C= Intersection Volume-to-Capacity Ratio (Signalized) / Critical Movement Volume-to-Capacity Ratio (Unsignalized)

Future Year 2038 Phase 4 With-Project Traffic Conditions
Weekday AM & PM Peak Hour
Vancouver, WA

Figure
17

PROPORTIONAL SHARE FEE CONTRIBUTIONS

The City of Vancouver is collecting proportional share fee contributions from all future development adding site-generated trips to multiple intersections in the study area. Intersections impacted by the VIC Master Plan that are projected to experience concurrency failures and for mitigation is being required in the form of the proportional share fee include:

- SE 34th Street/SE 192nd Avenue
- SE 20th Street/SE 176th Avenue
- SE 192nd Avenue/SR-14 Westbound

Information about the current applicable fees and anticipated total project impact is documented for each intersection below based on the current site plan and trip estimates previously presented in Table 4. The fee amount due for each new building at The VIC will be determined at the time of site plan application and payment will be paid prior to building permit issuance.

SE 34th Street/SE 192nd Avenue (Study Intersection #5)

- A fee payment of \$150 is currently required by the City for each weekday PM peak hour site-generated trip traveling through the intersection.
- Full Master Plan buildout is projected to add 556 weekday PM peak hour trips to the intersection, resulting in a projected fee of \$83,400.

SE 20th Street/SE 176th Avenue (Study Intersection #10)

- A fee payment of \$400 is currently required by the City for each weekday PM peak hour site-generated trip traveling through the intersection.
- Full Master Plan buildout is projected to add 84 weekday PM peak hour trips to the intersection, resulting in a projected fee of \$33,600.

SE 192nd Avenue & SR-14 Westbound Ramp Terminal Mitigation

- A fee payment of \$2,000 is currently required by the City for each weekday PM peak hour site-generated trip traveling through the intersection. The fee will be used to fund the installation of a traffic signal and a second westbound right-turn lane at the intersection along with related modifications.
- Full Master Plan buildout is projected to add 215 weekday PM peak hour trips to the intersection, resulting in a projected fee of \$430,000 as follows:
 - Light industrial and office uses: 53 trips (\$106,000);
 - Residential uses: 126 trips (\$252,000);
 - Commercial retail uses: 28 trips (\$56,000); and
 - Middle School: 8 trips (\$16,000).

SITE ACCESS SIGHT DISTANCE CONSIDERATIONS

The final VIC Master Plan site plan design should provide intersection sight clear areas at each on-site intersection and connections to the public roadway network surrounding the campus in accordance with City of Vancouver standards. Further, it is recommended that above-ground utilities, monuments, fencing, and vegetation be appropriately located and maintained on-site to preserve adequate intersection sight lines per City of Vancouver standards.

FINDINGS & RECOMMENDATIONS

Based on the results of this Traffic Impact Analysis, the proposed VIC Master Plan can be developed while maintaining acceptable study intersection operations and/or mitigating site development impacts. The analysis developed the findings and recommendations listed below.

Findings

- Each of the study intersections satisfies City operating standards today.
- By the future baseline year 2038, the following study intersections do not satisfy City performance standards:
 - SE 25th Street/SE 192nd Avenue
 - SE 20th Street/SE 176th Avenue
- The VIC project will provide several new roadways and transportation capacity mitigations including construction of:
 - SE 29th Street as a collector between SE 176th Avenue and SE 192nd Avenue;
 - A new loop road within the VIC campus linking SE 34th Street and SE 29th Street;
 - A new single lane roundabout at the SE 29th Street/SE 176th Avenue intersection;
 - A new single lane roundabout at SE 29th Street/west loop road intersection;
 - A new single lane roundabout at SE 29th Street/east loop road intersection;
 - A new signalized intersection at SE 29th Street/SE 192nd Avenue intersection;
 - Capacity mitigations at the signalized SE 29th Street/SE 164th Avenue intersection including:
 - Convert the existing east-west left-turn permissive signal phasing on SE 29th Street to protected/permissive left-turn phasing;
 - Extend the westbound left-turn lane storage on SE 29th Street; and
 - Extend the existing southbound left-turn lane on SE 162nd Avenue.

- Closure of the existing west campus access connection to SE 34th Street (the site access aligned with SE 177th Avenue); and
 - Modify the existing east campus access connection to SE 34th Street (the site access aligned with SE Hiddenbrook Drive) to have one northbound lane, one southbound left-turn lane and one southbound shared through/right lane at the SE 34th Street traffic signal.
- The VIC Master Plan site-generated trips will impact three intersections where the City of Vancouver is collecting proportional share fee contributions including:
 - SE 34th Street/SE 192nd Avenue
 - SE 20th Street/SE 176th Avenue
 - SE 192nd Avenue/SR-14 Westbound

Recommended Off-site Intersection Mitigations with Master Plan Development

SE 29th Street/SE 164th Avenue (Study Intersection #11) With Phase 2 Site Development

- The existing east-west left-turn signal phasing on SE 29th Street at SE 162nd Avenue should be converted from permissive operations to protected/permissive left-turn phasing;
- The westbound left-turn lane striping should be extended to provide 225 feet of storage; and
- The existing southbound left-turn lane on SE 162nd Avenue at SE 29th Street should be extended to provide 300 feet of left-turn storage (the existing left-turn storage is approximately 135 feet long; the extension will required reconstruction of the existing median area and drainage facilities within the median).

SE 29th Street/SE 192nd Avenue (Study Intersection #4) With Master Plan Phase 3

- Construct a traffic signal along with:
 - separate left and right-turn lanes with at least 250 feet of storage on the eastbound SE 29th Street approach;
 - a separate left-turn lane with at least 200 feet of storage on the northbound approach; and
 - protected northbound left-turn phasing on SE 192nd Avenue at the intersection.

Proportional Share Contributions

The VIC should make a proportionate share contribution toward future capacity improvements at each of these three intersections with each site development application. The fee for individual site plan applications will be determined as part of each application and should be paid prior to building permit issuance.

- SE 34th Street/SE 192nd Avenue (Study Intersection #5)
 - A fee payment of \$150 is currently required by the City for each weekday PM peak hour site-generated trip traveling through the intersection.
- SE 192nd Avenue & SR-14 Westbound Ramp Terminal
 - A fee payment of \$2,000 is currently required by the City for each weekday PM peak hour site-generated trip traveling through the intersection.
- SE 20th Street/SE 176th Avenue (Study Intersection #10)
 - The VIC should make a proportionate share contribution toward future capacity improvements at the unsignalized SE 20th Street/SE 176th Avenue intersection with each site development application. A fee payment of \$400 is currently required by the City for each weekday PM peak hour site-generated trip traveling through the intersection.

Other Recommendations

- Above-ground utilities, monuments, fencing, and vegetation should be appropriately located and maintained on-site and at all site access intersections to provide adequate intersection sight lines per City of Vancouver standards.

We trust this letter adequately addresses the traffic impacts associated with the revised The VIC Master Plan proposal. Please contact us if you have any questions or comments.

Sincerely,
KITTELSON & ASSOCIATES, INC.



Chris Brehmer, PE
Senior Principal Engineer



Julia Kuhn, PE
Senior Principal Engineer



REFERENCES

- 1) Transportation Research Board. *Highway Capacity Manual*, 6th Edition. 2016.
- 2) City of Vancouver. Arterial Street System and Classification Map. 2022.
https://www.cityofvancouver.us/sites/default/files/fileattachments/public_works/page/1744/arterial_map_large_2022.pdf
- 3) C-Tran. <http://www.c-tran.com>. Accessed March 2021.
- 4) Institute of Transportation Engineers. *Trip Generation Manual*, 11th Edition. 2021.

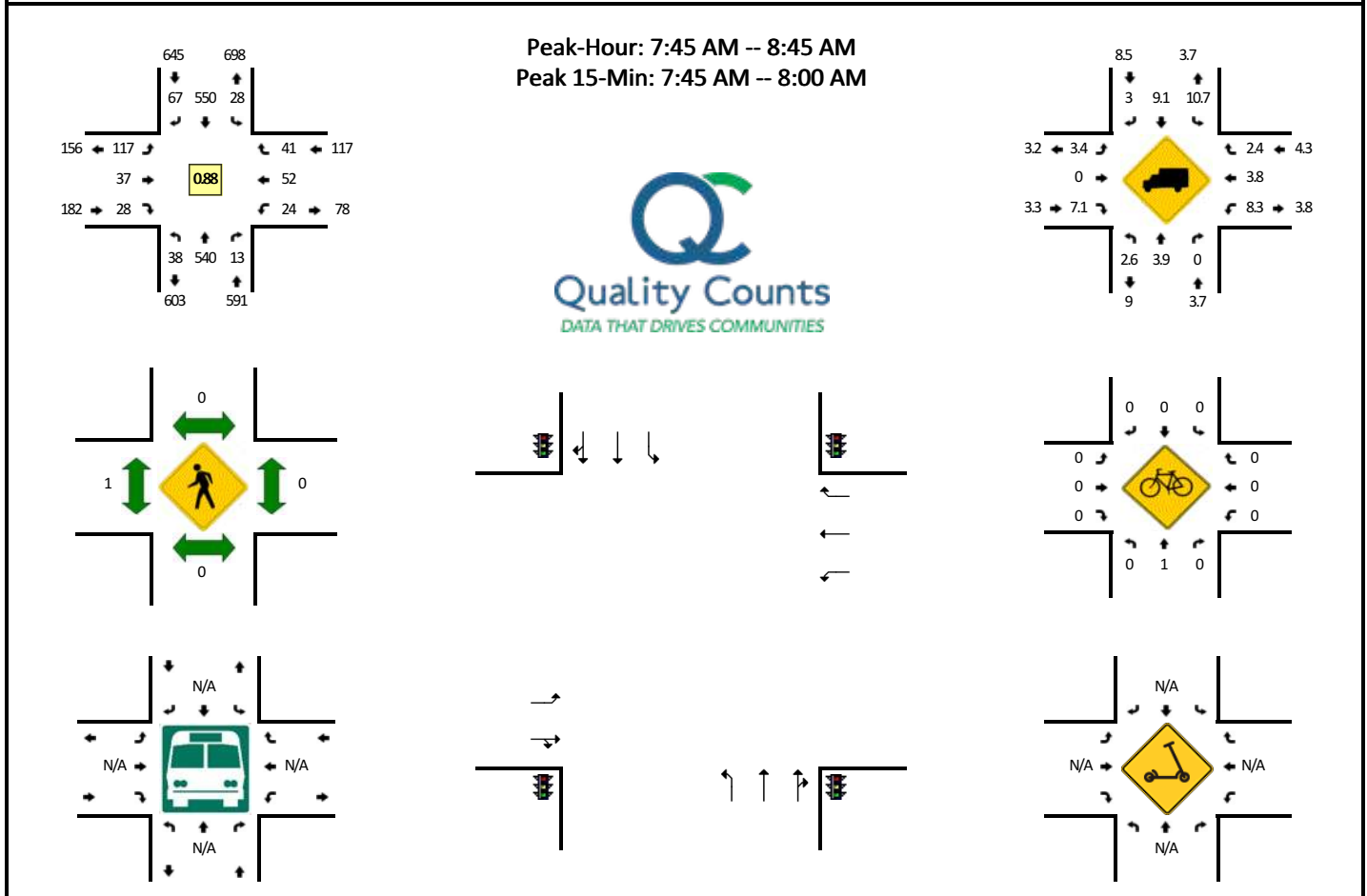
APPENDICES

- Appendix A: Traffic Count Data
- Appendix B: WSDOT Crash Data
- Appendix C: Existing Operations Worksheets
- Appendix D: The VIC Campus Volume Adjustment
- Appendix E: 2038 Baseline Operations Worksheets and Total In-process Trip Assignment
- Appendix F: 2038 With-Project Phase 1 Operations Worksheets
- Appendix G: 2038 With-Project Phase 2 Operations Worksheets and Re-route Trips
- Appendix H: 2038 With-Project Phase 3 Operations Worksheets and Re-route Trips
- Appendix I: 2038 With-Project Phase 4 Operations Worksheets

Appendix A Traffic Count Data

LOCATION: SE 192nd Ave -- SE 15th St
CITY/STATE: Vancouver, WA

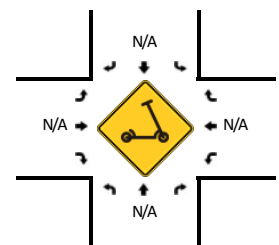
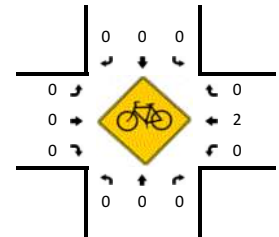
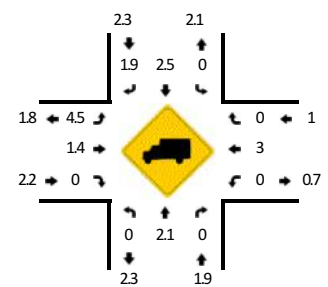
QC JOB #: 16050501
DATE: Tue, Jan 10 2023



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	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	1	31	0	0	1	51	4	0	2	2	1	0	0	1	0	0	94	
7:05 AM	0	23	0	0	1	35	4	0	2	1	1	0	2	0	2	0	71	
7:10 AM	2	31	0	0	0	36	3	0	6	2	3	0	1	1	1	0	86	
7:15 AM	2	39	0	0	6	36	1	0	7	6	3	0	1	0	2	0	103	
7:20 AM	4	35	0	0	1	32	3	0	7	2	2	0	1	0	6	0	93	
7:25 AM	2	39	0	1	1	39	4	0	1	2	1	0	2	6	0	0	98	
7:30 AM	1	43	2	0	0	30	4	0	2	5	2	0	2	0	3	0	94	
7:35 AM	3	46	0	0	1	37	2	0	10	1	4	0	3	3	2	0	112	
7:40 AM	1	65	3	0	1	42	2	0	11	5	3	0	3	4	3	0	143	
7:45 AM	5	56	1	0	1	50	4	0	11	4	1	0	2	4	7	0	146	
7:50 AM	2	44	1	1	4	63	4	0	10	5	4	0	3	5	5	0	151	
7:55 AM	0	39	3	0	7	59	12	0	6	3	5	0	1	2	2	0	139	1330
8:00 AM	1	41	1	0	0	43	13	0	8	3	2	0	2	5	1	0	120	1356
8:05 AM	9	39	0	0	1	43	4	0	5	1	6	0	0	6	0	0	114	1399
8:10 AM	0	35	2	0	3	38	5	0	6	4	1	0	1	8	2	0	105	1418
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Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	28	556	20	4	48	688	80	0	108	48	40	0	24	44	56	0	1744	
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Buses																		
Pedestrians		0				0				0				0			0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scooters																		

Comments:

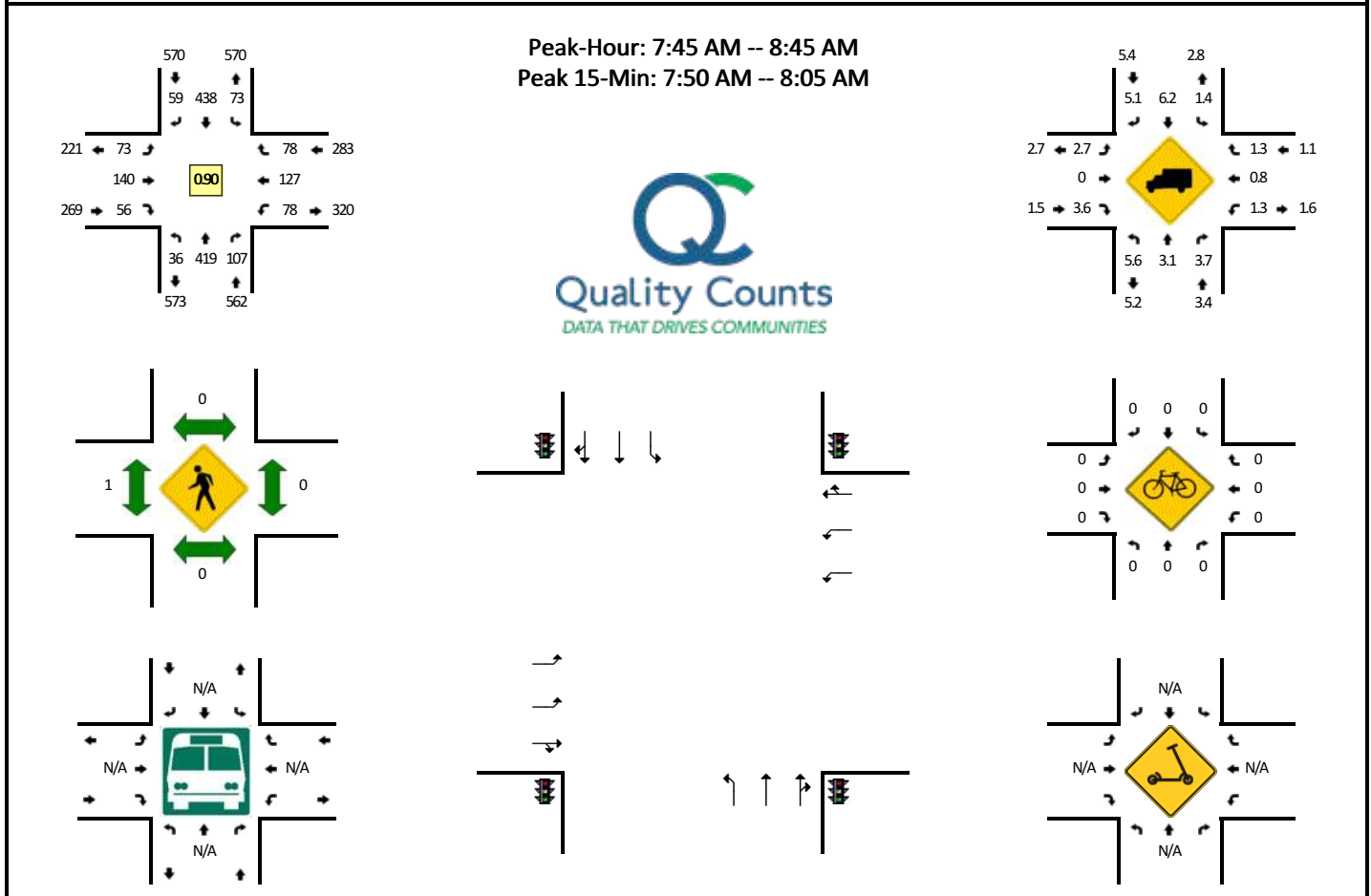
QC JOB #: 16050502
DATE: Tue, Jan 10 2023



Comments:

LOCATION: SE 192nd Ave -- SE 20th St
CITY/STATE: Vancouver, WA

QC JOB #: 16050503
DATE: Tue, Jan 10 2023

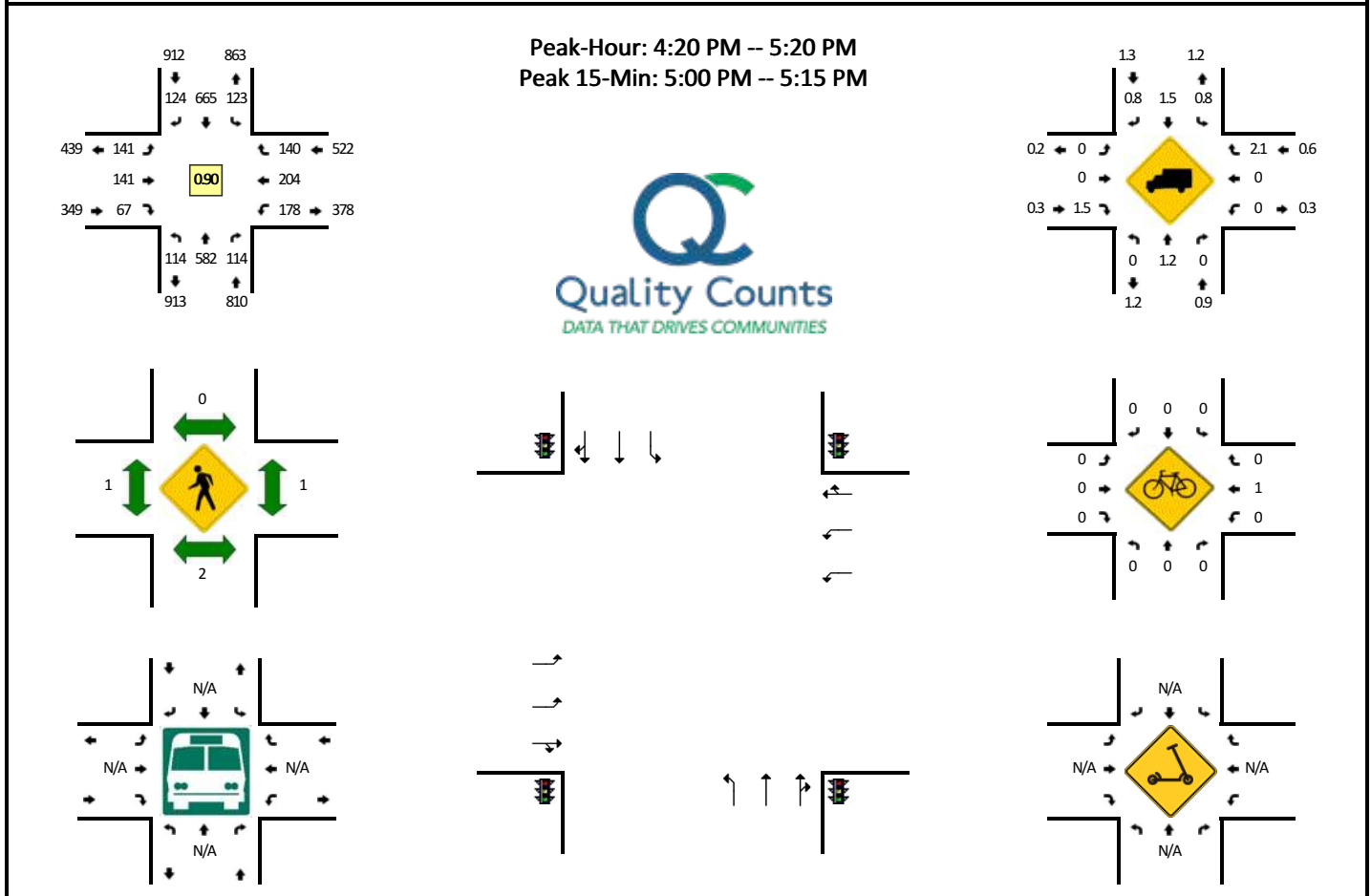


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Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
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Heavy Trucks	0	12	0	0	0	20	4	0	4	0	0	0	0	0	0	0	40	
Buses																		
Pedestrians		0				0				0				0			0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scoters																		

Comments:

LOCATION: SE 192nd Ave -- SE 20th St
CITY/STATE: Vancouver, WA

QC JOB #: 16050504
DATE: Tue, Jan 10 2023

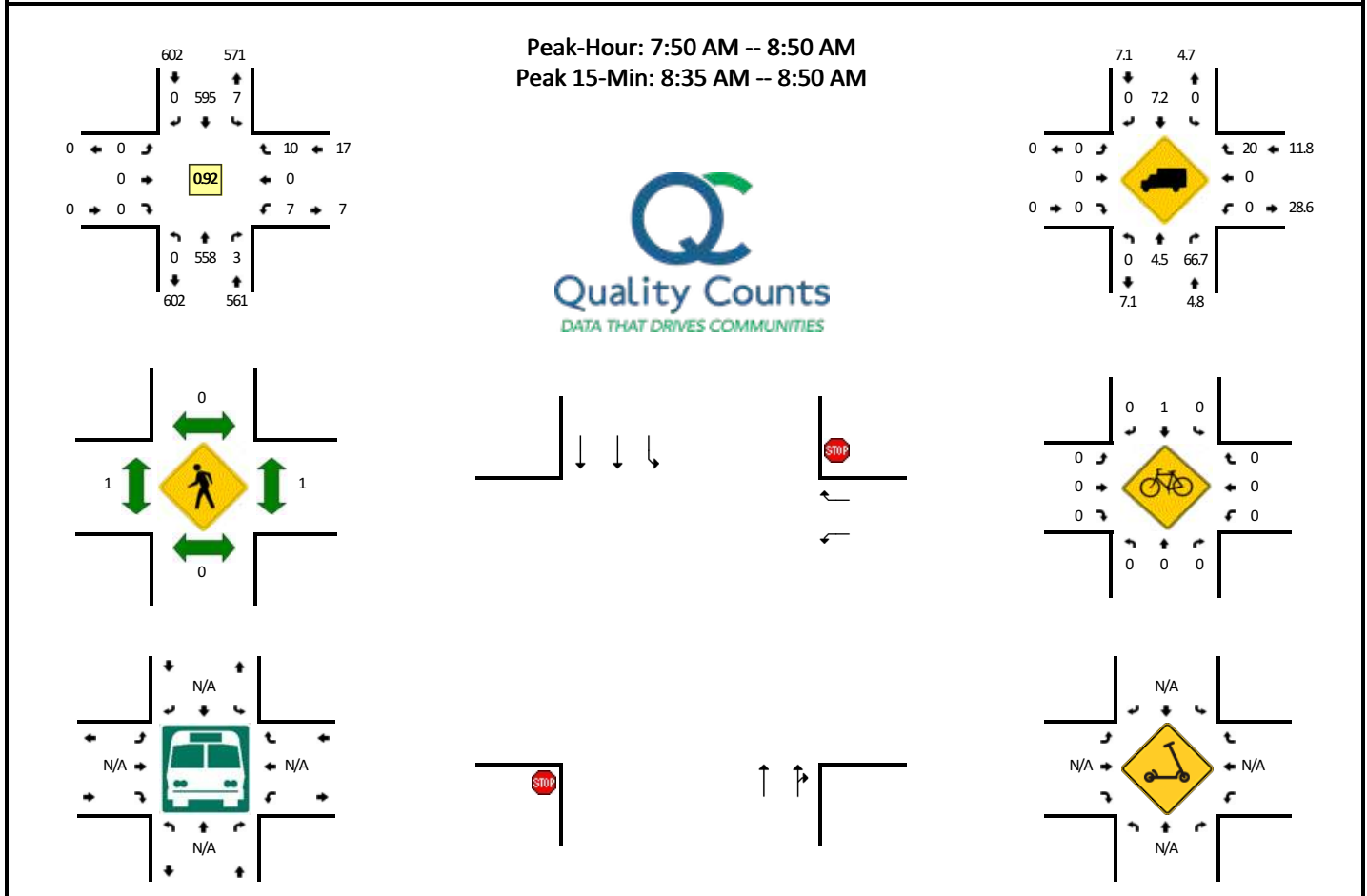


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Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
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All Vehicles	96	556	188	4	112	776	116	0	132	180	80	0	220	264	144	0	2868	
Heavy Trucks	0	0	0		0	8	0		0	0	0		0	0	0		8	
Buses																		
Pedestrians		0				0				0				0			0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scoters																		

Comments:

LOCATION: SE 192nd Ave -- SE 25th St
CITY/STATE: Vancouver, WA

QC JOB #: 16050505
DATE: Thu, Jan 12 2023

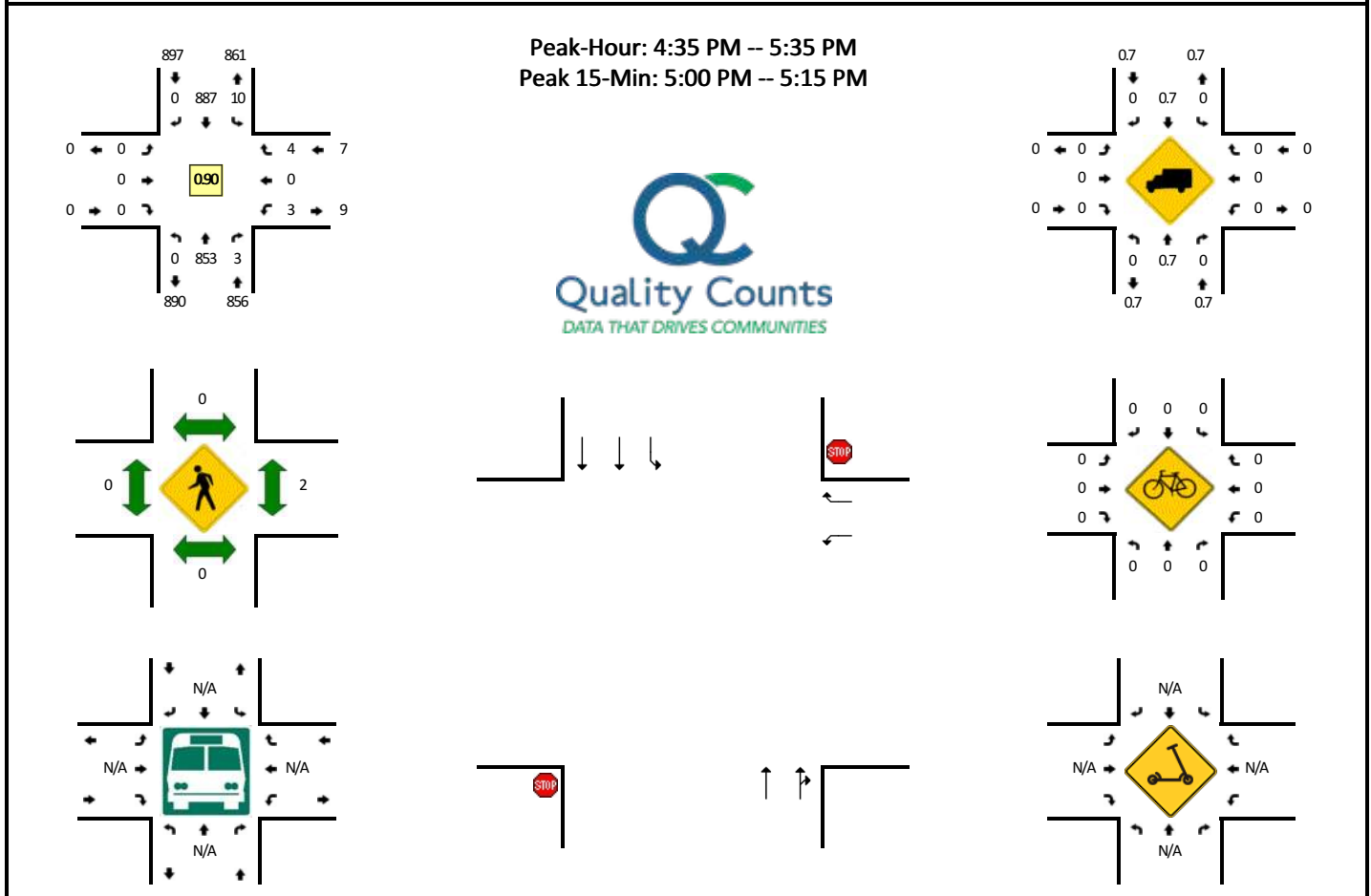


5-Min Count Period Beginning At	SE 192nd Ave (Northbound)				SE 192nd Ave (Southbound)				SE 25th St (Eastbound)				SE 25th St (Westbound)				Total	Hourly Totals
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7:10 AM	0	27	0	0	1	32	0	1	0	0	0	0	0	0	0	0	61	
7:15 AM	0	35	0	0	0	42	0	0	0	0	0	0	0	0	1	0	78	
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7:30 AM	0	34	0	0	0	42	0	0	0	0	0	0	0	0	0	0	76	
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7:40 AM	0	30	0	0	0	44	0	0	0	0	0	0	0	0	0	0	74	
7:45 AM	0	40	0	0	0	52	0	1	0	0	0	0	0	0	2	0	95	
7:50 AM	0	36	0	0	0	57	0	0	0	0	0	0	1	0	2	0	96	
7:55 AM	0	38	0	0	0	60	0	0	0	0	0	0	0	0	0	0	98	953
8:00 AM	0	51	0	0	1	45	0	1	0	0	0	0	0	0	1	0	99	982
8:05 AM	0	44	1	0	0	48	0	0	0	0	0	0	0	0	1	0	94	1015
8:10 AM	0	45	1	0	0	36	0	0	0	0	0	0	1	0	3	0	86	1040
8:15 AM	0	41	0	0	1	39	0	0	0	0	0	0	0	0	1	0	82	1044
8:20 AM	0	57	0	0	0	46	0	0	0	0	0	0	1	0	0	0	104	1072
8:25 AM	0	39	0	0	1	54	0	0	0	0	0	0	0	0	1	0	95	1088
8:30 AM	0	49	0	0	0	55	0	0	0	0	0	0	1	0	0	0	105	1117
8:35 AM	0	59	1	0	1	50	0	1	0	0	0	0	0	0	1	0	113	1141
8:40 AM	0	38	0	0	0	46	0	0	0	0	0	0	3	0	0	0	87	1154
8:45 AM	0	61	0	0	0	59	0	1	0	0	0	0	0	0	0	0	121	1180
8:50 AM	0	55	1	0	0	33	0	0	0	0	0	0	0	0	0	0	89	1173
8:55 AM	0	37	1	0	1	50	0	0	0	0	0	0	0	0	2	0	91	1166
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	632	4	0	4	620	0	8	0	0	0	0	12	0	4	0	1284	
Heavy Trucks	0	40	0	0	0	48	0	0	0	0	0	0	0	0	0	0	88	
Buses																		
Pedestrians	0	0	0	0	0	0	0	0	4	0	0	0	4	0	0	0	8	
Bicycles	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	4	
Scooters																		

Comments:

LOCATION: SE 192nd Ave -- SE 25th St
CITY/STATE: Vancouver, WA

QC JOB #: 16050506
DATE: Thu, Jan 12 2023

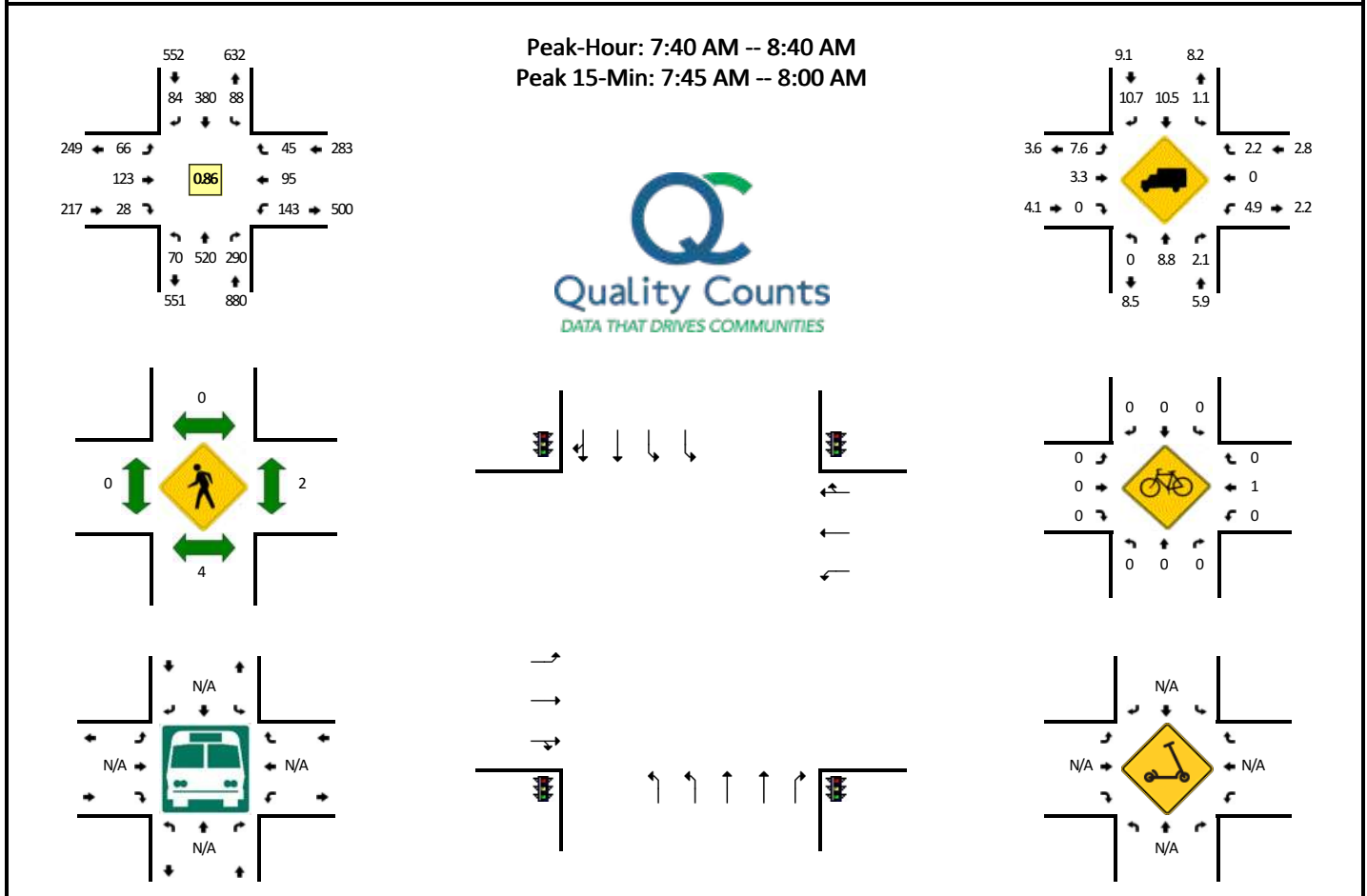


5-Min Count Period Beginning At	SE 192nd Ave (Northbound)				SE 192nd Ave (Southbound)				SE 25th St (Eastbound)				SE 25th St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	70	1	0	2	69	0	0	0	0	0	0	0	0	2	0	144	
4:05 PM	0	65	0	0	0	84	0	0	0	0	0	0	0	0	1	0	150	
4:10 PM	0	50	1	0	0	74	0	1	0	0	0	0	0	0	1	0	127	
4:15 PM	0	70	1	0	2	74	0	0	0	0	0	0	0	0	0	0	147	
4:20 PM	0	69	1	0	0	97	0	0	0	0	0	0	1	0	1	0	169	
4:25 PM	0	63	0	0	0	59	0	0	0	0	0	0	2	0	1	0	125	
4:30 PM	0	62	0	0	0	74	0	0	0	0	0	0	0	0	0	0	136	
4:35 PM	0	71	0	0	1	69	0	0	0	0	0	0	0	0	0	0	141	
4:40 PM	0	65	1	0	0	73	0	0	0	0	0	0	0	0	0	0	139	
4:45 PM	0	56	1	0	0	85	0	1	0	0	0	0	0	0	0	0	143	
4:50 PM	0	63	0	0	0	71	0	0	0	0	0	0	1	0	2	0	137	
4:55 PM	0	62	0	0	0	66	0	0	0	0	0	0	0	0	0	0	128	1686
5:00 PM	0	88	0	0	0	70	0	1	0	0	0	0	0	0	0	0	159	1701
5:05 PM	0	84	0	0	1	85	0	0	0	0	0	0	0	0	0	0	170	1721
5:10 PM	0	74	0	0	0	84	0	0	0	0	0	0	0	0	0	0	158	1752
5:15 PM	0	74	1	0	2	75	0	0	0	0	0	0	0	0	1	0	153	1758
5:20 PM	0	69	0	0	0	69	0	2	0	0	0	0	0	0	1	0	141	1730
5:25 PM	0	63	0	0	1	68	0	0	0	0	0	0	0	0	0	0	132	1737
5:30 PM	0	84	0	0	1	72	0	0	0	0	0	0	2	0	0	0	159	1760
5:35 PM	0	52	0	0	1	64	0	0	0	0	0	0	0	0	0	0	117	1736
5:40 PM	0	70	0	0	2	70	0	3	0	0	0	0	0	0	1	0	146	1743
5:45 PM	0	65	0	0	0	45	0	0	0	0	0	0	1	0	0	0	111	1711
5:50 PM	0	68	1	0	2	59	0	0	0	0	0	0	0	0	1	0	131	1705
5:55 PM	0	61	1	0	1	58	0	2	0	0	0	0	0	0	2	0	125	1702
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	984	0	0	4	956	0	4	0	0	0	0	0	0	0	0	1948	
Heavy Trucks	0	20	0	0	0	8	0	0	0	0	0	0	0	0	0	0	28	
Buses																		
Pedestrians		0				0				0				4			4	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scooters																		

Comments:

LOCATION: SE 192nd Ave -- SE 34th St
CITY/STATE: Vancouver, WA

QC JOB #: 16019615
DATE: Tue, Dec 6 2022

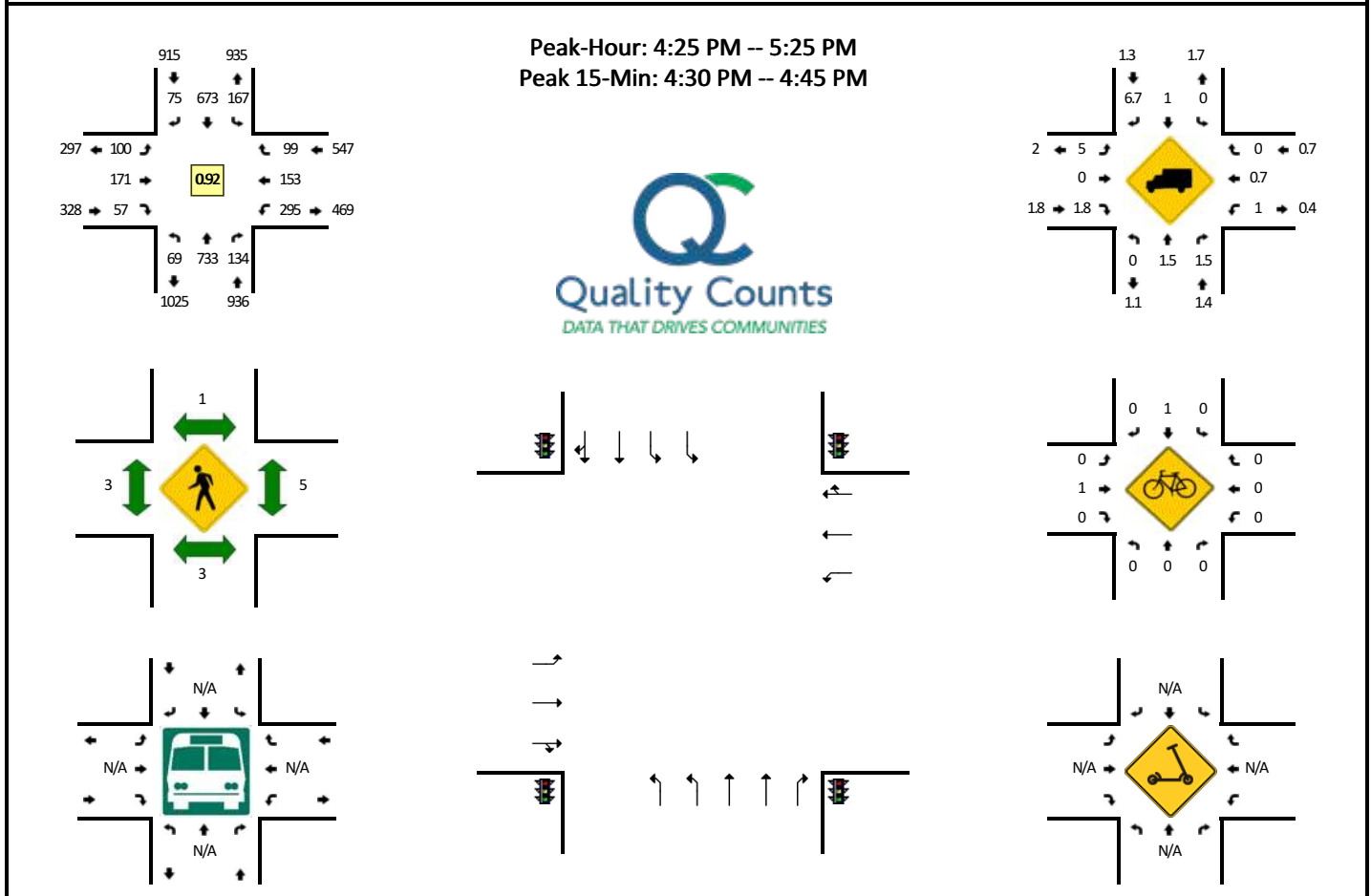


5-Min Count Period Beginning At	SE 192nd Ave (Northbound)				SE 192nd Ave (Southbound)				SE 34th St (Eastbound)				SE 34th St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	3	28	36	0	5	29	2	0	3	6	2	0	11	4	1	0	130	
7:05 AM	2	30	26	0	12	30	6	0	4	15	3	0	12	3	3	0	146	
7:10 AM	0	30	19	0	5	38	7	0	2	10	2	0	14	5	5	0	137	
7:15 AM	1	30	24	0	2	24	4	0	1	3	1	0	8	7	4	0	109	
7:20 AM	1	43	24	0	11	24	6	0	4	7	0	0	14	6	7	0	147	
7:25 AM	7	42	16	0	8	30	5	0	3	8	1	0	11	4	1	0	136	
7:30 AM	8	40	26	1	6	30	6	0	6	9	2	0	14	9	3	0	160	
7:35 AM	4	36	20	1	7	27	1	0	6	10	3	0	16	7	5	0	143	
7:40 AM	4	51	31	0	3	28	14	0	5	8	4	0	7	7	0	0	162	
7:45 AM	8	57	30	0	8	30	5	0	11	17	1	0	18	7	1	0	193	
7:50 AM	9	50	29	0	10	32	7	0	9	17	3	0	8	8	3	0	185	
7:55 AM	11	49	22	0	13	35	11	0	5	11	1	0	10	15	3	0	186	1834
8:00 AM	4	48	31	0	8	29	11	1	4	7	4	0	6	5	5	0	163	1867
8:05 AM	3	35	23	0	8	36	3	0	2	4	2	0	10	11	5	0	142	1863
8:10 AM	7	38	22	0	7	35	7	0	3	10	1	0	21	12	3	0	166	1892
8:15 AM	2	29	17	0	6	29	4	0	6	6	4	0	16	8	6	0	133	1916
8:20 AM	5	46	20	0	7	30	3	0	7	13	5	0	5	10	5	0	156	1925
8:25 AM	5	41	21	0	4	32	5	0	4	14	0	0	10	2	4	0	142	1931
8:30 AM	3	34	22	0	9	29	9	0	5	7	1	0	9	4	5	0	137	1908
8:35 AM	9	42	22	0	4	35	5	0	5	9	2	0	23	6	5	0	167	1932
8:40 AM	3	38	10	0	9	38	4	0	3	13	1	0	18	12	12	0	161	1931
8:45 AM	9	48	14	1	12	38	4	0	3	12	3	0	17	7	11	0	179	1917
8:50 AM	5	43	17	0	8	29	3	0	1	7	7	0	10	15	3	0	148	1880
8:55 AM	3	46	7	0	13	42	5	0	4	6	1	0	4	9	5	0	145	1839
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	112	624	324	0	124	388	92	0	100	180	20	0	144	120	28	0	2256	
Heavy Trucks	0	72	4		4	40	4		4	8	0		4	0	0		140	
Buses																		
Pedestrians		8				0				0				4			12	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scoters																		

Comments:

LOCATION: SE 192nd Ave -- SE 34th St
CITY/STATE: Vancouver, WA

QC JOB #: 16019616
DATE: Tue, Dec 6 2022

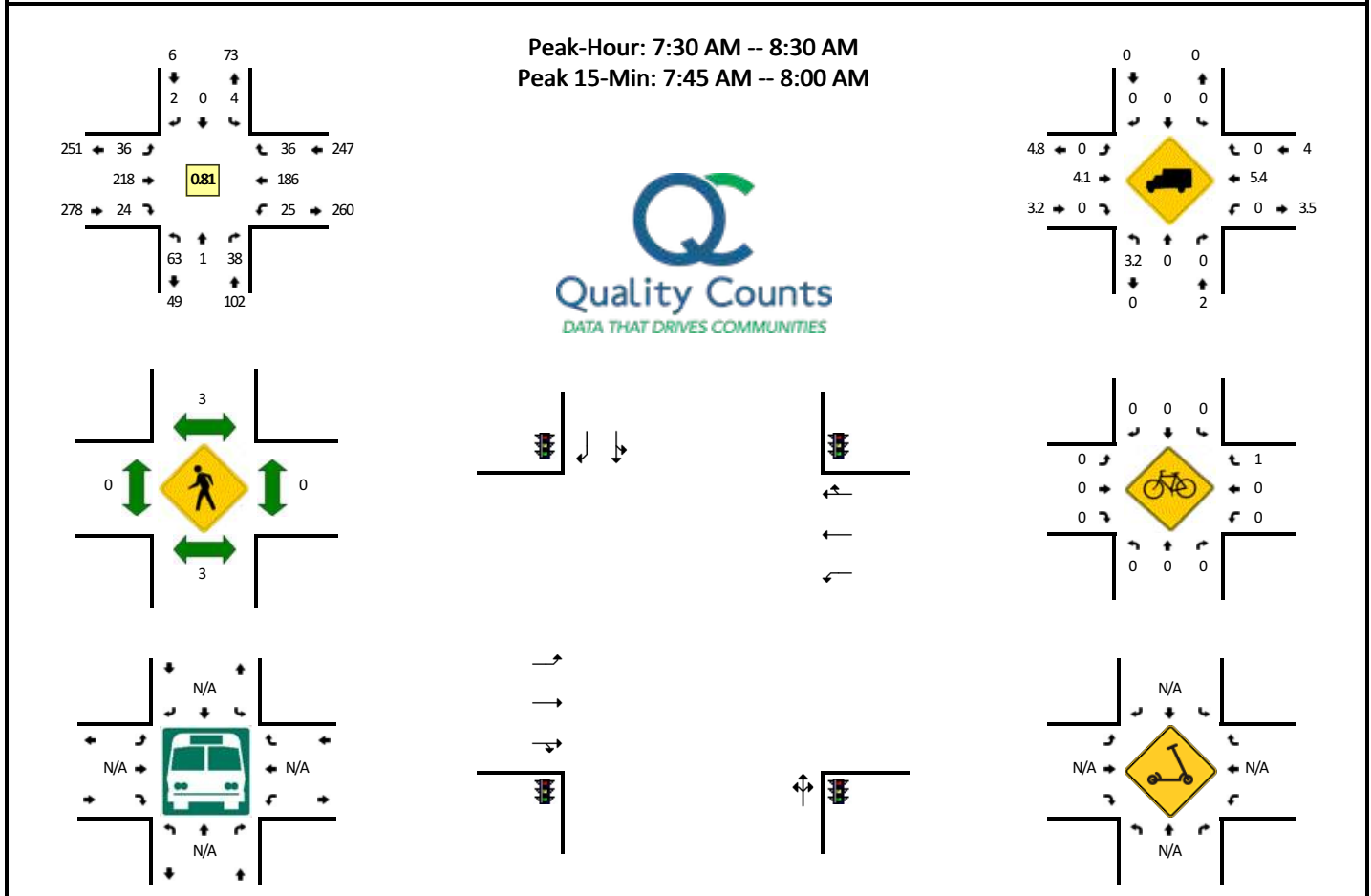


5-Min Count Period Beginning At	SE 192nd Ave (Northbound)				SE 192nd Ave (Southbound)				SE 34th St (Eastbound)				SE 34th St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	10	64	13	0	17	44	9	0	12	18	4	0	28	11	11	0	241	
4:05 PM	11	68	11	0	5	68	11	0	4	9	7	0	26	12	5	0	237	
4:10 PM	12	54	13	0	13	62	9	0	9	16	3	0	26	15	11	0	243	
4:15 PM	6	61	10	0	9	48	4	1	6	18	5	0	26	12	5	0	211	
4:20 PM	4	57	7	0	11	64	5	0	12	8	3	0	22	10	10	0	213	
4:25 PM	6	72	9	0	11	65	3	0	9	13	5	0	29	14	2	0	238	
4:30 PM	8	78	12	0	10	46	7	0	4	11	2	0	22	11	11	0	222	
4:35 PM	6	65	9	0	16	57	5	0	15	15	3	0	18	13	14	0	236	
4:40 PM	5	62	18	0	19	83	6	0	9	15	4	0	33	19	6	0	279	
4:45 PM	6	56	10	0	14	38	15	0	5	15	6	0	24	15	6	0	210	
4:50 PM	8	57	7	0	9	48	6	2	9	20	5	0	16	12	5	0	204	
4:55 PM	3	41	15	0	15	49	7	0	5	11	6	0	21	10	7	0	190	2724
5:00 PM	7	62	10	0	15	50	4	0	9	7	5	0	24	14	10	0	217	2700
5:05 PM	3	59	14	0	10	66	6	0	12	11	7	0	27	9	9	0	233	2696
5:10 PM	6	51	9	0	16	61	4	0	5	18	8	0	27	15	10	0	230	2683
5:15 PM	4	62	10	0	14	69	6	0	13	18	1	0	33	11	8	0	249	2721
5:20 PM	7	68	11	0	15	41	6	1	5	17	5	0	21	10	11	0	218	2726
5:25 PM	7	51	14	0	19	52	5	0	4	18	7	0	21	16	16	0	230	2718
5:30 PM	5	55	16	0	19	31	3	0	3	19	1	0	14	12	12	0	190	2686
5:35 PM	3	46	9	1	6	39	5	0	7	10	2	0	12	7	4	0	151	2601
5:40 PM	3	52	14	0	17	46	5	0	4	17	4	0	15	4	5	0	186	2508
5:45 PM	6	60	13	0	12	43	7	0	12	9	2	0	9	4	5	0	182	2480
5:50 PM	2	42	7	0	10	60	5	0	4	7	3	0	12	9	9	0	170	2446
5:55 PM	9	49	8	0	14	41	4	0	4	9	6	0	16	8	2	0	170	2426
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	76	820	156	0	180	744	72	0	112	164	36	0	292	172	124	0	2948	
Heavy Trucks	0	16	4		0	8	4		0	0	0		4	0	0		36	
Buses																		
Pedestrians		0				4				0				12			16	
Bicycles	0	0	0		0	4	0		0	4	0		0	0	0		8	
Scoters																		

Comments:

LOCATION: SE Hiddenbrook Dr -- SE 34th St
CITY/STATE: Vancouver, WA

QC JOB #: 16019613
DATE: Tue, Dec 6 2022

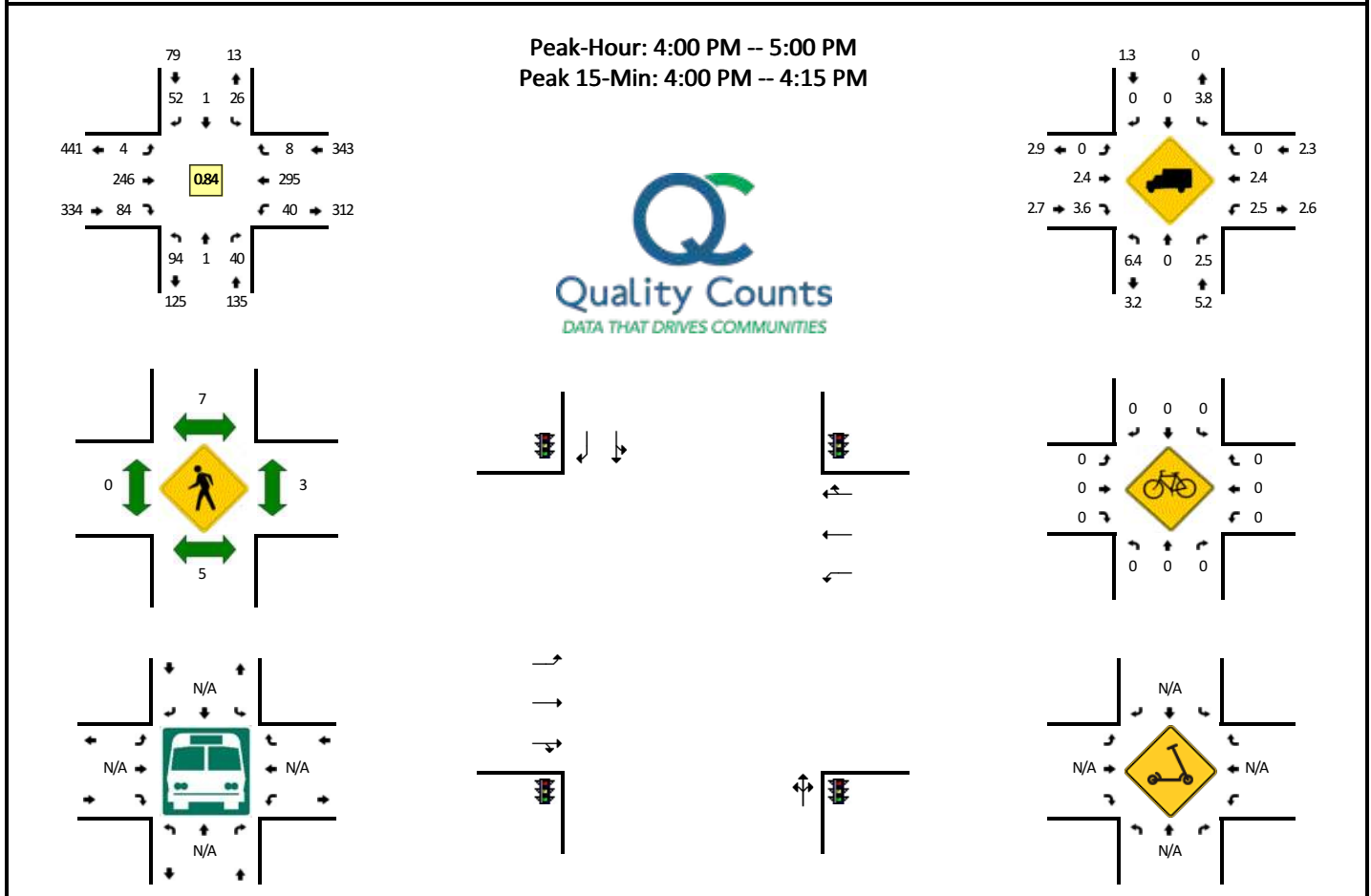


5-Min Count Period Beginning At	SE Hiddenbrook Dr (Northbound)				SE Hiddenbrook Dr (Southbound)				SE 34th St (Eastbound)				SE 34th St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	2	0	3	0	0	0	0	0	1	12	0	0	0	9	0	0	27	
7:05 AM	5	0	0	0	1	0	0	0	3	16	0	0	0	8	3	0	36	
7:10 AM	1	0	1	0	0	0	0	0	1	12	0	0	0	11	2	0	28	
7:15 AM	4	0	2	0	0	0	0	0	3	9	2	0	0	16	1	0	37	
7:20 AM	5	0	0	0	0	0	0	0	3	10	0	0	2	11	2	0	33	
7:25 AM	3	1	2	0	0	0	0	0	1	13	1	0	1	14	2	0	38	
7:30 AM	4	0	3	0	0	0	0	0	1	17	0	0	0	20	3	0	48	
7:35 AM	5	0	2	0	0	0	0	0	4	18	1	0	2	9	2	0	43	
7:40 AM	3	0	4	0	0	0	0	0	2	21	3	0	1	12	6	0	52	
7:45 AM	7	0	6	0	0	0	0	0	2	26	1	0	4	17	4	0	67	
7:50 AM	1	0	2	0	2	0	1	0	5	21	3	0	3	16	2	0	56	
7:55 AM	2	0	3	0	0	0	0	0	4	28	3	0	6	23	4	0	73	538
8:00 AM	7	0	2	0	0	0	0	0	3	14	1	0	2	16	3	0	48	559
8:05 AM	5	1	2	0	1	0	0	0	3	11	3	0	3	15	2	0	46	569
8:10 AM	12	0	1	0	0	0	0	0	3	8	2	0	1	23	4	0	54	595
8:15 AM	7	0	6	0	1	0	0	0	5	21	2	0	0	14	1	0	57	615
8:20 AM	5	0	5	0	0	0	0	0	2	21	2	0	1	12	2	0	50	632
8:25 AM	5	0	2	0	0	0	1	0	2	12	3	0	2	9	3	0	39	633
8:30 AM	4	1	2	0	0	0	0	0	4	16	3	0	4	13	0	0	47	632
8:35 AM	4	0	1	0	0	0	1	0	1	10	6	0	3	13	4	0	43	632
8:40 AM	9	0	0	0	0	0	1	0	2	19	5	0	2	11	2	0	51	631
8:45 AM	2	0	4	0	0	0	0	0	6	17	1	0	4	18	1	0	53	617
8:50 AM	4	0	3	0	0	0	0	0	4	15	5	0	4	19	2	0	56	617
8:55 AM	4	0	1	0	0	0	0	0	1	16	8	0	2	13	1	0	46	590
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	40	0	44	0	8	0	4	0	44	300	28	0	52	224	40	0	784	
Heavy Trucks	0	0	0	0	0	0	0	0	0	12	0	0	0	8	0	0	20	
Buses																		
Pedestrians		12				0				0				0			12	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scooters																		

Comments:

LOCATION: SE Hiddenbrook Dr -- SE 34th St
CITY/STATE: Vancouver, WA

QC JOB #: 16019614
DATE: Tue, Dec 6 2022

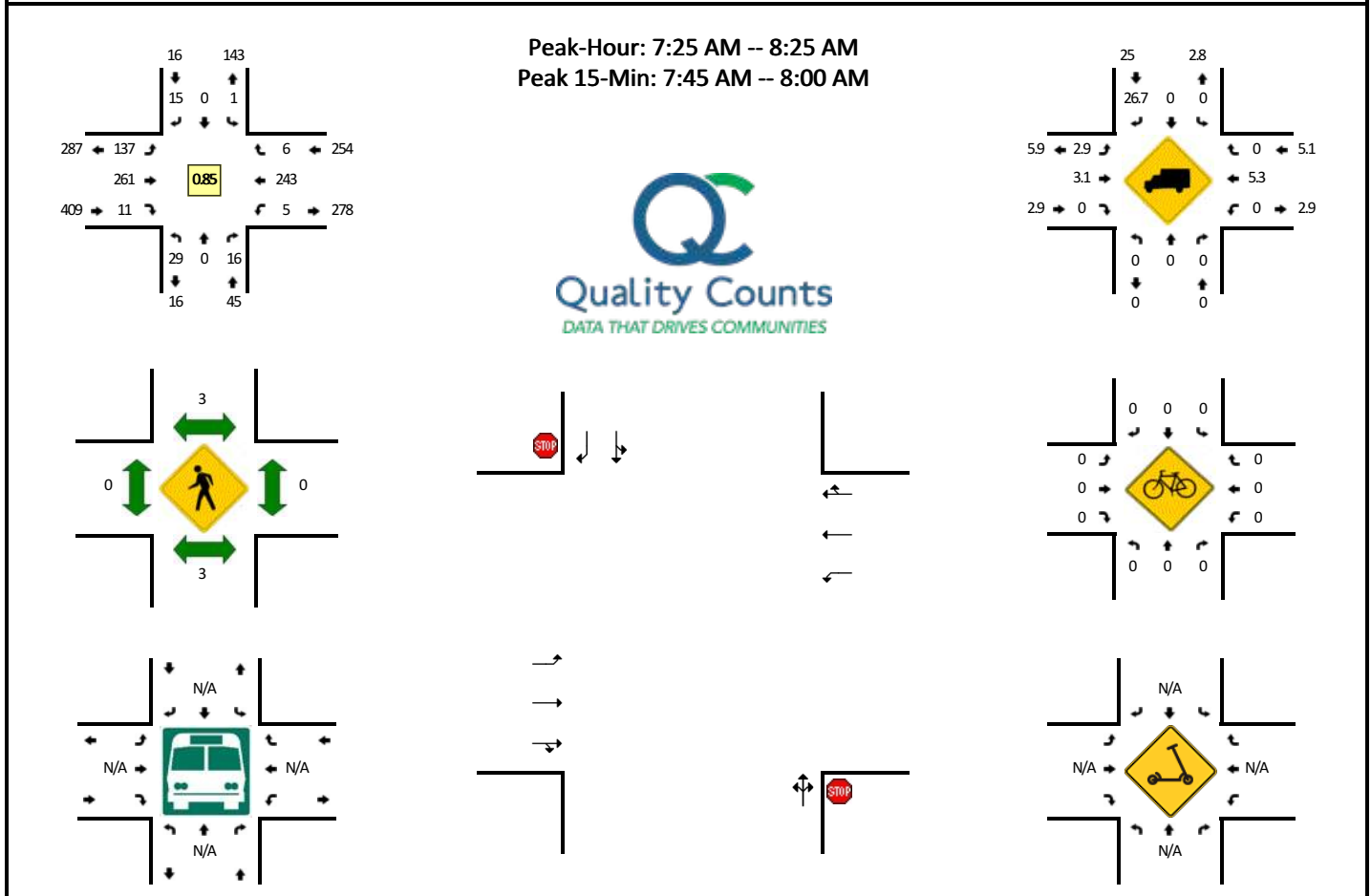


5-Min Count Period Beginning At	SE Hiddenbrook Dr (Northbound)				SE Hiddenbrook Dr (Southbound)				SE 34th St (Eastbound)				SE 34th St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	21	0	11	0	0	0	5	0	0	24	9	0	4	26	0	0	100	
4:05 PM	10	0	4	0	4	0	4	0	1	11	6	0	3	28	3	0	74	
4:10 PM	4	0	3	0	1	0	3	0	0	27	10	0	4	39	0	0	91	
4:15 PM	6	0	4	0	1	0	3	0	0	15	7	0	2	18	0	0	56	
4:20 PM	8	0	4	0	4	0	4	0	1	25	8	0	1	15	0	0	70	
4:25 PM	13	1	2	0	1	0	4	0	0	17	8	0	3	20	1	0	70	
4:30 PM	3	0	1	0	3	0	1	0	0	20	6	0	3	22	0	0	59	
4:35 PM	10	0	2	0	5	0	12	0	0	21	5	0	5	25	0	0	85	
4:40 PM	2	0	3	0	1	0	6	0	0	23	6	0	3	29	0	0	73	
4:45 PM	1	0	0	0	1	1	2	0	0	24	7	0	4	25	3	0	68	
4:50 PM	13	0	3	0	4	0	4	0	1	22	6	0	4	23	1	0	81	
4:55 PM	3	0	3	0	1	0	4	0	1	17	6	0	4	25	0	0	64	891
5:00 PM	3	0	5	0	1	0	9	0	0	23	6	0	3	33	1	0	84	875
5:05 PM	4	0	3	0	4	1	4	0	0	16	5	0	2	18	2	0	59	860
5:10 PM	4	0	0	0	3	1	6	0	1	30	12	0	1	30	0	0	88	857
5:15 PM	7	0	4	0	5	0	2	0	0	23	5	0	1	21	0	0	68	869
5:20 PM	5	0	1	0	2	0	3	0	0	20	7	0	2	24	0	0	64	863
5:25 PM	6	0	3	0	2	0	2	0	1	24	4	0	4	23	1	0	70	863
5:30 PM	7	0	1	0	0	0	7	0	0	19	2	0	2	19	0	0	57	861
5:35 PM	1	0	2	0	1	0	7	0	1	19	7	0	2	20	0	0	60	836
5:40 PM	1	0	1	0	2	0	8	0	1	29	3	0	1	12	2	0	60	823
5:45 PM	1	0	0	0	1	0	4	0	0	21	4	0	5	14	0	0	50	805
5:50 PM	3	0	0	0	1	0	2	0	0	15	4	0	0	15	0	0	40	764
5:55 PM	2	0	4	0	1	0	1	0	0	10	5	0	4	22	0	0	49	749
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	140	0	72	0	20	0	48	0	4	248	100	0	44	372	12	0	1060	
Heavy Trucks	16	0	4		4	0	0		0	4	4		0	12	0		44	
Buses																		
Pedestrians		4				4				0				4			12	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scooters																		

Comments:

LOCATION: SE 177th Ave -- SE 34th St
CITY/STATE: Vancouver, WA

QC JOB #: 16019611
DATE: Tue, Dec 6 2022

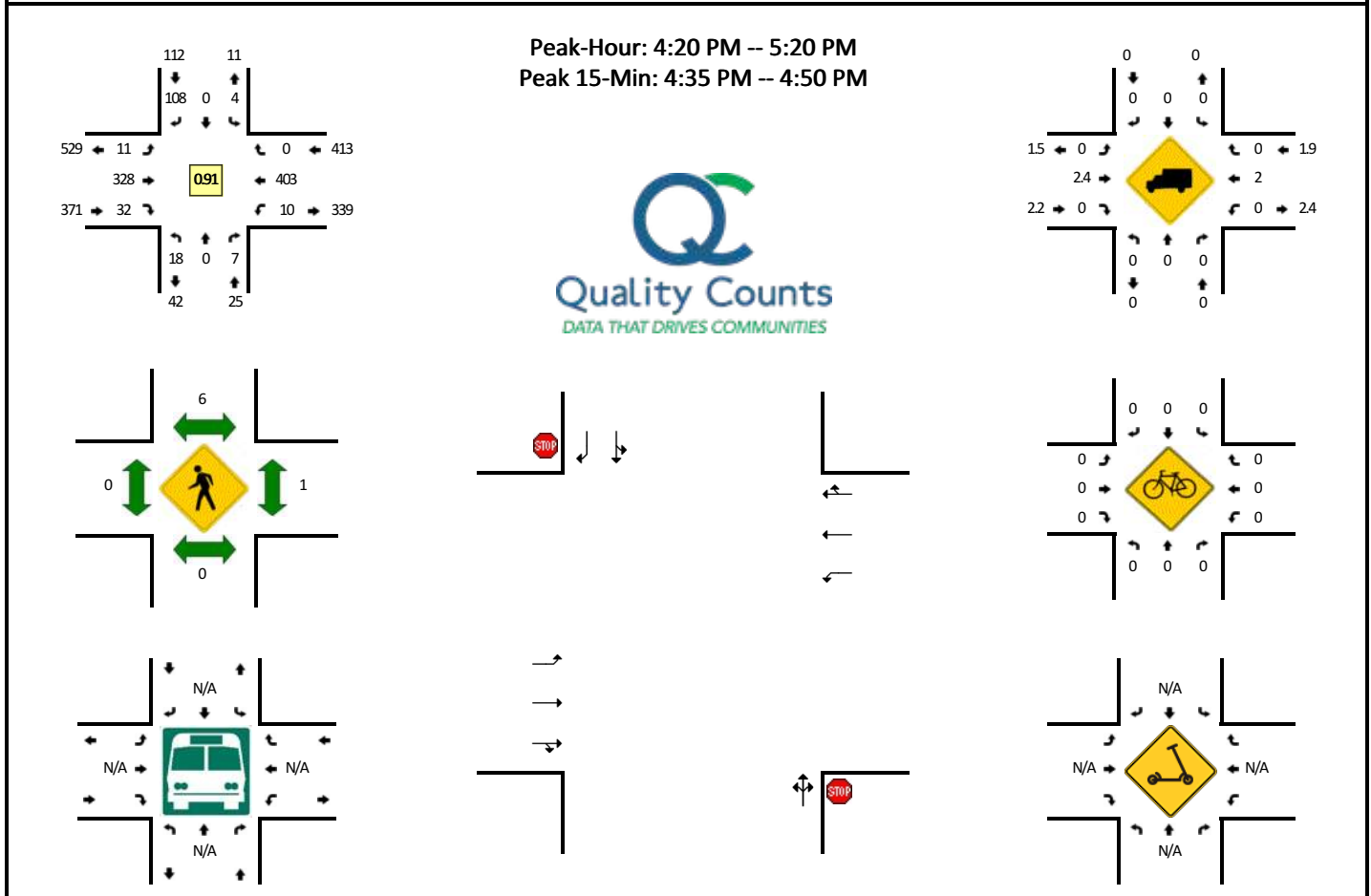


5-Min Count Period Beginning At	SE 177th Ave (Northbound)				SE 177th Ave (Southbound)				SE 34th St (Eastbound)				SE 34th St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	2	0	1	0	0	0	0	0	6	13	0	0	1	10	1	0	34	
7:05 AM	2	0	1	0	0	0	0	0	5	18	0	0	0	12	1	0	39	
7:10 AM	1	0	1	0	0	0	0	0	4	11	1	0	0	12	0	0	30	
7:15 AM	4	0	2	0	0	0	0	0	6	13	0	0	1	16	0	0	42	
7:20 AM	1	0	0	0	0	0	0	0	4	13	0	0	0	18	0	0	36	
7:25 AM	4	0	0	0	0	0	1	0	10	17	0	0	0	17	0	0	49	
7:30 AM	4	0	2	0	0	0	3	0	7	13	1	0	0	23	0	0	53	
7:35 AM	5	0	1	0	0	0	1	0	6	21	2	0	0	16	0	0	52	
7:40 AM	1	0	0	0	0	0	1	0	16	28	1	0	0	15	0	0	62	
7:45 AM	3	0	1	0	0	0	0	0	11	31	2	0	1	21	1	0	71	
7:50 AM	1	0	3	0	0	0	0	0	13	28	1	0	0	16	0	0	62	
7:55 AM	2	0	2	0	0	0	2	0	19	27	1	0	1	25	1	0	80	610
8:00 AM	1	0	1	0	1	0	1	0	16	16	0	0	1	22	0	0	59	635
8:05 AM	2	0	1	0	0	0	1	0	10	18	0	0	0	16	2	0	50	646
8:10 AM	2	0	0	0	0	0	3	0	12	15	0	0	1	32	1	0	66	682
8:15 AM	2	0	2	0	0	0	0	0	10	25	1	0	0	23	1	0	64	704
8:20 AM	2	0	3	0	0	0	2	0	7	22	2	0	1	17	0	0	56	724
8:25 AM	0	0	0	0	0	0	0	0	11	16	1	0	0	14	1	0	43	718
8:30 AM	0	0	0	0	1	0	3	0	7	23	2	0	1	14	0	0	51	716
8:35 AM	1	0	0	0	0	0	0	0	4	15	0	0	0	18	0	0	38	702
8:40 AM	4	0	3	0	0	0	1	0	9	22	0	0	0	21	0	0	60	700
8:45 AM	2	0	1	0	0	0	0	0	5	22	0	0	0	14	0	0	44	673
8:50 AM	2	0	1	0	0	0	0	0	7	25	1	0	0	27	2	0	65	676
8:55 AM	1	0	0	0	0	0	1	0	8	27	1	0	1	15	0	0	54	650
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	24	0	24	0	0	0	8	0	172	344	16	0	8	248	8	0	852	
Heavy Trucks	0	0	0	0	0	0	4	0	0	12	0	0	0	8	0	0	24	
Buses																		
Pedestrians		4				0				0				0			4	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scoters																		

Comments:

LOCATION: SE 177th Ave -- SE 34th St
CITY/STATE: Vancouver, WA

QC JOB #: 16019612
DATE: Tue, Dec 6 2022

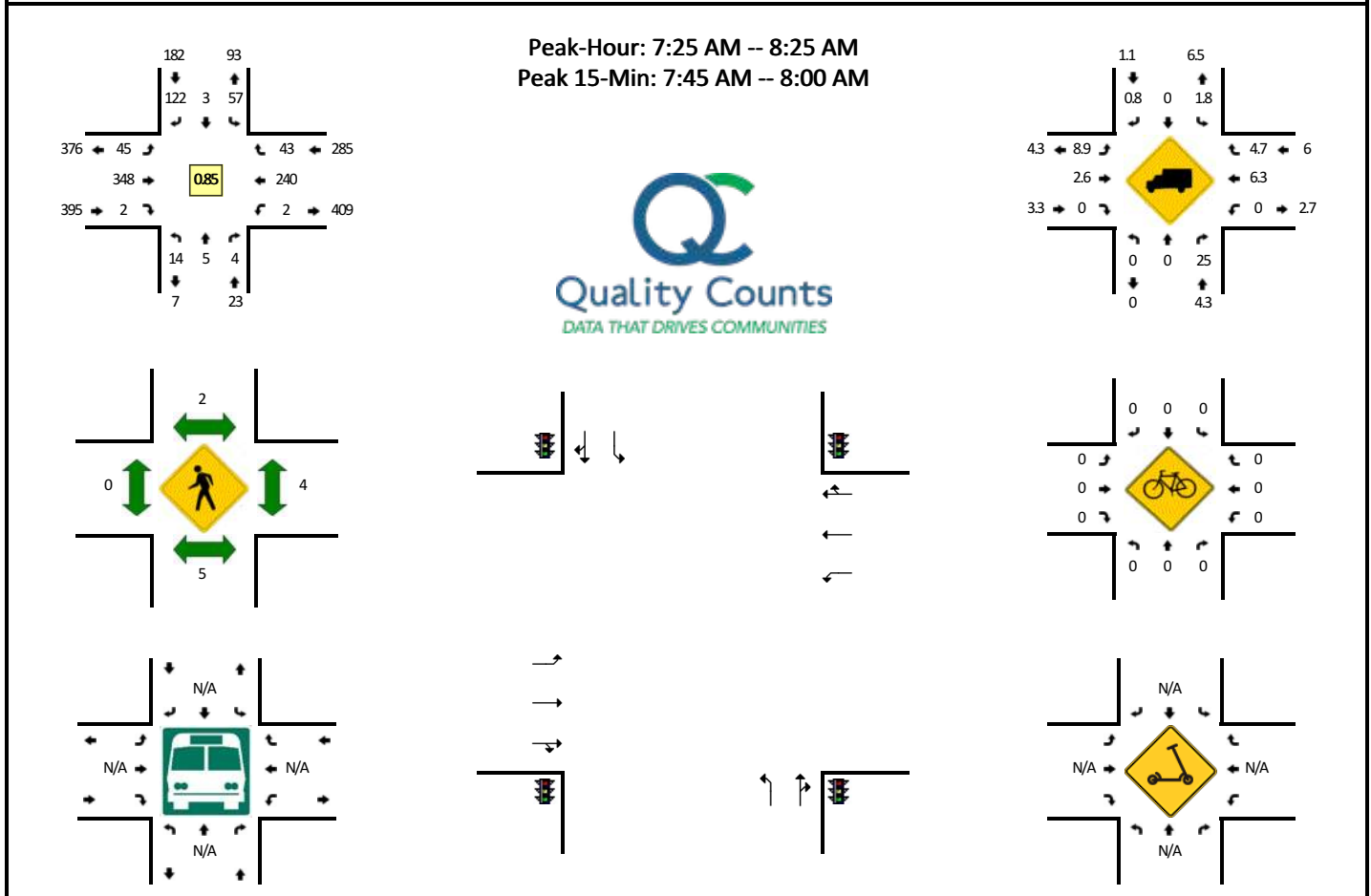


5-Min Count Period Beginning At	SE 177th Ave (Northbound)				SE 177th Ave (Southbound)				SE 34th St (Eastbound)				SE 34th St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	2	0	0	0	0	0	4	0	0	29	2	0	1	49	1	0	88	
4:05 PM	1	0	1	0	0	0	10	0	0	20	1	0	1	39	0	0	73	
4:10 PM	2	0	0	0	0	0	5	0	0	32	1	0	1	47	1	0	89	
4:15 PM	0	0	0	0	1	0	9	0	0	25	1	0	1	28	0	0	65	
4:20 PM	1	0	1	0	1	0	8	0	2	26	4	0	0	27	0	0	70	
4:25 PM	1	0	0	0	0	0	5	0	1	29	1	0	1	35	0	0	73	
4:30 PM	1	0	0	0	0	0	7	0	3	21	4	0	0	24	0	0	60	
4:35 PM	1	0	0	0	0	0	12	0	0	29	4	0	1	44	0	0	91	
4:40 PM	4	0	0	0	1	0	20	0	0	25	1	0	0	41	0	0	92	
4:45 PM	2	0	0	0	0	0	6	0	0	36	2	0	1	23	0	0	70	
4:50 PM	1	0	0	0	0	0	3	0	2	24	3	0	2	38	0	0	73	
4:55 PM	0	0	1	0	1	0	10	0	0	23	2	0	0	38	0	0	75	919
5:00 PM	3	0	1	0	0	0	12	0	0	27	3	0	0	42	0	0	88	919
5:05 PM	3	0	0	0	0	0	11	0	1	28	1	0	0	24	0	0	68	914
5:10 PM	0	0	1	0	1	0	5	0	0	34	5	0	3	40	0	0	89	914
5:15 PM	1	0	3	0	0	0	9	0	2	26	2	0	2	27	0	0	72	921
5:20 PM	0	0	2	0	1	0	5	0	0	23	1	0	1	34	0	0	67	918
5:25 PM	0	0	0	0	0	0	6	0	0	27	3	0	0	32	0	0	68	913
5:30 PM	0	0	1	0	0	0	2	0	0	24	4	0	0	28	0	0	59	912
5:35 PM	2	0	0	0	0	0	4	0	0	24	6	0	0	31	0	0	67	888
5:40 PM	0	0	0	0	0	0	6	0	0	30	2	0	0	22	0	0	60	856
5:45 PM	3	0	1	0	1	0	3	0	2	24	3	0	3	16	0	0	56	842
5:50 PM	1	0	0	0	0	0	7	0	1	17	1	0	0	21	0	0	48	817
5:55 PM	0	0	0	0	0	0	0	0	0	17	4	0	0	24	0	0	45	787
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	28	0	0	0	4	0	152	0	0	360	28	0	8	432	0	0	1012	
Heavy Trucks	0	0	0	0	0	0	0	0	0	8	0	0	0	4	0	0	12	
Buses																		
Pedestrians		0				0				0				0			0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scooters																		

Comments:

LOCATION: SE 176th Ave -- SE 34th St
CITY/STATE: Vancouver, WA

QC JOB #: 16019609
DATE: Tue, Dec 6 2022

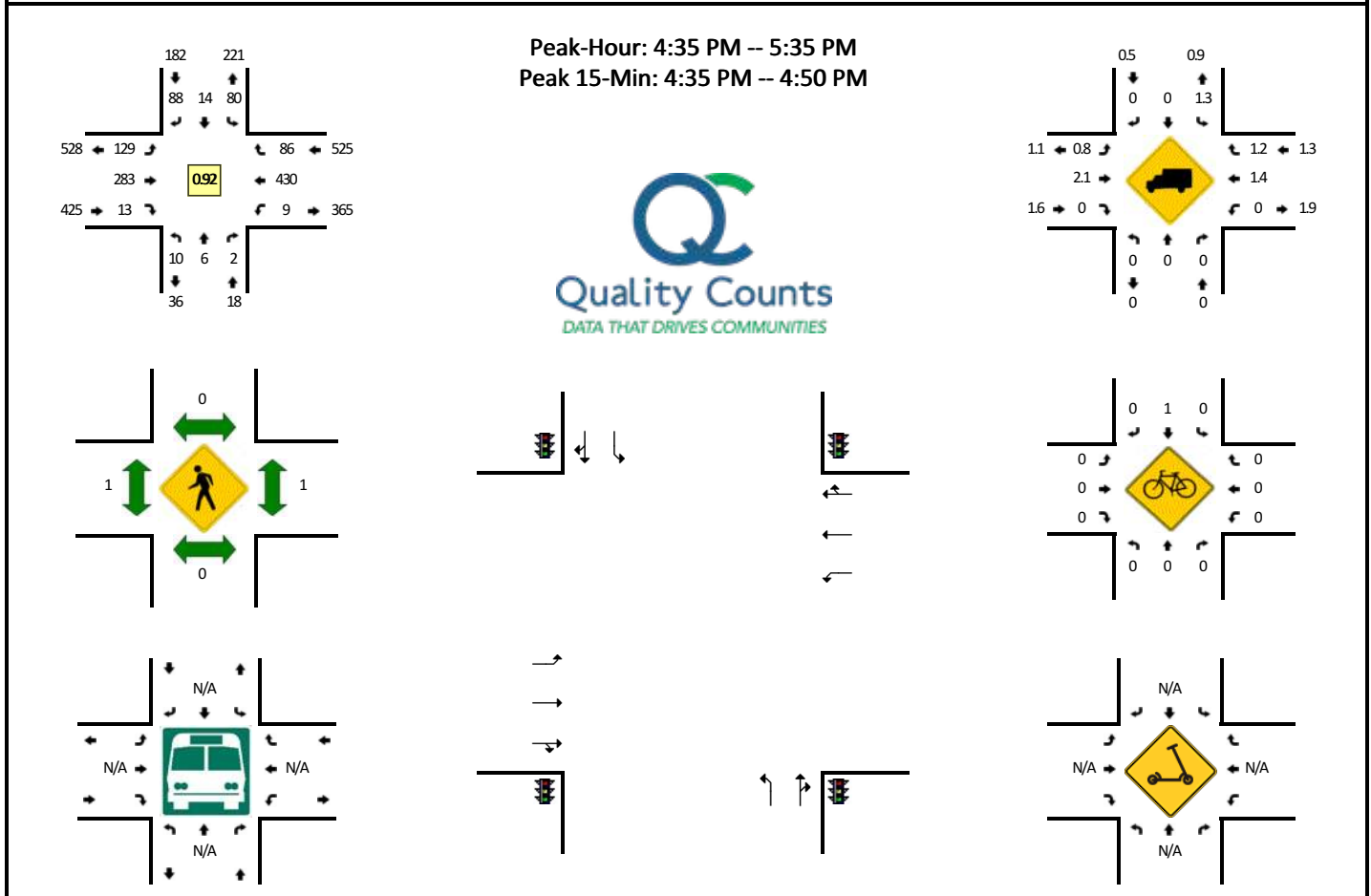


5-Min Count Period Beginning At	SE 176th Ave (Northbound)				SE 176th Ave (Southbound)				SE 34th St (Eastbound)				SE 34th St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	1	1	0	0	3	0	6	0	2	15	0	0	1	10	1	0	40	
7:05 AM	3	2	1	0	2	0	10	0	4	20	0	0	0	12	2	0	56	
7:10 AM	2	2	0	0	1	0	11	0	2	15	0	0	0	11	1	0	45	
7:15 AM	2	2	0	0	1	0	7	0	3	18	0	0	0	18	3	0	54	
7:20 AM	1	1	0	0	0	0	8	0	4	16	1	0	0	16	3	0	50	
7:25 AM	1	0	0	0	2	0	10	0	5	25	0	0	0	20	2	0	65	
7:30 AM	1	0	1	0	3	0	10	0	3	20	0	0	0	24	4	0	66	
7:35 AM	2	1	0	0	4	0	10	0	1	23	0	0	0	19	4	0	64	
7:40 AM	2	0	1	0	3	0	13	0	3	41	0	0	0	14	4	0	81	
7:45 AM	0	0	1	0	7	0	14	0	9	35	0	0	0	20	4	0	90	
7:50 AM	2	1	0	0	6	1	8	0	4	37	1	0	0	14	3	0	77	
7:55 AM	1	1	1	0	5	0	10	0	5	42	0	0	2	24	3	0	94	782
8:00 AM	1	0	0	0	3	1	12	0	6	28	0	0	0	21	2	0	74	816
8:05 AM	1	0	0	0	4	0	8	0	3	23	1	0	0	18	3	0	61	821
8:10 AM	1	1	0	0	2	1	10	0	2	27	0	0	0	30	6	0	80	856
8:15 AM	0	0	0	0	10	0	6	0	2	26	0	0	0	22	3	0	69	871
8:20 AM	2	1	0	0	8	0	11	0	2	21	0	0	0	14	5	0	64	885
8:25 AM	2	1	0	0	1	0	8	0	1	27	0	0	0	13	3	0	56	876
8:30 AM	0	0	0	0	7	0	8	0	2	27	0	0	0	10	6	0	60	870
8:35 AM	3	0	0	0	0	0	10	0	2	20	1	0	1	16	3	0	56	862
8:40 AM	0	0	0	0	8	1	20	0	2	21	2	0	0	20	7	0	81	862
8:45 AM	1	1	0	0	3	0	5	0	3	25	1	0	0	14	2	0	55	827
8:50 AM	3	0	0	0	5	1	8	0	4	35	0	0	0	24	5	0	85	835
8:55 AM	0	2	0	0	6	0	4	0	4	23	0	0	1	12	5	0	57	798
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	12	8	8	0	72	4	128	0	72	456	4	0	8	232	40	0	1044	
Heavy Trucks	0	0	0	0	4	0	0	0	0	8	0	0	0	8	4	0	24	
Buses																		
Pedestrians		8				4				0				4			16	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scoters																		

Comments:

LOCATION: SE 176th Ave -- SE 34th St
CITY/STATE: Vancouver, WA

QC JOB #: 16019610
DATE: Tue, Dec 6 2022

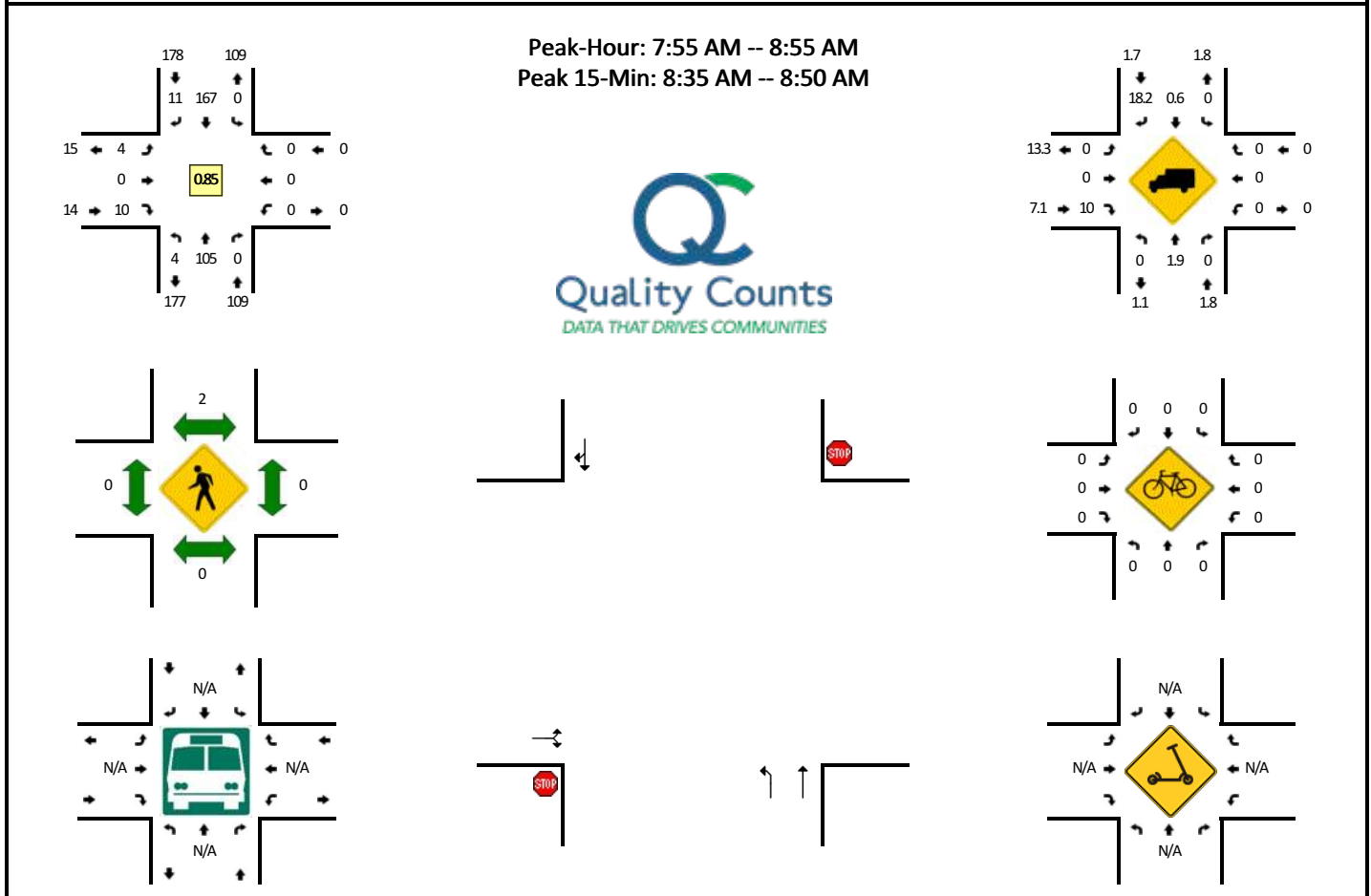


5-Min Count Period Beginning At	SE 176th Ave (Northbound)				SE 176th Ave (Southbound)				SE 34th St (Eastbound)				SE 34th St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	1	0	0	0	11	1	4	0	12	19	0	0	0	46	9	0	103	
4:05 PM	5	2	0	0	6	2	9	0	6	13	4	0	0	36	11	0	94	
4:10 PM	3	0	0	0	7	2	7	0	5	27	2	0	1	45	11	0	110	
4:15 PM	0	1	0	0	9	0	4	0	6	17	0	0	1	29	8	0	75	
4:20 PM	0	1	0	0	7	0	3	0	13	25	0	0	0	29	7	0	85	
4:25 PM	1	0	0	0	7	0	4	0	10	25	0	0	0	33	7	0	87	
4:30 PM	1	0	0	0	6	2	5	0	11	22	1	0	0	18	11	0	77	
4:35 PM	1	0	0	0	7	0	10	0	6	26	1	0	1	51	9	0	112	
4:40 PM	0	1	0	0	8	1	11	0	11	19	0	0	0	46	10	0	107	
4:45 PM	1	0	0	0	5	2	4	0	9	33	2	0	0	36	3	0	95	
4:50 PM	1	2	0	0	5	2	14	0	11	24	2	0	0	32	9	0	102	
4:55 PM	1	0	2	0	5	1	6	0	8	19	2	0	2	36	9	0	91	1138
5:00 PM	1	0	0	0	7	0	9	0	14	24	1	0	0	51	5	0	112	1147
5:05 PM	0	0	0	0	1	1	5	0	9	26	0	0	1	31	8	0	82	1135
5:10 PM	0	1	0	0	19	3	3	0	7	22	1	0	2	37	5	0	100	1125
5:15 PM	0	0	0	0	5	1	3	0	10	24	1	0	2	29	5	0	80	1130
5:20 PM	3	0	0	0	5	2	5	0	17	19	2	0	1	25	8	0	87	1132
5:25 PM	1	1	0	0	5	0	10	0	13	25	1	0	0	33	8	0	97	1142
5:30 PM	1	1	0	0	8	1	8	0	14	22	0	0	0	23	7	0	85	1150
5:35 PM	2	2	0	0	4	1	13	0	14	24	1	0	0	29	8	0	98	1136
5:40 PM	1	2	1	0	11	1	7	0	9	21	3	0	0	25	2	0	83	1112
5:45 PM	4	0	0	0	4	2	6	0	11	26	4	0	0	21	1	0	79	1096
5:50 PM	1	0	0	0	6	2	3	0	14	12	0	0	0	22	9	0	69	1063
5:55 PM	0	1	0	0	7	2	7	0	5	14	1	0	0	15	7	0	59	1031
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	8	4	0	0	80	12	100	0	104	312	12	0	4	532	88	0	1256	
Heavy Trucks	0	0	0	0	0	0	0	0	0	8	0	0	0	4	0	0	12	
Buses																		
Pedestrians		0				0				0				0			0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scooters																		

Comments:

LOCATION: SE 176th Ave -- SE 29th St
CITY/STATE: Vancouver, WA

QC JOB #: 16050509
DATE: Tue, Jan 10 2023

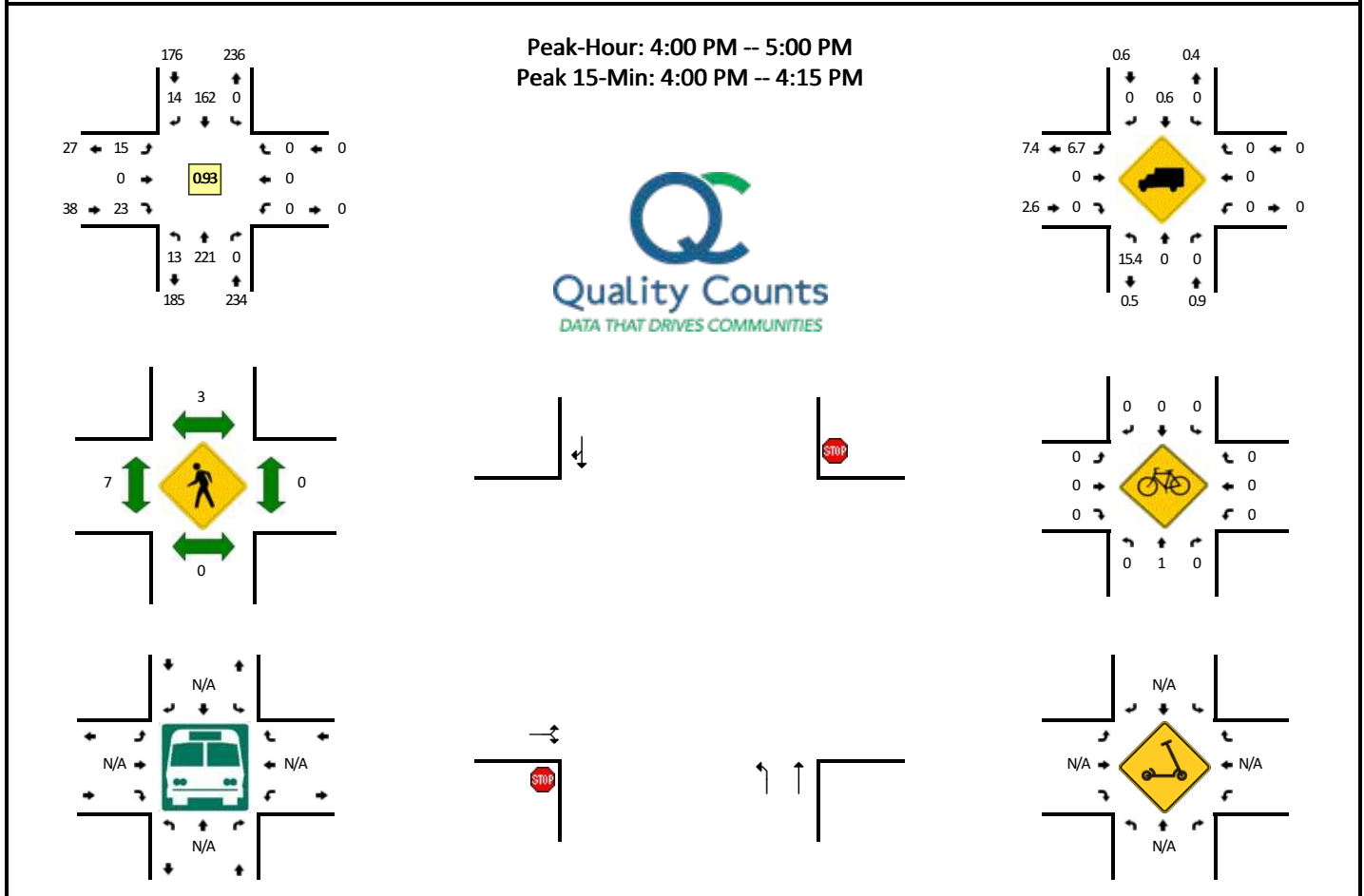


5-Min Count Period Beginning At	SE 176th Ave (Northbound)				SE 176th Ave (Southbound)				SE 29th St (Eastbound)				SE 29th St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	1	6	0	0	0	12	0	0	1	0	0	0	0	0	0	0	20	
7:05 AM	0	3	0	0	0	12	1	0	0	0	0	0	0	0	0	0	16	
7:10 AM	1	9	0	0	0	11	3	0	3	0	1	0	0	0	0	0	28	
7:15 AM	0	7	0	0	0	11	1	0	0	0	0	0	0	0	0	0	19	
7:20 AM	1	7	0	0	0	13	0	0	0	0	0	0	0	0	0	0	21	
7:25 AM	0	8	0	0	0	3	1	0	2	0	0	0	0	0	0	0	14	
7:30 AM	0	4	0	0	0	8	1	0	1	0	0	0	0	0	0	0	14	
7:35 AM	0	7	0	0	0	12	0	0	1	0	0	0	0	0	0	0	20	
7:40 AM	0	6	0	0	0	9	1	0	0	0	2	0	0	0	0	0	18	
7:45 AM	0	4	0	0	0	6	0	0	2	0	1	0	0	0	0	0	13	
7:50 AM	1	7	0	0	0	7	0	0	2	0	0	0	0	0	0	0	17	
7:55 AM	0	7	0	0	0	17	2	0	0	0	1	0	0	0	0	0	27	227
8:00 AM	0	11	0	0	0	13	2	0	0	0	1	0	0	0	0	0	27	234
8:05 AM	0	8	0	0	0	13	1	0	0	0	2	0	0	0	0	0	24	242
8:10 AM	0	6	0	0	0	14	0	0	1	0	0	0	0	0	0	0	21	235
8:15 AM	0	9	0	0	0	14	1	0	0	0	0	0	0	0	0	0	24	240
8:20 AM	0	11	0	0	0	12	0	0	0	0	1	0	0	0	0	0	24	243
8:25 AM	1	7	0	0	0	13	0	0	1	0	0	0	0	0	0	0	22	251
8:30 AM	0	6	0	0	0	12	1	0	0	0	0	0	0	0	0	0	19	256
8:35 AM	0	9	0	0	0	14	0	0	1	0	1	0	0	0	0	0	25	261
8:40 AM	1	13	0	0	0	16	2	0	1	0	2	0	0	0	0	0	35	278
8:45 AM	1	12	0	0	0	12	2	0	0	0	2	0	0	0	0	0	29	294
8:50 AM	1	6	0	0	0	17	0	0	0	0	0	0	0	0	0	0	24	301
8:55 AM	1	6	0	0	0	8	0	0	0	0	3	0	0	0	0	0	18	292
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	8	136	0	0	0	168	16	0	8	0	20	0	0	0	0	0	356	
Heavy Trucks	0	4	0	0	0	0	0	0	0	0	4	0	0	0	0	0	8	
Buses																		
Pedestrians		0				4				0				0			4	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scooters																		

Comments:

LOCATION: SE 176th Ave -- SE 29th St
CITY/STATE: Vancouver, WA

QC JOB #: 16050510
DATE: Tue, Jan 10 2023

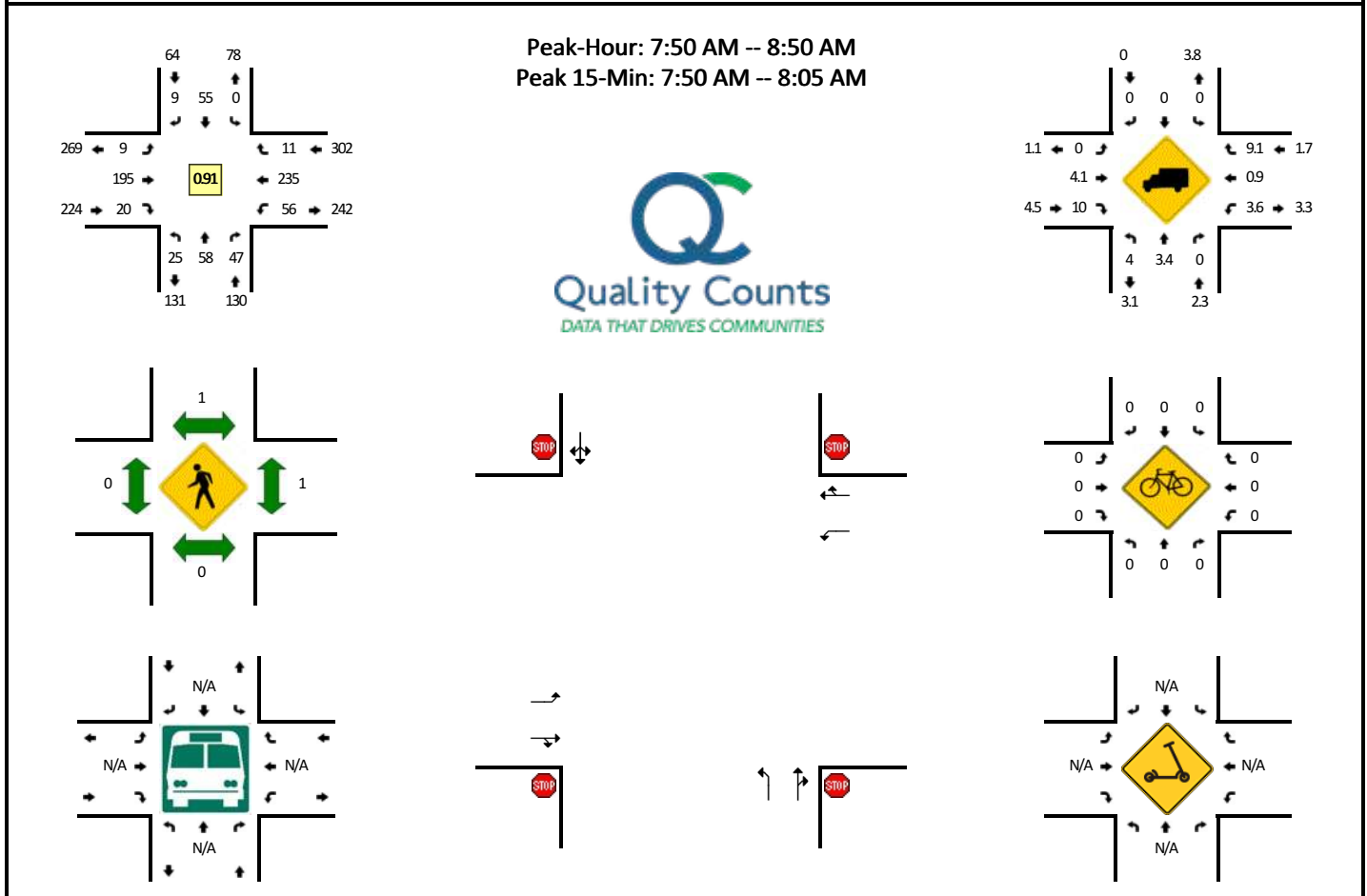


5-Min Count Period Beginning At	SE 176th Ave (Northbound)				SE 176th Ave (Southbound)				SE 29th St (Eastbound)				SE 29th St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	2	21	0	0	0	11	0	0	4	0	2	0	0	0	0	0	40	
4:05 PM	0	21	0	0	0	14	4	0	2	0	2	0	0	0	0	0	43	
4:10 PM	0	19	0	0	0	12	3	0	0	0	3	0	0	0	0	0	37	
4:15 PM	2	18	0	0	0	12	2	0	1	0	1	0	0	0	0	0	36	
4:20 PM	2	18	0	0	0	11	1	0	1	0	1	0	0	0	0	0	34	
4:25 PM	0	18	0	0	0	10	1	0	2	0	0	0	0	0	0	0	31	
4:30 PM	1	24	0	0	0	17	3	0	1	0	3	0	0	0	0	0	49	
4:35 PM	3	15	0	0	0	15	0	0	1	0	4	0	0	0	0	0	38	
4:40 PM	1	11	0	0	0	12	0	0	1	0	3	0	0	0	0	0	28	
4:45 PM	1	22	0	0	0	17	0	0	0	0	4	0	0	0	0	0	44	
4:50 PM	1	14	0	0	0	20	0	0	1	0	0	0	0	0	0	0	36	
4:55 PM	0	20	0	0	0	11	0	0	1	0	0	0	0	0	0	0	32	448
5:00 PM	0	19	0	0	0	13	3	0	2	0	0	0	0	0	0	0	37	445
5:05 PM	0	22	0	0	0	13	1	0	1	0	1	0	0	0	0	0	38	440
5:10 PM	2	12	0	0	0	7	1	0	1	0	1	0	0	0	0	0	24	427
5:15 PM	2	15	0	0	0	10	2	0	2	0	0	0	0	0	0	0	31	422
5:20 PM	1	14	0	0	0	15	2	0	2	0	1	0	0	0	0	0	35	423
5:25 PM	0	18	0	0	0	10	3	0	1	0	1	0	0	0	0	0	33	425
5:30 PM	0	12	0	0	0	12	2	0	3	0	1	0	0	0	0	0	30	406
5:35 PM	0	16	0	0	0	15	1	0	0	0	0	0	0	0	0	0	32	400
5:40 PM	0	15	0	0	0	12	1	0	4	0	2	0	0	0	0	0	34	406
5:45 PM	0	20	0	0	0	10	0	0	1	0	1	0	0	0	0	0	32	394
5:50 PM	0	16	0	0	0	12	1	0	3	0	1	0	0	0	0	0	33	391
5:55 PM	0	19	0	0	0	12	2	0	0	0	0	0	0	0	0	0	33	392
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	8	244	0	0	0	148	28	0	24	0	28	0	0	0	0	0	480	
Heavy Trucks	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	4	
Buses																		
Pedestrians	0				0				4				0				4	
Bicycles	0	4	0		0	0	0		0	0	0		0	0	0		4	
Scooters																		

Comments:

LOCATION: SE 176th Ave -- SE 20th St
CITY/STATE: Vancouver, WA

QC JOB #: 16050507
DATE: Tue, Jan 10 2023

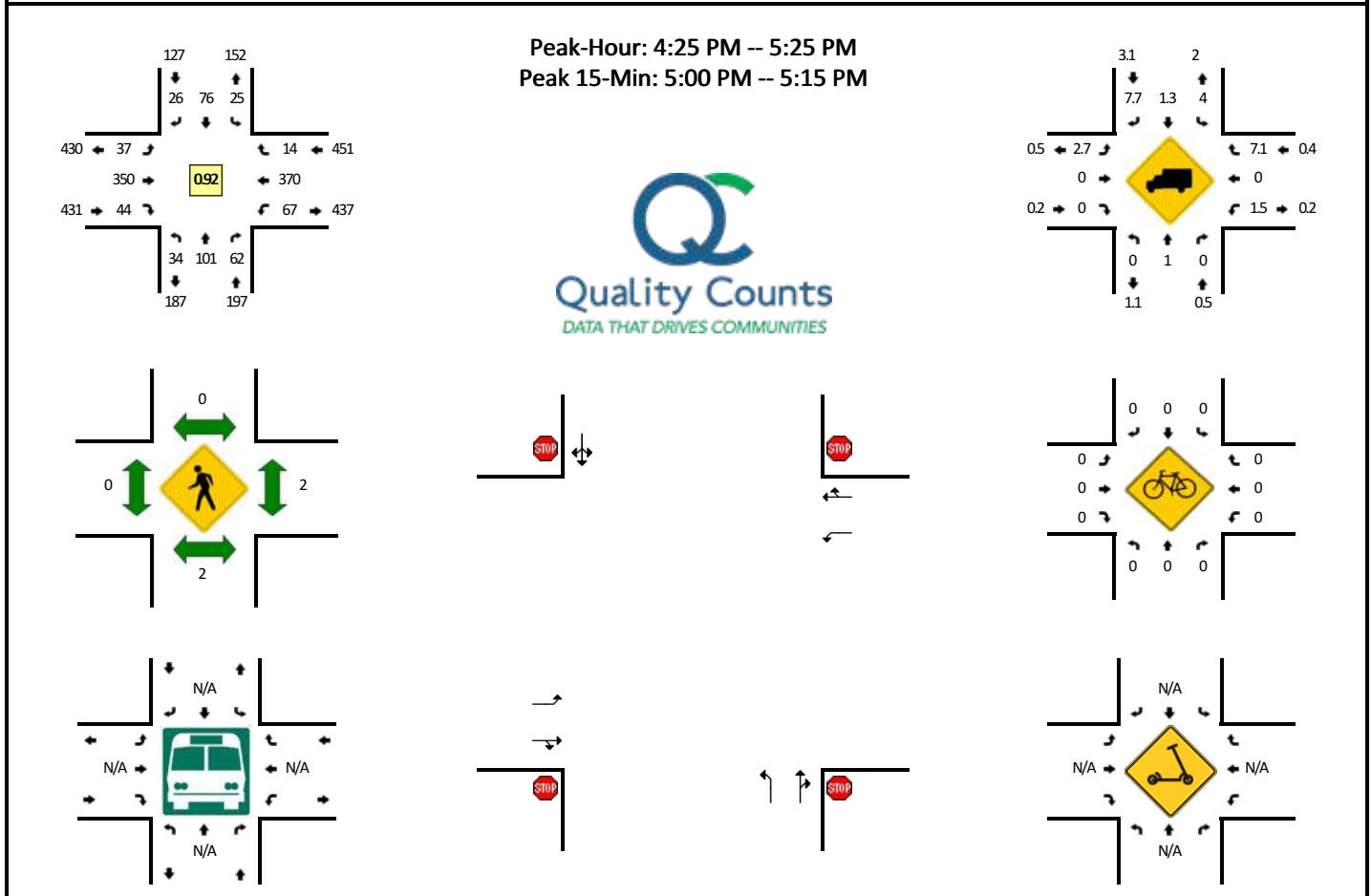


5-Min Count Period Beginning At	SE 176th Ave (Northbound)				SE 176th Ave (Southbound)				SE 20th St (Eastbound)				SE 20th St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	1	2	3	0	0	4	3	0	1	12	1	0	3	8	0	0	38	
7:05 AM	0	0	2	0	1	3	3	0	1	11	2	0	3	10	2	0	38	
7:10 AM	1	2	3	0	0	4	3	0	0	14	1	0	3	14	0	0	45	
7:15 AM	0	2	2	0	0	4	1	0	0	8	1	0	5	12	1	0	36	
7:20 AM	1	2	0	0	0	5	2	0	0	19	1	0	1	18	0	0	49	
7:25 AM	1	4	6	0	0	4	0	0	0	17	2	0	5	10	0	0	49	
7:30 AM	1	2	3	0	0	4	1	0	1	11	1	0	5	18	2	0	49	
7:35 AM	0	6	6	0	0	7	1	0	0	15	0	0	4	8	0	0	47	
7:40 AM	3	3	6	0	1	5	3	0	1	21	1	0	5	22	3	0	74	
7:45 AM	1	1	4	0	1	5	1	0	0	13	0	0	4	15	1	0	46	
7:50 AM	1	7	4	0	0	3	1	0	0	27	3	0	7	19	1	0	73	
7:55 AM	5	5	4	0	0	10	0	0	1	13	1	0	5	18	2	0	64	608
8:00 AM	4	5	1	0	0	6	0	0	0	21	0	0	6	17	1	0	61	631
8:05 AM	1	3	5	0	0	5	2	0	0	13	4	0	1	27	1	0	62	655
8:10 AM	0	1	6	0	0	5	1	0	0	16	1	0	6	18	1	0	55	665
8:15 AM	1	6	2	0	0	2	0	0	1	8	2	0	3	22	1	0	48	677
8:20 AM	3	4	4	0	0	3	2	0	2	13	1	0	6	24	1	0	63	691
8:25 AM	1	7	4	0	0	6	0	0	1	14	2	0	3	20	1	0	59	701
8:30 AM	0	4	5	0	0	4	1	0	2	20	3	0	1	17	1	0	58	710
8:35 AM	2	4	2	0	0	2	1	0	1	18	0	0	3	17	1	0	51	714
8:40 AM	2	6	5	0	0	6	1	0	1	13	2	0	7	15	0	0	58	698
8:45 AM	5	6	5	0	0	3	0	0	0	19	1	0	8	21	0	0	68	720
8:50 AM	3	3	4	0	1	7	2	0	2	12	1	0	3	20	1	0	59	706
8:55 AM	0	2	2	0	1	3	0	0	1	10	4	0	0	22	1	0	46	688
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	40	68	36	0	0	76	4	0	4	244	16	0	72	216	16	0	792	
Heavy Trucks	0	0	0	0	0	0	0	0	0	4	0	0	4	0	0	0	8	
Buses																		
Pedestrians		0				0				0				4			4	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scooters																		

Comments:

LOCATION: SE 176th Ave -- SE 20th St
CITY/STATE: Vancouver, WA

QC JOB #: 16050508
DATE: Tue, Jan 10 2023

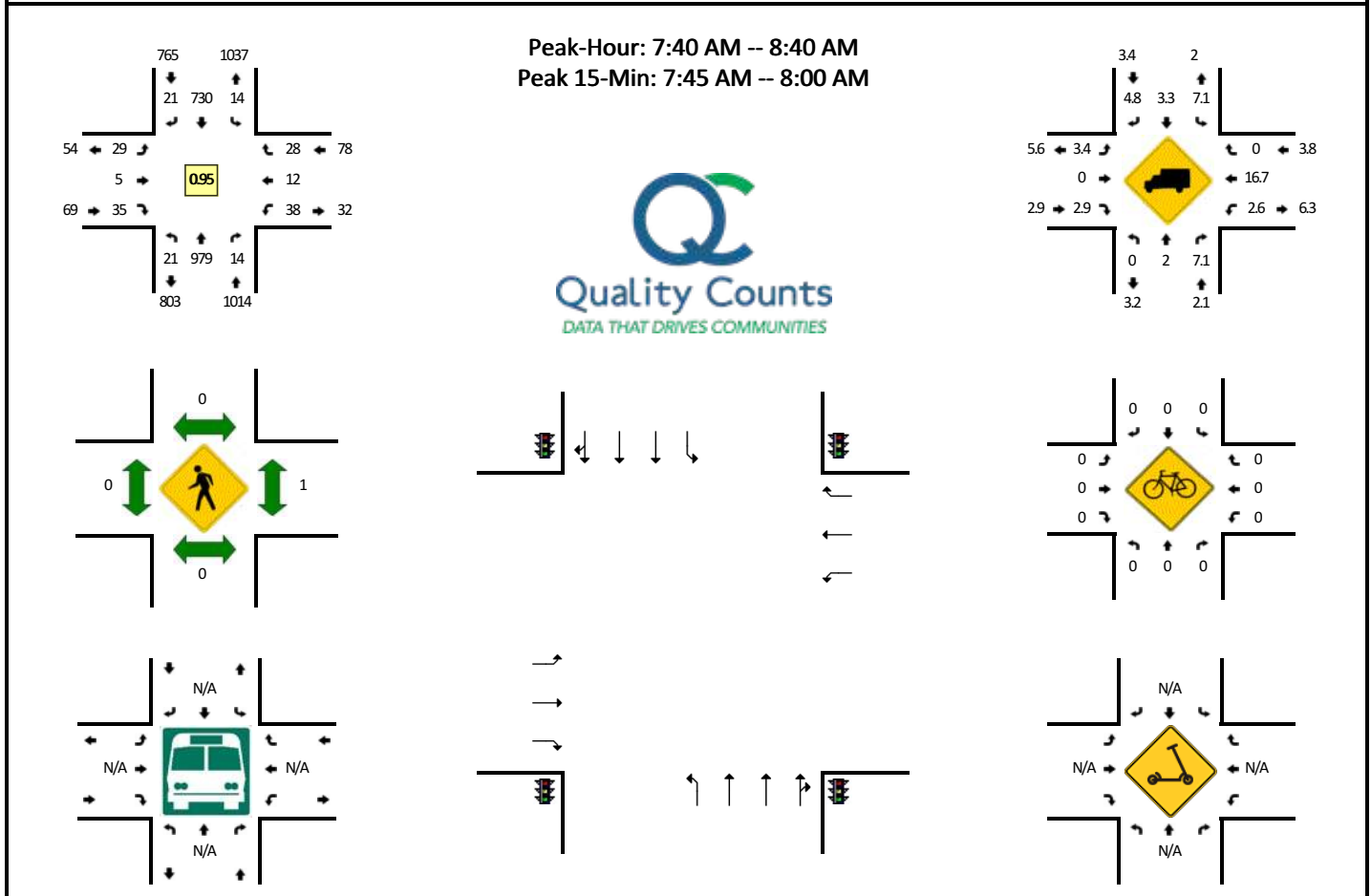


5-Min Count Period Beginning At	SE 176th Ave (Northbound)				SE 176th Ave (Southbound)				SE 20th St (Eastbound)				SE 20th St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	2	6	5	0	3	10	2	0	4	31	0	0	3	32	1	0	99	
4:05 PM	2	9	8	0	1	11	1	0	2	35	1	0	6	37	1	0	114	
4:10 PM	3	3	9	0	4	3	2	0	1	30	2	0	2	33	1	0	93	
4:15 PM	2	5	7	0	0	8	2	0	5	18	2	0	7	23	1	0	80	
4:20 PM	4	3	10	0	0	5	1	0	2	23	2	0	1	27	0	0	78	
4:25 PM	2	3	3	0	1	6	5	0	2	32	5	0	4	36	1	0	100	
4:30 PM	4	12	9	0	2	6	3	0	7	20	2	0	8	30	0	0	103	
4:35 PM	0	9	5	0	2	7	2	0	2	20	3	0	3	35	1	0	89	
4:40 PM	2	10	3	0	3	8	1	0	4	30	2	0	5	24	3	0	95	
4:45 PM	4	8	7	0	2	3	3	0	2	33	6	0	4	21	0	0	93	
4:50 PM	3	10	5	0	1	7	2	0	4	26	4	0	4	38	1	0	105	
4:55 PM	9	12	3	0	3	4	3	0	3	31	2	0	5	29	0	0	104	1153
5:00 PM	3	10	9	0	0	6	0	0	5	23	7	0	7	36	0	0	106	1160
5:05 PM	2	8	5	0	3	13	1	0	1	34	6	0	10	32	2	0	117	1163
5:10 PM	3	6	4	0	2	3	3	0	2	36	3	0	6	35	2	0	105	1175
5:15 PM	2	5	3	0	3	8	1	0	2	34	2	0	5	27	1	0	93	1188
5:20 PM	0	8	6	0	3	5	2	0	3	31	2	0	6	27	3	0	96	1206
5:25 PM	2	11	4	0	1	9	4	0	3	21	2	0	5	29	1	0	92	1198
5:30 PM	2	5	4	0	1	7	1	0	1	26	2	0	5	27	1	0	82	1177
5:35 PM	1	2	5	0	2	8	1	0	1	19	1	0	9	22	2	0	73	1161
5:40 PM	1	7	9	0	2	3	3	0	6	25	2	0	7	21	2	0	88	1154
5:45 PM	2	5	9	0	2	2	2	0	2	28	2	0	4	22	1	0	81	1142
5:50 PM	3	8	8	0	0	4	0	0	2	19	3	0	4	28	1	0	80	1117
5:55 PM	2	6	11	0	1	8	2	0	3	15	2	0	0	22	2	0	74	1087
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	32	96	72	0	20	88	16	0	32	372	64	0	92	412	16	0	1312	
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Buses																		
Pedestrians		0				0				0				0			0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scoters																		

Comments:

LOCATION: SE 164th Ave -- SE 29th St
CITY/STATE: Vancouver, WA

QC JOB #: 16050511
DATE: Tue, Jan 10 2023

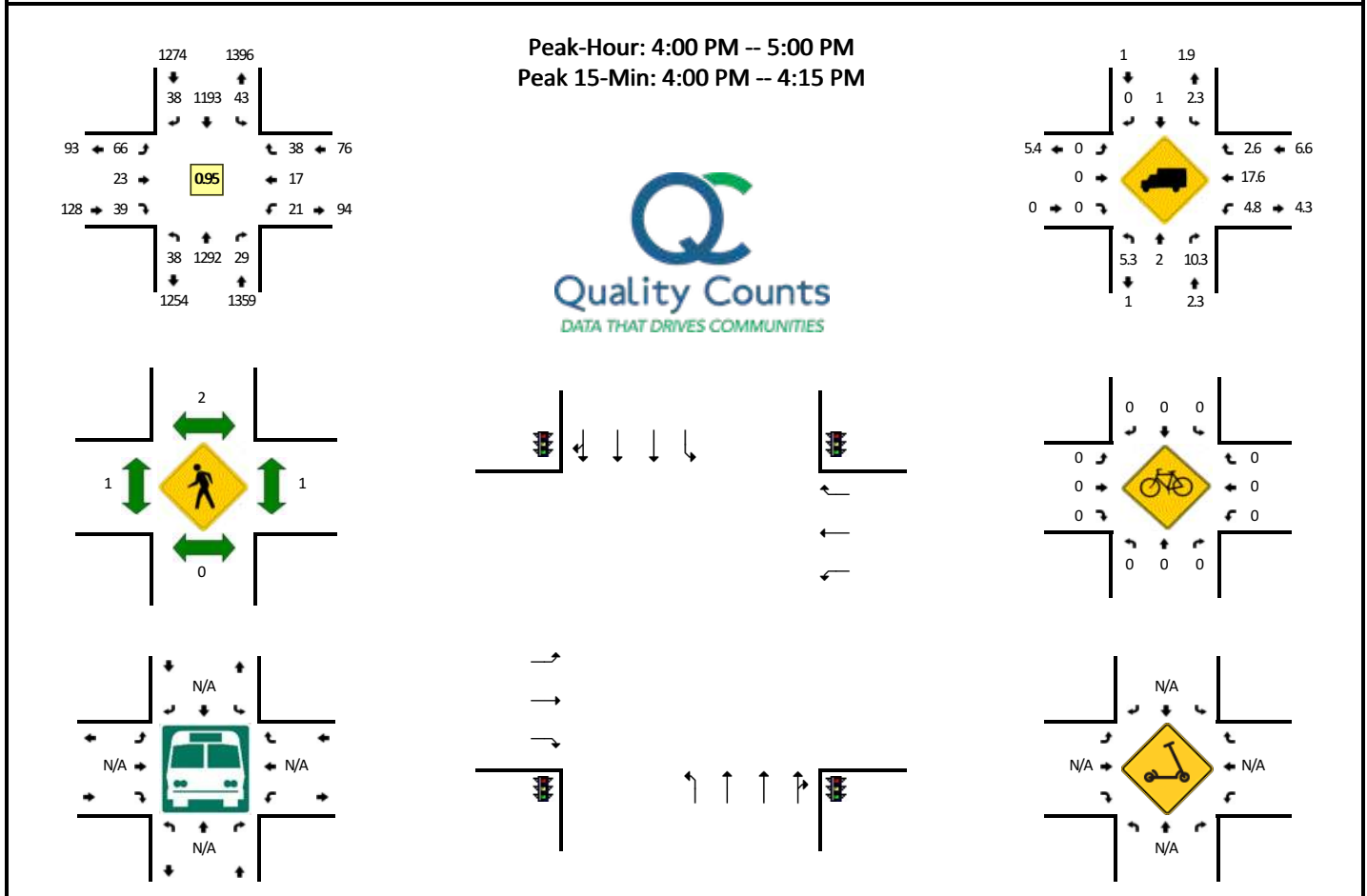


5-Min Count Period Beginning At	SE 164th Ave (Northbound)				SE 164th Ave (Southbound)				SE 29th St (Eastbound)				SE 29th St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	3	25	0	0	0	54	1	0	0	1	0	0	5	1	2	0	92	
7:05 AM	1	26	0	0	1	71	2	0	2	0	1	0	3	0	2	0	109	
7:10 AM	0	39	0	0	0	46	1	1	0	0	4	0	10	0	4	0	105	
7:15 AM	2	50	2	0	1	59	1	0	0	1	1	0	5	1	1	0	124	
7:20 AM	0	41	1	0	2	60	1	1	1	0	1	0	7	0	1	0	116	
7:25 AM	1	60	1	0	3	67	5	0	0	0	0	0	3	2	1	0	143	
7:30 AM	1	67	3	0	1	47	3	0	1	0	3	0	2	2	2	0	132	
7:35 AM	1	55	0	0	0	52	2	0	5	0	3	0	1	0	1	0	120	
7:40 AM	2	77	1	0	1	57	2	0	3	0	7	0	5	1	5	0	161	
7:45 AM	1	89	0	0	2	59	1	0	1	2	2	0	3	1	3	0	164	
7:50 AM	2	95	3	0	1	50	2	0	5	0	4	0	4	0	2	0	168	
7:55 AM	3	94	0	0	1	64	4	0	1	0	2	0	3	2	1	0	175	1609
8:00 AM	3	90	1	0	1	45	1	0	1	1	0	0	2	1	3	0	149	1666
8:05 AM	2	63	2	0	1	78	1	0	5	0	4	0	2	0	2	0	160	1717
8:10 AM	2	98	2	0	1	48	1	1	2	1	4	0	2	1	5	0	168	1780
8:15 AM	1	57	2	0	2	70	0	0	2	1	2	0	1	1	4	0	143	1799
8:20 AM	0	95	1	0	0	62	1	0	3	0	1	0	4	2	1	0	170	1853
8:25 AM	3	82	0	0	2	71	1	0	2	0	3	0	2	2	0	0	168	1878
8:30 AM	1	69	2	0	0	48	3	0	2	0	3	0	7	1	1	0	137	1883
8:35 AM	1	70	0	0	1	78	4	0	2	0	3	0	3	0	1	0	163	1926
8:40 AM	2	71	1	0	0	56	1	0	1	1	2	0	3	2	1	0	141	1906
8:45 AM	4	87	1	0	0	67	3	0	2	1	0	0	3	1	1	0	170	1912
8:50 AM	2	91	0	0	0	46	2	0	2	2	1	0	3	1	3	0	153	1897
8:55 AM	3	73	0	0	0	60	0	0	2	1	1	0	2	0	3	0	145	1867
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	24	1112	12	0	16	692	28	0	28	8	32	0	40	12	24	0	2028	
Heavy Trucks	0	8	0	0	0	28	0	0	0	0	0	0	0	0	0	0	36	
Buses																		
Pedestrians		0				0				0				0			0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scooters																		

Comments:

LOCATION: SE 164th Ave -- SE 29th St
CITY/STATE: Vancouver, WA

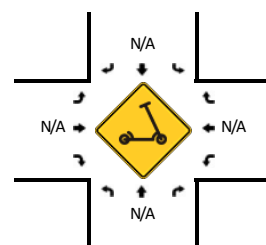
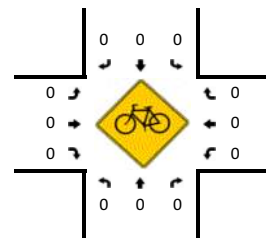
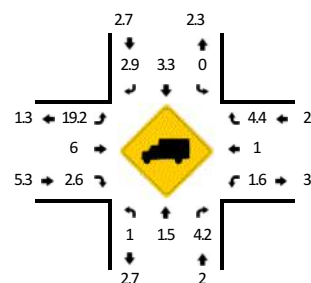
QC JOB #: 16050512
DATE: Tue, Jan 10 2023



5-Min Count Period Beginning At	SE 164th Ave (Northbound)				SE 164th Ave (Southbound)				SE 29th St (Eastbound)				SE 29th St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	2	108	4	0	3	111	4	0	8	2	1	1	0	3	2	0	249	
4:05 PM	4	114	0	0	7	81	1	0	7	5	3	0	3	3	5	0	233	
4:10 PM	1	112	1	0	5	125	3	1	3	3	2	0	1	1	4	0	262	
4:15 PM	1	118	7	1	3	91	2	0	4	0	4	0	2	4	1	0	238	
4:20 PM	5	83	3	0	6	110	3	0	6	1	0	0	3	1	4	0	225	
4:25 PM	5	110	2	0	5	64	4	0	5	0	5	0	0	3	6	0	209	
4:30 PM	0	86	0	0	2	110	7	0	2	4	7	0	1	0	3	0	222	
4:35 PM	4	112	1	0	3	89	5	0	6	4	3	0	2	2	3	0	234	
4:40 PM	5	115	5	0	3	121	2	0	14	3	2	0	5	0	4	0	279	
4:45 PM	1	130	2	0	1	87	2	0	3	0	1	0	2	0	1	0	230	
4:50 PM	3	96	2	0	2	113	4	0	4	1	6	0	0	0	1	0	232	
4:55 PM	6	108	2	0	2	91	1	0	3	0	5	0	2	0	4	0	224	2837
5:00 PM	2	81	4	0	7	108	1	0	5	2	4	0	0	0	2	0	216	2804
5:05 PM	1	99	6	1	2	99	2	0	5	3	1	0	4	1	5	0	229	2800
5:10 PM	0	87	2	0	6	128	1	0	8	0	6	0	0	1	4	0	243	2781
5:15 PM	2	117	3	0	6	89	1	2	4	2	7	0	2	0	2	0	237	2780
5:20 PM	3	87	2	0	5	125	5	2	7	3	5	0	0	1	8	0	253	2808
5:25 PM	3	70	1	0	1	77	2	0	3	2	4	0	5	4	6	0	178	2777
5:30 PM	1	72	5	0	3	110	1	3	5	1	2	0	1	2	5	0	211	2766
5:35 PM	2	105	6	0	8	72	3	0	9	1	0	0	1	0	1	0	208	2740
5:40 PM	4	94	4	0	3	99	3	0	9	2	2	0	2	3	2	0	227	2688
5:45 PM	4	96	6	0	3	72	1	0	6	4	2	0	0	1	3	0	198	2656
5:50 PM	2	97	6	0	6	105	4	1	2	1	10	0	2	0	2	0	238	2662
5:55 PM	4	70	5	0	4	63	0	1	5	1	3	0	4	0	2	0	162	2600
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	28	1336	20	0	60	1268	32	4	72	40	24	4	16	28	44	0	2976	
Heavy Trucks	0	32	4	0	4	12	0	0	0	0	0	0	4	4	0	0	60	
Buses																		
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Scoters																		

Comments:

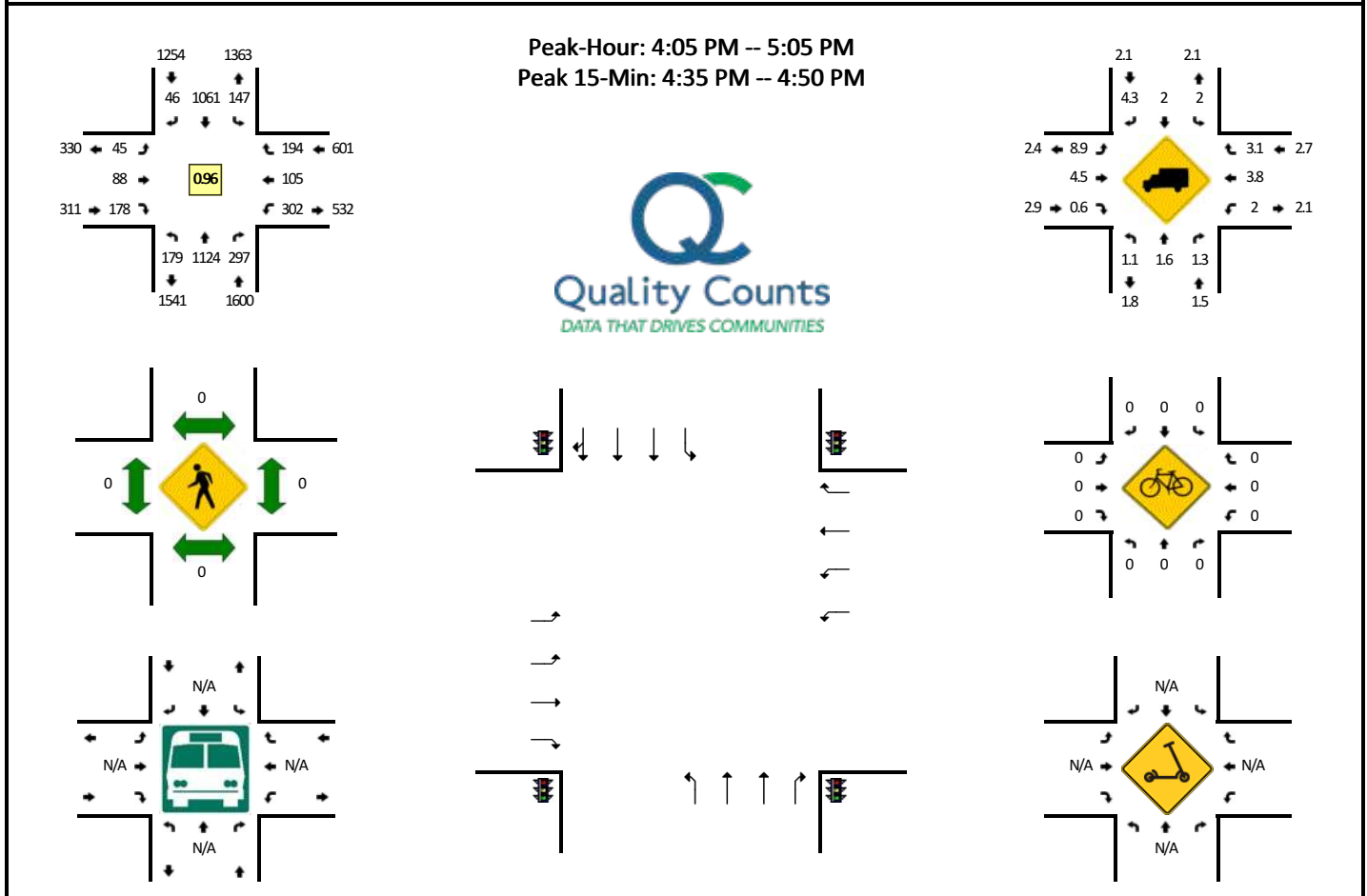
QC JOB #: 16019601
DATE: Tue, Dec 6 2022



Comments:

LOCATION: SE 164th Ave -- SE 34th St
CITY/STATE: Vancouver, WA

QC JOB #: 16019602
DATE: Tue, Dec 6 2022



5-Min Count Period Beginning At	SE 164th Ave (Northbound)				SE 164th Ave (Southbound)				SE 34th St (Eastbound)				SE 34th St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	11	81	26	0	10	70	7	0	5	3	9	0	31	10	11	0	274	
4:05 PM	18	116	26	0	6	79	3	0	3	6	24	0	24	8	15	0	328	
4:10 PM	14	84	23	0	16	94	3	0	1	8	10	0	40	10	18	0	321	
4:15 PM	19	104	31	0	8	89	4	0	1	3	14	0	13	5	15	0	306	
4:20 PM	10	73	31	0	16	106	2	0	3	7	11	0	24	7	13	0	303	
4:25 PM	17	125	23	0	14	75	6	0	1	1	17	0	19	9	12	0	319	
4:30 PM	12	81	26	0	13	80	3	0	3	7	9	0	28	3	13	0	278	
4:35 PM	18	105	22	0	5	84	5	0	6	10	20	0	24	11	13	0	323	
4:40 PM	11	77	26	0	13	96	4	0	10	10	14	0	36	14	28	0	339	
4:45 PM	22	114	21	0	14	77	5	0	2	9	17	0	21	8	12	0	322	
4:50 PM	11	81	20	0	17	80	3	0	8	13	11	0	20	10	21	0	295	
4:55 PM	17	98	26	0	11	94	6	0	2	4	12	0	22	12	16	0	320	3728
5:00 PM	10	66	22	0	14	107	2	0	5	10	19	0	31	8	18	0	312	3766
5:05 PM	16	106	23	0	12	89	4	0	5	9	17	0	23	4	16	0	324	3762
5:10 PM	8	72	24	0	14	107	5	0	4	6	14	0	27	14	21	0	316	3757
5:15 PM	11	114	29	0	10	74	1	0	4	8	14	0	14	6	9	0	294	3745
5:20 PM	11	59	26	0	18	83	0	0	2	5	10	0	22	6	18	0	260	3702
5:25 PM	19	101	32	0	10	88	3	0	6	7	17	0	12	13	15	0	323	3706
5:30 PM	12	63	24	0	21	77	3	0	1	10	16	0	19	8	15	0	269	3697
5:35 PM	15	113	35	0	10	73	2	0	5	3	14	0	26	3	11	0	310	3684
5:40 PM	6	84	23	0	10	104	1	0	8	6	15	0	27	7	9	0	300	3645
5:45 PM	14	89	35	0	5	74	6	0	3	4	10	0	16	1	9	0	266	3589
5:50 PM	11	75	25	0	7	83	3	0	0	3	13	0	22	4	9	0	255	3549
5:55 PM	17	70	21	0	7	57	2	0	3	4	9	0	12	1	10	0	213	3442
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	204	1184	276	0	128	1028	56	0	72	116	204	0	324	132	212	0	3936	
Heavy Trucks	0	28	8		0	12	4		4	8	4		0	12	0		80	
Buses																		
Pedestrians		0				0				0				0			0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scooters																		

Comments:

Appendix B WSDOT Crash Data

OFFICER REPORTED CRASHES THAT OCCURRED AT OR IN THE VICINITY OF MULTIPLE INTERSECTIONS IN THE CITY OF VANCOUVER
01/01/2017 - available 0022 - see 2nd tab below for road information
Under 23 C.S. Code 1-1401, data, reports, surveys, schedules, lists compiled or collected for the purpose of identifying, evaluating, or planning the safety enhancement of potential crash sites, hazardous roadway conditions, or roadway-highway crossings are not subject to discovery or admitted into evidence in a Federal or State court proceeding or considered for any action for damage arising from any occurrence at a location maintained or addressed in such reports, surveys, schedules, lists, or data.

JURISDICTION	CITY	COUNTY	PRIMARY TRAFFIC	BLOCK	INTERSECTION	DIST. FROM REF.	COMP. DIR. FROM REF.	REFERENCE NAME	MILEPOST	A/B	SR ONLY HISTORY/SUSPENSE	REPORT NUMBER	DATE	TIME	TYPE	# INJ	# FATAL	# VEH	# PEDS	# BIKES	VEHICLE 1 TYPE	VEHICLE 2 TYPE	SHIP	WEATHER	ROADWAY CONDITION	LIGHTING	FIRST COLLISION N TYPE / OBJECT	VEHICLE 1 ACTION	VEHICLE 2 ACTION	VEHICLE 1 COMPASS DIRECTIO	VEHICLE 2 COMPASS DIRECTIO			
City Street Clark	Vancouver	SE 157H ST	0	0	SE 152ND AVE						No	0734485	2:11 Possible Inj	2:11	Possible Inj	1	0	0	0	0	0	Passenger Car	At Intersection	Clear or Pa Dry	Dusk	Dark-Street	Utility Box Making Right Turn	West	South					
City Street Clark	Vancouver	SE 157H ST	0	0	SE 152ND AVE						No	0735632	15:40 Possible Inj	15:40	Possible Inj	3	0	2	0	0	0	Truck (Flat)Passenger	At Intersection	Clear or Pa Dry	Dusk	Dark-Street	Entering at Going Straight Going South	South	North					
City Street Clark	Vancouver	SE 157H ST	0	0	SE 152ND AVE						No	0999464	1/2/2020	15:52	No Appare	0	0	2	0	0	0	Passenger	Passenger	At Intersection	Raining	Wet	Dark-Street	Entering at Going Straight Going South	South	North				
City Street Clark	Vancouver	SE 164TH H	0	0	SE 29TH ST						No	0813134	16:14 Unknown	16:14	Unknown	0	0	2	0	0	0	Pickup/Pan	Pickup/Pan	At Intersection	Clear or Pa Dry	Dusk	Dark-Street	From oppo Making Left Going South	South	East				
City Street Clark	Vancouver	SE 164TH H	2800	2800	0	SE 157H ST	300 F	S	SE 29TH ST		No	0534752	21:00 No Appare	21:00	No Appare	0	0	1	0	0	0	Pickup	Pan	Truck or Not at Inter	Clear or Pa Wet	Dusk	Dark-Street	Tree or Stu Going Straight Ahead	South	West				
City Street Clark	Vancouver	SE 164TH H	2800	2800	0	SE 157H ST	41 F	N	SE 29TH ST		No	0915671	13:31 No Appare	13:31	No Appare	0	0	2	0	0	0	Pickup	Pan	Pickup	Not at Inter	Overcast	Wet	Dark-Street	From same Going Str Stopped in South	South	North			
City Street Clark	Vancouver	SE 167H H	0	0	SE 20TH ST						No	0967588	19:17 No Appare	19:17	No Appare	0	0	0	0	0	0	Pickup	Pan	Passenger	At Intersection	Overcast	Standing	Dark-Street	Entering at Going Straight Going North	North	South			
City Street Clark	Vancouver	SE 167H H	17500	17500	SE 34TH ST						No	0756777	1/6/2018	22:05	Suspected	1	0	1	0	0	0	Passenger Car	At Intersection	Overcast	Wet	Dark-Street	Medal Sign Making Left Turn	North	East					
City Street Clark	Vancouver	SE 167H H	17500	17500	SE 34TH ST						No	0598145	9/6/2019	11:28	No Appare	0	0	1	0	0	0	Passenger Car	At Intersection	Clear or Pa Dry	Dusk	Dark-Street	Medal Sign Making Right Turn	North	East					
City Street Clark	Vancouver	SE 177TH H	0	0	SE 34TH ST						No	0873724	9:08 No Appare	9:08	No Appare	0	0	2	0	0	0	Passenger	Pickup/Pan	At Intersection	Clear or Pa Wet	Dusk	Dark-Street	Entering at Making Left Going South	South	West				
City Street Clark	Vancouver	SE 192ND	1498	1498	SE 15TH ST						No	0528001	6/3/2022	10:27	Possible Inj	1	0	3	0	0	0	Pickup	Pan	Pickup/Pan	At Intersection	Raining	Wet	Dark-Street	Entering at Going Straight Making Left	South	North			
City Street Clark	Vancouver	SE 192ND	0	0	SE 15TH ST						No	0880276	1/7/2019	19:05	No Appare	0	0	2	0	0	0	Passenger	Passenger	At Intersection	Clear or Pa Dry	Dusk	Dark-Street	From same Going Str Stopped in North	North	South				
City Street Clark	Vancouver	SE 192ND	0	0	SE 15TH ST						No	0420704	16:40 No Appare	16:40	No Appare	0	0	2	0	0	0	Pickup	Pan	Passenger	At Intersection	Raining	Wet	Dark-Street	Entering at Going Straight Going North	North	South			
City Street Clark	Vancouver	SE 192ND	0	0	SE 15TH ST						No	0795421	5/7/2018	9:56	No Appare	0	0	2	0	0	0	Passenger	Pickup/Pan	At Intersection	Overcast	Dry	Dark-Street	Entering at Going Straight Going North	North	South				
City Street Clark	Vancouver	SE 192ND	0	0	SE 15TH ST						No	0908184	4/4/2019	11:56	Suspected	1	0	2	0	0	0	Passenger	Pickup/Pan	At Intersection	Clear or Pa Ice	Dusk	Dark-Street	From oppo Going Str Making Left	South	North				
City Street Clark	Vancouver	SE 192ND	0	0	SE 15TH ST						No	0697125	10:45 No Appare	10:45	No Appare	0	0	2	0	0	0	Passenger	Passenger	At Intersection	Overcast	Dry	Dark-Street	From same Slowing	Slowing	South	North			
City Street Clark	Vancouver	SE 192ND	2000	2000	SE 20TH ST						No	0846012	14:21 Possible Inj	14:21	Possible Inj	1	0	2	0	0	0	Passenger	Pickup/Pan	At Intersection	Clear or Pa Dry	Dusk	Dark-Street	Entering at Going Straight Going North	North	South				
City Street Clark	Vancouver	SE 192ND	0	0	SE 20TH ST						No	0453822	9:46 No Appare	9:46	No Appare	0	0	2	0	0	0	Truck (Flat)Pickup/Pan	At Intersection	Clear or Pa Dry	Dusk	Dark-Street	From same Going Str Stopped in South	South	North					
City Street Clark	Vancouver	SE 192ND	0	0	SE 20TH ST						No	0995917	12:49 No Appare	12:49	No Appare	0	0	1	0	0	0	Passenger Car	At Intersection	Clear	Dry	Dark-Street	Signal Pole Going Straight Ahead	South	North					
City Street Clark	Vancouver	SE 192ND	0	0	SE 20TH ST						No	0944488	7:36 No Appare	7:36	No Appare	0	0	2	0	0	0	Pickup	Pan	Passenger	At Intersection	Clear or Pa Dry	Dusk	Dark-Street	From oppo Making Left Going South	South	North			
City Street Clark	Vancouver	SE 192ND	0	0	SE 20TH ST						No	0784445	16:18 Possible Inj	16:18	Possible Inj	1	0	2	0	0	0	Pickup	Pan	Pickup/Pan	At Intersection	Overcast	Wet	Dark-Street	From oppo Making Left Going South	South	North			
City Street Clark	Vancouver	SE 192ND	0	0	SE 20TH ST						No	0841694	9:23 Suspected	9:23	Suspected	1	0	2	0	0	0	Passenger	Passenger	At Intersection	Clear	Dry	Dark-Street	From oppo Making Left Going South	South	North				
City Street Clark	Vancouver	SE 192ND	0	0	SE 20TH ST						No	0531788	4:00 No Appare	4:00	No Appare	0	0	2	0	0	0	Passenger	Pickup/Pan	At Intersection	Overcast	Dry	Dark-Street	Entering at Going Straight Going West	West	East				
City Street Clark	Vancouver	SE 192ND	1400	1400	SE 15TH ST						No	0988844	13:40 Possible Inj	13:40	Possible Inj	1	0	1	0	0	0	Passenger	Passenger	Intersection	Clear or Pa Dry	Dusk	Dark-Street	From same Going Str Stopped in North	North	South				
City Street Clark	Vancouver	SE 192ND	1600	1600	SE 15TH ST						No	0785221	4/3/2018	10:10	No Appare	0	0	2	0	0	0	Truck	Do	Pickup/Pan	Not at Inter	Clear or Pa Dry	Dusk	Dark-Street	From same Going Str Going South	South	North			
City Street Clark	Vancouver	SE 192ND	2100	2100	SE 20TH ST						No	0530138	11:18 Suspected	11:18	Suspected	1	0	2	0	0	0	Truck	Do	Pickup/Pan	Not at Inter	Clear or Pa Dry	Dusk	Dark-Street	From same Going Str Going South	South	North			
City Street Clark	Vancouver	SE 192ND	2000	2000	SE 20TH ST						No	0537243	13:59 No Appare	13:59	No Appare	0	0	2	0	0	0	Truck	Do	Pickup/Pan	Intersection	Raining	Wet	Dark-Street	From same Going Str Slowing	Slowing	South	North		
City Street Clark	Vancouver	SE 192ND	2000	2000	SE 20TH ST						No	0762873	12:07 No Appare	12:07	No Appare	0	0	2	0	0	0	Passenger	Passenger	Intersection	Clear or Pa Dry	Dusk	Dark-Street	From same Going Str Stopped in North	North	South				
City Street Clark	Vancouver	SE 192ND	1900	1900	SE 20TH ST						No	0784828	17:02 No Appare	17:02	No Appare	0	0	2	0	0	0	Passenger	Pickup/Pan	Intersection	Overcast	Wet	Dark-Street	From oppo Going Str Stopped in South	South	North				
City Street Clark	Vancouver	SE 192ND	1900	1900	SE 20TH ST						No	0653540	12:40 No Appare	12:40	No Appare	0	0	3	0	0	0	Truck (Flat)Pickup/Pan	Intersection	Overcast	Dry	Dark-Street	From same Going Str Stopped in North	North	South					
City Street Clark	Vancouver	SE 192ND	1700	1700	SE 20TH ST						No	0841509	16:04 No Appare	16:04	No Appare	0	0	2	0	0	0	Pickup	Pan	Pickup/Pan	Intersection	Clear or Pa Dry	Dusk	Dark-Street	From same Stopped in Going Straight South	South	Vehicle Sto			
City Street Clark	Vancouver	SE 192ND	1700	1700	SE 20TH ST						No	0932443	5/2/2019	13:44	No Appare	0	0	2	0	0	0	Passenger	Passenger	Intersection	Clear or Pa Dry	Dusk	Dark-Street	From same Going Str Stopped in North	North	South				
City Street Clark	Vancouver	SE 192ND	2000	2000	SE 20TH ST						No	0881001	4/6/2018	8:58	No Appare	0	0	3	0	0	0	Pickup	Pan	Passenger	Intersection	Raining	Wet	Dark-Street	From same Going Str Stopped in South	South	North			
City Street Clark	Vancouver	SE 192ND	2100	2100	SE 20TH ST						No	0515456	16:02 Possible Inj	16:02	Possible Inj	1	0	2	0	0	0	Passenger	Pickup/Pan	At Driveway	Clear	Dusk	Dark-Street	Entering at Making Right Going Str	South	North				
City Street Clark	Vancouver	SE 192ND	2400	2400	SE 25TH ST						No	0442584	2:52 No Appare	2:52	No Appare	0	0	1	0	0	0	Pickup	Panel	Truck	Not at Inter	Clear or Pa Dry	Dark-Street	Tree or Stu Going Straight Ahead	North	South				
City Street Clark	Vancouver	SE 192ND	2500	2500	SE 25TH ST						No	0721495	22:37 No Appare	22:37	No Appare	0	0	1	0	0	0	Passenger Car	Not at Inter	Clear or Pa Dry	Dark-Street	Vehicle Str	Going Straight Ahead	South	North					
City Street Clark	Vancouver	SE 192ND	2700	2700	SE 25TH ST						No	0842701	9:26 No Appare	9:26	No Appare	0	0	1	0	0	0	Pickup	Panel	Truck	Not at Inter	Clear or Pa Dry	Dark-Street	Vehicle Str	Going Straight Ahead	South	North			
City Street Clark	Vancouver	SE 192ND	2700	2700	SE 25TH ST						No	0802199	22:20 No Appare	22:20	No Appare	0	0	1	0	0	0	Passenger Car	Not at Inter	Clear or Pa Dry	Dark-Street	Vehicle Str	Going Straight Ahead	North	South					
City Street Clark	Vancouver	SE 192ND	2400	2400	SE 25TH ST						No	0445610	7/2/2020	17:47	Died In H	0	1	1	0	0	0	Passenger Car	Not at Inter	Clear	Dry	Dark-Street	Utility Pole Going Straight Ahead	South	North					
City Street Clark	Vancouver	SE 192ND	2500	2500	SE 25TH ST						No	0988844	13:40 Possible Inj	13:40	Possible Inj	1	0	1	0	0	0	Pickup	Panel	Truck	Not at Inter	Clear or Pa Dry	Dark-Street	Vehicle Str	Going Straight Ahead	South	North			
City Street Clark	Vancouver	SE 192ND	3100	3100	SE 34TH ST						No	0768082	16:55 No Appare	16:55	No Appare	0	0	2	0	0	0	Passenger	Passenger	Truck	Not at Inter	Clear or Pa Dry	Dark-Street	From same Going Str Going South	South	North				
City Street Clark	Vancouver	SE 20TH ST	16602	16602	SE 176TH AVE						No	0856936	20:57 No Appare	20:57	No Appare	0	0	2	0	0	0	Passenger	Passenger	At Intersection	Clear or Pa Dry	Dark-Street	From same Going Str Stopped in East	East	West					
City Street Clark	Vancouver	SE 20TH ST	16602	16602	SE 176TH AVE						No	0809354	11:09 Suspected	11:09	Suspected	1	0	2	0	0	0	Passenger	Pickup/Pan	At Intersection	Overcast	Dry	Dark-Street	From same Going Str Stopped in East	East	West				
City Street Clark	Vancouver	SE 20TH ST	0	0	SE 176TH AVE						No	0770111	18:25 No Appare	18:25	No Appare	0	0	2	0	0	0	Pickup	Pan	Passenger	At Intersection	Overcast	Wet	Dark-Street	From oppo Starting in Making Left	West	North			
City Street Clark	Vancouver	SE 20TH ST	0	0	SE 176TH AVE						No	0448810	19:53 Suspected	19:53	Suspected	1	0	1	0	0	0	1	Pickup	Panel	Truck	At Intersection	Clear	Dry	Dark-Street	Vehicle Str Starting in Traffic Lane	West	Vehicle Sto		
City Street Clark	Vancouver	SE 20TH ST	16700	16700	SE 176TH AVE						No	0510568	13:08 No Appare	13:08	No Appare	0	0	2	0	0	0	Passenger	Pickup/Pan	At Intersection	Clear or Pa Dry	Dusk	Dark-Street	From same Going Str Stopped in East	East	West				
City Street Clark	Vancouver	SE 20TH ST	16602	16602	SE 176TH AVE						No	0409463	10:11 No Appare	10:11	No Appare	0	0	0	0	0	0	Passenger	Pickup/Pan	Pan	At Intersection	Overcast	Dry	Dark-Street	From same Slowing	Slowed at East	West			
City Street Clark	Vancouver	SE 20TH ST	0	0	SE 176TH AVE						No	0779994	21:50 No Appare	21:50	No Appare	0	0	2	0	0	0	Pickup	Pan	From same	Going Str	Clear or Pa Dry	Dark-Street	From same Going Str	Stopped in Making Left	West	East			
City Street Clark	Vancouver	SE 20TH ST	0	0	SE 176TH AVE						No	0491782	19:29 Possible Inj	19:29	Possible Inj	2	0	2	0	0	0	Passenger	Passenger	At Intersection	Raining	Wet	Dark-Street	From oppo Making Left Making Left	West	East				
City Street Clark	Vancouver	SE 20TH ST	0	0	SE 176TH AVE						No	0707718	17:28 Suspected	17:28	Suspected	1	0	1	0	0	0	1	Passenger Car	At Intersection	Clear or Pa Dry	Dusk	Dark-Street	Vehicle - Making Right Turn	West	South				
City Street Clark	Vancouver	SE 20TH ST	16600	16600	SE 176TH AVE																													

VEHICLE 2 COMPASS DIRECTION N FROM	VEHICLE 1 COMPASS DIRECTION N TO	DRIVER CONTRIB CIRCUMS TANCE 1 (UNIT 1)	DRIVER CONTRIB CIRCUMS TANCE 2 (UNIT 1)	DRIVER CONTRIB CIRCUMS TANCE 3 (UNIT 1)	DRIVER CONTRIB CIRCUMS TANCE 1 (UNIT 2)	DRIVER CONTRIB CIRCUMS TANCE 2 (UNIT 2)	DRIVER CONTRIB CIRCUMS TANCE 3 (UNIT 2)	BICYCLIST CONTRIB CIRCUMS TANCE 1 (UNIT 1)	BICYCLIST CONTRIB CIRCUMS TANCE 2 (UNIT 1)	BICYCLIST CONTRIB CIRCUMS TANCE 3 (UNIT 1)	BICYCLIST CONTRIB CIRCUMS TANCE 1 (UNIT 2)	BICYCLIST CONTRIB CIRCUMS TANCE 2 (UNIT 2)	BICYCLIST CONTRIB CIRCUMS TANCE 3 (UNIT 2)	AN CONTRIB CIRCUMS TANCE 1 (UNIT 2)	AN CONTRIB CIRCUMS TANCE 2 (UNIT 2)	AN CONTRIB CIRCUMS TANCE 3 (UNIT 2)	IMPACT LOCATIO N CTRY County & Misc Trafficw D	WA STATE PLANE PLANE 2010 - FORWARD D	WA STATE PLANE PLANE 2010 - FORWARD D
West	East	Under Influence of Alcohol	None	None	None	None	None	None	None	None	None	None	None	None	None	None	Past the O	1134740	107246
East	West	Inattention	None	None	None	None	None	None	None	None	None	None	None	None	None	None	Lane of Pri	1134778	107244.7
South	North	Disregard Traffic Sign and Signals	None	None	None	None	None	None	None	None	None	None	None	None	None	None	Lane of Pri	1134740	107246
Vehicle St	Vehicle St	Disregard 1 Inattention	Driver Not Distracted	None	None	None	None	None	None	None	None	None	None	None	None	None	Lane of Pri	1127533	103833.3
East	West	Inattention	None	None	None	None	None	None	None	None	None	None	None	None	None	None	Past the O	1127523	103531.1
Vehicle St	Vehicle St	Inattention	None	None	None	None	None	None	None	None	None	None	None	None	None	None	Lane of Pri	1127534	103903.5
East	West	Inattention	None	None	None	None	None	None	None	None	None	None	None	None	None	None	Lane of Pri	1120577	106130.2
West	East	Under Infrs Improper 1 Driver Interacting with Passengers, Anim	None	None	None	None	None	None	None	None	None	None	None	None	None	None	Median of	1130488	102486.5
West	East	Improper 1 Non Motorist on Wrong Side of Road	None	None	None	None	None	None	None	None	None	None	None	None	None	None	Past the O	1120538	102488.5
West	East	Did Not Grant RW to Vehicle	None	None	None	None	None	None	None	None	None	None	None	None	None	None	Lane of Pri	1130865	102504.3
West	North	Unknown Distraction	None	None	None	None	None	None	None	None	None	None	None	None	None	None	Lane of Pri	1134740	107247.5
Vehicle St	Vehicle St	Other Contributing Circ Not Listed	None	None	None	None	None	None	None	None	None	None	None	None	None	None	Lane of Pri	1134740	107246
East	West	Lost in Thought / Day Dreaming	None	None	None	None	None	None	None	None	None	None	None	None	None	None	Lane of Pri	1134740	107246
East	West	Disregard Stop and Go Light	None	None	None	None	None	None	None	None	None	None	None	None	None	None	Lane of Pri	1134777	107244.7
North	East	Inattention	None	None	None	None	None	None	None	None	None	None	None	None	None	None	Lane of Pri	1134777	107244.7
South	North	Operating Defective Equipment	None	None	None	None	None	None	None	None	None	None	None	None	None	None	Lane of Pri	1134750	106040.2
West	East	Disregard Traffic Sign and Signals	None	None	None	None	None	None	None	None	None	None	None	None	None	None	Lane of Pri	1134715	106043.2
South	East	Follow Too Closely	None	None	None	None	None	None	None	None	None	None	None	None	None	None	Lane of Pri	1134715	106044.3
East	West	Under Influence of Alcohol	None	None	None	None	None	None	None	None	None	None	None	None	None	None	Past the O	1134715	106044.3
East	West	Inattention	None	None	None	None	None	None	None	None	None	None	None	None	None	None	Lane of Pri	1134035	102365.8
East	West	Improper Turn/Merge	None	None	None	None	None	None	None	None	None	None	None	None	None	None	Lane of Pri	1134082	102401.8
North	South	Did Not Grant RW to Vehicle	None	None	None	None	None	None	None	None	None	None	None	None	None	None	Lane of Pri	1134036	102366.8
South	North	Other Contributing Circ Not Listed	None	None	None	None	None	None	None	None	None	None	None	None	None	None	Lane of Pri	1134036	102366.8
North	South	Eating or Drinking	Follow Too Closely	None	None	None	None	None	None	None	None	None	None	None	None	None	Lane of Pri	1134740	107338.6
Vehicle St	Vehicle St	Inattention	None	None	None	None	None	None	None	None	None	None	None	None	None	None	Lane of Pri	1134772	106925.8
South	North	Follow Too Closely	None	None	None	None	None	None	None	None	None	None	None	None	None	None	Lane of Pri	1134743	105708.5
South	North	Operating Defective Equipment	None	None	None	None	None	None	None	None	None	None	None	None	None	None	Lane of Pri	1134709	105793.3
South	North	None	Exceeding Reas. Safe Speed	None	None	None	None	None	None	None	None	None	None	None	None	None	Lane of Pri	1134749	106002.2
Vehicle St	Vehicle St	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	Lane of Pri	1134754	106201.9
Vehicle St	Vehicle St	Inattention	None	None	None	None	None	None	None	None	None	None	None	None	None	None	Lane of Pri	1134718	106158.5
North	South	None	Follow Too Closely	None	None	None	None	None	None	None	None	None	None	None	None	None	Lane of Pri	1134724	106336.9
North	South	Inattention	None	None	None	None	None	None	None	None	None	None	None	None	None	None	Lane of Pri	1134716	106088
Vehicle St	Vehicle St	Disregard 1 Inattention	None	None	None	None	None	None	None	None	None	None	None	None	None	None	Lane of Pri	1134748	105927
South	North	Did Not Grant RW to Vehicle	None	None	None	None	None	None	None	None	None	None	None	None	None	None	Lane of Pri	1134708	105753
South	North	Apparently Asleep or Fatigued	None	None	None	None	None	None	None	None	None	None	None	None	None	None	Past the O	1134640	104752.7
South	North	Exceeding Reas. Safe Speed	None	None	None	None	None	None	None	None	None	None	None	None	None	None	Median of	1134632	104621.8
South	North	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	Lane of Pri	1134352	104179.8
South	North	Unknown Distraction	None	None	None	None	None	None	None	None	None	None	None	None	None	None	Lane of Pri	1134391	104249.2
North	South	Distractions Outside Vehicle	None	None	None	None	None	None	None	None	None	None	None	None	None	None	Past the O	1134710	104844.9
East	Vehicle St	Lost in Thought / Day Dreaming	None	None	None	None	None	None	None	None	None	None	None	None	None	None	Lane of Pri	1134749	105871.6
Vehicle St	Vehicle St	Operating Handheld Cell Phone	None	None	None	None	None	None	None	None	None	None	None	None	None	None	Lane of Pri	1134798	99963.43
West	North	Unknown Distraction	Unknown Distraction	None	None	None	None	None	None	None	None	None	None	None	None	None	Lane of Pri	1130576	106107.9
Vehicle St	Vehicle St	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	Lane of Pri	1130550	105128.4
Vehicle St	Vehicle St	Operating Defective Equipment	None	None	None	None	None	None	None	None	None	None	None	None	None	None	Lane of Pri	1130577	106130.2
Vehicle St	Vehicle St	Other Contributing Circ Not Listed	None	None	None	None	None	None	None	None	None	None	None	None	None	None	Lane of Pri	1130576	106107.2
Vehicle St	Vehicle St	Other Contributing Circ Not Listed	None	None	None	None	None	None	None	None	None	None	None	None	None	None	Lane of Pri	1130642	106110.3
East	West	Under Infrs Inattention Did Not Go	None	None	None	None	None	None	None	None	None	None	None	None	None	None	Lane of Pri	1130576	106107.9
East	South	Other Contributing Circ Not Listed	None	None	None	None	None	None	None	None	None	None	None	None	None	None	Lane of Pri	1130577	106130.2
East	West	Other Contributing Circ Not Listed	None	None	None	None	None	None	None	None	None	None	None	None	None	None	Lane of Pri	1134756	106043.6
East	West	Disregard 1 Apparently Asleep or 1 None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	Lane of Pri	1134715	106044.3
East	West	Unknown Distraction	None	None	None	None	None	None	None	None	None	None	None	None	None	None	Lane of Pri	1130509	105131.6
East	West	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	Lane of Pri	1130643	106128.6
West	East	Exceeding Reas. Safe Speed	None	None	None	None	None	None	None	None	None	None	None	None	None	None	Outside Sh	1130276	106136.1
West	East	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	Past the O	1127533	103863.9
South	North	Other Contributing Circ Not Listed	None	None	None	None	None	None	None	None	None	None	None	None	None	None	Lane of Pri	1127535	103833.4
South	North	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	Intersectin	1130524	103788.2
East	West	Improper Turn/Merge	None	None	None	None	None	None	None	None	None	None	None	None	None	None	Lane of Pri	1130524	103788.1
East	West	Did Not Gr Distractions Outside Vehicle	None	None	None	None	None	None	None	None	None	None	None	None	None	None	Lane of Pri	1130488	102508.7
East	West	Improper Turn/Merge	None	None	None	None	None	None	None	None	None	None	None	None	None	None	Lane of Pri	1130488	102509.4
East	West	Disregard 1 Inattention Did Not Gr	None	None	None	None	None	None	None	None	None	None	None	None	None	None	Lane of Pri	1130488	102509.4
North	Southeast	Unknown 1 Disregard Traffic Sign	None	None	None	None	None	None	None	None	None	None	None	None	None	None	Lane of Pri	1130488	102509.4
East	West	Did Not Grant RW to Vehicle	None	None	None	None	None	None	None	None	None	None	None	None	None	None	Lane of Pri	1130488	102509.4
East	South	Inattention	Inattention	None	None	None	None	None	None	None	None	None	None	None	None	None	Lane of Pri	1134035	102365.8
West	East	Under Infrs Did Not Grant RW to	None	None	None	None	None	None	None	None	None	None	None	None	None	None	Lane of Pri	1134036	102366.8
East	West	Improper Turn/Merge	None	None	None	None	None	None	None	None	None	None	None	None	None	None	Lane of Pri	1134081	102401.8
East	West	Apparently Ill	None	None	None	None	None	None	None	None	None	None	None	None	None	None	Lane of Pri	1134036	102402.6
West	East	Operating Other Electronic Devis	None	None	None	None	None	None	None	None	None	None	None	None	None	None	Lane of Pri	1134035	102365.8
South	South	Disregard 1 Exceeding Operating	None	None	None	None	None	None	None	None	None	None	None	None	None	None	Lane of Pri	1134035	102365.8
West	East	Did Not Grant RW to Vehicle	Exceeding Reas. Safe Speed	None	None	None	None	None	None	None	None	None	None	None	None	None	Lane of Pri	1134081	102363.0
East	West	Did Not Grant RW to Vehicle	None	None	None	None	None	None	None	None	None	None	None	None	None	None	Lane of Pri	1134079	102401.8
South	North	Disregard 1 Distractions Outside V	None	None	None	None	None	None	None	None	None	None	None	None	None	None	Lane of Pri	1134082	102401.8
East	West	Did Not Grant RW to Vehicle	None	None	None	None	None	None	None	None	None	None	None	None	None	None	Lane of Pri	1134036	102366.8
West	East	Other Contributing Circ Not Listed	None	None	None	None	None	None	None	None	None	None	None	None	None	None	Past the O	1134082	102401.8
West	East	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	Lane of Pri	1134035	102365.8
East	West	Inattention	None	None	None	None	None	None	None	None	None	None	None	None	None	None	Lane of Pri	1134035	102365.8
West	East	Did Not Grant RW to Vehicle	None	None	None	None	None	None	None	None	None	None	None	None	None	None	Lane of Pri	1134036	102366.8
West	East	Disregard Traffic Sign and Signals	None	None	None	None	None	None	None	None	None	None	None	None	None	None	Lane of Pri	1134036	102366.8
West	South	Exceeding Reas. Safe Speed	None	None	None	None	None	None	None	None	None	None	None	None	None	None	Lane of Pri	1132562	102384.2
East	East	Other Contributing Circ Not Listed	None	None	None	None	None	None	None	None	None	None	None	None	None	None	Lane of Pri	1134549	102354.6
South	North	None	Did Not Grant RW to Vehicle	None	None	None	None	None	None	None	None	None	None	None	None	None	Lane of Pri	1134558	102354.5
West	East	Under Influence of Alcohol	None	None	None	None	None	None	None	None	None	None	None	None	None	None	Past the O	1134792	102350.2

Appendix C Existing Operations Worksheets

Timings

1: SE 192nd & SE 15th St

Vancouver Innovation Center

Existing AM Peak Hour Conditions

									
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	117	37	24	52	41	38	540	28	550
Future Volume (vph)	117	37	24	52	41	38	540	28	550
Turn Type	Prot	NA	Prot	NA	pm+ov	Prot	NA	Prot	NA
Protected Phases	5	2	1	6	3	7	4	3	8
Permitted Phases					6				
Detector Phase	5	2	1	6	3	7	4	3	8
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	15.0	5.0	15.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	20.0	10.0	20.0
Total Split (s)	20.0	29.0	20.0	29.0	14.0	15.0	37.0	14.0	36.0
Total Split (%)	20.0%	29.0%	20.0%	29.0%	14.0%	15.0%	37.0%	14.0%	36.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	None	Max
Act Effect Green (s)	10.8	16.9	5.7	9.8	18.8	6.3	57.4	6.0	59.1
Actuated g/C Ratio	0.11	0.17	0.06	0.10	0.19	0.06	0.57	0.06	0.59
v/c Ratio	0.71	0.23	0.28	0.33	0.13	0.39	0.32	0.33	0.36
Control Delay	62.4	21.8	52.5	44.1	2.8	59.1	12.5	53.7	15.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.4	21.8	52.5	44.1	2.8	59.1	12.5	53.7	15.3
LOS	E	C	D	D	A	E	B	D	B
Approach Delay		47.9		31.2			15.5		17.0
Approach LOS		D		C			B		B

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 9 (9%), Referenced to phase 4:NBT, Start of Green

Natural Cycle: 50

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.71

Intersection Signal Delay: 21.2

Intersection LOS: C

Intersection Capacity Utilization 49.0%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 1: SE 192nd & SE 15th St

			
Ø1	Ø2	Ø3	Ø4 (R)
20 s	29 s	14 s	37 s
			
Ø5	Ø6	Ø7	Ø8
20 s	29 s	15 s	36 s

HCM 6th Signalized Intersection Summary

1: SE 192nd & SE 15th St

Vancouver Innovation Center

Existing AM Peak Hour Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	117	37	28	24	52	41	38	540	13	28	550	67
Future Volume (veh/h)	117	37	28	24	52	41	38	540	13	28	550	67
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1900	1796	1781	1841	1870	1856	1841	1900	1737	1767	1856
Adj Flow Rate, veh/h	133	42	1	27	59	0	43	614	14	32	625	69
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	3	0	7	8	4	2	3	4	0	11	9	3
Cap, veh/h	162	215	5	45	93	127	62	2194	50	49	1898	209
Arrive On Green	0.09	0.12	0.12	0.03	0.05	0.00	0.07	1.00	1.00	0.03	0.62	0.62
Sat Flow, veh/h	1767	1848	44	1697	1841	1585	1767	3493	80	1654	3048	336
Grp Volume(v), veh/h	133	0	43	27	59	0	43	307	321	32	344	350
Grp Sat Flow(s),veh/h/ln	1767	0	1892	1697	1841	1585	1767	1749	1824	1654	1678	1706
Q Serve(g_s), s	7.4	0.0	2.1	1.6	3.1	0.0	2.4	0.0	0.0	1.9	9.7	9.8
Cycle Q Clear(g_c), s	7.4	0.0	2.1	1.6	3.1	0.0	2.4	0.0	0.0	1.9	9.7	9.8
Prop In Lane	1.00		0.02	1.00		1.00	1.00		0.04	1.00		0.20
Lane Grp Cap(c), veh/h	162	0	220	45	93	127	62	1098	1146	49	1045	1062
V/C Ratio(X)	0.82	0.00	0.20	0.60	0.63	0.00	0.70	0.28	0.28	0.66	0.33	0.33
Avail Cap(c_a), veh/h	265	0	454	254	442	427	177	1098	1146	149	1045	1062
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	0.95	0.95	0.95	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.6	0.0	40.0	48.2	46.5	0.0	46.0	0.0	0.0	48.0	9.0	9.0
Incr Delay (d2), s/veh	4.0	0.0	0.2	4.8	2.6	0.0	5.0	0.6	0.6	5.5	0.8	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	6.0	0.0	1.7	1.3	2.7	0.0	1.9	0.3	0.3	1.5	6.0	6.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.6	0.0	40.1	52.9	49.2	0.0	51.0	0.6	0.6	53.5	9.8	9.8
LnGrp LOS	D	A	D	D	D	A	D	A	A	D	A	A
Approach Vol, veh/h		176			86			671			726	
Approach Delay, s/veh		46.5			50.3			3.8			11.7	
Approach LOS		D			D			A			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.6	16.6	7.9	67.8	14.2	10.1	8.5	67.3				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	15.0	24.0	9.0	32.0	15.0	24.0	10.0	31.0				
Max Q Clear Time (g_c+I1), s	3.6	4.1	3.9	2.0	9.4	5.1	4.4	11.8				
Green Ext Time (p_c), s	0.0	0.0	0.0	1.1	0.0	0.1	0.0	1.3				
Intersection Summary												
HCM 6th Ctrl Delay			14.2									
HCM 6th LOS			B									

Timings
2: SE 20th St & SE 192nd Ave

Vancouver Innovation Center
Existing AM Peak Hour Conditions

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	73	140	78	127	36	419	73	438
Future Volume (vph)	73	140	78	127	36	419	73	438
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	5	2	1	6	7	4	3	8
Permitted Phases								
Detector Phase	5	2	1	6	7	4	3	8
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	20.0	5.0	20.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	25.0	10.0	25.0
Total Split (s)	17.0	29.0	17.0	29.0	15.0	39.0	15.0	39.0
Total Split (%)	17.0%	29.0%	17.0%	29.0%	15.0%	39.0%	15.0%	39.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	Min	C-Max	None	Max
Act Effct Green (s)	6.8	15.6	6.9	15.7	7.0	52.5	8.9	52.4
Actuated g/C Ratio	0.07	0.16	0.07	0.16	0.07	0.52	0.09	0.52
v/c Ratio	0.35	0.73	0.36	0.75	0.34	0.33	0.51	0.31
Control Delay	48.2	50.7	48.2	50.0	68.1	5.9	54.0	20.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.2	50.7	48.2	50.0	68.1	5.9	54.0	20.7
LOS	D	D	D	D	E	A	D	C
Approach Delay		50.0		49.5		9.9		25.0
Approach LOS		D		D		A		C

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 98 (98%), Referenced to phase 4:NBT, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.75

Intersection Signal Delay: 28.1

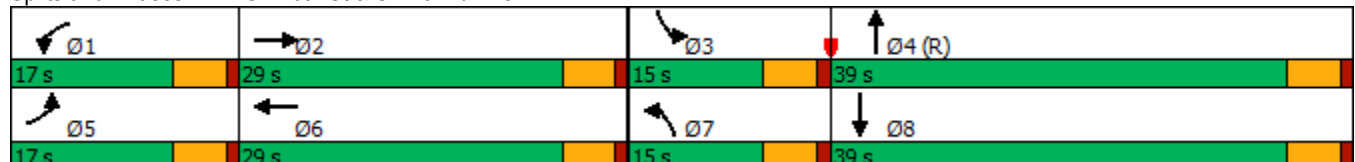
Intersection LOS: C

Intersection Capacity Utilization 54.8%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 2: SE 20th St & SE 192nd Ave



HCM 6th Signalized Intersection Summary

2: SE 20th St & SE 192nd Ave

Vancouver Innovation Center
Existing AM Peak Hour Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	73	140	56	78	127	78	36	419	107	73	438	59
Future Volume (veh/h)	73	140	56	78	127	78	36	419	107	73	438	59
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1900	1841	1885	1885	1885	1811	1856	1841	1885	1811	1826
Adj Flow Rate, veh/h	81	156	44	87	141	60	40	466	100	81	487	57
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	0	4	1	1	1	6	3	4	1	6	5
Cap, veh/h	153	190	54	159	169	72	86	1628	347	104	1772	207
Arrive On Green	0.04	0.13	0.13	0.05	0.13	0.13	0.05	0.56	0.56	0.06	0.57	0.57
Sat Flow, veh/h	3428	1426	402	3483	1255	534	1725	2890	616	1795	3104	362
Grp Volume(v), veh/h	81	0	200	87	0	201	40	283	283	81	269	275
Grp Sat Flow(s),veh/h/ln	1714	0	1828	1742	0	1789	1725	1763	1744	1795	1721	1746
Q Serve(g_s), s	2.3	0.0	10.6	2.4	0.0	11.0	2.3	8.4	8.5	4.5	8.0	8.0
Cycle Q Clear(g_c), s	2.3	0.0	10.6	2.4	0.0	11.0	2.3	8.4	8.5	4.5	8.0	8.0
Prop In Lane	1.00		0.22	1.00		0.30	1.00		0.35	1.00		0.21
Lane Grp Cap(c), veh/h	153	0	244	159	0	240	86	993	982	104	982	997
V/C Ratio(X)	0.53	0.00	0.82	0.55	0.00	0.84	0.46	0.29	0.29	0.78	0.27	0.28
Avail Cap(c_a), veh/h	411	0	439	418	0	429	172	993	982	180	982	997
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.94	0.94	0.94
Uniform Delay (d), s/veh	46.7	0.0	42.2	46.7	0.0	42.2	46.2	11.4	11.4	46.5	10.9	10.9
Incr Delay (d2), s/veh	1.0	0.0	2.6	1.1	0.0	3.0	1.4	0.7	0.7	4.4	0.6	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.8	0.0	8.4	1.9	0.0	8.5	1.8	5.7	5.7	3.7	5.3	5.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.8	0.0	44.8	47.8	0.0	45.2	47.6	12.1	12.1	50.9	11.6	11.6
LnGrp LOS	D	A	D	D	A	D	D	B	B	D	B	B
Approach Vol, veh/h	281			288			606			625		
Approach Delay, s/veh	45.6			46.0			14.5			16.7		
Approach LOS	D			D			B			B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.6	18.3	10.8	61.3	9.5	18.4	10.0	62.1				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	12.0	24.0	10.0	34.0	12.0	24.0	10.0	34.0				
Max Q Clear Time (g_c+I1), s	4.4	12.6	6.5	10.5	4.3	13.0	4.3	10.0				
Green Ext Time (p_c), s	0.1	0.5	0.0	2.0	0.1	0.5	0.0	1.9				

Intersection Summary

HCM 6th Ctrl Delay 25.1
HCM 6th LOS C

Notes

User approved pedestrian interval to be less than phase max green.

Intersection						
Int Delay, s/veh	0.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	7	10	558	3	7	595
Future Vol, veh/h	7	10	558	3	7	595
Conflicting Peds, #/hr	0	0	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	125	0	-	-	230	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	20	4	67	0	7
Mvmt Flow	8	11	607	3	8	647
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	950	306	0	0	611	0
Stage 1	610	-	-	-	-	-
Stage 2	340	-	-	-	-	-
Critical Hdwy	6.8	7.3	-	-	4.1	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.5	-	-	2.2	-
Pot Cap-1 Maneuver	262	639	-	-	978	-
Stage 1	510	-	-	-	-	-
Stage 2	698	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	260	638	-	-	977	-
Mov Cap-2 Maneuver	260	-	-	-	-	-
Stage 1	509	-	-	-	-	-
Stage 2	692	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	14.2	0	0.1			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT		
Capacity (veh/h)	-	- 260 638	977	-		
HCM Lane V/C Ratio	-	- 0.029 0.017	0.008	-		
HCM Control Delay (s)	-	- 19.3 10.7	8.7	-		
HCM Lane LOS	-	- C B	A	-		
HCM 95th %tile Q(veh)	-	- 0.1 0.1	0	-		

Timings
5: SE 192nd Ave & SE 34th St

Vancouver Innovation Center
Existing AM Peak Hour Conditions

									
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	66	123	143	95	70	520	290	88	380
Future Volume (vph)	66	123	143	95	70	520	290	88	380
Turn Type	pm+pt	NA	pm+pt	NA	Prot	NA	pm+ov	Prot	NA
Protected Phases	5	2	1	6	7	4	1	3	8
Permitted Phases	2		6				4		
Detector Phase	5	2	1	6	7	4	1	3	8
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	20.0	5.0	5.0	20.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	25.0	10.0	10.0	25.0
Total Split (s)	15.0	36.0	15.0	36.0	15.0	34.0	15.0	15.0	34.0
Total Split (%)	15.0%	36.0%	15.0%	36.0%	15.0%	34.0%	15.0%	15.0%	34.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Max	None	None	Max
Act Effect Green (s)	19.0	11.9	24.1	16.2	6.0	51.8	62.1	9.0	54.8
Actuated g/C Ratio	0.19	0.12	0.24	0.16	0.06	0.52	0.62	0.09	0.55
v/c Ratio	0.31	0.41	0.55	0.27	0.38	0.35	0.30	0.33	0.31
Control Delay	29.0	34.7	35.3	24.8	50.2	18.2	1.8	36.9	11.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.0	34.7	35.3	24.8	50.2	18.2	1.8	36.9	11.1
LOS	C	C	D	C	D	B	A	D	B
Approach Delay		33.0		30.1		15.3			15.2
Approach LOS		C		C		B			B

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 40 (40%), Referenced to phase 4:NBT, Start of Green

Natural Cycle: 55

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.55

Intersection Signal Delay: 19.4

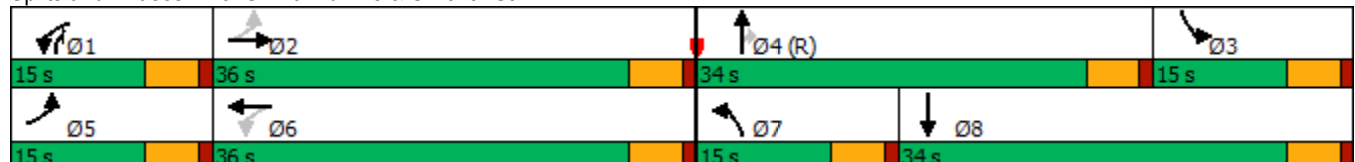
Intersection LOS: B

Intersection Capacity Utilization 56.4%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 5: SE 192nd Ave & SE 34th St



HCM 6th Signalized Intersection Summary

5: SE 192nd Ave & SE 34th St

Vancouver Innovation Center
Existing AM Peak Hour Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	66	123	28	143	95	45	70	520	290	88	380	84
Future Volume (veh/h)	66	123	28	143	95	45	70	520	290	88	380	84
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.99	0.99		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1728	1803	1847	1943	2018	1988	2018	1883	1988	1832	1684	1684
Adj Flow Rate, veh/h	77	143	4	166	110	1	81	605	177	102	442	83
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	8	3	0	5	0	2	0	9	2	1	11	11
Cap, veh/h	266	302	8	315	514	5	167	1037	652	1094	1530	285
Arrive On Green	0.05	0.09	0.09	0.10	0.13	0.13	0.04	0.29	0.29	0.32	0.57	0.57
Sat Flow, veh/h	1646	3402	95	1850	3892	35	3728	3578	1681	3385	2691	502
Grp Volume(v), veh/h	77	72	75	166	54	57	81	605	177	102	262	263
Grp Sat Flow(s),veh/h/ln	1646	1712	1784	1850	1917	2011	1864	1789	1681	1693	1600	1593
Q Serve(g_s), s	4.2	4.0	4.0	7.9	2.5	2.5	2.1	14.5	1.6	2.1	8.4	8.6
Cycle Q Clear(g_c), s	4.2	4.0	4.0	7.9	2.5	2.5	2.1	14.5	1.6	2.1	8.4	8.6
Prop In Lane	1.00		0.05	1.00		0.02	1.00		1.00	1.00		0.32
Lane Grp Cap(c), veh/h	266	152	159	315	253	265	167	1037	652	1094	909	906
V/C Ratio(X)	0.29	0.47	0.47	0.53	0.21	0.21	0.49	0.58	0.27	0.09	0.29	0.29
Avail Cap(c_a), veh/h	341	531	553	319	594	623	373	1037	652	1094	909	906
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.99	0.99	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.5	43.3	43.3	35.3	38.8	38.8	46.6	30.3	8.9	23.6	11.1	11.2
Incr Delay (d2), s/veh	0.2	0.8	0.8	0.7	0.2	0.1	0.8	2.4	1.0	0.0	0.8	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.0	3.0	3.2	6.3	2.1	2.2	1.8	10.4	2.8	1.5	5.2	5.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.7	44.2	44.1	36.1	38.9	38.9	47.5	32.7	9.9	23.6	11.9	12.0
LnGrp LOS	D	D	D	D	D	D	D	C	A	C	B	B
Approach Vol, veh/h		224			277			863			627	
Approach Delay, s/veh		42.3			37.2			29.4			13.8	
Approach LOS		D			D			C			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.8	13.9	37.3	34.0	10.5	18.2	9.5	61.9				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	10.0	31.0	10.0	29.0	10.0	31.0	10.0	29.0				
Max Q Clear Time (g_c+I1), s	9.9	6.0	4.1	16.5	6.2	4.5	4.1	10.6				
Green Ext Time (p_c), s	0.0	0.2	0.0	1.3	0.0	0.2	0.0	0.9				
Intersection Summary												
HCM 6th Ctrl Delay			27.0									
HCM 6th LOS			C									

Timings

6: SE Hiddenbrook Dr & SE 34th St

Vancouver Innovation Center

Existing AM Peak Hour Conditions

									
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	36	218	25	189	63	1	4	0	2
Future Volume (vph)	36	218	25	189	63	1	4	0	2
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA	Perm
Protected Phases	5	2	1	6		8		4	
Permitted Phases					8		4		4
Detector Phase	5	2	1	6	8	8	4	4	4
Switch Phase									
Minimum Initial (s)	5.0	15.0	5.0	15.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	27.0	10.0	27.0	32.0	32.0	34.0	34.0	34.0
Total Split (s)	10.0	85.0	10.0	85.0	35.0	35.0	35.0	35.0	35.0
Total Split (%)	7.7%	65.4%	7.7%	65.4%	26.9%	26.9%	26.9%	26.9%	26.9%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					
Recall Mode	None	Min	None	Min	None	None	None	None	None
Act Effect Green (s)	5.5	24.3	5.5	22.3	8.8	8.8		8.8	8.8
Actuated g/C Ratio	0.13	0.58	0.13	0.53	0.21	0.21		0.21	0.21
v/c Ratio	0.18	0.15	0.13	0.15	0.27	0.13		0.02	0.01
Control Delay	24.1	8.4	24.0	9.5	16.0	6.1		13.2	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay	24.1	8.4	24.0	9.5	16.0	6.1		13.2	0.0
LOS	C	A	C	A	B	A		B	A
Approach Delay		10.4		10.9		12.2		9.5	
Approach LOS		B		B		B		A	

Intersection Summary

Cycle Length: 130

Actuated Cycle Length: 41.8

Natural Cycle: 75

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.27

Intersection Signal Delay: 10.9

Intersection LOS: B

Intersection Capacity Utilization 39.9%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 6: SE Hiddenbrook Dr & SE 34th St

		
10 s	85 s	35 s
		
10 s	85 s	35 s

HCM 6th Signalized Intersection Summary

6: SE Hiddenbrook Dr & SE 34th St

Vancouver Innovation Center
Existing AM Peak Hour Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	36	218	24	25	189	36	63	1	38	4	0	2
Future Volume (veh/h)	36	218	24	25	189	36	63	1	38	4	0	2
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1841	1900	1876	1802	1876	1832	1876	1876	1900	1900	1900
Adj Flow Rate, veh/h	44	269	19	31	233	24	78	1	0	5	0	0
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	0	4	0	0	5	0	3	0	0	0	0	0
Cap, veh/h	90	1493	105	67	1374	140	320	150	0	322	0	129
Arrive On Green	0.05	0.45	0.45	0.04	0.44	0.44	0.08	0.08	0.00	0.08	0.00	0.00
Sat Flow, veh/h	1810	3314	233	1787	3136	320	1388	1876	0	1430	0	1610
Grp Volume(v), veh/h	44	141	147	31	126	131	78	1	0	5	0	0
Grp Sat Flow(s),veh/h/ln	1810	1749	1798	1787	1712	1743	1388	1876	0	1430	0	1610
Q Serve(g_s), s	0.8	1.7	1.7	0.6	1.6	1.6	1.7	0.0	0.0	0.1	0.0	0.0
Cycle Q Clear(g_c), s	0.8	1.7	1.7	0.6	1.6	1.6	1.9	0.0	0.0	0.1	0.0	0.0
Prop In Lane	1.00		0.13	1.00		0.18	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	90	788	810	67	750	764	320	150	0	322	0	129
V/C Ratio(X)	0.49	0.18	0.18	0.47	0.17	0.17	0.24	0.01	0.00	0.02	0.00	0.00
Avail Cap(c_a), veh/h	261	4031	4144	257	3947	4019	1409	1622	0	1450	0	1392
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	16.1	5.7	5.7	16.4	5.9	5.9	15.5	14.7	0.0	14.8	0.0	0.0
Incr Delay (d2), s/veh	1.5	0.0	0.0	1.9	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.5	0.6	0.6	0.4	0.5	0.5	0.9	0.0	0.0	0.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.6	5.7	5.7	18.2	6.0	6.0	15.7	14.7	0.0	14.8	0.0	0.0
LnGrp LOS	B	A	A	B	A	A	B	B	A	B	A	A
Approach Vol, veh/h	332				288				79			
Approach Delay, s/veh	7.3				7.3				15.7			
Approach LOS	A				A				B			
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.3	20.6		7.8	6.7	20.2		7.8				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	5.0	80.0		30.0	5.0	80.0		30.0				
Max Q Clear Time (g_c+I1), s	2.6	3.7		2.1	2.8	3.6		3.9				
Green Ext Time (p_c), s	0.0	0.5		0.0	0.0	0.4		0.0				
Intersection Summary												
HCM 6th Ctrl Delay	8.3											
HCM 6th LOS	A											

Intersection												
Int Delay, s/veh	3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	137	261	11	5	243	6	29	0	16	1	0	15
Future Vol, veh/h	137	261	11	5	243	6	29	0	16	1	0	15
Conflicting Peds, #/hr	3	0	3	3	0	3	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	140	-	-	95	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	3	3	0	0	5	0	0	0	0	0	0	27
Mvmt Flow	161	307	13	6	286	7	34	0	19	1	0	18

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	296	0	0	323	0	0	794	947	163	781	950	150
Stage 1	-	-	-	-	-	-	639	639	-	305	305	-
Stage 2	-	-	-	-	-	-	155	308	-	476	645	-
Critical Hdwy	4.16	-	-	4.1	-	-	7.5	6.5	6.9	7.5	6.5	7.44
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Follow-up Hdwy	2.23	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.57
Pot Cap-1 Maneuver	1255	-	-	1248	-	-	282	263	859	288	262	796
Stage 1	-	-	-	-	-	-	436	474	-	685	666	-
Stage 2	-	-	-	-	-	-	838	664	-	544	471	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1251	-	-	1244	-	-	247	226	857	252	226	794
Mov Cap-2 Maneuver	-	-	-	-	-	-	247	226	-	252	226	-
Stage 1	-	-	-	-	-	-	379	411	-	595	661	-
Stage 2	-	-	-	-	-	-	815	659	-	464	409	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	2.8			0.2			17.9			10.2		
HCM LOS							C			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	331	1251	-	-	1244	-	-	252	794
HCM Lane V/C Ratio	0.16	0.129	-	-	0.005	-	-	0.005	0.022
HCM Control Delay (s)	17.9	8.3	-	-	7.9	-	-	19.4	9.6
HCM Lane LOS	C	A	-	-	A	-	-	C	A
HCM 95th %tile Q(veh)	0.6	0.4	-	-	0	-	-	0	0.1

Timings
8: SE 176th Ave & SE 34th St

Vancouver Innovation Center
Existing AM Peak Hour Conditions

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	45	348	2	242	14	5	57	3
Future Volume (vph)	45	348	2	242	14	5	57	3
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	Perm	NA
Protected Phases	5	2	1	6		8		4
Permitted Phases	2		6		8		4	
Detector Phase	5	2	1	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	5.0	15.0	5.0	15.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	24.0	10.0	28.0	33.0	33.0	32.0	32.0
Total Split (s)	15.0	45.0	15.0	45.0	25.0	25.0	25.0	25.0
Total Split (%)	17.6%	52.9%	17.6%	52.9%	29.4%	29.4%	29.4%	29.4%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lead	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	Min	None	Min	None	None	None	None
Act Effct Green (s)	24.9	22.8	24.7	21.3	8.7	8.7	8.7	8.7
Actuated g/C Ratio	0.61	0.56	0.61	0.53	0.21	0.21	0.21	0.21
v/c Ratio	0.08	0.21	0.00	0.19	0.06	0.03	0.22	0.33
Control Delay	6.7	9.5	7.0	9.5	13.4	10.6	15.0	5.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.7	9.5	7.0	9.5	13.4	10.6	15.0	5.5
LOS	A	A	A	A	B	B	B	A
Approach Delay		9.2		9.5		12.2		8.5
Approach LOS		A		A		B		A

Intersection Summary

Cycle Length: 85

Actuated Cycle Length: 40.5

Natural Cycle: 75

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.33

Intersection Signal Delay: 9.2

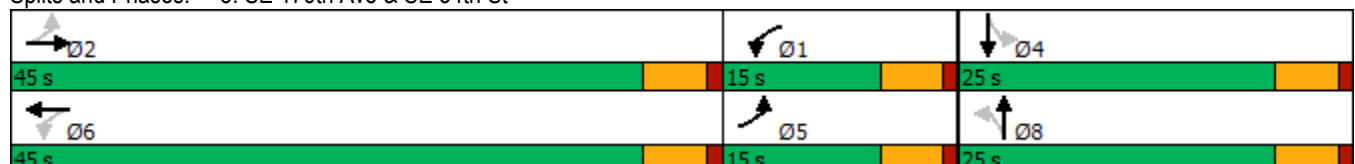
Intersection LOS: A

Intersection Capacity Utilization 41.3%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 8: SE 176th Ave & SE 34th St



HCM 6th Signalized Intersection Summary

8: SE 176th Ave & SE 34th St

Vancouver Innovation Center

Existing AM Peak Hour Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	348	2	2	242	43	14	5	4	57	3	122
Future Volume (veh/h)	45	348	2	2	242	43	14	5	4	57	3	122
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.99		1.00	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1767	1856	1900	1900	1811	1826	1900	1900	1530	1870	1900	1885
Adj Flow Rate, veh/h	53	409	1	2	285	30	16	6	0	67	4	3
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	9	3	0	0	6	5	0	0	25	2	0	1
Cap, veh/h	657	1510	4	648	1321	138	343	199	0	342	105	79
Arrive On Green	0.06	0.42	0.42	0.06	0.42	0.42	0.10	0.10	0.00	0.10	0.10	0.10
Sat Flow, veh/h	1682	3608	9	1810	3142	328	1415	1900	0	1394	1004	753
Grp Volume(v), veh/h	53	200	210	2	155	160	16	6	0	67	0	7
Grp Sat Flow(s),veh/h/ln	1682	1763	1854	1810	1721	1750	1415	1900	0	1394	0	1757
Q Serve(g_s), s	0.0	2.7	2.7	0.0	2.1	2.1	0.4	0.1	0.0	1.6	0.0	0.1
Cycle Q Clear(g_c), s	0.0	2.7	2.7	0.0	2.1	2.1	0.5	0.1	0.0	1.7	0.0	0.1
Prop In Lane	1.00		0.00	1.00		0.19	1.00		0.00	1.00		0.43
Lane Grp Cap(c), veh/h	657	738	776	648	724	736	343	199	0	342	0	184
V/C Ratio(X)	0.08	0.27	0.27	0.00	0.21	0.22	0.05	0.03	0.00	0.20	0.00	0.04
Avail Cap(c_a), veh/h	1030	1964	2065	1044	1917	1949	984	1058	0	973	0	978
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	6.4	6.8	6.8	6.4	6.6	6.6	14.7	14.4	0.0	15.2	0.0	14.5
Incr Delay (d2), s/veh	0.0	0.1	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.3	1.0	1.1	0.0	0.8	0.8	0.2	0.1	0.0	0.8	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.5	6.9	6.9	6.4	6.7	6.7	14.7	14.5	0.0	15.3	0.0	14.5
LnGrp LOS	A	A	A	A	A	A	B	B	A	B	A	B
Approach Vol, veh/h		463			317			22			74	
Approach Delay, s/veh		6.9			6.7			14.6			15.2	
Approach LOS		A			A			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.1	20.0		8.8	7.1	20.1		8.8				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	10.0	40.0		20.0	10.0	40.0		20.0				
Max Q Clear Time (g_c+I1), s	2.0	4.7		3.7	2.0	4.1		2.5				
Green Ext Time (p_c), s	0.0	1.4		0.1	0.0	1.1		0.0				

Intersection Summary

HCM 6th Ctrl Delay	7.7
HCM 6th LOS	A

Notes

User approved pedestrian interval to be less than phase max green.

Intersection						
Int Delay, s/veh	0.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	4	10	4	105	167	11
Future Vol, veh/h	4	10	4	105	167	11
Conflicting Peds, #/hr	0	2	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	80	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	0	10	0	2	1	18
Mvmt Flow	5	12	5	124	196	13
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	337	205	209	0	-	0
Stage 1	203	-	-	-	-	-
Stage 2	134	-	-	-	-	-
Critical Hdwy	6.4	6.3	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.39	2.2	-	-	-
Pot Cap-1 Maneuver	663	816	1374	-	-	-
Stage 1	836	-	-	-	-	-
Stage 2	897	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	660	814	1374	-	-	-
Mov Cap-2 Maneuver	660	-	-	-	-	-
Stage 1	833	-	-	-	-	-
Stage 2	897	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	9.8	0.3		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1374	-	763	-	-	
HCM Lane V/C Ratio	0.003	-	0.022	-	-	
HCM Control Delay (s)	7.6	-	9.8	-	-	
HCM Lane LOS	A	-	A	-	-	
HCM 95th %tile Q(veh)	0	-	0.1	-	-	

Intersection

Intersection Delay, s/veh	11.1
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	195	20	56	235	11	25	58	47	0	55	9
Future Vol, veh/h	9	195	20	56	235	11	25	58	47	0	55	9
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	0	4	10	4	1	9	4	3	0	0	0	0
Mvmt Flow	10	214	22	62	258	12	27	64	52	0	60	10
Number of Lanes	1	1	0	1	1	0	1	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	2	2
HCM Control Delay	11.4	11.5	10	10.1
HCM LOS	B	B	A	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	100%	0%	100%	0%	100%	0%	0%
Vol Thru, %	0%	55%	0%	91%	0%	96%	86%
Vol Right, %	0%	45%	0%	9%	0%	4%	14%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	25	105	9	215	56	246	64
LT Vol	25	0	9	0	56	0	0
Through Vol	0	58	0	195	0	235	55
RT Vol	0	47	0	20	0	11	9
Lane Flow Rate	27	115	10	236	62	270	70
Geometry Grp	7	7	7	7	7	7	6
Degree of Util (X)	0.051	0.189	0.017	0.366	0.103	0.41	0.122
Departure Headway (Hd)	6.732	5.892	6.086	5.584	6.049	5.461	6.224
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	533	609	591	647	595	662	576
Service Time	4.463	3.623	3.794	3.291	3.756	3.168	4.258
HCM Lane V/C Ratio	0.051	0.189	0.017	0.365	0.104	0.408	0.122
HCM Control Delay	9.8	10	8.9	11.5	9.5	11.9	10.1
HCM Lane LOS	A	A	A	B	A	B	B
HCM 95th-tile Q	0.2	0.7	0.1	1.7	0.3	2	0.4

Timings
11: SE 164th Ave & SE 29th St

Vancouver Innovation Center
Existing AM Peak Hour Conditions

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	29	5	35	38	12	28	21	979	14	730
Future Volume (vph)	29	5	35	38	12	28	21	979	14	730
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Prot	NA
Protected Phases		2			6		7	4	3	8
Permitted Phases	2		2	6		6				
Detector Phase	2	2	2	6	6	6	7	4	3	8
Switch Phase										
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	5.0	15.0	5.0	15.0
Minimum Split (s)	39.0	39.0	39.0	38.0	38.0	38.0	10.0	32.0	10.0	32.0
Total Split (s)	39.0	39.0	39.0	39.0	39.0	39.0	17.0	64.0	17.0	64.0
Total Split (%)	32.5%	32.5%	32.5%	32.5%	32.5%	32.5%	14.2%	53.3%	14.2%	53.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag							Lead	Lag	Lead	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	None	C-Max
Act Effct Green (s)	14.6	14.6	14.6	14.6	14.6	14.6	5.6	95.1	5.3	92.8
Actuated g/C Ratio	0.12	0.12	0.12	0.12	0.12	0.12	0.05	0.79	0.04	0.77
v/c Ratio	0.18	0.02	0.15	0.24	0.07	0.12	0.26	0.26	0.20	0.20
Control Delay	46.2	40.2	3.9	47.7	42.3	1.5	39.6	18.0	61.4	6.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.2	40.2	3.9	47.7	42.3	1.5	39.6	18.0	61.4	6.3
LOS	D	D	A	D	D	A	D	B	E	A
Approach Delay		24.4			30.5			18.4		7.3
Approach LOS		C			C			B		A

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 85 (71%), Referenced to phase 8:SBT, Start of Green

Natural Cycle: 85

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.26

Intersection Signal Delay: 14.7

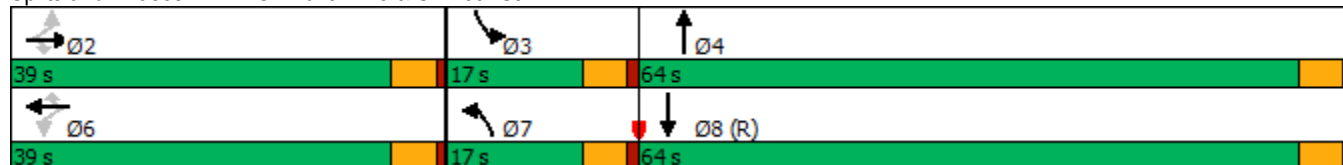
Intersection LOS: B

Intersection Capacity Utilization 51.7%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 11: SE 164th Ave & SE 29th St



HCM 6th Signalized Intersection Summary

11: SE 164th Ave & SE 29th St

Vancouver Innovation Center
Existing AM Peak Hour Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	5	35	38	12	28	21	979	14	14	730	21
Future Volume (veh/h)	29	5	35	38	12	28	21	979	14	14	730	21
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1900	1856	1856	1648	1900	1900	1870	1796	1796	1856	1826
Adj Flow Rate, veh/h	31	5	2	40	13	2	22	1031	15	15	768	21
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	0	3	3	17	0	0	2	7	7	3	5
Cap, veh/h	160	151	125	168	131	128	39	2577	37	28	2492	68
Arrive On Green	0.08	0.08	0.08	0.08	0.08	0.08	0.02	0.50	0.50	0.02	0.49	0.49
Sat Flow, veh/h	1387	1900	1572	1397	1648	1610	1810	5185	75	1711	5069	138
Grp Volume(v), veh/h	31	5	2	40	13	2	22	677	369	15	511	278
Grp Sat Flow(s),veh/h/ln	1387	1900	1572	1397	1648	1610	1810	1702	1857	1711	1689	1830
Q Serve(g_s), s	2.5	0.3	0.1	3.3	0.9	0.1	1.4	15.0	15.0	1.0	10.9	10.9
Cycle Q Clear(g_c), s	3.4	0.3	0.1	3.6	0.9	0.1	1.4	15.0	15.0	1.0	10.9	10.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.04	1.00		0.08
Lane Grp Cap(c), veh/h	160	151	125	168	131	128	39	1692	923	28	1660	900
V/C Ratio(X)	0.19	0.03	0.02	0.24	0.10	0.02	0.56	0.40	0.40	0.53	0.31	0.31
Avail Cap(c_a), veh/h	443	538	446	453	467	456	181	1692	923	171	1660	900
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.85	0.85	0.85	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.8	51.0	50.9	52.6	51.2	50.9	58.1	19.0	19.0	58.6	18.3	18.3
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.3	0.1	0.0	3.9	0.6	1.1	5.7	0.5	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.6	0.3	0.1	2.1	0.7	0.1	1.3	9.5	10.3	0.9	7.6	8.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.0	51.0	50.9	52.9	51.4	50.9	62.1	19.6	20.1	64.3	18.8	19.2
LnGrp LOS	D	D	D	D	D	D	E	B	C	E	B	B
Approach Vol, veh/h	38			55			1068			804		
Approach Delay, s/veh	52.7			52.4			20.6			19.7		
Approach LOS	D			D			C			B		
Timer - Assigned Phs	2		3	4		6		7	8			
Phs Duration (G+Y+Rc), s	14.5		7.0	64.6		14.5		7.6	64.0			
Change Period (Y+Rc), s	5.0		5.0	5.0		5.0		5.0	5.0			
Max Green Setting (Gmax), s	34.0		12.0	59.0		34.0		12.0	59.0			
Max Q Clear Time (g_c+I1), s	5.4		3.0	17.0		5.6		3.4	12.9			
Green Ext Time (p_c), s	0.0		0.0	4.7		0.1		0.0	3.3			
Intersection Summary												
HCM 6th Ctrl Delay	21.8											
HCM 6th LOS	C											

Timings
12: SE 164th Ave/SE164th Ave & SE 34th Street

Vancouver Innovation Center
Existing AM Peak Hour Conditions

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	26	50	151	318	98	90	103	849	237	141	601
Future Volume (vph)	26	50	151	318	98	90	103	849	237	141	601
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA
Protected Phases	5	2	7	1	6	3	7	4	1	3	8
Permitted Phases			2			6			4		
Detector Phase	5	2	7	1	6	3	7	4	1	3	8
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	20.0	5.0	5.0	20.0
Minimum Split (s)	10.0	33.0	10.0	22.5	32.0	10.0	10.0	31.0	22.5	10.0	28.0
Total Split (s)	20.0	33.0	20.0	25.0	38.0	17.0	20.0	45.0	25.0	17.0	42.0
Total Split (%)	16.7%	27.5%	16.7%	20.8%	31.7%	14.2%	16.7%	37.5%	20.8%	14.2%	35.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes		Yes		Yes	Yes	Yes	Yes		Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	None	None	C-Max
Act Effct Green (s)	5.3	7.5	21.7	20.0	24.2	45.6	11.2	58.1	83.1	16.4	63.3
Actuated g/C Ratio	0.04	0.06	0.18	0.17	0.20	0.38	0.09	0.48	0.69	0.14	0.53
v/c Ratio	0.23	0.51	0.51	1.07	0.29	0.15	0.70	0.56	0.23	0.65	0.27
Control Delay	59.5	69.5	30.2	116.8	42.9	4.8	74.0	25.2	1.6	55.1	15.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.5	69.5	30.2	116.8	42.9	4.8	74.0	25.2	1.6	55.1	15.7
LOS	E	E	C	F	D	A	E	C	A	E	B
Approach Delay		42.3			82.5			24.7			22.9
Approach LOS		D			F			C			C

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 15 (13%), Referenced to phase 8:SBT, Start of Green

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.07

Intersection Signal Delay: 36.5

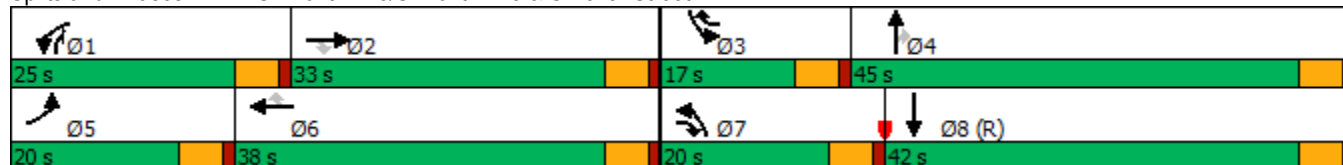
Intersection LOS: D

Intersection Capacity Utilization 59.5%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 12: SE 164th Ave/SE164th Ave & SE 34th Street



HCM 6th Signalized Intersection Summary

12: SE 164th Ave/SE164th Ave & SE 34th Street

Vancouver Innovation Center
Existing AM Peak Hour Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	26	50	151	318	98	90	103	849	237	141	601	34
Future Volume (veh/h)	26	50	151	318	98	90	103	849	237	141	601	34
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1565	1758	1803	1870	1885	1841	1791	1776	1746	1806	1761	1761
Adj Flow Rate, veh/h	29	56	108	353	109	22	114	943	157	157	668	35
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	19	6	3	2	1	4	1	2	4	0	3	3
Cap, veh/h	75	143	248	333	419	503	138	1125	740	172	1649	86
Arrive On Green	0.03	0.08	0.08	0.17	0.22	0.22	0.08	0.33	0.33	0.03	0.12	0.12
Sat Flow, veh/h	2892	1758	1528	1995	1885	1560	1706	3375	1480	1720	4679	244
Grp Volume(v), veh/h	29	56	108	353	109	22	114	943	157	157	457	246
Grp Sat Flow(s),veh/h/ln	1446	1758	1528	998	1885	1560	1706	1687	1480	1720	1603	1717
Q Serve(g_s), s	1.2	3.6	7.6	20.0	5.7	1.2	7.9	31.0	7.1	10.9	15.9	16.0
Cycle Q Clear(g_c), s	1.2	3.6	7.6	20.0	5.7	1.2	7.9	31.0	7.1	10.9	15.9	16.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.14
Lane Grp Cap(c), veh/h	75	143	248	333	419	503	138	1125	740	172	1130	605
V/C Ratio(X)	0.39	0.39	0.44	1.06	0.26	0.04	0.83	0.84	0.21	0.91	0.40	0.41
Avail Cap(c_a), veh/h	362	410	480	333	518	585	213	1125	740	172	1130	605
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.99	0.99	0.99
Uniform Delay (d), s/veh	57.5	52.3	45.3	50.0	38.5	28.0	54.3	37.0	16.8	57.5	41.3	41.4
Incr Delay (d2), s/veh	1.2	0.6	0.4	66.6	0.1	0.0	8.1	7.5	0.7	43.3	1.1	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.8	2.9	5.2	12.9	4.7	0.8	6.6	19.5	4.4	11.4	11.3	12.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.7	52.9	45.8	116.6	38.6	28.0	62.5	44.5	17.4	100.8	42.4	43.4
LnGrp LOS	E	D	D	F	D	C	E	D	B	F	D	D
Approach Vol, veh/h	193				484				1214			
Approach Delay, s/veh	49.8				95.0				42.7			
Approach LOS	D				F				D			
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	25.0	14.8	17.0	45.0	8.1	31.7	14.7	47.3				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	20.0	28.0	12.0	40.0	15.0	33.0	15.0	37.0				
Max Q Clear Time (g_c+I1), s	22.0	9.6	12.9	33.0	3.2	7.7	9.9	18.0				
Green Ext Time (p_c), s	0.0	0.1	0.0	2.7	0.0	0.2	0.0	2.6				
Intersection Summary												
HCM 6th Ctrl Delay	55.7											
HCM 6th LOS	E											

Timings
1: SE 192nd & SE 15th St

Vancouver Innovation Center
Existing PM Peak Hour Conditions

									
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	88	74	33	67	107	55	916	47	920
Future Volume (vph)	88	74	33	67	107	55	916	47	920
Turn Type	Prot	NA	Prot	NA	pm+ov	Prot	NA	Prot	NA
Protected Phases	5	2	1	6	3	7	4	3	8
Permitted Phases					6				
Detector Phase	5	2	1	6	3	7	4	3	8
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	15.0	5.0	15.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	20.0	10.0	20.0
Total Split (s)	15.0	29.0	15.0	29.0	16.0	14.0	40.0	16.0	42.0
Total Split (%)	15.0%	29.0%	15.0%	29.0%	16.0%	14.0%	40.0%	16.0%	42.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	None	Max
Act Effct Green (s)	8.2	14.5	6.0	10.2	16.9	6.8	56.9	6.6	58.7
Actuated g/C Ratio	0.08	0.14	0.06	0.10	0.17	0.07	0.57	0.07	0.59
v/c Ratio	0.68	0.52	0.33	0.39	0.34	0.49	0.51	0.43	0.54
Control Delay	67.9	33.3	53.1	45.3	11.9	54.2	14.8	55.3	17.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.9	33.3	53.1	45.3	11.9	54.2	14.8	55.3	17.5
LOS	E	C	D	D	B	D	B	E	B
Approach Delay		46.8		29.3			16.9		19.2
Approach LOS		D		C			B		B

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 98 (98%), Referenced to phase 4:NBT, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.68

Intersection Signal Delay: 21.6

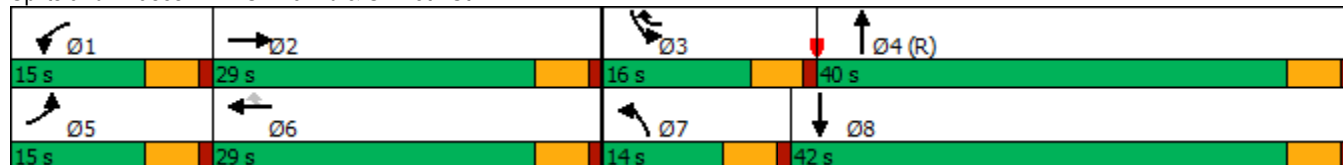
Intersection LOS: C

Intersection Capacity Utilization 61.6%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 1: SE 192nd & SE 15th St



HCM 6th Signalized Intersection Summary

1: SE 192nd & SE 15th St

Vancouver Innovation Center

Existing PM Peak Hour Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	88	74	65	33	67	107	55	916	28	47	920	103
Future Volume (veh/h)	88	74	65	33	67	107	55	916	28	47	920	103
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1826	1885	1900	1900	1856	1900	1900	1870	1900	1900	1870	1870
Adj Flow Rate, veh/h	96	80	32	36	73	13	60	996	29	51	1000	105
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	1	0	0	3	0	0	2	0	0	2	2
Cap, veh/h	120	131	52	57	119	162	77	2216	65	69	2024	212
Arrive On Green	0.07	0.10	0.10	0.03	0.06	0.06	0.09	1.00	1.00	0.04	0.62	0.62
Sat Flow, veh/h	1739	1279	512	1810	1856	1572	1810	3526	103	1810	3244	341
Grp Volume(v), veh/h	96	0	112	36	73	13	60	502	523	51	548	557
Grp Sat Flow(s),veh/h/ln	1739	0	1791	1810	1856	1572	1810	1777	1851	1810	1777	1808
Q Serve(g_s), s	5.4	0.0	6.0	2.0	3.8	0.7	3.2	0.0	0.0	2.8	16.8	16.8
Cycle Q Clear(g_c), s	5.4	0.0	6.0	2.0	3.8	0.7	3.2	0.0	0.0	2.8	16.8	16.8
Prop In Lane	1.00		0.29	1.00		1.00	1.00		0.06	1.00		0.19
Lane Grp Cap(c), veh/h	120	0	183	57	119	162	77	1117	1164	69	1108	1128
V/C Ratio(X)	0.80	0.00	0.61	0.63	0.61	0.08	0.78	0.45	0.45	0.74	0.49	0.49
Avail Cap(c_a), veh/h	174	0	430	181	445	438	163	1117	1164	199	1108	1128
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	0.77	0.77	0.77	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.8	0.0	43.0	47.8	45.6	40.6	45.3	0.0	0.0	47.6	10.2	10.2
Incr Delay (d2), s/veh	9.3	0.0	1.2	4.2	1.9	0.1	4.8	1.0	1.0	5.8	1.6	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.7	0.0	4.8	1.7	3.3	0.5	2.7	0.6	0.6	2.4	10.2	10.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.2	0.0	44.2	52.0	47.4	40.7	50.1	1.0	1.0	53.4	11.8	11.8
LnGrp LOS	E	A	D	D	D	D	D	A	A	D	B	B
Approach Vol, veh/h	208			122			1085			1156		
Approach Delay, s/veh	49.3			48.1			3.7			13.6		
Approach LOS	D			D			A			B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.2	15.2	8.8	67.9	11.9	11.4	9.3	67.4				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	10.0	24.0	11.0	35.0	10.0	24.0	9.0	37.0				
Max Q Clear Time (g_c+I1), s	4.0	8.0	4.8	2.0	7.4	5.8	5.2	18.8				
Green Ext Time (p_c), s	0.0	0.1	0.0	2.0	0.0	0.1	0.0	2.2				
Intersection Summary												
HCM 6th Ctrl Delay	14.0											
HCM 6th LOS	B											

Timings
2: SE 192nd Ave & SE 20th St

Vancouver Innovation Center
Existing PM Peak Hour Conditions

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	 		 			 		 
Traffic Volume (vph)	141	141	178	204	114	582	123	665
Future Volume (vph)	141	141	178	204	114	582	123	665
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	5	2	1	6	7	4	3	8
Permitted Phases								
Detector Phase	5	2	1	6	7	4	3	8
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	20.0	5.0	20.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	25.0	10.0	25.0
Total Split (s)	20.0	27.0	20.0	27.0	15.0	35.0	18.0	38.0
Total Split (%)	20.0%	27.0%	20.0%	27.0%	15.0%	35.0%	18.0%	38.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	Min	C-Max	None	Max
Act Effect Green (s)	8.9	16.0	17.7	24.7	9.6	35.4	11.0	36.8
Actuated g/C Ratio	0.09	0.16	0.18	0.25	0.10	0.35	0.11	0.37
v/c Ratio	0.50	0.75	0.32	0.83	0.74	0.62	0.70	0.68
Control Delay	48.8	51.4	37.8	49.4	84.4	17.2	67.9	28.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.8	51.4	37.8	49.4	84.4	17.2	67.9	28.7
LOS	D	D	D	D	F	B	E	C
Approach Delay		50.3		45.5		26.7		34.0
Approach LOS		D		D		C		C

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 93 (93%), Referenced to phase 4:NBT, Start of Green

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.83

Intersection Signal Delay: 36.2

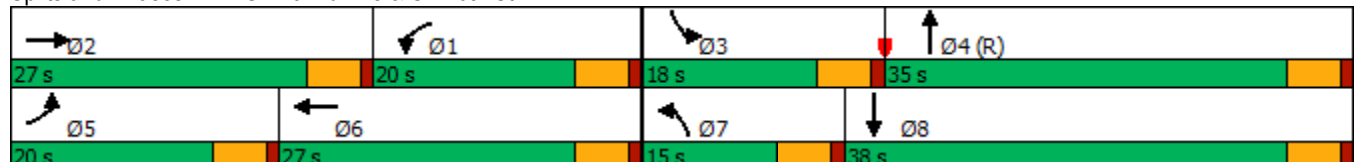
Intersection LOS: D

Intersection Capacity Utilization 68.9%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 2: SE 192nd Ave & SE 20th St



HCM 6th Signalized Intersection Summary

2: SE 192nd Ave & SE 20th St

Vancouver Innovation Center

Existing PM Peak Hour Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	141	141	67	178	204	140	114	582	114	123	665	124
Future Volume (veh/h)	141	141	67	178	204	140	114	582	114	123	665	124
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1885	1900	1900	1870	1900	1885	1900	1885	1870	1885
Adj Flow Rate, veh/h	157	157	54	198	227	129	127	647	110	137	739	121
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	1	0	0	2	0	1	0	1	2	1
Cap, veh/h	229	191	66	495	246	140	161	1292	219	171	1309	214
Arrive On Green	0.07	0.14	0.14	0.14	0.22	0.22	0.09	0.42	0.42	0.10	0.43	0.43
Sat Flow, veh/h	3510	1350	464	3510	1130	642	1810	3062	520	1795	3056	500
Grp Volume(v), veh/h	157	0	211	198	0	356	127	378	379	137	430	430
Grp Sat Flow(s),veh/h/ln	1755	0	1814	1755	0	1772	1810	1791	1791	1795	1777	1780
Q Serve(g_s), s	4.4	0.0	11.3	5.1	0.0	19.7	6.9	15.5	15.5	7.5	18.2	18.2
Cycle Q Clear(g_c), s	4.4	0.0	11.3	5.1	0.0	19.7	6.9	15.5	15.5	7.5	18.2	18.2
Prop In Lane	1.00		0.26	1.00		0.36	1.00		0.29	1.00		0.28
Lane Grp Cap(c), veh/h	229	0	257	495	0	385	161	756	756	171	761	762
V/C Ratio(X)	0.68	0.00	0.82	0.40	0.00	0.92	0.79	0.50	0.50	0.80	0.56	0.56
Avail Cap(c_a), veh/h	527	0	399	527	0	390	181	756	756	233	761	762
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.83	0.83	0.83
Uniform Delay (d), s/veh	45.7	0.0	41.7	39.1	0.0	38.3	44.6	21.2	21.2	44.3	21.5	21.6
Incr Delay (d2), s/veh	1.4	0.0	4.0	0.2	0.0	26.8	16.2	2.4	2.4	7.8	2.5	2.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.4	0.0	8.9	3.9	0.0	16.5	6.7	10.8	10.8	6.4	11.8	11.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.1	0.0	45.7	39.3	0.0	65.1	60.8	23.5	23.6	52.1	24.1	24.1
LnGrp LOS	D	A	D	D	A	E	E	C	C	D	C	C
Approach Vol, veh/h	368			554			884			997		
Approach Delay, s/veh	46.3			55.9			28.9			27.9		
Approach LOS	D			E			C			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	19.1	19.2	14.5	47.2	11.5	26.7	13.9	47.8				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	15.0	22.0	13.0	30.0	15.0	22.0	10.0	33.0				
Max Q Clear Time (g_c+l1), s	7.1	13.3	9.5	17.5	6.4	21.7	8.9	20.2				
Green Ext Time (p_c), s	0.2	0.4	0.1	2.4	0.2	0.1	0.0	2.8				
Intersection Summary												
HCM 6th Ctrl Delay	36.2											
HCM 6th LOS	D											

Intersection						
Int Delay, s/veh	0.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	3	4	853	3	10	887
Future Vol, veh/h	3	4	853	3	10	887
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	125	0	-	-	230	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	1	0	0	1
Mvmt Flow	3	4	948	3	11	986
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1465	476	0	0	951	0
Stage 1	950	-	-	-	-	-
Stage 2	515	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.1	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	121	541	-	-	730	-
Stage 1	341	-	-	-	-	-
Stage 2	570	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	119	541	-	-	730	-
Mov Cap-2 Maneuver	119	-	-	-	-	-
Stage 1	341	-	-	-	-	-
Stage 2	561	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	22.2	0	0.1			
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT		
Capacity (veh/h)	-	- 119 541	730	-		
HCM Lane V/C Ratio	-	- 0.028 0.008	0.015	-		
HCM Control Delay (s)	-	- 36.1 11.7	10	-		
HCM Lane LOS	-	- E B	B	-		
HCM 95th %tile Q(veh)	-	- 0.1 0	0	-		

Timings
5: SE 192nd Ave & SE 34th St

Vancouver Innovation Center
Existing PM Peak Hour Conditions

									
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	100	171	295	153	69	733	134	167	673
Future Volume (vph)	100	171	295	153	69	733	134	167	673
Turn Type	pm+pt	NA	pm+pt	NA	Prot	NA	pm+ov	Prot	NA
Protected Phases	5	2	1	6	7	4	1	3	8
Permitted Phases	2		6				4		
Detector Phase	5	2	1	6	7	4	1	3	8
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	20.0	5.0	5.0	20.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	25.0	10.0	10.0	25.0
Total Split (s)	14.0	32.0	19.0	37.0	13.0	34.0	19.0	15.0	36.0
Total Split (%)	14.0%	32.0%	19.0%	37.0%	13.0%	34.0%	19.0%	15.0%	36.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Max	None	None	Max
Act Effct Green (s)	20.0	12.3	31.0	18.3	5.8	44.0	57.7	10.0	50.2
Actuated g/C Ratio	0.20	0.12	0.31	0.18	0.06	0.44	0.58	0.10	0.50
v/c Ratio	0.42	0.54	0.87	0.38	0.36	0.50	0.15	0.53	0.47
Control Delay	29.3	36.8	52.7	21.8	50.0	23.3	1.7	36.3	13.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.3	36.8	52.7	21.8	50.0	23.3	1.7	36.3	13.2
LOS	C	D	D	C	D	C	A	D	B
Approach Delay		34.5		38.4		22.1			17.4
Approach LOS		C		D		C			B

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 36 (36%), Referenced to phase 4:NBT, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.87

Intersection Signal Delay: 25.3

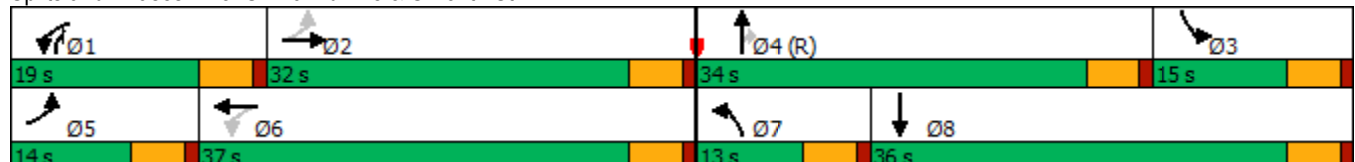
Intersection LOS: C

Intersection Capacity Utilization 67.7%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 5: SE 192nd Ave & SE 34th St



HCM 6th Signalized Intersection Summary

5: SE 192nd Ave & SE 34th St

Vancouver Innovation Center
Existing PM Peak Hour Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	171	57	295	153	99	69	733	134	167	673	75
Future Volume (veh/h)	100	171	57	295	153	99	69	733	134	167	673	75
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.98	1.00		0.99	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1773	1847	1817	2003	2003	2018	2018	1988	2003	1847	1832	1743
Adj Flow Rate, veh/h	109	186	20	321	166	12	75	797	78	182	732	75
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	0	2	1	1	0	0	2	1	0	1	7
Cap, veh/h	305	304	32	387	582	42	163	1095	727	937	1658	170
Arrive On Green	0.07	0.10	0.10	0.14	0.16	0.16	0.04	0.29	0.29	0.27	0.52	0.52
Sat Flow, veh/h	1688	3192	339	1908	3600	258	3728	3777	1689	3413	3182	326
Grp Volume(v), veh/h	109	101	105	321	87	91	75	797	78	182	400	407
Grp Sat Flow(s), veh/h/ln	1688	1755	1776	1908	1903	1955	1864	1889	1689	1706	1741	1768
Q Serve(g_s), s	5.7	5.5	5.7	14.0	4.0	4.1	2.0	19.0	0.7	4.1	14.3	14.3
Cycle Q Clear(g_c), s	5.7	5.5	5.7	14.0	4.0	4.1	2.0	19.0	0.7	4.1	14.3	14.3
Prop In Lane	1.00		0.19	1.00		0.13	1.00		1.00	1.00		0.18
Lane Grp Cap(c), veh/h	305	167	169	387	308	316	163	1095	727	937	907	921
V/C Ratio(X)	0.36	0.60	0.62	0.83	0.28	0.29	0.46	0.73	0.11	0.19	0.44	0.44
Avail Cap(c_a), veh/h	332	474	480	387	609	626	298	1095	727	937	907	921
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.99	0.99	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.9	43.4	43.5	34.3	36.8	36.9	46.7	31.9	6.6	27.8	14.9	14.9
Incr Delay (d2), s/veh	0.3	1.3	1.4	13.1	0.2	0.2	0.7	4.2	0.3	0.0	1.6	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.2	4.3	4.5	12.8	3.3	3.5	1.6	13.8	0.9	2.9	9.4	9.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.2	44.7	44.8	47.4	37.0	37.0	47.4	36.2	6.9	27.8	16.5	16.4
LnGrp LOS	D	D	D	D	D	D	D	D	A	C	B	B
Approach Vol, veh/h		315			499			950			989	
Approach Delay, s/veh		42.1			43.7			34.7			18.5	
Approach LOS		D			D			C			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	19.0	14.5	32.5	34.0	12.4	21.2	9.4	57.1				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	14.0	27.0	10.0	29.0	9.0	32.0	8.0	31.0				
Max Q Clear Time (g_c+I1), s	16.0	7.7	6.1	21.0	7.7	6.1	4.0	16.3				
Green Ext Time (p_c), s	0.0	0.3	0.0	1.5	0.0	0.3	0.0	1.4				
Intersection Summary												
HCM 6th Ctrl Delay			31.4									
HCM 6th LOS			C									
Notes												
User approved pedestrian interval to be less than phase max green.												

Timings

6: SE Hiddenbrook Dr & SE 34th St

Vancouver Innovation Center

Existing PM Peak Hour Conditions

									
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	4	261	34	286	71	1	33	3	58
Future Volume (vph)	4	261	34	286	71	1	33	3	58
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA	Perm
Protected Phases	5	2	1	6		8		4	
Permitted Phases					8		4		4
Detector Phase	5	2	1	6	8	8	4	4	4
Switch Phase									
Minimum Initial (s)	5.0	15.0	5.0	15.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	30.0	10.0	30.0	32.0	32.0	34.0	34.0	34.0
Total Split (s)	10.0	85.0	10.0	85.0	35.0	35.0	35.0	35.0	35.0
Total Split (%)	7.7%	65.4%	7.7%	65.4%	26.9%	26.9%	26.9%	26.9%	26.9%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					
Recall Mode	None	Min	None	Min	None	None	None	None	None
Act Effect Green (s)	5.5	22.0	5.5	24.0	8.6	8.6		8.6	8.6
Actuated g/C Ratio	0.13	0.53	0.13	0.58	0.21	0.21		0.21	0.21
v/c Ratio	0.02	0.20	0.16	0.15	0.28	0.10		0.13	0.16
Control Delay	23.5	8.8	23.6	8.4	16.4	6.8		14.6	5.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay	23.5	8.8	23.6	8.4	16.4	6.8		14.6	5.8
LOS	C	A	C	A	B	A		B	A
Approach Delay		8.9		10.0		13.5		9.1	
Approach LOS		A		A		B		A	

Intersection Summary

Cycle Length: 130

Actuated Cycle Length: 41.2

Natural Cycle: 75

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.28

Intersection Signal Delay: 9.9

Intersection LOS: A

Intersection Capacity Utilization 41.6%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 6: SE Hiddenbrook Dr & SE 34th St

		
10 s	85 s	35 s
		
10 s	85 s	35 s

HCM 6th Signalized Intersection Summary

6: SE Hiddenbrook Dr & SE 34th St

Vancouver Innovation Center

Existing PM Peak Hour Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	261	80	34	286	8	71	1	30	33	3	58
Future Volume (veh/h)	4	261	80	34	286	8	71	1	30	33	3	58
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	0.99		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1870	1841	1832	1847	1876	1817	1876	1832	1900	1900	1900
Adj Flow Rate, veh/h	4	278	53	36	304	7	76	1	3	35	3	7
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	2	4	3	2	0	4	0	3	0	0	0
Cap, veh/h	10	1276	240	73	1629	37	324	47	140	338	21	182
Arrive On Green	0.01	0.43	0.43	0.04	0.46	0.46	0.11	0.11	0.11	0.11	0.11	0.11
Sat Flow, veh/h	1810	2982	560	1745	3506	81	1358	412	1236	1285	189	1603
Grp Volume(v), veh/h	4	164	167	36	152	159	76	0	4	38	0	7
Grp Sat Flow(s),veh/h/ln	1810	1777	1765	1745	1754	1832	1358	0	1648	1474	0	1603
Q Serve(g_s), s	0.1	2.1	2.2	0.7	1.8	1.8	1.9	0.0	0.1	0.6	0.0	0.1
Cycle Q Clear(g_c), s	0.1	2.1	2.2	0.7	1.8	1.8	2.7	0.0	0.1	0.8	0.0	0.1
Prop In Lane	1.00		0.32	1.00		0.04	1.00		0.75	0.92		1.00
Lane Grp Cap(c), veh/h	10	761	756	73	815	851	324	0	187	359	0	182
V/C Ratio(X)	0.41	0.22	0.22	0.49	0.19	0.19	0.23	0.00	0.02	0.11	0.00	0.04
Avail Cap(c_a), veh/h	251	3948	3921	242	3898	4069	1301	0	1373	1407	0	1336
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.8	6.5	6.5	16.9	5.6	5.7	15.8	0.0	14.2	14.5	0.0	14.2
Incr Delay (d2), s/veh	9.6	0.1	0.1	1.9	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.1	0.8	0.8	0.5	0.6	0.6	1.0	0.0	0.0	0.4	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.5	6.5	6.6	18.8	5.7	5.7	15.9	0.0	14.2	14.5	0.0	14.2
LnGrp LOS	C	A	A	B	A	A	B	A	B	B	A	B
Approach Vol, veh/h	335			347			80			45		
Approach Delay, s/veh	6.8			7.0			15.8			14.5		
Approach LOS	A			A			B			B		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.5	20.4		9.1	5.2	21.7		9.1				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	5.0	80.0		30.0	5.0	80.0		30.0				
Max Q Clear Time (g_c+I1), s	2.7	4.2		2.8	2.1	3.8		4.7				
Green Ext Time (p_c), s	0.0	0.6		0.1	0.0	0.5		0.0				
Intersection Summary												
HCM 6th Ctrl Delay	8.2											
HCM 6th LOS	A											

Intersection												
Int Delay, s/veh	1.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	334	32	10	405	0	18	0	7	4	0	108
Future Vol, veh/h	11	334	32	10	405	0	18	0	7	4	0	108
Conflicting Peds, #/hr	6	0	0	0	0	6	0	0	1	1	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	140	-	-	95	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	0	2	0	0	2	0	0	0	0	0	0	0
Mvmt Flow	12	367	35	11	445	0	20	0	8	4	0	119

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	451	0	0	402	0	0	654	882	202	682	899	229
Stage 1	-	-	-	-	-	-	409	409	-	473	473	-
Stage 2	-	-	-	-	-	-	245	473	-	209	426	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.5	6.5	6.9	7.5	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1120	-	-	1168	-	-	356	287	811	340	281	780
Stage 1	-	-	-	-	-	-	596	600	-	546	562	-
Stage 2	-	-	-	-	-	-	743	562	-	779	589	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1114	-	-	1168	-	-	297	280	810	329	274	776
Mov Cap-2 Maneuver	-	-	-	-	-	-	297	280	-	329	274	-
Stage 1	-	-	-	-	-	-	589	593	-	537	554	-
Stage 2	-	-	-	-	-	-	623	554	-	763	583	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.2			0.2			15.8			10.7		
HCM LOS							C			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	361	1114	-	-	1168	-	-	329	776
HCM Lane V/C Ratio	0.076	0.011	-	-	0.009	-	-	0.013	0.153
HCM Control Delay (s)	15.8	8.3	-	-	8.1	-	-	16.1	10.5
HCM Lane LOS	C	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0	0.5

Timings
8: SE 176th Ave & SE 34th St

Vancouver Innovation Center
Existing PM Peak Hour Conditions

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	129	295	9	436	10	6	80	14
Future Volume (vph)	129	295	9	436	10	6	80	14
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	Perm	NA
Protected Phases	5	2	1	6		8		4
Permitted Phases	2		6		8		4	
Detector Phase	5	2	1	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	5.0	15.0	5.0	15.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	24.0	10.0	28.0	33.0	33.0	32.0	32.0
Total Split (s)	15.0	45.0	15.0	45.0	25.0	25.0	25.0	25.0
Total Split (%)	17.6%	52.9%	17.6%	52.9%	29.4%	29.4%	29.4%	29.4%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lead	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	Min	None	Min	None	None	None	None
Act Effct Green (s)	27.0	27.4	24.6	21.4	9.2	9.2	9.2	9.2
Actuated g/C Ratio	0.60	0.61	0.54	0.47	0.20	0.20	0.20	0.20
v/c Ratio	0.24	0.16	0.02	0.34	0.04	0.02	0.30	0.27
Control Delay	9.1	9.2	7.1	12.2	13.9	12.4	17.7	6.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.1	9.2	7.1	12.2	13.9	12.4	17.7	6.7
LOS	A	A	A	B	B	B	B	A
Approach Delay		9.2		12.2		13.2		11.5
Approach LOS		A		B		B		B

Intersection Summary

Cycle Length: 85

Actuated Cycle Length: 45.2

Natural Cycle: 75

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.34

Intersection Signal Delay: 11.0

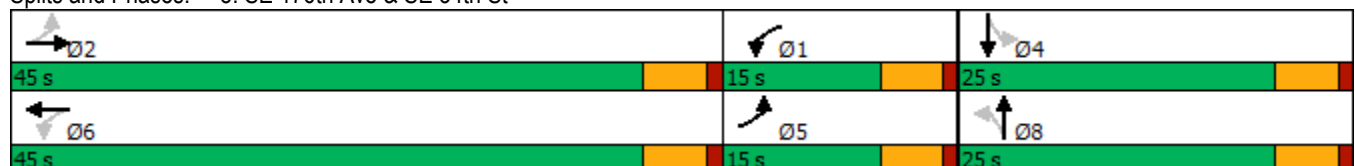
Intersection LOS: B

Intersection Capacity Utilization 45.9%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 8: SE 176th Ave & SE 34th St



HCM 6th Signalized Intersection Summary 8: SE 176th Ave & SE 34th St

Vancouver Innovation Center
Existing PM Peak Hour Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	129	295	13	9	436	86	10	6	2	80	14	88
Future Volume (veh/h)	129	295	13	9	436	86	10	6	2	80	14	88
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1885	1870	1900	1900	1885	1885	1900	1900	1900	1885	1900	1900
Adj Flow Rate, veh/h	140	321	11	10	474	69	11	7	0	87	15	8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	2	0	0	1	1	0	0	0	1	0	0
Cap, veh/h	626	1394	48	734	1249	181	319	195	0	331	119	63
Arrive On Green	0.10	0.40	0.40	0.10	0.40	0.40	0.10	0.10	0.00	0.10	0.10	0.10
Sat Flow, veh/h	1795	3506	120	1810	3139	455	1407	1900	0	1416	1159	618
Grp Volume(v), veh/h	140	162	170	10	269	274	11	7	0	87	0	23
Grp Sat Flow(s),veh/h/ln	1795	1777	1849	1810	1791	1803	1407	1900	0	1416	0	1777
Q Serve(g_s), s	0.0	2.3	2.3	0.0	4.0	4.1	0.3	0.1	0.0	2.2	0.0	0.4
Cycle Q Clear(g_c), s	0.0	2.3	2.3	0.0	4.0	4.1	0.7	0.1	0.0	2.3	0.0	0.4
Prop In Lane	1.00		0.06	1.00		0.25	1.00		0.00	1.00		0.35
Lane Grp Cap(c), veh/h	626	707	735	734	712	717	319	195	0	331	0	182
V/C Ratio(X)	0.22	0.23	0.23	0.01	0.38	0.38	0.03	0.04	0.00	0.26	0.00	0.13
Avail Cap(c_a), veh/h	919	1885	1961	1029	1900	1913	920	1008	0	937	0	942
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	8.3	7.5	7.5	6.0	8.0	8.1	15.7	15.2	0.0	16.3	0.0	15.4
Incr Delay (d2), s/veh	0.1	0.1	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.2	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.9	1.0	1.0	0.0	1.7	1.8	0.1	0.1	0.0	1.1	0.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.4	7.6	7.6	6.0	8.2	8.2	15.7	15.3	0.0	16.5	0.0	15.5
LnGrp LOS	A	A	A	A	A	A	B	B	A	B	A	B
Approach Vol, veh/h	472			553			18			110		
Approach Delay, s/veh	7.8			8.1			15.6			16.3		
Approach LOS	A			A			B			B		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.8	20.0		8.9	8.8	20.0		8.9				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	10.0	40.0		20.0	10.0	40.0		20.0				
Max Q Clear Time (g_c+I1), s	2.0	4.3		4.3	2.0	6.1		2.7				
Green Ext Time (p_c), s	0.0	1.1		0.1	0.1	2.0		0.0				

Intersection Summary

HCM 6th Ctrl Delay 8.9
HCM 6th LOS A

Notes

User approved pedestrian interval to be less than phase max green.

Intersection						
Int Delay, s/veh	1.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	15	23	13	221	162	14
Future Vol, veh/h	15	23	13	221	162	14
Conflicting Peds, #/hr	0	3	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	80	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	7	0	15	0	1	0
Mvmt Flow	16	25	14	238	174	15
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	448	185	189	0	-	0
Stage 1	182	-	-	-	-	-
Stage 2	266	-	-	-	-	-
Critical Hdwy	6.47	6.2	4.25	-	-	-
Critical Hdwy Stg 1	5.47	-	-	-	-	-
Critical Hdwy Stg 2	5.47	-	-	-	-	-
Follow-up Hdwy	3.563	3.3	2.335	-	-	-
Pot Cap-1 Maneuver	559	862	1311	-	-	-
Stage 1	837	-	-	-	-	-
Stage 2	767	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	553	860	1311	-	-	-
Mov Cap-2 Maneuver	553	-	-	-	-	-
Stage 1	828	-	-	-	-	-
Stage 2	767	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	10.4	0.4		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1311	-	705	-	-	
HCM Lane V/C Ratio	0.011	-	0.058	-	-	
HCM Control Delay (s)	7.8	-	10.4	-	-	
HCM Lane LOS	A	-	B	-	-	
HCM 95th %tile Q(veh)	0	-	0.2	-	-	

Intersection	
Intersection Delay, s/veh	24.2
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	37	350	44	67	370	14	34	101	62	25	76	26
Future Vol, veh/h	37	350	44	67	370	14	34	101	62	25	76	26
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	3	0	0	1	0	7	0	1	0	4	1	8
Mvmt Flow	40	380	48	73	402	15	37	110	67	27	83	28
Number of Lanes	1	1	0	1	1	0	1	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	2	2
HCM Control Delay	29	26.6	14.2	14.7
HCM LOS	D	D	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	100%	0%	100%	0%	100%	0%	20%
Vol Thru, %	0%	62%	0%	89%	0%	96%	60%
Vol Right, %	0%	38%	0%	11%	0%	4%	20%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	34	163	37	394	67	384	127
LT Vol	34	0	37	0	67	0	25
Through Vol	0	101	0	350	0	370	76
RT Vol	0	62	0	44	0	14	26
Lane Flow Rate	37	177	40	428	73	417	138
Geometry Grp	7	7	7	7	7	7	6
Degree of Util (X)	0.085	0.37	0.082	0.795	0.147	0.778	0.309
Departure Headway (Hd)	8.289	7.518	7.33	6.686	7.266	6.711	8.057
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	432	477	488	540	493	538	444
Service Time	6.053	5.282	5.085	4.441	5.022	4.466	6.133
HCM Lane V/C Ratio	0.086	0.371	0.082	0.793	0.148	0.775	0.311
HCM Control Delay	11.8	14.7	10.7	30.7	11.3	29.3	14.7
HCM Lane LOS	B	B	B	D	B	D	B
HCM 95th-tile Q	0.3	1.7	0.3	7.5	0.5	7.1	1.3

Timings
11: SE 164th Ave & SE 29th St

Vancouver Innovation Center
Existing PM Peak Hour Conditions

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	
Lane Configurations											
Traffic Volume (vph)	66	23	39	21	17	38	38	1296	43	1193	
Future Volume (vph)	66	23	39	21	17	38	38	1296	43	1193	
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Prot	NA	
Protected Phases	2				6		7		4	3	8
Permitted Phases	2		2		6						
Detector Phase	2	2	2	6	6	6	7	4	3	8	
Switch Phase											
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	5.0	15.0	5.0	15.0	
Minimum Split (s)	39.0	39.0	39.0	38.0	38.0	38.0	10.0	32.0	19.5	32.0	
Total Split (s)	39.0	39.0	39.0	39.0	39.0	39.0	15.0	66.0	15.0	66.0	
Total Split (%)	32.5%	32.5%	32.5%	32.5%	32.5%	32.5%	12.5%	55.0%	12.5%	55.0%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lead/Lag							Lead	Lead	Lag	Lag	
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	None	None	None	None	Max	None	C-Max	
Act Effct Green (s)	14.7	14.7	14.7	14.7	14.7	14.7	6.1	87.3	9.0	90.2	
Actuated g/C Ratio	0.12	0.12	0.12	0.12	0.12	0.12	0.05	0.73	0.08	0.75	
v/c Ratio	0.40	0.10	0.14	0.13	0.09	0.14	0.46	0.38	0.34	0.34	
Control Delay	52.8	43.6	1.0	44.5	43.1	1.0	52.3	18.3	59.3	8.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	52.8	43.6	1.0	44.5	43.1	1.0	52.3	18.3	59.3	8.0	
LOS	D	D	A	D	D	A	D	B	E	A	
Approach Delay	35.3				22.4			19.3		9.7	
Approach LOS	D				C			B		A	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 112 (93%), Referenced to phase 8:SBT, Start of Green

Natural Cycle: 95

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.46

Intersection Signal Delay: 15.8

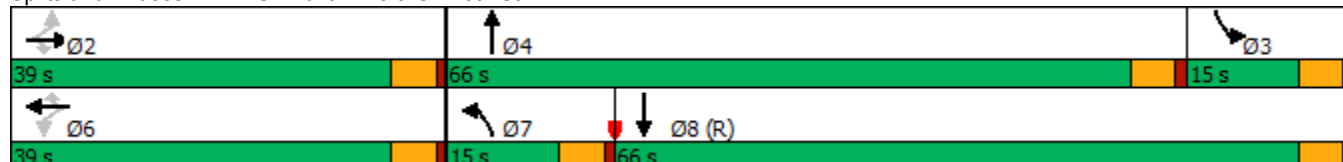
Intersection LOS: B

Intersection Capacity Utilization 54.9%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 11: SE 164th Ave & SE 29th St



HCM 6th Signalized Intersection Summary

11: SE 164th Ave & SE 29th St

Vancouver Innovation Center
Existing PM Peak Hour Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	66	23	39	21	17	38	38	1296	29	43	1193	38
Future Volume (veh/h)	66	23	39	21	17	38	38	1296	29	43	1193	38
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.99	0.99		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1826	1633	1856	1826	1870	1752	1870	1885	1900
Adj Flow Rate, veh/h	69	24	2	22	18	2	40	1364	30	45	1256	38
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	5	18	3	5	2	10	2	1	0
Cap, veh/h	180	182	153	173	156	150	53	2613	57	58	2618	79
Arrive On Green	0.10	0.10	0.10	0.10	0.10	0.10	0.03	0.51	0.51	0.03	0.51	0.51
Sat Flow, veh/h	1406	1900	1600	1344	1633	1563	1739	5141	113	1781	5133	155
Grp Volume(v), veh/h	69	24	2	22	18	2	40	903	491	45	840	454
Grp Sat Flow(s),veh/h/ln	1406	1900	1600	1344	1633	1563	1739	1702	1850	1781	1716	1857
Q Serve(g_s), s	5.7	1.4	0.1	1.8	1.2	0.1	2.7	21.3	21.3	3.0	19.0	19.0
Cycle Q Clear(g_c), s	6.9	1.4	0.1	3.2	1.2	0.1	2.7	21.3	21.3	3.0	19.0	19.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.06	1.00		0.08
Lane Grp Cap(c), veh/h	180	182	153	173	156	150	53	1730	940	58	1750	947
V/C Ratio(X)	0.38	0.13	0.01	0.13	0.12	0.01	0.75	0.52	0.52	0.78	0.48	0.48
Avail Cap(c_a), veh/h	444	538	453	425	463	443	145	1730	940	148	1750	947
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.79	0.79	0.79	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.8	49.7	49.1	51.2	49.6	49.1	57.7	19.7	19.7	57.6	19.1	19.1
Incr Delay (d2), s/veh	0.5	0.1	0.0	0.1	0.1	0.0	6.1	0.9	1.6	8.1	0.9	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.7	1.2	0.1	1.1	0.9	0.1	2.3	12.4	13.5	2.6	11.9	13.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.3	49.8	49.1	51.3	49.7	49.1	63.8	20.6	21.4	65.7	20.0	20.8
LnGrp LOS	D	D	D	D	D	D	E	C	C	E	C	C
Approach Vol, veh/h		95			42			1434			1339	
Approach Delay, s/veh		52.3			50.5			22.1			21.8	
Approach LOS		D			D			C			C	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		16.5	8.9	66.0		16.5	8.7	66.2				
Change Period (Y+Rc), s		5.0	5.0	5.0		5.0	5.0	5.0				
Max Green Setting (Gmax), s		34.0	10.0	61.0		34.0	10.0	61.0				
Max Q Clear Time (g_c+I1), s		8.9	5.0	23.3		5.2	4.7	21.0				
Green Ext Time (p_c), s		0.0	0.0	1.5		0.0	0.0	1.4				
Intersection Summary												
HCM 6th Ctrl Delay			23.4									
HCM 6th LOS			C									

Timings
12: SE 164th Ave & SE 34th Street

Vancouver Innovation Center
Existing PM Peak Hour Conditions

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations	 			 				 			  
Traffic Volume (vph)	45	88	178	302	105	194	179	1124	297	147	1061
Future Volume (vph)	45	88	178	302	105	194	179	1124	297	147	1061
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA
Protected Phases	5	2	7	1	6	3	7	4	1	3	8
Permitted Phases			2			6			4		
Detector Phase	5	2	7	1	6	3	7	4	1	3	8
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	20.0	5.0	5.0	20.0
Minimum Split (s)	10.0	33.0	10.0	10.0	32.0	10.0	10.0	31.0	10.0	10.0	28.0
Total Split (s)	15.0	33.0	20.0	17.0	35.0	20.0	20.0	50.0	17.0	20.0	50.0
Total Split (%)	12.5%	27.5%	16.7%	14.2%	29.2%	16.7%	16.7%	41.7%	14.2%	16.7%	41.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	None	None	C-Max
Act Effct Green (s)	5.6	9.7	31.9	12.0	18.0	37.3	17.2	64.1	81.1	14.3	61.1
Actuated g/C Ratio	0.05	0.08	0.27	0.10	0.15	0.31	0.14	0.53	0.68	0.12	0.51
v/c Ratio	0.32	0.64	0.40	1.59	0.40	0.36	0.74	0.63	0.27	0.74	0.46
Control Delay	60.7	72.8	24.2	323.8	51.2	15.7	66.6	23.0	2.7	69.4	18.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.7	72.8	24.2	323.8	51.2	15.7	66.6	23.0	2.7	69.4	18.7
LOS	E	E	C	F	D	B	E	C	A	E	B
Approach Delay		43.3			176.9			24.1			24.6
Approach LOS		D			F			C			C

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 40 (33%), Referenced to phase 8:SBT, Start of Green

Natural Cycle: 105

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.59

Intersection Signal Delay: 50.2

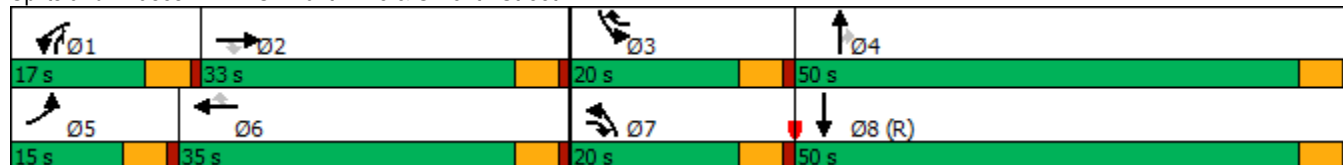
Intersection LOS: D

Intersection Capacity Utilization 67.0%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 12: SE 164th Ave & SE 34th Street



HCM 6th Signalized Intersection Summary

12: SE 164th Ave & SE 34th Street

Vancouver Innovation Center
Existing PM Peak Hour Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	88	178	302	105	194	179	1124	297	147	1061	46
Future Volume (veh/h)	45	88	178	302	105	194	179	1124	297	147	1061	46
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1714	1773	1832	1870	1841	1856	1791	1776	1791	1776	1776	1746
Adj Flow Rate, veh/h	47	92	134	315	109	120	186	1171	210	153	1105	45
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	9	5	1	2	4	3	1	2	1	2	2	4
Cap, veh/h	104	164	335	200	293	417	211	1325	748	179	1792	73
Arrive On Green	0.03	0.09	0.09	0.10	0.16	0.16	0.12	0.39	0.39	0.04	0.12	0.12
Sat Flow, veh/h	3166	1773	1553	1995	1841	1572	1706	3375	1518	1692	4779	195
Grp Volume(v), veh/h	47	92	134	315	109	120	186	1171	210	153	747	403
Grp Sat Flow(s),veh/h/ln	1583	1773	1553	998	1841	1572	1706	1687	1518	1692	1616	1741
Q Serve(g_s), s	1.7	6.0	8.9	12.0	6.3	7.3	12.9	38.7	9.8	10.8	26.3	26.3
Cycle Q Clear(g_c), s	1.7	6.0	8.9	12.0	6.3	7.3	12.9	38.7	9.8	10.8	26.3	26.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.11
Lane Grp Cap(c), veh/h	104	164	335	200	293	417	211	1325	748	179	1212	653
V/C Ratio(X)	0.45	0.56	0.40	1.58	0.37	0.29	0.88	0.88	0.28	0.85	0.62	0.62
Avail Cap(c_a), veh/h	264	414	554	200	460	560	213	1325	748	211	1212	653
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95
Uniform Delay (d), s/veh	57.0	52.1	40.4	54.0	45.1	35.1	51.7	33.9	17.9	57.0	44.4	44.4
Incr Delay (d2), s/veh	1.1	1.1	0.3	283.1	0.3	0.1	30.8	8.8	0.9	20.6	2.2	4.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.3	4.8	6.1	18.5	5.2	5.0	11.6	23.5	6.3	9.7	17.2	18.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.1	53.3	40.7	337.1	45.4	35.2	82.5	42.7	18.9	77.6	46.6	48.5
LnGrp LOS	E	D	D	F	D	D	F	D	B	E	D	D
Approach Vol, veh/h	273			544			1567			1303		
Approach Delay, s/veh	47.9			212.1			44.3			50.8		
Approach LOS	D			F			D			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.0	16.1	17.7	52.1	9.0	24.1	19.8	50.0				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	12.0	28.0	15.0	45.0	10.0	30.0	15.0	45.0				
Max Q Clear Time (g_c+I1), s	14.0	10.9	12.8	40.7	3.7	9.3	14.9	28.3				
Green Ext Time (p_c), s	0.0	0.2	0.0	1.6	0.0	0.2	0.0	2.5				
Intersection Summary												
HCM 6th Ctrl Delay	71.6											
HCM 6th LOS	E											

Appendix D VIC Campus Volume Adjustment

Table 1 summarizes the combined traffic counts at 10th s main and west gates during the time intervals determined by the County in 1994. Table 1 also indicates the specific trip generation rates derived from these counts according to the actual development on HP's South Campus.

Impact of HP North Campus Development on 10th S Avenue
Page 1 of 2



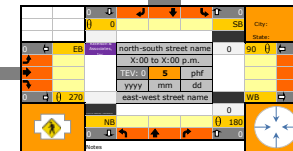
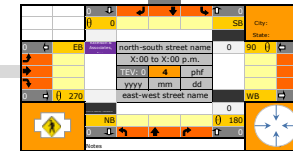
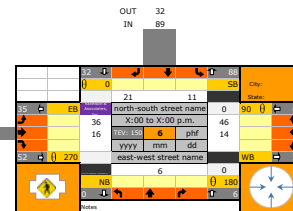
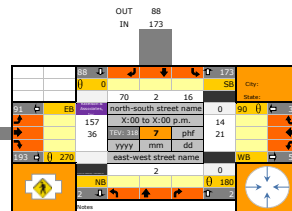
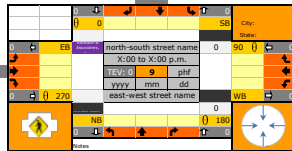
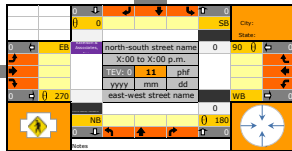
	Traffic Counts	Trip Rate per Thousand Gross Square Feet
AM Peak (7:45 AM - 8:45 AM)		
Entering	261	0.37
Exiting	119	0.17
Total	380	0.53
PM Peak (4:35 PM - 5:35 PM)		
Entering	76	0.11
Exiting	146	0.21
Total	222	0.32

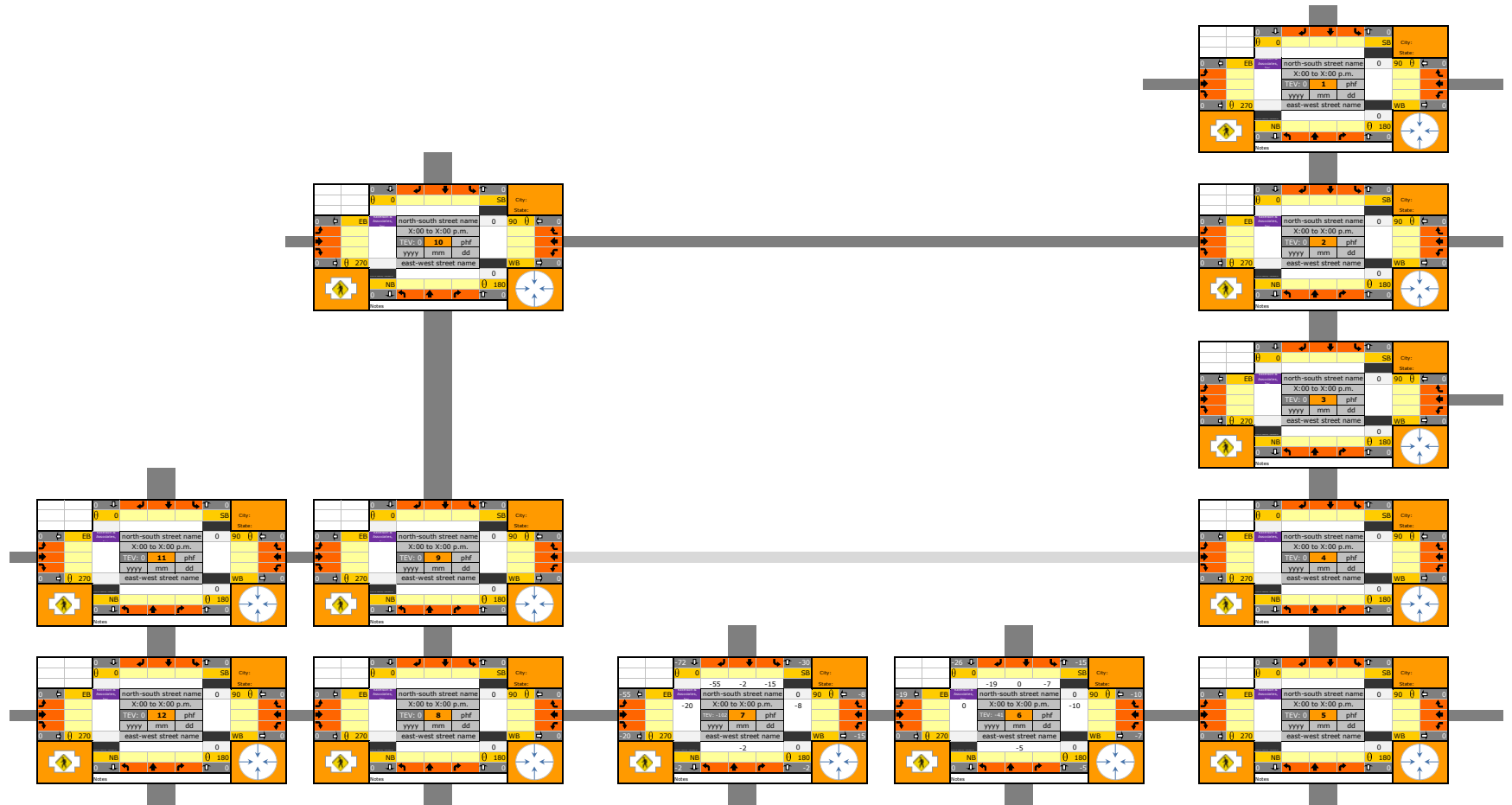
Total for 712,000K
+3,000 K since 1996 count
###

OUT 0.65 IN 0.60 IN 0.35	OUT 0.35 IN 0.37 IN 0.41	OUT 0.15 IN 0.65 IN 0.36	OUT 0.34 IN 0.09 IN 0.04	OUT 0.27 IN 0.34 IN 0.43	OUT 0.67 IN 0.00 IN 0.43
--------------------------------	--------------------------------	--------------------------------	--------------------------------	--------------------------------	--------------------------------

Note: the outward distribution percentages programmed in the spreadsheet for intersection 7 is slightly different to what was calculated above. I kept to what was programmed in the spreadsheet.

TOTAL IN OUT
262 120
2020 Site Driveway Count Distribution - Same Pattern used for Assignment of Historic Trips





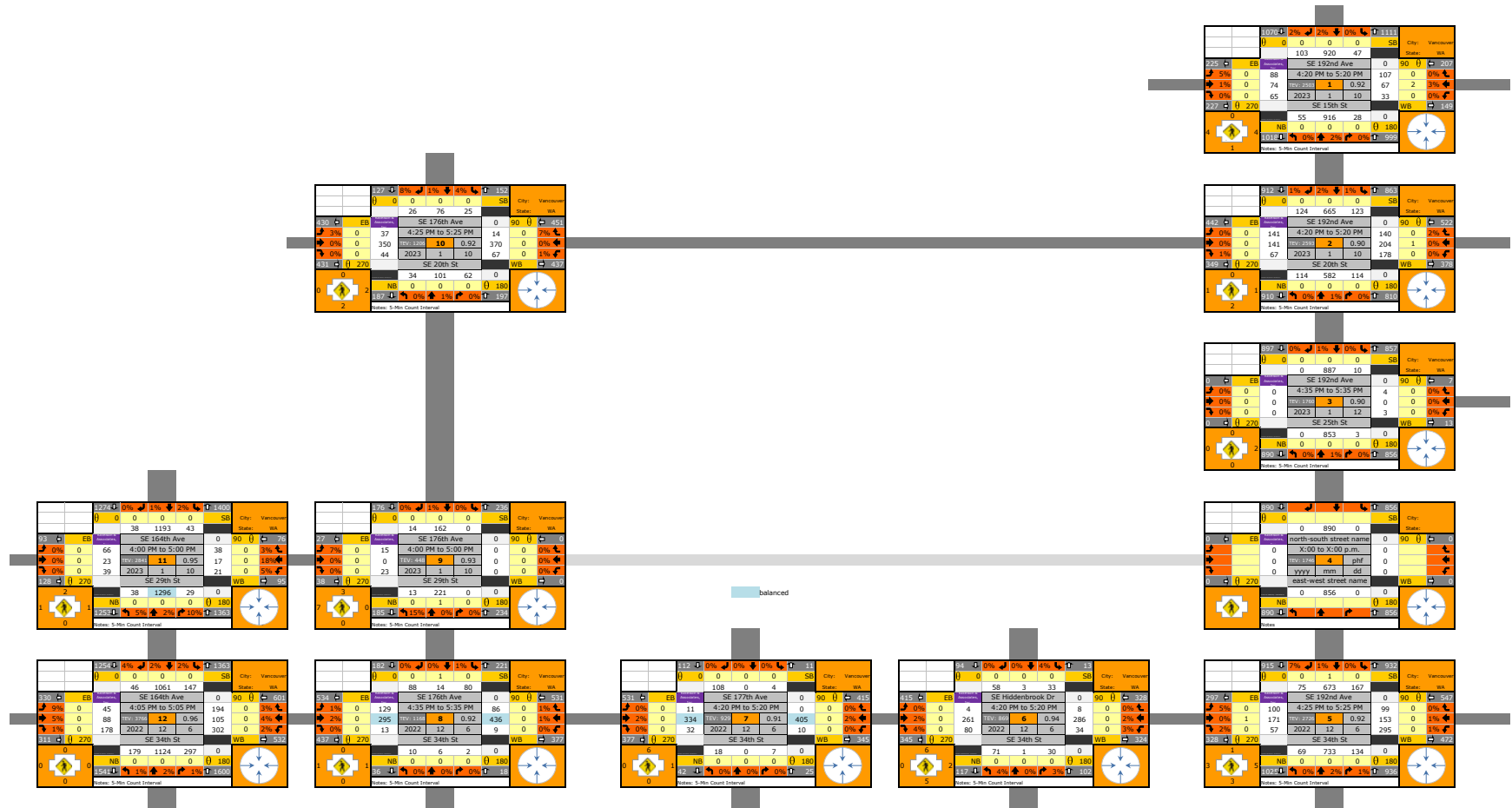


Table 1 summarizes the combined traffic counts at HP's east and west gates during the time intervals determined by the County in 1996. Table 1 also indicates the specific trip generation rates derived from these counts according to the actual development on HP's South Campus.

Report of HP South Campus Development on 104th Avenue
Page 1 of 3



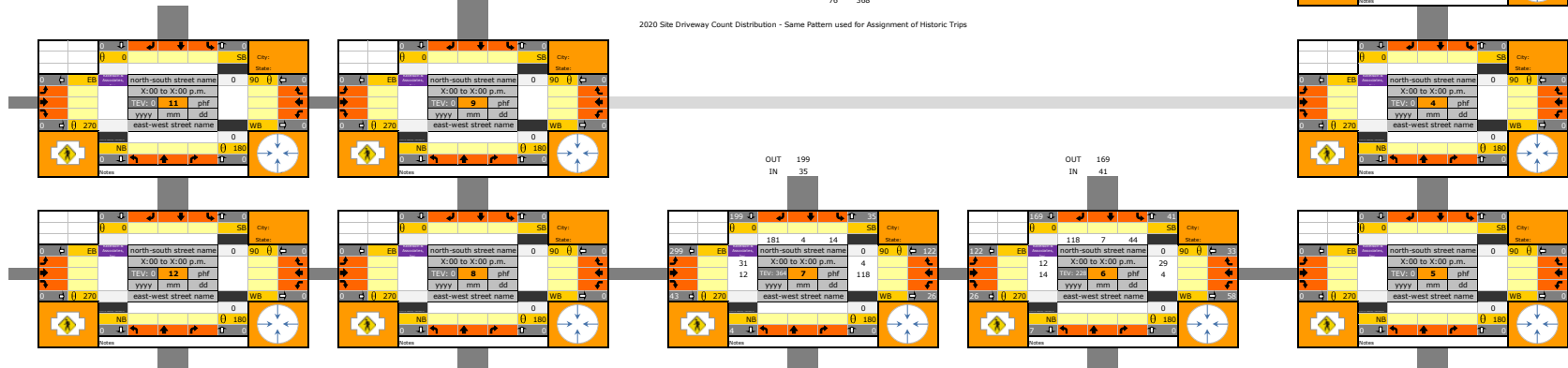
	Traffic Counts	Trip Rate per Thousand Gross Square Feet
AM Peak (7:05 AM - 8:05 AM)		
Entering	261	0.37
Exiting	119	0.17
Total	380	0.53
PM Peak (4:35 PM - 5:35 PM)		
Entering	76	0.11
Exiting	366	0.51
Total	442	0.62

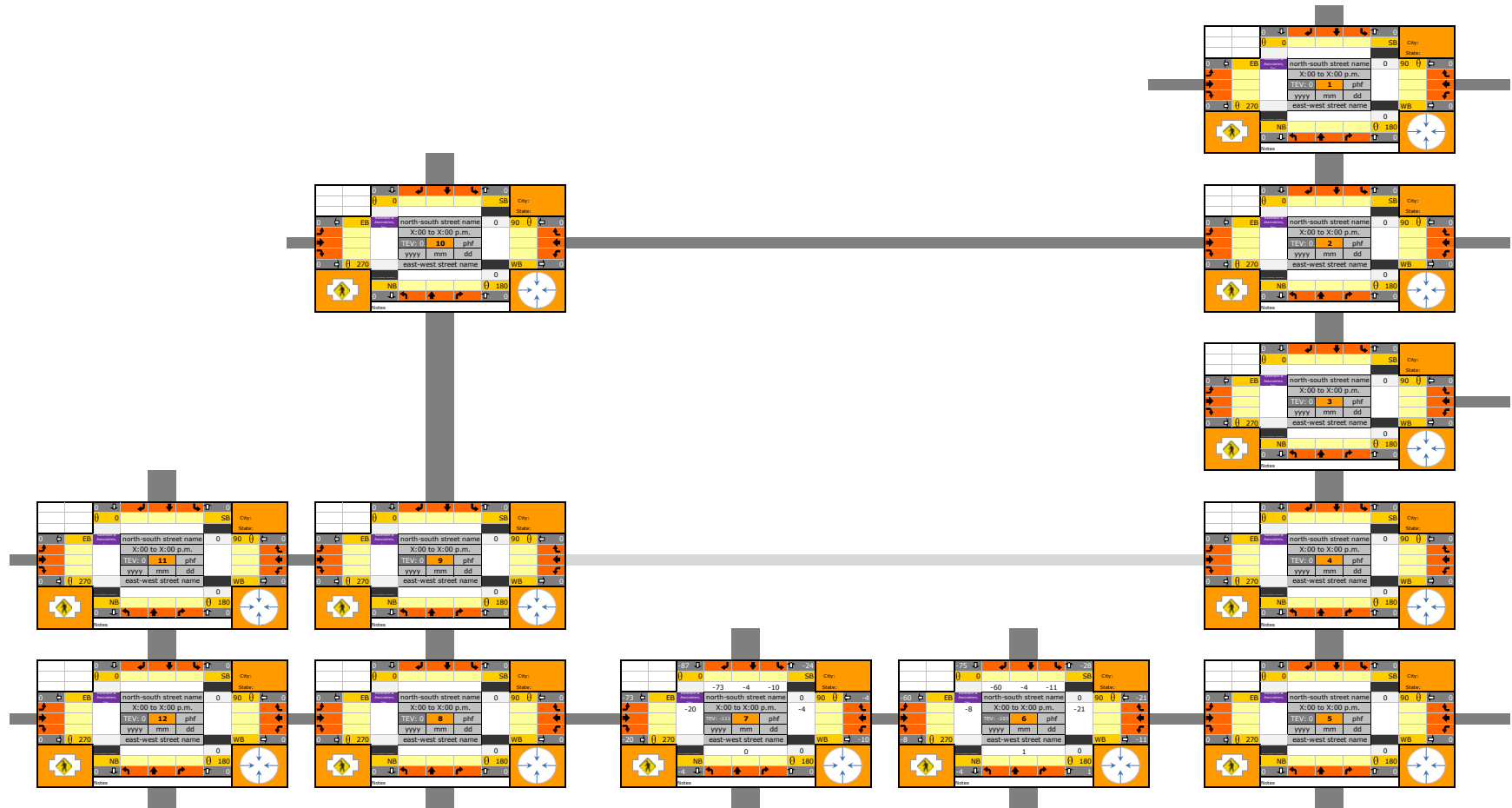
Total for 712,000K
+3,000 K since 1996 count

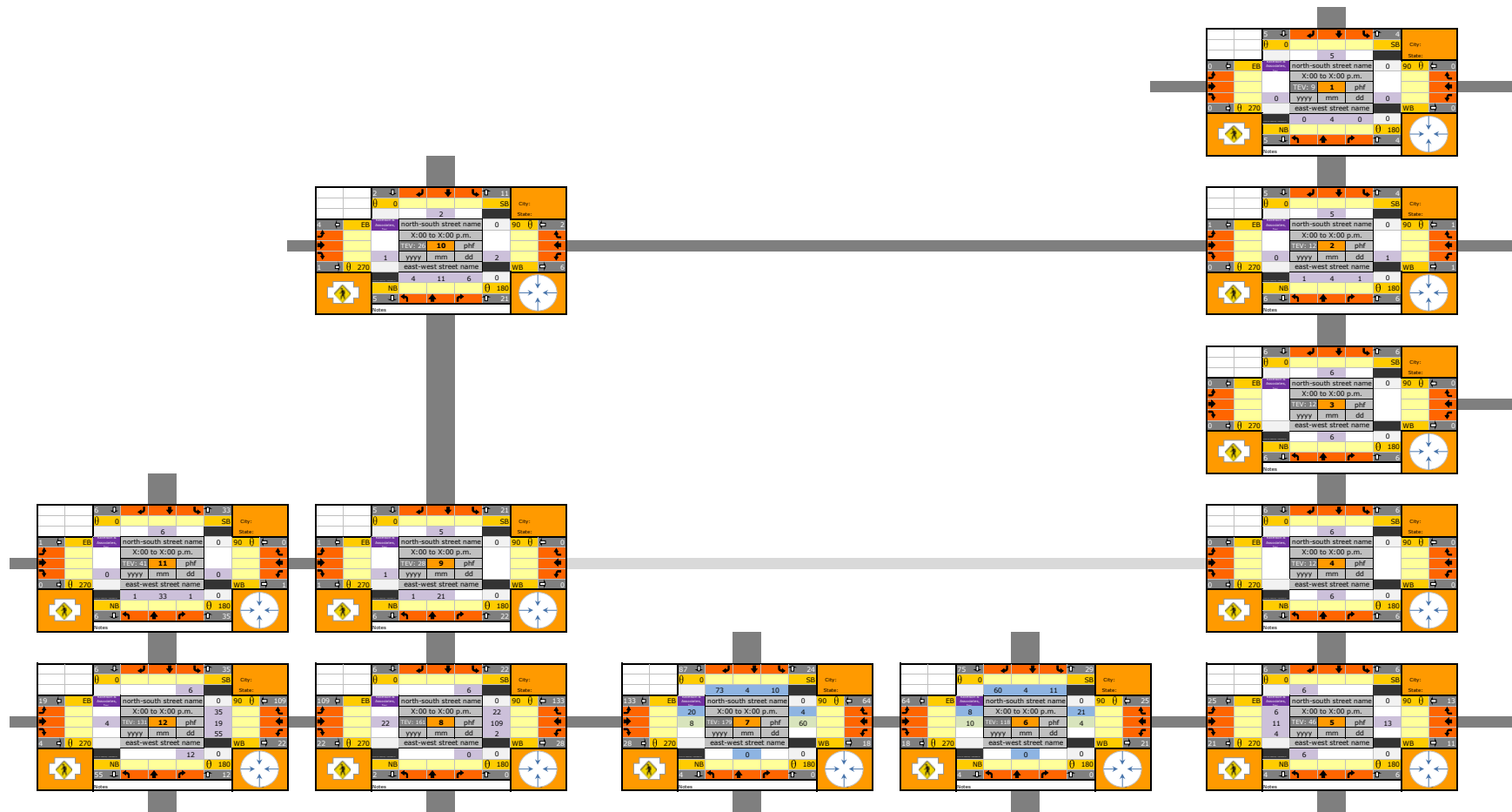
TOTAL IN OUT
442 76 366
2 0 2
444 76 368

OUT 0.47 IN 0.56 OUT 0.91 0.02 0.07 IN 0.89 0.11	Previous version - use	OUT 0.53 IN 0.44 OUT 0.70 0.04 0.26 IN 0.29 0.71	Latest version - in/out split	OUT 0.46 IN 0.54 OUT 0.62 0.03 0.35 IN 0.31 0.62
NOTE: the distribution is slightly different to what was calculated above for certain movements. I kept to what was input on the lab, so I thus only changed the in/out split percentages and left the distribution as was programmed.				
TOTAL IN OUT 76 368				

2020 Site Driveway Count Distribution - Same Pattern used for Assignment of Historic Trips







Calculated as difference of 2023 count trips and historical (1996) site trips
 Carried through
 Back distributed to system based on 2023 volume ratios (see previous network tool versions for volume ratios)

Appendix E 2038 Baseline Operations
Worksheets & Total In-process
Trip Assignment

Timings

1: SE 192nd & SE 15th St

Vancouver Innovation Center

Baseline 2038 AM Peak Hour Conditions

									
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	156	45	29	64	158	46	910	89	793
Future Volume (vph)	156	45	29	64	158	46	910	89	793
Turn Type	Prot	NA	Prot	NA	pm+ov	Prot	NA	Prot	NA
Protected Phases	5	2	1	6	3	7	4	3	8
Permitted Phases					6				
Detector Phase	5	2	1	6	3	7	4	3	8
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	15.0	5.0	15.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	20.0	10.0	20.0
Total Split (s)	20.0	29.0	20.0	29.0	14.0	15.0	37.0	14.0	36.0
Total Split (%)	20.0%	29.0%	20.0%	29.0%	14.0%	15.0%	37.0%	14.0%	36.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	None	Max
Act Effct Green (s)	12.4	18.7	5.9	10.2	22.0	6.7	50.6	8.8	54.7
Actuated g/C Ratio	0.12	0.19	0.06	0.10	0.22	0.07	0.51	0.09	0.55
v/c Ratio	0.80	0.25	0.32	0.38	0.42	0.44	0.59	0.69	0.54
Control Delay	67.8	21.5	53.4	45.3	17.3	59.9	18.2	69.1	20.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.8	21.5	53.4	45.3	17.3	59.9	18.2	69.1	20.4
LOS	E	C	D	D	B	E	B	E	C
Approach Delay		52.2		28.6			20.1		24.8
Approach LOS		D		C			C		C

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 9 (9%), Referenced to phase 4:NBT, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.80

Intersection Signal Delay: 26.0

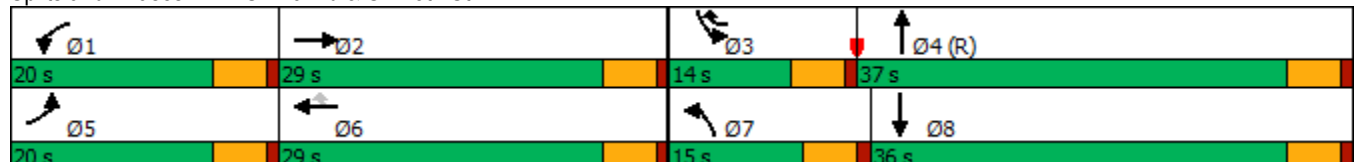
Intersection LOS: C

Intersection Capacity Utilization 58.4%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 1: SE 192nd & SE 15th St



HCM 6th Signalized Intersection Summary

1: SE 192nd & SE 15th St

Vancouver Innovation Center
Baseline 2038 AM Peak Hour Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	156	45	34	29	64	158	46	910	16	89	793	87
Future Volume (veh/h)	156	45	34	29	64	158	46	910	16	89	793	87
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1900	1796	1781	1841	1870	1856	1841	1900	1737	1767	1856
Adj Flow Rate, veh/h	173	50	6	32	71	97	51	1011	17	99	881	90
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	0	7	8	4	2	3	4	0	11	9	3
Cap, veh/h	204	271	32	50	141	239	88	1878	32	122	1715	175
Arrive On Green	0.12	0.16	0.16	0.03	0.08	0.08	0.10	1.00	1.00	0.07	0.56	0.56
Sat Flow, veh/h	1767	1664	200	1697	1841	1585	1767	3518	59	1654	3074	314
Grp Volume(v), veh/h	173	0	56	32	71	97	51	503	525	99	481	490
Grp Sat Flow(s),veh/h/ln	1767	0	1864	1697	1841	1585	1767	1749	1829	1654	1678	1710
Q Serve(g_s), s	9.6	0.0	2.6	1.9	3.7	5.5	2.8	0.0	0.0	5.9	17.8	17.8
Cycle Q Clear(g_c), s	9.6	0.0	2.6	1.9	3.7	5.5	2.8	0.0	0.0	5.9	17.8	17.8
Prop In Lane	1.00		0.11	1.00		1.00	1.00		0.03	1.00		0.18
Lane Grp Cap(c), veh/h	204	0	303	50	141	239	88	934	976	122	936	954
V/C Ratio(X)	0.85	0.00	0.18	0.64	0.50	0.41	0.58	0.54	0.54	0.81	0.51	0.51
Avail Cap(c_a), veh/h	265	0	447	254	442	498	177	934	976	149	936	954
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	0.84	0.84	0.84	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.4	0.0	36.1	48.0	44.3	38.4	44.0	0.0	0.0	45.6	13.7	13.7
Incr Delay (d2), s/veh	14.7	0.0	0.1	5.0	1.0	0.4	1.9	1.9	1.8	19.5	2.0	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	8.5	0.0	2.1	1.5	3.1	3.8	2.1	0.9	0.9	5.4	10.8	10.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.1	0.0	36.2	53.0	45.3	38.8	45.8	1.9	1.8	65.1	15.7	15.7
LnGrp LOS	E	A	D	D	D	D	D	A	A	E	B	B
Approach Vol, veh/h	229			200			1079			1070		
Approach Delay, s/veh	52.8			43.4			3.9			20.3		
Approach LOS	D			D			A			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.9	21.3	12.4	58.4	16.5	12.7	10.0	60.8				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	15.0	24.0	9.0	32.0	15.0	24.0	10.0	31.0				
Max Q Clear Time (g_c+I1), s	3.9	4.6	7.9	2.0	11.6	7.5	4.8	19.8				
Green Ext Time (p_c), s	0.0	0.1	0.0	2.0	0.0	0.2	0.0	1.7				
Intersection Summary												
HCM 6th Ctrl Delay	18.1											
HCM 6th LOS	B											

Timings
2: SE 20th St & SE 192nd Ave

Vancouver Innovation Center
Baseline 2038 AM Peak Hour Conditions

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	166	182	106	165	46	689	59	643
Future Volume (vph)	166	182	106	165	46	689	59	643
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	5	2	1	6	7	4	3	8
Permitted Phases								
Detector Phase	5	2	1	6	7	4	3	8
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	20.0	5.0	20.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	25.0	10.0	25.0
Total Split (s)	17.0	29.0	17.0	29.0	15.0	39.0	15.0	39.0
Total Split (%)	17.0%	29.0%	17.0%	29.0%	15.0%	39.0%	15.0%	39.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	Min	C-Max	None	Max
Act Effct Green (s)	9.4	18.6	7.6	16.8	7.4	48.0	7.9	46.4
Actuated g/C Ratio	0.09	0.19	0.08	0.17	0.07	0.48	0.08	0.46
v/c Ratio	0.55	0.79	0.42	0.74	0.38	0.52	0.44	0.50
Control Delay	49.5	51.4	48.6	50.4	68.6	8.1	51.7	26.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.5	51.4	48.6	50.4	68.6	8.1	51.7	26.3
LOS	D	D	D	D	E	A	D	C
Approach Delay		50.6		49.8		11.3		28.2
Approach LOS		D		D		B		C

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 98 (98%), Referenced to phase 4:NBT, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.79

Intersection Signal Delay: 29.0

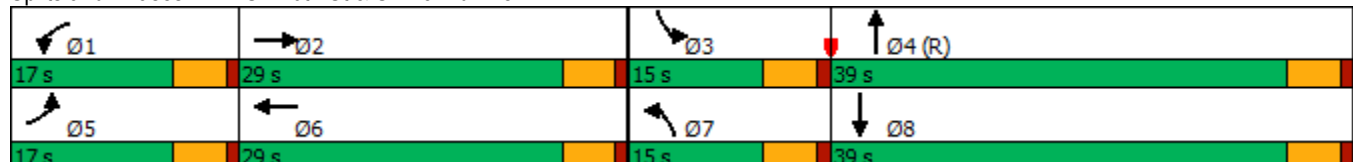
Intersection LOS: C

Intersection Capacity Utilization 62.6%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 2: SE 20th St & SE 192nd Ave



HCM 6th Signalized Intersection Summary

2: SE 20th St & SE 192nd Ave

Vancouver Innovation Center
Baseline 2038 AM Peak Hour Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	166	182	78	106	165	57	46	689	132	59	643	103
Future Volume (veh/h)	166	182	78	106	165	57	46	689	132	59	643	103
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1900	1841	1885	1885	1885	1811	1856	1841	1885	1811	1826
Adj Flow Rate, veh/h	175	192	65	112	174	46	48	725	125	62	677	97
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	0	4	1	1	1	6	3	4	1	6	5
Cap, veh/h	242	222	75	174	206	54	86	1629	281	80	1620	232
Arrive On Green	0.07	0.16	0.16	0.05	0.14	0.14	0.05	0.54	0.54	0.06	0.71	0.71
Sat Flow, veh/h	3428	1358	460	3483	1437	380	1725	3006	518	1795	3021	432
Grp Volume(v), veh/h	175	0	257	112	0	220	48	425	425	62	385	389
Grp Sat Flow(s),veh/h/ln	1714	0	1817	1742	0	1817	1725	1763	1762	1795	1721	1733
Q Serve(g_s), s	5.0	0.0	13.8	3.2	0.0	11.8	2.7	14.6	14.6	3.4	9.1	9.2
Cycle Q Clear(g_c), s	5.0	0.0	13.8	3.2	0.0	11.8	2.7	14.6	14.6	3.4	9.1	9.2
Prop In Lane	1.00		0.25	1.00		0.21	1.00		0.29	1.00		0.25
Lane Grp Cap(c), veh/h	242	0	298	174	0	260	86	955	954	80	923	929
V/C Ratio(X)	0.72	0.00	0.86	0.64	0.00	0.85	0.56	0.45	0.45	0.78	0.42	0.42
Avail Cap(c_a), veh/h	411	0	436	418	0	436	172	955	954	180	923	929
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.83	0.83	0.83
Uniform Delay (d), s/veh	45.5	0.0	40.7	46.6	0.0	41.8	46.4	13.8	13.8	46.5	8.0	8.0
Incr Delay (d2), s/veh	1.5	0.0	8.3	1.5	0.0	3.2	2.1	1.5	1.5	4.9	1.2	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.8	0.0	10.9	2.5	0.0	9.1	2.1	9.6	9.6	2.8	5.3	5.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.0	0.0	49.0	48.1	0.0	45.0	48.5	15.3	15.3	51.5	9.1	9.1
LnGrp LOS	D	A	D	D	A	D	D	B	B	D	A	A
Approach Vol, veh/h	432			332			898			836		
Approach Delay, s/veh	48.2			46.0			17.1			12.3		
Approach LOS	D			D			B			B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.0	21.4	9.5	59.2	12.1	19.3	10.0	58.6				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	12.0	24.0	10.0	34.0	12.0	24.0	10.0	34.0				
Max Q Clear Time (g_c+I1), s	5.2	15.8	5.4	16.6	7.0	13.8	4.7	11.2				
Green Ext Time (p_c), s	0.1	0.5	0.0	3.1	0.1	0.5	0.0	2.9				

Intersection Summary

HCM 6th Ctrl Delay 24.7
HCM 6th LOS C

Notes

User approved pedestrian interval to be less than phase max green.

Intersection						
Int Delay, s/veh	0.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	7	10	789	3	7	801
Future Vol, veh/h	7	10	789	3	7	801
Conflicting Peds, #/hr	0	0	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	125	0	-	-	230	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	20	4	67	0	7
Mvmt Flow	7	11	831	3	7	843
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1270	418	0	0	835	0
Stage 1	834	-	-	-	-	-
Stage 2	436	-	-	-	-	-
Critical Hdwy	6.8	7.3	-	-	4.1	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.5	-	-	2.2	-
Pot Cap-1 Maneuver	163	536	-	-	807	-
Stage 1	392	-	-	-	-	-
Stage 2	625	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	161	535	-	-	806	-
Mov Cap-2 Maneuver	161	-	-	-	-	-
Stage 1	392	-	-	-	-	-
Stage 2	619	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	18.7	0	0.1			
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT		
Capacity (veh/h)	-	- 161 535	806	-		
HCM Lane V/C Ratio	-	- 0.046 0.02	0.009	-		
HCM Control Delay (s)	-	- 28.4 11.9	9.5	-		
HCM Lane LOS	-	- D B	A	-		
HCM 95th %tile Q(veh)	-	- 0.1 0.1	0	-		

Timings
5: SE 192nd Ave & SE 34th St

Vancouver Innovation Center
Baseline 2038 AM Peak Hour Conditions

										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	100	148	207	117	67	100	704	349	108	547
Future Volume (vph)	100	148	207	117	67	100	704	349	108	547
Turn Type	pm+pt	NA	pm+pt	NA	Perm	Prot	NA	pm+ov	Prot	NA
Protected Phases	5	2	1	6		7	4	1	3	8
Permitted Phases	2		6		6			4		
Detector Phase	5	2	1	6	6	7	4	1	3	8
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	20.0	5.0	5.0	20.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	25.0	10.0	10.0	25.0
Total Split (s)	15.0	36.0	15.0	36.0	36.0	15.0	34.0	15.0	15.0	34.0
Total Split (%)	15.0%	36.0%	15.0%	36.0%	36.0%	15.0%	34.0%	15.0%	15.0%	34.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	None	None	Max
Act Effct Green (s)	25.3	17.2	28.8	19.0	19.0	8.8	43.0	52.8	10.0	44.2
Actuated g/C Ratio	0.25	0.17	0.29	0.19	0.19	0.09	0.43	0.53	0.10	0.44
v/c Ratio	0.33	0.71	0.80	0.36	0.16	0.69	0.54	0.38	0.35	0.53
Control Delay	25.6	46.7	46.5	36.3	0.8	66.1	24.8	2.2	41.1	21.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.6	46.7	46.5	36.3	0.8	66.1	24.8	2.2	41.1	21.1
LOS	C	D	D	D	A	E	C	A	D	C
Approach Delay		39.7		35.6			21.6			23.9
Approach LOS		D		D			C			C

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 40 (40%), Referenced to phase 4:NBT, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.80

Intersection Signal Delay: 26.5

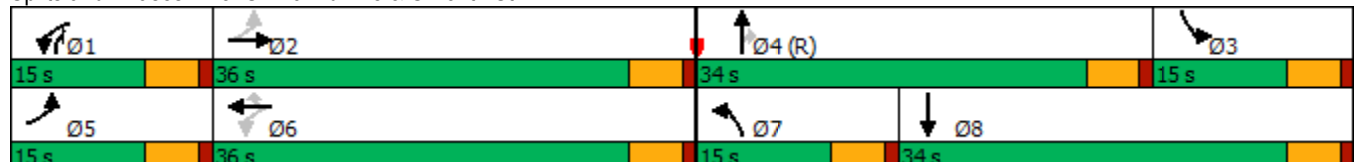
Intersection LOS: C

Intersection Capacity Utilization 67.0%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 5: SE 192nd Ave & SE 34th St



HCM 6th Signalized Intersection Summary

5: SE 192nd Ave & SE 34th St

Vancouver Innovation Center
Baseline 2038 AM Peak Hour Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	148	55	207	117	67	100	704	349	108	547	116
Future Volume (veh/h)	100	148	55	207	117	67	100	704	349	108	547	116
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.99	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1728	1803	1847	1943	2018	1988	2018	1883	1988	1832	1684	1684
Adj Flow Rate, veh/h	111	164	43	230	130	4	111	782	172	120	608	113
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	8	3	0	5	0	2	0	9	2	1	11	11
Cap, veh/h	338	214	56	308	371	303	141	1037	655	860	1267	235
Arrive On Green	0.07	0.16	0.16	0.10	0.18	0.18	0.07	0.29	0.29	0.25	0.47	0.47
Sat Flow, veh/h	1646	1374	360	1850	2018	1652	1922	3578	1679	3385	2694	500
Grp Volume(v), veh/h	111	0	207	230	130	4	111	782	172	120	361	360
Grp Sat Flow(s),veh/h/ln	1646	0	1734	1850	2018	1652	1922	1789	1679	1693	1600	1593
Q Serve(g_s), s	5.6	0.0	11.4	10.0	5.6	0.1	5.7	19.9	2.4	2.7	15.4	15.5
Cycle Q Clear(g_c), s	5.6	0.0	11.4	10.0	5.6	0.1	5.7	19.9	2.4	2.7	15.4	15.5
Prop In Lane	1.00		0.21	1.00		1.00	1.00		1.00	1.00		0.31
Lane Grp Cap(c), veh/h	338	0	271	308	371	303	141	1037	655	860	753	750
V/C Ratio(X)	0.33	0.00	0.76	0.75	0.35	0.01	0.79	0.75	0.26	0.14	0.48	0.48
Avail Cap(c_a), veh/h	384	0	538	308	626	512	192	1037	655	860	753	750
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.92	0.00	0.92	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.0	0.0	40.4	33.0	35.6	10.7	45.6	32.3	7.5	28.9	18.1	18.1
Incr Delay (d2), s/veh	0.2	0.0	1.6	8.6	0.2	0.0	9.6	5.1	1.0	0.0	2.2	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.9	0.0	8.3	9.0	4.9	0.1	5.4	13.8	2.1	2.0	9.7	9.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.2	0.0	42.0	41.6	35.8	10.7	55.1	37.3	8.5	28.9	20.3	20.3
LnGrp LOS	C	A	D	D	D	B	E	D	A	C	C	C
Approach Vol, veh/h		318			364			1065			841	
Approach Delay, s/veh		38.6			39.2			34.5			21.5	
Approach LOS		D			D			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.0	20.6	30.4	34.0	12.2	23.4	12.3	52.1				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	10.0	31.0	10.0	29.0	10.0	31.0	10.0	29.0				
Max Q Clear Time (g_c+I1), s	12.0	13.4	4.7	21.9	7.6	7.6	7.7	17.5				
Green Ext Time (p_c), s	0.0	0.3	0.0	1.4	0.0	0.2	0.0	1.2				
Intersection Summary												
HCM 6th Ctrl Delay			31.5									
HCM 6th LOS			C									

Timings

6: SE Hiddenbrook Dr & SE 34th St

Vancouver Innovation Center

Baseline 2038 AM Peak Hour Conditions

									
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	36	310	27	255	63	6	11	0	21
Future Volume (vph)	36	310	27	255	63	6	11	0	21
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA	Perm
Protected Phases	5	2	1	6		8		4	
Permitted Phases					8		4		4
Detector Phase	5	2	1	6	8	8	4	4	4
Switch Phase									
Minimum Initial (s)	5.0	15.0	5.0	15.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	27.0	10.0	27.0	32.0	32.0	34.0	34.0	34.0
Total Split (s)	10.0	85.0	10.0	85.0	35.0	35.0	35.0	35.0	35.0
Total Split (%)	7.7%	65.4%	7.7%	65.4%	26.9%	26.9%	26.9%	26.9%	26.9%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					
Recall Mode	None	Min	None	Min	None	None	None	None	None
Act Effect Green (s)	5.5	25.1	5.5	22.9	9.0	9.0		9.0	9.0
Actuated g/C Ratio	0.12	0.56	0.12	0.51	0.20	0.20		0.20	0.20
v/c Ratio	0.20	0.40	0.15	0.41	0.28	0.16		0.05	0.07
Control Delay	26.3	12.8	26.0	13.8	18.0	7.1		15.1	1.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay	26.3	12.8	26.0	13.8	18.0	7.1		15.1	1.5
LOS	C	B	C	B	B	A		B	A
Approach Delay		14.1		14.8		13.4		6.2	
Approach LOS		B		B		B		A	

Intersection Summary

Cycle Length: 130

Actuated Cycle Length: 44.6

Natural Cycle: 75

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.41

Intersection Signal Delay: 14.0

Intersection LOS: B

Intersection Capacity Utilization 44.7%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 6: SE Hiddenbrook Dr & SE 34th St

		
10 s	85 s	35 s
		
10 s	85 s	35 s

HCM 6th Signalized Intersection Summary

6: SE Hiddenbrook Dr & SE 34th St

Vancouver Innovation Center
Baseline 2038 AM Peak Hour Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	36	310	24	27	255	46	63	6	41	11	0	21
Future Volume (veh/h)	36	310	24	27	255	46	63	6	41	11	0	21
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1841	1900	1876	1802	1876	1832	1876	1876	1900	1900	1900
Adj Flow Rate, veh/h	44	383	26	33	315	48	78	7	0	14	0	0
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	0	4	0	0	5	0	3	0	0	0	0	0
Cap, veh/h	90	757	51	70	663	101	332	166	0	327	0	142
Arrive On Green	0.05	0.44	0.44	0.04	0.43	0.43	0.09	0.09	0.00	0.09	0.00	0.00
Sat Flow, veh/h	1810	1704	116	1787	1527	233	1388	1876	0	1376	0	1610
Grp Volume(v), veh/h	44	0	409	33	0	363	78	7	0	14	0	0
Grp Sat Flow(s),veh/h/ln	1810	0	1819	1787	0	1760	1388	1876	0	1376	0	1610
Q Serve(g_s), s	0.8	0.0	5.6	0.6	0.0	5.2	1.3	0.1	0.0	0.3	0.0	0.0
Cycle Q Clear(g_c), s	0.8	0.0	5.6	0.6	0.0	5.2	1.8	0.1	0.0	0.4	0.0	0.0
Prop In Lane	1.00		0.06	1.00		0.13	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	90	0	809	70	0	764	332	166	0	327	0	142
V/C Ratio(X)	0.49	0.00	0.51	0.47	0.00	0.48	0.23	0.04	0.00	0.04	0.00	0.00
Avail Cap(c_a), veh/h	258	0	4154	255	0	4017	1399	1607	0	1426	0	1379
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	16.2	0.0	7.0	16.5	0.0	7.1	15.3	14.6	0.0	14.8	0.0	0.0
Incr Delay (d2), s/veh	1.5	0.0	0.2	1.8	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.5	0.0	2.0	0.4	0.0	1.8	0.9	0.1	0.0	0.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.7	0.0	7.2	18.3	0.0	7.2	15.5	14.7	0.0	14.8	0.0	0.0
LnGrp LOS	B	A	A	B	A	A	B	B	A	B	A	A
Approach Vol, veh/h	453				396				85			
Approach Delay, s/veh	8.2				8.2				15.4			
Approach LOS	A				A				B			
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.4	20.6		8.1	6.7	20.2		8.1				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	5.0	80.0		30.0	5.0	80.0		30.0				
Max Q Clear Time (g_c+I1), s	2.6	7.6		2.4	2.8	7.2		3.8				
Green Ext Time (p_c), s	0.0	0.8		0.0	0.0	0.7		0.0				
Intersection Summary												
HCM 6th Ctrl Delay	8.9											
HCM 6th LOS	A											

Intersection												
Int Delay, s/veh	4.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	157	338	11	5	320	14	29	2	17	16	2	70
Future Vol, veh/h	157	338	11	5	320	14	29	2	17	16	2	70
Conflicting Peds, #/hr	3	0	3	3	0	3	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	140	-	-	95	-	0	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	3	3	0	0	5	0	0	0	0	0	0	27
Mvmt Flow	185	398	13	6	376	16	34	2	20	19	2	82
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	395	0	0	414	0	0	1216	1185	408	1177	1175	379
Stage 1	-	-	-	-	-	-	778	778	-	391	391	-
Stage 2	-	-	-	-	-	-	438	407	-	786	784	-
Critical Hdwy	4.13	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.47
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.227	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.543
Pot Cap-1 Maneuver	1158	-	-	1156	-	-	159	191	648	169	193	616
Stage 1	-	-	-	-	-	-	392	410	-	637	611	-
Stage 2	-	-	-	-	-	-	601	601	-	388	407	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1155	-	-	1153	-	-	119	159	646	141	160	614
Mov Cap-2 Maneuver	-	-	-	-	-	-	119	159	-	141	160	-
Stage 1	-	-	-	-	-	-	328	343	-	533	606	-
Stage 2	-	-	-	-	-	-	516	596	-	314	341	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	2.7			0.1			36.4			16.4		
HCM LOS							E			C		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2			
Capacity (veh/h)	170	1155	-	-	1153	-	-	143	614			
HCM Lane V/C Ratio	0.332	0.16	-	-	0.005	-	-	0.148	0.134			
HCM Control Delay (s)	36.4	8.7	-	-	8.1	-	-	34.5	11.8			
HCM Lane LOS	E	A	-	-	A	-	-	D	B			
HCM 95th %tile Q(veh)	1.4	0.6	-	-	0	-	-	0.5	0.5			

Timings 8: SE 176th Ave & SE 34th St

Vancouver Innovation Center
Baseline 2038 AM Peak Hour Conditions

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	49	436	3	357	14	5	66	3
Future Volume (vph)	49	436	3	357	14	5	66	3
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	Perm	NA
Protected Phases	5	2	1	6		8		4
Permitted Phases	2		6		8		4	
Detector Phase	5	2	1	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	5.0	15.0	5.0	15.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	24.0	10.0	28.0	33.0	33.0	32.0	32.0
Total Split (s)	15.0	45.0	15.0	45.0	25.0	25.0	25.0	25.0
Total Split (%)	17.6%	52.9%	17.6%	52.9%	29.4%	29.4%	29.4%	29.4%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lead	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	Min	None	Min	None	None	None	None
Act Effct Green (s)	31.7	34.1	29.6	30.0	9.2	9.2	9.4	9.4
Actuated g/C Ratio	0.68	0.73	0.63	0.64	0.20	0.20	0.20	0.20
v/c Ratio	0.10	0.38	0.01	0.43	0.06	0.04	0.28	0.14
Control Delay	6.3	9.0	6.7	12.5	18.3	14.7	20.5	8.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.3	9.0	6.7	12.5	18.3	14.7	20.5	8.3
LOS	A	A	A	B	B	B	C	A
Approach Delay		8.8		12.5		16.8		15.7
Approach LOS		A		B		B		B

Intersection Summary

Cycle Length: 85

Actuated Cycle Length: 46.7

Natural Cycle: 75

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.43

Intersection Signal Delay: 11.2

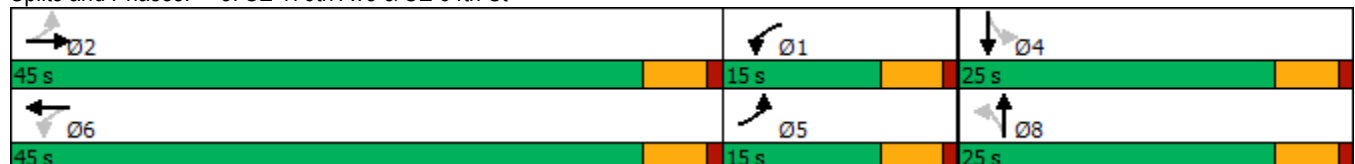
Intersection LOS: B

Intersection Capacity Utilization 50.1%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 8: SE 176th Ave & SE 34th St



HCM 6th Signalized Intersection Summary

8: SE 176th Ave & SE 34th St

Vancouver Innovation Center
Baseline 2038 AM Peak Hour Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	49	436	2	3	357	59	14	5	4	66	3	39
Future Volume (veh/h)	49	436	2	3	357	59	14	5	4	66	3	39
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.98		1.00	0.98		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1767	1856	1900	1900	1811	1826	1900	1900	1530	1870	1900	1885
Adj Flow Rate, veh/h	58	513	2	4	420	62	16	6	0	78	4	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	9	3	0	0	6	5	0	0	25	2	0	1
Cap, veh/h	470	766	3	483	642	95	348	205	0	345	205	0
Arrive On Green	0.06	0.41	0.41	0.06	0.42	0.42	0.11	0.11	0.00	0.11	0.11	0.00
Sat Flow, veh/h	1682	1847	7	1810	1541	227	1409	1900	0	1384	1900	0
Grp Volume(v), veh/h	58	0	515	4	0	482	16	6	0	78	4	0
Grp Sat Flow(s),veh/h/ln	1682	0	1854	1810	0	1769	1409	1900	0	1384	1900	0
Q Serve(g_s), s	0.0	0.0	8.2	0.0	0.0	7.9	0.4	0.1	0.0	1.9	0.1	0.0
Cycle Q Clear(g_c), s	0.0	0.0	8.2	0.0	0.0	7.9	0.4	0.1	0.0	2.0	0.1	0.0
Prop In Lane	1.00		0.00	1.00		0.13	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	470	0	769	483	0	737	348	205	0	345	205	0
V/C Ratio(X)	0.12	0.00	0.67	0.01	0.00	0.65	0.05	0.03	0.00	0.23	0.02	0.00
Avail Cap(c_a), veh/h	832	0	2047	868	0	1952	974	1049	0	959	1049	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	10.7	0.0	8.6	10.2	0.0	8.5	14.6	14.5	0.0	15.4	14.4	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.4	0.0	0.0	0.4	0.0	0.0	0.0	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.5	0.0	3.4	0.0	0.0	3.1	0.2	0.1	0.0	0.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.8	0.0	9.0	10.2	0.0	8.8	14.7	14.5	0.0	15.5	14.5	0.0
LnGrp LOS	B	A	A	B	A	A	B	B	A	B	B	A
Approach Vol, veh/h	573			486			22			82		
Approach Delay, s/veh	9.2			8.8			14.6			15.4		
Approach LOS	A			A			B			B		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.3	20.0		8.9	7.2	20.1		8.9				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	10.0	40.0		20.0	10.0	40.0		20.0				
Max Q Clear Time (g_c+I1), s	2.0	10.2		4.0	2.0	9.9		2.4				
Green Ext Time (p_c), s	0.0	2.0		0.1	0.0	1.9		0.0				
Intersection Summary												
HCM 6th Ctrl Delay	9.6											
HCM 6th LOS	A											

Intersection						
Int Delay, s/veh	0.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	13	4	124	91	104
Future Vol, veh/h	5	13	4	124	91	104
Conflicting Peds, #/hr	2	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	80	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	0	10	0	2	1	18
Mvmt Flow	6	15	5	146	107	122
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	326	168	229	0	-	0
Stage 1	168	-	-	-	-	-
Stage 2	158	-	-	-	-	-
Critical Hdwy	6.4	6.3	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.39	2.2	-	-	-
Pot Cap-1 Maneuver	672	856	1351	-	-	-
Stage 1	867	-	-	-	-	-
Stage 2	875	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	669	856	1351	-	-	-
Mov Cap-2 Maneuver	669	-	-	-	-	-
Stage 1	864	-	-	-	-	-
Stage 2	875	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	9.7	0.2		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1351	-	794	-	-	
HCM Lane V/C Ratio	0.003	-	0.027	-	-	
HCM Control Delay (s)	7.7	-	9.7	-	-	
HCM Lane LOS	A	-	A	-	-	
HCM 95th %tile Q(veh)	0	-	0.1	-	-	

Intersection	
Intersection Delay, s/veh	14.2
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	12	272	26	75	314	14	29	67	55	0	60	10
Future Vol, veh/h	12	272	26	75	314	14	29	67	55	0	60	10
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	0	4	10	4	1	9	4	3	0	0	0	0
Mvmt Flow	13	299	29	82	345	15	32	74	60	0	66	11
Number of Lanes	1	1	0	1	1	0	1	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	2	2
HCM Control Delay	15.2	15.1	11.2	11.2
HCM LOS	C	C	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	100%	0%	100%	0%	100%	0%	0%
Vol Thru, %	0%	55%	0%	91%	0%	96%	86%
Vol Right, %	0%	45%	0%	9%	0%	4%	14%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	29	122	12	298	75	328	70
LT Vol	29	0	12	0	75	0	0
Through Vol	0	67	0	272	0	314	60
RT Vol	0	55	0	26	0	14	10
Lane Flow Rate	32	134	13	327	82	360	77
Geometry Grp	7	7	7	7	7	7	6
Degree of Util (X)	0.065	0.242	0.024	0.539	0.146	0.578	0.148
Departure Headway (Hd)	7.343	6.496	6.42	5.92	6.357	5.768	6.911
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	487	551	557	609	564	624	517
Service Time	5.107	4.26	4.168	3.667	4.101	3.513	4.985
HCM Lane V/C Ratio	0.066	0.243	0.023	0.537	0.145	0.577	0.149
HCM Control Delay	10.6	11.3	9.3	15.4	10.2	16.2	11.2
HCM Lane LOS	B	B	A	C	B	C	B
HCM 95th-tile Q	0.2	0.9	0.1	3.2	0.5	3.7	0.5

Timings 11: SE 164th Ave & SE 29th St

Vancouver Innovation Center
Baseline 2038 AM Peak Hour Conditions

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	42	7	46	141	16	37	23	1081	16	795
Future Volume (vph)	42	7	46	141	16	37	23	1081	16	795
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Prot	NA
Protected Phases		2			6		7	4	3	8
Permitted Phases	2		2	6		6				
Detector Phase	2	2	2	6	6	6	7	4	3	8
Switch Phase										
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	5.0	15.0	5.0	15.0
Minimum Split (s)	39.0	39.0	39.0	38.0	38.0	38.0	10.0	32.0	10.0	32.0
Total Split (s)	39.0	39.0	39.0	39.0	39.0	39.0	17.0	64.0	17.0	64.0
Total Split (%)	32.5%	32.5%	32.5%	32.5%	32.5%	32.5%	14.2%	53.3%	14.2%	53.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag							Lead	Lag	Lead	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	None	C-Max
Act Effct Green (s)	18.7	18.7	18.7	18.7	18.7	18.7	5.7	86.9	5.4	84.6
Actuated g/C Ratio	0.16	0.16	0.16	0.16	0.16	0.16	0.05	0.72	0.04	0.70
v/c Ratio	0.21	0.02	0.16	0.69	0.07	0.13	0.28	0.31	0.22	0.24
Control Delay	42.7	37.1	6.3	62.4	38.9	3.9	37.5	22.3	61.9	8.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.7	37.1	6.3	62.4	38.9	3.9	37.5	22.3	61.9	8.2
LOS	D	D	A	E	D	A	D	C	E	A
Approach Delay		24.6			49.2			22.6		9.2
Approach LOS		C			D			C		A

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 85 (71%), Referenced to phase 8:SBT, Start of Green

Natural Cycle: 85

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.69

Intersection Signal Delay: 20.0

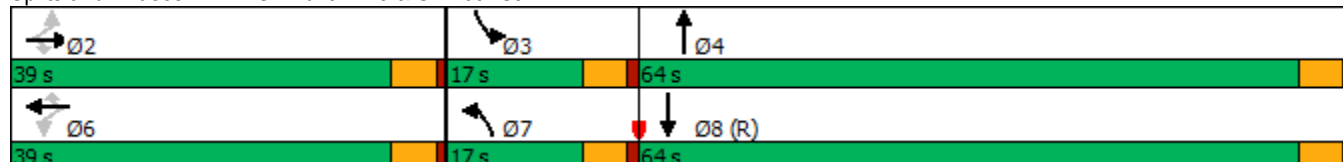
Intersection LOS: B

Intersection Capacity Utilization 51.7%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 11: SE 164th Ave & SE 29th St



HCM 6th Signalized Intersection Summary

11: SE 164th Ave & SE 29th St

Vancouver Innovation Center
Baseline 2038 AM Peak Hour Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	7	46	141	16	37	23	1081	15	16	795	26
Future Volume (veh/h)	42	7	46	141	16	37	23	1081	15	16	795	26
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1900	1856	1856	1648	1900	1900	1870	1796	1796	1856	1826
Adj Flow Rate, veh/h	44	7	5	148	17	4	24	1138	15	17	837	25
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	0	3	3	17	0	0	2	7	7	3	5
Cap, veh/h	221	239	198	230	207	202	42	2579	34	31	2485	74
Arrive On Green	0.13	0.13	0.13	0.13	0.13	0.13	0.02	0.50	0.50	0.02	0.49	0.49
Sat Flow, veh/h	1380	1900	1572	1391	1648	1610	1810	5194	68	1711	5055	151
Grp Volume(v), veh/h	44	7	5	148	17	4	24	746	407	17	559	303
Grp Sat Flow(s),veh/h/ln	1380	1900	1572	1391	1648	1610	1810	1702	1858	1711	1689	1828
Q Serve(g_s), s	3.5	0.4	0.3	12.5	1.1	0.3	1.6	16.9	17.0	1.2	12.1	12.1
Cycle Q Clear(g_c), s	4.6	0.4	0.3	12.9	1.1	0.3	1.6	16.9	17.0	1.2	12.1	12.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.04	1.00		0.08
Lane Grp Cap(c), veh/h	221	239	198	230	207	202	42	1690	923	31	1660	899
V/C Ratio(X)	0.20	0.03	0.03	0.64	0.08	0.02	0.58	0.44	0.44	0.55	0.34	0.34
Avail Cap(c_a), veh/h	438	538	446	450	467	456	181	1690	923	171	1660	899
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.78	0.78	0.78	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.4	46.0	46.0	51.7	46.4	46.0	58.0	19.5	19.5	58.4	18.6	18.6
Incr Delay (d2), s/veh	0.2	0.0	0.0	1.1	0.1	0.0	3.6	0.7	1.2	5.6	0.5	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.2	0.3	0.2	7.9	0.8	0.2	1.4	10.3	11.2	1.0	8.2	8.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.5	46.1	46.0	52.8	46.4	46.0	61.7	20.1	20.7	64.0	19.1	19.6
LnGrp LOS	D	D	D	D	D	D	E	C	C	E	B	B
Approach Vol, veh/h	56			169			1177			879		
Approach Delay, s/veh	48.0			52.0			21.2			20.2		
Approach LOS	D			D			C			C		
Timer - Assigned Phs	2			3			4			6		
Phs Duration (G+Y+Rc), s	20.1			7.2			64.6			20.1		
Change Period (Y+Rc), s	5.0			5.0			5.0			5.0		
Max Green Setting (Gmax), s	34.0			12.0			59.0			34.0		
Max Q Clear Time (g_c+I1), s	6.6			3.2			19.0			14.9		
Green Ext Time (p_c), s	0.0			0.0			5.3			0.2		
Intersection Summary												
HCM 6th Ctrl Delay	23.7											
HCM 6th LOS	C											

Timings
12: SE 164th Ave/SE164th Ave & SE 34th Street

Vancouver Innovation Center
Baseline 2038 AM Peak Hour Conditions

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	28	60	165	294	121	109	111	931	264	158	742
Future Volume (vph)	28	60	165	294	121	109	111	931	264	158	742
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA
Protected Phases	5	2	7	1	6	3	7	4	1	3	8
Permitted Phases			2			6			4		
Detector Phase	5	2	7	1	6	3	7	4	1	3	8
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	20.0	5.0	5.0	20.0
Minimum Split (s)	10.0	33.0	10.0	10.0	32.0	10.0	10.0	31.0	10.0	10.0	28.0
Total Split (s)	20.0	33.0	20.0	25.0	38.0	17.0	20.0	45.0	25.0	17.0	42.0
Total Split (%)	16.7%	27.5%	16.7%	20.8%	31.7%	14.2%	16.7%	37.5%	20.8%	14.2%	35.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes		Yes		Yes	Yes	Yes	Yes		Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	None	None	C-Max
Act Effct Green (s)	6.4	8.2	23.0	20.0	23.8	47.0	11.8	55.6	80.6	18.2	62.0
Actuated g/C Ratio	0.05	0.07	0.19	0.17	0.20	0.39	0.10	0.46	0.67	0.15	0.52
v/c Ratio	0.39	0.56	0.53	1.11	0.36	0.18	0.72	0.64	0.26	0.66	0.34
Control Delay	68.3	70.9	31.3	130.9	45.0	4.6	74.0	28.4	1.8	52.0	20.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.3	70.9	31.3	130.9	45.0	4.6	74.0	28.4	1.8	52.0	20.8
LOS	E	E	C	F	D	A	E	C	A	D	C
Approach Delay		44.8			84.9			26.9			26.1
Approach LOS		D			F			C			C

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 15 (13%), Referenced to phase 8:SBT, Start of Green

Natural Cycle: 105

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.11

Intersection Signal Delay: 38.2

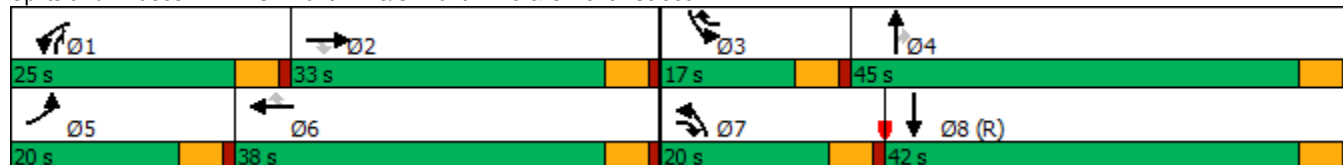
Intersection LOS: D

Intersection Capacity Utilization 70.3%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 12: SE 164th Ave/SE164th Ave & SE 34th Street



HCM 6th Signalized Intersection Summary

12: SE 164th Ave/SE164th Ave & SE 34th Street

Vancouver Innovation Center
Baseline 2038 AM Peak Hour Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	28	60	165	294	121	109	111	931	264	158	742	37
Future Volume (veh/h)	28	60	165	294	121	109	111	931	264	158	742	37
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1565	1758	1803	1870	1885	1841	1791	1776	1746	1806	1761	1761
Adj Flow Rate, veh/h	31	67	124	327	134	33	123	1034	169	176	824	38
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	19	6	3	2	1	4	1	2	4	0	3	3
Cap, veh/h	40	159	270	297	434	515	147	1125	740	172	1635	75
Arrive On Green	0.03	0.09	0.09	0.17	0.23	0.23	0.09	0.33	0.33	0.03	0.11	0.11
Sat Flow, veh/h	1491	1758	1528	1781	1885	1560	1706	3375	1480	1720	4711	217
Grp Volume(v), veh/h	31	67	124	327	134	33	123	1034	169	176	560	302
Grp Sat Flow(s),veh/h/ln	1491	1758	1528	1781	1885	1560	1706	1687	1480	1720	1603	1722
Q Serve(g_s), s	2.5	4.3	8.7	20.0	7.1	1.7	8.5	35.3	7.7	12.0	19.7	19.8
Cycle Q Clear(g_c), s	2.5	4.3	8.7	20.0	7.1	1.7	8.5	35.3	7.7	12.0	19.7	19.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.13
Lane Grp Cap(c), veh/h	40	159	270	297	434	515	147	1125	740	172	1112	598
V/C Ratio(X)	0.77	0.42	0.46	1.10	0.31	0.06	0.84	0.92	0.23	1.02	0.50	0.51
Avail Cap(c_a), veh/h	186	410	488	297	518	585	213	1125	740	172	1112	598
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.96	0.96	0.96
Uniform Delay (d), s/veh	58.0	51.6	44.2	50.0	38.3	27.5	54.0	38.4	16.9	58.0	43.4	43.5
Incr Delay (d2), s/veh	11.1	0.7	0.5	82.2	0.1	0.0	11.8	13.3	0.7	73.5	1.6	2.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.9	3.4	5.9	23.0	5.8	1.2	7.3	22.7	4.8	14.0	13.4	14.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	69.2	52.2	44.7	132.2	38.4	27.5	65.8	51.8	17.7	131.5	45.0	46.4
LnGrp LOS	E	D	D	F	D	C	E	D	B	F	D	D
Approach Vol, veh/h	222				494				1326			
Approach Delay, s/veh	50.4				99.8				48.7			
Approach LOS	D				F				D			
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	25.0	15.9	17.0	45.0	8.2	32.7	15.4	46.6				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	20.0	28.0	12.0	40.0	15.0	33.0	15.0	37.0				
Max Q Clear Time (g_c+I1), s	22.0	10.7	14.0	37.3	4.5	9.1	10.5	21.8				
Green Ext Time (p_c), s	0.0	0.1	0.0	1.0	0.0	0.2	0.0	1.7				
Intersection Summary												
HCM 6th Ctrl Delay	60.8											
HCM 6th LOS	E											

Timings

1: SE 192nd & SE 15th St

Vancouver Innovation Center
Baseline 2038 PM Peak Hour Conditions

									
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	116	91	40	82	242	63	1246	115	1424
Future Volume (vph)	116	91	40	82	242	63	1246	115	1424
Turn Type	Prot	NA	Prot	NA	pm+ov	Prot	NA	Prot	NA
Protected Phases	5	2	1	6	3	7	4	3	8
Permitted Phases					6				
Detector Phase	5	2	1	6	3	7	4	3	8
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	15.0	5.0	15.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	20.0	10.0	20.0
Total Split (s)	15.0	29.0	15.0	29.0	16.0	14.0	40.0	16.0	42.0
Total Split (%)	15.0%	29.0%	15.0%	29.0%	16.0%	14.0%	40.0%	16.0%	42.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	None	Max
Act Effct Green (s)	9.0	15.7	6.2	10.9	19.7	7.0	52.3	9.7	57.0
Actuated g/C Ratio	0.09	0.16	0.06	0.11	0.20	0.07	0.52	0.10	0.57
v/c Ratio	0.79	0.58	0.38	0.43	0.68	0.52	0.73	0.69	0.82
Control Delay	78.1	36.7	54.0	45.8	30.8	52.8	23.8	63.7	25.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	78.1	36.7	54.0	45.8	30.8	52.8	23.8	63.7	25.9
LOS	E	D	D	D	C	D	C	E	C
Approach Delay		53.4		36.7			25.2		28.5
Approach LOS		D		D			C		C

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 98 (98%), Referenced to phase 4:NBT, Start of Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.82

Intersection Signal Delay: 30.1

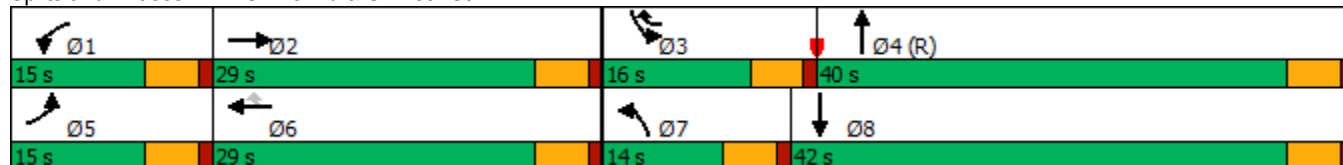
Intersection LOS: C

Intersection Capacity Utilization 78.7%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 1: SE 192nd & SE 15th St



HCM 6th Signalized Intersection Summary

1: SE 192nd & SE 15th St

Vancouver Innovation Center

Baseline 2038 PM Peak Hour Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	116	91	80	40	82	242	63	1246	32	115	1424	133
Future Volume (veh/h)	116	91	80	40	82	242	63	1246	32	115	1424	133
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1885	1900	1900	1856	1900	1900	1870	1900	1900	1870	1870
Adj Flow Rate, veh/h	122	96	47	42	86	192	66	1312	33	121	1499	135
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	5	1	0	0	3	0	0	2	0	0	2	2
Cap, veh/h	150	221	108	62	248	345	100	1762	44	150	1733	155
Arrive On Green	0.09	0.19	0.19	0.03	0.13	0.13	0.11	1.00	1.00	0.08	0.53	0.53
Sat Flow, veh/h	1739	1194	585	1810	1856	1582	1810	3542	89	1810	3298	295
Grp Volume(v), veh/h	122	0	143	42	86	192	66	658	687	121	803	831
Grp Sat Flow(s),veh/h/ln	1739	0	1779	1810	1856	1582	1810	1777	1854	1810	1777	1816
Q Serve(g_s), s	6.9	0.0	7.1	2.3	4.2	10.8	3.5	0.7	0.7	6.6	39.1	40.1
Cycle Q Clear(g_c), s	6.9	0.0	7.1	2.3	4.2	10.8	3.5	0.7	0.7	6.6	39.1	40.1
Prop In Lane	1.00		0.33	1.00		1.00	1.00		0.05	1.00		0.16
Lane Grp Cap(c), veh/h	150	0	329	62	248	345	100	884	923	150	934	954
V/C Ratio(X)	0.82	0.00	0.43	0.67	0.35	0.56	0.66	0.74	0.74	0.81	0.86	0.87
Avail Cap(c_a), veh/h	174	0	427	181	445	513	163	884	923	199	934	954
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	0.48	0.48	0.48	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.9	0.0	36.1	47.7	39.4	34.9	43.6	0.1	0.1	45.1	20.5	20.8
Incr Delay (d2), s/veh	19.5	0.0	0.3	4.6	0.3	0.5	1.3	2.8	2.7	12.3	10.2	10.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	6.7	0.0	5.5	2.0	3.5	7.3	2.7	1.3	1.4	6.1	23.8	24.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.4	0.0	36.4	52.4	39.7	35.5	45.0	2.9	2.8	57.3	30.7	31.5
LnGrp LOS	E	A	D	D	D	D	D	A	A	E	C	C
Approach Vol, veh/h		265			320			1411			1755	
Approach Delay, s/veh		49.3			38.8			4.8			32.9	
Approach LOS		D			D			A			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.4	23.5	13.3	54.8	13.6	18.4	10.5	57.5				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	10.0	24.0	11.0	35.0	10.0	24.0	9.0	37.0				
Max Q Clear Time (g_c+I1), s	4.3	9.1	8.6	2.7	8.9	12.8	5.5	42.1				
Green Ext Time (p_c), s	0.0	0.2	0.0	2.9	0.0	0.2	0.0	0.0				
Intersection Summary												
HCM 6th Ctrl Delay			24.0									
HCM 6th LOS			C									

Timings
2: SE 192nd Ave & SE 20th St

Vancouver Innovation Center
Baseline 2038 PM Peak Hour Conditions

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	233	183	236	265	138	813	151	1024
Future Volume (vph)	233	183	236	265	138	813	151	1024
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	5	2	1	6	7	4	3	8
Permitted Phases								
Detector Phase	5	2	1	6	7	4	3	8
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	20.0	5.0	20.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	25.0	10.0	25.0
Total Split (s)	20.0	27.0	20.0	27.0	14.0	35.0	18.0	39.0
Total Split (%)	20.0%	27.0%	20.0%	27.0%	14.0%	35.0%	18.0%	39.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	Min	C-Max	None	Max
Act Effect Green (s)	11.3	24.3	11.4	24.4	9.1	32.6	11.7	35.2
Actuated g/C Ratio	0.11	0.24	0.11	0.24	0.09	0.33	0.12	0.35
v/c Ratio	0.62	0.63	0.62	0.88	0.88	0.86	0.75	1.07
Control Delay	49.0	38.5	48.9	56.7	96.7	22.6	63.9	76.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.0	38.5	48.9	56.7	96.7	22.6	63.9	76.2
LOS	D	D	D	E	F	C	E	E
Approach Delay		43.3		53.7		32.0		74.9
Approach LOS		D		D		C		E

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 93 (93%), Referenced to phase 4:NBT, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.07

Intersection Signal Delay: 54.0

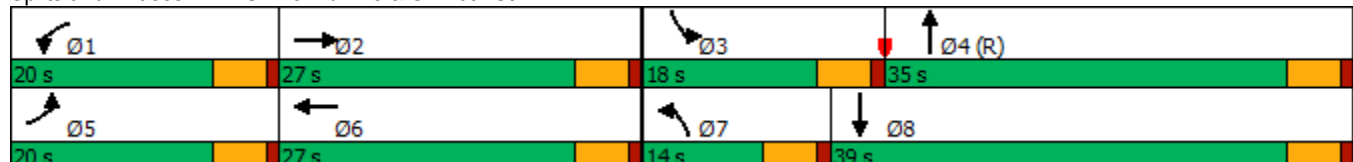
Intersection LOS: D

Intersection Capacity Utilization 88.0%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 2: SE 192nd Ave & SE 20th St



HCM 6th Signalized Intersection Summary

2: SE 192nd Ave & SE 20th St

Vancouver Innovation Center
Baseline 2038 PM Peak Hour Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	233	183	92	236	265	118	138	813	137	151	1024	237
Future Volume (veh/h)	233	183	92	236	265	118	138	813	137	151	1024	237
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1885	1900	1900	1870	1900	1885	1900	1885	1870	1885
Adj Flow Rate, veh/h	243	191	78	246	276	106	144	847	129	157	1067	227
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	1	0	0	2	0	1	0	1	2	1
Cap, veh/h	316	281	115	319	286	110	163	1198	182	189	1167	247
Arrive On Green	0.09	0.22	0.22	0.09	0.22	0.22	0.09	0.38	0.38	0.14	0.53	0.53
Sat Flow, veh/h	3510	1281	523	3510	1301	500	1810	3115	474	1795	2917	618
Grp Volume(v), veh/h	243	0	269	246	0	382	144	487	489	157	648	646
Grp Sat Flow(s),veh/h/ln	1755	0	1804	1755	0	1801	1810	1791	1799	1795	1777	1758
Q Serve(g_s), s	6.8	0.0	13.7	6.9	0.0	21.0	7.9	23.0	23.0	8.5	33.2	33.6
Cycle Q Clear(g_c), s	6.8	0.0	13.7	6.9	0.0	21.0	7.9	23.0	23.0	8.5	33.2	33.6
Prop In Lane	1.00		0.29	1.00		0.28	1.00		0.26	1.00		0.35
Lane Grp Cap(c), veh/h	316	0	396	319	0	396	163	689	692	189	711	703
V/C Ratio(X)	0.77	0.00	0.68	0.77	0.00	0.96	0.88	0.71	0.71	0.83	0.91	0.92
Avail Cap(c_a), veh/h	527	0	397	527	0	396	163	689	692	233	711	703
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.48	0.48	0.48
Uniform Delay (d), s/veh	44.5	0.0	35.8	44.5	0.0	38.6	45.0	26.0	26.0	42.1	21.8	21.9
Incr Delay (d2), s/veh	1.5	0.0	3.8	1.5	0.0	35.6	38.3	6.0	6.0	7.9	10.1	10.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.3	0.0	10.3	5.3	0.0	18.7	8.9	15.6	15.7	6.2	16.8	17.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.0	0.0	39.7	46.0	0.0	74.2	83.3	32.1	32.0	50.1	31.9	32.6
LnGrp LOS	D	A	D	D	A	E	F	C	C	D	C	C
Approach Vol, veh/h		512			628			1120			1451	
Approach Delay, s/veh		42.7			63.2			38.6			34.2	
Approach LOS		D			E			D			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.1	26.9	15.6	43.4	14.0	27.0	14.0	45.0				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	15.0	22.0	13.0	30.0	15.0	22.0	9.0	34.0				
Max Q Clear Time (g_c+I1), s	8.9	15.7	10.5	25.0	8.8	23.0	9.9	35.6				
Green Ext Time (p_c), s	0.2	0.5	0.0	1.9	0.2	0.0	0.0	0.0				
Intersection Summary												
HCM 6th Ctrl Delay			41.6									
HCM 6th LOS			D									

Intersection						
Int Delay, s/veh	0.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	3	4	1098	3	10	1219
Future Vol, veh/h	3	4	1098	3	10	1219
Conflicting Peds, #/hr	0	0	0	2	2	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	125	0	-	-	230	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	1	0	0	1
Mvmt Flow	3	4	1156	3	11	1283
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1824	582	0	0	1161	0
Stage 1	1160	-	-	-	-	-
Stage 2	664	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.1	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	70	461	-	-	609	-
Stage 1	265	-	-	-	-	-
Stage 2	479	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	69	460	-	-	608	-
Mov Cap-2 Maneuver	69	-	-	-	-	-
Stage 1	264	-	-	-	-	-
Stage 2	470	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	33	0	0.1			
HCM LOS	D					
Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT		
Capacity (veh/h)	-	- 69 460	608	-		
HCM Lane V/C Ratio	-	- 0.046 0.009	0.017	-		
HCM Control Delay (s)	-	- 59.7 12.9	11	-		
HCM Lane LOS	-	- F B	B	-		
HCM 95th %tile Q(veh)	-	- 0.1 0	0.1	-		

Timings
5: SE 192nd Ave & SE 34th St

Vancouver Innovation Center
Baseline 2038 PM Peak Hour Conditions

										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	126	204	355	183	120	108	955	204	212	932
Future Volume (vph)	126	204	355	183	120	108	955	204	212	932
Turn Type	pm+pt	NA	pm+pt	NA	Perm	Prot	NA	pm+ov	Prot	NA
Protected Phases	5	2	1	6		7	4	1	3	8
Permitted Phases	2		6		6			4		
Detector Phase	5	2	1	6	6	7	4	1	3	8
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	20.0	5.0	5.0	20.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	25.0	10.0	10.0	25.0
Total Split (s)	14.0	32.0	19.0	37.0	37.0	13.0	34.0	19.0	15.0	36.0
Total Split (%)	14.0%	32.0%	19.0%	37.0%	37.0%	13.0%	34.0%	19.0%	15.0%	36.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	None	None	Max
Act Effct Green (s)	27.5	19.6	38.6	25.7	25.7	9.1	36.4	50.4	10.0	37.3
Actuated g/C Ratio	0.28	0.20	0.39	0.26	0.26	0.09	0.36	0.50	0.10	0.37
v/c Ratio	0.37	0.83	1.08	0.39	0.23	0.69	0.77	0.24	0.65	0.86
Control Delay	22.9	54.8	98.0	32.3	2.0	65.7	34.3	1.9	40.7	29.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.9	54.8	98.0	32.3	2.0	65.7	34.3	1.9	40.7	29.1
LOS	C	D	F	C	A	E	C	A	D	C
Approach Delay		45.0		62.2			31.8			31.0
Approach LOS		D		E			C			C

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 36 (36%), Referenced to phase 4:NBT, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.08

Intersection Signal Delay: 38.6

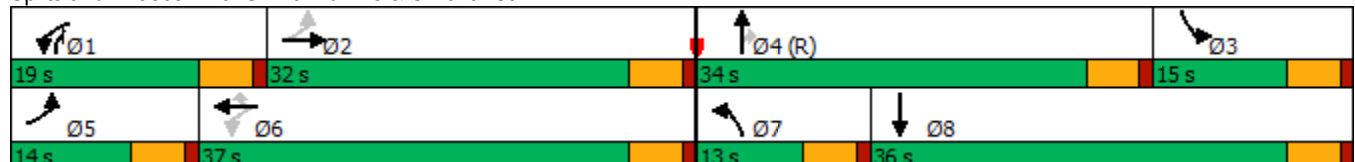
Intersection LOS: D

Intersection Capacity Utilization 88.7%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 5: SE 192nd Ave & SE 34th St



HCM 6th Signalized Intersection Summary

5: SE 192nd Ave & SE 34th St

Vancouver Innovation Center
Baseline 2038 PM Peak Hour Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	126	204	83	355	183	120	108	955	204	212	932	118
Future Volume (veh/h)	126	204	83	355	183	120	108	955	204	212	932	118
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1773	1847	1817	2003	2003	2018	2018	1988	2003	1847	1832	1743
Adj Flow Rate, veh/h	133	215	70	374	193	25	114	1005	98	223	981	115
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	5	0	2	1	1	0	0	2	1	0	1	7
Cap, veh/h	392	250	81	375	496	422	144	1095	726	621	1244	146
Arrive On Green	0.08	0.19	0.19	0.14	0.25	0.25	0.08	0.29	0.29	0.18	0.40	0.40
Sat Flow, veh/h	1688	1328	432	1908	2003	1704	1922	3777	1683	3413	3132	367
Grp Volume(v), veh/h	133	0	285	374	193	25	114	1005	98	223	545	551
Grp Sat Flow(s),veh/h/ln	1688	0	1760	1908	2003	1704	1922	1889	1683	1706	1741	1759
Q Serve(g_s), s	6.3	0.0	15.7	14.0	8.0	0.7	5.8	25.7	1.5	5.7	27.5	27.5
Cycle Q Clear(g_c), s	6.3	0.0	15.7	14.0	8.0	0.7	5.8	25.7	1.5	5.7	27.5	27.5
Prop In Lane	1.00		0.25	1.00		1.00	1.00		1.00	1.00		0.21
Lane Grp Cap(c), veh/h	392	0	331	375	496	422	144	1095	726	621	691	698
V/C Ratio(X)	0.34	0.00	0.86	1.00	0.39	0.06	0.79	0.92	0.14	0.36	0.79	0.79
Avail Cap(c_a), veh/h	408	0	475	375	641	545	154	1095	726	621	691	698
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.89	0.00	0.89	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.1	0.0	39.3	30.0	31.3	11.2	45.5	34.3	5.9	35.8	26.5	26.5
Incr Delay (d2), s/veh	0.2	0.0	7.1	45.4	0.2	0.0	20.3	13.4	0.4	0.1	8.9	8.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.4	0.0	11.3	17.2	6.8	0.8	6.3	19.2	1.2	4.2	18.1	18.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.2	0.0	46.5	75.4	31.5	11.3	65.8	47.8	6.3	35.9	35.4	35.3
LnGrp LOS	C	A	D	E	C	B	E	D	A	D	D	D
Approach Vol, veh/h	418			592			1217			1319		
Approach Delay, s/veh	41.0			58.4			46.1			35.4		
Approach LOS	D			E			D			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	19.0	23.8	23.2	34.0	13.1	29.7	12.5	44.7				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	14.0	27.0	10.0	29.0	9.0	32.0	8.0	31.0				
Max Q Clear Time (g_c+I1), s	16.0	17.7	7.7	27.7	8.3	10.0	7.8	29.5				
Green Ext Time (p_c), s	0.0	0.4	0.0	0.5	0.0	0.3	0.0	0.5				
Intersection Summary												
HCM 6th Ctrl Delay	43.6											
HCM 6th LOS	D											

Timings

6: SE Hiddenbrook Dr & SE 34th St

Vancouver Innovation Center

Baseline 2038 PM Peak Hour Conditions

									
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	12	336	37	387	71	1	44	7	118
Future Volume (vph)	12	336	37	387	71	1	44	7	118
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA	Perm
Protected Phases	5	2	1	6		8		4	
Permitted Phases					8		4		4
Detector Phase	5	2	1	6	8	8	4	4	4
Switch Phase									
Minimum Initial (s)	5.0	15.0	5.0	15.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	30.0	10.0	30.0	32.0	32.0	34.0	34.0	34.0
Total Split (s)	10.0	85.0	10.0	85.0	35.0	35.0	35.0	35.0	35.0
Total Split (%)	7.7%	65.4%	7.7%	65.4%	26.9%	26.9%	26.9%	26.9%	26.9%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					
Recall Mode	None	Min	None	Min	None	None	None	None	None
Act Effect Green (s)	5.6	22.8	5.6	24.8	8.4	8.4		8.4	8.4
Actuated g/C Ratio	0.13	0.54	0.13	0.59	0.20	0.20		0.20	0.20
v/c Ratio	0.05	0.45	0.17	0.41	0.29	0.11		0.20	0.30
Control Delay	24.1	12.7	24.5	10.8	17.6	7.2		16.3	5.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay	24.1	12.7	24.5	10.8	17.6	7.2		16.3	5.8
LOS	C	B	C	B	B	A		B	A
Approach Delay		13.1		11.9		14.3		8.9	
Approach LOS		B		B		B		A	

Intersection Summary

Cycle Length: 130

Actuated Cycle Length: 41.9

Natural Cycle: 75

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.45

Intersection Signal Delay: 12.1

Intersection LOS: B

Intersection Capacity Utilization 50.4%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 6: SE Hiddenbrook Dr & SE 34th St

		
Ø1	Ø2	Ø4
10 s	85 s	35 s
		
Ø5	Ø6	Ø8
10 s	85 s	35 s

HCM 6th Signalized Intersection Summary

6: SE Hiddenbrook Dr & SE 34th St

Vancouver Innovation Center
Baseline 2038 PM Peak Hour Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	336	80	37	387	29	71	1	32	44	7	118
Future Volume (veh/h)	12	336	80	37	387	29	71	1	32	44	7	118
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	0.99		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1870	1841	1832	1847	1876	1817	1876	1832	1841	1900	1900
Adj Flow Rate, veh/h	13	357	75	39	412	29	76	1	4	47	7	14
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	2	4	3	2	0	4	0	3	4	0	0
Cap, veh/h	31	632	133	78	767	54	320	40	160	331	37	196
Arrive On Green	0.02	0.42	0.42	0.04	0.45	0.45	0.12	0.12	0.12	0.12	0.12	0.12
Sat Flow, veh/h	1810	1497	314	1745	1704	120	1346	326	1304	1195	303	1603
Grp Volume(v), veh/h	13	0	432	39	0	441	76	0	5	54	0	14
Grp Sat Flow(s),veh/h/ln	1810	0	1811	1745	0	1824	1346	0	1630	1498	0	1603
Q Serve(g_s), s	0.3	0.0	6.6	0.8	0.0	6.4	2.0	0.0	0.1	0.8	0.0	0.3
Cycle Q Clear(g_c), s	0.3	0.0	6.6	0.8	0.0	6.4	3.1	0.0	0.1	1.1	0.0	0.3
Prop In Lane	1.00		0.17	1.00		0.07	1.00		0.80	0.87		1.00
Lane Grp Cap(c), veh/h	31	0	765	78	0	821	320	0	200	368	0	196
V/C Ratio(X)	0.42	0.00	0.57	0.50	0.00	0.54	0.24	0.00	0.03	0.15	0.00	0.07
Avail Cap(c_a), veh/h	248	0	3966	239	0	3995	1261	0	1339	1395	0	1317
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.8	0.0	8.0	17.0	0.0	7.3	16.0	0.0	14.1	14.5	0.0	14.2
Incr Delay (d2), s/veh	3.4	0.0	0.2	1.8	0.0	0.2	0.1	0.0	0.0	0.1	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.2	0.0	2.7	0.5	0.0	2.4	1.0	0.0	0.1	0.6	0.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.2	0.0	8.3	18.9	0.0	7.5	16.1	0.0	14.1	14.6	0.0	14.2
LnGrp LOS	C	A	A	B	A	A	B	A	B	B	A	B
Approach Vol, veh/h	445			480			81			68		
Approach Delay, s/veh	8.6			8.4			16.0			14.5		
Approach LOS	A			A			B			B		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.6	20.4		9.5	5.6	21.4		9.5				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	5.0	80.0		30.0	5.0	80.0		30.0				
Max Q Clear Time (g_c+I1), s	2.8	8.6		3.1	2.3	8.4		5.1				
Green Ext Time (p_c), s	0.0	0.4		0.0	0.0	0.4		0.0				
Intersection Summary												
HCM 6th Ctrl Delay				9.5								
HCM 6th LOS				A								

Intersection												
Int Delay, s/veh	4.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	31	407	32	12	560	4	18	0	7	14	4	181
Future Vol, veh/h	31	407	32	12	560	4	18	0	7	14	4	181
Conflicting Peds, #/hr	6	0	0	0	0	6	0	0	1	1	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	140	-	-	95	-	0	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	0	2	0	0	2	0	0	0	0	0	0	0
Mvmt Flow	34	447	35	13	615	4	20	0	8	15	4	199
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	625	0	0	482	0	0	1278	1184	466	1185	1197	621
Stage 1	-	-	-	-	-	-	533	533	-	647	647	-
Stage 2	-	-	-	-	-	-	745	651	-	538	550	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	966	-	-	1091	-	-	144	191	601	167	187	491
Stage 1	-	-	-	-	-	-	534	528	-	463	470	-
Stage 2	-	-	-	-	-	-	409	468	-	531	519	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	960	-	-	1091	-	-	81	181	600	158	177	488
Mov Cap-2 Maneuver	-	-	-	-	-	-	81	181	-	158	177	-
Stage 1	-	-	-	-	-	-	515	510	-	444	462	-
Stage 2	-	-	-	-	-	-	237	460	-	505	501	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.6			0.2			49.9			18.6		
HCM LOS							E			C		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2			
Capacity (veh/h)	107	960	-	-	1091	-	-	162	488			
HCM Lane V/C Ratio	0.257	0.035	-	-	0.012	-	-	0.122	0.408			
HCM Control Delay (s)	49.9	8.9	-	-	8.3	-	-	30.3	17.4			
HCM Lane LOS	E	A	-	-	A	-	-	D	C			
HCM 95th %tile Q(veh)	0.9	0.1	-	-	0	-	-	0.4	2			

Timings 8: SE 176th Ave & SE 34th St

Vancouver Innovation Center
Baseline 2038 PM Peak Hour Conditions

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	141	374	11	628	10	6	94	15
Future Volume (vph)	141	374	11	628	10	6	94	15
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	Perm	NA
Protected Phases	5	2	1	6		8		4
Permitted Phases	2		6		8		4	
Detector Phase	5	2	1	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	5.0	15.0	5.0	15.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	24.0	10.0	28.0	33.0	33.0	32.0	32.0
Total Split (s)	15.0	45.0	15.0	45.0	25.0	25.0	25.0	25.0
Total Split (%)	17.6%	52.9%	17.6%	52.9%	29.4%	29.4%	29.4%	29.4%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lead	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	Min	None	Min	None	None	None	None
Act Effct Green (s)	49.2	49.1	41.1	37.3	11.0	11.0	11.0	11.0
Actuated g/C Ratio	0.71	0.71	0.59	0.54	0.16	0.16	0.16	0.16
v/c Ratio	0.42	0.32	0.02	0.82	0.05	0.03	0.46	0.07
Control Delay	17.6	9.9	7.9	25.0	26.2	23.2	34.6	22.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.6	9.9	7.9	25.0	26.2	23.2	34.6	22.6
LOS	B	A	A	C	C	C	C	C
Approach Delay		11.9		24.7		24.9		32.5
Approach LOS		B		C		C		C

Intersection Summary

Cycle Length: 85

Actuated Cycle Length: 69.3

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.82

Intersection Signal Delay: 20.6

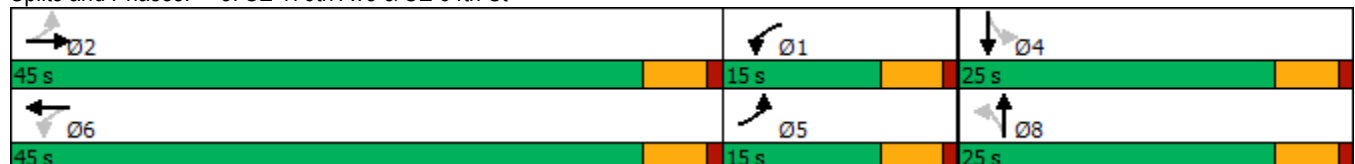
Intersection LOS: C

Intersection Capacity Utilization 72.8%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 8: SE 176th Ave & SE 34th St



HCM 6th Signalized Intersection Summary

8: SE 176th Ave & SE 34th St

Vancouver Innovation Center
Baseline 2038 PM Peak Hour Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	141	374	13	11	628	120	10	6	2	94	15	5
Future Volume (veh/h)	141	374	13	11	628	120	10	6	2	94	15	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1885	1870	1900	1900	1885	1885	1900	1900	1900	1885	1900	1900
Adj Flow Rate, veh/h	153	407	13	12	683	122	11	7	0	102	16	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	2	0	0	1	1	0	0	0	1	0	0
Cap, veh/h	307	552	18	724	781	139	281	196	0	288	182	11
Arrive On Green	0.09	0.31	0.31	0.28	0.50	0.50	0.10	0.10	0.00	0.10	0.10	0.10
Sat Flow, veh/h	1795	1802	58	1810	1557	278	1412	1900	0	1413	1766	110
Grp Volume(v), veh/h	153	0	420	12	0	805	11	7	0	102	0	17
Grp Sat Flow(s),veh/h/ln	1795	0	1860	1810	0	1835	1412	1900	0	1413	0	1876
Q Serve(g_s), s	0.0	0.0	9.9	0.0	0.0	19.1	0.3	0.2	0.0	3.4	0.0	0.4
Cycle Q Clear(g_c), s	0.0	0.0	9.9	0.0	0.0	19.1	0.7	0.2	0.0	3.6	0.0	0.4
Prop In Lane	1.00		0.03	1.00		0.15	1.00		0.00	1.00		0.06
Lane Grp Cap(c), veh/h	307	0	569	724	0	920	281	196	0	288	0	194
V/C Ratio(X)	0.50	0.00	0.74	0.02	0.00	0.87	0.04	0.04	0.00	0.35	0.00	0.09
Avail Cap(c_a), veh/h	513	0	1519	724	0	1498	712	776	0	719	0	766
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	20.3	0.0	15.2	10.6	0.0	10.9	20.2	19.8	0.0	21.4	0.0	19.9
Incr Delay (d2), s/veh	0.5	0.0	0.7	0.0	0.0	2.0	0.0	0.0	0.0	0.3	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.6	0.0	6.2	0.1	0.0	9.3	0.2	0.1	0.0	1.9	0.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.8	0.0	15.9	10.6	0.0	12.8	20.2	19.8	0.0	21.7	0.0	20.0
LnGrp LOS	C	A	B	B	A	B	C	B	A	C	A	B
Approach Vol, veh/h	573			817			18			119		
Approach Delay, s/veh	17.2			12.8			20.1			21.4		
Approach LOS	B			B			C			C		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	18.9	20.0		10.1	9.4	29.6		10.1				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	10.0	40.0		20.0	10.0	40.0		20.0				
Max Q Clear Time (g_c+I1), s	2.0	11.9		5.6	2.0	21.1		2.7				
Green Ext Time (p_c), s	0.0	1.5		0.1	0.1	3.5		0.0				

Intersection Summary

HCM 6th Ctrl Delay 15.2
HCM 6th LOS B

Notes

User approved pedestrian interval to be less than phase max green.

Intersection						
Int Delay, s/veh	1.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	20	31	15	259	89	105
Future Vol, veh/h	20	31	15	259	89	105
Conflicting Peds, #/hr	3	0	7	0	0	7
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	80	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	7	0	15	0	1	0
Mvmt Flow	22	33	16	278	96	113
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	473	160	216	0	-	0
Stage 1	160	-	-	-	-	-
Stage 2	313	-	-	-	-	-
Critical Hdwy	6.47	6.2	4.25	-	-	-
Critical Hdwy Stg 1	5.47	-	-	-	-	-
Critical Hdwy Stg 2	5.47	-	-	-	-	-
Follow-up Hdwy	3.563	3.3	2.335	-	-	-
Pot Cap-1 Maneuver	541	890	1280	-	-	-
Stage 1	857	-	-	-	-	-
Stage 2	730	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	526	884	1271	-	-	-
Mov Cap-2 Maneuver	526	-	-	-	-	-
Stage 1	840	-	-	-	-	-
Stage 2	725	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	10.6	0.4		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1271	-	698	-	-	
HCM Lane V/C Ratio	0.013	-	0.079	-	-	
HCM Control Delay (s)	7.9	-	10.6	-	-	
HCM Lane LOS	A	-	B	-	-	
HCM 95th %tile Q(veh)	0	-	0.3	-	-	

Intersection	
Intersection Delay, s/veh	79.6
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	48	466	58	89	503	18	41	120	73	27	84	28
Future Vol, veh/h	48	466	58	89	503	18	41	120	73	27	84	28
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	3	0	0	1	0	7	0	1	0	4	1	8
Mvmt Flow	52	507	63	97	547	20	45	130	79	29	91	30
Number of Lanes	1	1	0	1	1	0	1	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	2	2
HCM Control Delay	102.9	95.5	18	18.2
HCM LOS	F	F	C	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	100%	0%	100%	0%	100%	0%	19%
Vol Thru, %	0%	62%	0%	89%	0%	97%	60%
Vol Right, %	0%	38%	0%	11%	0%	3%	20%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	41	193	48	524	89	521	139
LT Vol	41	0	48	0	89	0	27
Through Vol	0	120	0	466	0	503	84
RT Vol	0	73	0	58	0	18	28
Lane Flow Rate	45	210	52	570	97	566	151
Geometry Grp	7	7	7	7	7	7	6
Degree of Util (X)	0.11	0.474	0.114	1.139	0.208	1.134	0.373
Departure Headway (Hd)	9.497	8.717	8.213	7.564	8.147	7.588	9.62
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	380	415	439	484	443	481	376
Service Time	7.197	6.417	5.913	5.264	5.847	5.288	7.62
HCM Lane V/C Ratio	0.118	0.506	0.118	1.178	0.219	1.177	0.402
HCM Control Delay	13.4	19	12	111.2	13	109.6	18.2
HCM Lane LOS	B	C	B	F	B	F	C
HCM 95th-tile Q	0.4	2.5	0.4	19	0.8	18.7	1.7

Timings
11: SE 164th Ave & SE 29th St

Vancouver Innovation Center
Baseline 2038 PM Peak Hour Conditions

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	
Lane Configurations											
Traffic Volume (vph)	89	30	51	117	22	50	42	1434	47	1306	
Future Volume (vph)	89	30	51	117	22	50	42	1434	47	1306	
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Prot	NA	
Protected Phases		2			6		7	4	3	8	
Permitted Phases	2		2	6		6					
Detector Phase	2	2	2	6	6	6	7	4	3	8	
Switch Phase											
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	5.0	15.0	5.0	15.0	
Minimum Split (s)	39.0	39.0	39.0	38.0	38.0	38.0	10.0	32.0	19.5	32.0	
Total Split (s)	39.0	39.0	39.0	39.0	39.0	39.0	15.0	66.0	15.0	66.0	
Total Split (%)	32.5%	32.5%	32.5%	32.5%	32.5%	32.5%	12.5%	55.0%	12.5%	55.0%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lead/Lag							Lead	Lag	Lead	Lag	
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	None	None	None	None	Max	None	C-Max	
Act Effct Green (s)	16.9	16.9	16.9	16.9	16.9	16.9	6.3	83.5	6.5	83.7	
Actuated g/C Ratio	0.14	0.14	0.14	0.14	0.14	0.14	0.05	0.70	0.05	0.70	
v/c Ratio	0.47	0.12	0.19	0.65	0.10	0.19	0.49	0.44	0.51	0.40	
Control Delay	53.0	41.8	8.4	63.3	41.2	8.2	51.4	21.4	73.1	9.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	53.0	41.8	8.4	63.3	41.2	8.2	51.4	21.4	73.1	9.7	
LOS	D	D	A	E	D	A	D	C	E	A	
Approach Delay		37.6			46.1			22.2		11.8	
Approach LOS		D			D			C		B	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 112 (93%), Referenced to phase 8:SBT, Start of Green

Natural Cycle: 95

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.65

Intersection Signal Delay: 20.0

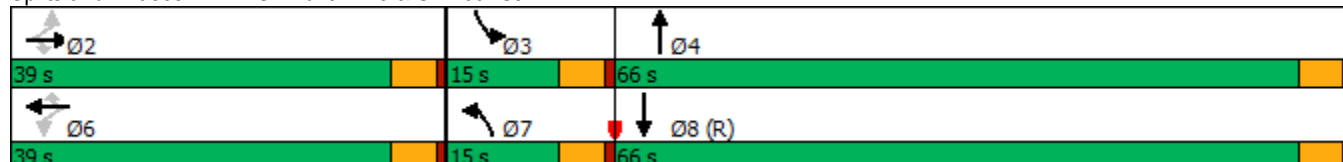
Intersection LOS: B

Intersection Capacity Utilization 59.2%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 11: SE 164th Ave & SE 29th St



HCM 6th Signalized Intersection Summary

11: SE 164th Ave & SE 29th St

Vancouver Innovation Center
Baseline 2038 PM Peak Hour Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	89	30	51	117	22	50	42	1434	32	47	1306	46
Future Volume (veh/h)	89	30	51	117	22	50	42	1434	32	47	1306	46
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1826	1633	1856	1826	1870	1752	1870	1885	1900
Adj Flow Rate, veh/h	94	32	6	123	23	5	44	1509	33	49	1375	46
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	5	18	3	5	2	10	2	1	0
Cap, veh/h	227	250	211	216	215	206	56	2614	57	63	2616	88
Arrive On Green	0.13	0.13	0.13	0.13	0.13	0.13	0.03	0.51	0.51	0.04	0.51	0.51
Sat Flow, veh/h	1398	1900	1603	1332	1633	1565	1739	5142	112	1781	5114	171
Grp Volume(v), veh/h	94	32	6	123	23	5	44	999	543	49	922	499
Grp Sat Flow(s),veh/h/ln	1398	1900	1603	1332	1633	1565	1739	1702	1850	1781	1716	1854
Q Serve(g_s), s	7.6	1.8	0.4	10.8	1.5	0.3	3.0	24.5	24.5	3.3	21.6	21.6
Cycle Q Clear(g_c), s	9.1	1.8	0.4	12.6	1.5	0.3	3.0	24.5	24.5	3.3	21.6	21.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.06	1.00		0.09
Lane Grp Cap(c), veh/h	227	250	211	216	215	206	56	1730	940	63	1755	949
V/C Ratio(X)	0.41	0.13	0.03	0.57	0.11	0.02	0.79	0.58	0.58	0.78	0.53	0.53
Avail Cap(c_a), veh/h	439	538	454	418	463	444	145	1730	940	148	1755	949
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.71	0.71	0.71	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.9	46.0	45.4	51.6	45.9	45.4	57.7	20.5	20.5	57.4	19.6	19.6
Incr Delay (d2), s/veh	0.4	0.1	0.0	0.9	0.1	0.0	6.3	1.0	1.8	7.4	1.1	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.9	1.5	0.3	6.6	1.1	0.2	2.5	13.7	15.0	2.8	13.2	14.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.3	46.1	45.4	52.4	46.0	45.4	64.0	21.5	22.4	64.8	20.7	21.7
LnGrp LOS	D	D	D	D	D	D	E	C	C	E	C	C
Approach Vol, veh/h		132			151			1586			1470	
Approach Delay, s/veh		49.1			51.2			23.0			22.5	
Approach LOS		D			D			C			C	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		20.8	9.2	66.0		20.8	8.9	66.4				
Change Period (Y+Rc), s		5.0	5.0	5.0		5.0	5.0	5.0				
Max Green Setting (Gmax), s		34.0	10.0	61.0		34.0	10.0	61.0				
Max Q Clear Time (g_c+I1), s		11.1	5.3	26.5		14.6	5.0	23.6				
Green Ext Time (p_c), s		0.0	0.0	1.7		0.0	0.0	1.6				
Intersection Summary												
HCM 6th Ctrl Delay			25.1									
HCM 6th LOS			C									

Timings
12: SE 164th Ave & SE 34th Street

Vancouver Innovation Center
Baseline 2038 PM Peak Hour Conditions

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	49	102	194	295	136	247	192	1216	331	164	1249
Future Volume (vph)	49	102	194	295	136	247	192	1216	331	164	1249
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA
Protected Phases	5	2	7	1	6	3	7	4	1	3	8
Permitted Phases			2			6			4		
Detector Phase	5	2	7	1	6	3	7	4	1	3	8
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	20.0	5.0	5.0	20.0
Minimum Split (s)	10.0	33.0	10.0	10.0	32.0	10.0	10.0	31.0	10.0	10.0	28.0
Total Split (s)	15.0	33.0	20.0	17.0	35.0	20.0	20.0	50.0	17.0	20.0	50.0
Total Split (%)	12.5%	27.5%	16.7%	14.2%	29.2%	16.7%	16.7%	41.7%	14.2%	16.7%	41.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	None	None	C-Max
Act Effct Green (s)	7.3	10.7	34.0	12.0	17.5	38.0	18.3	61.8	78.8	15.5	59.0
Actuated g/C Ratio	0.06	0.09	0.28	0.10	0.15	0.32	0.15	0.52	0.66	0.13	0.49
v/c Ratio	0.51	0.66	0.41	1.73	0.54	0.46	0.74	0.70	0.30	0.75	0.54
Control Delay	71.7	71.0	24.2	385.6	56.2	21.9	64.4	26.2	3.6	64.7	22.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	71.7	71.0	24.2	385.6	56.2	21.9	64.4	26.2	3.6	64.7	22.4
LOS	E	E	C	F	E	C	E	C	A	E	C
Approach Delay		44.8			186.9			26.1			27.2
Approach LOS		D			F			C			C

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 40 (33%), Referenced to phase 8:SBT, Start of Green

Natural Cycle: 115

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.73

Intersection Signal Delay: 53.8

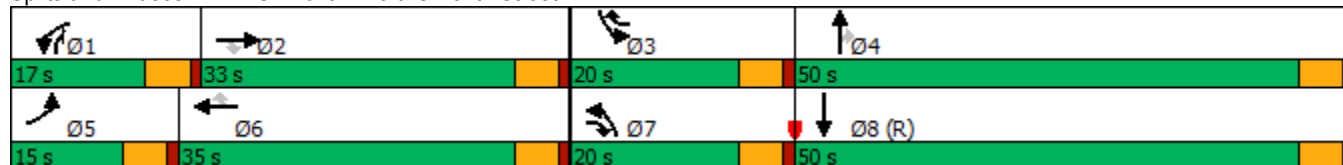
Intersection LOS: D

Intersection Capacity Utilization 81.1%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 12: SE 164th Ave & SE 34th Street



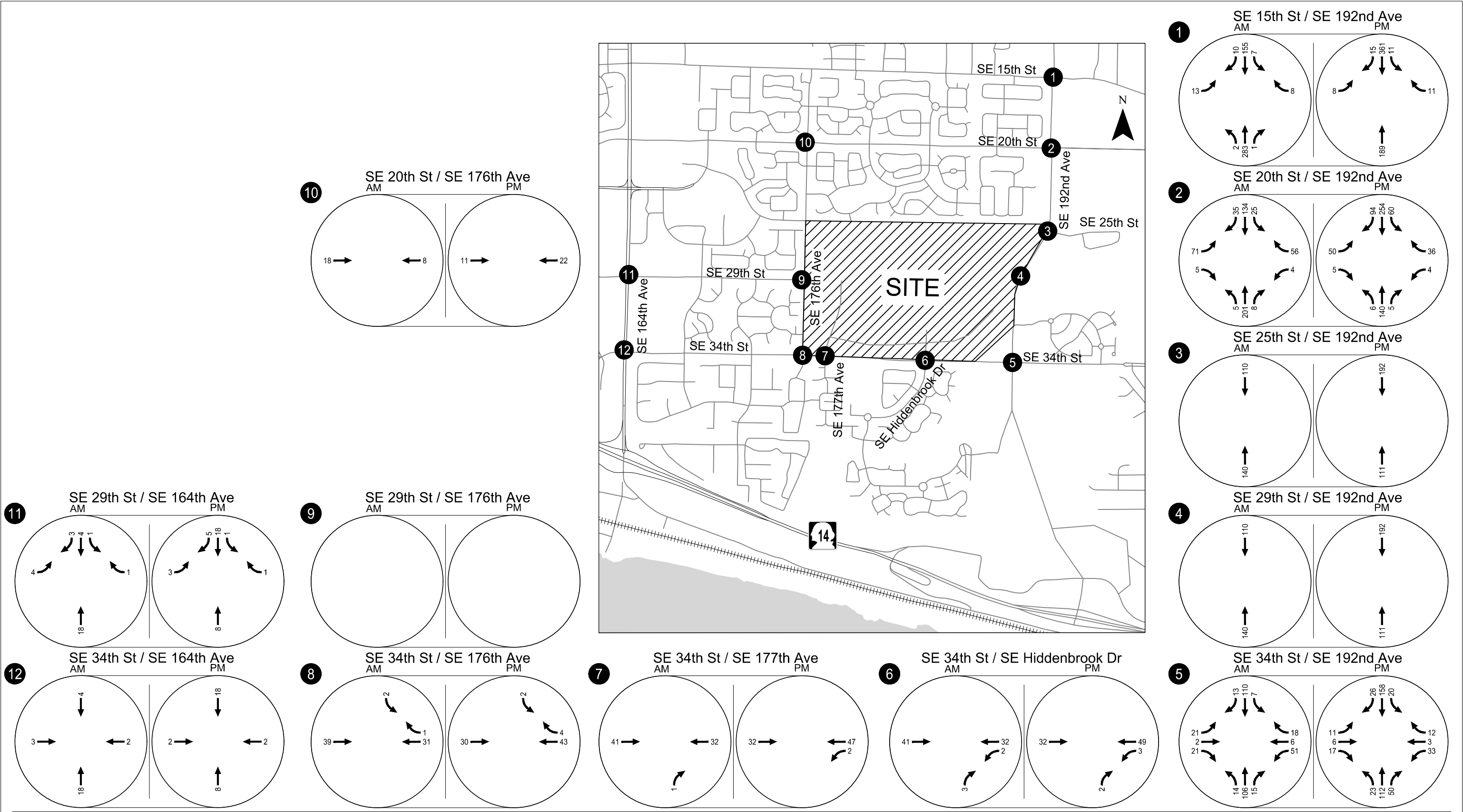
HCM 6th Signalized Intersection Summary

12: SE 164th Ave & SE 34th Street

Vancouver Innovation Center
Baseline 2038 PM Peak Hour Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	49	102	194	295	136	247	192	1216	331	164	1249	49
Future Volume (veh/h)	49	102	194	295	136	247	192	1216	331	164	1249	49
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1767	1826	1885	1870	1841	1856	1885	1870	1885	1870	1870	1841
Adj Flow Rate, veh/h	51	106	152	307	142	182	200	1267	237	171	1301	48
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	9	5	1	2	4	3	1	2	1	2	2	4
Cap, veh/h	64	183	359	178	298	430	224	1379	780	199	1895	70
Arrive On Green	0.04	0.10	0.10	0.10	0.16	0.16	0.13	0.39	0.39	0.04	0.12	0.12
Sat Flow, veh/h	1682	1826	1598	1781	1841	1572	1795	3554	1598	1781	5054	186
Grp Volume(v), veh/h	51	106	152	307	142	182	200	1267	237	171	876	473
Grp Sat Flow(s),veh/h/ln	1682	1826	1598	1781	1841	1572	1795	1777	1598	1781	1702	1837
Q Serve(g_s), s	3.6	6.7	9.8	12.0	8.4	11.4	13.2	40.7	10.7	11.5	29.6	29.6
Cycle Q Clear(g_c), s	3.6	6.7	9.8	12.0	8.4	11.4	13.2	40.7	10.7	11.5	29.6	29.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.10
Lane Grp Cap(c), veh/h	64	183	359	178	298	430	224	1379	780	199	1277	689
V/C Ratio(X)	0.79	0.58	0.42	1.72	0.48	0.42	0.89	0.92	0.30	0.86	0.69	0.69
Avail Cap(c_a), veh/h	140	426	572	178	460	569	224	1379	780	223	1277	689
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.92	0.92	0.92
Uniform Delay (d), s/veh	57.2	51.6	39.8	54.0	45.7	35.8	51.7	34.9	18.5	56.8	45.8	45.8
Incr Delay (d2), s/veh	7.9	1.1	0.3	348.1	0.4	0.2	31.8	11.3	1.0	21.5	2.8	5.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.0	5.5	6.9	35.7	6.9	7.7	12.4	26.1	7.3	10.7	19.8	21.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	65.1	52.7	40.1	402.1	46.1	36.0	83.5	46.2	19.5	78.4	48.6	50.9
LnGrp LOS	E	D	D	F	D	D	F	D	B	E	D	D
Approach Vol, veh/h	309			631			1704			1520		
Approach Delay, s/veh	48.6			216.4			46.8			52.7		
Approach LOS	D			F			D			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.0	17.0	18.4	51.6	9.6	24.4	20.0	50.0				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	12.0	28.0	15.0	45.0	10.0	30.0	15.0	45.0				
Max Q Clear Time (g_c+I1), s	14.0	11.8	13.5	42.7	5.6	13.4	15.2	31.6				
Green Ext Time (p_c), s	0.0	0.2	0.0	1.1	0.0	0.3	0.0	2.9				
Intersection Summary												
HCM 6th Ctrl Delay	74.8											
HCM 6th LOS	E											

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Apr 05, 2023 - 2:00pm - ckleynhans Layout Tab: Fig E-1_in-process Trips



In-Process Trip Assignment
Weekday AM & PM Peak Hour
Vancouver, WA

Figure
E-1

Appendix F 2038 With-Project Phase 1
Buildout Operations
Worksheets

Timings

1: SE 192nd & SE 15th St

Vancouver Innovation Center

Baseline 2036 AM Peak Hour Conditions

									
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	156	45	29	64	158	49	925	89	814
Future Volume (vph)	156	45	29	64	158	49	925	89	814
Turn Type	Prot	NA	Prot	NA	pm+ov	Prot	NA	Prot	NA
Protected Phases	5	2	1	6	3	7	4	3	8
Permitted Phases					6				
Detector Phase	5	2	1	6	3	7	4	3	8
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	15.0	5.0	15.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	20.0	10.0	20.0
Total Split (s)	20.0	29.0	20.0	29.0	14.0	15.0	37.0	14.0	36.0
Total Split (%)	20.0%	29.0%	20.0%	29.0%	14.0%	15.0%	37.0%	14.0%	36.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	None	Max
Act Effct Green (s)	12.4	18.7	5.9	10.2	22.0	6.8	50.6	8.8	54.5
Actuated g/C Ratio	0.12	0.19	0.06	0.10	0.22	0.07	0.51	0.09	0.54
v/c Ratio	0.80	0.26	0.32	0.38	0.42	0.45	0.60	0.69	0.56
Control Delay	67.8	21.0	53.4	45.3	17.3	60.3	18.0	69.1	20.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.8	21.0	53.4	45.3	17.3	60.3	18.0	69.1	20.8
LOS	E	C	D	D	B	E	B	E	C
Approach Delay		51.7		28.6			20.1		25.1
Approach LOS		D		C			C		C

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 9 (9%), Referenced to phase 4:NBT, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.80

Intersection Signal Delay: 26.0

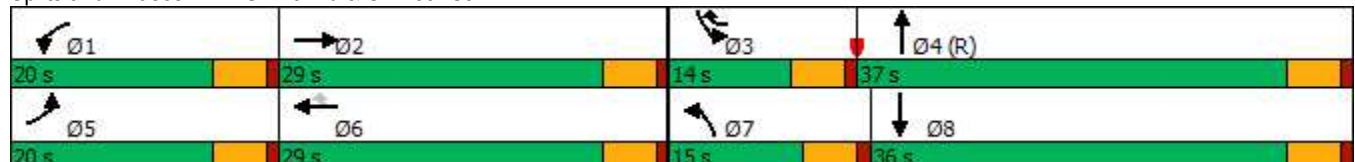
Intersection LOS: C

Intersection Capacity Utilization 58.8%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 1: SE 192nd & SE 15th St



HCM 6th Signalized Intersection Summary

1: SE 192nd & SE 15th St

Vancouver Innovation Center
Baseline 2036 AM Peak Hour Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	156	45	37	29	64	158	49	925	16	89	814	87
Future Volume (veh/h)	156	45	37	29	64	158	49	925	16	89	814	87
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1900	1796	1781	1841	1870	1856	1841	1900	1737	1767	1856
Adj Flow Rate, veh/h	173	50	5	32	71	97	54	1028	17	99	904	90
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	0	7	8	4	2	3	4	0	11	9	3
Cap, veh/h	204	276	28	50	141	239	88	1879	31	122	1720	171
Arrive On Green	0.12	0.16	0.16	0.03	0.08	0.08	0.10	1.00	1.00	0.07	0.56	0.56
Sat Flow, veh/h	1767	1699	170	1697	1841	1585	1767	3519	58	1654	3082	307
Grp Volume(v), veh/h	173	0	55	32	71	97	54	511	534	99	492	502
Grp Sat Flow(s),veh/h/ln	1767	0	1869	1697	1841	1585	1767	1749	1829	1654	1678	1711
Q Serve(g_s), s	9.6	0.0	2.5	1.9	3.7	5.5	2.9	0.0	0.0	5.9	18.3	18.3
Cycle Q Clear(g_c), s	9.6	0.0	2.5	1.9	3.7	5.5	2.9	0.0	0.0	5.9	18.3	18.3
Prop In Lane	1.00		0.09	1.00		1.00	1.00		0.03	1.00		0.18
Lane Grp Cap(c), veh/h	204	0	304	50	141	239	88	934	976	122	936	955
V/C Ratio(X)	0.85	0.00	0.18	0.64	0.50	0.41	0.61	0.55	0.55	0.81	0.53	0.53
Avail Cap(c_a), veh/h	265	0	449	254	442	498	177	934	976	149	936	955
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	0.82	0.82	0.82	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.4	0.0	36.1	48.0	44.3	38.4	44.1	0.0	0.0	45.6	13.8	13.8
Incr Delay (d2), s/veh	14.7	0.0	0.1	5.0	1.0	0.4	2.1	1.9	1.8	19.5	2.1	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	8.5	0.0	2.0	1.5	3.1	3.8	2.3	0.9	0.9	5.4	11.1	11.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.1	0.0	36.2	53.0	45.3	38.8	46.1	1.9	1.8	65.1	15.9	15.9
LnGrp LOS	E	A	D	D	D	D	D	A	A	E	B	B
Approach Vol, veh/h		228			200			1099			1093	
Approach Delay, s/veh		52.8			43.4			4.0			20.4	
Approach LOS		D			D			A			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.9	21.3	12.4	58.4	16.5	12.7	10.0	60.8				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	15.0	24.0	9.0	32.0	15.0	24.0	10.0	31.0				
Max Q Clear Time (g_c+I1), s	3.9	4.5	7.9	2.0	11.6	7.5	4.9	20.3				
Green Ext Time (p_c), s	0.0	0.1	0.0	2.1	0.0	0.2	0.0	1.7				
Intersection Summary												
HCM 6th Ctrl Delay			18.1									
HCM 6th LOS			B									

Timings
2: SE 20th St & SE 192nd Ave

Vancouver Innovation Center
Baseline 2036 AM Peak Hour Conditions

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	166	182	119	165	46	707	59	667
Future Volume (vph)	166	182	119	165	46	707	59	667
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	5	2	1	6	7	4	3	8
Permitted Phases								
Detector Phase	5	2	1	6	7	4	3	8
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	20.0	5.0	20.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	25.0	10.0	25.0
Total Split (s)	17.0	29.0	17.0	29.0	15.0	39.0	15.0	39.0
Total Split (%)	17.0%	29.0%	17.0%	29.0%	15.0%	39.0%	15.0%	39.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	Min	C-Max	None	Max
Act Effct Green (s)	9.4	18.7	8.0	17.2	7.3	47.6	7.7	46.0
Actuated g/C Ratio	0.09	0.19	0.08	0.17	0.07	0.48	0.08	0.46
v/c Ratio	0.55	0.79	0.45	0.72	0.39	0.54	0.45	0.52
Control Delay	49.5	51.2	48.7	48.4	67.5	8.7	52.3	27.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.5	51.2	48.7	48.4	67.5	8.7	52.3	27.1
LOS	D	D	D	D	E	A	D	C
Approach Delay		50.5		48.5		11.7		28.9
Approach LOS		D		D		B		C

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 98 (98%), Referenced to phase 4:NBT, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.79

Intersection Signal Delay: 29.2

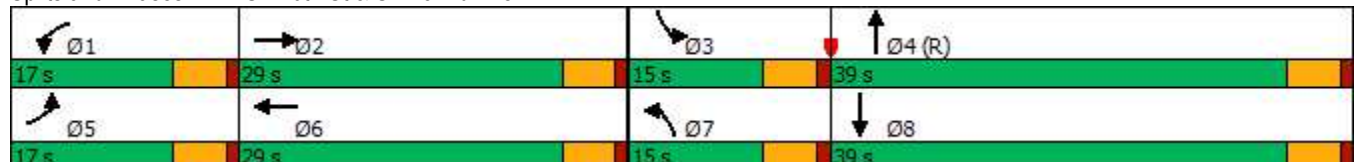
Intersection LOS: C

Intersection Capacity Utilization 63.4%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 2: SE 20th St & SE 192nd Ave



HCM 6th Signalized Intersection Summary

2: SE 20th St & SE 192nd Ave

Vancouver Innovation Center
Baseline 2036 AM Peak Hour Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	166	182	80	119	165	57	46	707	138	59	667	103
Future Volume (veh/h)	166	182	80	119	165	57	46	707	138	59	667	103
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1900	1841	1885	1885	1885	1811	1856	1841	1885	1811	1826
Adj Flow Rate, veh/h	175	192	66	125	174	46	48	744	131	62	702	97
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	0	4	1	1	1	6	3	4	1	6	5
Cap, veh/h	242	222	76	189	212	56	86	1609	283	80	1615	223
Arrive On Green	0.07	0.16	0.16	0.05	0.15	0.15	0.05	0.54	0.54	0.04	0.53	0.53
Sat Flow, veh/h	3428	1352	465	3483	1437	380	1725	2996	527	1795	3036	419
Grp Volume(v), veh/h	175	0	258	125	0	220	48	438	437	62	398	401
Grp Sat Flow(s),veh/h/ln	1714	0	1816	1742	0	1817	1725	1763	1760	1795	1721	1735
Q Serve(g_s), s	5.0	0.0	13.8	3.5	0.0	11.7	2.7	15.3	15.3	3.4	14.1	14.1
Cycle Q Clear(g_c), s	5.0	0.0	13.8	3.5	0.0	11.7	2.7	15.3	15.3	3.4	14.1	14.1
Prop In Lane	1.00		0.26	1.00		0.21	1.00		0.30	1.00		0.24
Lane Grp Cap(c), veh/h	242	0	298	189	0	268	86	947	945	80	915	923
V/C Ratio(X)	0.72	0.00	0.87	0.66	0.00	0.82	0.56	0.46	0.46	0.77	0.43	0.44
Avail Cap(c_a), veh/h	411	0	436	418	0	436	172	947	945	180	915	923
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.81	0.81	0.81
Uniform Delay (d), s/veh	45.5	0.0	40.7	46.4	0.0	41.3	46.4	14.3	14.3	47.3	14.3	14.3
Incr Delay (d2), s/veh	1.5	0.0	8.6	1.5	0.0	2.6	2.1	1.6	1.6	4.8	1.2	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.8	0.0	10.9	2.7	0.0	9.1	2.1	10.0	10.0	2.9	8.7	8.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.0	0.0	49.3	47.8	0.0	44.0	48.5	15.9	15.9	52.0	15.5	15.5
LnGrp LOS	D	A	D	D	A	D	D	B	B	D	B	B
Approach Vol, veh/h	433			345			923			861		
Approach Delay, s/veh	48.4			45.4			17.6			18.1		
Approach LOS	D			D			B			B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.4	21.4	9.5	58.7	12.1	19.8	10.0	58.2				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	12.0	24.0	10.0	34.0	12.0	24.0	10.0	34.0				
Max Q Clear Time (g_c+I1), s	5.5	15.8	5.4	17.3	7.0	13.7	4.7	16.1				
Green Ext Time (p_c), s	0.1	0.5	0.0	3.1	0.1	0.5	0.0	2.9				

Intersection Summary

HCM 6th Ctrl Delay 26.7
HCM 6th LOS C

Notes

User approved pedestrian interval to be less than phase max green.

Intersection						
Int Delay, s/veh	0.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	7	10	813	3	7	840
Future Vol, veh/h	7	10	813	3	7	840
Conflicting Peds, #/hr	0	0	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	125	0	-	-	230	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	20	4	67	0	7
Mvmt Flow	7	11	856	3	7	884
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1315	431	0	0	860	0
Stage 1	859	-	-	-	-	-
Stage 2	456	-	-	-	-	-
Critical Hdwy	6.8	7.3	-	-	4.1	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.5	-	-	2.2	-
Pot Cap-1 Maneuver	152	525	-	-	790	-
Stage 1	380	-	-	-	-	-
Stage 2	611	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	150	525	-	-	789	-
Mov Cap-2 Maneuver	150	-	-	-	-	-
Stage 1	380	-	-	-	-	-
Stage 2	606	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	19.5	0	0.1			
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT		
Capacity (veh/h)	-	- 150 525	789	-		
HCM Lane V/C Ratio	-	- 0.049 0.02	0.009	-		
HCM Control Delay (s)	-	- 30.2 12	9.6	-		
HCM Lane LOS	-	- D B	A	-		
HCM 95th %tile Q(veh)	-	- 0.2 0.1	0	-		

Timings
5: SE 192nd Ave & SE 34th St

Vancouver Innovation Center
Baseline 2036 AM Peak Hour Conditions

										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	124	152	207	127	67	118	704	349	108	547
Future Volume (vph)	124	152	207	127	67	118	704	349	108	547
Turn Type	pm+pt	NA	pm+pt	NA	Perm	Prot	NA	pm+ov	Prot	NA
Protected Phases	5	2	1	6		7	4	1	3	8
Permitted Phases	2		6		6			4		
Detector Phase	5	2	1	6	6	7	4	1	3	8
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	20.0	5.0	5.0	20.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	25.0	10.0	10.0	25.0
Total Split (s)	15.0	36.0	15.0	36.0	36.0	15.0	34.0	15.0	15.0	34.0
Total Split (%)	15.0%	36.0%	15.0%	36.0%	36.0%	15.0%	34.0%	15.0%	15.0%	34.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	None	None	Max
Act Effct Green (s)	27.0	18.3	29.2	19.4	19.4	9.9	41.9	51.7	10.0	42.1
Actuated g/C Ratio	0.27	0.18	0.29	0.19	0.19	0.10	0.42	0.52	0.10	0.42
v/c Ratio	0.40	0.74	0.82	0.38	0.16	0.73	0.55	0.38	0.35	0.59
Control Delay	26.3	47.2	48.4	36.4	0.8	66.8	25.7	2.3	42.0	23.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.3	47.2	48.4	36.4	0.8	66.8	25.7	2.3	42.0	23.6
LOS	C	D	D	D	A	E	C	A	D	C
Approach Delay		39.8		36.7			22.8			26.1
Approach LOS		D		D			C			C

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 40 (40%), Referenced to phase 4:NBT, Start of Green

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.82

Intersection Signal Delay: 28.0

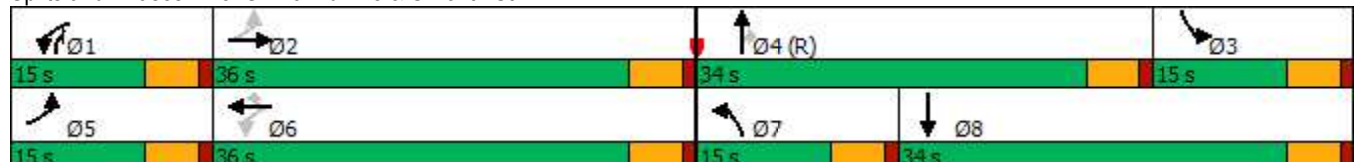
Intersection LOS: C

Intersection Capacity Utilization 69.0%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 5: SE 192nd Ave & SE 34th St



HCM 6th Signalized Intersection Summary

5: SE 192nd Ave & SE 34th St

Vancouver Innovation Center
Baseline 2036 AM Peak Hour Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	124	152	74	207	127	67	118	704	349	108	547	155
Future Volume (veh/h)	124	152	74	207	127	67	118	704	349	108	547	155
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1728	1803	1847	1943	2018	1988	2018	1883	1988	1832	1684	1684
Adj Flow Rate, veh/h	138	169	60	230	141	7	131	782	179	120	608	149
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	8	3	0	5	0	2	0	9	2	1	11	11
Cap, veh/h	352	214	76	305	368	301	163	1037	655	818	1138	278
Arrive On Green	0.09	0.17	0.17	0.10	0.18	0.18	0.08	0.29	0.29	0.24	0.45	0.45
Sat Flow, veh/h	1646	1268	450	1850	2018	1652	1922	3578	1679	3385	2548	623
Grp Volume(v), veh/h	138	0	229	230	141	7	131	782	179	120	381	376
Grp Sat Flow(s),veh/h/ln	1646	0	1718	1850	2018	1652	1922	1789	1679	1693	1600	1571
Q Serve(g_s), s	6.8	0.0	12.8	10.0	6.1	0.2	6.7	19.9	2.6	2.8	17.3	17.4
Cycle Q Clear(g_c), s	6.8	0.0	12.8	10.0	6.1	0.2	6.7	19.9	2.6	2.8	17.3	17.4
Prop In Lane	1.00		0.26	1.00		1.00	1.00		1.00	1.00		0.40
Lane Grp Cap(c), veh/h	352	0	289	305	368	301	163	1037	655	818	715	702
V/C Ratio(X)	0.39	0.00	0.79	0.75	0.38	0.02	0.80	0.75	0.27	0.15	0.53	0.54
Avail Cap(c_a), veh/h	374	0	532	305	626	512	192	1037	655	818	715	702
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.92	0.00	0.92	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.4	0.0	39.9	32.0	36.0	11.4	44.9	32.3	7.4	29.8	20.1	20.1
Incr Delay (d2), s/veh	0.2	0.0	1.7	9.1	0.2	0.0	15.9	5.1	1.0	0.0	2.8	2.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.7	0.0	9.0	9.0	5.3	0.2	6.9	13.8	2.2	2.0	10.8	10.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.7	0.0	41.6	41.1	36.2	11.4	60.9	37.3	8.5	29.9	22.9	23.0
LnGrp LOS	C	A	D	D	D	B	E	D	A	C	C	C
Approach Vol, veh/h		367			378			1092			877	
Approach Delay, s/veh		37.5			38.7			35.4			23.9	
Approach LOS		D			D			D			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.0	21.8	29.2	34.0	13.6	23.2	13.5	49.7				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	10.0	31.0	10.0	29.0	10.0	31.0	10.0	29.0				
Max Q Clear Time (g_c+I1), s	12.0	14.8	4.8	21.9	8.8	8.1	8.7	19.4				
Green Ext Time (p_c), s	0.0	0.4	0.0	1.4	0.0	0.2	0.0	1.2				
Intersection Summary												
HCM 6th Ctrl Delay			32.4									
HCM 6th LOS			C									

Timings

6: SE Hiddenbrook Dr & SE 34th St

Vancouver Innovation Center

Baseline 2036 AM Peak Hour Conditions

									
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	36	310	27	255	63	11	58	1	21
Future Volume (vph)	36	310	27	255	63	11	58	1	21
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA	Perm
Protected Phases	5	2	1	6		8		4	
Permitted Phases					8		4		4
Detector Phase	5	2	1	6	8	8	4	4	4
Switch Phase									
Minimum Initial (s)	5.0	15.0	5.0	15.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	27.0	10.0	27.0	32.0	32.0	34.0	34.0	34.0
Total Split (s)	10.0	85.0	10.0	85.0	35.0	35.0	35.0	35.0	35.0
Total Split (%)	7.7%	65.4%	7.7%	65.4%	26.9%	26.9%	26.9%	26.9%	26.9%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					
Recall Mode	None	Min	None	Min	None	None	None	None	None
Act Effect Green (s)	5.6	26.3	5.6	24.1	9.2	9.2		9.2	9.2
Actuated g/C Ratio	0.12	0.57	0.12	0.53	0.20	0.20		0.20	0.20
v/c Ratio	0.20	0.40	0.15	0.50	0.30	0.17		0.28	0.07
Control Delay	27.7	12.3	27.4	14.3	19.5	8.4		19.2	1.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay	27.7	12.3	27.4	14.3	19.5	8.4		19.2	1.5
LOS	C	B	C	B	B	A		B	A
Approach Delay		13.8		15.2		14.4		14.5	
Approach LOS		B		B		B		B	

Intersection Summary

Cycle Length: 130

Actuated Cycle Length: 45.9

Natural Cycle: 75

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.50

Intersection Signal Delay: 14.5

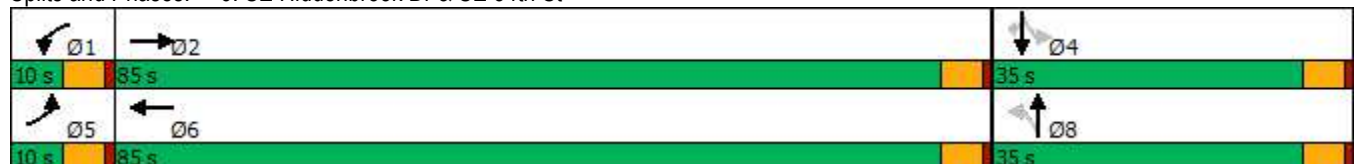
Intersection LOS: B

Intersection Capacity Utilization 47.2%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 6: SE Hiddenbrook Dr & SE 34th St



HCM 6th Signalized Intersection Summary

6: SE Hiddenbrook Dr & SE 34th St

Vancouver Innovation Center
Baseline 2036 AM Peak Hour Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	36	310	24	27	255	113	63	11	41	58	1	21
Future Volume (veh/h)	36	310	24	27	255	113	63	11	41	58	1	21
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1841	1900	1876	1802	1876	1832	1876	1876	1900	1900	1900
Adj Flow Rate, veh/h	44	383	26	33	315	119	78	14	0	72	1	0
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	0	4	0	0	5	0	3	0	0	0	0	0
Cap, veh/h	89	737	50	70	526	199	375	210	0	347	3	181
Arrive On Green	0.05	0.43	0.43	0.04	0.42	0.42	0.11	0.11	0.00	0.11	0.11	0.00
Sat Flow, veh/h	1810	1704	116	1787	1245	470	1387	1876	0	1324	24	1610
Grp Volume(v), veh/h	44	0	409	33	0	434	78	14	0	73	0	0
Grp Sat Flow(s),veh/h/ln	1810	0	1819	1787	0	1716	1387	1876	0	1348	0	1610
Q Serve(g_s), s	0.9	0.0	5.9	0.7	0.0	7.1	0.0	0.2	0.0	1.7	0.0	0.0
Cycle Q Clear(g_c), s	0.9	0.0	5.9	0.7	0.0	7.1	1.5	0.2	0.0	2.0	0.0	0.0
Prop In Lane	1.00		0.06	1.00		0.27	1.00		0.00	0.99		1.00
Lane Grp Cap(c), veh/h	89	0	787	70	0	724	375	210	0	350	0	181
V/C Ratio(X)	0.49	0.00	0.52	0.47	0.00	0.60	0.21	0.07	0.00	0.21	0.00	0.00
Avail Cap(c_a), veh/h	251	0	4039	248	0	3809	1374	1562	0	1377	0	1341
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	16.7	0.0	7.5	17.0	0.0	8.1	14.9	14.3	0.0	15.2	0.0	0.0
Incr Delay (d2), s/veh	1.5	0.0	0.2	1.8	0.0	0.3	0.1	0.0	0.0	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.6	0.0	2.3	0.4	0.0	2.7	0.9	0.2	0.0	0.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.2	0.0	7.7	18.8	0.0	8.4	15.0	14.4	0.0	15.3	0.0	0.0
LnGrp LOS	B	A	A	B	A	A	B	B	A	B	A	A
Approach Vol, veh/h	453				467				92			
Approach Delay, s/veh	8.7				9.1				14.9			
Approach LOS	A				A				B			
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.4	20.6		9.0	6.8	20.2		9.0				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	5.0	80.0		30.0	5.0	80.0		30.0				
Max Q Clear Time (g_c+I1), s	2.7	7.9		4.0	2.9	9.1		3.5				
Green Ext Time (p_c), s	0.0	0.8		0.1	0.0	0.9		0.1				
Intersection Summary												
HCM 6th Ctrl Delay	9.8											
HCM 6th LOS	A											

Intersection												
Int Delay, s/veh	7.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	234	338	11	5	320	14	29	2	17	16	2	125
Future Vol, veh/h	234	338	11	5	320	14	29	2	17	16	2	125
Conflicting Peds, #/hr	3	0	3	3	0	3	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	140	-	-	95	-	0	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	3	3	0	0	5	0	0	0	0	0	0	27
Mvmt Flow	275	398	13	6	376	16	34	2	20	19	2	147
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	395	0	0	414	0	0	1429	1365	408	1357	1355	379
Stage 1	-	-	-	-	-	-	958	958	-	391	391	-
Stage 2	-	-	-	-	-	-	471	407	-	966	964	-
Critical Hdwy	4.13	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.47
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.227	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.543
Pot Cap-1 Maneuver	1158	-	-	1156	-	-	114	149	648	127	151	616
Stage 1	-	-	-	-	-	-	312	338	-	637	611	-
Stage 2	-	-	-	-	-	-	577	601	-	309	336	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1155	-	-	1153	-	-	69	112	646	98	114	614
Mov Cap-2 Maneuver	-	-	-	-	-	-	69	112	-	98	114	-
Stage 1	-	-	-	-	-	-	237	257	-	484	606	-
Stage 2	-	-	-	-	-	-	435	596	-	226	255	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	3.6			0.1			76			17.4		
HCM LOS							F			C		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2			
Capacity (veh/h)	103	1155	-	-	1153	-	-	100	614			
HCM Lane V/C Ratio	0.548	0.238	-	-	0.005	-	-	0.212	0.24			
HCM Control Delay (s)	76	9.1	-	-	8.1	-	-	50.4	12.7			
HCM Lane LOS	F	A	-	-	A	-	-	F	B			
HCM 95th %tile Q(veh)	2.5	0.9	-	-	0	-	-	0.7	0.9			

Timings 8: SE 176th Ave & SE 34th St

Vancouver Innovation Center
Baseline 2036 AM Peak Hour Conditions

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	49	508	3	404	14	5	70	3
Future Volume (vph)	49	508	3	404	14	5	70	3
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	Perm	NA
Protected Phases	5	2	1	6		8		4
Permitted Phases	2		6		8		4	
Detector Phase	5	2	1	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	5.0	15.0	5.0	15.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	24.0	10.0	28.0	33.0	33.0	32.0	32.0
Total Split (s)	15.0	45.0	15.0	45.0	25.0	25.0	25.0	25.0
Total Split (%)	17.6%	52.9%	17.6%	52.9%	29.4%	29.4%	29.4%	29.4%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lead	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	Min	None	Min	None	None	None	None
Act Effct Green (s)	32.7	32.0	30.7	27.9	9.6	9.6	9.6	9.6
Actuated g/C Ratio	0.66	0.64	0.62	0.56	0.19	0.19	0.19	0.19
v/c Ratio	0.11	0.51	0.01	0.56	0.06	0.04	0.31	0.14
Control Delay	6.4	10.8	6.7	14.4	20.1	15.6	22.8	9.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.4	10.8	6.7	14.4	20.1	15.6	22.8	9.0
LOS	A	B	A	B	C	B	C	A
Approach Delay		10.4		14.4		18.2		17.6
Approach LOS		B		B		B		B

Intersection Summary

Cycle Length: 85

Actuated Cycle Length: 49.8

Natural Cycle: 75

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.56

Intersection Signal Delay: 12.9

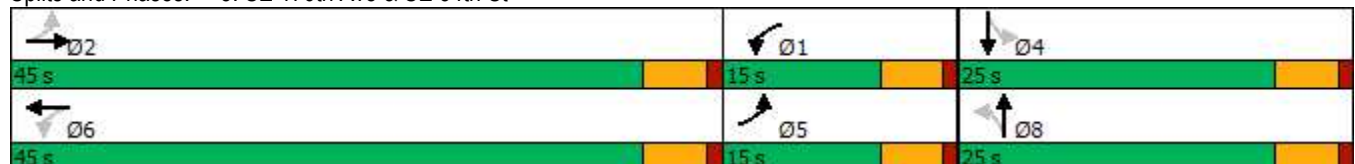
Intersection LOS: B

Intersection Capacity Utilization 54.1%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 8: SE 176th Ave & SE 34th St



HCM 6th Signalized Intersection Summary

8: SE 176th Ave & SE 34th St

Vancouver Innovation Center
Baseline 2036 AM Peak Hour Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	49	508	2	3	404	67	14	5	5	70	3	39
Future Volume (veh/h)	49	508	2	3	404	67	14	5	5	70	3	39
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.98		1.00	0.98		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1767	1856	1900	1900	1811	1826	1900	1900	1530	1870	1900	1885
Adj Flow Rate, veh/h	58	598	2	4	475	71	16	6	0	82	4	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	9	3	0	0	6	5	0	0	25	2	0	1
Cap, veh/h	425	765	3	423	640	96	351	209	0	347	209	0
Arrive On Green	0.06	0.41	0.41	0.06	0.42	0.42	0.11	0.11	0.00	0.11	0.11	0.00
Sat Flow, veh/h	1682	1848	6	1810	1538	230	1409	1900	0	1385	1900	0
Grp Volume(v), veh/h	58	0	600	4	0	546	16	6	0	82	4	0
Grp Sat Flow(s),veh/h/ln	1682	0	1854	1810	0	1768	1409	1900	0	1385	1900	0
Q Serve(g_s), s	0.0	0.0	10.2	0.0	0.0	9.5	0.4	0.1	0.0	2.0	0.1	0.0
Cycle Q Clear(g_c), s	0.0	0.0	10.2	0.0	0.0	9.5	0.4	0.1	0.0	2.1	0.1	0.0
Prop In Lane	1.00		0.00	1.00		0.13	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	425	0	767	423	0	735	351	209	0	347	209	0
V/C Ratio(X)	0.14	0.00	0.78	0.01	0.00	0.74	0.05	0.03	0.00	0.24	0.02	0.00
Avail Cap(c_a), veh/h	786	0	2043	808	0	1948	972	1047	0	957	1047	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	12.1	0.0	9.2	11.8	0.0	9.0	14.6	14.4	0.0	15.4	14.4	0.0
Incr Delay (d2), s/veh	0.1	0.0	0.7	0.0	0.0	0.6	0.0	0.0	0.0	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.5	0.0	4.3	0.0	0.0	3.8	0.2	0.1	0.0	0.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.1	0.0	9.9	11.8	0.0	9.5	14.6	14.4	0.0	15.5	14.4	0.0
LnGrp LOS	B	A	A	B	A	A	B	B	A	B	B	A
Approach Vol, veh/h	658			550			22			86		
Approach Delay, s/veh	10.1			9.5			14.6			15.5		
Approach LOS	B			A			B			B		
Timer - Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	7.3	20.0	9.0		7.2	20.1	9.0					
Change Period (Y+Rc), s	5.0	5.0	5.0		5.0	5.0	5.0					
Max Green Setting (Gmax), s	10.0	40.0	20.0		10.0	40.0	20.0					
Max Q Clear Time (g_c+I1), s	2.0	12.2	4.1		2.0	11.5	2.4					
Green Ext Time (p_c), s	0.0	2.4	0.1		0.0	2.2	0.0					

Intersection Summary

HCM 6th Ctrl Delay 10.3

HCM 6th LOS B

Notes

User approved pedestrian interval to be less than phase max green.

Intersection						
Int Delay, s/veh	0.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	13	4	132	95	104
Future Vol, veh/h	5	13	4	132	95	104
Conflicting Peds, #/hr	2	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	80	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	0	10	0	2	1	18
Mvmt Flow	6	15	5	155	112	122
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	340	173	234	0	-	0
Stage 1	173	-	-	-	-	-
Stage 2	167	-	-	-	-	-
Critical Hdwy	6.4	6.3	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.39	2.2	-	-	-
Pot Cap-1 Maneuver	660	850	1345	-	-	-
Stage 1	862	-	-	-	-	-
Stage 2	867	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	657	850	1345	-	-	-
Mov Cap-2 Maneuver	657	-	-	-	-	-
Stage 1	859	-	-	-	-	-
Stage 2	867	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	9.7	0.2		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1345	-	786	-	-	
HCM Lane V/C Ratio	0.003	-	0.027	-	-	
HCM Control Delay (s)	7.7	-	9.7	-	-	
HCM Lane LOS	A	-	A	-	-	
HCM 95th %tile Q(veh)	0	-	0.1	-	-	

Intersection	
Intersection Delay, s/veh	14.4
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	12	272	28	75	314	14	33	71	55	0	62	10
Future Vol, veh/h	12	272	28	75	314	14	33	71	55	0	62	10
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	0	4	10	4	1	9	4	3	0	0	0	0
Mvmt Flow	13	299	31	82	345	15	36	78	60	0	68	11
Number of Lanes	1	1	0	1	1	0	1	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	2	2
HCM Control Delay	15.5	15.3	11.3	11.3
HCM LOS	C	C	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	100%	0%	100%	0%	100%	0%	0%
Vol Thru, %	0%	56%	0%	91%	0%	96%	86%
Vol Right, %	0%	44%	0%	9%	0%	4%	14%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	33	126	12	300	75	328	72
LT Vol	33	0	12	0	75	0	0
Through Vol	0	71	0	272	0	314	62
RT Vol	0	55	0	28	0	14	10
Lane Flow Rate	36	138	13	330	82	360	79
Geometry Grp	7	7	7	7	7	7	6
Degree of Util (X)	0.074	0.251	0.024	0.546	0.147	0.583	0.153
Departure Headway (Hd)	7.371	6.533	6.47	5.965	6.408	5.819	6.959
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	485	548	552	603	559	620	513
Service Time	5.134	4.297	4.22	3.715	4.154	3.565	5.035
HCM Lane V/C Ratio	0.074	0.252	0.024	0.547	0.147	0.581	0.154
HCM Control Delay	10.7	11.5	9.4	15.7	10.3	16.4	11.3
HCM Lane LOS	B	B	A	C	B	C	B
HCM 95th-tile Q	0.2	1	0.1	3.3	0.5	3.8	0.5

Timings
11: SE 164th Ave & SE 29th St

Vancouver Innovation Center
Baseline 2036 AM Peak Hour Conditions

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	42	7	47	141	16	37	27	1106	16	823
Future Volume (vph)	42	7	47	141	16	37	27	1106	16	823
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Prot	NA
Protected Phases		2			6		7	4	3	8
Permitted Phases	2		2	6		6				
Detector Phase	2	2	2	6	6	6	7	4	3	8
Switch Phase										
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	5.0	15.0	5.0	15.0
Minimum Split (s)	39.0	39.0	39.0	38.0	38.0	38.0	10.0	32.0	10.0	32.0
Total Split (s)	39.0	39.0	39.0	39.0	39.0	39.0	17.0	64.0	17.0	64.0
Total Split (%)	32.5%	32.5%	32.5%	32.5%	32.5%	32.5%	14.2%	53.3%	14.2%	53.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag							Lead	Lag	Lead	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	None	C-Max
Act Effct Green (s)	18.7	18.7	18.7	18.7	18.7	18.7	5.9	86.9	5.4	84.4
Actuated g/C Ratio	0.16	0.16	0.16	0.16	0.16	0.16	0.05	0.72	0.04	0.70
v/c Ratio	0.21	0.02	0.16	0.69	0.07	0.13	0.32	0.32	0.22	0.25
Control Delay	42.7	37.1	6.5	62.4	38.9	3.9	36.9	23.3	61.9	8.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.7	37.1	6.5	62.4	38.9	3.9	36.9	23.3	61.9	8.3
LOS	D	D	A	E	D	A	D	C	E	A
Approach Delay		24.6			49.2			23.6		9.3
Approach LOS		C			D			C		A

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 85 (71%), Referenced to phase 8:SBT, Start of Green

Natural Cycle: 85

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.69

Intersection Signal Delay: 20.4

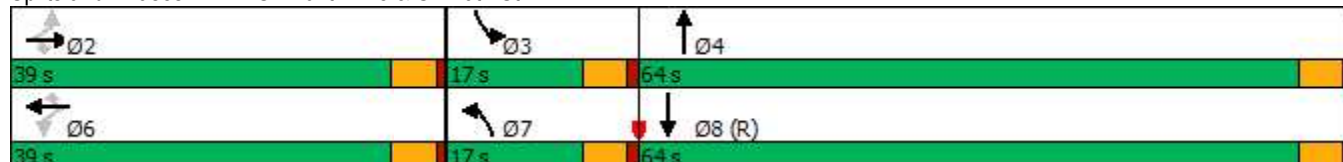
Intersection LOS: C

Intersection Capacity Utilization 51.7%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 11: SE 164th Ave & SE 29th St



HCM 6th Signalized Intersection Summary

11: SE 164th Ave & SE 29th St

Vancouver Innovation Center
Baseline 2036 AM Peak Hour Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	7	47	141	16	37	27	1106	15	16	823	26
Future Volume (veh/h)	42	7	47	141	16	37	27	1106	15	16	823	26
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1900	1856	1856	1648	1900	1900	1870	1796	1796	1856	1826
Adj Flow Rate, veh/h	44	7	6	148	17	4	28	1164	15	17	866	25
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	0	3	3	17	0	0	2	7	7	3	5
Cap, veh/h	221	239	198	230	207	202	46	2592	33	31	2488	72
Arrive On Green	0.13	0.13	0.13	0.13	0.13	0.13	0.03	0.50	0.50	0.02	0.49	0.49
Sat Flow, veh/h	1380	1900	1572	1390	1648	1610	1810	5195	67	1711	5060	146
Grp Volume(v), veh/h	44	7	6	148	17	4	28	763	416	17	578	313
Grp Sat Flow(s),veh/h/ln	1380	1900	1572	1390	1648	1610	1810	1702	1858	1711	1689	1829
Q Serve(g_s), s	3.5	0.4	0.4	12.5	1.1	0.3	1.8	17.4	17.4	1.2	12.6	12.6
Cycle Q Clear(g_c), s	4.6	0.4	0.4	12.9	1.1	0.3	1.8	17.4	17.4	1.2	12.6	12.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.04	1.00		0.08
Lane Grp Cap(c), veh/h	221	239	198	230	207	202	46	1698	927	31	1660	899
V/C Ratio(X)	0.20	0.03	0.03	0.64	0.08	0.02	0.61	0.45	0.45	0.55	0.35	0.35
Avail Cap(c_a), veh/h	438	538	446	449	467	456	181	1698	927	171	1660	899
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.73	0.73	0.73	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.4	46.0	46.0	51.7	46.3	46.0	57.9	19.4	19.4	58.4	18.7	18.7
Incr Delay (d2), s/veh	0.2	0.0	0.0	1.1	0.1	0.0	3.6	0.6	1.2	5.6	0.6	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.2	0.3	0.3	7.9	0.8	0.2	1.6	10.3	11.3	1.0	8.5	9.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.5	46.1	46.1	52.8	46.4	46.0	61.5	20.0	20.6	64.0	19.3	19.8
LnGrp LOS	D	D	D	D	D	D	E	C	C	E	B	B
Approach Vol, veh/h	57			169			1207			908		
Approach Delay, s/veh	48.0			52.0			21.2			20.3		
Approach LOS	D			D			C			C		
Timer - Assigned Phs	2			3			4			6		
Phs Duration (G+Y+Rc), s	20.1			7.2			64.9			20.1		
Change Period (Y+Rc), s	5.0			5.0			5.0			5.0		
Max Green Setting (Gmax), s	34.0			12.0			59.0			34.0		
Max Q Clear Time (g_c+I1), s	6.6			3.2			19.4			14.9		
Green Ext Time (p_c), s	0.0			0.0			5.5			0.2		
Intersection Summary												
HCM 6th Ctrl Delay	23.7											
HCM 6th LOS	C											

Timings 12: SE 164th Ave/SE164th Ave & SE 34th Street

Vancouver Innovation Center
Baseline 2036 AM Peak Hour Conditions

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	28	60	165	312	121	138	111	931	307	187	742
Future Volume (vph)	28	60	165	312	121	138	111	931	307	187	742
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA
Protected Phases	5	2	7	1	6	3	7	4	1	3	8
Permitted Phases			2			6			4		
Detector Phase	5	2	7	1	6	3	7	4	1	3	8
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	20.0	5.0	5.0	20.0
Minimum Split (s)	10.0	33.0	10.0	10.0	32.0	10.0	10.0	31.0	10.0	10.0	28.0
Total Split (s)	20.0	33.0	20.0	25.0	38.0	17.0	20.0	45.0	25.0	17.0	42.0
Total Split (%)	16.7%	27.5%	16.7%	20.8%	31.7%	14.2%	16.7%	37.5%	20.8%	14.2%	35.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes		Yes		Yes	Yes	Yes	Yes		Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	None	None	C-Max
Act Effct Green (s)	6.4	8.2	23.0	20.0	23.8	52.1	11.8	50.5	75.5	23.3	62.0
Actuated g/C Ratio	0.05	0.07	0.19	0.17	0.20	0.43	0.10	0.42	0.63	0.19	0.52
v/c Ratio	0.39	0.56	0.53	1.18	0.36	0.20	0.72	0.71	0.32	0.61	0.34
Control Delay	68.3	70.9	31.3	152.9	45.0	4.0	74.0	32.9	2.1	45.5	20.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.3	70.9	31.3	152.9	45.0	4.0	74.0	32.9	2.1	45.5	20.5
LOS	E	E	C	F	D	A	E	C	A	D	C
Approach Delay		44.8			94.1			29.3			25.4
Approach LOS		D			F			C			C

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 15 (13%), Referenced to phase 8:SBT, Start of Green

Natural Cycle: 115

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.18

Intersection Signal Delay: 41.1

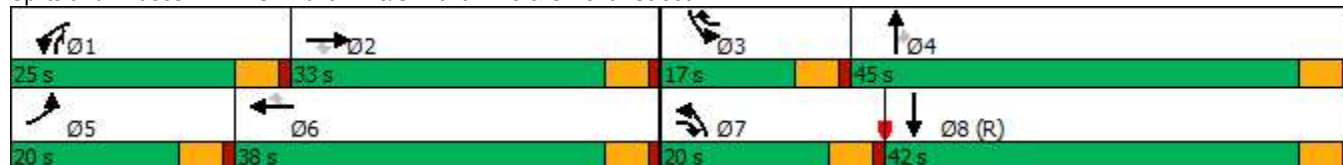
Intersection LOS: D

Intersection Capacity Utilization 72.5%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 12: SE 164th Ave/SE164th Ave & SE 34th Street



HCM 6th Signalized Intersection Summary

12: SE 164th Ave/SE164th Ave & SE 34th Street

Vancouver Innovation Center
Baseline 2036 AM Peak Hour Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	28	60	165	312	121	138	111	931	307	187	742	37
Future Volume (veh/h)	28	60	165	312	121	138	111	931	307	187	742	37
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1565	1758	1803	1870	1885	1841	1791	1776	1746	1806	1761	1761
Adj Flow Rate, veh/h	31	67	124	347	134	50	123	1034	181	208	824	38
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	19	6	3	2	1	4	1	2	4	0	3	3
Cap, veh/h	40	159	270	297	434	515	147	1125	740	172	1635	75
Arrive On Green	0.03	0.09	0.09	0.17	0.23	0.23	0.09	0.33	0.33	0.03	0.11	0.11
Sat Flow, veh/h	1491	1758	1528	1781	1885	1560	1706	3375	1480	1720	4711	217
Grp Volume(v), veh/h	31	67	124	347	134	50	123	1034	181	208	560	302
Grp Sat Flow(s),veh/h/ln	1491	1758	1528	1781	1885	1560	1706	1687	1480	1720	1603	1722
Q Serve(g_s), s	2.5	4.3	8.7	20.0	7.1	2.7	8.5	35.3	8.4	12.0	19.7	19.8
Cycle Q Clear(g_c), s	2.5	4.3	8.7	20.0	7.1	2.7	8.5	35.3	8.4	12.0	19.7	19.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.13
Lane Grp Cap(c), veh/h	40	159	270	297	434	515	147	1125	740	172	1112	598
V/C Ratio(X)	0.77	0.42	0.46	1.17	0.31	0.10	0.84	0.92	0.24	1.21	0.50	0.51
Avail Cap(c_a), veh/h	186	410	488	297	518	585	213	1125	740	172	1112	598
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.96	0.96	0.96
Uniform Delay (d), s/veh	58.0	51.6	44.2	50.0	38.3	27.8	54.0	38.4	17.1	58.0	43.4	43.5
Incr Delay (d2), s/veh	11.1	0.7	0.5	106.0	0.1	0.0	11.8	13.3	0.8	134.8	1.6	2.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.9	3.4	5.9	26.2	5.8	1.8	7.3	22.7	5.2	18.8	13.4	14.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	69.2	52.2	44.7	156.0	38.4	27.8	65.8	51.8	17.9	192.8	45.0	46.4
LnGrp LOS	E	D	D	F	D	C	E	D	B	F	D	D
Approach Vol, veh/h	222			531			1338			1070		
Approach Delay, s/veh	50.4			114.3			48.5			74.1		
Approach LOS	D			F			D			E		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	25.0	15.9	17.0	45.0	8.2	32.7	15.4	46.6				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	20.0	28.0	12.0	40.0	15.0	33.0	15.0	37.0				
Max Q Clear Time (g_c+I1), s	22.0	10.7	14.0	37.3	4.5	9.1	10.5	21.8				
Green Ext Time (p_c), s	0.0	0.1	0.0	1.0	0.0	0.2	0.0	1.7				
Intersection Summary												
HCM 6th Ctrl Delay	68.3											
HCM 6th LOS	E											

Timings

1: SE 192nd & SE 15th St

Vancouver Innovation Center

Phase 1 2038 PM Peak Hour Conditions

									
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	116	91	40	82	242	66	1268	115	1436
Future Volume (vph)	116	91	40	82	242	66	1268	115	1436
Turn Type	Prot	NA	Prot	NA	pm+ov	Prot	NA	Prot	NA
Protected Phases	5	2	1	6	3	7	4	3	8
Permitted Phases					6				
Detector Phase	5	2	1	6	3	7	4	3	8
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	15.0	5.0	15.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	20.0	10.0	20.0
Total Split (s)	15.0	29.0	15.0	29.0	16.0	14.0	40.0	16.0	42.0
Total Split (%)	15.0%	29.0%	15.0%	29.0%	16.0%	14.0%	40.0%	16.0%	42.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	None	Max
Act Effect Green (s)	9.0	15.7	6.2	10.9	19.7	7.1	52.3	9.7	56.9
Actuated g/C Ratio	0.09	0.16	0.06	0.11	0.20	0.07	0.52	0.10	0.57
v/c Ratio	0.79	0.59	0.38	0.43	0.68	0.54	0.74	0.69	0.83
Control Delay	78.1	36.7	54.0	45.7	30.8	52.8	24.3	63.7	26.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	78.1	36.7	54.0	45.7	30.8	52.8	24.3	63.7	26.4
LOS	E	D	D	D	C	D	C	E	C
Approach Delay		53.3		36.7			25.7		28.9
Approach LOS		D		D			C		C

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 98 (98%), Referenced to phase 4:NBT, Start of Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.83

Intersection Signal Delay: 30.4

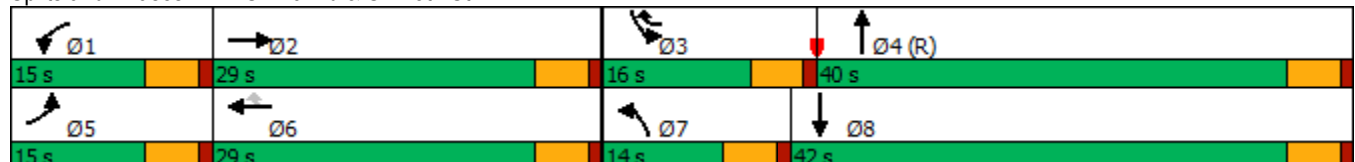
Intersection LOS: C

Intersection Capacity Utilization 79.2%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 1: SE 192nd & SE 15th St



HCM 6th Signalized Intersection Summary

1: SE 192nd & SE 15th St

Vancouver Innovation Center

Phase 1 2038 PM Peak Hour Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	116	91	82	40	82	242	66	1268	32	115	1436	133
Future Volume (veh/h)	116	91	82	40	82	242	66	1268	32	115	1436	133
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1885	1900	1900	1856	1900	1900	1870	1900	1900	1870	1870
Adj Flow Rate, veh/h	122	96	49	42	86	192	69	1335	33	121	1512	135
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	5	1	0	0	3	0	0	2	0	0	2	2
Cap, veh/h	150	218	111	62	248	345	103	1763	44	150	1729	153
Arrive On Green	0.09	0.19	0.19	0.03	0.13	0.13	0.11	1.00	1.00	0.08	0.52	0.52
Sat Flow, veh/h	1739	1176	600	1810	1856	1582	1810	3544	88	1810	3301	293
Grp Volume(v), veh/h	122	0	145	42	86	192	69	669	699	121	809	838
Grp Sat Flow(s),veh/h/ln	1739	0	1776	1810	1856	1582	1810	1777	1854	1810	1777	1816
Q Serve(g_s), s	6.9	0.0	7.2	2.3	4.2	10.8	3.7	0.7	0.7	6.6	39.8	40.8
Cycle Q Clear(g_c), s	6.9	0.0	7.2	2.3	4.2	10.8	3.7	0.7	0.7	6.6	39.8	40.8
Prop In Lane	1.00		0.34	1.00		1.00	1.00		0.05	1.00		0.16
Lane Grp Cap(c), veh/h	150	0	329	62	248	345	103	884	923	150	931	951
V/C Ratio(X)	0.82	0.00	0.44	0.67	0.35	0.56	0.67	0.76	0.76	0.81	0.87	0.88
Avail Cap(c_a), veh/h	174	0	426	181	445	513	163	884	923	199	931	951
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	0.43	0.43	0.43	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.9	0.0	36.2	47.7	39.4	34.9	43.4	0.1	0.1	45.1	20.8	21.1
Incr Delay (d2), s/veh	19.5	0.0	0.3	4.6	0.3	0.5	1.2	2.7	2.6	12.3	10.8	11.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	6.7	0.0	5.5	2.0	3.5	7.3	2.8	1.3	1.3	6.1	24.3	25.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.4	0.0	36.5	52.4	39.7	35.5	44.7	2.8	2.7	57.3	31.6	32.6
LnGrp LOS	E	A	D	D	D	D	D	A	A	E	C	C
Approach Vol, veh/h		267			320			1437			1768	
Approach Delay, s/veh		49.2			38.8			4.7			33.8	
Approach LOS		D			D			A			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.4	23.5	13.3	54.8	13.6	18.4	10.7	57.4				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	10.0	24.0	11.0	35.0	10.0	24.0	9.0	37.0				
Max Q Clear Time (g_c+I1), s	4.3	9.2	8.6	2.7	8.9	12.8	5.7	42.8				
Green Ext Time (p_c), s	0.0	0.2	0.0	3.0	0.0	0.2	0.0	0.0				
Intersection Summary												
HCM 6th Ctrl Delay			24.3									
HCM 6th LOS			C									

Timings
2: SE 192nd Ave & SE 20th St

Vancouver Innovation Center
Phase 1 2038 PM Peak Hour Conditions

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	 		 			 		 
Traffic Volume (vph)	233	183	242	265	140	838	151	1038
Future Volume (vph)	233	183	242	265	140	838	151	1038
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	5	2	1	6	7	4	3	8
Permitted Phases								
Detector Phase	5	2	1	6	7	4	3	8
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	20.0	5.0	20.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	25.0	10.0	25.0
Total Split (s)	20.0	27.0	20.0	27.0	15.0	35.0	18.0	38.0
Total Split (%)	20.0%	27.0%	20.0%	27.0%	15.0%	35.0%	18.0%	38.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	Min	C-Max	None	Max
Act Effect Green (s)	11.3	24.2	11.5	24.4	9.7	32.6	11.7	34.6
Actuated g/C Ratio	0.11	0.24	0.12	0.24	0.10	0.33	0.12	0.35
v/c Ratio	0.62	0.64	0.63	0.88	0.83	0.89	0.75	1.10
Control Delay	49.0	38.8	49.0	56.7	86.6	25.9	63.5	88.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.0	38.8	49.0	56.7	86.6	25.9	63.5	88.4
LOS	D	D	D	E	F	C	E	F
Approach Delay		43.4		53.7		33.5		85.7
Approach LOS		D		D		C		F

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 93 (93%), Referenced to phase 4:NBT, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.10

Intersection Signal Delay: 58.5

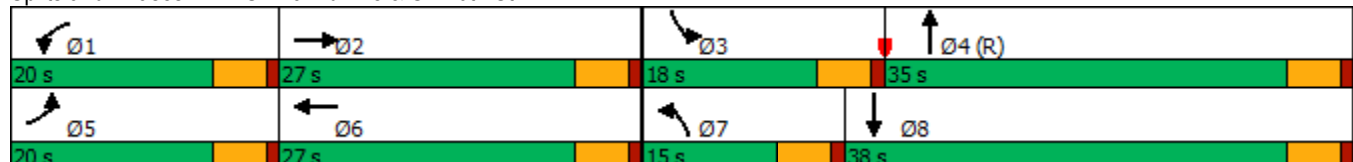
Intersection LOS: E

Intersection Capacity Utilization 88.5%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 2: SE 192nd Ave & SE 20th St



HCM 6th Signalized Intersection Summary

2: SE 192nd Ave & SE 20th St

Vancouver Innovation Center
Phase 1 2038 PM Peak Hour Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	233	183	92	242	265	118	140	838	150	151	1038	237
Future Volume (veh/h)	233	183	92	242	265	118	140	838	150	151	1038	237
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1885	1900	1900	1870	1900	1885	1900	1885	1870	1885
Adj Flow Rate, veh/h	243	191	78	252	276	106	146	873	141	157	1081	227
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	1	0	0	2	0	1	0	1	2	1
Cap, veh/h	316	279	114	325	286	110	179	1185	191	191	1143	239
Arrive On Green	0.09	0.22	0.22	0.09	0.22	0.22	0.10	0.38	0.38	0.11	0.39	0.39
Sat Flow, veh/h	3510	1281	523	3510	1301	500	1810	3087	499	1795	2925	612
Grp Volume(v), veh/h	243	0	269	252	0	382	146	506	508	157	655	653
Grp Sat Flow(s),veh/h/ln	1755	0	1804	1755	0	1801	1810	1791	1795	1795	1777	1759
Q Serve(g_s), s	6.8	0.0	13.7	7.0	0.0	21.0	7.9	24.3	24.3	8.6	35.6	36.0
Cycle Q Clear(g_c), s	6.8	0.0	13.7	7.0	0.0	21.0	7.9	24.3	24.3	8.6	35.6	36.0
Prop In Lane	1.00		0.29	1.00		0.28	1.00		0.28	1.00		0.35
Lane Grp Cap(c), veh/h	316	0	392	325	0	396	179	688	689	191	695	688
V/C Ratio(X)	0.77	0.00	0.69	0.78	0.00	0.96	0.81	0.74	0.74	0.82	0.94	0.95
Avail Cap(c_a), veh/h	527	0	397	527	0	396	181	688	689	233	695	688
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.47	0.47	0.47
Uniform Delay (d), s/veh	44.5	0.0	36.0	44.4	0.0	38.6	44.1	26.5	26.5	43.8	29.4	29.5
Incr Delay (d2), s/veh	1.5	0.0	4.0	1.5	0.0	35.6	22.4	6.9	6.9	7.6	13.3	14.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.3	0.0	10.3	5.5	0.0	18.7	8.1	16.5	16.5	6.4	21.2	21.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.0	0.0	39.9	45.9	0.0	74.2	66.5	33.4	33.4	51.3	42.6	43.7
LnGrp LOS	D	A	D	D	A	E	E	C	C	D	D	D
Approach Vol, veh/h		512			634			1160			1465	
Approach Delay, s/veh		42.8			63.0			37.5			44.1	
Approach LOS		D			E			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.2	26.8	15.6	43.4	14.0	27.0	14.9	44.1				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	15.0	22.0	13.0	30.0	15.0	22.0	10.0	33.0				
Max Q Clear Time (g_c+I1), s	9.0	15.7	10.6	26.3	8.8	23.0	9.9	38.0				
Green Ext Time (p_c), s	0.2	0.5	0.0	1.6	0.2	0.0	0.0	0.0				
Intersection Summary												
HCM 6th Ctrl Delay			45.1									
HCM 6th LOS			D									

Intersection						
Int Delay, s/veh	0.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	3	4	1138	3	10	1239
Future Vol, veh/h	3	4	1138	3	10	1239
Conflicting Peds, #/hr	0	0	0	2	2	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	125	0	-	-	230	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	1	0	0	1
Mvmt Flow	3	4	1198	3	11	1304
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	1876	603	0	0	1203	0
Stage 1	1202	-	-	-	-	-
Stage 2	674	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.1	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	65	447	-	-	587	-
Stage 1	251	-	-	-	-	-
Stage 2	473	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	64	446	-	-	586	-
Mov Cap-2 Maneuver	64	-	-	-	-	-
Stage 1	250	-	-	-	-	-
Stage 2	464	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	35	0		0.1		
HCM LOS	E					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	64	446	586	-
HCM Lane V/C Ratio	-	-	0.049	0.009	0.018	-
HCM Control Delay (s)	-	-	64.2	13.1	11.3	-
HCM Lane LOS	-	-	F	B	B	-
HCM 95th %tile Q(veh)	-	-	0.2	0	0.1	-

Timings
5: SE 192nd Ave & SE 34th St

Vancouver Innovation Center
Phase 1 2038 PM Peak Hour Conditions

										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	166	213	355	187	120	124	955	204	212	932
Future Volume (vph)	166	213	355	187	120	124	955	204	212	932
Turn Type	pm+pt	NA	pm+pt	NA	Perm	Prot	NA	pm+ov	Prot	NA
Protected Phases	5	2	1	6		7	4	1	3	8
Permitted Phases	2		6		6			4		
Detector Phase	5	2	1	6	6	7	4	1	3	8
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	20.0	5.0	5.0	20.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	25.0	10.0	10.0	25.0
Total Split (s)	14.0	32.0	19.0	37.0	37.0	13.0	34.0	19.0	15.0	36.0
Total Split (%)	14.0%	32.0%	19.0%	37.0%	37.0%	13.0%	34.0%	19.0%	15.0%	36.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	None	None	Max
Act Effct Green (s)	29.3	20.8	39.8	26.3	26.3	9.9	35.2	49.2	10.0	35.3
Actuated g/C Ratio	0.29	0.21	0.40	0.26	0.26	0.10	0.35	0.49	0.10	0.35
v/c Ratio	0.46	0.86	1.11	0.39	0.22	0.73	0.80	0.24	0.65	0.92
Control Delay	24.3	56.6	106.9	31.8	1.9	67.9	36.2	2.0	40.5	32.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.3	56.6	106.9	31.8	1.9	67.9	36.2	2.0	40.5	32.9
LOS	C	E	F	C	A	E	D	A	D	C
Approach Delay		45.4		66.7			33.8			34.1
Approach LOS		D		E			C			C

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 36 (36%), Referenced to phase 4:NBT, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.11

Intersection Signal Delay: 41.3

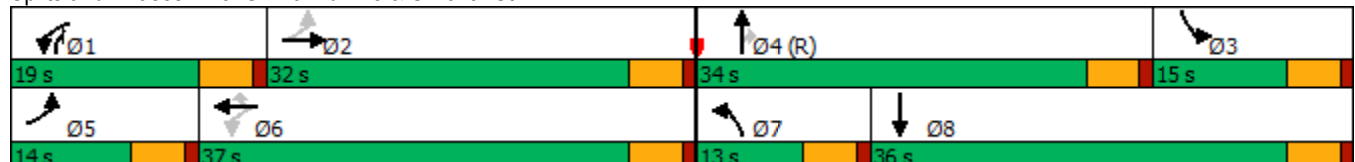
Intersection LOS: D

Intersection Capacity Utilization 91.8%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 5: SE 192nd Ave & SE 34th St



HCM 6th Signalized Intersection Summary

5: SE 192nd Ave & SE 34th St

Vancouver Innovation Center
Phase 1 2038 PM Peak Hour Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	166	213	103	355	187	120	124	955	204	212	932	138
Future Volume (veh/h)	166	213	103	355	187	120	124	955	204	212	932	138
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1773	1847	1817	2003	2003	2018	2018	1988	2003	1847	1832	1743
Adj Flow Rate, veh/h	175	224	88	374	197	28	131	1005	100	223	981	133
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	5	0	2	1	1	0	0	2	1	0	1	7
Cap, veh/h	411	255	100	373	507	431	154	1095	726	570	1159	157
Arrive On Green	0.09	0.20	0.20	0.14	0.25	0.25	0.08	0.29	0.29	0.17	0.38	0.38
Sat Flow, veh/h	1688	1255	493	1908	2003	1704	1922	3777	1683	3413	3073	416
Grp Volume(v), veh/h	175	0	312	374	197	28	131	1005	100	223	555	559
Grp Sat Flow(s),veh/h/ln	1688	0	1748	1908	2003	1704	1922	1889	1683	1706	1741	1749
Q Serve(g_s), s	8.2	0.0	17.3	14.0	8.1	0.8	6.7	25.7	1.6	5.8	29.2	29.2
Cycle Q Clear(g_c), s	8.2	0.0	17.3	14.0	8.1	0.8	6.7	25.7	1.6	5.8	29.2	29.2
Prop In Lane	1.00		0.28	1.00		1.00	1.00		1.00	1.00		0.24
Lane Grp Cap(c), veh/h	411	0	355	373	507	431	154	1095	726	570	656	659
V/C Ratio(X)	0.43	0.00	0.88	1.00	0.39	0.06	0.85	0.92	0.14	0.39	0.85	0.85
Avail Cap(c_a), veh/h	411	0	472	373	641	545	154	1095	726	570	656	659
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.81	0.00	0.81	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.9	0.0	38.7	28.9	30.9	11.7	45.4	34.3	5.9	37.1	28.5	28.5
Incr Delay (d2), s/veh	0.2	0.0	9.6	47.2	0.2	0.0	32.8	13.4	0.4	0.2	12.8	12.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.8	0.0	12.3	17.2	6.9	0.9	8.0	19.2	1.3	4.3	19.8	19.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.2	0.0	48.2	76.1	31.1	11.7	78.3	47.8	6.3	37.3	41.3	41.3
LnGrp LOS	C	A	D	F	C	B	E	D	A	D	D	D
Approach Vol, veh/h	487			599			1236			1337		
Approach Delay, s/veh	41.0			58.3			47.6			40.6		
Approach LOS	D			E			D			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	19.0	25.3	21.7	34.0	14.0	30.3	13.0	42.7				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	14.0	27.0	10.0	29.0	9.0	32.0	8.0	31.0				
Max Q Clear Time (g_c+I1), s	16.0	19.3	7.8	27.7	10.2	10.1	8.7	31.2				
Green Ext Time (p_c), s	0.0	0.4	0.0	0.5	0.0	0.3	0.0	0.0				

Intersection Summary

HCM 6th Ctrl Delay	45.9
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

Timings

6: SE Hiddenbrook Dr & SE 34th St

Vancouver Innovation Center

Phase 1 2038 PM Peak Hour Conditions



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	12	336	37	387	71	2	113	11	118
Future Volume (vph)	12	336	37	387	71	2	113	11	118
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA	Perm
Protected Phases	5	2	1	6		8		4	
Permitted Phases					8		4		4
Detector Phase	5	2	1	6	8	8	4	4	4
Switch Phase									
Minimum Initial (s)	5.0	15.0	5.0	15.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	30.0	10.0	30.0	32.0	32.0	34.0	34.0	34.0
Total Split (s)	10.0	85.0	10.0	85.0	35.0	35.0	35.0	35.0	35.0
Total Split (%)	7.7%	65.4%	7.7%	65.4%	26.9%	26.9%	26.9%	26.9%	26.9%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					
Recall Mode	None	Min	None	Min	None	None	None	None	None
Act Effect Green (s)	5.7	19.1	5.7	21.0	9.9	9.9		9.9	9.9
Actuated g/C Ratio	0.13	0.44	0.13	0.48	0.23	0.23		0.23	0.23
v/c Ratio	0.06	0.55	0.17	0.55	0.27	0.10		0.44	0.27
Control Delay	26.1	14.6	26.4	13.0	17.8	7.6		20.6	5.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay	26.1	14.6	26.4	13.0	17.8	7.6		20.6	5.6
LOS	C	B	C	B	B	A		C	A
Approach Delay		14.9		14.0		14.5		13.3	
Approach LOS		B		B		B		B	

Intersection Summary

Cycle Length: 130

Actuated Cycle Length: 43.3

Natural Cycle: 75

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.55

Intersection Signal Delay: 14.2

Intersection LOS: B

Intersection Capacity Utilization 52.6%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 6: SE Hiddenbrook Dr & SE 34th St

	Ø1		Ø2		Ø4
10 s		85 s		35 s	
	Ø5		Ø6		Ø8
10 s		85 s		35 s	

HCM 6th Signalized Intersection Summary

6: SE Hiddenbrook Dr & SE 34th St

Vancouver Innovation Center
Phase 1 2038 PM Peak Hour Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	336	80	37	387	69	71	2	32	113	11	118
Future Volume (veh/h)	12	336	80	37	387	69	71	2	32	113	11	118
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	0.99		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1870	1841	1832	1847	1876	1817	1876	1832	1841	1900	1900
Adj Flow Rate, veh/h	13	357	74	39	412	66	76	2	5	120	12	21
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	2	4	3	2	0	4	0	3	4	0	0
Cap, veh/h	30	589	122	77	651	104	320	86	216	410	33	293
Arrive On Green	0.02	0.39	0.39	0.04	0.42	0.42	0.18	0.18	0.18	0.18	0.18	0.18
Sat Flow, veh/h	1810	1501	311	1745	1551	249	1333	473	1183	1287	182	1605
Grp Volume(v), veh/h	13	0	431	39	0	478	76	0	7	132	0	21
Grp Sat Flow(s),veh/h/ln	1810	0	1812	1745	0	1800	1333	0	1656	1469	0	1605
Q Serve(g_s), s	0.3	0.0	7.5	0.9	0.0	8.3	2.1	0.0	0.1	2.9	0.0	0.4
Cycle Q Clear(g_c), s	0.3	0.0	7.5	0.9	0.0	8.3	5.3	0.0	0.1	3.1	0.0	0.4
Prop In Lane	1.00		0.17	1.00		0.14	1.00		0.71	0.91		1.00
Lane Grp Cap(c), veh/h	30	0	711	77	0	755	320	0	302	443	0	293
V/C Ratio(X)	0.43	0.00	0.61	0.51	0.00	0.63	0.24	0.00	0.02	0.30	0.00	0.07
Avail Cap(c_a), veh/h	230	0	3680	222	0	3657	1092	0	1262	1286	0	1223
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	19.2	0.0	9.5	18.4	0.0	9.0	16.8	0.0	13.2	14.4	0.0	13.3
Incr Delay (d2), s/veh	3.5	0.0	0.3	1.9	0.0	0.3	0.1	0.0	0.0	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.2	0.0	3.5	0.6	0.0	3.7	1.1	0.0	0.1	1.7	0.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.6	0.0	9.8	20.3	0.0	9.4	16.9	0.0	13.2	14.6	0.0	13.4
LnGrp LOS	C	A	A	C	A	A	B	A	B	B	A	B
Approach Vol, veh/h	444			517			83			153		
Approach Delay, s/veh	10.2			10.2			16.6			14.4		
Approach LOS	B			B			B			B		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.7	20.5		12.2	5.7	21.5		12.2				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	5.0	80.0		30.0	5.0	80.0		30.0				
Max Q Clear Time (g_c+I1), s	2.9	9.5		5.1	2.3	10.3		7.3				
Green Ext Time (p_c), s	0.0	0.4		0.1	0.0	0.4		0.0				
Intersection Summary												
HCM 6th Ctrl Delay				11.2								
HCM 6th LOS				B								

Intersection												
Int Delay, s/veh	6.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	75	407	32	12	560	4	18	0	7	14	4	258
Future Vol, veh/h	75	407	32	12	560	4	18	0	7	14	4	258
Conflicting Peds, #/hr	6	0	0	0	0	6	0	0	1	1	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	140	-	-	95	-	0	0	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	0	2	0	0	2	0	0	0	0	0	0	0
Mvmt Flow	82	447	35	13	615	4	20	0	8	15	4	284
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	625	0	0	482	0	0	1416	1280	466	1281	1293	621
Stage 1	-	-	-	-	-	-	629	629	-	647	647	-
Stage 2	-	-	-	-	-	-	787	651	-	634	646	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	966	-	-	1091	-	-	116	167	601	144	164	491
Stage 1	-	-	-	-	-	-	474	478	-	463	470	-
Stage 2	-	-	-	-	-	-	388	468	-	471	470	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	960	-	-	1091	-	-	44	150	600	131	147	488
Mov Cap-2 Maneuver	-	-	-	-	-	-	44	150	-	131	147	-
Stage 1	-	-	-	-	-	-	434	437	-	421	462	-
Stage 2	-	-	-	-	-	-	159	460	-	425	430	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.3			0.2			84.9			23		
HCM LOS							F			C		
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2		
Capacity (veh/h)	44	88	960	-	-	1091	-	-	134	488		
HCM Lane V/C Ratio	0.3	0.162	0.086	-	-	0.012	-	-	0.148	0.581		
HCM Control Delay (s)	118.6	53.7	9.1	-	-	8.3	-	-	36.5	22.1		
HCM Lane LOS	F	F	A	-	-	A	-	-	E	C		
HCM 95th %tile Q(veh)	1	0.5	0.3	-	-	0	-	-	0.5	3.6		

Timings 8: SE 176th Ave & SE 34th St

Vancouver Innovation Center
Phase 1 2038 PM Peak Hour Conditions

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	141	413	12	700	10	6	99	15
Future Volume (vph)	141	413	12	700	10	6	99	15
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	Perm	NA
Protected Phases	5	2	1	6		8		4
Permitted Phases	2		6		8		4	
Detector Phase	5	2	1	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	5.0	15.0	5.0	15.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	24.0	10.0	28.0	33.0	33.0	32.0	32.0
Total Split (s)	15.0	45.0	15.0	45.0	25.0	25.0	25.0	25.0
Total Split (%)	17.6%	52.9%	17.6%	52.9%	29.4%	29.4%	29.4%	29.4%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Lead/Lag	Lag	Lead	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	Min	None	Min	None	None	None	None
Act Effct Green (s)	55.4	54.8	45.4	43.4		11.5	11.6	11.6
Actuated g/C Ratio	0.73	0.72	0.60	0.57		0.15	0.15	0.15
v/c Ratio	0.48	0.35	0.02	0.85		0.08	0.51	0.07
Control Delay	21.9	9.4	8.0	27.2		24.9	37.5	22.4
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	21.9	9.4	8.0	27.2		24.9	37.5	22.4
LOS	C	A	A	C		C	D	C
Approach Delay		12.5		26.9		24.9		35.0
Approach LOS		B		C		C		C

Intersection Summary

Cycle Length: 85

Actuated Cycle Length: 76

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.85

Intersection Signal Delay: 22.2

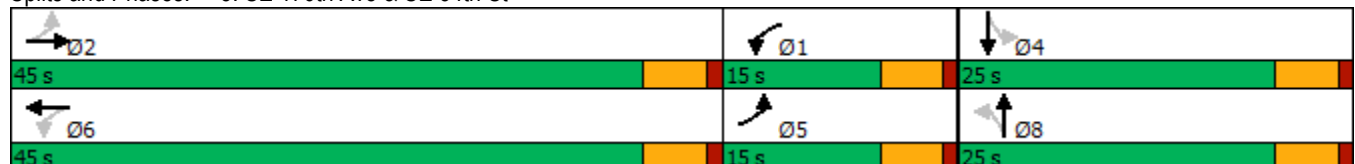
Intersection LOS: C

Intersection Capacity Utilization 73.9%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 8: SE 176th Ave & SE 34th St



HCM 6th Signalized Intersection Summary

8: SE 176th Ave & SE 34th St

Vancouver Innovation Center
Phase 1 2038 PM Peak Hour Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	141	413	13	12	700	124	10	6	2	99	15	5
Future Volume (veh/h)	141	413	13	12	700	124	10	6	2	99	15	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1885	1870	1900	1900	1885	1885	1900	1900	1900	1885	1900	1900
Adj Flow Rate, veh/h	153	449	13	13	761	127	11	7	0	108	16	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	2	0	0	1	1	0	0	0	1	0	0
Cap, veh/h	282	542	16	743	846	141	185	91	0	281	181	11
Arrive On Green	0.08	0.30	0.30	0.32	0.54	0.54	0.10	0.10	0.00	0.10	0.10	0.10
Sat Flow, veh/h	1795	1809	52	1810	1575	263	755	884	0	1413	1766	110
Grp Volume(v), veh/h	153	0	462	13	0	888	18	0	0	108	0	17
Grp Sat Flow(s),veh/h/ln	1795	0	1861	1810	0	1838	1639	0	0	1413	0	1876
Q Serve(g_s), s	0.2	0.0	12.5	0.0	0.0	23.4	0.0	0.0	0.0	3.4	0.0	0.4
Cycle Q Clear(g_c), s	0.2	0.0	12.5	0.0	0.0	23.4	0.5	0.0	0.0	3.9	0.0	0.4
Prop In Lane	1.00		0.03	1.00		0.14	0.61		0.00	1.00		0.06
Lane Grp Cap(c), veh/h	282	0	557	743	0	988	275	0	0	281	0	192
V/C Ratio(X)	0.54	0.00	0.83	0.02	0.00	0.90	0.07	0.00	0.00	0.38	0.00	0.09
Avail Cap(c_a), veh/h	464	0	1374	743	0	1357	693	0	0	658	0	693
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	22.8	0.0	17.7	11.5	0.0	11.2	22.0	0.0	0.0	23.5	0.0	22.0
Incr Delay (d2), s/veh	0.6	0.0	1.2	0.0	0.0	5.3	0.0	0.0	0.0	0.3	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.0	0.0	8.1	0.2	0.0	12.2	0.4	0.0	0.0	2.3	0.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.4	0.0	18.9	11.5	0.0	16.5	22.1	0.0	0.0	23.8	0.0	22.1
LnGrp LOS	C	A	B	B	A	B	C	A	A	C	A	C
Approach Vol, veh/h	615			901			18			125		
Approach Delay, s/veh	20.0			16.4			22.1			23.6		
Approach LOS	C			B			C			C		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	22.4	21.2		10.6	9.5	34.1		10.6				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	10.0	40.0		20.0	10.0	40.0		20.0				
Max Q Clear Time (g_c+I1), s	2.0	14.5		5.9	2.2	25.4		2.5				
Green Ext Time (p_c), s	0.0	1.7		0.1	0.1	3.7		0.0				

Intersection Summary

HCM 6th Ctrl Delay 18.4

HCM 6th LOS B

Notes

User approved pedestrian interval to be less than phase max green.

Intersection						
Int Delay, s/veh	1.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	20	31	15	263	94	105
Future Vol, veh/h	20	31	15	263	94	105
Conflicting Peds, #/hr	3	0	7	0	0	7
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	80	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	7	0	15	0	1	0
Mvmt Flow	22	33	16	283	101	113
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	483	165	221	0	-	0
Stage 1	165	-	-	-	-	-
Stage 2	318	-	-	-	-	-
Critical Hdwy	6.47	6.2	4.25	-	-	-
Critical Hdwy Stg 1	5.47	-	-	-	-	-
Critical Hdwy Stg 2	5.47	-	-	-	-	-
Follow-up Hdwy	3.563	3.3	2.335	-	-	-
Pot Cap-1 Maneuver	534	885	1275	-	-	-
Stage 1	852	-	-	-	-	-
Stage 2	726	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	520	879	1267	-	-	-
Mov Cap-2 Maneuver	520	-	-	-	-	-
Stage 1	835	-	-	-	-	-
Stage 2	721	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	10.7	0.4		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1267	-	692	-	-	
HCM Lane V/C Ratio	0.013	-	0.079	-	-	
HCM Control Delay (s)	7.9	-	10.7	-	-	
HCM Lane LOS	A	-	B	-	-	
HCM 95th %tile Q(veh)	0	-	0.3	-	-	

Intersection	
Intersection Delay, s/veh	81.8
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	48	466	62	89	503	18	43	122	73	27	85	28
Future Vol, veh/h	48	466	62	89	503	18	43	122	73	27	85	28
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	3	0	0	1	0	7	0	1	0	4	1	8
Mvmt Flow	52	507	67	97	547	20	47	133	79	29	92	30
Number of Lanes	1	1	0	1	1	0	1	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	2	2
HCM Control Delay	107.3	97.1	18.3	18.4
HCM LOS	F	F	C	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	100%	0%	100%	0%	100%	0%	19%
Vol Thru, %	0%	63%	0%	88%	0%	97%	61%
Vol Right, %	0%	37%	0%	12%	0%	3%	20%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	43	195	48	528	89	521	140
LT Vol	43	0	48	0	89	0	27
Through Vol	0	122	0	466	0	503	85
RT Vol	0	73	0	62	0	18	28
Lane Flow Rate	47	212	52	574	97	566	152
Geometry Grp	7	7	7	7	7	7	6
Degree of Util (X)	0.116	0.48	0.114	1.152	0.209	1.139	0.377
Departure Headway (Hd)	9.531	8.753	8.25	7.596	8.194	7.635	9.678
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	379	415	437	482	441	481	374
Service Time	7.231	6.453	5.95	5.296	5.894	5.335	7.678
HCM Lane V/C Ratio	0.124	0.511	0.119	1.191	0.22	1.177	0.406
HCM Control Delay	13.5	19.3	12	116	13	111.5	18.4
HCM Lane LOS	B	C	B	F	B	F	C
HCM 95th-tile Q	0.4	2.5	0.4	19.5	0.8	18.9	1.7

Timings
11: SE 164th Ave & SE 29th St

Vancouver Innovation Center
Phase 1 2038 PM Peak Hour Conditions

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	89	30	55	152	22	50	44	1463	47	1326
Future Volume (vph)	89	30	55	152	22	50	44	1463	47	1326
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Prot	NA
Protected Phases		2			6		7	4	3	8
Permitted Phases	2		2	6		6				
Detector Phase	2	2	2	6	6	6	7	4	3	8
Switch Phase										
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	5.0	15.0	5.0	15.0
Minimum Split (s)	39.0	39.0	39.0	38.0	38.0	38.0	10.0	32.0	19.5	32.0
Total Split (s)	39.0	39.0	39.0	39.0	39.0	39.0	15.0	66.0	15.0	66.0
Total Split (%)	32.5%	32.5%	32.5%	32.5%	32.5%	32.5%	12.5%	55.0%	12.5%	55.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag							Lead	Lag	Lead	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	None	C-Max
Act Effct Green (s)	19.0	19.0	19.0	19.0	19.0	19.0	6.5	81.5	6.5	81.5
Actuated g/C Ratio	0.16	0.16	0.16	0.16	0.16	0.16	0.05	0.68	0.05	0.68
v/c Ratio	0.42	0.11	0.19	0.76	0.09	0.18	0.50	0.46	0.51	0.42
Control Delay	48.9	39.8	8.9	68.9	39.3	7.7	50.5	23.7	73.1	10.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.9	39.8	8.9	68.9	39.3	7.7	50.5	23.7	73.1	10.8
LOS	D	D	A	E	D	A	D	C	E	B
Approach Delay		34.7			52.3			24.5		12.9
Approach LOS		C			D			C		B

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 112 (93%), Referenced to phase 8:SBT, Start of Green

Natural Cycle: 95

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.76

Intersection Signal Delay: 21.9

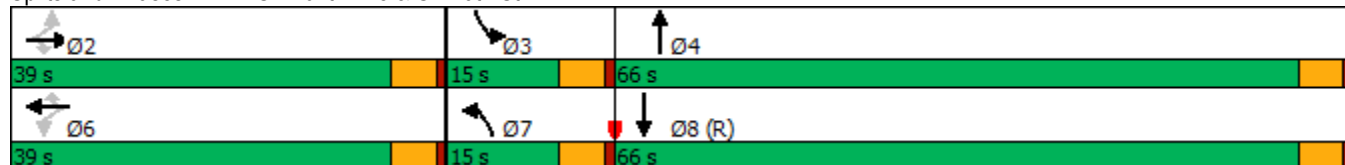
Intersection LOS: C

Intersection Capacity Utilization 61.5%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 11: SE 164th Ave & SE 29th St



HCM 6th Signalized Intersection Summary

11: SE 164th Ave & SE 29th St

Vancouver Innovation Center
Phase 1 2038 PM Peak Hour Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	89	30	55	152	22	50	44	1463	32	47	1326	46
Future Volume (veh/h)	89	30	55	152	22	50	44	1463	32	47	1326	46
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1826	1633	1856	1826	1870	1752	1870	1885	1900
Adj Flow Rate, veh/h	94	32	5	160	23	5	46	1540	33	49	1396	46
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	5	18	3	5	2	10	2	1	0
Cap, veh/h	262	298	251	250	256	245	59	2615	56	63	2610	86
Arrive On Green	0.16	0.16	0.16	0.16	0.16	0.16	0.03	0.51	0.51	0.04	0.51	0.51
Sat Flow, veh/h	1399	1900	1604	1334	1633	1566	1739	5144	110	1781	5117	169
Grp Volume(v), veh/h	94	32	5	160	23	5	46	1019	554	49	936	506
Grp Sat Flow(s),veh/h/ln	1399	1900	1604	1334	1633	1566	1739	1702	1850	1781	1716	1855
Q Serve(g_s), s	7.4	1.7	0.3	14.0	1.4	0.3	3.2	25.2	25.2	3.3	22.1	22.1
Cycle Q Clear(g_c), s	8.8	1.7	0.3	15.8	1.4	0.3	3.2	25.2	25.2	3.3	22.1	22.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.06	1.00		0.09
Lane Grp Cap(c), veh/h	262	298	251	250	256	245	59	1730	941	63	1750	946
V/C Ratio(X)	0.36	0.11	0.02	0.64	0.09	0.02	0.79	0.59	0.59	0.78	0.53	0.53
Avail Cap(c_a), veh/h	440	538	454	419	463	444	145	1730	941	148	1750	946
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.68	0.68	0.68	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.1	43.4	42.8	50.2	43.3	42.8	57.5	20.7	20.7	57.4	19.8	19.8
Incr Delay (d2), s/veh	0.3	0.1	0.0	1.0	0.1	0.0	5.8	1.0	1.8	7.4	1.2	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.7	1.5	0.2	8.4	1.1	0.2	2.6	13.9	15.2	2.8	13.5	14.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.4	43.5	42.8	51.2	43.3	42.8	63.3	21.7	22.5	64.8	21.0	22.0
LnGrp LOS	D	D	D	D	D	D	E	C	C	E	C	C
Approach Vol, veh/h	131			188			1619			1491		
Approach Delay, s/veh	46.2			50.0			23.2			22.8		
Approach LOS	D			D			C			C		
Timer - Assigned Phs	2		3	4		6		7	8			
Phs Duration (G+Y+Rc), s	23.8		9.2	66.0		23.8		9.0	66.2			
Change Period (Y+Rc), s	5.0		5.0	5.0		5.0		5.0	5.0			
Max Green Setting (Gmax), s	34.0		10.0	61.0		34.0		10.0	61.0			
Max Q Clear Time (g_c+l1), s	10.8		5.3	27.2		17.8		5.2	24.1			
Green Ext Time (p_c), s	0.0		0.0	1.8		0.0		0.0	1.6			
Intersection Summary												
HCM 6th Ctrl Delay	25.3											
HCM 6th LOS	C											

Timings
12: SE 164th Ave & SE 34th Street

Vancouver Innovation Center
Phase 1 2038 PM Peak Hour Conditions

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	49	102	194	301	136	278	192	1216	346	188	1284
Future Volume (vph)	49	102	194	301	136	278	192	1216	346	188	1284
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA
Protected Phases	5	2	7	1	6	3	7	4	1	3	8
Permitted Phases			2			6			4		
Detector Phase	5	2	7	1	6	3	7	4	1	3	8
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	20.0	5.0	5.0	20.0
Minimum Split (s)	10.0	33.0	10.0	10.0	32.0	10.0	10.0	31.0	10.0	10.0	28.0
Total Split (s)	15.0	33.0	20.0	17.0	35.0	20.0	20.0	50.0	17.0	20.0	50.0
Total Split (%)	12.5%	27.5%	16.7%	14.2%	29.2%	16.7%	16.7%	41.7%	14.2%	16.7%	41.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	None	None	C-Max
Act Effct Green (s)	7.3	10.7	34.0	12.0	17.5	40.5	18.3	59.2	76.2	18.0	59.0
Actuated g/C Ratio	0.06	0.09	0.28	0.10	0.15	0.34	0.15	0.49	0.64	0.15	0.49
v/c Ratio	0.51	0.66	0.41	1.77	0.54	0.49	0.74	0.73	0.32	0.74	0.56
Control Delay	71.7	71.0	24.2	402.1	56.2	22.8	64.4	28.5	3.9	58.4	22.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	71.7	71.0	24.2	402.1	56.2	22.8	64.4	28.5	3.9	58.4	22.9
LOS	E	E	C	F	E	C	E	C	A	E	C
Approach Delay		44.8			188.8			27.6			27.3
Approach LOS		D			F			C			C

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 40 (33%), Referenced to phase 8: SBT, Start of Green

Natural Cycle: 135

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.77

Intersection Signal Delay: 55.5

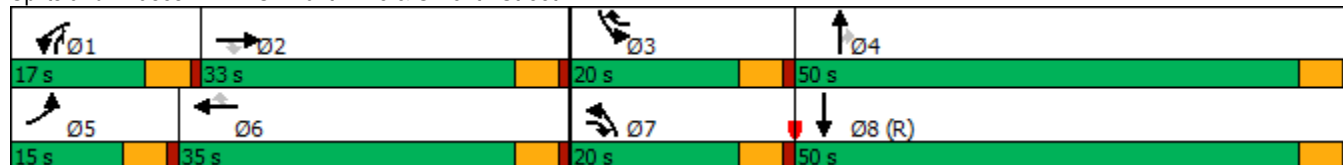
Intersection LOS: E

Intersection Capacity Utilization 82.7%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 12: SE 164th Ave & SE 34th Street



HCM 6th Signalized Intersection Summary

12: SE 164th Ave & SE 34th Street

Vancouver Innovation Center
Phase 1 2038 PM Peak Hour Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	49	102	194	301	136	278	192	1216	346	188	1284	49
Future Volume (veh/h)	49	102	194	301	136	278	192	1216	346	188	1284	49
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1767	1826	1885	1870	1841	1856	1885	1870	1885	1870	1870	1841
Adj Flow Rate, veh/h	51	106	152	314	142	217	200	1267	241	196	1338	48
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	9	5	1	2	4	3	1	2	1	2	2	4
Cap, veh/h	64	183	359	178	298	451	224	1333	759	223	1898	68
Arrive On Green	0.04	0.10	0.10	0.10	0.16	0.16	0.13	0.38	0.38	0.04	0.12	0.12
Sat Flow, veh/h	1682	1826	1598	1781	1841	1572	1795	3554	1598	1781	5060	182
Grp Volume(v), veh/h	51	106	152	314	142	217	200	1267	241	196	900	486
Grp Sat Flow(s),veh/h/ln	1682	1826	1598	1781	1841	1572	1795	1777	1598	1781	1702	1838
Q Serve(g_s), s	3.6	6.7	9.8	12.0	8.4	13.7	13.2	41.6	11.2	13.1	30.5	30.5
Cycle Q Clear(g_c), s	3.6	6.7	9.8	12.0	8.4	13.7	13.2	41.6	11.2	13.1	30.5	30.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.10
Lane Grp Cap(c), veh/h	64	183	359	178	298	451	224	1333	759	223	1277	689
V/C Ratio(X)	0.79	0.58	0.42	1.76	0.48	0.48	0.89	0.95	0.32	0.88	0.71	0.71
Avail Cap(c_a), veh/h	140	426	572	178	460	590	224	1333	759	223	1277	689
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.90	0.90	0.90
Uniform Delay (d), s/veh	57.2	51.6	39.8	54.0	45.7	35.4	51.7	36.4	19.5	56.6	46.2	46.2
Incr Delay (d2), s/veh	7.9	1.1	0.3	365.2	0.4	0.3	31.8	15.4	1.1	27.6	3.0	5.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.0	5.5	6.9	37.0	6.9	8.9	12.4	27.4	7.6	12.4	20.3	22.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	65.1	52.7	40.1	419.2	46.1	35.7	83.5	51.8	20.6	84.2	49.2	51.6
LnGrp LOS	E	D	D	F	D	D	F	D	C	F	D	D
Approach Vol, veh/h	309			673			1708			1582		
Approach Delay, s/veh	48.6			216.8			51.1			54.3		
Approach LOS	D			F			D			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.0	17.0	20.0	50.0	9.6	24.4	20.0	50.0				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	12.0	28.0	15.0	45.0	10.0	30.0	15.0	45.0				
Max Q Clear Time (g_c+I1), s	14.0	11.8	15.1	43.6	5.6	15.7	15.2	32.5				
Green Ext Time (p_c), s	0.0	0.2	0.0	0.7	0.0	0.3	0.0	2.9				
Intersection Summary												
HCM 6th Ctrl Delay	78.2											
HCM 6th LOS	E											

Appendix G 2038 With-Project Phase 2
Buildout Operations
Worksheets & Re-routed trips

Timings

1: SE 192nd & SE 15th St

Vancouver Innovation Center

Phase 2 2038 AM Peak Hour Conditions

									
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	156	45	29	64	158	58	973	89	848
Future Volume (vph)	156	45	29	64	158	58	973	89	848
Turn Type	Prot	NA	Prot	NA	pm+ov	Prot	NA	Prot	NA
Protected Phases	5	2	1	6	3	7	4	3	8
Permitted Phases					6				
Detector Phase	5	2	1	6	3	7	4	3	8
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	15.0	5.0	15.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	20.0	10.0	20.0
Total Split (s)	20.0	29.0	20.0	29.0	14.0	15.0	37.0	14.0	36.0
Total Split (%)	20.0%	29.0%	20.0%	29.0%	14.0%	15.0%	37.0%	14.0%	36.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	None	Max
Act Effct Green (s)	12.4	18.7	5.9	10.2	22.0	7.3	50.6	8.8	54.1
Actuated g/C Ratio	0.12	0.19	0.06	0.10	0.22	0.07	0.51	0.09	0.54
v/c Ratio	0.80	0.28	0.32	0.38	0.42	0.50	0.63	0.69	0.58
Control Delay	67.8	20.2	53.4	45.3	17.7	61.3	18.5	69.1	21.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.8	20.2	53.4	45.3	17.7	61.3	18.5	69.1	21.6
LOS	E	C	D	D	B	E	B	E	C
Approach Delay		50.5		28.8			20.8		25.7
Approach LOS		D		C			C		C

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 9 (9%), Referenced to phase 4:NBT, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.80

Intersection Signal Delay: 26.4

Intersection LOS: C

Intersection Capacity Utilization 60.1%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 1: SE 192nd & SE 15th St

			
Ø1	Ø2	Ø3	Ø4 (R)
20 s	29 s	14 s	37 s
			
Ø5	Ø6	Ø7	Ø8
20 s	29 s	15 s	36 s

HCM 6th Signalized Intersection Summary

1: SE 192nd & SE 15th St

Vancouver Innovation Center

Phase 2 2038 AM Peak Hour Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	156	45	44	29	64	158	58	973	16	89	848	87
Future Volume (veh/h)	156	45	44	29	64	158	58	973	16	89	848	87
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1900	1796	1781	1841	1870	1856	1841	1900	1737	1767	1856
Adj Flow Rate, veh/h	173	50	8	32	71	103	64	1081	17	99	942	91
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	0	7	8	4	2	3	4	0	11	9	3
Cap, veh/h	204	266	42	50	148	244	97	1869	29	122	1699	164
Arrive On Green	0.12	0.17	0.17	0.03	0.08	0.08	0.11	1.00	1.00	0.07	0.55	0.55
Sat Flow, veh/h	1767	1598	256	1697	1841	1585	1767	3523	55	1654	3092	299
Grp Volume(v), veh/h	173	0	58	32	71	103	64	537	561	99	511	522
Grp Sat Flow(s),veh/h/ln	1767	0	1854	1697	1841	1585	1767	1749	1829	1654	1678	1713
Q Serve(g_s), s	9.6	0.0	2.7	1.9	3.7	5.9	3.5	0.0	0.0	5.9	19.7	19.7
Cycle Q Clear(g_c), s	9.6	0.0	2.7	1.9	3.7	5.9	3.5	0.0	0.0	5.9	19.7	19.7
Prop In Lane	1.00		0.14	1.00		1.00	1.00		0.03	1.00		0.17
Lane Grp Cap(c), veh/h	204	0	308	50	148	244	97	928	970	122	922	941
V/C Ratio(X)	0.85	0.00	0.19	0.64	0.48	0.42	0.66	0.58	0.58	0.81	0.55	0.55
Avail Cap(c_a), veh/h	265	0	445	254	442	498	177	928	970	149	922	941
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	0.78	0.78	0.78	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.4	0.0	35.9	48.0	44.0	38.3	43.6	0.0	0.0	45.6	14.6	14.6
Incr Delay (d2), s/veh	14.7	0.0	0.1	5.0	0.9	0.4	2.2	2.1	2.0	19.5	2.4	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	8.5	0.0	2.2	1.5	3.1	4.0	2.7	1.0	1.0	5.4	11.8	12.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.1	0.0	36.0	53.0	44.9	38.7	45.8	2.1	2.0	65.1	17.0	16.9
LnGrp LOS	E	A	D	D	D	D	D	A	A	E	B	B
Approach Vol, veh/h		231			206			1162			1132	
Approach Delay, s/veh		52.6			43.0			4.4			21.2	
Approach LOS		D			D			A			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.9	21.6	12.4	58.0	16.5	13.0	10.5	60.0				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	15.0	24.0	9.0	32.0	15.0	24.0	10.0	31.0				
Max Q Clear Time (g_c+I1), s	3.9	4.7	7.9	2.0	11.6	7.9	5.5	21.7				
Green Ext Time (p_c), s	0.0	0.1	0.0	2.2	0.0	0.2	0.0	1.7				
Intersection Summary												
HCM 6th Ctrl Delay			18.4									
HCM 6th LOS			B									

Timings
2: SE 20th St & SE 192nd Ave

Vancouver Innovation Center
Phase 2 2038 AM Peak Hour Conditions

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	166	182	140	165	46	764	59	708
Future Volume (vph)	166	182	140	165	46	764	59	708
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	5	2	1	6	7	4	3	8
Permitted Phases								
Detector Phase	5	2	1	6	7	4	3	8
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	20.0	5.0	20.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	25.0	10.0	25.0
Total Split (s)	17.0	29.0	17.0	29.0	15.0	39.0	15.0	39.0
Total Split (%)	17.0%	29.0%	17.0%	29.0%	15.0%	39.0%	15.0%	39.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	Min	C-Max	None	Max
Act Effct Green (s)	9.4	18.6	8.6	17.8	7.3	47.0	7.7	45.4
Actuated g/C Ratio	0.09	0.19	0.09	0.18	0.07	0.47	0.08	0.45
v/c Ratio	0.55	0.80	0.49	0.70	0.39	0.60	0.45	0.56
Control Delay	49.5	52.2	49.0	46.5	63.3	10.5	52.2	28.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.5	52.2	49.0	46.5	63.3	10.5	52.2	28.3
LOS	D	D	D	D	E	B	D	C
Approach Delay		51.2		47.4		13.0		30.0
Approach LOS		D		D		B		C

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 98 (98%), Referenced to phase 4:NBT, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.80

Intersection Signal Delay: 29.6

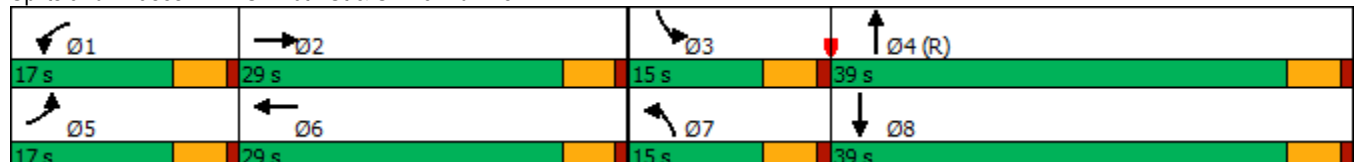
Intersection LOS: C

Intersection Capacity Utilization 65.8%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 2: SE 20th St & SE 192nd Ave



HCM 6th Signalized Intersection Summary

2: SE 20th St & SE 192nd Ave

Vancouver Innovation Center
Phase 2 2038 AM Peak Hour Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	166	182	84	140	165	57	46	764	156	59	708	103
Future Volume (veh/h)	166	182	84	140	165	57	46	764	156	59	708	103
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1900	1841	1885	1885	1885	1811	1856	1841	1885	1811	1826
Adj Flow Rate, veh/h	175	192	70	147	174	23	48	804	147	62	745	97
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	0	4	1	1	1	6	3	4	1	6	5
Cap, veh/h	242	221	81	214	256	34	86	1570	287	80	1599	208
Arrive On Green	0.07	0.17	0.17	0.06	0.16	0.16	0.05	0.53	0.53	0.06	0.69	0.69
Sat Flow, veh/h	3428	1328	484	3483	1631	216	1725	2976	544	1795	3061	398
Grp Volume(v), veh/h	175	0	262	147	0	197	48	476	475	62	419	423
Grp Sat Flow(s),veh/h/ln	1714	0	1813	1742	0	1846	1725	1763	1757	1795	1721	1739
Q Serve(g_s), s	5.0	0.0	14.1	4.1	0.0	10.1	2.7	17.5	17.5	3.4	11.0	11.0
Cycle Q Clear(g_c), s	5.0	0.0	14.1	4.1	0.0	10.1	2.7	17.5	17.5	3.4	11.0	11.0
Prop In Lane	1.00		0.27	1.00		0.12	1.00		0.31	1.00		0.23
Lane Grp Cap(c), veh/h	242	0	301	214	0	290	86	930	927	80	899	908
V/C Ratio(X)	0.72	0.00	0.87	0.69	0.00	0.68	0.56	0.51	0.51	0.78	0.47	0.47
Avail Cap(c_a), veh/h	411	0	435	418	0	443	172	930	927	180	899	908
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.79	0.79	0.79
Uniform Delay (d), s/veh	45.5	0.0	40.6	46.0	0.0	39.8	46.4	15.3	15.3	46.5	9.0	9.0
Incr Delay (d2), s/veh	1.5	0.0	9.2	1.5	0.0	1.0	2.1	2.0	2.0	4.7	1.4	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.8	0.0	11.1	3.2	0.0	8.0	2.1	11.2	11.2	2.8	6.2	6.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.0	0.0	49.8	47.5	0.0	40.8	48.5	17.3	17.3	51.2	10.3	10.3
LnGrp LOS	D	A	D	D	A	D	D	B	B	D	B	B
Approach Vol, veh/h	437			344			999			904		
Approach Delay, s/veh	48.7			43.7			18.8			13.1		
Approach LOS	D			D			B			B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.1	21.6	9.5	57.8	12.1	20.7	10.0	57.2				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	12.0	24.0	10.0	34.0	12.0	24.0	10.0	34.0				
Max Q Clear Time (g_c+I1), s	6.1	16.1	5.4	19.5	7.0	12.1	4.7	13.0				
Green Ext Time (p_c), s	0.1	0.5	0.0	3.3	0.1	0.5	0.0	3.2				
Intersection Summary												
HCM 6th Ctrl Delay	24.9											
HCM 6th LOS	C											

Intersection							
Int Delay, s/veh	0.3						
Movement	WBL	WBR	NBT	NBR	SBL	SBT	
Lane Configurations							
Traffic Vol, veh/h	7	10	888	3	7	906	
Future Vol, veh/h	7	10	888	3	7	906	
Conflicting Peds, #/hr	0	0	0	1	1	0	
Sign Control	Stop	Stop	Free	Free	Free	Free	
RT Channelized	-	None	-	None	-	None	
Storage Length	125	0	-	-	230	-	
Veh in Median Storage, #	0	-	0	-	-	0	
Grade, %	0	-	0	-	-	0	
Peak Hour Factor	95	95	95	95	95	95	
Heavy Vehicles, %	0	20	4	67	0	7	
Mvmt Flow	7	11	935	3	7	954	
Major/Minor	Minor1	Major1		Major2			
Conflicting Flow All	1429	470	0	0	939	0	
Stage 1	938	-	-	-	-	-	
Stage 2	491	-	-	-	-	-	
Critical Hdwy	6.8	7.3	-	-	4.1	-	
Critical Hdwy Stg 1	5.8	-	-	-	-	-	
Critical Hdwy Stg 2	5.8	-	-	-	-	-	
Follow-up Hdwy	3.5	3.5	-	-	2.2	-	
Pot Cap-1 Maneuver	128	494	-	-	738	-	
Stage 1	346	-	-	-	-	-	
Stage 2	586	-	-	-	-	-	
Platoon blocked, %			-	-		-	
Mov Cap-1 Maneuver	127	494	-	-	737	-	
Mov Cap-2 Maneuver	127	-	-	-	-	-	
Stage 1	346	-	-	-	-	-	
Stage 2	581	-	-	-	-	-	
Approach	WB	NB		SB			
HCM Control Delay, s	21.7	0		0.1			
HCM LOS	C						
Minor Lane/Major Mvmt		NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)		-	-	127	494	737	-
HCM Lane V/C Ratio		-	-	0.058	0.021	0.01	-
HCM Control Delay (s)		-	-	35.1	12.4	9.9	-
HCM Lane LOS		-	-	E	B	A	-
HCM 95th %tile Q(veh)		-	-	0.2	0.1	0	-

Timings
5: SE 192nd Ave & SE 34th St

Vancouver Innovation Center
Phase 2 2038 AM Peak Hour Conditions

										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	199	170	207	145	67	153	704	349	108	547
Future Volume (vph)	199	170	207	145	67	153	704	349	108	547
Turn Type	pm+pt	NA	pm+pt	NA	Perm	Prot	NA	pm+ov	Prot	NA
Protected Phases	5	2	1	6		7	4	1	3	8
Permitted Phases	2		6		6			4		
Detector Phase	5	2	1	6	6	7	4	1	3	8
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	20.0	5.0	5.0	20.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	25.0	10.0	10.0	25.0
Total Split (s)	15.0	36.0	15.0	36.0	36.0	15.0	34.0	15.0	15.0	34.0
Total Split (%)	15.0%	36.0%	15.0%	36.0%	36.0%	15.0%	34.0%	15.0%	15.0%	34.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	None	None	Max
Act Effct Green (s)	31.5	21.8	31.6	21.8	21.8	12.8	38.5	48.2	10.0	35.7
Actuated g/C Ratio	0.32	0.22	0.32	0.22	0.22	0.13	0.38	0.48	0.10	0.36
v/c Ratio	0.59	0.84	0.89	0.38	0.15	0.73	0.60	0.40	0.35	0.75
Control Delay	29.3	50.7	59.3	34.4	0.7	61.4	28.7	2.4	43.1	30.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.3	50.7	59.3	34.4	0.7	61.4	28.7	2.4	43.1	30.9
LOS	C	D	E	C	A	E	C	A	D	C
Approach Delay		42.3		41.4			25.3			32.4
Approach LOS		D		D			C			C

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 40 (40%), Referenced to phase 4:NBT, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.89

Intersection Signal Delay: 32.4

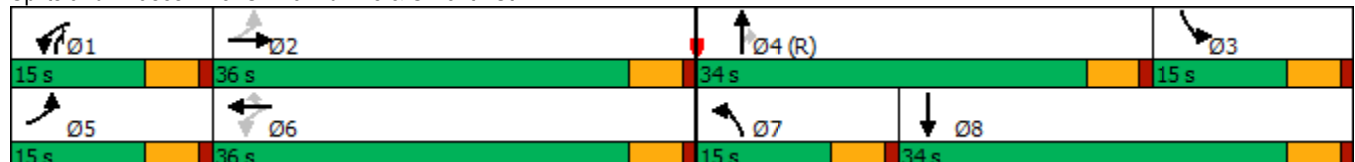
Intersection LOS: C

Intersection Capacity Utilization 77.3%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 5: SE 192nd Ave & SE 34th St



HCM 6th Signalized Intersection Summary

5: SE 192nd Ave & SE 34th St

Vancouver Innovation Center
Phase 2 2038 AM Peak Hour Conditions

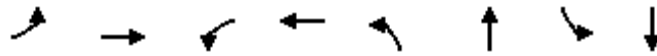
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	199	170	136	207	145	67	153	704	349	108	547	221
Future Volume (veh/h)	199	170	136	207	145	67	153	704	349	108	547	221
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1728	1803	1847	1943	2018	1988	2018	1883	1988	1832	1684	1684
Adj Flow Rate, veh/h	221	189	114	230	161	7	170	782	154	120	608	202
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	8	3	0	5	0	2	0	9	2	1	11	11
Cap, veh/h	395	221	133	298	424	347	192	1037	655	677	920	305
Arrive On Green	0.10	0.21	0.21	0.10	0.21	0.21	0.10	0.29	0.29	0.20	0.39	0.39
Sat Flow, veh/h	1646	1051	634	1850	2018	1653	1922	3578	1679	3385	2359	782
Grp Volume(v), veh/h	221	0	303	230	161	7	170	782	154	120	412	398
Grp Sat Flow(s),veh/h/ln	1646	0	1684	1850	2018	1653	1922	1789	1679	1693	1600	1542
Q Serve(g_s), s	10.0	0.0	17.3	9.8	6.8	0.2	8.7	19.9	2.6	2.9	21.2	21.2
Cycle Q Clear(g_c), s	10.0	0.0	17.3	9.8	6.8	0.2	8.7	19.9	2.6	2.9	21.2	21.2
Prop In Lane	1.00		0.38	1.00		1.00	1.00		1.00	1.00		0.51
Lane Grp Cap(c), veh/h	395	0	354	298	424	347	192	1037	655	677	624	601
V/C Ratio(X)	0.56	0.00	0.86	0.77	0.38	0.02	0.88	0.75	0.23	0.18	0.66	0.66
Avail Cap(c_a), veh/h	395	0	522	298	626	513	192	1037	655	677	624	601
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.81	0.00	0.81	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.2	0.0	38.1	29.1	33.9	12.1	44.4	32.3	7.2	33.2	25.1	25.1
Incr Delay (d2), s/veh	0.9	0.0	5.2	10.7	0.2	0.0	34.1	5.1	0.8	0.0	5.4	5.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	7.1	0.0	11.4	8.7	5.9	0.2	9.8	13.8	2.2	2.1	13.3	12.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.1	0.0	43.2	39.8	34.1	12.1	78.5	37.3	8.0	33.2	30.5	30.7
LnGrp LOS	C	A	D	D	C	B	E	D	A	C	C	C
Approach Vol, veh/h		524			398			1106			930	
Approach Delay, s/veh		37.3			37.0			39.6			30.9	
Approach LOS		D			D			D			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.0	26.0	25.0	34.0	15.0	26.0	15.0	44.0				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	10.0	31.0	10.0	29.0	10.0	31.0	10.0	29.0				
Max Q Clear Time (g_c+I1), s	11.8	19.3	4.9	21.9	12.0	8.8	10.7	23.2				
Green Ext Time (p_c), s	0.0	0.5	0.0	1.4	0.0	0.2	0.0	1.1				
Intersection Summary												
HCM 6th Ctrl Delay			36.1									
HCM 6th LOS			D									

Timings

6: SE Hiddenbrook Dr & SE 34th St

Vancouver Innovation Center

Phase 2 2038 AM Peak Hour Conditions



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	115	290	27	238	63	19	231	4
Future Volume (vph)	115	290	27	238	63	19	231	4
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA
Protected Phases	5	2	1	6		8		4
Permitted Phases					8		4	
Detector Phase	5	2	1	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	5.0	15.0	5.0	15.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	27.0	10.0	27.0	32.0	32.0	34.0	34.0
Total Split (s)	10.0	85.0	10.0	85.0	35.0	35.0	35.0	35.0
Total Split (%)	7.7%	65.4%	7.7%	65.4%	26.9%	26.9%	26.9%	26.9%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	Min	None	Min	None	None	None	None
Act Effct Green (s)	5.2	34.2	5.2	29.1	21.7	21.7	21.7	21.7
Actuated g/C Ratio	0.07	0.48	0.07	0.41	0.30	0.30	0.30	0.30
v/c Ratio	1.08	0.45	0.25	0.83	0.20	0.14	0.70	0.11
Control Delay	144.1	16.3	42.8	28.0	22.1	10.2	34.1	7.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	144.1	16.3	42.8	28.0	22.1	10.2	34.1	7.8
LOS	F	B	D	C	C	B	C	A
Approach Delay		50.5		28.8		16.3		29.4
Approach LOS		D		C		B		C

Intersection Summary

Cycle Length: 130

Actuated Cycle Length: 71.7

Natural Cycle: 80

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.08

Intersection Signal Delay: 34.7

Intersection LOS: C

Intersection Capacity Utilization 66.3%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 6: SE Hiddenbrook Dr & SE 34th St

10 s	85 s	35 s	35 s
10 s	85 s	35 s	35 s

HCM 6th Signalized Intersection Summary

6: SE Hiddenbrook Dr & SE 34th St

Vancouver Innovation Center
Phase 2 2038 AM Peak Hour Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	115	290	24	27	238	249	63	19	41	231	4	45
Future Volume (veh/h)	115	290	24	27	238	249	63	19	41	231	4	45
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1841	1900	1876	1802	1876	1832	1876	1876	1900	1900	1900
Adj Flow Rate, veh/h	142	358	26	33	294	254	78	23	7	285	5	8
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	0	4	0	0	5	0	3	0	0	0	0	0
Cap, veh/h	172	730	53	65	332	286	469	342	104	466	163	261
Arrive On Green	0.09	0.43	0.43	0.04	0.37	0.37	0.25	0.25	0.25	0.25	0.25	0.25
Sat Flow, veh/h	1810	1695	123	1787	891	769	1372	1381	420	1401	658	1053
Grp Volume(v), veh/h	142	0	384	33	0	548	78	0	30	285	0	13
Grp Sat Flow(s),veh/h/ln	1810	0	1818	1787	0	1660	1372	0	1801	1401	0	1711
Q Serve(g_s), s	4.1	0.0	8.0	1.0	0.0	16.3	2.4	0.0	0.7	10.3	0.0	0.3
Cycle Q Clear(g_c), s	4.1	0.0	8.0	1.0	0.0	16.3	2.7	0.0	0.7	11.0	0.0	0.3
Prop In Lane	1.00		0.07	1.00		0.46	1.00		0.23	1.00		0.62
Lane Grp Cap(c), veh/h	172	0	783	65	0	618	469	0	446	466	0	424
V/C Ratio(X)	0.83	0.00	0.49	0.51	0.00	0.89	0.17	0.00	0.07	0.61	0.00	0.03
Avail Cap(c_a), veh/h	172	0	2762	170	0	2522	911	0	1026	917	0	975
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	23.4	0.0	10.8	24.9	0.0	15.5	16.0	0.0	15.1	19.3	0.0	15.0
Incr Delay (d2), s/veh	25.6	0.0	0.2	2.3	0.0	1.8	0.1	0.0	0.0	0.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.9	0.0	4.4	0.7	0.0	8.8	1.3	0.0	0.5	5.6	0.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.0	0.0	11.0	27.2	0.0	17.2	16.1	0.0	15.2	19.8	0.0	15.0
LnGrp LOS	D	A	B	C	A	B	B	A	B	B	A	B
Approach Vol, veh/h	526			581			108			298		
Approach Delay, s/veh	21.2			17.8			15.8			19.6		
Approach LOS	C			B			B			B		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.9	27.7		18.1	10.0	24.6		18.1				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	5.0	80.0		30.0	5.0	80.0		30.0				
Max Q Clear Time (g_c+I1), s	3.0	10.0		13.0	6.1	18.3		4.7				
Green Ext Time (p_c), s	0.0	0.7		0.1	0.0	1.2		0.1				
Intersection Summary												
HCM 6th Ctrl Delay	19.2											
HCM 6th LOS	B											

Intersection						
Int Delay, s/veh	1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	413	11	7	339	29	17
Future Vol, veh/h	413	11	7	339	29	17
Conflicting Peds, #/hr	0	3	3	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	95	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	3	0	0	5	0	0
Mvmt Flow	486	13	8	399	34	20
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	502	0	911	496
Stage 1	-	-	-	-	496	-
Stage 2	-	-	-	-	415	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1073	-	307	578
Stage 1	-	-	-	-	616	-
Stage 2	-	-	-	-	671	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1070	-	304	576
Mov Cap-2 Maneuver	-	-	-	-	304	-
Stage 1	-	-	-	-	614	-
Stage 2	-	-	-	-	666	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	0.2		16.5		
HCM LOS	C					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	368	-	-	1070	-	
HCM Lane V/C Ratio	0.147	-	-	0.008	-	
HCM Control Delay (s)	16.5	-	-	8.4	-	
HCM Lane LOS	C	-	-	A	-	
HCM 95th %tile Q(veh)	0.5	-	-	0	-	

Timings 8: SE 176th Ave & SE 34th St

Vancouver Innovation Center
Phase 2 2038 AM Peak Hour Conditions

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	236	352	4	305	14	7	66	4
Future Volume (vph)	236	352	4	305	14	7	66	4
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	Perm	NA
Protected Phases	5	2	1	6		8		4
Permitted Phases	2		6		8		4	
Detector Phase	5	2	1	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	5.0	15.0	5.0	15.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	24.0	10.0	28.0	33.0	33.0	32.0	32.0
Total Split (s)	15.0	45.0	15.0	45.0	25.0	25.0	25.0	25.0
Total Split (%)	17.6%	52.9%	17.6%	52.9%	29.4%	29.4%	29.4%	29.4%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lead	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	Min	None	Min	None	None	None	None
Act Effct Green (s)	31.5	31.9	25.7	19.3	9.3	9.3	9.3	9.3
Actuated g/C Ratio	0.64	0.65	0.52	0.39	0.19	0.19	0.19	0.19
v/c Ratio	0.48	0.35	0.01	0.62	0.07	0.05	0.30	0.31
Control Delay	12.9	10.5	7.0	18.7	19.3	15.0	22.3	7.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.9	10.5	7.0	18.7	19.3	15.0	22.3	7.4
LOS	B	B	A	B	B	B	C	A
Approach Delay		11.5		18.6		17.2		13.2
Approach LOS		B		B		B		B

Intersection Summary

Cycle Length: 85

Actuated Cycle Length: 49.4

Natural Cycle: 75

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.62

Intersection Signal Delay: 14.1

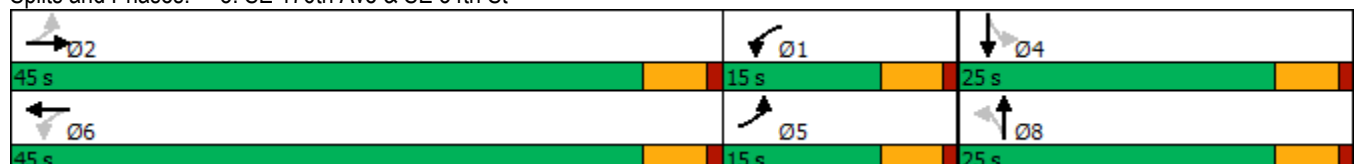
Intersection LOS: B

Intersection Capacity Utilization 55.6%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 8: SE 176th Ave & SE 34th St



HCM 6th Signalized Intersection Summary

8: SE 176th Ave & SE 34th St

Vancouver Innovation Center
Phase 2 2038 AM Peak Hour Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	236	352	2	4	305	59	14	7	6	66	4	100
Future Volume (veh/h)	236	352	2	4	305	59	14	7	6	66	4	100
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.98		1.00	0.98		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1767	1856	1900	1900	1811	1826	1900	1900	1530	1870	1900	1885
Adj Flow Rate, veh/h	278	414	2	5	359	57	16	8	0	78	5	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	9	3	0	0	6	5	0	0	25	2	0	1
Cap, veh/h	569	711	3	613	590	94	331	202	0	326	202	0
Arrive On Green	0.12	0.39	0.39	0.12	0.39	0.39	0.11	0.11	0.00	0.11	0.11	0.00
Sat Flow, veh/h	1682	1845	9	1810	1524	242	1407	1900	0	1382	1900	0
Grp Volume(v), veh/h	278	0	416	5	0	416	16	8	0	78	5	0
Grp Sat Flow(s),veh/h/ln	1682	0	1854	1810	0	1766	1407	1900	0	1382	1900	0
Q Serve(g_s), s	0.0	0.0	6.9	0.0	0.0	7.4	0.4	0.1	0.0	2.1	0.1	0.0
Cycle Q Clear(g_c), s	0.0	0.0	6.9	0.0	0.0	7.4	0.5	0.1	0.0	2.2	0.1	0.0
Prop In Lane	1.00		0.00	1.00		0.14	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	569	0	714	613	0	684	331	202	0	326	202	0
V/C Ratio(X)	0.49	0.00	0.58	0.01	0.00	0.61	0.05	0.04	0.00	0.24	0.02	0.00
Avail Cap(c_a), veh/h	795	0	1901	852	0	1810	903	974	0	888	974	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	12.6	0.0	9.5	8.8	0.0	9.6	15.8	15.6	0.0	16.6	15.6	0.0
Incr Delay (d2), s/veh	0.2	0.0	0.3	0.0	0.0	0.3	0.0	0.0	0.0	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.0	0.0	3.3	0.0	0.0	3.3	0.2	0.1	0.0	1.0	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.8	0.0	9.8	8.8	0.0	9.9	15.9	15.7	0.0	16.8	15.6	0.0
LnGrp LOS	B	A	A	A	A	A	B	B	A	B	B	A
Approach Vol, veh/h	694				421				24			
Approach Delay, s/veh	11.0				9.9				15.8			
Approach LOS	B				A				B			
Timer - Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	9.8	20.0	9.1		9.8	20.1	9.1					
Change Period (Y+Rc), s	5.0	5.0	5.0		5.0	5.0	5.0					
Max Green Setting (Gmax), s	10.0	40.0	20.0		10.0	40.0	20.0					
Max Q Clear Time (g_c+I1), s	2.0	8.9	4.2		2.0	9.4	2.5					
Green Ext Time (p_c), s	0.0	1.5	0.1		0.3	1.6	0.0					

Intersection Summary

HCM 6th Ctrl Delay 11.1
HCM 6th LOS B

Notes

User approved pedestrian interval to be less than phase max green.

MOVEMENT SUMMARY

 **Site: 101 [SE 176 Avenue/ SE 29th Street Phase 2 (Site Folder: General)]**

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Phase 2
Site Category: (None)
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]		[Total HV]					[Veh. veh	Dist]				mph
			veh/h	%	veh/h	%	v/c	sec			ft				
South: SE 176th Avenue															
3	L2	All MCs	5	0.0	5	0.0	0.315	5.9	LOS A	1.8	44.4	0.37	0.18	0.37	32.8
8	T1	All MCs	144	2.0	144	2.0	0.315	6.0	LOS A	1.8	44.4	0.37	0.18	0.37	33.5
18	R2	All MCs	225	0.0	225	0.0	0.315	5.9	LOS A	1.8	44.4	0.37	0.18	0.37	33.2
Approach			373	0.8	373	0.8	0.315	5.9	LOS A	1.8	44.4	0.37	0.18	0.37	33.3
East: SE 29th Street															
1	L2	All MCs	74	0.0	74	0.0	0.286	5.6	LOS A	1.5	38.6	0.37	0.20	0.37	32.5
6	T1	All MCs	215	0.0	215	0.0	0.286	5.6	LOS A	1.5	38.6	0.37	0.20	0.37	33.1
16	R2	All MCs	46	0.0	46	0.0	0.286	5.6	LOS A	1.5	38.6	0.37	0.20	0.37	32.9
Approach			335	0.0	335	0.0	0.286	5.6	LOS A	1.5	38.6	0.37	0.20	0.37	33.0
North: SE 176th Avenue															
7	L2	All MCs	20	88.0	20	88.0	0.291	16.9	LOS C	1.2	35.0	0.50	0.33	0.50	29.7
4	T1	All MCs	105	1.0	105	1.0	0.291	5.9	LOS A	1.2	35.0	0.50	0.33	0.50	32.8
14	R2	All MCs	122	18.0	122	18.0	0.291	7.5	LOS A	1.2	35.0	0.50	0.33	0.50	32.2
Approach			247	16.5	247	16.5	0.291	7.4	LOS A	1.2	35.0	0.50	0.33	0.50	32.2
West: SE 29th Street															
5	L2	All MCs	6	0.0	6	0.0	0.109	4.1	LOS A	0.5	12.1	0.37	0.22	0.37	33.6
2	T1	All MCs	98	0.0	98	0.0	0.109	4.1	LOS A	0.5	12.1	0.37	0.22	0.37	34.3
12	R2	All MCs	15	10.0	15	10.0	0.109	5.0	LOS A	0.5	12.1	0.37	0.22	0.37	33.8
Approach			119	1.3	119	1.3	0.109	4.2	LOS A	0.5	12.1	0.37	0.22	0.37	34.2
All Vehicles			1074	4.2	1074	4.2	0.315	6.0	LOS A	1.8	44.4	0.40	0.23	0.40	33.0

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: Sieglösch M1 implied by US HCM 6 Roundabout Capacity Model.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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Project: H:\27\27715 - VIC Implementation\005 - Master Plan Update TIA\Analysis\176th_29th With Project 2038 AM.sip9

Intersection	
Intersection Delay, s/veh	15.1
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	12	272	33	76	314	14	47	85	56	0	66	10
Future Vol, veh/h	12	272	33	76	314	14	47	85	56	0	66	10
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	0	4	10	4	1	9	4	3	0	0	0	0
Mvmt Flow	13	299	36	84	345	15	52	93	62	0	73	11
Number of Lanes	1	1	0	1	1	0	1	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	2	2
HCM Control Delay	16.5	16.1	11.9	11.6
HCM LOS	C	C	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	100%	0%	100%	0%	100%	0%	0%
Vol Thru, %	0%	60%	0%	89%	0%	96%	87%
Vol Right, %	0%	40%	0%	11%	0%	4%	13%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	47	141	12	305	76	328	76
LT Vol	47	0	12	0	76	0	0
Through Vol	0	85	0	272	0	314	66
RT Vol	0	56	0	33	0	14	10
Lane Flow Rate	52	155	13	335	84	360	84
Geometry Grp	7	7	7	7	7	7	6
Degree of Util (X)	0.107	0.286	0.024	0.57	0.152	0.599	0.165
Departure Headway (Hd)	7.446	6.637	6.633	6.117	6.573	5.984	7.119
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	479	539	538	587	544	602	500
Service Time	5.22	4.409	4.399	3.883	4.336	3.746	5.211
HCM Lane V/C Ratio	0.109	0.288	0.024	0.571	0.154	0.598	0.168
HCM Control Delay	11.1	12.1	9.6	16.8	10.5	17.4	11.6
HCM Lane LOS	B	B	A	C	B	C	B
HCM 95th-tile Q	0.4	1.2	0.1	3.6	0.5	4	0.6

Timings
11: SE 164th Ave & SE 29th St

Vancouver Innovation Center
Phase 2 2038 AM Peak Hour Conditions

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	42	14	46	202	35	140	23	1081	92	795
Future Volume (vph)	42	14	46	202	35	140	23	1081	92	795
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Prot	NA
Protected Phases	5	2		1	6		7	4	3	8
Permitted Phases	2		2	6		6				
Detector Phase	5	2	2	1	6	6	7	4	3	8
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	15.0	5.0	15.0
Minimum Split (s)	9.5	39.0	39.0	9.5	38.0	38.0	10.0	32.0	10.0	32.0
Total Split (s)	10.0	25.0	25.0	14.0	29.0	29.0	17.0	44.0	37.0	64.0
Total Split (%)	8.3%	20.8%	20.8%	11.7%	24.2%	24.2%	14.2%	36.7%	30.8%	53.3%
Yellow Time (s)	3.5	4.0	4.0	3.5	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	5.0	5.0	4.5	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	None	C-Max
Act Effct Green (s)	15.9	12.0	12.0	23.3	15.2	15.2	5.7	71.8	10.0	80.1
Actuated g/C Ratio	0.13	0.10	0.10	0.19	0.13	0.13	0.05	0.60	0.08	0.67
v/c Ratio	0.22	0.08	0.16	0.85	0.16	0.44	0.28	0.38	0.66	0.26
Control Delay	39.2	47.7	1.2	71.7	46.1	10.8	64.1	7.1	72.8	9.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.2	47.7	1.2	71.7	46.1	10.8	64.1	7.1	72.8	9.8
LOS	D	D	A	E	D	B	E	A	E	A
Approach Delay		23.3			46.8			8.3		16.2
Approach LOS		C			D			A		B

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 4 (3%), Referenced to phase 8:SBT, Start of Green

Natural Cycle: 95

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.85

Intersection Signal Delay: 17.6

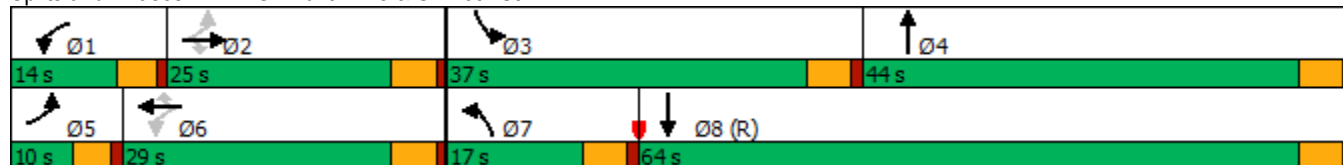
Intersection LOS: B

Intersection Capacity Utilization 58.0%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 11: SE 164th Ave & SE 29th St



HCM 6th Signalized Intersection Summary

11: SE 164th Ave & SE 29th St

Vancouver Innovation Center
Phase 2 2038 AM Peak Hour Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	14	46	202	35	140	23	1081	15	92	795	26
Future Volume (veh/h)	42	14	46	202	35	140	23	1081	15	92	795	26
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1900	1856	1870	1870	1900	1900	1870	1796	1885	1856	1826
Adj Flow Rate, veh/h	44	15	7	213	37	22	24	1138	15	97	837	25
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	0	3	2	2	0	0	2	7	1	3	5
Cap, veh/h	226	156	129	305	242	208	42	2323	31	121	2485	74
Arrive On Green	0.03	0.08	0.08	0.08	0.13	0.13	0.02	0.45	0.45	0.07	0.49	0.49
Sat Flow, veh/h	1767	1900	1572	1781	1870	1610	1810	5194	68	1795	5055	151
Grp Volume(v), veh/h	44	15	7	213	37	22	24	746	407	97	559	303
Grp Sat Flow(s), veh/h/ln	1767	1900	1572	1781	1870	1610	1810	1702	1858	1795	1689	1828
Q Serve(g_s), s	2.7	0.9	0.5	9.5	2.1	1.4	1.6	18.6	18.6	6.4	12.1	12.1
Cycle Q Clear(g_c), s	2.7	0.9	0.5	9.5	2.1	1.4	1.6	18.6	18.6	6.4	12.1	12.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.04	1.00		0.08
Lane Grp Cap(c), veh/h	226	156	129	305	242	208	42	1522	831	121	1660	899
V/C Ratio(X)	0.19	0.10	0.05	0.70	0.15	0.11	0.58	0.49	0.49	0.80	0.34	0.34
Avail Cap(c_a), veh/h	250	317	262	305	374	322	181	1522	831	479	1660	899
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.78	0.78	0.78	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.3	51.0	50.8	47.1	46.4	46.1	58.0	23.5	23.5	55.2	18.6	18.6
Incr Delay (d2), s/veh	0.4	0.1	0.1	6.9	0.1	0.1	3.6	0.9	1.6	4.6	0.5	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.2	0.8	0.3	3.8	1.8	1.0	1.4	11.3	12.4	5.4	8.2	8.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.7	51.1	50.8	53.9	46.5	46.2	61.7	24.4	25.1	59.7	19.1	19.6
LnGrp LOS	D	D	D	D	D	D	E	C	C	E	B	B
Approach Vol, veh/h		66			272			1177			959	
Approach Delay, s/veh		49.5			52.3			25.4			23.4	
Approach LOS		D			D			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.0	14.8	13.1	58.7	8.3	20.5	7.8	64.0				
Change Period (Y+Rc), s	4.5	5.0	5.0	5.0	4.5	5.0	5.0	5.0				
Max Green Setting (Gmax), s	9.5	20.0	32.0	39.0	5.5	24.0	12.0	59.0				
Max Q Clear Time (g_c+I1), s	11.5	2.9	8.4	20.6	4.7	4.1	3.6	14.1				
Green Ext Time (p_c), s	0.0	0.0	0.0	4.7	0.0	0.1	0.0	3.7				

Intersection Summary

HCM 6th Ctrl Delay	28.2
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Timings
12: SE 164th Ave/SE164th Ave & SE 34th Street

Vancouver Innovation Center
Phase 2 2038 AM Peak Hour Conditions

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	28	60	165	302	121	109	111	931	366	158	803
Future Volume (vph)	28	60	165	302	121	109	111	931	366	158	803
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA
Protected Phases	5	2	7	1	6	3	7	4	1	3	8
Permitted Phases			2			6			4		
Detector Phase	5	2	7	1	6	3	7	4	1	3	8
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	20.0	5.0	5.0	20.0
Minimum Split (s)	10.0	33.0	10.0	10.0	32.0	10.0	10.0	31.0	10.0	10.0	28.0
Total Split (s)	20.0	33.0	20.0	25.0	38.0	17.0	20.0	45.0	25.0	17.0	42.0
Total Split (%)	16.7%	27.5%	16.7%	20.8%	31.7%	14.2%	16.7%	37.5%	20.8%	14.2%	35.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes		Yes		Yes	Yes	Yes	Yes		Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	None	None	C-Max
Act Effct Green (s)	6.4	8.2	23.0	20.0	23.8	47.0	11.8	55.6	80.6	18.2	62.0
Actuated g/C Ratio	0.05	0.07	0.19	0.17	0.20	0.39	0.10	0.46	0.67	0.15	0.52
v/c Ratio	0.39	0.56	0.53	1.14	0.36	0.18	0.72	0.64	0.35	0.66	0.37
Control Delay	68.3	70.9	31.3	140.5	45.0	4.6	74.0	28.4	1.9	65.2	14.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.3	70.9	31.3	140.5	45.0	4.6	74.0	28.4	1.9	65.2	14.5
LOS	E	E	C	F	D	A	E	C	A	E	B
Approach Delay		44.8			91.0			25.1			22.6
Approach LOS		D			F			C			C

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 15 (13%), Referenced to phase 8:SBT, Start of Green

Natural Cycle: 105

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.14

Intersection Signal Delay: 36.9

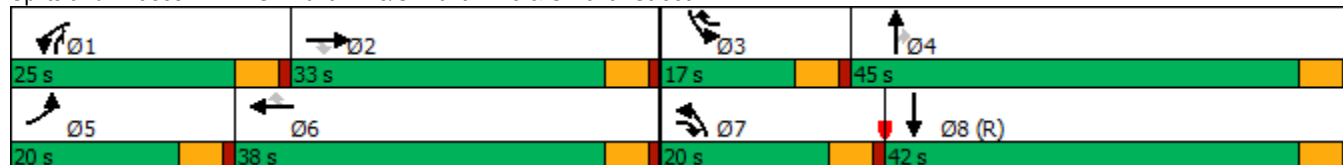
Intersection LOS: D

Intersection Capacity Utilization 70.4%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 12: SE 164th Ave/SE164th Ave & SE 34th Street



HCM 6th Signalized Intersection Summary

12: SE 164th Ave/SE164th Ave & SE 34th Street

Vancouver Innovation Center
Phase 2 2038 AM Peak Hour Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	28	60	165	302	121	109	111	931	366	158	803	37
Future Volume (veh/h)	28	60	165	302	121	109	111	931	366	158	803	37
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1565	1758	1803	1870	1885	1841	1791	1776	1746	1806	1761	1761
Adj Flow Rate, veh/h	31	67	124	336	134	33	123	1034	235	176	892	38
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	19	6	3	2	1	4	1	2	4	0	3	3
Cap, veh/h	40	159	270	297	434	515	147	1125	740	172	1641	70
Arrive On Green	0.03	0.09	0.09	0.17	0.23	0.23	0.09	0.33	0.33	0.20	0.69	0.69
Sat Flow, veh/h	1491	1758	1528	1781	1885	1560	1706	3375	1480	1720	4730	201
Grp Volume(v), veh/h	31	67	124	336	134	33	123	1034	235	176	604	326
Grp Sat Flow(s),veh/h/ln	1491	1758	1528	1781	1885	1560	1706	1687	1480	1720	1603	1725
Q Serve(g_s), s	2.5	4.3	8.7	20.0	7.1	1.7	8.5	35.3	11.3	12.0	11.1	11.2
Cycle Q Clear(g_c), s	2.5	4.3	8.7	20.0	7.1	1.7	8.5	35.3	11.3	12.0	11.1	11.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.12
Lane Grp Cap(c), veh/h	40	159	270	297	434	515	147	1125	740	172	1112	599
V/C Ratio(X)	0.77	0.42	0.46	1.13	0.31	0.06	0.84	0.92	0.32	1.02	0.54	0.54
Avail Cap(c_a), veh/h	186	410	488	297	518	585	213	1125	740	172	1112	599
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.94	0.94	0.94
Uniform Delay (d), s/veh	58.0	51.6	44.2	50.0	38.3	27.5	54.0	38.4	17.8	48.0	13.7	13.7
Incr Delay (d2), s/veh	11.1	0.7	0.5	92.6	0.1	0.0	11.8	13.3	1.1	72.8	1.8	3.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.9	3.4	5.9	24.4	5.8	1.2	7.3	22.7	7.1	12.5	5.6	6.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	69.2	52.2	44.7	142.6	38.4	27.5	65.8	51.8	19.0	120.8	15.5	17.0
LnGrp LOS	E	D	D	F	D	C	E	D	B	F	B	B
Approach Vol, veh/h	222			503			1392			1106		
Approach Delay, s/veh	50.4			107.3			47.5			32.7		
Approach LOS	D			F			D			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	25.0	15.9	17.0	45.0	8.2	32.7	15.4	46.6				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	20.0	28.0	12.0	40.0	15.0	33.0	15.0	37.0				
Max Q Clear Time (g_c+I1), s	22.0	10.7	14.0	37.3	4.5	9.1	10.5	13.2				
Green Ext Time (p_c), s	0.0	0.1	0.0	1.0	0.0	0.2	0.0	2.0				
Intersection Summary												
HCM 6th Ctrl Delay	51.9											
HCM 6th LOS	D											

Timings

Mitigation

1: SE 192nd & SE 15th St

									
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	116	91	40	82	242	78	1310	115	1475
Future Volume (vph)	116	91	40	82	242	78	1310	115	1475
Turn Type	Prot	NA	Prot	NA	pm+ov	Prot	NA	Prot	NA
Protected Phases	5	2	1	6	3	7	4	3	8
Permitted Phases					6				
Detector Phase	5	2	1	6	3	7	4	3	8
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	15.0	5.0	15.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	20.0	10.0	20.0
Total Split (s)	15.0	29.0	15.0	29.0	16.0	14.0	40.0	16.0	42.0
Total Split (%)	15.0%	29.0%	15.0%	29.0%	16.0%	14.0%	40.0%	16.0%	42.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	None	Max
Act Effct Green (s)	9.0	15.8	6.2	11.1	19.8	7.6	52.2	9.7	56.3
Actuated g/C Ratio	0.09	0.16	0.06	0.11	0.20	0.08	0.52	0.10	0.56
v/c Ratio	0.79	0.62	0.38	0.42	0.67	0.60	0.77	0.69	0.86
Control Delay	78.1	36.9	54.0	45.4	30.5	54.0	25.1	63.7	28.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	78.1	36.9	54.0	45.4	30.5	54.0	25.1	63.7	28.3
LOS	E	D	D	D	C	D	C	E	C
Approach Delay		52.7		36.4			26.7		30.6
Approach LOS		D		D			C		C

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 98 (98%), Referenced to phase 4:NBT, Start of Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.86

Intersection Signal Delay: 31.5

Intersection LOS: C

Intersection Capacity Utilization 81.1%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 1: SE 192nd & SE 15th St

			
Ø1	Ø2	Ø3	Ø4 (R)
15 s	29 s	16 s	40 s
			
Ø5	Ø6	Ø7	Ø8
15 s	29 s	14 s	42 s

HCM 6th Signalized Intersection Summary

Mitigation

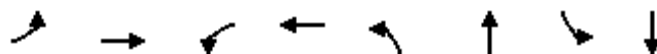
1: SE 192nd & SE 15th St

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	116	91	94	40	82	242	78	1310	32	115	1475	133
Future Volume (veh/h)	116	91	94	40	82	242	78	1310	32	115	1475	133
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1885	1900	1900	1856	1900	1900	1870	1900	1900	1870	1870
Adj Flow Rate, veh/h	122	96	56	42	86	192	82	1379	32	121	1553	135
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	5	1	0	0	3	0	0	2	0	0	2	2
Cap, veh/h	150	207	121	62	248	344	116	1768	41	149	1708	147
Arrive On Green	0.09	0.19	0.19	0.03	0.13	0.13	0.09	0.66	0.66	0.11	0.69	0.69
Sat Flow, veh/h	1739	1116	651	1810	1856	1582	1810	3550	82	1810	3309	285
Grp Volume(v), veh/h	122	0	152	42	86	192	82	690	721	121	828	860
Grp Sat Flow(s),veh/h/ln	1739	0	1767	1810	1856	1582	1810	1777	1855	1810	1777	1818
Q Serve(g_s), s	6.9	0.0	7.7	2.3	4.2	10.8	4.4	27.1	27.2	6.5	38.4	40.0
Cycle Q Clear(g_c), s	6.9	0.0	7.7	2.3	4.2	10.8	4.4	27.1	27.2	6.5	38.4	40.0
Prop In Lane	1.00		0.37	1.00		1.00	1.00		0.04	1.00		0.16
Lane Grp Cap(c), veh/h	150	0	327	62	248	344	116	885	924	149	917	938
V/C Ratio(X)	0.82	0.00	0.46	0.67	0.35	0.56	0.71	0.78	0.78	0.81	0.90	0.92
Avail Cap(c_a), veh/h	174	0	424	181	445	512	163	885	924	199	917	938
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33	1.33	1.33	1.33
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	0.30	0.30	0.30	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.9	0.0	36.3	47.7	39.4	35.0	44.8	13.1	13.1	43.8	13.6	13.8
Incr Delay (d2), s/veh	19.5	0.0	0.4	4.6	0.3	0.5	1.0	2.1	2.0	12.5	13.8	15.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	6.7	0.0	5.8	2.0	3.5	7.3	3.2	10.0	10.4	5.9	18.7	19.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.4	0.0	36.7	52.4	39.7	35.5	45.8	15.2	15.1	56.3	27.4	28.9
LnGrp LOS	E	A	D	D	D	D	D	B	B	E	C	C
Approach Vol, veh/h		274			320			1493			1809	
Approach Delay, s/veh		49.0			38.8			16.8			30.0	
Approach LOS		D			D			B			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.4	23.5	13.2	54.8	13.6	18.4	11.4	56.6				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	10.0	24.0	11.0	35.0	10.0	24.0	9.0	37.0				
Max Q Clear Time (g_c+I1), s	4.3	9.7	8.5	29.2	8.9	12.8	6.4	42.0				
Green Ext Time (p_c), s	0.0	0.2	0.0	1.9	0.0	0.2	0.0	0.0				
Intersection Summary												
HCM 6th Ctrl Delay				27.0								
HCM 6th LOS				C								

Timings

Mitigation

2: SE 192nd Ave & SE 20th St



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↰↱	↱	↰↱	↱	↰	↱↱	↰	↱↱
Traffic Volume (vph)	233	183	266	265	144	892	151	1089
Future Volume (vph)	233	183	266	265	144	892	151	1089
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	5	2	1	6	7	4	3	8
Permitted Phases								
Detector Phase	5	2	1	6	7	4	3	8
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	20.0	5.0	20.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	25.0	10.0	25.0
Total Split (s)	20.0	27.0	20.0	27.0	14.0	35.0	18.0	39.0
Total Split (%)	20.0%	27.0%	20.0%	27.0%	14.0%	35.0%	18.0%	39.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	Min	C-Max	None	Max
Act Effect Green (s)	11.3	23.6	12.1	24.4	9.3	32.6	11.7	35.0
Actuated g/C Ratio	0.11	0.24	0.12	0.24	0.09	0.33	0.12	0.35
v/c Ratio	0.62	0.66	0.66	0.88	0.90	0.97	0.75	1.13
Control Delay	49.0	39.8	49.4	56.7	89.3	35.9	62.2	99.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.0	39.8	49.4	56.7	89.3	35.9	62.2	99.4
LOS	D	D	D	E	F	D	E	F
Approach Delay		44.0		53.7		42.2		95.6
Approach LOS		D		D		D		F

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 93 (93%), Referenced to phase 4:NBT, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.13

Intersection Signal Delay: 64.8

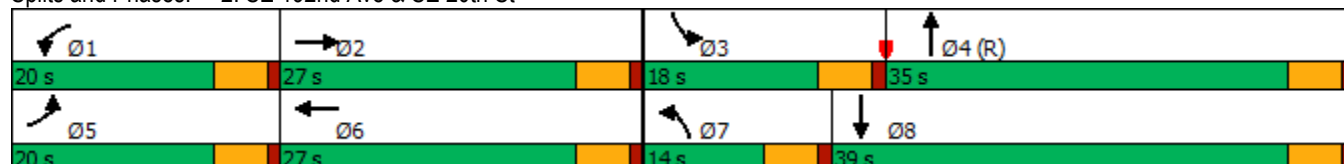
Intersection LOS: E

Intersection Capacity Utilization 90.1%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 2: SE 192nd Ave & SE 20th St



HCM 6th Signalized Intersection Summary

2: SE 192nd Ave & SE 20th St

Mitigation

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	233	183	94	266	265	118	144	892	179	151	1089	237
Future Volume (veh/h)	233	183	94	266	265	118	144	892	179	151	1089	237
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1885	1900	1900	1870	1900	1885	1900	1885	1870	1885
Adj Flow Rate, veh/h	243	191	79	277	276	106	150	929	168	157	1134	227
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	1	0	0	2	0	1	0	1	2	1
Cap, veh/h	316	268	111	350	286	110	163	1165	211	189	1181	235
Arrive On Green	0.09	0.21	0.21	0.10	0.22	0.22	0.09	0.38	0.38	0.14	0.53	0.53
Sat Flow, veh/h	3510	1276	528	3510	1301	500	1810	3029	548	1795	2953	588
Grp Volume(v), veh/h	243	0	270	277	0	382	150	549	548	157	680	681
Grp Sat Flow(s),veh/h/ln	1755	0	1803	1755	0	1801	1810	1791	1786	1795	1777	1764
Q Serve(g_s), s	6.8	0.0	13.9	7.7	0.0	21.0	8.2	27.2	27.2	8.5	36.5	37.2
Cycle Q Clear(g_c), s	6.8	0.0	13.9	7.7	0.0	21.0	8.2	27.2	27.2	8.5	36.5	37.2
Prop In Lane	1.00		0.29	1.00		0.28	1.00		0.31	1.00		0.33
Lane Grp Cap(c), veh/h	316	0	379	350	0	396	163	689	687	189	711	705
V/C Ratio(X)	0.77	0.00	0.71	0.79	0.00	0.96	0.92	0.80	0.80	0.83	0.96	0.97
Avail Cap(c_a), veh/h	527	0	397	527	0	396	163	689	687	233	711	705
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.42	0.42	0.42
Uniform Delay (d), s/veh	44.5	0.0	36.7	44.0	0.0	38.6	45.1	27.3	27.3	42.1	22.6	22.7
Incr Delay (d2), s/veh	1.5	0.0	4.7	2.5	0.0	35.6	47.3	9.3	9.4	7.0	13.8	15.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.3	0.0	10.5	6.1	0.0	18.7	9.6	18.5	18.5	6.0	18.6	19.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.0	0.0	41.3	46.5	0.0	74.2	92.4	36.7	36.7	49.1	36.3	37.9
LnGrp LOS	D	A	D	D	A	E	F	D	D	D	D	D
Approach Vol, veh/h		513			659			1247			1518	
Approach Delay, s/veh		43.5			62.6			43.4			38.4	
Approach LOS		D			E			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.0	26.0	15.6	43.4	14.0	27.0	14.0	45.0				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	15.0	22.0	13.0	30.0	15.0	22.0	9.0	34.0				
Max Q Clear Time (g_c+I1), s	9.7	15.9	10.5	29.2	8.8	23.0	10.2	39.2				
Green Ext Time (p_c), s	0.2	0.5	0.0	0.4	0.2	0.0	0.0	0.0				
Intersection Summary												
HCM 6th Ctrl Delay			44.7									
HCM 6th LOS			D									

HCM 6th TWSC
3: SE 192nd Ave & SE 25th St

Mitigation

Intersection

Int Delay, s/veh 0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	3	4	1225	3	10	1316
Future Vol, veh/h	3	4	1225	3	10	1316
Conflicting Peds, #/hr	0	0	0	2	2	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	125	0	-	-	230	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	1	0	0	1
Mvmt Flow	3	4	1289	3	11	1385

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	2008	648	0
Stage 1	1293	-	-
Stage 2	715	-	-
Critical Hdwy	6.8	6.9	-
Critical Hdwy Stg 1	5.8	-	-
Critical Hdwy Stg 2	5.8	-	-
Follow-up Hdwy	3.5	3.3	-
Pot Cap-1 Maneuver	53	418	-
Stage 1	225	-	-
Stage 2	451	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	52	417	-
Mov Cap-2 Maneuver	52	-	-
Stage 1	225	-	-
Stage 2	442	-	-

Approach	WB	NB	SB
HCM Control Delay, s	41.6	0	0.1
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT
Capacity (veh/h)	-	- 52 417 541	-	-
HCM Lane V/C Ratio	-	- 0.061 0.01 0.019	-	-
HCM Control Delay (s)	-	- 78.7 13.7 11.8	-	-
HCM Lane LOS	-	- F B B	-	-
HCM 95th %tile Q(veh)	-	- 0.2 0 0.1	-	-

Timings 5: SE 192nd Ave & SE 34th St

Mitigation

										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	253	245	355	216	120	177	955	204	212	932
Future Volume (vph)	253	245	355	216	120	177	955	204	212	932
Turn Type	pm+pt	NA	pm+pt	NA	Perm	Prot	NA	pm+ov	Prot	NA
Protected Phases	5	2	1	6		7	4	1	3	8
Permitted Phases	2		6		6			4		
Detector Phase	5	2	1	6	6	7	4	1	3	8
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	20.0	5.0	5.0	20.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	25.0	10.0	10.0	25.0
Total Split (s)	14.0	32.0	19.0	37.0	37.0	13.0	34.0	19.0	15.0	36.0
Total Split (%)	14.0%	32.0%	19.0%	37.0%	37.0%	13.0%	34.0%	19.0%	15.0%	36.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	None	None	Max
Act Effct Green (s)	33.6	24.6	43.6	29.6	29.6	10.4	31.4	45.4	10.0	31.0
Actuated g/C Ratio	0.34	0.25	0.44	0.30	0.30	0.10	0.31	0.45	0.10	0.31
v/c Ratio	0.63	0.92	1.13	0.40	0.21	0.98	0.89	0.25	0.65	1.13
Control Delay	28.3	61.7	117.2	29.9	1.8	109.6	45.1	2.1	40.0	91.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.3	61.7	117.2	29.9	1.8	109.6	45.1	2.1	40.0	91.7
LOS	C	E	F	C	A	F	D	A	D	F
Approach Delay		48.7		69.9			47.0			83.6
Approach LOS		D		E			D			F

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 36 (36%), Referenced to phase 4:NBT, Start of Green

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.13

Intersection Signal Delay: 63.5

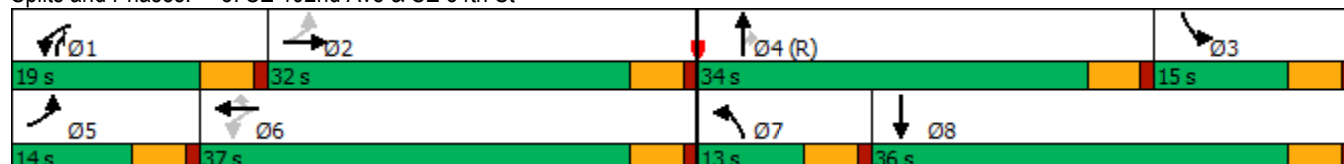
Intersection LOS: E

Intersection Capacity Utilization 101.5%

ICU Level of Service G

Analysis Period (min) 15

Splits and Phases: 5: SE 192nd Ave & SE 34th St



HCM 6th Signalized Intersection Summary 5: SE 192nd Ave & SE 34th St

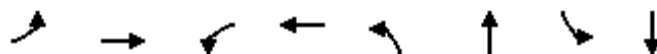
Mitigation

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	253	245	152	355	216	120	177	955	204	212	932	215
Future Volume (veh/h)	253	245	152	355	216	120	177	955	204	212	932	215
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1773	1847	1817	2003	2003	2018	2018	1988	2003	1847	1832	1743
Adj Flow Rate, veh/h	266	258	136	374	227	30	186	1005	87	223	981	205
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	5	0	2	1	1	0	0	2	1	0	1	7
Cap, veh/h	444	280	147	365	595	507	154	1095	726	419	951	198
Arrive On Green	0.09	0.25	0.25	0.14	0.30	0.30	0.08	0.29	0.29	0.12	0.33	0.33
Sat Flow, veh/h	1688	1131	596	1908	2003	1705	1922	3777	1683	3413	2857	596
Grp Volume(v), veh/h	266	0	394	374	227	30	186	1005	87	223	597	589
Grp Sat Flow(s),veh/h/ln	1688	0	1728	1908	2003	1705	1922	1889	1683	1706	1741	1713
Q Serve(g_s), s	9.0	0.0	22.2	14.0	9.0	0.9	8.0	25.7	1.6	6.1	33.3	33.3
Cycle Q Clear(g_c), s	9.0	0.0	22.2	14.0	9.0	0.9	8.0	25.7	1.6	6.1	33.3	33.3
Prop In Lane	1.00		0.35	1.00		1.00	1.00		1.00	1.00		0.35
Lane Grp Cap(c), veh/h	444	0	427	365	595	507	154	1095	726	419	579	570
V/C Ratio(X)	0.60	0.00	0.92	1.02	0.38	0.06	1.21	0.92	0.12	0.53	1.03	1.03
Avail Cap(c_a), veh/h	444	0	467	365	641	546	154	1095	726	419	579	570
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.78	0.00	0.78	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.4	0.0	36.7	25.3	27.9	11.7	46.0	34.3	6.2	41.2	33.4	33.4
Incr Delay (d2), s/veh	1.2	0.0	18.4	53.4	0.1	0.0	139.9	13.4	0.3	0.7	45.3	46.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.1	0.0	16.0	17.0	7.5	0.9	15.8	19.2	1.4	4.6	28.5	28.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.6	0.0	55.1	78.6	28.0	11.7	185.9	47.8	6.6	41.8	78.7	79.9
LnGrp LOS	C	A	E	F	C	B	F	D	A	D	F	F
Approach Vol, veh/h	660			631			1278			1409		
Approach Delay, s/veh	44.4			57.2			65.1			73.3		
Approach LOS	D			E			E			E		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	19.0	29.7	17.3	34.0	14.0	34.7	13.0	38.3				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	14.0	27.0	10.0	29.0	9.0	32.0	8.0	31.0				
Max Q Clear Time (g_c+I1), s	16.0	24.2	8.1	27.7	11.0	11.0	10.0	35.3				
Green Ext Time (p_c), s	0.0	0.3	0.0	0.5	0.0	0.4	0.0	0.0				
Intersection Summary												
HCM 6th Ctrl Delay	63.3											
HCM 6th LOS	E											
Notes												

Timings

Mitigation

6: SE Hiddenbrook Dr & SE 34th St



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	69	308	37	366	71	15	309	27
Future Volume (vph)	69	308	37	366	71	15	309	27
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA
Protected Phases	5	2	1	6		8		4
Permitted Phases					8		4	
Detector Phase	5	2	1	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	5.0	15.0	5.0	15.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	30.0	10.0	30.0	32.0	32.0	34.0	34.0
Total Split (s)	10.0	85.0	10.0	85.0	35.0	35.0	35.0	35.0
Total Split (%)	7.7%	65.4%	7.7%	65.4%	26.9%	26.9%	26.9%	26.9%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	Min	None	Min	None	None	None	None
Act Effect Green (s)	5.1	37.4	5.1	32.9	30.4	30.4	30.4	30.4
Actuated g/C Ratio	0.06	0.45	0.06	0.39	0.36	0.36	0.36	0.36
v/c Ratio	0.67	0.51	0.37	0.93	0.21	0.08	0.69	0.31
Control Delay	72.0	18.7	51.8	42.0	23.7	11.4	34.3	6.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	72.0	18.7	51.8	42.0	23.7	11.4	34.3	6.5
LOS	E	B	D	D	C	B	C	A
Approach Delay		26.7		42.6		18.8		23.0
Approach LOS		C		D		B		C

Intersection Summary

Cycle Length: 130

Actuated Cycle Length: 83.5

Natural Cycle: 80

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.93

Intersection Signal Delay: 31.0

Intersection LOS: C

Intersection Capacity Utilization 78.0%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 6: SE Hiddenbrook Dr & SE 34th St

10 s	85 s	35 s
10 s	85 s	35 s

HCM 6th Signalized Intersection Summary 6: SE Hiddenbrook Dr & SE 34th St

Mitigation

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	69	308	80	37	366	249	71	15	32	309	27	184
Future Volume (veh/h)	69	308	80	37	366	249	71	15	32	309	27	184
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1870	1841	1832	1847	1876	1817	1876	1832	1841	1900	1900
Adj Flow Rate, veh/h	73	328	73	39	389	234	76	16	11	329	29	62
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	2	4	3	2	0	4	0	3	4	0	0
Cap, veh/h	109	607	135	70	420	253	437	297	204	500	154	330
Arrive On Green	0.06	0.41	0.41	0.04	0.39	0.39	0.29	0.29	0.29	0.29	0.29	0.29
Sat Flow, veh/h	1810	1479	329	1745	1077	648	1265	1034	711	1357	538	1150
Grp Volume(v), veh/h	73	0	401	39	0	623	76	0	27	329	0	91
Grp Sat Flow(s),veh/h/ln	1810	0	1808	1745	0	1724	1265	0	1746	1357	0	1688
Q Serve(g_s), s	2.3	0.0	9.6	1.3	0.0	19.7	2.8	0.0	0.6	13.2	0.0	2.3
Cycle Q Clear(g_c), s	2.3	0.0	9.6	1.3	0.0	19.7	5.1	0.0	0.6	13.9	0.0	2.3
Prop In Lane	1.00		0.18	1.00		0.38	1.00		0.41	1.00		0.68
Lane Grp Cap(c), veh/h	109	0	742	70	0	673	437	0	501	500	0	484
V/C Ratio(X)	0.67	0.00	0.54	0.55	0.00	0.93	0.17	0.00	0.05	0.66	0.00	0.19
Avail Cap(c_a), veh/h	158	0	2533	153	0	2415	739	0	917	824	0	887
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	26.3	0.0	12.8	26.9	0.0	16.6	17.3	0.0	14.8	19.8	0.0	15.4
Incr Delay (d2), s/veh	2.7	0.0	0.2	2.5	0.0	2.5	0.1	0.0	0.0	0.6	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.7	0.0	5.6	0.9	0.0	10.9	1.4	0.0	0.4	7.0	0.0	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.0	0.0	13.0	29.4	0.0	19.1	17.3	0.0	14.8	20.3	0.0	15.4
LnGrp LOS	C	A	B	C	A	B	B	A	B	C	A	B
Approach Vol, veh/h	474			662			103			420		
Approach Delay, s/veh	15.5			19.7			16.7			19.3		
Approach LOS	B			B			B			B		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.3	28.4		21.4	8.4	27.3		21.4				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	5.0	80.0		30.0	5.0	80.0		30.0				
Max Q Clear Time (g_c+I1), s	3.3	11.6		15.9	4.3	21.7		7.1				
Green Ext Time (p_c), s	0.0	0.3		0.1	0.0	0.6		0.0				
Intersection Summary												
HCM 6th Ctrl Delay	18.2											
HCM 6th LOS	B											

Intersection						
Int Delay, s/veh	0.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	450	32	16	606	18	7
Future Vol, veh/h	450	32	16	606	18	7
Conflicting Peds, #/hr	0	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	95	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	0	0	2	0	0
Mvmt Flow	495	35	18	666	20	8
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	530	0	1215	514
Stage 1	-	-	-	-	513	-
Stage 2	-	-	-	-	702	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1048	-	202	564
Stage 1	-	-	-	-	605	-
Stage 2	-	-	-	-	495	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1048	-	199	563
Mov Cap-2 Maneuver	-	-	-	-	199	-
Stage 1	-	-	-	-	605	-
Stage 2	-	-	-	-	487	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.2		21.7	
HCM LOS					C	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	243	-	-	1048	-	
HCM Lane V/C Ratio	0.113	-	-	0.017	-	
HCM Control Delay (s)	21.7	-	-	8.5	-	
HCM Lane LOS	C	-	-	A	-	
HCM 95th %tile Q(veh)	0.4	-	-	0.1	-	

Timings 8: SE 176th Ave & SE 34th St

Mitigation

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	197	383	16	488	10	9	94	19
Future Volume (vph)	197	383	16	488	10	9	94	19
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	Perm	NA
Protected Phases	5	2	1	6		8		4
Permitted Phases	2		6		8		4	
Detector Phase	5	2	1	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	5.0	15.0	5.0	15.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	24.0	10.0	28.0	33.0	33.0	32.0	32.0
Total Split (s)	15.0	45.0	15.0	45.0	25.0	25.0	25.0	25.0
Total Split (%)	17.6%	52.9%	17.6%	52.9%	29.4%	29.4%	29.4%	29.4%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lead	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	Min	None	Min	None	None	None	None
Act Effct Green (s)	37.2	35.8	30.0	24.9	10.5	10.5	10.5	10.5
Actuated g/C Ratio	0.62	0.60	0.50	0.42	0.18	0.18	0.18	0.18
v/c Ratio	0.53	0.39	0.03	0.86	0.05	0.05	0.41	0.41
Control Delay	20.5	10.9	8.6	28.7	23.9	19.7	29.4	10.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.5	10.9	8.6	28.7	23.9	19.7	29.4	10.0
LOS	C	B	A	C	C	B	C	B
Approach Delay		14.1		28.2		21.5		17.4
Approach LOS		B		C		C		B

Intersection Summary

Cycle Length: 85

Actuated Cycle Length: 59.7

Natural Cycle: 80

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.86

Intersection Signal Delay: 20.6

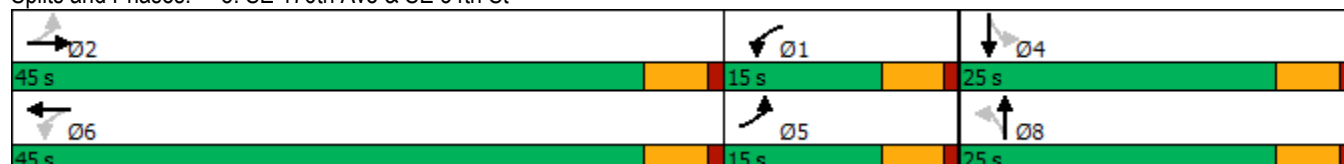
Intersection LOS: C

Intersection Capacity Utilization 68.6%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 8: SE 176th Ave & SE 34th St



HCM 6th Signalized Intersection Summary 8: SE 176th Ave & SE 34th St

Mitigation

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	197	383	13	16	488	120	10	9	5	94	19	135
Future Volume (veh/h)	197	383	13	16	488	120	10	9	5	94	19	135
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1885	1870	1900	1900	1885	1885	1900	1900	1900	1885	1900	1900
Adj Flow Rate, veh/h	214	416	13	17	530	117	11	10	1	102	21	13
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	2	0	0	1	1	0	0	0	1	0	0
Cap, veh/h	396	639	20	652	637	141	301	189	19	320	121	75
Arrive On Green	0.11	0.35	0.35	0.18	0.43	0.43	0.11	0.11	0.11	0.11	0.11	0.11
Sat Flow, veh/h	1795	1804	56	1810	1496	330	1391	1699	170	1409	1085	672
Grp Volume(v), veh/h	214	0	429	17	0	647	11	0	11	102	0	34
Grp Sat Flow(s),veh/h/ln	1795	0	1860	1810	0	1826	1391	0	1869	1409	0	1757
Q Serve(g_s), s	0.0	0.0	8.2	0.0	0.0	13.3	0.3	0.0	0.2	3.0	0.0	0.7
Cycle Q Clear(g_c), s	0.0	0.0	8.2	0.0	0.0	13.3	1.0	0.0	0.2	3.2	0.0	0.7
Prop In Lane	1.00		0.03	1.00		0.18	1.00		0.09	1.00		0.38
Lane Grp Cap(c), veh/h	396	0	659	652	0	777	301	0	208	320	0	196
V/C Ratio(X)	0.54	0.00	0.65	0.03	0.00	0.83	0.04	0.00	0.05	0.32	0.00	0.17
Avail Cap(c_a), veh/h	625	0	1757	753	0	1724	802	0	882	828	0	830
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.7	0.0	11.5	9.4	0.0	10.8	17.5	0.0	16.8	18.2	0.0	17.0
Incr Delay (d2), s/veh	0.4	0.0	0.4	0.0	0.0	0.9	0.0	0.0	0.0	0.2	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.8	0.0	4.4	0.1	0.0	6.5	0.2	0.0	0.2	1.6	0.0	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.1	0.0	11.9	9.4	0.0	11.7	17.5	0.0	16.9	18.4	0.0	17.2
LnGrp LOS	B	A	B	A	A	B	B	A	B	B	A	B
Approach Vol, veh/h	643		664			22			136			
Approach Delay, s/veh	13.6		11.7			17.2			18.1			
Approach LOS	B		B			B			B			
Timer - Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	12.6	20.0	9.7		9.6	23.0	9.7					
Change Period (Y+Rc), s	5.0	5.0	5.0		5.0	5.0	5.0					
Max Green Setting (Gmax), s	10.0	40.0	20.0		10.0	40.0	20.0					
Max Q Clear Time (g_c+I1), s	2.0	10.2	5.2		2.0	15.3	3.0					
Green Ext Time (p_c), s	0.0	1.6	0.2		0.2	2.7	0.0					
Intersection Summary												
HCM 6th Ctrl Delay	13.2											
HCM 6th LOS	B											
Notes												

MOVEMENT SUMMARY

 **Site: 101 [SE 176 Avenue/ SE 29th Street Phase 2 (Site Folder: General)]**

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Phase 2

Site Category: (None)

Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]		[Total HV]					[Veh.	Dist]				
			veh/h	%	veh/h	%	v/c	sec		veh	ft				mph
South: SE 176th Avenue															
3	L2	All MCs	16	15.0	16	15.0	0.314	7.4	LOS A	1.7	43.3	0.41	0.22	0.41	32.3
8	T1	All MCs	268	0.0	268	0.0	0.314	6.0	LOS A	1.7	43.3	0.41	0.22	0.41	33.4
18	R2	All MCs	74	0.0	74	0.0	0.314	6.0	LOS A	1.7	43.3	0.41	0.22	0.41	33.1
Approach			358	0.7	358	0.7	0.314	6.1	LOS A	1.7	43.3	0.41	0.22	0.41	33.3
East: SE 29th Street															
1	L2	All MCs	152	0.0	152	0.0	0.438	8.4	LOS A	2.6	64.2	0.59	0.40	0.59	31.0
6	T1	All MCs	247	0.0	247	0.0	0.438	8.4	LOS A	2.6	64.2	0.59	0.40	0.59	31.6
16	R2	All MCs	41	0.0	41	0.0	0.438	8.4	LOS A	2.6	64.2	0.59	0.40	0.59	31.3
Approach			440	0.0	440	0.0	0.438	8.4	LOS A	2.6	64.2	0.59	0.40	0.59	31.3
North: SE 176th Avenue															
7	L2	All MCs	44	0.0	44	0.0	0.249	6.5	LOS A	1.2	29.2	0.55	0.41	0.55	32.1
4	T1	All MCs	67	1.0	67	1.0	0.249	6.6	LOS A	1.2	29.2	0.55	0.41	0.55	32.7
14	R2	All MCs	113	0.0	113	0.0	0.249	6.5	LOS A	1.2	29.2	0.55	0.41	0.55	32.4
Approach			224	0.3	224	0.3	0.249	6.6	LOS A	1.2	29.2	0.55	0.41	0.55	32.4
West: SE 29th Street															
5	L2	All MCs	22	7.0	22	7.0	0.159	5.4	LOS A	0.7	18.1	0.42	0.27	0.42	32.9
2	T1	All MCs	111	0.0	111	0.0	0.159	4.8	LOS A	0.7	18.1	0.42	0.27	0.42	33.8
12	R2	All MCs	33	0.0	33	0.0	0.159	4.8	LOS A	0.7	18.1	0.42	0.27	0.42	33.5
Approach			166	0.9	166	0.9	0.159	4.9	LOS A	0.7	18.1	0.42	0.27	0.42	33.6
All Vehicles			1187	0.4	1187	0.4	0.438	6.9	LOS A	2.6	64.2	0.50	0.33	0.50	32.4

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: Sieglach M1 implied by US HCM 6 Roundabout Capacity Model.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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Project: H:\27\27715 - VIC Implementation\005 - Master Plan Update TIA\Analysis\176th_29th With Project 2038 PM.sip9

Intersection	
Intersection Delay, s/veh	90.7
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	48	466	71	93	503	18	49	132	76	27	95	28
Future Vol, veh/h	48	466	71	93	503	18	49	132	76	27	95	28
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	3	0	0	1	0	7	0	1	0	4	1	8
Mvmt Flow	52	507	77	101	547	20	53	143	83	29	103	30
Number of Lanes	1	1	0	1	1	0	1	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	2	2
HCM Control Delay	124.1	106.1	19.5	19.6
HCM LOS	F	F	C	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	100%	0%	100%	0%	100%	0%	18%
Vol Thru, %	0%	63%	0%	87%	0%	97%	63%
Vol Right, %	0%	37%	0%	13%	0%	3%	19%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	49	208	48	537	93	521	150
LT Vol	49	0	48	0	93	0	27
Through Vol	0	132	0	466	0	503	95
RT Vol	0	76	0	71	0	18	28
Lane Flow Rate	53	226	52	584	101	566	163
Geometry Grp	7	7	7	7	7	7	6
Degree of Util (X)	0.133	0.517	0.117	1.199	0.223	1.167	0.409
Departure Headway (Hd)	9.705	8.932	8.467	7.801	8.438	7.877	9.937
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	372	407	426	473	429	464	365
Service Time	7.405	6.632	6.167	5.501	6.138	5.577	7.937
HCM Lane V/C Ratio	0.142	0.555	0.122	1.235	0.235	1.22	0.447
HCM Control Delay	13.9	20.8	12.3	134.1	13.5	122.6	19.6
HCM Lane LOS	B	C	B	F	B	F	C
HCM 95th-tile Q	0.5	2.9	0.4	21.2	0.8	19.7	1.9

Timings

Mitigation

11: SE 164th Ave & SE 29th St

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	89	49	51	240	36	143	42	1434	131	1306
Future Volume (vph)	89	49	51	240	36	143	42	1434	131	1306
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Prot	NA
Protected Phases	5	2		1	6		7	4	3	8
Permitted Phases	2		2	6		6				
Detector Phase	5	2	2	1	6	6	7	4	3	8
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	15.0	5.0	15.0
Minimum Split (s)	9.5	39.0	39.0	9.5	38.0	38.0	10.0	32.0	19.5	32.0
Total Split (s)	15.0	20.0	20.0	19.0	24.0	24.0	15.0	59.0	22.0	66.0
Total Split (%)	12.5%	16.7%	16.7%	15.8%	20.0%	20.0%	12.5%	49.2%	18.3%	55.0%
Yellow Time (s)	3.5	4.0	4.0	3.5	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	5.0	5.0	4.5	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	None	C-Max
Act Effct Green (s)	18.9	11.0	11.0	28.7	14.5	14.5	6.3	64.6	11.8	72.1
Actuated g/C Ratio	0.16	0.09	0.09	0.24	0.12	0.12	0.05	0.54	0.10	0.60
v/c Ratio	0.37	0.30	0.19	0.76	0.17	0.47	0.49	0.57	0.78	0.46
Control Delay	40.7	55.0	1.5	55.9	47.9	12.2	51.3	34.3	80.8	14.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.7	55.0	1.5	55.9	47.9	12.2	51.3	34.3	80.8	14.9
LOS	D	D	A	E	D	B	D	C	F	B
Approach Delay		33.8			40.3			34.8		20.8
Approach LOS		C			D			C		C

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 112 (93%), Referenced to phase 8:SBT, Start of Green

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.78

Intersection Signal Delay: 29.6

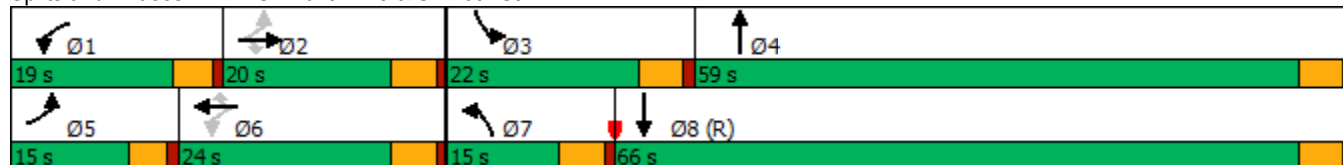
Intersection LOS: C

Intersection Capacity Utilization 68.6%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 11: SE 164th Ave & SE 29th St



HCM 6th Signalized Intersection Summary

11: SE 164th Ave & SE 29th St

Mitigation

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	89	49	51	240	36	143	42	1434	32	131	1306	46
Future Volume (veh/h)	89	49	51	240	36	143	42	1434	32	131	1306	46
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No				No
Adj Sat Flow, veh/h/ln	1900	1900	1900	1870	1870	1870	1826	1870	1752	1885	1885	1900
Adj Flow Rate, veh/h	94	52	10	253	38	26	44	1509	32	138	1375	46
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	2	2	2	5	2	10	1	1	0
Cap, veh/h	287	163	138	356	273	230	56	2315	49	164	2605	87
Arrive On Green	0.06	0.09	0.09	0.12	0.15	0.15	0.03	0.45	0.45	0.09	0.51	0.51
Sat Flow, veh/h	1810	1900	1599	1781	1870	1579	1739	5146	109	1795	5114	171
Grp Volume(v), veh/h	94	52	10	253	38	26	44	998	543	138	922	499
Grp Sat Flow(s),veh/h/ln	1810	1900	1599	1781	1870	1579	1739	1702	1851	1795	1716	1854
Q Serve(g_s), s	5.6	3.1	0.7	14.5	2.1	1.7	3.0	27.4	27.4	9.1	21.7	21.7
Cycle Q Clear(g_c), s	5.6	3.1	0.7	14.5	2.1	1.7	3.0	27.4	27.4	9.1	21.7	21.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.06	1.00		0.09
Lane Grp Cap(c), veh/h	287	163	138	356	273	230	56	1532	833	164	1748	944
V/C Ratio(X)	0.33	0.32	0.07	0.71	0.14	0.11	0.79	0.65	0.65	0.84	0.53	0.53
Avail Cap(c_a), veh/h	334	238	200	356	296	250	145	1532	833	254	1748	944
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.71	0.71	0.71	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.0	51.5	50.4	42.6	44.7	44.5	57.7	25.7	25.7	53.6	19.8	19.8
Incr Delay (d2), s/veh	0.7	0.4	0.1	6.5	0.1	0.1	6.3	1.5	2.8	8.2	1.1	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.7	2.7	0.5	12.0	1.8	1.2	2.5	15.5	17.0	7.8	13.3	14.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.7	51.9	50.5	49.1	44.8	44.6	64.0	27.2	28.5	61.8	20.9	21.9
LnGrp LOS	D	D	D	D	D	D	E	C	C	E	C	C
Approach Vol, veh/h	156			317			1585			1559		
Approach Delay, s/veh	48.7			48.2			28.7			24.8		
Approach LOS	D			D			C			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	19.0	15.3	16.0	59.0	11.8	22.5	8.9	66.1				
Change Period (Y+Rc), s	4.5	5.0	5.0	5.0	4.5	5.0	5.0	5.0				
Max Green Setting (Gmax), s	14.5	15.0	17.0	54.0	10.5	19.0	10.0	61.0				
Max Q Clear Time (g_c+I1), s	16.5	5.1	11.1	29.4	7.6	4.1	5.0	23.7				
Green Ext Time (p_c), s	0.0	0.0	0.0	1.7	0.0	0.0	0.0	1.6				
Intersection Summary												
HCM 6th Ctrl Delay	29.6											
HCM 6th LOS	C											

Timings

Mitigation

12: SE 164th Ave & SE 34th St

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	49	102	194	279	136	247	192	1216	390	164	1372
Future Volume (vph)	49	102	194	279	136	247	192	1216	390	164	1372
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA
Protected Phases	5	2	7	1	6	3	7	4	1	3	8
Permitted Phases			2			6			4		
Detector Phase	5	2	7	1	6	3	7	4	1	3	8
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	20.0	5.0	5.0	20.0
Minimum Split (s)	10.0	33.0	10.0	10.0	32.0	10.0	10.0	31.0	10.0	10.0	28.0
Total Split (s)	15.0	33.0	20.0	17.0	35.0	20.0	20.0	50.0	17.0	20.0	50.0
Total Split (%)	12.5%	27.5%	16.7%	14.2%	29.2%	16.7%	16.7%	41.7%	14.2%	16.7%	41.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	None	None	C-Max
Act Effct Green (s)	7.3	10.7	34.0	12.0	17.5	38.0	18.3	61.8	78.8	15.5	59.0
Actuated g/C Ratio	0.06	0.09	0.28	0.10	0.15	0.32	0.15	0.52	0.66	0.13	0.49
v/c Ratio	0.51	0.66	0.41	1.64	0.54	0.46	0.74	0.70	0.35	0.75	0.59
Control Delay	71.7	71.0	24.2	348.1	56.2	21.9	64.4	26.2	3.7	67.2	22.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	71.7	71.0	24.2	348.1	56.2	21.9	64.4	26.2	3.7	67.2	22.3
LOS	E	E	C	F	E	C	E	C	A	E	C
Approach Delay		44.8			166.5			25.4			26.9
Approach LOS		D			F			C			C

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 40 (33%), Referenced to phase 8:SBT, Start of Green

Natural Cycle: 115

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.64

Intersection Signal Delay: 48.8

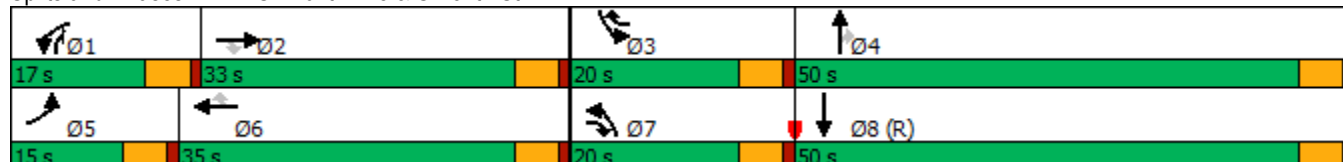
Intersection LOS: D

Intersection Capacity Utilization 80.2%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 12: SE 164th Ave & SE 34th St

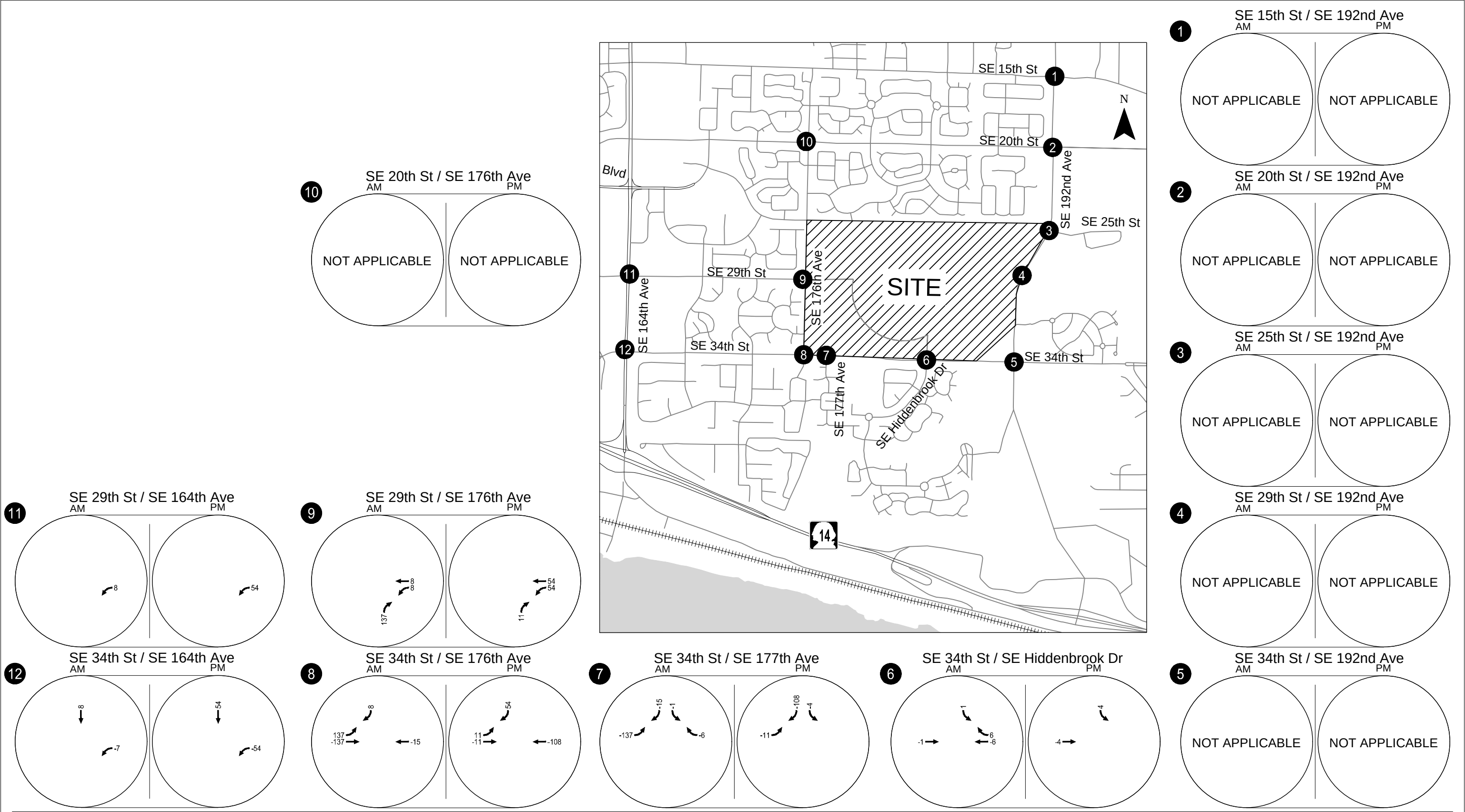


HCM 6th Signalized Intersection Summary 12: SE 164th Ave & SE 34th St

Mitigation

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	49	102	194	279	136	247	192	1216	390	164	1372	49
Future Volume (veh/h)	49	102	194	279	136	247	192	1216	390	164	1372	49
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1767	1826	1885	1870	1841	1856	1885	1870	1885	1870	1870	1841
Adj Flow Rate, veh/h	51	106	152	291	142	182	200	1267	279	171	1429	48
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	9	5	1	2	4	3	1	2	1	2	2	4
Cap, veh/h	64	183	359	178	298	430	224	1379	780	199	1902	64
Arrive On Green	0.04	0.10	0.10	0.10	0.16	0.16	0.13	0.39	0.39	0.04	0.12	0.12
Sat Flow, veh/h	1682	1826	1598	1781	1841	1572	1795	3554	1598	1781	5073	170
Grp Volume(v), veh/h	51	106	152	291	142	182	200	1267	279	171	959	518
Grp Sat Flow(s),veh/h/ln	1682	1826	1598	1781	1841	1572	1795	1777	1598	1781	1702	1840
Q Serve(g_s), s	3.6	6.7	9.8	12.0	8.4	11.4	13.2	40.7	13.0	11.5	32.7	32.7
Cycle Q Clear(g_c), s	3.6	6.7	9.8	12.0	8.4	11.4	13.2	40.7	13.0	11.5	32.7	32.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.09
Lane Grp Cap(c), veh/h	64	183	359	178	298	430	224	1379	780	199	1277	690
V/C Ratio(X)	0.79	0.58	0.42	1.63	0.48	0.42	0.89	0.92	0.36	0.86	0.75	0.75
Avail Cap(c_a), veh/h	140	426	572	178	460	569	224	1379	780	223	1277	690
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.86	0.86	0.86
Uniform Delay (d), s/veh	57.2	51.6	39.8	54.0	45.7	35.8	51.7	34.9	19.0	56.8	47.2	47.2
Incr Delay (d2), s/veh	7.9	1.1	0.3	309.2	0.4	0.2	31.8	11.3	1.3	20.4	3.5	6.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.0	5.5	6.9	32.7	6.9	7.7	12.4	26.1	8.5	10.5	21.4	23.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	65.1	52.7	40.1	363.2	46.1	36.0	83.5	46.2	20.3	77.2	50.7	53.6
LnGrp LOS	E	D	D	F	D	D	F	D	C	E	D	D
Approach Vol, veh/h	309			615			1746			1648		
Approach Delay, s/veh	48.6			193.2			46.3			54.4		
Approach LOS	D			F			D			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.0	17.0	18.4	51.6	9.6	24.4	20.0	50.0				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	12.0	28.0	15.0	45.0	10.0	30.0	15.0	45.0				
Max Q Clear Time (g_c+I1), s	14.0	11.8	13.5	42.7	5.6	13.4	15.2	34.7				
Green Ext Time (p_c), s	0.0	0.2	0.0	1.1	0.0	0.3	0.0	2.9				
Intersection Summary												
HCM 6th Ctrl Delay	70.5											
HCM 6th LOS	E											

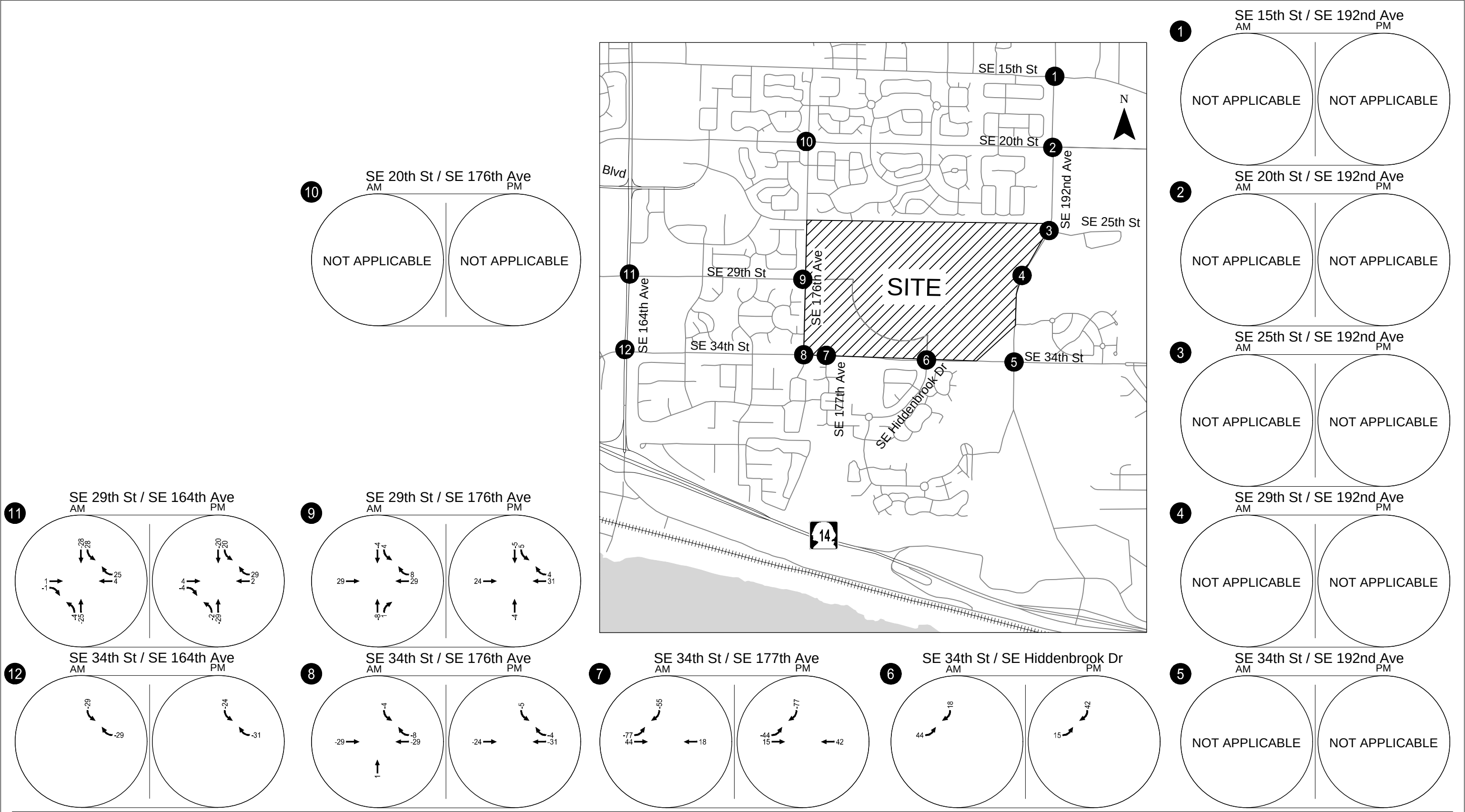
H:\2715 - VIC Implementation\005 - Master Plan Update\TIA\report\figs\2715-Figures_Fig G-1-Redistributed 29th (west) Apr 05, 2023 - 3:31pm - ckleyhans Layout Tab: Fig G-1_Redistributed 29th (west)



Redistributed Baseline Traffic Volumes - SE 29th St Western Connection
Weekday AM & PM Peak Hour
Vancouver, WA

Figure
G-1

H:\2712715 - VIC Implementation\005 - Master Plan Update TIA\report\figs\2712715-Figures_For_TIA.dwg Apr 05, 2023 - 3:31pm - ckeyhans Layout Tab: Fig G2_Redistributed Ph1 Assignment



Redistributed Phase 1 Trips - SE 29th St Western Connection
Weekday AM & PM Peak Hour
Vancouver, WA

Figure
G-2

Appendix H 2038 With-Project Phase 3
Buildout Operations
Worksheets & Re-routed trips

Timings

1: SE 192nd & SE 15th St

Vancouver Innovation Center

Phase 3 2038 AM Peak Hour Conditions

									
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	156	45	29	64	158	61	986	89	888
Future Volume (vph)	156	45	29	64	158	61	986	89	888
Turn Type	Prot	NA	Prot	NA	pm+ov	Prot	NA	Prot	NA
Protected Phases	5	2	1	6	3	7	4	3	8
Permitted Phases					6				
Detector Phase	5	2	1	6	3	7	4	3	8
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	15.0	5.0	15.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	20.0	10.0	20.0
Total Split (s)	20.0	29.0	20.0	29.0	14.0	15.0	37.0	14.0	36.0
Total Split (%)	20.0%	29.0%	20.0%	29.0%	14.0%	15.0%	37.0%	14.0%	36.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	None	Max
Act Effct Green (s)	12.4	18.7	5.9	10.2	22.0	7.4	50.6	8.8	54.0
Actuated g/C Ratio	0.12	0.19	0.06	0.10	0.22	0.07	0.51	0.09	0.54
v/c Ratio	0.80	0.30	0.32	0.38	0.43	0.53	0.64	0.69	0.61
Control Delay	67.8	19.2	53.4	45.3	17.8	58.9	23.7	69.1	22.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.8	19.2	53.4	45.3	17.8	58.9	23.7	69.1	22.2
LOS	E	B	D	D	B	E	C	E	C
Approach Delay		49.3		28.9			25.7		26.1
Approach LOS		D		C			C		C

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 9 (9%), Referenced to phase 4:NBT, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.80

Intersection Signal Delay: 28.4

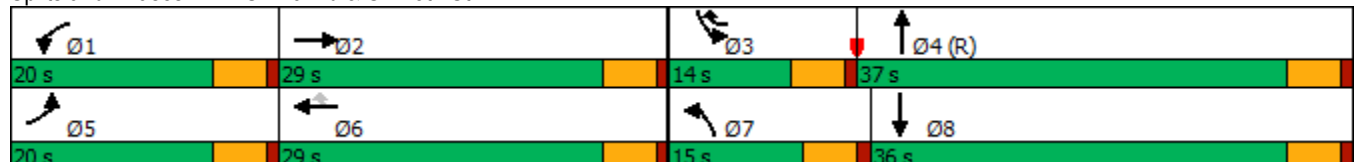
Intersection LOS: C

Intersection Capacity Utilization 60.5%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 1: SE 192nd & SE 15th St



HCM 6th Signalized Intersection Summary

1: SE 192nd & SE 15th St

Vancouver Innovation Center

Phase 3 2038 AM Peak Hour Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	156	45	50	29	64	158	61	986	16	89	888	87
Future Volume (veh/h)	156	45	50	29	64	158	61	986	16	89	888	87
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1900	1796	1781	1841	1870	1856	1841	1900	1737	1767	1856
Adj Flow Rate, veh/h	173	50	8	32	71	99	68	1096	17	99	987	91
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	0	7	8	4	2	3	4	0	11	9	3
Cap, veh/h	204	262	42	50	144	241	101	1877	29	122	1708	157
Arrive On Green	0.12	0.16	0.16	0.03	0.08	0.08	0.11	1.00	1.00	0.07	0.55	0.55
Sat Flow, veh/h	1767	1598	256	1697	1841	1585	1767	3523	55	1654	3107	286
Grp Volume(v), veh/h	173	0	58	32	71	99	68	544	569	99	533	545
Grp Sat Flow(s),veh/h/ln	1767	0	1854	1697	1841	1585	1767	1749	1829	1654	1678	1715
Q Serve(g_s), s	9.6	0.0	2.7	1.9	3.7	5.6	3.7	0.0	0.0	5.9	21.0	21.0
Cycle Q Clear(g_c), s	9.6	0.0	2.7	1.9	3.7	5.6	3.7	0.0	0.0	5.9	21.0	21.0
Prop In Lane	1.00		0.14	1.00		1.00	1.00		0.03	1.00		0.17
Lane Grp Cap(c), veh/h	204	0	304	50	144	241	101	932	975	122	923	943
V/C Ratio(X)	0.85	0.00	0.19	0.64	0.49	0.41	0.68	0.58	0.58	0.81	0.58	0.58
Avail Cap(c_a), veh/h	265	0	445	254	442	498	177	932	975	149	923	943
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	0.76	0.76	0.76	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.4	0.0	36.1	48.0	44.2	38.4	43.4	0.0	0.0	45.6	14.9	14.9
Incr Delay (d2), s/veh	14.7	0.0	0.1	5.0	1.0	0.4	2.2	2.0	1.9	19.5	2.6	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	8.5	0.0	2.2	1.5	3.1	3.9	2.8	0.9	0.9	5.4	12.4	12.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.1	0.0	36.2	53.0	45.2	38.8	45.6	2.0	1.9	65.1	17.5	17.4
LnGrp LOS	E	A	D	D	D	D	D	A	A	E	B	B
Approach Vol, veh/h	231			202			1181			1177		
Approach Delay, s/veh	52.6			43.3			4.5			21.5		
Approach LOS	D			D			A			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.9	21.4	12.4	58.3	16.5	12.8	10.7	60.0				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	15.0	24.0	9.0	32.0	15.0	24.0	10.0	31.0				
Max Q Clear Time (g_c+I1), s	3.9	4.7	7.9	2.0	11.6	7.6	5.7	23.0				
Green Ext Time (p_c), s	0.0	0.1	0.0	2.2	0.0	0.2	0.0	1.7				
Intersection Summary												
HCM 6th Ctrl Delay	18.4											
HCM 6th LOS	B											

Timings
2: SE 20th St & SE 192nd Ave

Vancouver Innovation Center
Phase 3 2038 AM Peak Hour Conditions

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	 		 			 		 
Traffic Volume (vph)	166	182	166	165	47	780	59	754
Future Volume (vph)	166	182	166	165	47	780	59	754
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	5	2	1	6	7	4	3	8
Permitted Phases								
Detector Phase	5	2	1	6	7	4	3	8
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	20.0	5.0	20.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	25.0	10.0	25.0
Total Split (s)	17.0	29.0	17.0	29.0	15.0	39.0	15.0	39.0
Total Split (%)	17.0%	29.0%	17.0%	29.0%	15.0%	39.0%	15.0%	39.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	Min	C-Max	None	Max
Act Effct Green (s)	9.4	18.7	9.3	18.7	7.4	46.2	7.7	44.6
Actuated g/C Ratio	0.09	0.19	0.09	0.19	0.07	0.46	0.08	0.45
v/c Ratio	0.55	0.81	0.54	0.67	0.39	0.62	0.45	0.60
Control Delay	49.5	53.3	49.3	44.1	64.6	14.2	52.2	29.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.5	53.3	49.3	44.1	64.6	14.2	52.2	29.7
LOS	D	D	D	D	E	B	D	C
Approach Delay		51.9		46.3		16.6		31.2
Approach LOS		D		D		B		C

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 98 (98%), Referenced to phase 4:NBT, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.81

Intersection Signal Delay: 31.4

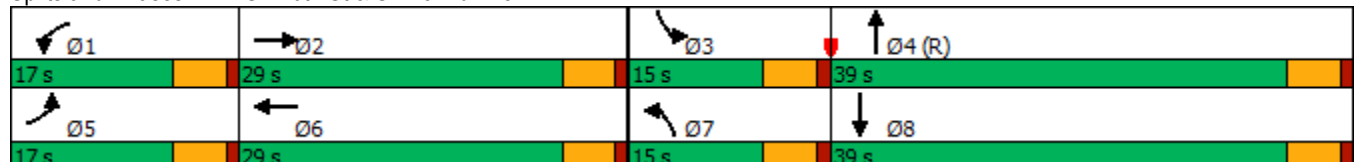
Intersection LOS: C

Intersection Capacity Utilization 67.3%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 2: SE 20th St & SE 192nd Ave



HCM 6th Signalized Intersection Summary

2: SE 20th St & SE 192nd Ave

Vancouver Innovation Center
Phase 3 2038 AM Peak Hour Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	166	182	89	166	165	57	47	780	161	59	754	103
Future Volume (veh/h)	166	182	89	166	165	57	47	780	161	59	754	103
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1900	1841	1885	1885	1885	1811	1856	1841	1885	1811	1826
Adj Flow Rate, veh/h	175	192	74	175	174	46	49	821	154	62	794	99
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	0	4	1	1	1	6	3	4	1	6	5
Cap, veh/h	242	220	85	244	241	64	86	1531	287	80	1574	196
Arrive On Green	0.07	0.17	0.17	0.07	0.17	0.17	0.05	0.52	0.52	0.06	0.68	0.68
Sat Flow, veh/h	3428	1306	503	3483	1437	380	1725	2962	556	1795	3078	384
Grp Volume(v), veh/h	175	0	266	175	0	220	49	489	486	62	444	449
Grp Sat Flow(s),veh/h/ln	1714	0	1809	1742	0	1817	1725	1763	1755	1795	1721	1742
Q Serve(g_s), s	5.0	0.0	14.3	4.9	0.0	11.5	2.8	18.5	18.5	3.4	12.6	12.6
Cycle Q Clear(g_c), s	5.0	0.0	14.3	4.9	0.0	11.5	2.8	18.5	18.5	3.4	12.6	12.6
Prop In Lane	1.00		0.28	1.00		0.21	1.00		0.32	1.00		0.22
Lane Grp Cap(c), veh/h	242	0	305	244	0	305	86	911	907	80	880	891
V/C Ratio(X)	0.72	0.00	0.87	0.72	0.00	0.72	0.57	0.54	0.54	0.78	0.50	0.50
Avail Cap(c_a), veh/h	411	0	434	418	0	436	172	911	907	180	880	891
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.77	0.77	0.77
Uniform Delay (d), s/veh	45.5	0.0	40.5	45.5	0.0	39.4	46.4	16.2	16.2	46.5	9.8	9.8
Incr Delay (d2), s/veh	1.5	0.0	9.8	1.5	0.0	1.3	2.2	2.3	2.3	4.6	1.6	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.8	0.0	11.3	3.8	0.0	8.8	2.2	11.8	11.8	2.8	6.8	6.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.0	0.0	50.3	47.0	0.0	40.7	48.6	18.4	18.4	51.1	11.4	11.4
LnGrp LOS	D	A	D	D	A	D	D	B	B	D	B	B
Approach Vol, veh/h	441			395			1024			955		
Approach Delay, s/veh	49.0			43.5			19.9			14.0		
Approach LOS	D			D			B			B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.0	21.9	9.5	56.7	12.1	21.8	10.0	56.1				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	12.0	24.0	10.0	34.0	12.0	24.0	10.0	34.0				
Max Q Clear Time (g_c+I1), s	6.9	16.3	5.4	20.5	7.0	13.5	4.8	14.6				
Green Ext Time (p_c), s	0.1	0.5	0.0	3.3	0.1	0.5	0.0	3.3				

Intersection Summary

HCM 6th Ctrl Delay	25.8
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Intersection							
Int Delay, s/veh	0.3						
Movement	WBL	WBR	NBT	NBR	SBL	SBT	
Lane Configurations							
Traffic Vol, veh/h	7	10	910	3	7	983	
Future Vol, veh/h	7	10	910	3	7	983	
Conflicting Peds, #/hr	0	0	0	1	1	0	
Sign Control	Stop	Stop	Free	Free	Free	Free	
RT Channelized	-	None	-	None	-	None	
Storage Length	125	0	-	-	230	-	
Veh in Median Storage, #	0	-	0	-	-	0	
Grade, %	0	-	0	-	-	0	
Peak Hour Factor	95	95	95	95	95	95	
Heavy Vehicles, %	0	20	4	67	0	7	
Mvmt Flow	7	11	958	3	7	1035	
Major/Minor	Minor1	Major1		Major2			
Conflicting Flow All	1493	482	0	0	962	0	
Stage 1	961	-	-	-	-	-	
Stage 2	532	-	-	-	-	-	
Critical Hdwy	6.8	7.3	-	-	4.1	-	
Critical Hdwy Stg 1	5.8	-	-	-	-	-	
Critical Hdwy Stg 2	5.8	-	-	-	-	-	
Follow-up Hdwy	3.5	3.5	-	-	2.2	-	
Pot Cap-1 Maneuver	116	485	-	-	724	-	
Stage 1	337	-	-	-	-	-	
Stage 2	559	-	-	-	-	-	
Platoon blocked, %			-	-		-	
Mov Cap-1 Maneuver	115	485	-	-	723	-	
Mov Cap-2 Maneuver	115	-	-	-	-	-	
Stage 1	337	-	-	-	-	-	
Stage 2	553	-	-	-	-	-	
Approach	WB	NB		SB			
HCM Control Delay, s	23.2	0		0.1			
HCM LOS	C						
Minor Lane/Major Mvmt		NBT	NBRWBLn1	WBLn2	SBL	SBT	
Capacity (veh/h)		-	-	115	485	723	-
HCM Lane V/C Ratio		-	-	0.064	0.022	0.01	-
HCM Control Delay (s)		-	-	38.4	12.6	10	-
HCM Lane LOS		-	-	E	B	B	-
HCM 95th %tile Q(veh)		-	-	0.2	0.1	0	-

Timings
4: SE 192nd Ave & SE 29th St

Vancouver Innovation Center
Phase 3 2038 AM Peak Hour Conditions

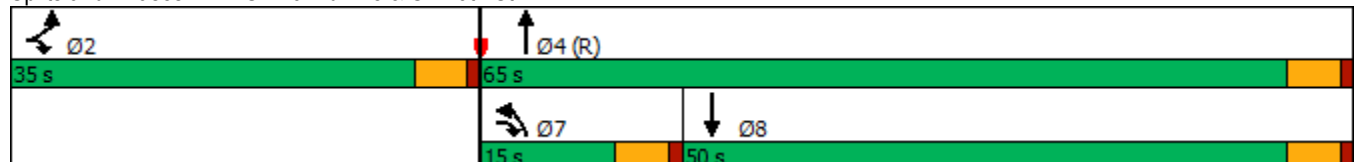
					
Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	147	70	91	766	781
Future Volume (vph)	147	70	91	766	781
Turn Type	Prot	pt+ov	Prot	NA	NA
Protected Phases	2	2 7	7	4	8
Permitted Phases					
Detector Phase	2	2 7	7	4	8
Switch Phase					
Minimum Initial (s)	5.0		5.0	5.0	5.0
Minimum Split (s)	27.0		10.0	26.0	26.0
Total Split (s)	35.0		15.0	65.0	50.0
Total Split (%)	35.0%		15.0%	65.0%	50.0%
Yellow Time (s)	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0		5.0	5.0	5.0
Lead/Lag			Lead		Lag
Lead-Lag Optimize?			Yes		Yes
Recall Mode	None		None	C-Max	Max
Act Effct Green (s)	14.8	30.7	10.8	75.2	59.3
Actuated g/C Ratio	0.15	0.31	0.11	0.75	0.59
v/c Ratio	0.62	0.14	0.52	0.31	0.53
Control Delay	49.6	5.3	28.6	11.4	23.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	49.6	5.3	28.6	11.4	23.0
LOS	D	A	C	B	C
Approach Delay	35.3			13.2	23.0
Approach LOS	D			B	C

Intersection Summary

Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 85 (85%), Referenced to phase 4:NBT, Start of Green
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.62
 Intersection Signal Delay: 20.3
 Intersection Capacity Utilization 53.9%
 Analysis Period (min) 15

Intersection LOS: C
 ICU Level of Service A

Splits and Phases: 4: SE 192nd Ave & SE 29th St



HCM 6th Signalized Intersection Summary

4: SE 192nd Ave & SE 29th St

Vancouver Innovation Center
Phase 3 2038 AM Peak Hour Conditions

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	147	70	91	766	781	209
Future Volume (veh/h)	147	70	91	766	781	209
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1811	1826	1826	1826	1811	1767
Adj Flow Rate, veh/h	155	20	96	806	822	201
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	6	5	5	5	6	9
Cap, veh/h	192	279	120	2736	1836	449
Arrive On Green	0.11	0.11	0.14	1.00	0.67	0.67
Sat Flow, veh/h	1725	1547	1739	3561	2831	670
Grp Volume(v), veh/h	155	20	96	806	516	507
Grp Sat Flow(s),veh/h/ln	1725	1547	1739	1735	1721	1690
Q Serve(g_s), s	8.8	1.1	5.4	0.0	14.1	14.1
Cycle Q Clear(g_c), s	8.8	1.1	5.4	0.0	14.1	14.1
Prop In Lane	1.00	1.00	1.00			0.40
Lane Grp Cap(c), veh/h	192	279	120	2736	1153	1132
V/C Ratio(X)	0.81	0.07	0.80	0.29	0.45	0.45
Avail Cap(c_a), veh/h	517	571	174	2736	1153	1132
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.81	0.81	1.00	1.00
Uniform Delay (d), s/veh	43.4	34.0	42.5	0.0	7.8	7.8
Incr Delay (d2), s/veh	7.8	0.1	12.9	0.2	1.3	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	7.4	1.8	4.6	0.2	8.3	8.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	51.2	34.2	55.3	0.2	9.0	9.1
LnGrp LOS	D	C	E	A	A	A
Approach Vol, veh/h	175			902	1023	
Approach Delay, s/veh	49.2			6.1	9.1	
Approach LOS	D			A	A	
Timer - Assigned Phs	2		4		7	8
Phs Duration (G+Y+Rc), s	16.1		83.9		11.9	72.0
Change Period (Y+Rc), s	5.0		5.0		5.0	5.0
Max Green Setting (Gmax), s	30.0		60.0		10.0	45.0
Max Q Clear Time (g_c+I1), s	10.8		2.0		7.4	16.1
Green Ext Time (p_c), s	0.4		6.3		0.0	7.3
Intersection Summary						
HCM 6th Ctrl Delay			11.1			
HCM 6th LOS			B			

Timings
5: SE 192nd Ave & SE 34th St

Vancouver Innovation Center
Phase 3 2038 AM Peak Hour Conditions

										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	74	164	207	146	87	111	775	349	121	604
Future Volume (vph)	74	164	207	146	87	111	775	349	121	604
Turn Type	pm+pt	NA	pm+pt	NA	Perm	Prot	NA	pm+ov	Prot	NA
Protected Phases	5	2	1	6		7	4	1	3	8
Permitted Phases	2		6		6			4		
Detector Phase	5	2	1	6	6	7	4	1	3	8
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	20.0	5.0	5.0	20.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	25.0	10.0	10.0	25.0
Total Split (s)	15.0	36.0	15.0	36.0	36.0	15.0	34.0	15.0	15.0	34.0
Total Split (%)	15.0%	36.0%	15.0%	36.0%	36.0%	15.0%	34.0%	15.0%	15.0%	34.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	None	None	Max
Act Effct Green (s)	26.5	19.8	32.8	24.8	24.8	9.4	40.5	50.2	10.0	41.0
Actuated g/C Ratio	0.26	0.20	0.33	0.25	0.25	0.09	0.40	0.50	0.10	0.41
v/c Ratio	0.23	0.79	0.84	0.34	0.18	0.72	0.63	0.39	0.39	0.59
Control Delay	22.1	48.8	50.4	32.4	0.7	66.6	28.3	2.3	44.6	25.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.1	48.8	50.4	32.4	0.7	66.6	28.3	2.3	44.6	25.5
LOS	C	D	D	C	A	E	C	A	D	C
Approach Delay		42.9		34.6			24.4			28.3
Approach LOS		D		C			C			C

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 40 (40%), Referenced to phase 4:NBT, Start of Green

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.84

Intersection Signal Delay: 29.3

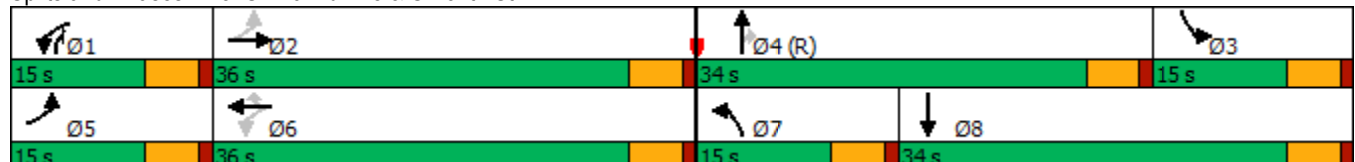
Intersection LOS: C

Intersection Capacity Utilization 70.0%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 5: SE 192nd Ave & SE 34th St



HCM 6th Signalized Intersection Summary

5: SE 192nd Ave & SE 34th St

Vancouver Innovation Center
Phase 3 2038 AM Peak Hour Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	74	164	96	207	146	87	111	775	349	121	604	89
Future Volume (veh/h)	74	164	96	207	146	87	111	775	349	121	604	89
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1817	1803	1847	1943	2018	1988	2018	1883	1988	1832	1684	1817
Adj Flow Rate, veh/h	82	182	79	230	162	16	123	861	169	134	671	88
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	3	0	5	0	2	0	9	2	1	11	2
Cap, veh/h	357	221	96	302	472	387	154	1037	655	758	1233	162
Arrive On Green	0.05	0.19	0.19	0.10	0.23	0.23	0.08	0.29	0.29	0.22	0.43	0.43
Sat Flow, veh/h	1731	1189	516	1850	2018	1654	1922	3578	1679	3385	2844	373
Grp Volume(v), veh/h	82	0	261	230	162	16	123	861	169	134	377	382
Grp Sat Flow(s),veh/h/ln	1731	0	1706	1850	2018	1654	1922	1789	1679	1693	1600	1616
Q Serve(g_s), s	3.8	0.0	14.7	9.9	6.7	0.4	6.3	22.5	2.6	3.2	17.5	17.5
Cycle Q Clear(g_c), s	3.8	0.0	14.7	9.9	6.7	0.4	6.3	22.5	2.6	3.2	17.5	17.5
Prop In Lane	1.00		0.30	1.00		1.00	1.00		1.00	1.00		0.23
Lane Grp Cap(c), veh/h	357	0	317	302	472	387	154	1037	655	758	694	701
V/C Ratio(X)	0.23	0.00	0.82	0.76	0.34	0.04	0.80	0.83	0.26	0.18	0.54	0.54
Avail Cap(c_a), veh/h	440	0	529	302	626	513	192	1037	655	758	694	701
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.96	0.00	0.96	1.00	1.00	1.00	1.00	1.00	1.00	0.85	0.85	0.85
Uniform Delay (d), s/veh	30.5	0.0	39.1	29.4	31.9	9.9	45.2	33.2	7.3	31.4	21.0	21.0
Incr Delay (d2), s/veh	0.1	0.0	2.0	9.7	0.2	0.0	13.5	7.7	1.0	0.0	2.6	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.8	0.0	10.1	8.7	5.7	0.5	6.3	15.7	2.2	2.3	10.5	10.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.6	0.0	41.1	39.1	32.1	9.9	58.7	40.9	8.2	31.4	23.6	23.6
LnGrp LOS	C	A	D	D	C	A	E	D	A	C	C	C
Approach Vol, veh/h	343			408			1153			893		
Approach Delay, s/veh	38.6			35.2			38.0			24.7		
Approach LOS	D			D			D			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.0	23.6	27.4	34.0	10.2	28.4	13.0	48.4				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	10.0	31.0	10.0	29.0	10.0	31.0	10.0	29.0				
Max Q Clear Time (g_c+I1), s	11.9	16.7	5.2	24.5	5.8	8.7	8.3	19.5				
Green Ext Time (p_c), s	0.0	0.4	0.0	1.2	0.0	0.2	0.0	1.2				
Intersection Summary												
HCM 6th Ctrl Delay	33.4											
HCM 6th LOS	C											

Timings

6: SE Hiddenbrook Dr & SE 34th St

Vancouver Innovation Center

Phase 3 2038 AM Peak Hour Conditions

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	153	289	27	212	63	29	61	4
Future Volume (vph)	153	289	27	212	63	29	61	4
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA
Protected Phases	5	2	1	6		8		4
Permitted Phases					8		4	
Detector Phase	5	2	1	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	5.0	15.0	5.0	15.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	27.0	10.0	27.0	32.0	32.0	34.0	34.0
Total Split (s)	10.0	85.0	10.0	85.0	35.0	35.0	35.0	35.0
Total Split (%)	7.7%	65.4%	7.7%	65.4%	26.9%	26.9%	26.9%	26.9%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	Min	None	Min	None	None	None	None
Act Effct Green (s)	5.4	28.1	5.4	17.1	8.9	8.9	8.9	8.9
Actuated g/C Ratio	0.12	0.63	0.12	0.38	0.20	0.20	0.20	0.20
v/c Ratio	0.78	0.30	0.14	0.52	0.27	0.21	0.26	0.14
Control Delay	52.7	10.2	25.1	15.6	17.6	9.3	17.4	6.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.7	10.2	25.1	15.6	17.6	9.3	17.4	6.6
LOS	D	B	C	B	B	A	B	A
Approach Delay		24.2		16.3		13.2		12.8
Approach LOS		C		B		B		B

Intersection Summary

Cycle Length: 130

Actuated Cycle Length: 44.6

Natural Cycle: 75

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.78

Intersection Signal Delay: 19.1

Intersection LOS: B

Intersection Capacity Utilization 48.7%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 6: SE Hiddenbrook Dr & SE 34th St

		
10 s	85 s	35 s
		
10 s	85 s	35 s

HCM 6th Signalized Intersection Summary

6: SE Hiddenbrook Dr & SE 34th St

Vancouver Innovation Center
Phase 3 2038 AM Peak Hour Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	153	289	24	27	212	102	63	29	41	61	4	42
Future Volume (veh/h)	153	289	24	27	212	102	63	29	41	61	4	42
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1841	1900	1876	1802	1876	1832	1876	1876	1900	1900	1900
Adj Flow Rate, veh/h	170	321	24	30	236	92	70	32	3	68	4	3
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	4	0	0	5	0	3	0	0	0	0	0
Cap, veh/h	217	799	60	64	479	187	330	185	17	312	110	83
Arrive On Green	0.12	0.47	0.47	0.04	0.39	0.39	0.11	0.11	0.11	0.11	0.11	0.11
Sat Flow, veh/h	1810	1691	126	1787	1233	481	1380	1690	158	1395	1008	756
Grp Volume(v), veh/h	170	0	345	30	0	328	70	0	35	68	0	7
Grp Sat Flow(s),veh/h/ln	1810	0	1817	1787	0	1714	1380	0	1848	1395	0	1764
Q Serve(g_s), s	3.6	0.0	4.8	0.6	0.0	5.7	1.9	0.0	0.7	1.8	0.0	0.1
Cycle Q Clear(g_c), s	3.6	0.0	4.8	0.6	0.0	5.7	2.0	0.0	0.7	2.5	0.0	0.1
Prop In Lane	1.00		0.07	1.00		0.28	1.00		0.09	1.00		0.43
Lane Grp Cap(c), veh/h	217	0	859	64	0	665	330	0	202	312	0	193
V/C Ratio(X)	0.78	0.00	0.40	0.47	0.00	0.49	0.21	0.00	0.17	0.22	0.00	0.04
Avail Cap(c_a), veh/h	231	0	3706	228	0	3494	1234	0	1413	1226	0	1349
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.8	0.0	6.7	18.6	0.0	9.1	16.5	0.0	15.9	17.0	0.0	15.6
Incr Delay (d2), s/veh	13.6	0.0	0.1	2.0	0.0	0.2	0.1	0.0	0.1	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.6	0.0	1.9	0.5	0.0	2.5	1.0	0.0	0.5	1.0	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.4	0.0	6.8	20.6	0.0	9.3	16.6	0.0	16.0	17.1	0.0	15.6
LnGrp LOS	C	A	A	C	A	A	B	A	B	B	A	B
Approach Vol, veh/h	515			358			105			75		
Approach Delay, s/veh	14.6			10.2			16.4			17.0		
Approach LOS	B			B			B			B		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.4	23.5		9.3	9.7	20.2		9.3				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	5.0	80.0		30.0	5.0	80.0		30.0				
Max Q Clear Time (g_c+I1), s	2.6	6.8		4.5	5.6	7.7		4.0				
Green Ext Time (p_c), s	0.0	0.6		0.0	0.0	0.6		0.1				
Intersection Summary												
HCM 6th Ctrl Delay	13.5											
HCM 6th LOS	B											

Intersection						
Int Delay, s/veh	1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	450	11	7	310	29	17
Future Vol, veh/h	450	11	7	310	29	17
Conflicting Peds, #/hr	0	3	3	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	95	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	3	0	0	5	0	0
Mvmt Flow	529	13	8	365	34	20
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	545	0	920	539
Stage 1	-	-	-	-	539	-
Stage 2	-	-	-	-	381	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1034	-	303	546
Stage 1	-	-	-	-	589	-
Stage 2	-	-	-	-	695	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1031	-	300	544
Mov Cap-2 Maneuver	-	-	-	-	300	-
Stage 1	-	-	-	-	587	-
Stage 2	-	-	-	-	689	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	0.2		16.8		
HCM LOS	C					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	360	-	-	1031	-	
HCM Lane V/C Ratio	0.15	-	-	0.008	-	
HCM Control Delay (s)	16.8	-	-	8.5	-	
HCM Lane LOS	C	-	-	A	-	
HCM 95th %tile Q(veh)	0.5	-	-	0	-	

Timings 8: SE 176th Ave & SE 34th St

Vancouver Innovation Center
Phase 3 2038 AM Peak Hour Conditions

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	280	388	4	276	14	9	65	4
Future Volume (vph)	280	388	4	276	14	9	65	4
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	Perm	NA
Protected Phases	5	2	1	6		8		4
Permitted Phases	2		6		8		4	
Detector Phase	5	2	1	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	5.0	15.0	5.0	15.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	24.0	10.0	28.0	33.0	33.0	32.0	32.0
Total Split (s)	15.0	45.0	15.0	45.0	25.0	25.0	25.0	25.0
Total Split (%)	17.6%	52.9%	17.6%	52.9%	29.4%	29.4%	29.4%	29.4%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lead	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	Min	None	Min	None	None	None	None
Act Effct Green (s)	31.4	31.8	24.6	18.7	9.3	9.3	9.3	9.3
Actuated g/C Ratio	0.64	0.65	0.50	0.38	0.19	0.19	0.19	0.19
v/c Ratio	0.54	0.38	0.01	0.58	0.07	0.07	0.29	0.32
Control Delay	13.6	10.2	7.5	18.3	18.7	14.5	21.7	7.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.6	10.2	7.5	18.3	18.7	14.5	21.7	7.2
LOS	B	B	A	B	B	B	C	A
Approach Delay		11.7		18.2		16.4		12.4
Approach LOS		B		B		B		B

Intersection Summary

Cycle Length: 85

Actuated Cycle Length: 48.9

Natural Cycle: 75

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.58

Intersection Signal Delay: 13.7

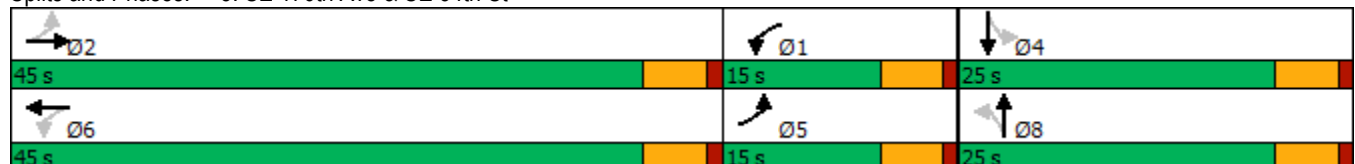
Intersection LOS: B

Intersection Capacity Utilization 56.4%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 8: SE 176th Ave & SE 34th St



HCM 6th Signalized Intersection Summary

8: SE 176th Ave & SE 34th St

Vancouver Innovation Center
Phase 3 2038 AM Peak Hour Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	280	388	2	4	276	59	14	9	8	65	4	109
Future Volume (veh/h)	280	388	2	4	276	59	14	9	8	65	4	109
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.98		1.00	0.98		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1767	1856	1900	1900	1811	1826	1900	1900	1530	1870	1900	1885
Adj Flow Rate, veh/h	329	456	2	5	325	56	16	11	0	76	5	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	9	3	0	0	6	5	0	0	25	2	0	1
Cap, veh/h	595	709	3	584	580	100	331	203	0	324	203	0
Arrive On Green	0.12	0.38	0.38	0.13	0.39	0.39	0.11	0.11	0.00	0.11	0.11	0.00
Sat Flow, veh/h	1682	1846	8	1810	1503	259	1407	1900	0	1378	1900	0
Grp Volume(v), veh/h	329	0	458	5	0	381	16	11	0	76	5	0
Grp Sat Flow(s),veh/h/ln	1682	0	1854	1810	0	1762	1407	1900	0	1378	1900	0
Q Serve(g_s), s	0.0	0.0	7.9	0.0	0.0	6.6	0.4	0.2	0.0	2.1	0.1	0.0
Cycle Q Clear(g_c), s	0.0	0.0	7.9	0.0	0.0	6.6	0.5	0.2	0.0	2.3	0.1	0.0
Prop In Lane	1.00		0.00	1.00		0.15	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	595	0	712	584	0	680	331	203	0	324	203	0
V/C Ratio(X)	0.55	0.00	0.64	0.01	0.00	0.56	0.05	0.05	0.00	0.23	0.02	0.00
Avail Cap(c_a), veh/h	816	0	1895	818	0	1801	900	971	0	881	971	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	12.4	0.0	9.9	9.4	0.0	9.4	15.9	15.7	0.0	16.7	15.7	0.0
Incr Delay (d2), s/veh	0.3	0.0	0.4	0.0	0.0	0.3	0.0	0.0	0.0	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.6	0.0	3.8	0.0	0.0	3.0	0.2	0.1	0.0	1.0	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.7	0.0	10.2	9.4	0.0	9.7	15.9	15.8	0.0	16.9	15.7	0.0
LnGrp LOS	B	A	B	A	A	A	B	B	A	B	B	A
Approach Vol, veh/h	787				386				27			
Approach Delay, s/veh	11.3				9.7				15.8			
Approach LOS	B				A				B			
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.9	20.0		9.2	9.9	20.1		9.2				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	10.0	40.0		20.0	10.0	40.0		20.0				
Max Q Clear Time (g_c+I1), s	2.0	9.9		4.3	2.0	8.6		2.5				
Green Ext Time (p_c), s	0.0	1.7		0.1	0.3	1.4		0.0				

Intersection Summary

HCM 6th Ctrl Delay	11.2
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

MOVEMENT SUMMARY

 **Site: 101 [SE 176 Avenue/ SE 29th Street Phase 3 (Site Folder: General)]**

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Phase 3
Site Category: (None)
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Queue	Back Of Queue	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]		[Total HV]					[Veh. veh	Dist]				mph
			veh/h	%	veh/h	%	v/c	sec			ft				
South: SE 176th Avenue															
3	L2	All MCs	5	0.0	5	0.0	0.392	7.2	LOS A	2.3	57.6	0.49	0.29	0.49	32.2
8	T1	All MCs	144	2.0	144	2.0	0.392	7.4	LOS A	2.3	57.6	0.49	0.29	0.49	32.8
18	R2	All MCs	279	0.0	279	0.0	0.392	7.2	LOS A	2.3	57.6	0.49	0.29	0.49	32.6
Approach			427	0.7	427	0.7	0.392	7.3	LOS A	2.3	57.6	0.49	0.29	0.49	32.6
East: SE 29th Street															
1	L2	All MCs	85	0.0	85	0.0	0.338	6.2	LOS A	1.9	48.5	0.40	0.21	0.40	32.2
6	T1	All MCs	259	0.0	259	0.0	0.338	6.2	LOS A	1.9	48.5	0.40	0.21	0.40	32.9
16	R2	All MCs	53	0.0	53	0.0	0.338	6.2	LOS A	1.9	48.5	0.40	0.21	0.40	32.6
Approach			396	0.0	396	0.0	0.338	6.2	LOS A	1.9	48.5	0.40	0.21	0.40	32.7
North: SE 176th Avenue															
7	L2	All MCs	26	88.0	26	88.0	0.322	18.6	LOS C	1.3	38.3	0.55	0.39	0.55	29.3
4	T1	All MCs	104	1.0	104	1.0	0.322	6.5	LOS A	1.3	38.3	0.55	0.39	0.55	32.3
14	R2	All MCs	122	18.0	122	18.0	0.322	8.3	LOS A	1.3	38.3	0.55	0.39	0.55	31.7
Approach			252	18.2	252	18.2	0.322	8.3	LOS A	1.3	38.3	0.55	0.39	0.55	31.7
West: SE 29th Street															
5	L2	All MCs	6	0.0	6	0.0	0.176	4.9	LOS A	0.8	20.5	0.41	0.25	0.41	33.3
2	T1	All MCs	167	0.0	167	0.0	0.176	4.9	LOS A	0.8	20.5	0.41	0.25	0.41	34.0
12	R2	All MCs	15	10.0	15	10.0	0.176	5.8	LOS A	0.8	20.5	0.41	0.25	0.41	33.5
Approach			188	0.8	188	0.8	0.176	4.9	LOS A	0.8	20.5	0.41	0.25	0.41	34.0
All Vehicles			1264	4.0	1264	4.0	0.392	6.9	LOS A	2.3	57.6	0.46	0.28	0.46	32.7

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: Sieglösch M1 implied by US HCM 6 Roundabout Capacity Model.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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Project: H:\27\27715 - VIC Implementation\005 - Master Plan Update TIA\Analysis\176th_29th With Project 2038 AM.sip9

Intersection												
Intersection Delay, s/veh	15.3											
Intersection LOS	C											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	12	272	34	76	314	14	50	88	56	0	69	10
Future Vol, veh/h	12	272	34	76	314	14	50	88	56	0	69	10
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	0	4	10	4	1	9	4	3	0	0	0	0
Mvmt Flow	13	299	37	84	345	15	55	97	62	0	76	11
Number of Lanes	1	1	0	1	1	0	1	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	2	2
HCM Control Delay	16.7	16.4	11.9	11.8
HCM LOS	C	C	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	100%	0%	100%	0%	100%	0%	0%
Vol Thru, %	0%	61%	0%	89%	0%	96%	87%
Vol Right, %	0%	39%	0%	11%	0%	4%	13%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	50	144	12	306	76	328	79
LT Vol	50	0	12	0	76	0	0
Through Vol	0	88	0	272	0	314	69
RT Vol	0	56	0	34	0	14	10
Lane Flow Rate	55	158	13	336	84	360	87
Geometry Grp	7	7	7	7	7	7	6
Degree of Util (X)	0.114	0.293	0.024	0.575	0.154	0.604	0.173
Departure Headway (Hd)	7.47	6.666	6.679	6.161	6.62	6.03	7.157
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	477	536	534	582	540	595	497
Service Time	5.249	4.445	4.45	3.931	4.386	3.795	5.253
HCM Lane V/C Ratio	0.115	0.295	0.024	0.577	0.156	0.605	0.175
HCM Control Delay	11.2	12.2	9.6	17	10.6	17.7	11.8
HCM Lane LOS	B	B	A	C	B	C	B
HCM 95th-tile Q	0.4	1.2	0.1	3.6	0.5	4	0.6

Timings
11: SE 164th Ave & SE 29th St

Vancouver Innovation Center
Phase 3 2038 AM Peak Hour Conditions

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	42	15	46	214	38	162	23	1081	145	792
Future Volume (vph)	42	15	46	214	38	162	23	1081	145	792
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Prot	NA
Protected Phases	5	2		1	6		7	4	3	8
Permitted Phases	2		2	6		6				
Detector Phase	5	2	2	1	6	6	7	4	3	8
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	15.0	5.0	15.0
Minimum Split (s)	9.5	39.0	39.0	9.5	38.0	38.0	10.0	32.0	10.0	32.0
Total Split (s)	10.0	25.0	25.0	14.0	29.0	29.0	17.0	44.0	37.0	64.0
Total Split (%)	8.3%	20.8%	20.8%	11.7%	24.2%	24.2%	14.2%	36.7%	30.8%	53.3%
Yellow Time (s)	3.5	4.0	4.0	3.5	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	5.0	5.0	4.5	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	None	C-Max
Act Effct Green (s)	15.9	12.0	12.0	23.3	15.2	15.2	5.7	68.0	13.8	80.1
Actuated g/C Ratio	0.13	0.10	0.10	0.19	0.13	0.13	0.05	0.57	0.12	0.67
v/c Ratio	0.22	0.08	0.16	0.90	0.17	0.48	0.28	0.40	0.75	0.26
Control Delay	39.2	47.9	1.2	79.3	46.3	11.2	64.3	7.8	72.3	9.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.2	47.9	1.2	79.3	46.3	11.2	64.3	7.8	72.3	9.8
LOS	D	D	A	E	D	B	E	A	E	A
Approach Delay		23.6			49.6			8.9		19.2
Approach LOS		C			D			A		B

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 4 (3%), Referenced to phase 8:SBT, Start of Green

Natural Cycle: 95

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.90

Intersection Signal Delay: 19.8

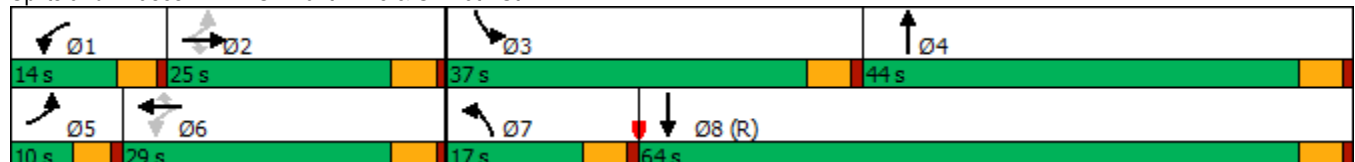
Intersection LOS: B

Intersection Capacity Utilization 61.6%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 11: SE 164th Ave & SE 29th St



HCM 6th Signalized Intersection Summary

11: SE 164th Ave & SE 29th St

Vancouver Innovation Center
Phase 3 2038 AM Peak Hour Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	15	46	214	38	162	23	1081	20	145	792	26
Future Volume (veh/h)	42	15	46	214	38	162	23	1081	20	145	792	26
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1900	1856	1870	1870	1900	1900	1870	1796	1885	1856	1826
Adj Flow Rate, veh/h	44	16	2	225	40	14	24	1138	20	153	834	25
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	0	3	2	2	0	0	2	7	1	3	5
Cap, veh/h	226	155	128	304	241	207	42	2141	38	180	2485	74
Arrive On Green	0.03	0.08	0.08	0.08	0.13	0.13	0.02	0.41	0.41	0.10	0.49	0.49
Sat Flow, veh/h	1767	1900	1572	1781	1870	1610	1810	5167	91	1795	5054	151
Grp Volume(v), veh/h	44	16	2	225	40	14	24	750	408	153	557	302
Grp Sat Flow(s),veh/h/ln	1767	1900	1572	1781	1870	1610	1810	1702	1854	1795	1689	1828
Q Serve(g_s), s	2.7	0.9	0.1	9.5	2.3	0.9	1.6	19.8	19.9	10.1	12.0	12.1
Cycle Q Clear(g_c), s	2.7	0.9	0.1	9.5	2.3	0.9	1.6	19.8	19.9	10.1	12.0	12.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.05	1.00		0.08
Lane Grp Cap(c), veh/h	226	155	128	304	241	207	42	1410	768	180	1660	899
V/C Ratio(X)	0.19	0.10	0.02	0.74	0.17	0.07	0.58	0.53	0.53	0.85	0.34	0.34
Avail Cap(c_a), veh/h	250	317	262	304	374	322	181	1410	768	479	1660	899
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.78	0.78	0.78	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.3	51.0	50.7	47.7	46.5	45.9	58.0	26.4	26.4	53.1	18.6	18.6
Incr Delay (d2), s/veh	0.4	0.1	0.0	9.3	0.1	0.1	3.6	1.1	2.1	4.3	0.5	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.2	0.8	0.1	4.9	2.0	0.7	1.4	12.1	13.2	8.2	8.2	8.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.8	51.1	50.7	57.0	46.7	46.0	61.7	27.5	28.5	57.3	19.1	19.6
LnGrp LOS	D	D	D	E	D	D	E	C	C	E	B	B
Approach Vol, veh/h	62			279			1182			1012		
Approach Delay, s/veh	49.4			54.9			28.5			25.0		
Approach LOS	D			D			C			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.0	14.8	17.0	54.7	8.3	20.4	7.8	64.0				
Change Period (Y+Rc), s	4.5	5.0	5.0	5.0	4.5	5.0	5.0	5.0				
Max Green Setting (Gmax), s	9.5	20.0	32.0	39.0	5.5	24.0	12.0	59.0				
Max Q Clear Time (g_c+I1), s	11.5	2.9	12.1	21.9	4.7	4.3	3.6	14.1				
Green Ext Time (p_c), s	0.0	0.0	0.1	4.6	0.0	0.1	0.0	3.7				
Intersection Summary												
HCM 6th Ctrl Delay	30.6											
HCM 6th LOS	C											

Timings
12: SE 164th Ave/SE164th Ave & SE 34th Street

Vancouver Innovation Center
Phase 3 2038 AM Peak Hour Conditions

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	28	60	165	293	121	99	111	936	449	155	813
Future Volume (vph)	28	60	165	293	121	99	111	936	449	155	813
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA
Protected Phases	5	2	7	1	6	3	7	4	1	3	8
Permitted Phases			2			6			4		
Detector Phase	5	2	7	1	6	3	7	4	1	3	8
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	20.0	5.0	5.0	20.0
Minimum Split (s)	10.0	33.0	10.0	10.0	32.0	10.0	10.0	31.0	10.0	10.0	28.0
Total Split (s)	20.0	33.0	20.0	25.0	38.0	17.0	20.0	45.0	25.0	17.0	42.0
Total Split (%)	16.7%	27.5%	16.7%	20.8%	31.7%	14.2%	16.7%	37.5%	20.8%	14.2%	35.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes		Yes		Yes	Yes	Yes	Yes		Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	None	None	C-Max
Act Effct Green (s)	6.4	8.2	23.0	20.0	23.8	46.4	11.8	56.2	81.2	17.6	62.0
Actuated g/C Ratio	0.05	0.07	0.19	0.17	0.20	0.39	0.10	0.47	0.68	0.15	0.52
v/c Ratio	0.39	0.56	0.53	1.11	0.36	0.16	0.72	0.64	0.42	0.66	0.53
Control Delay	68.3	70.9	31.3	129.9	45.0	4.8	74.0	28.0	2.1	66.0	16.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.3	70.9	31.3	129.9	45.0	4.8	74.0	28.0	2.1	66.0	16.8
LOS	E	E	C	F	D	A	E	C	A	E	B
Approach Delay		44.8			85.8			23.7			24.4
Approach LOS		D			F			C			C

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 15 (13%), Referenced to phase 8:SBT, Start of Green

Natural Cycle: 105

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.11

Intersection Signal Delay: 35.3

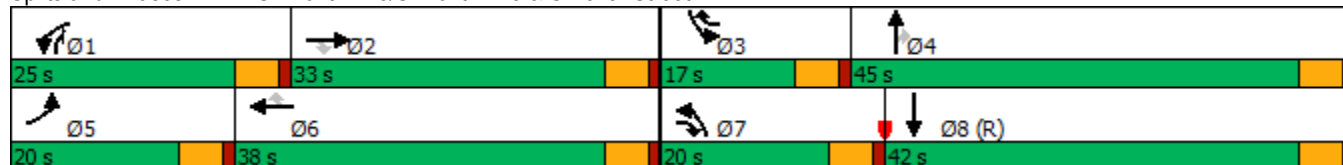
Intersection LOS: D

Intersection Capacity Utilization 70.2%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 12: SE 164th Ave/SE164th Ave & SE 34th Street



HCM 6th Signalized Intersection Summary

12: SE 164th Ave/SE164th Ave & SE 34th Street

Vancouver Innovation Center
Phase 3 2038 AM Peak Hour Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	28	60	165	293	121	99	111	936	449	155	813	37
Future Volume (veh/h)	28	60	165	293	121	99	111	936	449	155	813	37
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1565	1758	1803	1870	1885	1841	1791	1776	1746	1806	1761	1761
Adj Flow Rate, veh/h	31	67	124	326	134	30	123	1040	291	172	903	39
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	19	6	3	2	1	4	1	2	4	0	3	3
Cap, veh/h	40	159	270	297	434	515	147	1125	740	172	1326	57
Arrive On Green	0.03	0.09	0.09	0.17	0.23	0.23	0.09	0.33	0.33	0.10	0.35	0.35
Sat Flow, veh/h	1491	1758	1528	1781	1885	1560	1706	3375	1480	1720	3821	165
Grp Volume(v), veh/h	31	67	124	326	134	30	123	1040	291	172	532	410
Grp Sat Flow(s),veh/h/ln	1491	1758	1528	1781	1885	1560	1706	1687	1480	1720	1127	1732
Q Serve(g_s), s	2.5	4.3	8.7	20.0	7.1	1.6	8.5	35.6	14.7	12.0	24.2	24.3
Cycle Q Clear(g_c), s	2.5	4.3	8.7	20.0	7.1	1.6	8.5	35.6	14.7	12.0	24.2	24.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.10
Lane Grp Cap(c), veh/h	40	159	270	297	434	515	147	1125	740	172	782	601
V/C Ratio(X)	0.77	0.42	0.46	1.10	0.31	0.06	0.84	0.92	0.39	1.00	0.68	0.68
Avail Cap(c_a), veh/h	186	410	488	297	518	585	213	1125	740	172	782	601
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.93	0.93	0.93
Uniform Delay (d), s/veh	58.0	51.6	44.2	50.0	38.3	27.4	54.0	38.5	18.7	54.0	33.5	33.5
Incr Delay (d2), s/veh	11.1	0.7	0.5	81.1	0.1	0.0	11.8	13.9	1.6	66.2	4.4	5.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.9	3.4	5.9	22.8	5.8	1.0	7.3	23.0	8.9	12.8	11.1	16.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	69.2	52.2	44.7	131.1	38.4	27.4	65.8	52.5	20.2	120.2	37.9	39.3
LnGrp LOS	E	D	D	F	D	C	E	D	C	F	D	D
Approach Vol, veh/h	222				490				1454			
Approach Delay, s/veh	50.4				99.4				47.1			
Approach LOS	D				F				D			
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	25.0	15.9	17.0	45.0	8.2	32.7	15.4	46.6				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	20.0	28.0	12.0	40.0	15.0	33.0	15.0	37.0				
Max Q Clear Time (g_c+I1), s	22.0	10.7	14.0	37.6	4.5	9.1	10.5	26.3				
Green Ext Time (p_c), s	0.0	0.1	0.0	0.9	0.0	0.2	0.0	1.7				
Intersection Summary												
HCM 6th Ctrl Delay	56.5											
HCM 6th LOS	E											

Timings
1: SE 192nd & SE 15th St

Vancouver Innovation Center
Phase 3 2038 PM Peak Hour Conditions

									
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	116	91	40	82	242	84	1345	115	1486
Future Volume (vph)	116	91	40	82	242	84	1345	115	1486
Turn Type	Prot	NA	Prot	NA	pm+ov	Prot	NA	Prot	NA
Protected Phases	5	2	1	6	3	7	4	3	8
Permitted Phases					6				
Detector Phase	5	2	1	6	3	7	4	3	8
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	15.0	5.0	15.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	20.0	10.0	20.0
Total Split (s)	15.0	29.0	15.0	29.0	16.0	14.0	40.0	16.0	42.0
Total Split (%)	15.0%	29.0%	15.0%	29.0%	16.0%	14.0%	40.0%	16.0%	42.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	None	Max
Act Effct Green (s)	9.0	15.9	6.2	11.1	19.8	7.8	52.2	9.7	56.1
Actuated g/C Ratio	0.09	0.16	0.06	0.11	0.20	0.08	0.52	0.10	0.56
v/c Ratio	0.79	0.62	0.38	0.42	0.67	0.63	0.79	0.69	0.87
Control Delay	78.1	37.0	54.0	45.3	30.4	53.9	25.4	63.7	28.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	78.1	37.0	54.0	45.3	30.4	53.9	25.4	63.7	28.9
LOS	E	D	D	D	C	D	C	E	C
Approach Delay		52.7		36.4			27.0		31.2
Approach LOS		D		D			C		C

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 98 (98%), Referenced to phase 4:NBT, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.87

Intersection Signal Delay: 31.8

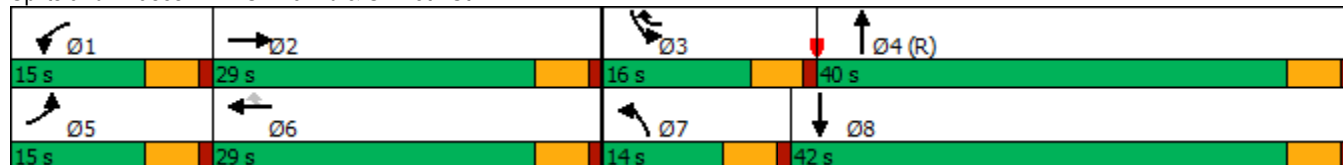
Intersection LOS: C

Intersection Capacity Utilization 81.9%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 1: SE 192nd & SE 15th St



HCM 6th Signalized Intersection Summary

1: SE 192nd & SE 15th St

Vancouver Innovation Center

Phase 3 2038 PM Peak Hour Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	116	91	97	40	82	242	84	1345	32	115	1486	133
Future Volume (veh/h)	116	91	97	40	82	242	84	1345	32	115	1486	133
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1885	1900	1900	1856	1900	1900	1870	1900	1900	1870	1870
Adj Flow Rate, veh/h	122	96	58	42	86	192	88	1416	32	121	1564	135
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	5	1	0	0	3	0	0	2	0	0	2	2
Cap, veh/h	150	204	123	62	248	344	122	1769	40	149	1699	145
Arrive On Green	0.09	0.19	0.19	0.03	0.13	0.13	0.09	0.66	0.66	0.11	0.68	0.68
Sat Flow, veh/h	1739	1100	664	1810	1856	1582	1810	3552	80	1810	3311	283
Grp Volume(v), veh/h	122	0	154	42	86	192	88	708	740	121	833	866
Grp Sat Flow(s),veh/h/ln	1739	0	1764	1810	1856	1582	1810	1777	1856	1810	1777	1818
Q Serve(g_s), s	6.9	0.0	7.8	2.3	4.2	10.8	4.7	28.6	28.7	6.5	39.6	41.3
Cycle Q Clear(g_c), s	6.9	0.0	7.8	2.3	4.2	10.8	4.7	28.6	28.7	6.5	39.6	41.3
Prop In Lane	1.00		0.38	1.00		1.00	1.00		0.04	1.00		0.16
Lane Grp Cap(c), veh/h	150	0	327	62	248	344	122	885	924	149	912	933
V/C Ratio(X)	0.82	0.00	0.47	0.67	0.35	0.56	0.72	0.80	0.80	0.81	0.91	0.93
Avail Cap(c_a), veh/h	174	0	423	181	445	512	163	885	924	199	912	933
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33	1.33	1.33	1.33
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	0.19	0.19	0.19	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.9	0.0	36.4	47.7	39.4	35.0	44.6	13.3	13.3	43.8	14.0	14.3
Incr Delay (d2), s/veh	19.5	0.0	0.4	4.6	0.3	0.5	1.1	1.5	1.5	12.5	15.1	16.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	6.7	0.0	5.9	2.0	3.5	7.3	3.1	9.8	10.2	5.9	19.5	20.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.4	0.0	36.8	52.4	39.7	35.5	45.7	14.8	14.8	56.3	29.1	30.8
LnGrp LOS	E	A	D	D	D	D	D	B	B	E	C	C
Approach Vol, veh/h		276			320			1536			1820	
Approach Delay, s/veh		49.0			38.8			16.6			31.7	
Approach LOS		D			D			B			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.4	23.5	13.2	54.8	13.6	18.4	11.7	56.3				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	10.0	24.0	11.0	35.0	10.0	24.0	9.0	37.0				
Max Q Clear Time (g_c+I1), s	4.3	9.8	8.5	30.7	8.9	12.8	6.7	43.3				
Green Ext Time (p_c), s	0.0	0.2	0.0	1.6	0.0	0.2	0.0	0.0				
Intersection Summary												
HCM 6th Ctrl Delay			27.6									
HCM 6th LOS			C									

Timings
2: SE 192nd Ave & SE 20th St

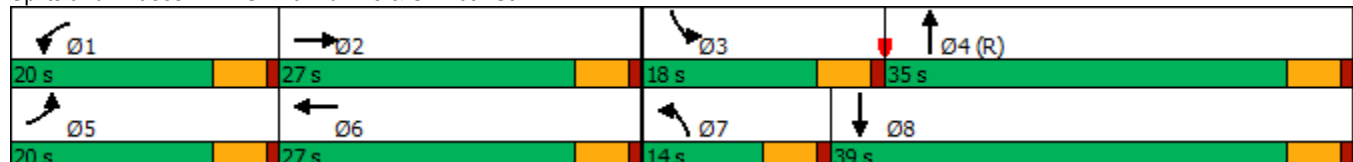
Vancouver Innovation Center
Phase 3 2038 PM Peak Hour Conditions

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	233	183	272	265	148	933	151	1103
Future Volume (vph)	233	183	272	265	148	933	151	1103
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	5	2	1	6	7	4	3	8
Permitted Phases								
Detector Phase	5	2	1	6	7	4	3	8
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	20.0	5.0	20.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	25.0	10.0	25.0
Total Split (s)	20.0	27.0	20.0	27.0	14.0	35.0	18.0	39.0
Total Split (%)	20.0%	27.0%	20.0%	27.0%	14.0%	35.0%	18.0%	39.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	Min	C-Max	None	Max
Act Effct Green (s)	11.3	23.5	12.2	24.4	9.5	32.6	11.7	34.8
Actuated g/C Ratio	0.11	0.24	0.12	0.24	0.10	0.33	0.12	0.35
v/c Ratio	0.62	0.66	0.66	0.88	0.91	1.03	0.75	1.15
Control Delay	49.0	40.2	49.5	56.7	105.2	54.2	61.7	106.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.0	40.2	49.5	56.7	105.2	54.2	61.7	106.8
LOS	D	D	D	E	F	D	E	F
Approach Delay		44.2		53.7		60.1		102.3
Approach LOS		D		D		E		F

Intersection Summary

Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 93 (93%), Referenced to phase 4:NBT, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.15	
Intersection Signal Delay: 72.9	Intersection LOS: E
Intersection Capacity Utilization 90.7%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 2: SE 192nd Ave & SE 20th St



HCM 6th Signalized Intersection Summary

2: SE 192nd Ave & SE 20th St

Vancouver Innovation Center
Phase 3 2038 PM Peak Hour Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	233	183	95	272	265	118	148	933	203	151	1103	237
Future Volume (veh/h)	233	183	95	272	265	118	148	933	203	151	1103	237
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1885	1900	1900	1870	1900	1885	1900	1885	1870	1885
Adj Flow Rate, veh/h	243	191	80	283	276	106	154	972	192	157	1149	228
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	1	0	0	2	0	1	0	1	2	1
Cap, veh/h	316	265	111	355	286	110	163	1146	226	189	1183	233
Arrive On Green	0.09	0.21	0.21	0.10	0.22	0.22	0.09	0.38	0.38	0.14	0.53	0.53
Sat Flow, veh/h	3510	1270	532	3510	1301	500	1810	2981	588	1795	2958	583
Grp Volume(v), veh/h	243	0	271	283	0	382	154	583	581	157	688	689
Grp Sat Flow(s),veh/h/ln	1755	0	1802	1755	0	1801	1810	1791	1778	1795	1777	1764
Q Serve(g_s), s	6.8	0.0	14.0	7.9	0.0	21.0	8.5	29.7	29.8	8.5	37.3	38.1
Cycle Q Clear(g_c), s	6.8	0.0	14.0	7.9	0.0	21.0	8.5	29.7	29.8	8.5	37.3	38.1
Prop In Lane	1.00		0.30	1.00		0.28	1.00		0.33	1.00		0.33
Lane Grp Cap(c), veh/h	316	0	376	355	0	396	163	689	684	189	711	706
V/C Ratio(X)	0.77	0.00	0.72	0.80	0.00	0.96	0.95	0.85	0.85	0.83	0.97	0.98
Avail Cap(c_a), veh/h	527	0	397	527	0	396	163	689	684	233	711	706
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.40	0.40	0.40
Uniform Delay (d), s/veh	44.5	0.0	36.8	43.9	0.0	38.6	45.3	28.1	28.1	42.1	22.8	22.9
Incr Delay (d2), s/veh	1.5	0.0	5.0	2.9	0.0	35.6	54.0	12.3	12.5	6.7	14.9	16.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.3	0.0	10.6	6.2	0.0	18.7	10.2	20.5	20.4	5.9	19.1	19.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.0	0.0	41.8	46.8	0.0	74.2	99.2	40.4	40.6	48.8	37.7	39.6
LnGrp LOS	D	A	D	D	A	E	F	D	D	D	D	D
Approach Vol, veh/h		514			665			1318			1534	
Approach Delay, s/veh		43.8			62.6			47.4			39.7	
Approach LOS		D			E			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.1	25.9	15.6	43.4	14.0	27.0	14.0	45.0				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	15.0	22.0	13.0	30.0	15.0	22.0	9.0	34.0				
Max Q Clear Time (g_c+I1), s	9.9	16.0	10.5	31.8	8.8	23.0	10.5	40.1				
Green Ext Time (p_c), s	0.3	0.5	0.0	0.0	0.2	0.0	0.0	0.0				
Intersection Summary												
HCM 6th Ctrl Delay			46.5									
HCM 6th LOS			D									

Intersection						
Int Delay, s/veh	0.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	3	4	1294	3	10	1337
Future Vol, veh/h	3	4	1294	3	10	1337
Conflicting Peds, #/hr	0	0	0	2	2	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	125	0	-	-	230	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	1	0	0	1
Mvmt Flow	3	4	1362	3	11	1407
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	2092	685	0	0	1367	0
Stage 1	1366	-	-	-	-	-
Stage 2	726	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.1	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	46	395	-	-	509	-
Stage 1	206	-	-	-	-	-
Stage 2	445	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	45	394	-	-	508	-
Mov Cap-2 Maneuver	45	-	-	-	-	-
Stage 1	206	-	-	-	-	-
Stage 2	435	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	47.1	0		0.1		
HCM LOS	E					
Minor Lane/Major Mvmt		NBT	NBRWBLn1	WBLn2	SBL	SBT
Capacity (veh/h)		-	-	45 394	508	-
HCM Lane V/C Ratio		-	-	0.07 0.011	0.021	-
HCM Control Delay (s)		-	-	91 14.2	12.2	-
HCM Lane LOS		-	-	F B	B	-
HCM 95th %tile Q(veh)		-	-	0.2 0	0.1	-

Timings
4: SE 192nd Ave & SE 29th St

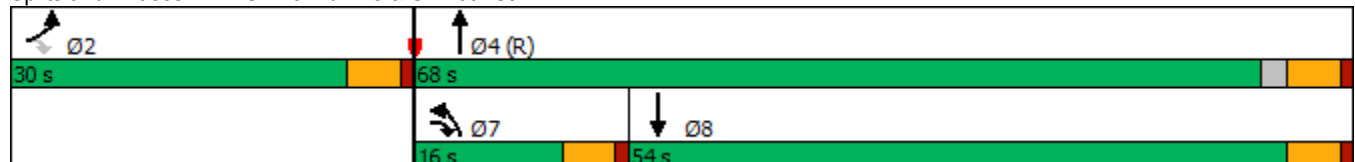
Vancouver Innovation Center
Phase 3 2038 PM Peak Hour Conditions

					
Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	131	45	55	1166	1239
Future Volume (vph)	131	45	55	1166	1239
Turn Type	Prot	pm+ov	Prot	NA	NA
Protected Phases	2	7	7	4	8
Permitted Phases	2				
Detector Phase	2	7	7	4	8
Switch Phase					
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	27.0	10.0	10.0	26.0	26.0
Total Split (s)	30.0	16.0	16.0	68.0	54.0
Total Split (%)	30.0%	16.0%	16.0%	68.0%	54.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead		Lead	Lag	
Lead-Lag Optimize?	Yes		Yes	Yes	
Recall Mode	Max	None	None	C-Max	None
Act Effct Green (s)	25.0	38.5	8.5	65.0	53.6
Actuated g/C Ratio	0.25	0.38	0.08	0.65	0.54
v/c Ratio	0.32	0.08	0.40	0.53	0.75
Control Delay	33.0	9.9	68.8	4.6	23.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	33.0	9.9	68.8	4.6	23.2
LOS	C	A	E	A	C
Approach Delay	27.1			7.5	23.2
Approach LOS	C			A	C

Intersection Summary

Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 45 (45%), Referenced to phase 4:NBT, Start of Green
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.75
 Intersection Signal Delay: 16.4
 Intersection LOS: B
 Intersection Capacity Utilization 61.3%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 4: SE 192nd Ave & SE 29th St



HCM 6th Signalized Intersection Summary

4: SE 192nd Ave & SE 29th St

Vancouver Innovation Center
Phase 3 2038 PM Peak Hour Conditions

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	131	45	55	1166	1239	101
Future Volume (veh/h)	131	45	55	1166	1239	101
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1826	1826	1885	1885	1826
Adj Flow Rate, veh/h	138	47	58	1227	1304	100
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	5	5	1	1	5
Cap, veh/h	442	453	74	2328	1880	144
Arrive On Green	0.25	0.25	0.08	1.00	0.56	0.56
Sat Flow, veh/h	1767	1547	1739	3676	3466	258
Grp Volume(v), veh/h	138	47	58	1227	691	713
Grp Sat Flow(s),veh/h/ln	1767	1547	1739	1791	1791	1839
Q Serve(g_s), s	6.4	2.2	3.3	0.0	27.8	28.0
Cycle Q Clear(g_c), s	6.4	2.2	3.3	0.0	27.8	28.0
Prop In Lane	1.00	1.00	1.00			0.14
Lane Grp Cap(c), veh/h	442	453	74	2328	998	1025
V/C Ratio(X)	0.31	0.10	0.78	0.53	0.69	0.70
Avail Cap(c_a), veh/h	442	453	191	2328	998	1025
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.49	0.49	1.00	1.00
Uniform Delay (d), s/veh	30.5	25.8	45.3	0.0	15.9	16.0
Incr Delay (d2), s/veh	1.8	0.5	8.6	0.4	2.1	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.2	4.1	2.7	0.2	16.0	16.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	32.3	26.3	53.9	0.4	18.0	18.1
LnGrp LOS	C	C	D	A	B	B
Approach Vol, veh/h	185			1285	1404	
Approach Delay, s/veh	30.8			2.8	18.0	
Approach LOS	C			A	B	
Timer - Assigned Phs	2		4		7	8
Phs Duration (G+Y+Rc), s	30.0		70.0		9.2	60.8
Change Period (Y+Rc), s	5.0		5.0		5.0	5.0
Max Green Setting (Gmax), s	25.0		63.0		11.0	49.0
Max Q Clear Time (g_c+I1), s	8.4		2.0		5.3	30.0
Green Ext Time (p_c), s	0.5		11.8		0.0	9.2
Intersection Summary						
HCM 6th Ctrl Delay			12.1			
HCM 6th LOS			B			

Timings
5: SE 192nd Ave & SE 34th St

Vancouver Innovation Center
Phase 3 2038 PM Peak Hour Conditions

										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	191	254	355	220	124	139	1006	204	221	968
Future Volume (vph)	191	254	355	220	124	139	1006	204	221	968
Turn Type	pm+pt	NA	pm+pt	NA	Perm	Prot	NA	pm+ov	Prot	NA
Protected Phases	5	2	1	6		7	4	1	3	8
Permitted Phases	2		6		6			4		
Detector Phase	5	2	1	6	6	7	4	1	3	8
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	20.0	5.0	5.0	20.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	25.0	10.0	10.0	25.0
Total Split (s)	14.0	32.0	19.0	37.0	37.0	13.0	34.0	19.0	15.0	36.0
Total Split (%)	14.0%	32.0%	19.0%	37.0%	37.0%	13.0%	34.0%	19.0%	15.0%	36.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	None	None	Max
Act Effct Green (s)	33.3	24.8	43.8	30.2	30.2	9.3	31.2	45.2	10.0	32.0
Actuated g/C Ratio	0.33	0.25	0.44	0.30	0.30	0.09	0.31	0.45	0.10	0.32
v/c Ratio	0.47	0.93	1.14	0.40	0.21	0.86	0.94	0.26	0.68	1.05
Control Delay	22.4	62.2	118.0	29.7	2.0	88.2	51.5	2.1	73.0	87.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.4	62.2	118.0	29.7	2.0	88.2	51.5	2.1	73.0	87.9
LOS	C	E	F	C	A	F	D	A	E	F
Approach Delay		49.4		69.6			47.8			85.4
Approach LOS		D		E			D			F

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 36 (36%), Referenced to phase 4:NBT, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.14

Intersection Signal Delay: 64.4

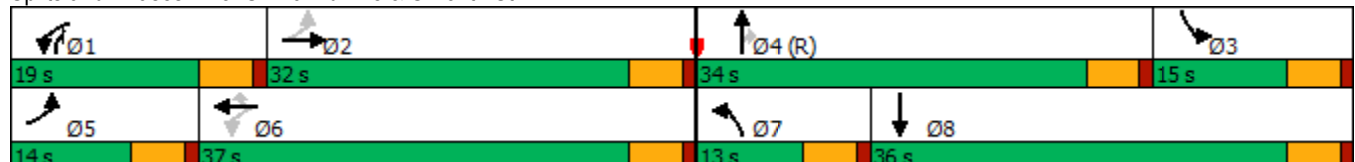
Intersection LOS: E

Intersection Capacity Utilization 97.8%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 5: SE 192nd Ave & SE 34th St



HCM 6th Signalized Intersection Summary

5: SE 192nd Ave & SE 34th St

Vancouver Innovation Center
Phase 3 2038 PM Peak Hour Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	191	254	145	355	220	124	139	1006	204	221	968	135
Future Volume (veh/h)	191	254	145	355	220	124	139	1006	204	221	968	135
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1817	1847	1817	2003	2003	2018	2018	1988	2003	1847	1832	1817
Adj Flow Rate, veh/h	201	267	131	374	232	32	146	1059	90	233	1019	130
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	0	2	1	1	0	0	2	1	0	1	2
Cap, veh/h	451	289	142	365	598	509	154	1095	726	415	1027	131
Arrive On Green	0.09	0.25	0.25	0.14	0.30	0.30	0.08	0.29	0.29	0.12	0.33	0.33
Sat Flow, veh/h	1731	1163	570	1908	2003	1705	1922	3777	1683	3413	3099	395
Grp Volume(v), veh/h	201	0	398	374	232	32	146	1059	90	233	572	577
Grp Sat Flow(s),veh/h/ln	1731	0	1733	1908	2003	1705	1922	1889	1683	1706	1741	1753
Q Serve(g_s), s	8.7	0.0	22.4	14.0	9.2	0.9	7.6	27.7	1.7	6.4	32.7	32.8
Cycle Q Clear(g_c), s	8.7	0.0	22.4	14.0	9.2	0.9	7.6	27.7	1.7	6.4	32.7	32.8
Prop In Lane	1.00		0.33	1.00		1.00	1.00		1.00	1.00		0.23
Lane Grp Cap(c), veh/h	451	0	431	365	598	509	154	1095	726	415	577	581
V/C Ratio(X)	0.45	0.00	0.92	1.02	0.39	0.06	0.95	0.97	0.12	0.56	0.99	0.99
Avail Cap(c_a), veh/h	451	0	468	365	641	546	154	1095	726	415	577	581
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.79	0.00	0.79	1.00	1.00	1.00	1.00	1.00	1.00	0.62	0.62	0.62
Uniform Delay (d), s/veh	24.9	0.0	36.7	25.2	27.8	11.7	45.8	35.0	6.3	41.4	33.3	33.3
Incr Delay (d2), s/veh	0.2	0.0	18.8	53.7	0.2	0.0	57.0	20.3	0.4	0.7	27.5	27.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	6.1	0.0	16.2	17.1	7.7	0.9	9.9	21.5	1.4	4.8	22.8	23.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.1	0.0	55.5	78.8	28.0	11.8	102.8	55.3	6.6	42.1	60.8	61.0
LnGrp LOS	C	A	E	F	C	B	F	E	A	D	E	E
Approach Vol, veh/h	599			638			1295			1382		
Approach Delay, s/veh	45.3			57.0			57.3			57.7		
Approach LOS	D			E			E			E		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	19.0	29.8	17.2	34.0	14.0	34.8	13.0	38.2				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	14.0	27.0	10.0	29.0	9.0	32.0	8.0	31.0				
Max Q Clear Time (g_c+I1), s	16.0	24.4	8.4	29.7	10.7	11.2	9.6	34.8				
Green Ext Time (p_c), s	0.0	0.3	0.0	0.0	0.0	0.4	0.0	0.0				

Intersection Summary

HCM 6th Ctrl Delay 55.6

HCM 6th LOS E

Notes

User approved pedestrian interval to be less than phase max green.

Timings

6: SE Hiddenbrook Dr & SE 34th St

Vancouver Innovation Center

Phase 3 2038 PM Peak Hour Conditions

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	74	307	37	334	71	17	250	37
Future Volume (vph)	74	307	37	334	71	17	250	37
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA
Protected Phases	5	2	1	6		8		4
Permitted Phases					8		4	
Detector Phase	5	2	1	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	5.0	15.0	5.0	15.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	30.0	10.0	30.0	32.0	32.0	34.0	34.0
Total Split (s)	10.0	85.0	10.0	85.0	35.0	35.0	35.0	35.0
Total Split (%)	7.7%	65.4%	7.7%	65.4%	26.9%	26.9%	26.9%	26.9%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	Min	None	Min	None	None	None	None
Act Effct Green (s)	5.2	29.0	5.2	24.0	17.8	17.8	17.8	17.8
Actuated g/C Ratio	0.08	0.46	0.08	0.38	0.28	0.28	0.28	0.28
v/c Ratio	0.53	0.49	0.27	0.77	0.26	0.11	0.71	0.38
Control Delay	47.8	15.9	37.5	24.9	21.5	10.3	32.9	8.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.8	15.9	37.5	24.9	21.5	10.3	32.9	8.1
LOS	D	B	D	C	C	B	C	A
Approach Delay		21.0		25.7		16.9		21.6
Approach LOS		C		C		B		C

Intersection Summary

Cycle Length: 130

Actuated Cycle Length: 62.6

Natural Cycle: 75

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.77

Intersection Signal Delay: 22.5

Intersection LOS: C

Intersection Capacity Utilization 68.0%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 6: SE Hiddenbrook Dr & SE 34th St

		
10 s	85 s	35 s
		
10 s	85 s	35 s

HCM 6th Signalized Intersection Summary

6: SE Hiddenbrook Dr & SE 34th St

Vancouver Innovation Center
Phase 3 2038 PM Peak Hour Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	74	307	80	37	334	167	71	17	32	250	37	173
Future Volume (veh/h)	74	307	80	37	334	167	71	17	32	250	37	173
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1870	1841	1832	1847	1876	1817	1876	1832	1841	1900	1900
Adj Flow Rate, veh/h	79	327	74	39	355	156	76	18	7	266	39	53
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	2	4	3	2	0	4	0	3	4	0	0
Cap, veh/h	126	548	124	75	419	184	424	323	126	487	183	249
Arrive On Green	0.07	0.37	0.37	0.04	0.35	0.35	0.25	0.25	0.25	0.25	0.25	0.25
Sat Flow, veh/h	1810	1474	333	1745	1213	533	1263	1285	500	1359	728	989
Grp Volume(v), veh/h	79	0	401	39	0	511	76	0	25	266	0	92
Grp Sat Flow(s),veh/h/ln	1810	0	1807	1745	0	1745	1263	0	1784	1359	0	1717
Q Serve(g_s), s	1.9	0.0	8.0	1.0	0.0	12.2	2.3	0.0	0.5	8.3	0.0	1.9
Cycle Q Clear(g_c), s	1.9	0.0	8.0	1.0	0.0	12.2	4.2	0.0	0.5	8.8	0.0	1.9
Prop In Lane	1.00		0.18	1.00		0.31	1.00		0.28	1.00		0.58
Lane Grp Cap(c), veh/h	126	0	672	75	0	603	424	0	448	487	0	432
V/C Ratio(X)	0.63	0.00	0.60	0.52	0.00	0.85	0.18	0.00	0.06	0.55	0.00	0.21
Avail Cap(c_a), veh/h	201	0	3217	194	0	3107	950	0	1191	1053	0	1146
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	20.3	0.0	11.4	21.1	0.0	13.6	15.0	0.0	12.8	16.1	0.0	13.3
Incr Delay (d2), s/veh	1.9	0.0	0.3	2.1	0.0	1.3	0.1	0.0	0.0	0.4	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.3	0.0	4.3	0.7	0.0	6.7	1.1	0.0	0.3	4.1	0.0	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.2	0.0	11.7	23.1	0.0	14.9	15.0	0.0	12.8	16.5	0.0	13.4
LnGrp LOS	C	A	B	C	A	B	B	A	B	B	A	B
Approach Vol, veh/h	480			550			101			358		
Approach Delay, s/veh	13.4			15.5			14.5			15.7		
Approach LOS	B			B			B			B		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.9	21.7		16.3	8.1	20.5		16.3				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	5.0	80.0		30.0	5.0	80.0		30.0				
Max Q Clear Time (g_c+I1), s	3.0	10.0		10.8	3.9	14.2		6.2				
Green Ext Time (p_c), s	0.0	0.3		0.1	0.0	0.5		0.0				
Intersection Summary												
HCM 6th Ctrl Delay	14.8											
HCM 6th LOS	B											

Intersection						
Int Delay, s/veh	0.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	454	32	16	563	18	7
Future Vol, veh/h	454	32	16	563	18	7
Conflicting Peds, #/hr	0	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	95	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	0	0	2	0	0
Mvmt Flow	499	35	18	619	20	8
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	534	0	1172	518
Stage 1	-	-	-	-	517	-
Stage 2	-	-	-	-	655	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1044	-	215	562
Stage 1	-	-	-	-	603	-
Stage 2	-	-	-	-	521	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1044	-	211	561
Mov Cap-2 Maneuver	-	-	-	-	211	-
Stage 1	-	-	-	-	603	-
Stage 2	-	-	-	-	512	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.2		20.7	
HCM LOS					C	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	256	-	-	1044	-	
HCM Lane V/C Ratio	0.107	-	-	0.017	-	
HCM Control Delay (s)	20.7	-	-	8.5	-	
HCM Lane LOS	C	-	-	A	-	
HCM 95th %tile Q(veh)	0.4	-	-	0.1	-	

Timings 8: SE 176th Ave & SE 34th St

Vancouver Innovation Center
Phase 3 2038 PM Peak Hour Conditions

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	207	387	18	443	10	10	93	21
Future Volume (vph)	207	387	18	443	10	10	93	21
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	Perm	NA
Protected Phases	5	2	1	6		8		4
Permitted Phases	2		6		8		4	
Detector Phase	5	2	1	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	5.0	15.0	5.0	15.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	24.0	10.0	28.0	33.0	33.0	32.0	32.0
Total Split (s)	15.0	45.0	15.0	45.0	25.0	25.0	25.0	25.0
Total Split (%)	17.6%	52.9%	17.6%	52.9%	29.4%	29.4%	29.4%	29.4%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lead	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	Min	None	Min	None	None	None	None
Act Effct Green (s)	35.3	34.1	29.8	23.4	10.2	10.2	10.2	10.2
Actuated g/C Ratio	0.61	0.59	0.52	0.41	0.18	0.18	0.18	0.18
v/c Ratio	0.52	0.40	0.04	0.81	0.06	0.06	0.41	0.48
Control Delay	18.1	11.0	7.5	25.4	23.4	18.4	28.2	9.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.1	11.0	7.5	25.4	23.4	18.4	28.2	9.7
LOS	B	B	A	C	C	B	C	A
Approach Delay		13.4		24.9		20.3		15.7
Approach LOS		B		C		C		B

Intersection Summary

Cycle Length: 85

Actuated Cycle Length: 57.6

Natural Cycle: 75

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.81

Intersection Signal Delay: 18.4

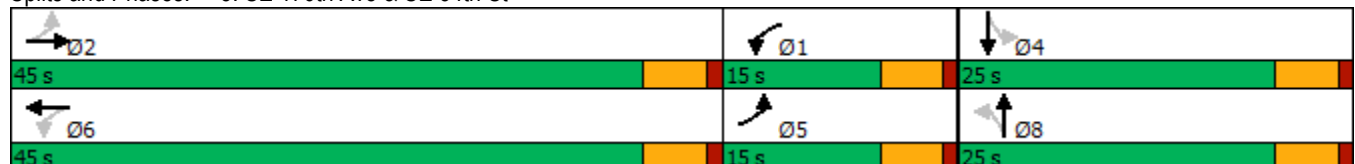
Intersection LOS: B

Intersection Capacity Utilization 66.8%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 8: SE 176th Ave & SE 34th St



HCM 6th Signalized Intersection Summary

8: SE 176th Ave & SE 34th St

Vancouver Innovation Center
Phase 3 2038 PM Peak Hour Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	207	387	13	18	443	120	10	10	6	93	21	174
Future Volume (veh/h)	207	387	13	18	443	120	10	10	6	93	21	174
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1885	1870	1900	1900	1885	1885	1900	1900	1900	1885	1900	1900
Adj Flow Rate, veh/h	225	421	13	20	482	115	11	11	0	101	23	18
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	2	0	0	1	1	0	0	0	1	0	0
Cap, veh/h	449	671	21	614	591	141	305	215	0	330	110	86
Arrive On Green	0.11	0.37	0.37	0.14	0.40	0.40	0.11	0.11	0.00	0.11	0.11	0.11
Sat Flow, veh/h	1795	1805	56	1810	1471	351	1382	1900	0	1409	975	763
Grp Volume(v), veh/h	225	0	434	20	0	597	11	11	0	101	0	41
Grp Sat Flow(s),veh/h/ln	1795	0	1860	1810	0	1822	1382	1900	0	1409	0	1738
Q Serve(g_s), s	0.0	0.0	7.7	0.0	0.0	11.8	0.3	0.2	0.0	2.8	0.0	0.9
Cycle Q Clear(g_c), s	0.0	0.0	7.7	0.0	0.0	11.8	1.2	0.2	0.0	3.0	0.0	0.9
Prop In Lane	1.00		0.03	1.00		0.19	1.00		0.00	1.00		0.44
Lane Grp Cap(c), veh/h	449	0	691	614	0	732	305	215	0	330	0	196
V/C Ratio(X)	0.50	0.00	0.63	0.03	0.00	0.82	0.04	0.05	0.00	0.31	0.00	0.21
Avail Cap(c_a), veh/h	689	0	1843	802	0	1806	834	941	0	869	0	861
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.4	0.0	10.4	9.4	0.0	10.8	16.8	16.0	0.0	17.3	0.0	16.3
Incr Delay (d2), s/veh	0.3	0.0	0.4	0.0	0.0	0.9	0.0	0.0	0.0	0.2	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.7	0.0	3.9	0.2	0.0	5.7	0.2	0.1	0.0	1.5	0.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.7	0.0	10.7	9.4	0.0	11.6	16.8	16.0	0.0	17.5	0.0	16.5
LnGrp LOS	B	A	B	A	A	B	B	B	A	B	A	B
Approach Vol, veh/h	659			617			22			142		
Approach Delay, s/veh	12.4			11.5			16.4			17.2		
Approach LOS	B			B			B			B		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.8	20.0		9.6	9.6	21.2		9.6				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	10.0	40.0		20.0	10.0	40.0		20.0				
Max Q Clear Time (g_c+I1), s	2.0	9.7		5.0	2.0	13.8		3.2				
Green Ext Time (p_c), s	0.0	1.6		0.2	0.2	2.4		0.0				

Intersection Summary

HCM 6th Ctrl Delay 12.6
HCM 6th LOS B

Notes

User approved pedestrian interval to be less than phase max green.

MOVEMENT SUMMARY

 **Site: 101 [SE 176 Avenue/ SE 29th Street Phase 3 (Site Folder: General)]**

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Phase 3
Site Category: (None)
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Queue	Back Of Queue	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] ft				mph
South: SE 176th Avenue															
3	L2	All MCs	16	15.0	16	15.0	0.336	7.9	LOS A	1.9	46.6	0.45	0.27	0.45	32.1
8	T1	All MCs	267	0.0	267	0.0	0.336	6.5	LOS A	1.9	46.6	0.45	0.27	0.45	33.2
18	R2	All MCs	87	0.0	87	0.0	0.336	6.5	LOS A	1.9	46.6	0.45	0.27	0.45	32.9
Approach			370	0.7	370	0.7	0.336	6.5	LOS A	1.9	46.6	0.45	0.27	0.45	33.1
East: SE 29th Street															
1	L2	All MCs	197	0.0	197	0.0	0.594	11.4	LOS B	6.0	151.1	0.71	0.58	0.94	29.8
6	T1	All MCs	354	0.0	354	0.0	0.594	11.4	LOS B	6.0	151.1	0.71	0.58	0.94	30.3
16	R2	All MCs	47	0.0	47	0.0	0.594	11.4	LOS B	6.0	151.1	0.71	0.58	0.94	30.1
Approach			598	0.0	598	0.0	0.594	11.4	LOS B	6.0	151.1	0.71	0.58	0.94	30.1
North: SE 176th Avenue															
7	L2	All MCs	51	0.0	51	0.0	0.325	8.5	LOS A	1.5	38.0	0.65	0.54	0.65	31.2
4	T1	All MCs	86	1.0	86	1.0	0.325	8.6	LOS A	1.5	38.0	0.65	0.54	0.65	31.8
14	R2	All MCs	113	0.0	113	0.0	0.325	8.5	LOS A	1.5	38.0	0.65	0.54	0.65	31.6
Approach			249	0.3	249	0.3	0.325	8.5	LOS A	1.5	38.0	0.65	0.54	0.65	31.6
West: SE 29th Street															
5	L2	All MCs	22	7.0	22	7.0	0.199	6.3	LOS A	0.9	23.1	0.48	0.34	0.48	32.6
2	T1	All MCs	139	0.0	139	0.0	0.199	5.5	LOS A	0.9	23.1	0.48	0.34	0.48	33.5
12	R2	All MCs	33	0.0	33	0.0	0.199	5.5	LOS A	0.9	23.1	0.48	0.34	0.48	33.2
Approach			194	0.8	194	0.8	0.199	5.6	LOS A	0.9	23.1	0.48	0.34	0.48	33.3
All Vehicles			1411	0.3	1411	0.3	0.594	8.8	LOS A	6.0	151.1	0.60	0.46	0.70	31.5

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: Sieglösch M1 implied by US HCM 6 Roundabout Capacity Model.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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Project: H:\27\27715 - VIC Implementation\005 - Master Plan Update TIA\Analysis\176th_29th With Project 2038 PM.sip9

Intersection	
Intersection Delay, s/veh	92.3
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	48	466	73	93	503	18	50	135	76	27	96	28
Future Vol, veh/h	48	466	73	93	503	18	50	135	76	27	96	28
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	3	0	0	1	0	7	0	1	0	4	1	8
Mvmt Flow	52	507	79	101	547	20	54	147	83	29	104	30
Number of Lanes	1	1	0	1	1	0	1	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	2	2
HCM Control Delay	127.4	107.5	19.7	19.8
HCM LOS	F	F	C	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	100%	0%	100%	0%	100%	0%	18%
Vol Thru, %	0%	64%	0%	86%	0%	97%	64%
Vol Right, %	0%	36%	0%	14%	0%	3%	19%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	50	211	48	539	93	521	151
LT Vol	50	0	48	0	93	0	27
Through Vol	0	135	0	466	0	503	96
RT Vol	0	76	0	73	0	18	28
Lane Flow Rate	54	229	52	586	101	566	164
Geometry Grp	7	7	7	7	7	7	6
Degree of Util (X)	0.136	0.525	0.117	1.208	0.224	1.171	0.413
Departure Headway (Hd)	9.732	8.962	8.503	7.834	8.481	7.92	9.988
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	371	406	424	469	426	464	363
Service Time	7.432	6.662	6.203	5.534	6.181	5.62	7.988
HCM Lane V/C Ratio	0.146	0.564	0.123	1.249	0.237	1.22	0.452
HCM Control Delay	14	21.1	12.3	137.6	13.6	124.3	19.8
HCM Lane LOS	B	C	B	F	B	F	C
HCM 95th-tile Q	0.5	3	0.4	21.6	0.8	19.8	2

Timings
11: SE 164th Ave & SE 29th St

Vancouver Innovation Center
Phase 3 2038 PM Peak Hour Conditions

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	89	51	51	287	38	193	42	1419	151	1304
Future Volume (vph)	89	51	51	287	38	193	42	1419	151	1304
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Prot	NA
Protected Phases	5	2		1	6		7	4	3	8
Permitted Phases	2		2	6		6				
Detector Phase	5	2	2	1	6	6	7	4	3	8
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	15.0	5.0	15.0
Minimum Split (s)	9.5	39.0	39.0	9.5	38.0	38.0	10.0	32.0	19.5	32.0
Total Split (s)	15.0	20.0	20.0	19.0	24.0	24.0	15.0	59.0	22.0	66.0
Total Split (%)	12.5%	16.7%	16.7%	15.8%	20.0%	20.0%	12.5%	49.2%	18.3%	55.0%
Yellow Time (s)	3.5	4.0	4.0	3.5	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	5.0	5.0	4.5	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	None	C-Max
Act Effct Green (s)	18.9	11.0	11.0	28.7	14.5	14.5	6.3	63.6	12.9	72.1
Actuated g/C Ratio	0.16	0.09	0.09	0.24	0.12	0.12	0.05	0.53	0.11	0.60
v/c Ratio	0.37	0.31	0.19	0.91	0.18	0.55	0.49	0.57	0.83	0.94
Control Delay	40.8	55.3	1.5	74.3	48.1	12.4	51.0	35.3	84.5	36.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.8	55.3	1.5	74.3	48.1	12.4	51.0	35.3	84.5	36.2
LOS	D	E	A	E	D	B	D	D	F	D
Approach Delay		34.1			49.3			35.7		41.1
Approach LOS		C			D			D		D

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 112 (93%), Referenced to phase 8:SBT, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.94

Intersection Signal Delay: 39.7

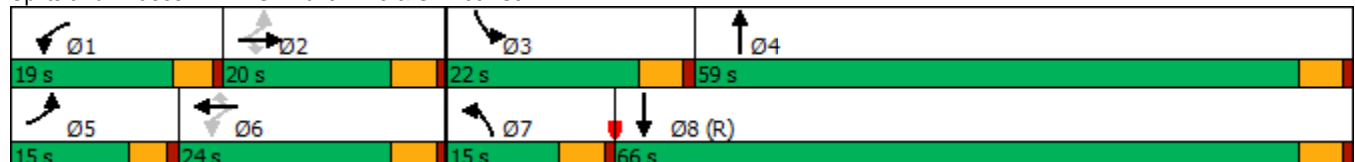
Intersection LOS: D

Intersection Capacity Utilization 72.0%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 11: SE 164th Ave & SE 29th St



HCM 6th Signalized Intersection Summary

11: SE 164th Ave & SE 29th St

Vancouver Innovation Center
Phase 3 2038 PM Peak Hour Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	89	51	51	287	38	193	42	1419	36	151	1304	46
Future Volume (veh/h)	89	51	51	287	38	193	42	1419	36	151	1304	46
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1870	1870	1870	1826	1870	1752	1885	1885	1900
Adj Flow Rate, veh/h	94	54	1	302	40	17	44	1494	36	159	1373	47
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	2	2	2	5	2	10	1	1	0
Cap, veh/h	287	163	137	355	273	230	56	2308	56	186	1794	61
Arrive On Green	0.06	0.09	0.09	0.12	0.15	0.15	0.03	0.45	0.45	0.10	0.52	0.52
Sat Flow, veh/h	1810	1900	1599	1781	1870	1579	1739	5128	124	1795	3443	118
Grp Volume(v), veh/h	94	54	1	302	40	17	44	992	538	159	677	743
Grp Sat Flow(s), veh/h/ln	1810	1900	1599	1781	1870	1579	1739	1702	1848	1795	848	1864
Q Serve(g_s), s	5.6	3.2	0.1	14.5	2.2	1.1	3.0	27.1	27.1	10.5	38.1	38.1
Cycle Q Clear(g_c), s	5.6	3.2	0.1	14.5	2.2	1.1	3.0	27.1	27.1	10.5	38.1	38.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.07	1.00		0.06
Lane Grp Cap(c), veh/h	287	163	137	355	273	230	56	1532	832	186	884	972
V/C Ratio(X)	0.33	0.33	0.01	0.85	0.15	0.07	0.79	0.65	0.65	0.86	0.77	0.77
Avail Cap(c_a), veh/h	335	238	200	355	296	250	145	1532	832	254	884	972
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.71	0.71	0.71	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.0	51.6	50.2	45.1	44.7	44.3	57.7	25.6	25.6	52.9	22.9	22.9
Incr Delay (d2), s/veh	0.7	0.4	0.0	17.6	0.1	0.0	6.3	1.5	2.8	14.6	6.3	5.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.7	2.8	0.0	6.6	1.9	0.8	2.5	15.3	16.8	9.2	12.5	23.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.7	52.0	50.2	62.7	44.8	44.3	64.0	27.1	28.4	67.5	29.1	28.6
LnGrp LOS	D	D	D	E	D	D	E	C	C	E	C	C
Approach Vol, veh/h		149			359			1574			1579	
Approach Delay, s/veh		48.7			59.9			28.6			32.8	
Approach LOS		D			E			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	19.0	15.3	17.4	59.0	11.8	22.5	8.9	67.5				
Change Period (Y+Rc), s	4.5	5.0	5.0	5.0	4.5	5.0	5.0	5.0				
Max Green Setting (Gmax), s	14.5	15.0	17.0	54.0	10.5	19.0	10.0	61.0				
Max Q Clear Time (g_c+I1), s	16.5	5.2	12.5	29.1	7.6	4.2	5.0	40.1				
Green Ext Time (p_c), s	0.0	0.0	0.0	1.7	0.0	0.0	0.0	1.5				

Intersection Summary

HCM 6th Ctrl Delay	34.3
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Timings
12: SE 164th Ave & SE 34th St

Vancouver Innovation Center
Phase 3 2038 PM Peak Hour Conditions

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	49	102	194	287	136	232	192	1220	405	162	1419
Future Volume (vph)	49	102	194	287	136	232	192	1220	405	162	1419
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA
Protected Phases	5	2	7	1	6	3	7	4	1	3	8
Permitted Phases			2			6			4		
Detector Phase	5	2	7	1	6	3	7	4	1	3	8
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	20.0	5.0	5.0	20.0
Minimum Split (s)	10.0	33.0	10.0	10.0	32.0	10.0	10.0	31.0	10.0	10.0	28.0
Total Split (s)	15.0	33.0	20.0	17.0	35.0	20.0	20.0	50.0	17.0	20.0	50.0
Total Split (%)	12.5%	27.5%	16.7%	14.2%	29.2%	16.7%	16.7%	41.7%	14.2%	16.7%	41.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	None	None	C-Max
Act Effct Green (s)	7.3	10.7	34.0	12.0	17.5	37.8	18.3	62.0	79.0	15.3	59.0
Actuated g/C Ratio	0.06	0.09	0.28	0.10	0.15	0.32	0.15	0.52	0.66	0.13	0.49
v/c Ratio	0.51	0.66	0.41	1.69	0.54	0.43	0.74	0.70	0.36	0.75	0.86
Control Delay	71.7	71.0	24.2	366.8	56.2	20.7	64.4	26.0	3.7	67.8	25.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	71.7	71.0	24.2	366.8	56.2	20.7	64.4	26.0	3.7	67.8	25.4
LOS	E	E	C	F	E	C	E	C	A	E	C
Approach Delay		44.8			179.6			25.1			29.6
Approach LOS		D			F			C			C

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 40 (33%), Referenced to phase 8:SBT, Start of Green

Natural Cycle: 145

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.69

Intersection Signal Delay: 51.1

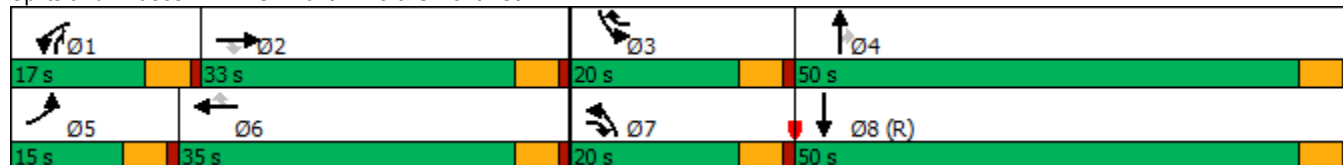
Intersection LOS: D

Intersection Capacity Utilization 80.6%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 12: SE 164th Ave & SE 34th St



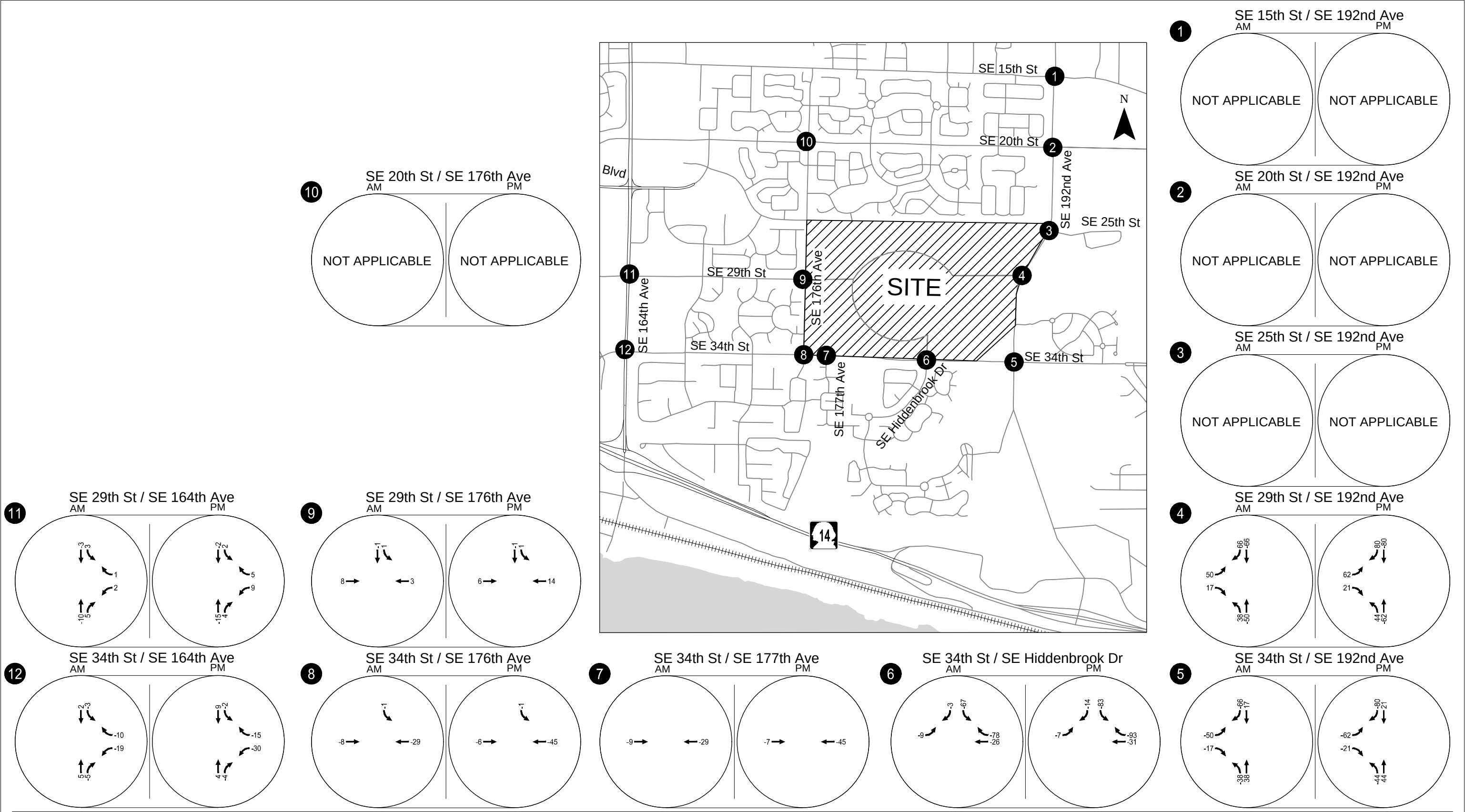
HCM 6th Signalized Intersection Summary

12: SE 164th Ave & SE 34th St

Vancouver Innovation Center
Phase 3 2038 PM Peak Hour Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	49	102	194	287	136	232	192	1220	405	162	1419	49
Future Volume (veh/h)	49	102	194	287	136	232	192	1220	405	162	1419	49
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1767	1826	1885	1870	1841	1856	1885	1870	1885	1870	1870	1841
Adj Flow Rate, veh/h	51	106	152	299	142	167	200	1271	291	169	1478	49
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	9	5	1	2	4	3	1	2	1	2	2	4
Cap, veh/h	64	183	359	178	298	427	224	1387	783	195	1552	51
Arrive On Green	0.04	0.10	0.10	0.10	0.16	0.16	0.13	0.39	0.39	0.11	0.38	0.38
Sat Flow, veh/h	1682	1826	1598	1781	1841	1572	1795	3554	1598	1781	4140	137
Grp Volume(v), veh/h	51	106	152	299	142	167	200	1271	291	169	868	659
Grp Sat Flow(s),veh/h/ln	1682	1826	1598	1781	1841	1572	1795	1777	1598	1781	1216	1846
Q Serve(g_s), s	3.6	6.7	9.8	12.0	8.4	10.4	13.2	40.7	13.6	11.2	41.6	41.6
Cycle Q Clear(g_c), s	3.6	6.7	9.8	12.0	8.4	10.4	13.2	40.7	13.6	11.2	41.6	41.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.07
Lane Grp Cap(c), veh/h	64	183	359	178	298	427	224	1387	783	195	912	692
V/C Ratio(X)	0.79	0.58	0.42	1.68	0.48	0.39	0.89	0.92	0.37	0.86	0.95	0.95
Avail Cap(c_a), veh/h	140	426	572	178	460	566	224	1387	783	223	912	692
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.30	0.30	0.30
Uniform Delay (d), s/veh	57.2	51.6	39.8	54.0	45.7	35.6	51.7	34.7	19.1	52.5	36.5	36.5
Incr Delay (d2), s/veh	7.9	1.1	0.3	328.6	0.4	0.2	31.8	11.0	1.4	8.6	8.4	10.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.0	5.5	6.9	34.2	6.9	7.1	12.4	26.0	8.9	7.5	16.1	23.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	65.1	52.7	40.1	382.6	46.1	35.8	83.5	45.7	20.4	61.2	44.9	46.9
LnGrp LOS	E	D	D	F	D	D	F	D	C	E	D	D
Approach Vol, veh/h	309			608			1762			1696		
Approach Delay, s/veh	48.6			208.8			45.8			47.3		
Approach LOS	D			F			D			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.0	17.0	18.2	51.8	9.6	24.4	20.0	50.0				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	12.0	28.0	15.0	45.0	10.0	30.0	15.0	45.0				
Max Q Clear Time (g_c+I1), s	14.0	11.8	13.2	42.7	5.6	12.4	15.2	43.6				
Green Ext Time (p_c), s	0.0	0.2	0.0	1.1	0.0	0.3	0.0	0.7				
Intersection Summary												
HCM 6th Ctrl Delay	69.2											
HCM 6th LOS	E											

H:\2715 - VIC Implementation\005 - Master Plan Update\TIA\report\figs\2715-Figures_Fig H-1.dwg Apr 05, 2023 3:43pm - ckleyhans Layout Tab: Fig H-1_Redistributed 29th



Redistributed Baseline Traffic Volumes - SE 29th St Eastern Connection
Weekday AM & PM Peak Hour
Vancouver, WA

Figure
H-1

Appendix I 2038 With-Project Phase 4
Buildout Operations
Worksheets

Timings

1: SE 192nd & SE 15th St

Vancouver Innovation Center

Phase 4 2038 AM Peak Hour Conditions

									
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	156	45	29	64	158	69	1025	89	920
Future Volume (vph)	156	45	29	64	158	69	1025	89	920
Turn Type	Prot	NA	Prot	NA	pm+ov	Prot	NA	Prot	NA
Protected Phases	5	2	1	6	3	7	4	3	8
Permitted Phases					6				
Detector Phase	5	2	1	6	3	7	4	3	8
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	15.0	5.0	15.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	20.0	10.0	20.0
Total Split (s)	20.0	29.0	20.0	29.0	14.0	15.0	37.0	14.0	36.0
Total Split (%)	20.0%	29.0%	20.0%	29.0%	14.0%	15.0%	37.0%	14.0%	36.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	None	Max
Act Effct Green (s)	12.4	18.7	5.9	10.2	22.0	7.7	50.6	8.8	53.7
Actuated g/C Ratio	0.12	0.19	0.06	0.10	0.22	0.08	0.51	0.09	0.54
v/c Ratio	0.80	0.31	0.32	0.38	0.43	0.57	0.66	0.69	0.63
Control Delay	67.8	18.5	53.4	45.3	18.0	60.6	24.5	69.1	22.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.8	18.5	53.4	45.3	18.0	60.6	24.5	69.1	22.9
LOS	E	B	D	D	B	E	C	E	C
Approach Delay		48.3		29.0			26.8		26.7
Approach LOS		D		C			C		C

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 9 (9%), Referenced to phase 4:NBT, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.80

Intersection Signal Delay: 29.0

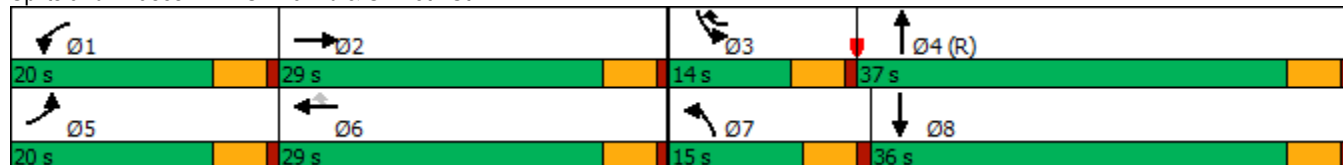
Intersection LOS: C

Intersection Capacity Utilization 61.6%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 1: SE 192nd & SE 15th St



HCM 6th Signalized Intersection Summary

1: SE 192nd & SE 15th St

Vancouver Innovation Center

Phase 4 2038 AM Peak Hour Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	156	45	57	29	64	158	69	1025	16	89	920	87
Future Volume (veh/h)	156	45	57	29	64	158	69	1025	16	89	920	87
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1900	1796	1781	1841	1870	1856	1841	1900	1737	1767	1856
Adj Flow Rate, veh/h	173	50	9	32	71	100	77	1139	17	99	1022	91
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	0	7	8	4	2	3	4	0	11	9	3
Cap, veh/h	204	258	46	50	145	242	109	1877	28	122	1697	151
Arrive On Green	0.12	0.16	0.16	0.03	0.08	0.08	0.12	1.00	1.00	0.07	0.54	0.54
Sat Flow, veh/h	1767	1567	282	1697	1841	1585	1767	3526	53	1654	3117	277
Grp Volume(v), veh/h	173	0	59	32	71	100	77	565	591	99	550	563
Grp Sat Flow(s),veh/h/ln	1767	0	1849	1697	1841	1585	1767	1749	1830	1654	1678	1716
Q Serve(g_s), s	9.6	0.0	2.8	1.9	3.7	5.7	4.2	0.0	0.0	5.9	22.2	22.2
Cycle Q Clear(g_c), s	9.6	0.0	2.8	1.9	3.7	5.7	4.2	0.0	0.0	5.9	22.2	22.2
Prop In Lane	1.00		0.15	1.00		1.00	1.00		0.03	1.00		0.16
Lane Grp Cap(c), veh/h	204	0	304	50	145	242	109	931	974	122	913	934
V/C Ratio(X)	0.85	0.00	0.19	0.64	0.49	0.41	0.70	0.61	0.61	0.81	0.60	0.60
Avail Cap(c_a), veh/h	265	0	444	254	442	498	177	931	974	149	913	934
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	0.71	0.71	0.71	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.4	0.0	36.1	48.0	44.2	38.3	42.9	0.0	0.0	45.6	15.4	15.5
Incr Delay (d2), s/veh	14.7	0.0	0.1	5.0	1.0	0.4	2.2	2.1	2.0	19.5	2.9	2.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	8.5	0.0	2.2	1.5	3.1	3.9	3.2	1.0	1.0	5.4	13.1	13.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.1	0.0	36.2	53.0	45.1	38.8	45.1	2.1	2.0	65.1	18.4	18.3
LnGrp LOS	E	A	D	D	D	D	D	A	A	E	B	B
Approach Vol, veh/h		232			203			1233			1212	
Approach Delay, s/veh		52.5			43.2			4.7			22.2	
Approach LOS		D			D			A			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.9	21.4	12.4	58.2	16.5	12.9	11.2	59.4				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	15.0	24.0	9.0	32.0	15.0	24.0	10.0	31.0				
Max Q Clear Time (g_c+I1), s	3.9	4.8	7.9	2.0	11.6	7.7	6.2	24.2				
Green Ext Time (p_c), s	0.0	0.1	0.0	2.3	0.0	0.2	0.0	1.6				
Intersection Summary												
HCM 6th Ctrl Delay			18.6									
HCM 6th LOS			B									

Timings
2: SE 20th St & SE 192nd Ave

Vancouver Innovation Center
Phase 4 2038 AM Peak Hour Conditions

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	166	182	182	165	50	827	59	793
Future Volume (vph)	166	182	182	165	50	827	59	793
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	5	2	1	6	7	4	3	8
Permitted Phases								
Detector Phase	5	2	1	6	7	4	3	8
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	20.0	5.0	20.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	25.0	10.0	25.0
Total Split (s)	17.0	29.0	17.0	29.0	15.0	39.0	15.0	39.0
Total Split (%)	17.0%	29.0%	17.0%	29.0%	15.0%	39.0%	15.0%	39.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	Min	C-Max	None	Max
Act Effct Green (s)	9.4	18.8	9.7	19.1	7.5	45.8	7.7	44.0
Actuated g/C Ratio	0.09	0.19	0.10	0.19	0.08	0.46	0.08	0.44
v/c Ratio	0.55	0.82	0.57	0.65	0.42	0.67	0.45	0.64
Control Delay	49.5	53.5	49.7	43.0	64.3	19.0	51.9	31.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.5	53.5	49.7	43.0	64.3	19.0	51.9	31.1
LOS	D	D	D	D	E	B	D	C
Approach Delay		52.0		46.0		21.2		32.4
Approach LOS		D		D		C		C

Intersection Summary

Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 98 (98%), Referenced to phase 4:NBT, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.82
 Intersection Signal Delay: 33.2
 Intersection Capacity Utilization 69.8%
 Analysis Period (min) 15

Intersection LOS: C
 ICU Level of Service C

Splits and Phases: 2: SE 20th St & SE 192nd Ave

 Ø1	 Ø2	 Ø3	 Ø4 (R)
17 s	29 s	15 s	39 s
 Ø5	 Ø6	 Ø7	 Ø8
17 s	29 s	15 s	39 s

HCM 6th Signalized Intersection Summary

2: SE 20th St & SE 192nd Ave

Vancouver Innovation Center
Phase 4 2038 AM Peak Hour Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	166	182	92	182	165	57	50	827	179	59	793	103
Future Volume (veh/h)	166	182	92	182	165	57	50	827	179	59	793	103
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1900	1841	1885	1885	1885	1811	1856	1841	1885	1811	1826
Adj Flow Rate, veh/h	175	192	77	192	174	46	53	871	172	62	835	100
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	0	4	1	1	1	6	3	4	1	6	5
Cap, veh/h	242	220	88	261	251	66	87	1496	295	80	1560	187
Arrive On Green	0.07	0.17	0.17	0.07	0.17	0.17	0.05	0.51	0.51	0.06	0.67	0.67
Sat Flow, veh/h	3428	1290	517	3483	1437	380	1725	2934	579	1795	3094	371
Grp Volume(v), veh/h	175	0	269	192	0	220	53	523	520	62	464	471
Grp Sat Flow(s),veh/h/ln	1714	0	1807	1742	0	1817	1725	1763	1751	1795	1721	1744
Q Serve(g_s), s	5.0	0.0	14.5	5.4	0.0	11.4	3.0	20.7	20.7	3.4	13.9	13.9
Cycle Q Clear(g_c), s	5.0	0.0	14.5	5.4	0.0	11.4	3.0	20.7	20.7	3.4	13.9	13.9
Prop In Lane	1.00		0.29	1.00		0.21	1.00		0.33	1.00		0.21
Lane Grp Cap(c), veh/h	242	0	308	261	0	318	87	899	893	80	868	879
V/C Ratio(X)	0.72	0.00	0.87	0.74	0.00	0.69	0.61	0.58	0.58	0.78	0.54	0.54
Avail Cap(c_a), veh/h	411	0	434	418	0	436	172	899	893	180	868	879
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.74	0.74	0.74
Uniform Delay (d), s/veh	45.5	0.0	40.4	45.3	0.0	38.7	46.5	17.1	17.1	46.5	10.4	10.4
Incr Delay (d2), s/veh	1.5	0.0	10.3	1.5	0.0	1.1	2.6	2.7	2.8	4.4	1.8	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.8	0.0	11.5	4.2	0.0	8.7	2.4	13.1	13.0	2.8	7.3	7.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.0	0.0	50.7	46.8	0.0	39.9	49.1	19.8	19.8	51.0	12.2	12.2
LnGrp LOS	D	A	D	D	A	D	D	B	B	D	B	B
Approach Vol, veh/h		444			412			1096			997	
Approach Delay, s/veh		49.2			43.1			21.3			14.6	
Approach LOS		D			D			C			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.5	22.1	9.5	56.0	12.1	22.5	10.0	55.4				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	12.0	24.0	10.0	34.0	12.0	24.0	10.0	34.0				
Max Q Clear Time (g_c+I1), s	7.4	16.5	5.4	22.7	7.0	13.4	5.0	15.9				
Green Ext Time (p_c), s	0.1	0.5	0.0	3.4	0.1	0.5	0.0	3.5				

Intersection Summary

HCM 6th Ctrl Delay 26.3
HCM 6th LOS C

Notes

User approved pedestrian interval to be less than phase max green.

Intersection						
Int Delay, s/veh	0.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	7	10	978	3	7	1041
Future Vol, veh/h	7	10	978	3	7	1041
Conflicting Peds, #/hr	0	0	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	125	0	-	-	230	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	20	4	67	0	7
Mvmt Flow	7	11	1029	3	7	1096
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1594	517	0	0	1033	0
Stage 1	1032	-	-	-	-	-
Stage 2	562	-	-	-	-	-
Critical Hdwy	6.8	7.3	-	-	4.1	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.5	-	-	2.2	-
Pot Cap-1 Maneuver	100	459	-	-	681	-
Stage 1	309	-	-	-	-	-
Stage 2	540	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	99	459	-	-	680	-
Mov Cap-2 Maneuver	99	-	-	-	-	-
Stage 1	309	-	-	-	-	-
Stage 2	535	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	25.9	0	0.1			
HCM LOS	D					
Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT		
Capacity (veh/h)	-	- 99 459	680	-		
HCM Lane V/C Ratio	-	- 0.074 0.023	0.011	-		
HCM Control Delay (s)	-	- 44.3 13	10.4	-		
HCM Lane LOS	-	- E B	B	-		
HCM 95th %tile Q(veh)	-	- 0.2 0.1	0	-		

Timings
4: SE 192nd Ave & SE 29th St

Vancouver Innovation Center
Phase 4 2038 AM Peak Hour Conditions

					
Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	215	100	109	766	781
Future Volume (vph)	215	100	109	766	781
Turn Type	Prot	pt+ov	Prot	NA	NA
Protected Phases	2	2 7	7	4	8
Permitted Phases					
Detector Phase	2	2 7	7	4	8
Switch Phase					
Minimum Initial (s)	5.0		5.0	5.0	5.0
Minimum Split (s)	27.0		10.0	26.0	26.0
Total Split (s)	35.0		15.0	65.0	50.0
Total Split (%)	35.0%		15.0%	65.0%	50.0%
Yellow Time (s)	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0		5.0	5.0	5.0
Lead/Lag			Lead	Lag	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None		None	C-Max	Max
Act Effct Green (s)	18.6	35.4	11.9	71.4	54.6
Actuated g/C Ratio	0.19	0.35	0.12	0.71	0.55
v/c Ratio	0.72	0.17	0.57	0.33	0.61
Control Delay	50.5	5.0	28.9	14.1	27.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	50.5	5.0	28.9	14.1	27.0
LOS	D	A	C	B	C
Approach Delay	36.1			15.9	27.0
Approach LOS	D			B	C

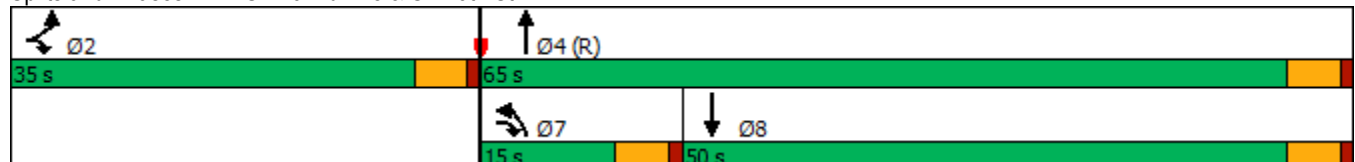
Intersection Summary

Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 85 (85%), Referenced to phase 4:NBT, Start of Green
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.72
 Intersection Signal Delay: 23.9
 Intersection Capacity Utilization 60.6%
 Analysis Period (min) 15

Intersection LOS: C

ICU Level of Service B

Splits and Phases: 4: SE 192nd Ave & SE 29th St



HCM 6th Signalized Intersection Summary 4: SE 192nd Ave & SE 29th St

Vancouver Innovation Center
Phase 4 2038 AM Peak Hour Conditions

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	215	100	109	766	781	267
Future Volume (veh/h)	215	100	109	766	781	267
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1811	1826	1826	1826	1811	1767
Adj Flow Rate, veh/h	226	39	115	806	822	252
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	6	5	5	5	6	9
Cap, veh/h	266	364	141	2587	1595	489
Arrive On Green	0.15	0.15	0.16	1.00	0.61	0.61
Sat Flow, veh/h	1725	1547	1739	3561	2684	795
Grp Volume(v), veh/h	226	39	115	806	545	529
Grp Sat Flow(s),veh/h/ln	1725	1547	1739	1735	1721	1668
Q Serve(g_s), s	12.8	2.0	6.4	0.0	17.9	17.9
Cycle Q Clear(g_c), s	12.8	2.0	6.4	0.0	17.9	17.9
Prop In Lane	1.00	1.00	1.00			0.48
Lane Grp Cap(c), veh/h	266	364	141	2587	1058	1026
V/C Ratio(X)	0.85	0.11	0.82	0.31	0.52	0.52
Avail Cap(c_a), veh/h	517	589	174	2587	1058	1026
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.79	0.79	1.00	1.00
Uniform Delay (d), s/veh	41.2	30.0	41.2	0.0	10.8	10.9
Incr Delay (d2), s/veh	7.4	0.1	17.6	0.2	1.8	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	9.9	3.5	5.7	0.2	10.6	10.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	48.6	30.1	58.8	0.2	12.6	12.7
LnGrp LOS	D	C	E	A	B	B
Approach Vol, veh/h	265			921	1074	
Approach Delay, s/veh	45.9			7.6	12.7	
Approach LOS	D			A	B	
Timer - Assigned Phs	2		4		7	8
Phs Duration (G+Y+Rc), s	20.4		79.6		13.1	66.5
Change Period (Y+Rc), s	5.0		5.0		5.0	5.0
Max Green Setting (Gmax), s	30.0		60.0		10.0	45.0
Max Q Clear Time (g_c+I1), s	14.8		2.0		8.4	19.9
Green Ext Time (p_c), s	0.7		6.3		0.0	7.5
Intersection Summary						
HCM 6th Ctrl Delay			14.5			
HCM 6th LOS			B			

Timings
5: SE 192nd Ave & SE 34th St

Vancouver Innovation Center
Phase 4 2038 AM Peak Hour Conditions

										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	74	173	207	154	95	121	785	349	131	624
Future Volume (vph)	74	173	207	154	95	121	785	349	131	624
Turn Type	pm+pt	NA	pm+pt	NA	Perm	Prot	NA	pm+ov	Prot	NA
Protected Phases	5	2	1	6		7	4	1	3	8
Permitted Phases	2		6		6			4		
Detector Phase	5	2	1	6	6	7	4	1	3	8
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	20.0	5.0	5.0	20.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	25.0	10.0	10.0	25.0
Total Split (s)	15.0	36.0	15.0	36.0	36.0	15.0	34.0	15.0	15.0	34.0
Total Split (%)	15.0%	36.0%	15.0%	36.0%	36.0%	15.0%	34.0%	15.0%	15.0%	34.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	None	None	Max
Act Effct Green (s)	27.6	20.9	34.0	26.0	26.0	10.0	39.3	49.1	10.0	39.3
Actuated g/C Ratio	0.28	0.21	0.34	0.26	0.26	0.10	0.39	0.49	0.10	0.39
v/c Ratio	0.22	0.82	0.85	0.34	0.19	0.73	0.66	0.40	0.43	0.63
Control Delay	21.3	49.9	52.2	31.6	0.8	66.8	29.6	2.4	41.6	24.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.3	49.9	52.2	31.6	0.8	66.8	29.6	2.4	41.6	24.3
LOS	C	D	D	C	A	E	C	A	D	C
Approach Delay		44.0		34.5			25.6			27.0
Approach LOS		D		C			C			C

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 40 (40%), Referenced to phase 4:NBT, Start of Green

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.85

Intersection Signal Delay: 29.7

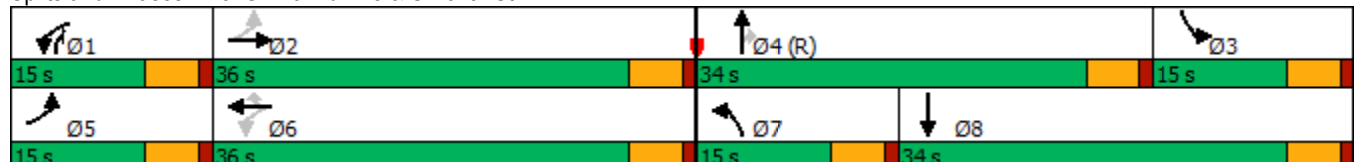
Intersection LOS: C

Intersection Capacity Utilization 72.2%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 5: SE 192nd Ave & SE 34th St



HCM 6th Signalized Intersection Summary

5: SE 192nd Ave & SE 34th St

Vancouver Innovation Center
Phase 4 2038 AM Peak Hour Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	74	173	112	207	154	95	121	785	349	131	624	89
Future Volume (veh/h)	74	173	112	207	154	95	121	785	349	131	624	89
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1817	1803	1847	1943	2018	1988	2018	1883	1988	1832	1684	1817
Adj Flow Rate, veh/h	82	192	94	230	171	19	134	872	165	146	693	88
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	3	0	5	0	2	0	9	2	1	11	2
Cap, veh/h	367	228	111	300	501	411	166	1037	655	712	1182	150
Arrive On Green	0.05	0.20	0.20	0.10	0.25	0.25	0.09	0.29	0.29	0.21	0.41	0.41
Sat Flow, veh/h	1731	1140	558	1850	2018	1655	1922	3578	1679	3385	2856	362
Grp Volume(v), veh/h	82	0	286	230	171	19	134	872	165	146	388	393
Grp Sat Flow(s),veh/h/ln	1731	0	1698	1850	2018	1655	1922	1789	1679	1693	1600	1618
Q Serve(g_s), s	3.7	0.0	16.2	9.7	7.0	0.5	6.8	22.9	2.7	3.6	18.8	18.8
Cycle Q Clear(g_c), s	3.7	0.0	16.2	9.7	7.0	0.5	6.8	22.9	2.7	3.6	18.8	18.8
Prop In Lane	1.00		0.33	1.00		1.00	1.00		1.00	1.00		0.22
Lane Grp Cap(c), veh/h	367	0	339	300	501	411	166	1037	655	712	662	670
V/C Ratio(X)	0.22	0.00	0.84	0.77	0.34	0.05	0.81	0.84	0.25	0.21	0.59	0.59
Avail Cap(c_a), veh/h	451	0	526	300	626	513	192	1037	655	712	662	670
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.96	0.00	0.96	1.00	1.00	1.00	1.00	1.00	1.00	0.79	0.79	0.79
Uniform Delay (d), s/veh	29.5	0.0	38.5	28.6	30.9	9.9	44.9	33.3	7.2	32.6	22.7	22.7
Incr Delay (d2), s/veh	0.1	0.0	4.1	10.3	0.1	0.0	16.8	8.2	0.9	0.0	3.0	3.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.7	0.0	11.1	8.6	5.9	0.6	7.1	16.0	2.3	2.6	11.1	11.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.6	0.0	42.6	38.9	31.0	9.9	61.7	41.5	8.1	32.6	25.7	25.7
LnGrp LOS	C	A	D	D	C	A	E	D	A	C	C	C
Approach Vol, veh/h		368			420			1171			927	
Approach Delay, s/veh		39.7			34.4			39.1			26.8	
Approach LOS		D			C			D			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.0	25.0	26.0	34.0	10.1	29.8	13.6	46.4				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	10.0	31.0	10.0	29.0	10.0	31.0	10.0	29.0				
Max Q Clear Time (g_c+I1), s	11.7	18.2	5.6	24.9	5.7	9.0	8.8	20.8				
Green Ext Time (p_c), s	0.0	0.4	0.0	1.1	0.0	0.3	0.0	1.2				
Intersection Summary												
HCM 6th Ctrl Delay			34.5									
HCM 6th LOS			C									

Timings

6: SE Hiddenbrook Dr & SE 34th St

Vancouver Innovation Center

Phase 4 2038 AM Peak Hour Conditions

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	169	288	27	212	63	57	86	29
Future Volume (vph)	169	288	27	212	63	57	86	29
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA
Protected Phases	5	2	1	6		8		4
Permitted Phases					8		4	
Detector Phase	5	2	1	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	5.0	15.0	5.0	15.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	27.0	10.0	27.0	32.0	32.0	34.0	34.0
Total Split (s)	10.0	85.0	10.0	85.0	35.0	35.0	35.0	35.0
Total Split (%)	7.7%	65.4%	7.7%	65.4%	26.9%	26.9%	26.9%	26.9%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	Min	None	Min	None	None	None	None
Act Effct Green (s)	5.4	28.3	5.4	17.3	9.6	9.6	9.6	9.6
Actuated g/C Ratio	0.12	0.62	0.12	0.38	0.21	0.21	0.21	0.21
v/c Ratio	0.88	0.31	0.14	0.55	0.26	0.28	0.35	0.20
Control Delay	67.2	10.4	25.7	16.2	17.4	13.8	19.0	9.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.2	10.4	25.7	16.2	17.4	13.8	19.0	9.0
LOS	E	B	C	B	B	B	B	A
Approach Delay		30.4		16.9		15.2		14.5
Approach LOS		C		B		B		B

Intersection Summary

Cycle Length: 130

Actuated Cycle Length: 45.5

Natural Cycle: 75

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.88

Intersection Signal Delay: 21.9

Intersection LOS: C

Intersection Capacity Utilization 51.9%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 6: SE Hiddenbrook Dr & SE 34th St

		
10 s	85 s	35 s
		
10 s	85 s	35 s

HCM 6th Signalized Intersection Summary

6: SE Hiddenbrook Dr & SE 34th St

Vancouver Innovation Center
Phase 4 2038 AM Peak Hour Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	169	288	24	27	212	120	63	57	41	86	29	42
Future Volume (veh/h)	169	288	24	27	212	120	63	57	41	86	29	42
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1841	1900	1876	1802	1876	1832	1876	1876	1900	1900	1900
Adj Flow Rate, veh/h	188	320	24	30	236	107	70	63	22	96	32	4
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	4	0	0	5	0	3	0	0	0	0	0
Cap, veh/h	217	761	57	63	428	194	359	207	72	324	257	32
Arrive On Green	0.12	0.45	0.45	0.04	0.37	0.37	0.16	0.16	0.16	0.16	0.16	0.16
Sat Flow, veh/h	1810	1691	127	1787	1172	532	1344	1329	464	1333	1656	207
Grp Volume(v), veh/h	188	0	344	30	0	343	70	0	85	96	0	36
Grp Sat Flow(s),veh/h/ln	1810	0	1817	1787	0	1704	1344	0	1793	1333	0	1863
Q Serve(g_s), s	4.3	0.0	5.4	0.7	0.0	6.7	2.0	0.0	1.8	2.9	0.0	0.7
Cycle Q Clear(g_c), s	4.3	0.0	5.4	0.7	0.0	6.7	2.7	0.0	1.8	4.6	0.0	0.7
Prop In Lane	1.00		0.07	1.00		0.31	1.00		0.26	1.00		0.11
Lane Grp Cap(c), veh/h	217	0	818	63	0	623	359	0	279	324	0	289
V/C Ratio(X)	0.87	0.00	0.42	0.48	0.00	0.55	0.19	0.00	0.31	0.30	0.00	0.12
Avail Cap(c_a), veh/h	217	0	3484	214	0	3267	1116	0	1289	1075	0	1339
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	18.0	0.0	7.8	19.8	0.0	10.5	16.3	0.0	15.6	17.7	0.0	15.2
Incr Delay (d2), s/veh	27.9	0.0	0.1	2.1	0.0	0.3	0.1	0.0	0.2	0.2	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.6	0.0	2.4	0.5	0.0	3.2	1.0	0.0	1.2	1.4	0.0	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.9	0.0	7.9	21.8	0.0	10.8	16.4	0.0	15.9	17.9	0.0	15.2
LnGrp LOS	D	A	A	C	A	B	B	A	B	B	A	B
Approach Vol, veh/h	532			373			155			132		
Approach Delay, s/veh	21.4			11.7			16.1			17.1		
Approach LOS	C			B			B			B		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.5	23.8		11.5	10.0	20.2		11.5				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	5.0	80.0		30.0	5.0	80.0		30.0				
Max Q Clear Time (g_c+I1), s	2.7	7.4		6.6	6.3	8.7		4.7				
Green Ext Time (p_c), s	0.0	0.6		0.1	0.0	0.7		0.2				
Intersection Summary												
HCM 6th Ctrl Delay	17.2											
HCM 6th LOS	B											

Intersection						
Int Delay, s/veh	1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	465	11	7	310	29	17
Future Vol, veh/h	465	11	7	310	29	17
Conflicting Peds, #/hr	0	3	3	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	95	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	3	0	0	5	0	0
Mvmt Flow	547	13	8	365	34	20
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	563	0	938	557
Stage 1	-	-	-	-	557	-
Stage 2	-	-	-	-	381	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1019	-	296	534
Stage 1	-	-	-	-	578	-
Stage 2	-	-	-	-	695	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1016	-	293	532
Mov Cap-2 Maneuver	-	-	-	-	293	-
Stage 1	-	-	-	-	576	-
Stage 2	-	-	-	-	689	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.2		17.1	
HCM LOS	C					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	351	-	-	1016	-	
HCM Lane V/C Ratio	0.154	-	-	0.008	-	
HCM Control Delay (s)	17.1	-	-	8.6	-	
HCM Lane LOS	C	-	-	A	-	
HCM 95th %tile Q(veh)	0.5	-	-	0	-	

Timings 8: SE 176th Ave & SE 34th St

Vancouver Innovation Center
Phase 4 2038 AM Peak Hour Conditions

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	295	403	4	276	14	9	65	4
Future Volume (vph)	295	403	4	276	14	9	65	4
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	Perm	NA
Protected Phases	5	2	1	6		8		4
Permitted Phases	2		6		8		4	
Detector Phase	5	2	1	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	5.0	15.0	5.0	15.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	24.0	10.0	28.0	33.0	33.0	32.0	32.0
Total Split (s)	15.0	45.0	15.0	45.0	25.0	25.0	25.0	25.0
Total Split (%)	17.6%	52.9%	17.6%	52.9%	29.4%	29.4%	29.4%	29.4%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lead	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	Min	None	Min	None	None	None	None
Act Effct Green (s)	31.7	32.1	24.5	18.7	9.3	9.3	9.3	9.3
Actuated g/C Ratio	0.65	0.65	0.50	0.38	0.19	0.19	0.19	0.19
v/c Ratio	0.56	0.40	0.01	0.59	0.07	0.07	0.29	0.39
Control Delay	14.5	10.2	7.5	18.4	18.9	14.5	21.7	7.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.5	10.2	7.5	18.4	18.9	14.5	21.7	7.1
LOS	B	B	A	B	B	B	C	A
Approach Delay		12.0		18.3		16.4		11.6
Approach LOS		B		B		B		B

Intersection Summary

Cycle Length: 85

Actuated Cycle Length: 49.1

Natural Cycle: 75

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.59

Intersection Signal Delay: 13.7

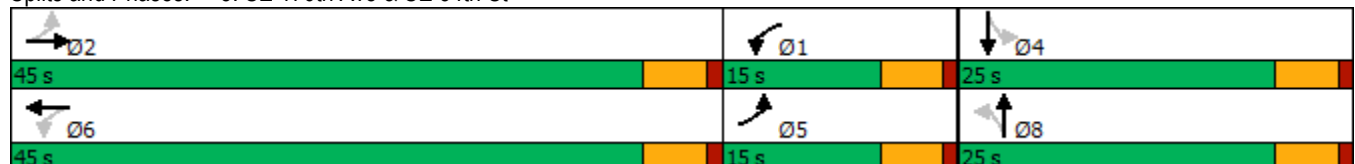
Intersection LOS: B

Intersection Capacity Utilization 59.8%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 8: SE 176th Ave & SE 34th St



HCM 6th Signalized Intersection Summary

8: SE 176th Ave & SE 34th St

Vancouver Innovation Center
Phase 4 2038 AM Peak Hour Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	295	403	2	4	276	59	14	9	8	65	4	141
Future Volume (veh/h)	295	403	2	4	276	59	14	9	8	65	4	141
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.98		1.00	0.98		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1767	1856	1900	1900	1811	1826	1900	1900	1530	1870	1900	1885
Adj Flow Rate, veh/h	347	474	2	5	325	56	16	11	0	76	5	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	9	3	0	0	6	5	0	0	25	2	0	1
Cap, veh/h	596	708	3	572	580	100	330	202	0	324	202	0
Arrive On Green	0.12	0.38	0.38	0.13	0.39	0.39	0.11	0.11	0.00	0.11	0.11	0.00
Sat Flow, veh/h	1682	1846	8	1810	1503	259	1407	1900	0	1378	1900	0
Grp Volume(v), veh/h	347	0	476	5	0	381	16	11	0	76	5	0
Grp Sat Flow(s),veh/h/ln	1682	0	1854	1810	0	1762	1407	1900	0	1378	1900	0
Q Serve(g_s), s	0.0	0.0	8.3	0.0	0.0	6.6	0.4	0.2	0.0	2.1	0.1	0.0
Cycle Q Clear(g_c), s	0.0	0.0	8.3	0.0	0.0	6.6	0.5	0.2	0.0	2.3	0.1	0.0
Prop In Lane	1.00		0.00	1.00		0.15	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	596	0	711	572	0	680	330	202	0	324	202	0
V/C Ratio(X)	0.58	0.00	0.67	0.01	0.00	0.56	0.05	0.05	0.00	0.23	0.02	0.00
Avail Cap(c_a), veh/h	816	0	1893	805	0	1800	899	970	0	880	970	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	12.6	0.0	10.0	9.7	0.0	9.4	15.9	15.7	0.0	16.7	15.7	0.0
Incr Delay (d2), s/veh	0.3	0.0	0.4	0.0	0.0	0.3	0.0	0.0	0.0	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.9	0.0	4.0	0.0	0.0	3.0	0.2	0.1	0.0	1.0	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.9	0.0	10.4	9.7	0.0	9.7	15.9	15.8	0.0	16.9	15.7	0.0
LnGrp LOS	B	A	B	A	A	A	B	B	A	B	B	A
Approach Vol, veh/h	823				386				27			
Approach Delay, s/veh	11.5				9.7				15.9			
Approach LOS	B				A				B			
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.0	20.0		9.2	9.9	20.1		9.2				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	10.0	40.0		20.0	10.0	40.0		20.0				
Max Q Clear Time (g_c+I1), s	2.0	10.3		4.3	2.0	8.6		2.5				
Green Ext Time (p_c), s	0.0	1.8		0.1	0.4	1.4		0.0				

Intersection Summary

HCM 6th Ctrl Delay	11.4
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

MOVEMENT SUMMARY

 **Site: 101 [SE 176 Avenue/ SE 29th Street Phase 4 (Site Folder: General)]**

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Phase 4
Site Category: (None)
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows [Total HV] veh/h %		Arrival Flows [Total HV] veh/h %		Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Queue [Veh. veh	Back Of Queue Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: SE 176th Avenue															
3	L2	All MCs	5	0.0	5	0.0	0.515	10.9	LOS B	3.9	97.6	0.71	0.64	0.94	30.6
8	T1	All MCs	144	2.0	144	2.0	0.515	11.2	LOS B	3.9	97.6	0.71	0.64	0.94	31.1
18	R2	All MCs	296	0.0	296	0.0	0.515	10.9	LOS B	3.9	97.6	0.71	0.64	0.94	30.9
Approach			445	0.6	445	0.6	0.515	11.0	LOS B	3.9	97.6	0.71	0.64	0.94	31.0
East: SE 29th Street															
1	L2	All MCs	122	0.0	122	0.0	0.527	8.9	LOS A	3.9	97.9	0.51	0.27	0.51	31.1
6	T1	All MCs	418	0.0	418	0.0	0.527	8.9	LOS A	3.9	97.9	0.51	0.27	0.51	31.7
16	R2	All MCs	79	0.0	79	0.0	0.527	8.9	LOS A	3.9	97.9	0.51	0.27	0.51	31.5
Approach			619	0.0	619	0.0	0.527	8.9	LOS A	3.9	97.9	0.51	0.27	0.51	31.6
North: SE 176th Avenue															
7	L2	All MCs	69	88.0	69	88.0	0.536	28.9	LOS D	2.9	90.3	0.75	0.78	1.15	26.5
4	T1	All MCs	104	1.0	104	1.0	0.536	12.3	LOS B	2.9	90.3	0.75	0.78	1.15	28.9
14	R2	All MCs	122	18.0	122	18.0	0.536	14.7	LOS B	2.9	90.3	0.75	0.78	1.15	28.4
Approach			295	28.5	295	28.5	0.536	16.4	LOS C	2.9	90.3	0.75	0.78	1.15	28.1
West: SE 29th Street															
5	L2	All MCs	6	0.0	6	0.0	0.351	7.5	LOS A	1.8	46.0	0.57	0.40	0.57	32.2
2	T1	All MCs	313	0.0	313	0.0	0.351	7.5	LOS A	1.8	46.0	0.57	0.40	0.57	32.8
12	R2	All MCs	15	10.0	15	10.0	0.351	8.7	LOS A	1.8	46.0	0.57	0.40	0.57	32.3
Approach			334	0.5	334	0.5	0.351	7.5	LOS A	1.8	46.0	0.57	0.40	0.57	32.8
All Vehicles			1693	5.2	1693	5.2	0.536	10.6	LOS B	3.9	97.9	0.62	0.48	0.75	31.0

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: Sieglösch M1 implied by US HCM 6 Roundabout Capacity Model.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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Project: H:\27\27715 - VIC Implementation\005 - Master Plan Update TIA\Analysis\176th_29th With Project 2038 AM.sip9

Intersection												
Intersection Delay, s/veh	16.6											
Intersection LOS	C											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	12	272	36	87	314	14	55	94	66	0	93	10
Future Vol, veh/h	12	272	36	87	314	14	55	94	66	0	93	10
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	0	4	10	4	1	9	4	3	0	0	0	0
Mvmt Flow	13	299	40	96	345	15	60	103	73	0	102	11
Number of Lanes	1	1	0	1	1	0	1	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	2	2
HCM Control Delay	18.8	17.9	12.8	12.8
HCM LOS	C	C	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	100%	0%	100%	0%	100%	0%	0%
Vol Thru, %	0%	59%	0%	88%	0%	96%	90%
Vol Right, %	0%	41%	0%	12%	0%	4%	10%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	55	160	12	308	87	328	103
LT Vol	55	0	12	0	87	0	0
Through Vol	0	94	0	272	0	314	93
RT Vol	0	66	0	36	0	14	10
Lane Flow Rate	60	176	13	338	96	360	113
Geometry Grp	7	7	7	7	7	7	6
Degree of Util (X)	0.13	0.338	0.026	0.614	0.185	0.638	0.235
Departure Headway (Hd)	7.746	6.923	7.051	6.526	6.969	6.377	7.466
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	463	519	510	555	517	569	481
Service Time	5.489	4.665	4.763	4.238	4.681	4.089	5.517
HCM Lane V/C Ratio	0.13	0.339	0.025	0.609	0.186	0.633	0.235
HCM Control Delay	11.6	13.2	10	19.1	11.3	19.7	12.8
HCM Lane LOS	B	B	A	C	B	C	B
HCM 95th-tile Q	0.4	1.5	0.1	4.1	0.7	4.5	0.9

Timings
11: SE 164th Ave & SE 29th St

Vancouver Innovation Center
Phase 4 2038 AM Peak Hour Conditions

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	42	30	46	234	56	259	23	1081	237	792
Future Volume (vph)	42	30	46	234	56	259	23	1081	237	792
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Prot	NA
Protected Phases	5	2		1	6		7	4	3	8
Permitted Phases	2		2	6		6				
Detector Phase	5	2	2	1	6	6	7	4	3	8
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	15.0	5.0	15.0
Minimum Split (s)	9.5	39.0	39.0	9.5	38.0	38.0	10.0	32.0	10.0	32.0
Total Split (s)	10.0	25.0	25.0	14.0	29.0	29.0	17.0	44.0	37.0	64.0
Total Split (%)	8.3%	20.8%	20.8%	11.7%	24.2%	24.2%	14.2%	36.7%	30.8%	53.3%
Yellow Time (s)	3.5	4.0	4.0	3.5	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	5.0	5.0	4.5	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	None	C-Max
Act Effct Green (s)	15.9	12.0	12.0	23.3	15.2	15.2	5.7	61.5	20.3	80.1
Actuated g/C Ratio	0.13	0.10	0.10	0.19	0.13	0.13	0.05	0.51	0.17	0.67
v/c Ratio	0.23	0.17	0.16	0.98	0.25	0.62	0.28	0.45	0.82	0.26
Control Delay	39.2	49.8	1.2	98.6	48.1	11.6	64.3	9.3	69.2	9.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.2	49.8	1.2	98.6	48.1	11.6	64.3	9.3	69.2	9.8
LOS	D	D	A	F	D	B	E	A	E	A
Approach Delay		27.3			52.4			10.4		23.1
Approach LOS		C			D			B		C

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 4 (3%), Referenced to phase 8:SBT, Start of Green

Natural Cycle: 95

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.98

Intersection Signal Delay: 23.8

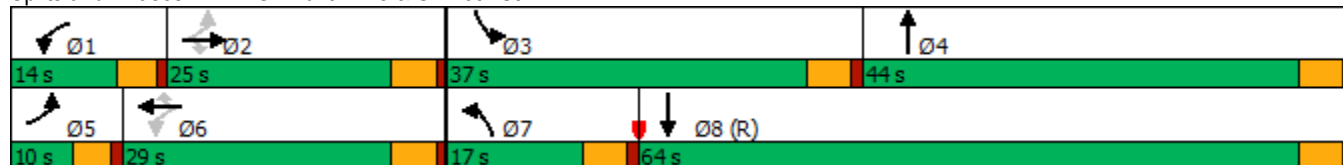
Intersection LOS: C

Intersection Capacity Utilization 67.8%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 11: SE 164th Ave & SE 29th St



HCM 6th Signalized Intersection Summary

11: SE 164th Ave & SE 29th St

Vancouver Innovation Center
Phase 4 2038 AM Peak Hour Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	30	46	234	56	259	23	1081	37	237	792	26
Future Volume (veh/h)	42	30	46	234	56	259	23	1081	37	237	792	26
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1900	1856	1870	1870	1900	1900	1870	1796	1885	1856	1826
Adj Flow Rate, veh/h	44	32	2	246	59	22	24	1138	37	249	834	25
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	0	3	2	2	0	0	2	7	1	3	5
Cap, veh/h	225	158	130	293	243	209	42	1834	60	276	2485	74
Arrive On Green	0.03	0.08	0.08	0.08	0.13	0.13	0.02	0.36	0.36	0.15	0.49	0.49
Sat Flow, veh/h	1767	1900	1572	1781	1870	1610	1810	5079	165	1795	5054	151
Grp Volume(v), veh/h	44	32	2	246	59	22	24	763	412	249	557	302
Grp Sat Flow(s),veh/h/ln	1767	1900	1572	1781	1870	1610	1810	1702	1840	1795	1689	1828
Q Serve(g_s), s	2.7	1.9	0.1	9.5	3.4	1.4	1.6	22.1	22.2	16.4	12.0	12.1
Cycle Q Clear(g_c), s	2.7	1.9	0.1	9.5	3.4	1.4	1.6	22.1	22.2	16.4	12.0	12.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.09	1.00		0.08
Lane Grp Cap(c), veh/h	225	158	130	293	243	209	42	1229	664	276	1660	899
V/C Ratio(X)	0.20	0.20	0.02	0.84	0.24	0.11	0.58	0.62	0.62	0.90	0.34	0.34
Avail Cap(c_a), veh/h	249	317	262	293	374	322	181	1229	664	479	1660	899
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.77	0.77	0.77	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.2	51.3	50.5	48.9	46.9	46.0	58.0	31.6	31.6	49.9	18.6	18.6
Incr Delay (d2), s/veh	0.4	0.2	0.0	18.9	0.2	0.1	3.6	1.8	3.4	6.2	0.5	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.2	1.7	0.1	7.7	2.9	1.0	1.4	13.5	14.8	12.2	8.2	8.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.6	51.6	50.5	67.8	47.1	46.1	61.6	33.4	34.9	56.1	19.1	19.6
LnGrp LOS	D	D	D	E	D	D	E	C	C	E	B	B
Approach Vol, veh/h		78			327			1199			1108	
Approach Delay, s/veh		49.9			62.6			34.5			27.6	
Approach LOS		D			E			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.0	15.0	23.4	48.3	8.3	20.6	7.8	64.0				
Change Period (Y+Rc), s	4.5	5.0	5.0	5.0	4.5	5.0	5.0	5.0				
Max Green Setting (Gmax), s	9.5	20.0	32.0	39.0	5.5	24.0	12.0	59.0				
Max Q Clear Time (g_c+I1), s	11.5	3.9	18.4	24.2	4.7	5.4	3.6	14.1				
Green Ext Time (p_c), s	0.0	0.0	0.1	4.4	0.0	0.1	0.0	3.7				

Intersection Summary

HCM 6th Ctrl Delay	35.5
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

Timings
12: SE 164th Ave/SE164th Ave & SE 34th Street

Vancouver Innovation Center
Phase 4 2038 AM Peak Hour Conditions

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	28	60	165	312	121	99	111	953	465	155	833
Future Volume (vph)	28	60	165	312	121	99	111	953	465	155	833
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA
Protected Phases	5	2	7	1	6	3	7	4	1	3	8
Permitted Phases			2			6			4		
Detector Phase	5	2	7	1	6	3	7	4	1	3	8
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	20.0	5.0	5.0	20.0
Minimum Split (s)	10.0	33.0	10.0	10.0	32.0	10.0	10.0	31.0	10.0	10.0	28.0
Total Split (s)	20.0	33.0	20.0	25.0	38.0	17.0	20.0	45.0	25.0	17.0	42.0
Total Split (%)	16.7%	27.5%	16.7%	20.8%	31.7%	14.2%	16.7%	37.5%	20.8%	14.2%	35.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes		Yes		Yes	Yes	Yes	Yes		Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	None	None	C-Max
Act Effct Green (s)	6.4	8.2	23.0	20.0	23.8	46.4	11.8	56.2	81.2	17.6	62.0
Actuated g/C Ratio	0.05	0.07	0.19	0.17	0.20	0.39	0.10	0.47	0.68	0.15	0.52
v/c Ratio	0.39	0.56	0.53	1.18	0.36	0.16	0.72	0.65	0.43	0.66	0.54
Control Delay	68.3	70.9	31.3	152.9	45.0	4.8	74.0	28.4	2.3	65.1	17.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.3	70.9	31.3	152.9	45.0	4.8	74.0	28.4	2.3	65.1	17.1
LOS	E	E	C	F	D	A	E	C	A	E	B
Approach Delay		44.8			100.8			23.7			24.4
Approach LOS		D			F			C			C

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 15 (13%), Referenced to phase 8: SBT, Start of Green

Natural Cycle: 115

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.18

Intersection Signal Delay: 37.8

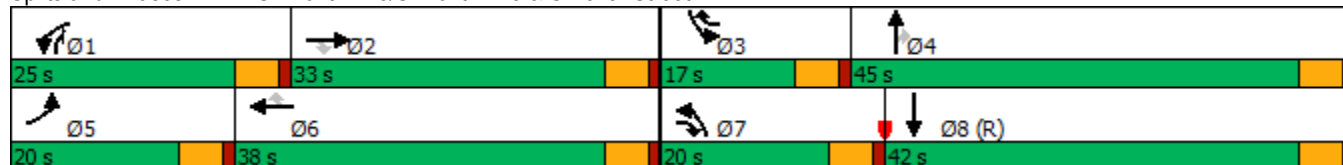
Intersection LOS: D

Intersection Capacity Utilization 71.4%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 12: SE 164th Ave/SE164th Ave & SE 34th Street



HCM 6th Signalized Intersection Summary

12: SE 164th Ave/SE164th Ave & SE 34th Street

Vancouver Innovation Center
Phase 4 2038 AM Peak Hour Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	28	60	165	312	121	99	111	953	465	155	833	37
Future Volume (veh/h)	28	60	165	312	121	99	111	953	465	155	833	37
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1565	1758	1803	1870	1885	1841	1791	1776	1746	1806	1761	1761
Adj Flow Rate, veh/h	31	67	124	347	134	30	123	1059	306	172	926	39
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	19	6	3	2	1	4	1	2	4	0	3	3
Cap, veh/h	40	159	270	297	434	515	147	1125	740	172	1327	56
Arrive On Green	0.03	0.09	0.09	0.17	0.23	0.23	0.09	0.33	0.33	0.10	0.35	0.35
Sat Flow, veh/h	1491	1758	1528	1781	1885	1560	1706	3375	1480	1720	3826	161
Grp Volume(v), veh/h	31	67	124	347	134	30	123	1059	306	172	545	420
Grp Sat Flow(s),veh/h/ln	1491	1758	1528	1781	1885	1560	1706	1687	1480	1720	1127	1732
Q Serve(g_s), s	2.5	4.3	8.7	20.0	7.1	1.6	8.5	36.6	15.6	12.0	25.0	25.1
Cycle Q Clear(g_c), s	2.5	4.3	8.7	20.0	7.1	1.6	8.5	36.6	15.6	12.0	25.0	25.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.09
Lane Grp Cap(c), veh/h	40	159	270	297	434	515	147	1125	740	172	782	601
V/C Ratio(X)	0.77	0.42	0.46	1.17	0.31	0.06	0.84	0.94	0.41	1.00	0.70	0.70
Avail Cap(c_a), veh/h	186	410	488	297	518	585	213	1125	740	172	782	601
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.92	0.92	0.92
Uniform Delay (d), s/veh	58.0	51.6	44.2	50.0	38.3	27.4	54.0	38.9	18.9	54.0	33.7	33.8
Incr Delay (d2), s/veh	11.1	0.7	0.5	106.0	0.1	0.0	11.8	16.0	1.7	65.9	4.7	6.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.9	3.4	5.9	26.2	5.8	1.0	7.3	23.8	9.3	12.7	11.3	16.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	69.2	52.2	44.7	156.0	38.4	27.4	65.8	54.9	20.6	119.9	38.5	39.9
LnGrp LOS	E	D	D	F	D	C	E	D	C	F	D	D
Approach Vol, veh/h	222			511			1488			1137		
Approach Delay, s/veh	50.4			117.6			48.7			51.3		
Approach LOS	D			F			D			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	25.0	15.9	17.0	45.0	8.2	32.7	15.4	46.6				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	20.0	28.0	12.0	40.0	15.0	33.0	15.0	37.0				
Max Q Clear Time (g_c+I1), s	22.0	10.7	14.0	38.6	4.5	9.1	10.5	27.1				
Green Ext Time (p_c), s	0.0	0.1	0.0	0.6	0.0	0.2	0.0	1.7				
Intersection Summary												
HCM 6th Ctrl Delay	60.2											
HCM 6th LOS	E											

Timings

1: SE 192nd & SE 15th St

Vancouver Innovation Center

Phase 4 2038 PM Peak Hour Conditions

									
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	116	91	40	82	242	87	1360	115	1505
Future Volume (vph)	116	91	40	82	242	87	1360	115	1505
Turn Type	Prot	NA	Prot	NA	pm+ov	Prot	NA	Prot	NA
Protected Phases	5	2	1	6	3	7	4	3	8
Permitted Phases					6				
Detector Phase	5	2	1	6	3	7	4	3	8
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	15.0	5.0	15.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	20.0	10.0	20.0
Total Split (s)	15.0	29.0	15.0	29.0	16.0	14.0	40.0	16.0	42.0
Total Split (%)	15.0%	29.0%	15.0%	29.0%	16.0%	14.0%	40.0%	16.0%	42.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	None	Max
Act Effct Green (s)	9.0	15.9	6.2	11.1	19.9	7.9	52.1	9.7	55.9
Actuated g/C Ratio	0.09	0.16	0.06	0.11	0.20	0.08	0.52	0.10	0.56
v/c Ratio	0.79	0.63	0.38	0.42	0.67	0.64	0.80	0.69	0.88
Control Delay	78.1	37.1	54.0	45.1	30.3	53.9	25.6	63.7	30.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	78.1	37.1	54.0	45.1	30.3	53.9	25.6	63.7	30.0
LOS	E	D	D	D	C	D	C	E	C
Approach Delay		52.5		36.2			27.2		32.3
Approach LOS		D		D			C		C

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 98 (98%), Referenced to phase 4:NBT, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.88

Intersection Signal Delay: 32.3

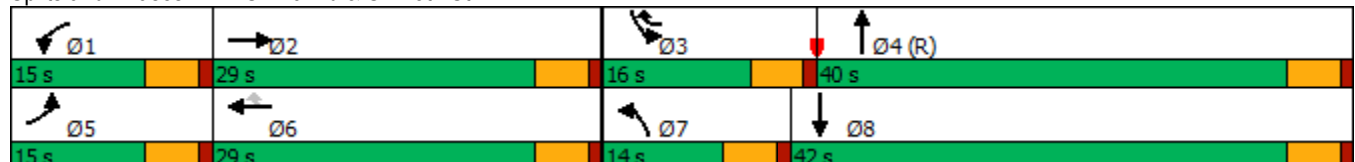
Intersection LOS: C

Intersection Capacity Utilization 82.8%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 1: SE 192nd & SE 15th St



HCM 6th Signalized Intersection Summary

1: SE 192nd & SE 15th St

Vancouver Innovation Center

Phase 4 2038 PM Peak Hour Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	116	91	101	40	82	242	87	1360	32	115	1505	133
Future Volume (veh/h)	116	91	101	40	82	242	87	1360	32	115	1505	133
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1885	1900	1900	1856	1900	1900	1870	1900	1900	1870	1870
Adj Flow Rate, veh/h	122	96	60	42	86	192	92	1432	33	121	1584	135
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	5	1	0	0	3	0	0	2	0	0	2	2
Cap, veh/h	150	201	125	62	248	344	126	1768	41	149	1694	143
Arrive On Green	0.09	0.19	0.19	0.03	0.13	0.13	0.09	0.66	0.66	0.11	0.68	0.68
Sat Flow, veh/h	1739	1084	678	1810	1856	1582	1810	3550	82	1810	3315	280
Grp Volume(v), veh/h	122	0	156	42	86	192	92	716	749	121	842	877
Grp Sat Flow(s),veh/h/ln	1739	0	1762	1810	1856	1582	1810	1777	1855	1810	1777	1819
Q Serve(g_s), s	6.9	0.0	7.9	2.3	4.2	10.8	4.9	29.3	29.5	6.5	41.1	43.0
Cycle Q Clear(g_c), s	6.9	0.0	7.9	2.3	4.2	10.8	4.9	29.3	29.5	6.5	41.1	43.0
Prop In Lane	1.00		0.38	1.00		1.00	1.00		0.04	1.00		0.15
Lane Grp Cap(c), veh/h	150	0	326	62	248	344	126	885	924	149	908	929
V/C Ratio(X)	0.82	0.00	0.48	0.67	0.35	0.56	0.73	0.81	0.81	0.81	0.93	0.94
Avail Cap(c_a), veh/h	174	0	423	181	445	512	163	885	924	199	908	929
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33	1.33	1.33	1.33
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	0.14	0.14	0.14	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.9	0.0	36.4	47.7	39.4	35.0	44.5	13.4	13.5	43.8	14.4	14.7
Incr Delay (d2), s/veh	19.5	0.0	0.4	4.6	0.3	0.5	1.1	1.2	1.2	12.5	16.8	18.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	6.7	0.0	6.0	2.0	3.5	7.3	3.1	9.7	10.1	5.9	20.7	22.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.4	0.0	36.8	52.4	39.7	35.5	45.5	14.6	14.6	56.3	31.3	33.4
LnGrp LOS	E	A	D	D	D	D	D	B	B	E	C	C
Approach Vol, veh/h		278			320			1557			1840	
Approach Delay, s/veh		48.9			38.8			16.4			33.9	
Approach LOS		D			D			B			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.4	23.5	13.2	54.8	13.6	18.4	12.0	56.1				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	10.0	24.0	11.0	35.0	10.0	24.0	9.0	37.0				
Max Q Clear Time (g_c+I1), s	4.3	9.9	8.5	31.5	8.9	12.8	6.9	45.0				
Green Ext Time (p_c), s	0.0	0.2	0.0	1.5	0.0	0.2	0.0	0.0				
Intersection Summary												
HCM 6th Ctrl Delay			28.5									
HCM 6th LOS			C									

Timings
2: SE 192nd Ave & SE 20th St

Vancouver Innovation Center
Phase 4 2038 PM Peak Hour Conditions

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	233	183	280	265	149	951	151	1126
Future Volume (vph)	233	183	280	265	149	951	151	1126
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	5	2	1	6	7	4	3	8
Permitted Phases								
Detector Phase	5	2	1	6	7	4	3	8
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	20.0	5.0	20.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	25.0	10.0	25.0
Total Split (s)	20.0	27.0	20.0	27.0	14.0	35.0	18.0	39.0
Total Split (%)	20.0%	27.0%	20.0%	27.0%	14.0%	35.0%	18.0%	39.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	Min	C-Max	None	Max
Act Effect Green (s)	11.3	23.3	12.4	24.4	9.5	32.6	11.7	34.8
Actuated g/C Ratio	0.11	0.23	0.12	0.24	0.10	0.33	0.12	0.35
v/c Ratio	0.62	0.67	0.67	0.88	0.91	1.05	0.75	1.17
Control Delay	49.0	40.5	49.7	56.7	104.0	62.1	61.1	115.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.0	40.5	49.7	56.7	104.0	62.1	61.1	115.4
LOS	D	D	D	E	F	E	E	F
Approach Delay		44.4		53.7		66.8		110.0
Approach LOS		D		D		E		F

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 93 (93%), Referenced to phase 4:NBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.17
Intersection Signal Delay: 78.1
Intersection Capacity Utilization 91.4%
Analysis Period (min) 15
Intersection LOS: E
ICU Level of Service F

Splits and Phases: 2: SE 192nd Ave & SE 20th St

			
Ø1	Ø2	Ø3	Ø4 (R)
20 s	27 s	18 s	35 s
			
Ø5	Ø6	Ø7	Ø8
20 s	27 s	14 s	39 s

HCM 6th Signalized Intersection Summary

2: SE 192nd Ave & SE 20th St

Vancouver Innovation Center
Phase 4 2038 PM Peak Hour Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	233	183	95	280	265	118	149	951	210	151	1126	237
Future Volume (veh/h)	233	183	95	280	265	118	149	951	210	151	1126	237
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1885	1900	1900	1870	1900	1885	1900	1885	1870	1885
Adj Flow Rate, veh/h	243	191	80	292	276	106	155	991	200	157	1173	228
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	1	0	0	2	0	1	0	1	2	1
Cap, veh/h	316	262	110	364	286	110	163	1142	230	189	1188	229
Arrive On Green	0.09	0.21	0.21	0.10	0.22	0.22	0.09	0.38	0.38	0.14	0.53	0.53
Sat Flow, veh/h	3510	1270	532	3510	1301	500	1810	2969	598	1795	2970	573
Grp Volume(v), veh/h	243	0	271	292	0	382	155	597	594	157	699	702
Grp Sat Flow(s),veh/h/ln	1755	0	1802	1755	0	1801	1810	1791	1777	1795	1777	1766
Q Serve(g_s), s	6.8	0.0	14.0	8.1	0.0	21.0	8.5	30.8	30.9	8.5	38.6	39.5
Cycle Q Clear(g_c), s	6.8	0.0	14.0	8.1	0.0	21.0	8.5	30.8	30.9	8.5	38.6	39.5
Prop In Lane	1.00		0.30	1.00		0.28	1.00		0.34	1.00		0.32
Lane Grp Cap(c), veh/h	316	0	372	364	0	396	163	689	683	189	711	707
V/C Ratio(X)	0.77	0.00	0.73	0.80	0.00	0.96	0.95	0.87	0.87	0.83	0.98	0.99
Avail Cap(c_a), veh/h	527	0	397	527	0	396	163	689	683	233	711	707
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.37	0.37	0.37
Uniform Delay (d), s/veh	44.5	0.0	37.1	43.8	0.0	38.6	45.3	28.4	28.5	42.1	23.1	23.3
Incr Delay (d2), s/veh	1.5	0.0	5.2	3.5	0.0	35.6	55.7	13.8	14.2	6.3	16.9	19.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.3	0.0	10.7	6.5	0.0	18.7	10.3	21.3	21.3	5.8	19.8	20.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.0	0.0	42.3	47.3	0.0	74.2	101.0	42.3	42.6	48.4	40.0	42.5
LnGrp LOS	D	A	D	D	A	E	F	D	D	D	D	D
Approach Vol, veh/h		514			674			1346			1558	
Approach Delay, s/veh		44.0			62.6			49.2			42.0	
Approach LOS		D			E			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.4	25.6	15.6	43.4	14.0	27.0	14.0	45.0				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	15.0	22.0	13.0	30.0	15.0	22.0	9.0	34.0				
Max Q Clear Time (g_c+I1), s	10.1	16.0	10.5	32.9	8.8	23.0	10.5	41.5				
Green Ext Time (p_c), s	0.3	0.5	0.0	0.0	0.2	0.0	0.0	0.0				
Intersection Summary												
HCM 6th Ctrl Delay			48.0									
HCM 6th LOS			D									

Intersection						
Int Delay, s/veh	0.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	3	4	1320	3	10	1368
Future Vol, veh/h	3	4	1320	3	10	1368
Conflicting Peds, #/hr	0	0	0	2	2	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	125	0	-	-	230	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	1	0	0	1
Mvmt Flow	3	4	1389	3	11	1440
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	2135	698	0	0	1394	0
Stage 1	1393	-	-	-	-	-
Stage 2	742	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.1	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	43	388	-	-	497	-
Stage 1	199	-	-	-	-	-
Stage 2	437	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	42	387	-	-	496	-
Mov Cap-2 Maneuver	42	-	-	-	-	-
Stage 1	199	-	-	-	-	-
Stage 2	427	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	50.1	0		0.1		
HCM LOS	F					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	42	387	496	-
HCM Lane V/C Ratio	-	-	0.075	0.011	0.021	-
HCM Control Delay (s)	-	-	97.6	14.4	12.4	-
HCM Lane LOS	-	-	F	B	B	-
HCM 95th %tile Q(veh)	-	-	0.2	0	0.1	-

Timings
4: SE 192nd Ave & SE 29th St

Vancouver Innovation Center
Phase 4 2038 PM Peak Hour Conditions

						
Lane Group	EBL	EBR	NBL	NBT	SBT	
Lane Configurations						
Traffic Volume (vph)	157	57	70	1166	1239	
Future Volume (vph)	157	57	70	1166	1239	
Turn Type	Prot	pm+ov	Prot	NA	NA	
Protected Phases	2	7	7	4	8	
Permitted Phases		2				
Detector Phase	2	7	7	4	8	
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	27.0	10.0	10.0	26.0	26.0	
Total Split (s)	30.0	16.0	16.0	68.0	54.0	
Total Split (%)	30.0%	16.0%	16.0%	68.0%	54.0%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	
Lead/Lag		Lead	Lead		Lag	
Lead-Lag Optimize?		Yes	Yes		Yes	
Recall Mode	Max	None	None	C-Max	None	
Act Effect Green (s)	25.0	34.1	9.1	65.0	53.1	
Actuated g/C Ratio	0.25	0.34	0.09	0.65	0.53	
v/c Ratio	0.38	0.11	0.47	0.53	0.77	
Control Delay	34.1	11.5	70.0	4.6	24.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	34.1	11.5	70.0	4.6	24.0	
LOS	C	B	E	A	C	
Approach Delay	28.1			8.3	24.0	
Approach LOS	C			A	C	

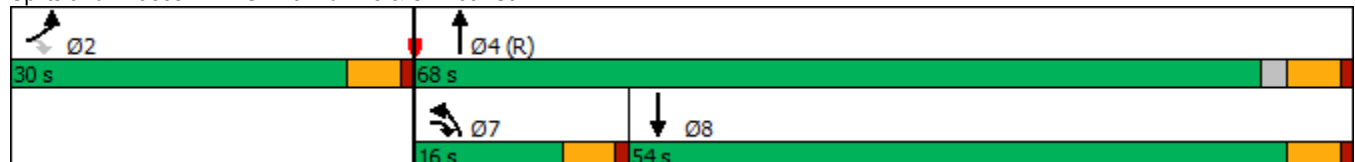
Intersection Summary

Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 45 (45%), Referenced to phase 4:NBT, Start of Green
 Natural Cycle: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.77
 Intersection Signal Delay: 17.5
 Intersection Capacity Utilization 73.5%
 Analysis Period (min) 15

Intersection LOS: B

ICU Level of Service D

Splits and Phases: 4: SE 192nd Ave & SE 29th St



HCM 6th Signalized Intersection Summary

4: SE 192nd Ave & SE 29th St

Vancouver Innovation Center
Phase 4 2038 PM Peak Hour Conditions

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				 	 	
Traffic Volume (veh/h)	157	57	70	1166	1239	132
Future Volume (veh/h)	157	57	70	1166	1239	132
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1826	1826	1885	1885	1826
Adj Flow Rate, veh/h	165	39	74	1227	1304	131
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	5	5	1	1	5
Cap, veh/h	442	470	94	2328	1795	180
Arrive On Green	0.25	0.25	0.11	1.00	0.55	0.55
Sat Flow, veh/h	1767	1547	1739	3676	3382	329
Grp Volume(v), veh/h	165	39	74	1227	708	727
Grp Sat Flow(s),veh/h/ln	1767	1547	1739	1791	1791	1826
Q Serve(g_s), s	7.7	1.8	4.1	0.0	29.7	30.0
Cycle Q Clear(g_c), s	7.7	1.8	4.1	0.0	29.7	30.0
Prop In Lane	1.00	1.00	1.00			0.18
Lane Grp Cap(c), veh/h	442	470	94	2328	978	997
V/C Ratio(X)	0.37	0.08	0.79	0.53	0.72	0.73
Avail Cap(c_a), veh/h	442	470	191	2328	978	997
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.46	0.46	1.00	1.00
Uniform Delay (d), s/veh	31.0	24.8	44.0	0.0	17.0	17.1
Incr Delay (d2), s/veh	2.4	0.3	6.6	0.4	2.7	2.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	6.4	3.4	3.3	0.2	17.2	17.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	33.4	25.2	50.6	0.4	19.7	19.9
LnGrp LOS	C	C	D	A	B	B
Approach Vol, veh/h	204			1301	1435	
Approach Delay, s/veh	31.9			3.3	19.8	
Approach LOS	C			A	B	
Timer - Assigned Phs	2		4		7	8
Phs Duration (G+Y+Rc), s	30.0		70.0		10.4	59.6
Change Period (Y+Rc), s	5.0		5.0		5.0	5.0
Max Green Setting (Gmax), s	25.0		63.0		11.0	49.0
Max Q Clear Time (g_c+I1), s	9.7		2.0		6.1	32.0
Green Ext Time (p_c), s	0.5		11.8		0.0	8.9
Intersection Summary						
HCM 6th Ctrl Delay			13.3			
HCM 6th LOS			B			

Timings
5: SE 192nd Ave & SE 34th St

Vancouver Innovation Center
Phase 4 2038 PM Peak Hour Conditions

										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	191	258	355	224	129	148	1016	204	225	976
Future Volume (vph)	191	258	355	224	129	148	1016	204	225	976
Turn Type	pm+pt	NA	pm+pt	NA	Perm	Prot	NA	pm+ov	Prot	NA
Protected Phases	5	2	1	6		7	4	1	3	8
Permitted Phases	2		6		6			4		
Detector Phase	5	2	1	6	6	7	4	1	3	8
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	20.0	5.0	5.0	20.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	25.0	10.0	10.0	25.0
Total Split (s)	14.0	32.0	19.0	37.0	37.0	13.0	34.0	19.0	15.0	36.0
Total Split (%)	14.0%	32.0%	19.0%	37.0%	37.0%	13.0%	34.0%	19.0%	15.0%	36.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	None	None	Max
Act Effct Green (s)	33.8	25.2	44.2	30.7	30.7	9.6	30.8	44.8	10.0	31.2
Actuated g/C Ratio	0.34	0.25	0.44	0.31	0.31	0.10	0.31	0.45	0.10	0.31
v/c Ratio	0.47	0.94	1.13	0.40	0.22	0.89	0.97	0.26	0.69	1.08
Control Delay	22.2	64.1	117.8	29.5	2.2	92.2	55.9	2.1	72.0	97.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.2	64.1	117.8	29.5	2.2	92.2	55.9	2.1	72.0	97.2
LOS	C	E	F	C	A	F	E	A	E	F
Approach Delay		50.8		68.8			51.8			92.9
Approach LOS		D		E			D			F

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 36 (36%), Referenced to phase 4:NBT, Start of Green

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.13

Intersection Signal Delay: 68.3

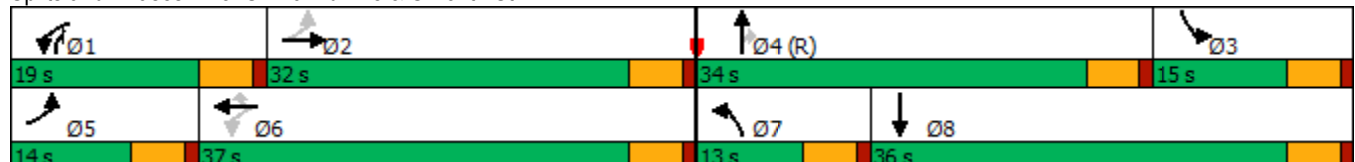
Intersection LOS: E

Intersection Capacity Utilization 99.2%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 5: SE 192nd Ave & SE 34th St



HCM 6th Signalized Intersection Summary

5: SE 192nd Ave & SE 34th St

Vancouver Innovation Center
Phase 4 2038 PM Peak Hour Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	191	258	153	355	224	129	148	1016	204	225	976	135
Future Volume (veh/h)	191	258	153	355	224	129	148	1016	204	225	976	135
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1817	1847	1817	2003	2003	2018	2018	1988	2003	1847	1832	1817
Adj Flow Rate, veh/h	201	272	138	374	236	35	156	1069	91	237	1027	130
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	0	2	1	1	0	0	2	1	0	1	2
Cap, veh/h	455	292	148	363	610	520	154	1095	726	393	1009	128
Arrive On Green	0.09	0.25	0.25	0.14	0.30	0.30	0.08	0.29	0.29	0.12	0.33	0.33
Sat Flow, veh/h	1731	1148	583	1908	2003	1705	1922	3777	1683	3413	3102	392
Grp Volume(v), veh/h	201	0	410	374	236	35	156	1069	91	237	576	581
Grp Sat Flow(s),veh/h/ln	1731	0	1731	1908	2003	1705	1922	1889	1683	1706	1741	1753
Q Serve(g_s), s	8.6	0.0	23.1	14.0	9.3	1.0	8.0	28.0	1.7	6.6	32.5	32.5
Cycle Q Clear(g_c), s	8.6	0.0	23.1	14.0	9.3	1.0	8.0	28.0	1.7	6.6	32.5	32.5
Prop In Lane	1.00		0.34	1.00		1.00	1.00		1.00	1.00		0.22
Lane Grp Cap(c), veh/h	455	0	441	363	610	520	154	1095	726	393	566	570
V/C Ratio(X)	0.44	0.00	0.93	1.03	0.39	0.07	1.01	0.98	0.13	0.60	1.02	1.02
Avail Cap(c_a), veh/h	455	0	467	363	641	546	154	1095	726	393	566	570
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.79	0.00	0.79	1.00	1.00	1.00	1.00	1.00	1.00	0.59	0.59	0.59
Uniform Delay (d), s/veh	24.4	0.0	36.4	25.5	27.4	11.8	46.0	35.2	6.4	42.1	33.7	33.7
Incr Delay (d2), s/veh	0.2	0.0	20.2	54.8	0.1	0.0	76.5	22.0	0.4	1.1	33.4	33.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	6.1	0.0	16.8	17.2	7.7	1.0	11.4	22.0	1.5	4.9	23.8	24.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.6	0.0	56.6	80.4	27.5	11.8	122.5	57.1	6.7	43.2	67.2	67.5
LnGrp LOS	C	A	E	F	C	B	F	E	A	D	F	F
Approach Vol, veh/h	611			645			1316			1394		
Approach Delay, s/veh	46.1			57.3			61.4			63.2		
Approach LOS	D			E			E			E		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	19.0	30.5	16.5	34.0	14.0	35.5	13.0	37.5				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	14.0	27.0	10.0	29.0	9.0	32.0	8.0	31.0				
Max Q Clear Time (g_c+I1), s	16.0	25.1	8.6	30.0	10.6	11.3	10.0	34.5				
Green Ext Time (p_c), s	0.0	0.2	0.0	0.0	0.0	0.4	0.0	0.0				

Intersection Summary

HCM 6th Ctrl Delay 59.0

HCM 6th LOS E

Notes

User approved pedestrian interval to be less than phase max green.

Timings

6: SE Hiddenbrook Dr & SE 34th St

Vancouver Innovation Center

Phase 4 2038 PM Peak Hour Conditions

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	86	306	37	333	71	26	263	46
Future Volume (vph)	86	306	37	333	71	26	263	46
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA
Protected Phases	5	2	1	6		8		4
Permitted Phases					8		4	
Detector Phase	5	2	1	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	5.0	15.0	5.0	15.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	30.0	10.0	30.0	32.0	32.0	34.0	34.0
Total Split (s)	10.0	85.0	10.0	85.0	35.0	35.0	35.0	35.0
Total Split (%)	7.7%	65.4%	7.7%	65.4%	26.9%	26.9%	26.9%	26.9%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	Min	None	Min	None	None	None	None
Act Effct Green (s)	5.2	29.9	5.2	24.9	19.0	19.0	19.0	19.0
Actuated g/C Ratio	0.08	0.46	0.08	0.38	0.29	0.29	0.29	0.29
v/c Ratio	0.63	0.49	0.28	0.79	0.26	0.12	0.71	0.40
Control Delay	55.8	16.1	38.9	26.1	21.8	11.3	32.7	11.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.8	16.1	38.9	26.1	21.8	11.3	32.7	11.1
LOS	E	B	D	C	C	B	C	B
Approach Delay		23.3		27.0		17.1		22.8
Approach LOS		C		C		B		C

Intersection Summary

Cycle Length: 130

Actuated Cycle Length: 64.7

Natural Cycle: 75

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.79

Intersection Signal Delay: 23.9

Intersection LOS: C

Intersection Capacity Utilization 70.1%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 6: SE Hiddenbrook Dr & SE 34th St

		
Ø1	Ø2	Ø4
10 s	85 s	35 s
		
Ø5	Ø6	Ø8
10 s	85 s	35 s

HCM 6th Signalized Intersection Summary

6: SE Hiddenbrook Dr & SE 34th St

Vancouver Innovation Center
Phase 4 2038 PM Peak Hour Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	86	306	80	37	333	181	71	26	32	263	46	174
Future Volume (veh/h)	86	306	80	37	333	181	71	26	32	263	46	174
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1870	1841	1832	1847	1876	1817	1876	1832	1885	1900	1900
Adj Flow Rate, veh/h	91	326	74	39	354	167	76	28	8	280	49	82
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	2	4	3	2	0	4	0	3	1	0	0
Cap, veh/h	134	553	125	74	407	192	398	367	105	494	167	279
Arrive On Green	0.07	0.38	0.38	0.04	0.34	0.34	0.26	0.26	0.26	0.26	0.26	0.26
Sat Flow, veh/h	1810	1473	334	1745	1183	558	1220	1402	401	1378	637	1066
Grp Volume(v), veh/h	91	0	400	39	0	521	76	0	36	280	0	131
Grp Sat Flow(s),veh/h/ln	1810	0	1807	1745	0	1741	1220	0	1803	1378	0	1703
Q Serve(g_s), s	2.3	0.0	8.3	1.0	0.0	13.1	2.5	0.0	0.7	9.0	0.0	2.9
Cycle Q Clear(g_c), s	2.3	0.0	8.3	1.0	0.0	13.1	5.4	0.0	0.7	9.7	0.0	2.9
Prop In Lane	1.00		0.19	1.00		0.32	1.00		0.22	1.00		0.63
Lane Grp Cap(c), veh/h	134	0	678	74	0	598	398	0	472	494	0	446
V/C Ratio(X)	0.68	0.00	0.59	0.53	0.00	0.87	0.19	0.00	0.08	0.57	0.00	0.29
Avail Cap(c_a), veh/h	193	0	3088	186	0	2975	860	0	1155	1016	0	1092
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.1	0.0	11.7	21.9	0.0	14.4	16.0	0.0	13.0	16.7	0.0	13.8
Incr Delay (d2), s/veh	2.2	0.0	0.3	2.1	0.0	1.6	0.1	0.0	0.0	0.4	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.6	0.0	4.5	0.7	0.0	7.4	1.1	0.0	0.5	4.6	0.0	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.4	0.0	12.0	24.1	0.0	16.0	16.1	0.0	13.0	17.1	0.0	14.0
LnGrp LOS	C	A	B	C	A	B	B	A	B	B	A	B
Approach Vol, veh/h	491			560			112			411		
Approach Delay, s/veh	14.1			16.5			15.1			16.1		
Approach LOS	B			B			B			B		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.0	22.6		17.2	8.5	21.1		17.2				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	5.0	80.0		30.0	5.0	80.0		30.0				
Max Q Clear Time (g_c+l1), s	3.0	10.3		11.7	4.3	15.1		7.4				
Green Ext Time (p_c), s	0.0	0.3		0.1	0.0	0.5		0.0				
Intersection Summary												
HCM 6th Ctrl Delay	15.6											
HCM 6th LOS	B											

Intersection						
Int Delay, s/veh	0.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	465	32	16	563	18	7
Future Vol, veh/h	465	32	16	563	18	7
Conflicting Peds, #/hr	0	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	95	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	0	0	2	0	0
Mvmt Flow	511	35	18	619	20	8
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	546	0	1184	530
Stage 1	-	-	-	-	529	-
Stage 2	-	-	-	-	655	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1033	-	211	553
Stage 1	-	-	-	-	595	-
Stage 2	-	-	-	-	521	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1033	-	207	552
Mov Cap-2 Maneuver	-	-	-	-	207	-
Stage 1	-	-	-	-	595	-
Stage 2	-	-	-	-	512	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.2		21.1	
HCM LOS	C					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	251	-	-	1033	-	
HCM Lane V/C Ratio	0.109	-	-	0.017	-	
HCM Control Delay (s)	21.1	-	-	8.5	-	
HCM Lane LOS	C	-	-	A	-	
HCM 95th %tile Q(veh)	0.4	-	-	0.1	-	

Timings 8: SE 176th Ave & SE 34th St

Vancouver Innovation Center
Phase 4 2038 PM Peak Hour Conditions

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	219	398	18	443	10	10	93	21
Future Volume (vph)	219	398	18	443	10	10	93	21
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	Perm	NA
Protected Phases	5	2	1	6		8		4
Permitted Phases	2		6		8		4	
Detector Phase	5	2	1	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	5.0	15.0	5.0	15.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	24.0	10.0	28.0	33.0	33.0	32.0	32.0
Total Split (s)	15.0	45.0	15.0	45.0	25.0	25.0	25.0	25.0
Total Split (%)	17.6%	52.9%	17.6%	52.9%	29.4%	29.4%	29.4%	29.4%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lead	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	Min	None	Min	None	None	None	None
Act Effct Green (s)	35.9	34.6	29.8	23.5	10.3	10.3	10.3	10.3
Actuated g/C Ratio	0.62	0.60	0.51	0.40	0.18	0.18	0.18	0.18
v/c Ratio	0.55	0.40	0.04	0.82	0.07	0.06	0.41	0.50
Control Delay	19.1	10.9	7.6	25.7	23.8	18.5	28.5	9.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.1	10.9	7.6	25.7	23.8	18.5	28.5	9.7
LOS	B	B	A	C	C	B	C	A
Approach Delay		13.7		25.2		20.5		15.5
Approach LOS		B		C		C		B

Intersection Summary

Cycle Length: 85

Actuated Cycle Length: 58.1

Natural Cycle: 80

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.82

Intersection Signal Delay: 18.5

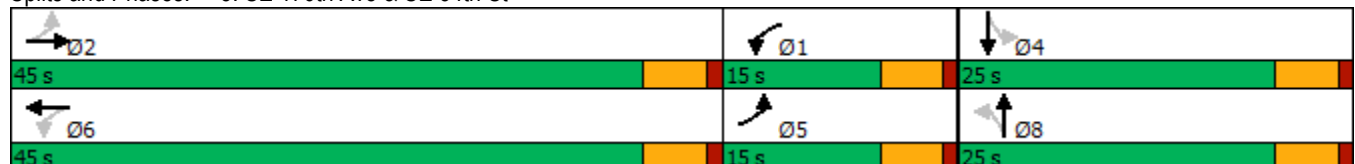
Intersection LOS: B

Intersection Capacity Utilization 68.2%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 8: SE 176th Ave & SE 34th St



HCM 6th Signalized Intersection Summary

8: SE 176th Ave & SE 34th St

Vancouver Innovation Center
Phase 4 2038 PM Peak Hour Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	219	398	13	18	443	120	10	10	6	93	21	186
Future Volume (veh/h)	219	398	13	18	443	120	10	10	6	93	21	186
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1885	1870	1900	1900	1885	1885	1900	1900	1900	1885	1900	1900
Adj Flow Rate, veh/h	238	433	13	20	482	115	11	11	0	101	23	18
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	2	0	0	1	1	0	0	0	1	0	0
Cap, veh/h	450	670	20	607	590	141	304	215	0	330	110	86
Arrive On Green	0.12	0.37	0.37	0.15	0.40	0.40	0.11	0.11	0.00	0.11	0.11	0.11
Sat Flow, veh/h	1795	1806	54	1810	1471	351	1382	1900	0	1409	975	763
Grp Volume(v), veh/h	238	0	446	20	0	597	11	11	0	101	0	41
Grp Sat Flow(s),veh/h/ln	1795	0	1861	1810	0	1822	1382	1900	0	1409	0	1738
Q Serve(g_s), s	0.0	0.0	8.0	0.0	0.0	11.8	0.3	0.2	0.0	2.8	0.0	0.9
Cycle Q Clear(g_c), s	0.0	0.0	8.0	0.0	0.0	11.8	1.2	0.2	0.0	3.0	0.0	0.9
Prop In Lane	1.00		0.03	1.00		0.19	1.00		0.00	1.00		0.44
Lane Grp Cap(c), veh/h	450	0	690	607	0	731	304	215	0	330	0	196
V/C Ratio(X)	0.53	0.00	0.65	0.03	0.00	0.82	0.04	0.05	0.00	0.31	0.00	0.21
Avail Cap(c_a), veh/h	687	0	1839	790	0	1801	832	939	0	867	0	859
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.4	0.0	10.5	9.6	0.0	10.8	16.8	16.0	0.0	17.4	0.0	16.3
Incr Delay (d2), s/veh	0.4	0.0	0.4	0.0	0.0	0.9	0.0	0.0	0.0	0.2	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.9	0.0	4.1	0.2	0.0	5.7	0.2	0.1	0.0	1.5	0.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.8	0.0	10.9	9.6	0.0	11.7	16.9	16.1	0.0	17.5	0.0	16.5
LnGrp LOS	B	A	B	A	A	B	B	B	A	B	A	B
Approach Vol, veh/h	684			617			22			142		
Approach Delay, s/veh	12.6			11.6			16.5			17.2		
Approach LOS	B			B			B			B		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.9	20.0		9.6	9.7	21.2		9.6				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	10.0	40.0		20.0	10.0	40.0		20.0				
Max Q Clear Time (g_c+I1), s	2.0	10.0		5.0	2.0	13.8		3.2				
Green Ext Time (p_c), s	0.0	1.6		0.2	0.2	2.4		0.0				

Intersection Summary

HCM 6th Ctrl Delay 12.7
HCM 6th LOS B

Notes

User approved pedestrian interval to be less than phase max green.

MOVEMENT SUMMARY

 **Site: 101 [SE 176 Avenue/ SE 29th Street Phase 4 (Site Folder: General)]**

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Phase 4
Site Category: (None)
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Queue	Back Of Queue	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]		[Total HV]					[Veh. veh	Dist]				mph
			veh/h	%	veh/h	%	v/c	sec			ft				
South: SE 176th Avenue															
3	L2	All MCs	16	15.0	16	15.0	0.373	9.0	LOS A	2.1	51.9	0.53	0.35	0.53	31.7
8	T1	All MCs	267	0.0	267	0.0	0.373	7.3	LOS A	2.1	51.9	0.53	0.35	0.53	32.8
18	R2	All MCs	100	0.0	100	0.0	0.373	7.3	LOS A	2.1	51.9	0.53	0.35	0.53	32.5
Approach			383	0.6	383	0.6	0.373	7.4	LOS A	2.1	51.9	0.53	0.35	0.53	32.7
East: SE 29th Street															
1	L2	All MCs	210	0.0	210	0.0	0.673	13.7	LOS B	9.1	227.6	0.79	0.71	1.20	29.0
6	T1	All MCs	408	0.0	408	0.0	0.673	13.7	LOS B	9.1	227.6	0.79	0.71	1.20	29.5
16	R2	All MCs	60	0.0	60	0.0	0.673	13.7	LOS B	9.1	227.6	0.79	0.71	1.20	29.3
Approach			677	0.0	677	0.0	0.673	13.7	LOS B	9.1	227.6	0.79	0.71	1.20	29.3
North: SE 176th Avenue															
7	L2	All MCs	66	0.0	66	0.0	0.369	9.7	LOS A	1.8	46.4	0.68	0.62	0.76	30.6
4	T1	All MCs	86	1.0	86	1.0	0.369	9.9	LOS A	1.8	46.4	0.68	0.62	0.76	31.2
14	R2	All MCs	113	0.0	113	0.0	0.369	9.7	LOS A	1.8	46.4	0.68	0.62	0.76	30.9
Approach			265	0.3	265	0.3	0.369	9.7	LOS A	1.8	46.4	0.68	0.62	0.76	30.9
West: SE 29th Street															
5	L2	All MCs	22	7.0	22	7.0	0.263	7.2	LOS A	1.3	31.7	0.53	0.38	0.53	32.3
2	T1	All MCs	194	0.0	194	0.0	0.263	6.4	LOS A	1.3	31.7	0.53	0.38	0.53	33.1
12	R2	All MCs	33	0.0	33	0.0	0.263	6.4	LOS A	1.3	31.7	0.53	0.38	0.53	32.9
Approach			248	0.6	248	0.6	0.263	6.4	LOS A	1.3	31.7	0.53	0.38	0.53	33.0
All Vehicles			1573	0.3	1573	0.3	0.673	10.3	LOS B	9.1	227.6	0.67	0.56	0.86	30.9

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: Sieglösch M1 implied by US HCM 6 Roundabout Capacity Model.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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Project: H:\27\27715 - VIC Implementation\005 - Master Plan Update TIA\Analysis\176th_29th With Project 2038 PM.sip9

Intersection	
Intersection Delay, s/veh	97.9
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	48	466	76	96	503	18	52	142	79	27	104	28
Future Vol, veh/h	48	466	76	96	503	18	52	142	79	27	104	28
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	3	0	0	1	0	7	0	1	0	4	1	8
Mvmt Flow	52	507	83	104	547	20	57	154	86	29	113	30
Number of Lanes	1	1	0	1	1	0	1	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	2	2
HCM Control Delay	137.5	114	20.9	20.8
HCM LOS	F	F	C	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	100%	0%	100%	0%	100%	0%	17%
Vol Thru, %	0%	64%	0%	86%	0%	97%	65%
Vol Right, %	0%	36%	0%	14%	0%	3%	18%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	52	221	48	542	96	521	159
LT Vol	52	0	48	0	96	0	27
Through Vol	0	142	0	466	0	503	104
RT Vol	0	79	0	76	0	18	28
Lane Flow Rate	57	240	52	589	104	566	173
Geometry Grp	7	7	7	7	7	7	6
Degree of Util (X)	0.142	0.554	0.119	1.235	0.235	1.191	0.438
Departure Headway (Hd)	9.852	9.084	8.658	7.985	8.65	8.088	10.159
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	366	399	416	460	417	453	358
Service Time	7.552	6.784	6.358	5.685	6.35	5.788	8.159
HCM Lane V/C Ratio	0.156	0.602	0.125	1.28	0.249	1.249	0.483
HCM Control Delay	14.2	22.5	12.5	148.6	14	132.4	20.8
HCM Lane LOS	B	C	B	F	B	F	C
HCM 95th-tile Q	0.5	3.2	0.4	22.5	0.9	20.4	2.2

Timings
11: SE 164th Ave & SE 29th St

Vancouver Innovation Center
Phase 4 2038 PM Peak Hour Conditions

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	89	59	51	295	44	229	42	1419	194	1304
Future Volume (vph)	89	59	51	295	44	229	42	1419	194	1304
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Prot	NA
Protected Phases	5	2		1	6		7	4	3	8
Permitted Phases	2		2	6		6				
Detector Phase	5	2	2	1	6	6	7	4	3	8
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	15.0	5.0	15.0
Minimum Split (s)	9.5	39.0	39.0	9.5	38.0	38.0	10.0	32.0	19.5	32.0
Total Split (s)	15.0	20.0	20.0	19.0	24.0	24.0	15.0	59.0	22.0	66.0
Total Split (%)	12.5%	16.7%	16.7%	15.8%	20.0%	20.0%	12.5%	49.2%	18.3%	55.0%
Yellow Time (s)	3.5	4.0	4.0	3.5	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	5.0	5.0	4.5	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	None	C-Max
Act Effct Green (s)	18.9	11.0	11.0	28.7	14.5	14.5	6.3	60.6	15.9	72.1
Actuated g/C Ratio	0.16	0.09	0.09	0.24	0.12	0.12	0.05	0.50	0.13	0.60
v/c Ratio	0.38	0.36	0.19	0.94	0.20	0.60	0.49	0.60	0.86	0.94
Control Delay	40.8	56.6	1.5	79.8	48.6	12.5	51.0	37.6	82.8	36.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.8	56.6	1.5	79.8	48.6	12.5	51.0	37.6	82.8	36.2
LOS	D	E	A	E	D	B	D	D	F	D
Approach Delay		35.3			50.3			38.0		42.1
Approach LOS		D			D			D		D

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 112 (93%), Referenced to phase 8:SBT, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.94

Intersection Signal Delay: 41.3

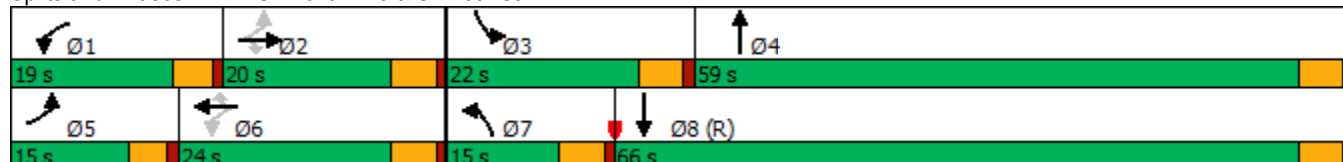
Intersection LOS: D

Intersection Capacity Utilization 74.8%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 11: SE 164th Ave & SE 29th St



HCM 6th Signalized Intersection Summary

11: SE 164th Ave & SE 29th St

Vancouver Innovation Center
Phase 4 2038 PM Peak Hour Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	89	59	51	295	44	229	42	1419	36	194	1304	46
Future Volume (veh/h)	89	59	51	295	44	229	42	1419	36	194	1304	46
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1870	1870	1870	1826	1870	1752	1885	1885	1900
Adj Flow Rate, veh/h	94	62	12	311	46	107	44	1494	36	204	1373	45
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	2	2	2	5	2	10	1	1	0
Cap, veh/h	278	164	138	348	273	230	56	2308	56	230	1883	62
Arrive On Green	0.06	0.09	0.09	0.12	0.15	0.15	0.03	0.45	0.45	0.13	0.55	0.55
Sat Flow, veh/h	1810	1900	1599	1781	1870	1579	1739	5128	124	1795	3448	113
Grp Volume(v), veh/h	94	62	12	311	46	107	44	992	538	204	676	742
Grp Sat Flow(s),veh/h/ln	1810	1900	1599	1781	1870	1579	1739	1702	1848	1795	848	1865
Q Serve(g_s), s	5.6	3.7	0.8	14.5	2.6	7.5	3.0	27.1	27.1	13.4	36.0	36.0
Cycle Q Clear(g_c), s	5.6	3.7	0.8	14.5	2.6	7.5	3.0	27.1	27.1	13.4	36.0	36.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.07	1.00		0.06
Lane Grp Cap(c), veh/h	278	164	138	348	273	230	56	1532	832	230	927	1018
V/C Ratio(X)	0.34	0.38	0.09	0.89	0.17	0.46	0.79	0.65	0.65	0.89	0.73	0.73
Avail Cap(c_a), veh/h	326	238	200	348	296	250	145	1532	832	254	927	1018
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.71	0.71	0.71	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.0	51.8	50.5	45.7	44.9	47.0	57.7	25.6	25.6	51.4	20.5	20.5
Incr Delay (d2), s/veh	0.7	0.5	0.1	24.0	0.1	0.5	6.3	1.5	2.8	25.6	5.0	4.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.7	3.2	0.6	8.2	2.2	5.3	2.5	15.3	16.8	12.1	11.7	22.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.8	52.3	50.6	69.7	45.0	47.5	64.0	27.1	28.4	77.0	25.6	25.1
LnGrp LOS	D	D	D	E	D	D	E	C	C	E	C	C
Approach Vol, veh/h		168			464			1574			1622	
Approach Delay, s/veh		49.1			62.1			28.6			31.8	
Approach LOS		D			E			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	19.0	15.3	20.4	59.0	11.8	22.5	8.9	70.5				
Change Period (Y+Rc), s	4.5	5.0	5.0	5.0	4.5	5.0	5.0	5.0				
Max Green Setting (Gmax), s	14.5	15.0	17.0	54.0	10.5	19.0	10.0	61.0				
Max Q Clear Time (g_c+I1), s	16.5	5.7	15.4	29.1	7.6	9.5	5.0	38.0				
Green Ext Time (p_c), s	0.0	0.0	0.0	1.7	0.0	0.0	0.0	1.5				

Intersection Summary

HCM 6th Ctrl Delay	34.9
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Timings
12: SE 164th Ave & SE 34th St

Vancouver Innovation Center
Phase 4 2038 PM Peak Hour Conditions

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	49	102	194	295	136	232	192	1220	426	162	1427
Future Volume (vph)	49	102	194	295	136	232	192	1220	426	162	1427
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA
Protected Phases	5	2	7	1	6	3	7	4	1	3	8
Permitted Phases			2			6			4		
Detector Phase	5	2	7	1	6	3	7	4	1	3	8
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	20.0	5.0	5.0	20.0
Minimum Split (s)	10.0	33.0	10.0	10.0	32.0	10.0	10.0	31.0	10.0	10.0	28.0
Total Split (s)	15.0	33.0	20.0	17.0	35.0	20.0	20.0	50.0	17.0	20.0	50.0
Total Split (%)	12.5%	27.5%	16.7%	14.2%	29.2%	16.7%	16.7%	41.7%	14.2%	16.7%	41.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	None	None	C-Max
Act Effct Green (s)	7.3	10.7	34.0	12.0	17.5	37.8	18.3	62.0	79.0	15.3	59.0
Actuated g/C Ratio	0.06	0.09	0.28	0.10	0.15	0.32	0.15	0.52	0.66	0.13	0.49
v/c Ratio	0.51	0.66	0.41	1.73	0.54	0.43	0.74	0.70	0.38	0.75	0.86
Control Delay	71.7	71.0	24.2	385.6	56.2	20.7	64.4	26.0	3.8	67.6	25.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	71.7	71.0	24.2	385.6	56.2	20.7	64.4	26.0	3.8	67.6	25.7
LOS	E	E	C	F	E	C	E	C	A	E	C
Approach Delay		44.8			190.1			24.9			29.9
Approach LOS		D			F			C			C

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 40 (33%), Referenced to phase 8:SBT, Start of Green

Natural Cycle: 145

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.73

Intersection Signal Delay: 52.7

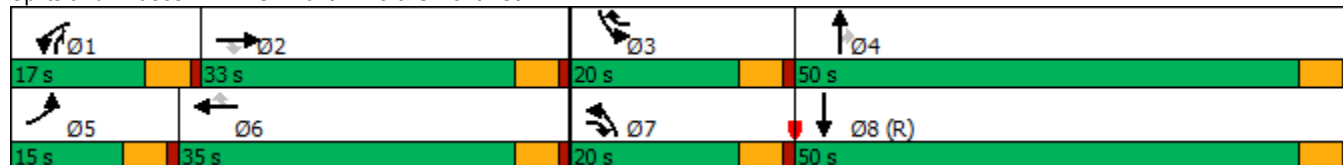
Intersection LOS: D

Intersection Capacity Utilization 81.1%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 12: SE 164th Ave & SE 34th St



HCM 6th Signalized Intersection Summary

12: SE 164th Ave & SE 34th St

Vancouver Innovation Center
Phase 4 2038 PM Peak Hour Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	49	102	194	295	136	232	192	1220	426	162	1427	49
Future Volume (veh/h)	49	102	194	295	136	232	192	1220	426	162	1427	49
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1767	1826	1885	1870	1841	1856	1885	1870	1885	1870	1870	1841
Adj Flow Rate, veh/h	51	106	152	307	142	167	200	1271	305	169	1486	48
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	9	5	1	2	4	3	1	2	1	2	2	4
Cap, veh/h	64	183	359	178	298	427	224	1387	783	195	1554	50
Arrive On Green	0.04	0.10	0.10	0.10	0.16	0.16	0.13	0.39	0.39	0.11	0.38	0.38
Sat Flow, veh/h	1682	1826	1598	1781	1841	1572	1795	3554	1598	1781	4144	134
Grp Volume(v), veh/h	51	106	152	307	142	167	200	1271	305	169	872	662
Grp Sat Flow(s),veh/h/ln	1682	1826	1598	1781	1841	1572	1795	1777	1598	1781	1216	1846
Q Serve(g_s), s	3.6	6.7	9.8	12.0	8.4	10.4	13.2	40.7	14.4	11.2	41.9	41.9
Cycle Q Clear(g_c), s	3.6	6.7	9.8	12.0	8.4	10.4	13.2	40.7	14.4	11.2	41.9	41.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.07
Lane Grp Cap(c), veh/h	64	183	359	178	298	427	224	1387	783	195	912	692
V/C Ratio(X)	0.79	0.58	0.42	1.72	0.48	0.39	0.89	0.92	0.39	0.86	0.96	0.96
Avail Cap(c_a), veh/h	140	426	572	178	460	566	224	1387	783	223	912	692
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.28	0.28	0.28
Uniform Delay (d), s/veh	57.2	51.6	39.8	54.0	45.7	35.6	51.7	34.7	19.3	52.5	36.5	36.5
Incr Delay (d2), s/veh	7.9	1.1	0.3	348.1	0.4	0.2	31.8	11.0	1.5	8.1	8.5	10.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.0	5.5	6.9	35.7	6.9	7.1	12.4	26.0	9.3	7.4	16.1	23.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	65.1	52.7	40.1	402.1	46.1	35.8	83.5	45.7	20.7	60.6	45.0	47.0
LnGrp LOS	E	D	D	F	D	D	F	D	C	E	D	D
Approach Vol, veh/h	309			616			1776			1703		
Approach Delay, s/veh	48.6			220.7			45.7			47.3		
Approach LOS	D			F			D			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.0	17.0	18.2	51.8	9.6	24.4	20.0	50.0				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	12.0	28.0	15.0	45.0	10.0	30.0	15.0	45.0				
Max Q Clear Time (g_c+I1), s	14.0	11.8	13.2	42.7	5.6	12.4	15.2	43.9				
Green Ext Time (p_c), s	0.0	0.2	0.0	1.1	0.0	0.3	0.0	0.6				
Intersection Summary												
HCM 6th Ctrl Delay	71.0											
HCM 6th LOS	E											

APPENDIX G

PARKING STRATEGY

SEE PROJECT NARRATIVE, APPENDIX B

APPENDIX H

PHASING STRATEGY

SEE PROJECT NARRATIVE, APPENDIX B

APPENDIX I

SUSTAINABILITY GOALS FOR CITY OF VANCOUVER CAF ALIGNMENT

Memo

Date: March 27, 2023
Project: VIC Sustainability Master Planning
Project Number: 22-1362
To: Pedro Polanco, Jennifer Rabina, Marc Esrig
From: Forest Tanier-Gesner, Ned Greene
Subject: Sustainability Goals for City of Vancouver CAF Alignment

The Vancouver Innovation Center (VIC) development is determining sustainability goals for site infrastructure and future phase developments and is working to align to the Vancouver Climate Action Framework (CAF) that has recently been released by the City of Vancouver.

GOALS OF THE CLIMATE ACTION FRAMEWORK

One of the primary goals of the City of Vancouver's Climate Action Framework is aggressive reductions in the Greenhouse Gas (GHG) emissions associated with the City and Community operations:

- By 2025 – Achieve 80% Reduction in GHG emissions associated with municipal operations.
- By 2030 – Achieve 80% Reduction in GHG emissions associated with community operations.
- By 2040 – Achieve 100% Reduction in GHG emissions (Carbon Neutrality) associated with municipal and community operations.

PAE understands that the VIC development team is in favor of these performance-based standards over arbitrary certification programs that do not guarantee the City's desired outcome for emission reduction as set forth in the CAF.

To that end, PAE has developed life-cycle emissions and life-cycle cost assessments of several heating, cooling, and domestic hot water (DHW) system options and cooking appliance options for the VIC campus. PAE's recommended baseline design option was then benchmarked against the City of Vancouver's CAF. Based on this analysis it is estimated that the non-industrial process loads¹ on the VIC campus could be within 2% of the CAF reduction targets by 2030 and within 1% of the total CAF target by 2040.

PAE identified additional potential measures to address the minor gap in the emissions reductions estimates versus the CAF targets. These measures serve as a menu of options and can be implemented incrementally and discretely during the course of the VIC development. The quantifiable impacts of these options are also summarized in the following table.

¹ It is understood that the campus currently houses industrial processes that rely on natural gas fuel. These operations are currently outside of the scope of the systems options analysis and emissions reduction estimates. Alternate fuel sources should be considered by the Development Team as these become more readily available for the types of industrial processes.



	Reference Year	2024	2030	2040
BENCHMARK:				
Existing Building Stock and Forecasting Future buildings per today's Standards				
	MT CO2e/year	20,743	20,743	20,743
BASELINE DESIGN for new buildings:				
All Electric heating, cooling, and domestic hot water for all asset types.				
All Electric appliance requirements for all residential buildings (all-electric cooking and laundry)				
Efficient heat pump selections for space heating and domestic hot water (DHW) in all new buildings				
	MT CO2e/year	7,075	4,530	289
	(% reduction from benchmark)	66%	78%	99%
UPGRADES BY 2030 - OPTIONS TO CONSIDER				
Increase campus Photovoltaic (Solar) installations as needed to reach emission reduction goal. Consider exceeding code minimum if needed.			A	
Material selections and construction practices could further reduce the emissions associated with the campus development, through reductions in the embodied emissions for the buildings and site infrastructure. Design teams could help address marginal reductions needed to achieve goal by 2030			B	
Consider committing to provide more EV charging for residential parking and/or more residential spaces provisioned as EV ready if market demand supports that investment			C	
A+B+C = 390 MT CO2e/year	MT CO2e/year	7,075	4,140	289
	(% reduction from benchmark)	66%	80.0%	99%
UPGRADES BY 2040				
Phase out use of non-industrial gas use from the VIC Campus - enforce all electric cooking in commercial buildings, upgrade existing buildings, phase out other gas uses by 2040 if required by code.				-289
	MT CO2e/year	7,075	4,140	0
	(% reduction from benchmark)	66%	80%	100%

Table 1: Emissions Reduction Estimates for VIC Campus



VIC SUSTAINABILITY GOALS

As shown in Table 1, site emissions estimates for the recommended baseline design approach closely aligns with the City's CAF emissions reductions targets. Below is a summary of PAE's recommended baseline design for the campus:

- BOD - "Building by Building Heating and Cooling – All Electric" systems approach for all new construction.
 - Efficient heat pump selections for space heating and domestic hot water (DHW) in all new buildings
 - Electrification phase in plan for all existing buildings heating and DHW heating systems by 2040, if required under City CAF.
 - Central heating update requires consideration of low temp heating coils for end-of-life upgrades with current heat pump technology.
 - All Electric appliance requirements for all residential buildings (all-electric cooking and laundry)

To close the minor gap between the baseline design approach and the CAF targets, PAE recommends the following possible options to be evaluated at the time of each new development project:

- Recommend to future commercial tenants to strive for All Electric appliance requirements for all commercial buildings (i.e. all-electric commercial cooking by 2040 if required by code). It is understood that restaurants and some industrial tenants who have commercial grade kitchens within their premises, may not be willing to comply with this requirement today given current industry standards.
- Increase onsite Photovoltaic (solar) installations as needed to reach emission reduction goal. This may require exceeding code minimum to achieve the desired target.
- Material selections and construction practices could further reduce the emissions associated with the campus development, through reductions in the embodied emissions for the buildings and site infrastructure. Design teams could help address marginal reductions needed to achieve goal by 2030.
- Evaluate demand for Increasing percentage of Electrical Vehicle charging stations for residential neighborhoods. Exceeding existing code if demand warranted that could help meet the CAF targets.

VIC Sustainability Plan

The following outlines the Sustainability Plan for VIC Masterplan 2.0 and the various commitments the Developer has submitted to date.

Sustainability Improvements done to date at the existing 715,000 SF industrial buildings:

- **Energy Efficiency Improvements:** Developer has worked with Clark PUD and Energy Trust of Oregon to improve energy efficiency at the existing industrial buildings as follows:
 - Installed new, more efficient chillers.
 - Replaced pumps and installed new VFDs in central plant.
 - Installed new building HVAC control systems.
 - Converting point controls from pneumatic to digital.
 - Installed exterior LED lighting.
 - Replacing all common area and house lighting with state-of-the-art LED and lighting control system.

The total estimated annual savings from the above installed improvements is estimated to be 6,300,000 KWh and 345,000 Therms.

- Additional energy efficiency upgrades and sustainability initiatives to date include:
 - Upgraded bathrooms with waterless and reduced flow systems to achieve **indoor water use reduction**.
 - Replaced water fountains with bottle filling stations.
 - Installed new electrical sub-metering system for better monitoring of electrical and water usage.
 - Participant in Clark PUD's Community Solar Program.
- All new tenants are required to install LED lighting and controls within their space.
- Installed showers and bicycle storage space to promote biking to work.
 - Creating long term program to replace a portion of current landscaping with native plants species.
- **Adaptive Reuse, Access to Recreation Facilities:**
 - The existing 715,000 SF of buildings is at the heart of this campus and substantial sustainability investments have been made as noted above. The Developer also renovated underutilized former corporate cafeteria into an activated community space with an upscale café and coffee bar, living room/lounge space, conference rooms, expanded fitness center with fully renovated locker rooms, a yoga and meditation studio, etc.

Sustainability Plan for the New Development under Masterplan 2.0

Overall Campus & Vision:

- **Walkable Streets, Compact Development, Mixed-Use Neighborhoods, Smart Location, Access to Recreation Facilities:** The campus is designed as a 20-minute, walkable, mixed-use

neighborhood providing convenient, safe pedestrian-oriented access to places and services that residents, employees, and neighbors need every day – including work, transit, shopping, quality food, school, parks, open space, and social activities.

- **Neighborhood Schools:** The campus includes a 20-acre parcel that is owned by the Evergreen School District and will be home to a future middle school.
- **Site Design for Habitat Conservation:** A 13.7-acre Forested Tract that has a restrictive covenant to remain as open space. The Developer intends to sell this Forested Tract to the City of Vancouver.
- **Housing Types and Affordability, Housing and Jobs Proximity:** Developer commits to participating in the MFTE program whereby 20% of the 1,800 units (i.e. 360 units) will be available at 80% AMI. All residential units are within walking distance of all employment opportunities on campus.
- **Connected and Open Community, Access to Civic and Public Space, Access to Recreation Facilities, Local Food Production:** Developer will provide a perimeter trail and neighborhood park open to the general public. The trail will be connected to the Forested Tract. The trail will also link together all of the developments within the campus. Community gardens will be available to residents and tenants. The Town Plaza is an optimal location for a local farmers market to operate on the campus.
- **Community Outreach and Involvement:** Masterplan 2.0 was developed in concert with community and municipal input through feedback from the Masterplan 1.0 approval process, community engagement sessions on the proposed Masterplan 2.0, and ongoing conversations with City staff.

Building Design:

- **Optimize Building Energy Performance:** Developer will achieve GHG emissions reduction targets stated in the City's Climate Action Framework as outlined in Appendix I of the application (Appendix I is part of Developer's Sustainability Plan).
- **Optimize Building Energy Performance:** All new buildings will include the following:
 - All electric heating, cooling and domestic hot water.
 - Efficient heat pump selections for space heating and domestic hot water
 - for all new residential buildings, all electric appliances
- **Solar Orientation:** All new buildings will be solar ready per code.
- **Rainwater Management:** For new buildings, Developer will be infiltrating all runoff on site.
- **Electric Vehicles:** Developer will comply with City code for EV infrastructure requirements with each project's site plan approval.

Transportation and Mobility:

- **Compact Development, Walkable Streets, Mixed-Use Neighborhoods, Connected and Open Community, Transportation Demand Management, Housing and Jobs Proximity, Smart Location:** Masterplan 2.0 allows for greater integration of uses than Masterplan 1.0. The entire campus will be walkable/bikeable with ample opportunities to live and work on campus. Small retail and commercial services will be within a 5-minute walk of any residential neighborhood or

commercial/industrial tenant. The reconfiguration of Masterplan 2.0 also achieves added density with the same amount of vested trips in Masterplan 1.0. Masterplan 2.0 also creates a more efficient street network that allows for separation of industrial related truck traffic from residential and mixed-use traffic.

- **Walkable Streets, Transit Facilities, Bike Facilities, Smart Location:** Road networks will be designed and coordinated with City transportation staff to ensure safe, comfortable and complete connections for various modes of transportation (vehicular, pedestrian, bicycles, etc.)
 - Once ESD develops the school, Developer will have bikeable/walkable laneways for students to be able to walk or bike to school safely.
- **Bicycle Facilities, Smart Location:** Developer will include infrastructure to support bike parking and will have bike sharing programs. Developer renovated locker rooms, showers and changing facilities at the existing buildings to help encourage habitual biking for its tenants. The perimeter trail and bike paths throughout the campus will encourage recreational physical activity.
- **Transportation Demand Management, Smart Location:** Developer will deploy shared parking strategies where applicable. The campus design encourages multimodal travel. Developer is eliminating an entrance on 34th Street to reduce traffic congestion at 176th Avenue and 34th Street. Campus entrances/exits at 34th Street are being coordinated with the City's efforts along that corridor to ensure offsite improvements result in a smooth and safe pedestrian experience.
- **Access to Quality Transit and Transit Facilities, Smart Location:** Developer will work with CTran, ESD and City staff to coordinate safe and efficient placement of bus stops within the campus. The VIC campus already has a bus stop along 34th Street and the campus will have pedestrian laneways to provide safe access to the existing bus stop.

Open Space, Natural Systems & Water Resources:

- **Site Design for Habitat Conservation and Long-Term Conservation Management of Habitat, Connected and Open Community, Access to Recreation Facilities:** Preservation of 13.7 acre Forested Tract
 - Developer worked with a local arborist to adjust the boundary line of the Forested Tract to create a better edge condition for the trees allowing for a more resilient tree canopy and preservation of native and climate resilient species.
- **Connected and Open Community, Access to Civic and Public Space, Access to Recreation Facilities, Connected and Open Community, Access to Recreation Facilities:** Masterplan 2.0 increases the amount of open space/parks/trails by 26% from 19 acres of open space to 24 acres.
- **Tree Lined and Shaded Streetscapes and Heat Island Reduction:** Canopy coverage per Restated DA which is above and beyond the code minimum for all use types. Developer also commits to achieving Tree CAP certification for all projects (minimum Silver Leaf Achievement). Both canopy coverage & Tree Cap Silver will reduce the heat island effects within the campus.
- **Outdoor Water Use Reduction:** Developer will favor nature scaping in lieu of high maintenance turf for streetscapes.
- **Rainwater Management:** For new buildings, Developer will be infiltrating all runoff on site.

APPENDIX F

REVISED DESIGN GUIDELINES



EXHIBIT E DESIGN GUIDELINES

Vancouver Innovation Center Master Plan

Updated April 2023

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Purpose	01
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Appendix A

Single Family Residential Design Reference Guide

Appendix B

Placemaking Goals

PURPOSE

These design guidelines are intended to ensure that development within the Vancouver Innovation Center is cohesive in both form and function and is consistent with the brand pillars of the VIC. These brand pillars form the foundation of the design principles that will guide project implementation. These brand pillars and the associated VIC design principles are described further below:



Natural

Connected to nature in all that we do

Design Principle

Provide a network of both passive and active open space areas that utilize existing trees and natural resources for recreation and relaxation.



Balanced

physical, mental, and spiritual

Design Principle

Provide a balance of community gathering spaces and areas for personal escape.



Authentic

Urban style and refinement, built with taste, personalization and ease in mind

Design Principle

Create a compact urban form composed of well-articulated buildings and ample pedestrian areas to encourage multi-modal travel throughout the site between the various on-site uses and open space areas.



Blended

Contemporary convenience, modern collaboration

Design Principle

Design buildings to encourage pedestrian access, ground floor visibility and community spaces for socialization and collaboration.



Community

Inclusivity and shared knowledge, energy and passion

Design Principle

Design with an eye towards the future. Incorporate sustainability and energy efficiency measures including things such as vehicle charging stations, solar panels, and low impact development (LID) stormwater management approaches. Continuously evaluate project performance related to parking and space efficiency, vehicular trips and sustainability with the goal of design refinements and improvements throughout project buildout, with the goal of the project becoming a “living laboratory.” Provide a network of well defined and accessible pedestrian corridors to encourage access through the site for all individuals.

APPLICABILITY

These guidelines will apply to new development and remodels of existing development within the Residential, Light Industrial, Mixed-Use, and Open Space LUAs within the VIC masterplan. Demonstration of project adherence to these guidelines will be required with land use permit submittals for new development on the site.



DESIGN GUIDELINES



Mobility

All new developments will demonstrate:

- a. Support for a 20-Minute Neighborhood by providing means to reduce need for vehicle trips;
- b. Functional connections to the site-wide bicycle and walking path network outlined in the Masterplan;
- c. Compliance with Washington State electric vehicle charging standards in effect at the time of land use application;
- d. Curbside ride share drop off or pull-out areas shall be incorporated at major entry points to all new buildings in the IL LUA; and
- e. Shared parking strategies.
- f. Compliance with the City of Vancouver Complete Street Policy, including infrastructure designed to be safe for all users, ages and abilities regardless of their mode of travel.



Energy

Developer is installing HVAC and lighting upgrades for the Existing Building. All new developments will demonstrate:

- a. Compliance with the 2018 Washington State Energy Code, at a minimum;
- b. Compliance with environmental standards in effect at the time of building permit application (i.e. environmental development standards do not vest on the Restated DA Effective Date;
- c. That every new building is designed to accommodate ready access for installation of solar panels that would occupy at least 10% of the building footprint. This includes the necessary structural and electrical infrastructure to accommodate the solar panels; and
- d. Infrastructure for electric vehicle charging stations.
- e. Advancement of "District Energy Conditions" as identified in Appendix A – Vancouver Innovation Center Master Plan Sustainability Framework.

Water

The VIC will prioritize use reductions, efficiency strategies, and surface water quality in its design. All new development applications will include:

- a. Water-saving plumbing fixtures in all new buildings;
- b. Native and adaptive plant selections that do not require excessive irrigation; and
- c. A surface stormwater strategy synopsis describing anticipated collection, treatment, and discharge strategies including any Low Impact Development (LID) BMPs planned for the project.
- d. An evaluation of means to reduce potable water use consistent with Appendix A – Vancouver Innovation Center Master Plan Sustainability Framework.





Building Design

a. Blank Walls

- i. At least 75% of the width of any new first-story building wall facing a street shall be devoted to interest-creating features, pedestrian entrances, transparent show or display windows, or windows affording views into retail, office or lobby space.
- ii. In all areas other than the IL LUA, building surfaces over 2,000 sf shall be broken up with window openings and/or changes in material.
- iii. Blank walls longer than 20 feet without windows or an unbroken series of garage doors are not permitted on any street frontage.
- iv. Any face of a building that is over 50' wide shall have varied horizontal plane and/or vertical façade shifts to break up the building's mass.

b. Corner Buildings

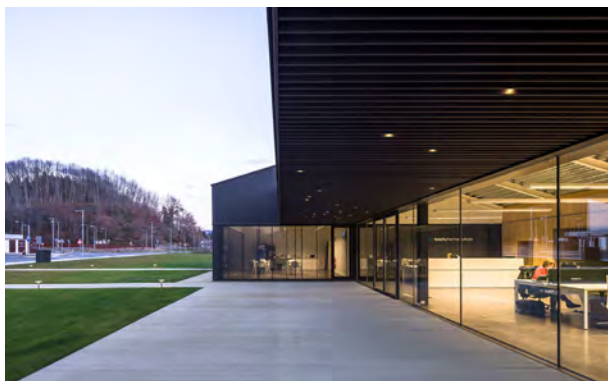
- i. New IL LUA buildings on a corner will have an entrance within 75 feet of the corner.

c. Ground Floor

- i. Buildings should engage with the “sidewalk zone” to bring visual interest, variation, and intimacy to the streetscape, while maintaining the pedestrian through-routes that link the land use areas on the site.
- ii. Pedestrian access to primary building entrances should be close to and visible from circulation facilities that include a pedestrian component such as a sidewalk, trail, or pedestrian plaza. Primary building entrances may not be from non-pedestrian oriented areas. Each primary building entrance should be attractive and have weather protection and highlight the presence of the entrance to pedestrians through the use of architectural treatments such as changes in the street-facing wall and lighting. Entrances from primary pedestrian corridors should be visually more prominent than
- iii. The design of buildings, above and below should be pedestrian scaled, intimate, and inviting.

d. Roofs

- i. Roof materials shall screen roof top mechanical equipment from ground-level views
- ii. Buildings shall have primarily flat roofs - architectural detailing and rooftop decks shall be allowed.



Exterior Building Finishes

To create a unique identity for the VIC, material selection and application is required to adhere to exterior finish standards.

- a. Major color themes are to predominantly be earth tones of grey, brown, and tan.
- b. Materials exhibiting patina are encouraged – including weathered wood, rusted steel, singed wood.
- c. Material changes shall be offset by a minimum 3 ½" horizontal or vertical relief.
- d. Materials that expose their natural state are encouraged such as exposed wood and concrete.
- e. First floor window framing shall be either wood or aluminum (does not apply to Residential LUAs)
- f. Opportunity for more industrial and technological materials, such as steel, aluminum, and heavy timber.

Maximum Building Heights

See Development Standards applicable to each LUA under Exhibit D of the Restated DA.

Single Family Residential

Single family residential attached designs should incorporate the material and pedestrian orientation provisions of these guidelines. See Appendix B – Single Family Residential Design Reference Guide.

Signage

- a. Monument signs will have a uniform color and typeface throughout the property.





Tree canopy

Every development application must demonstrate how it complies with the Tree Canopy Plan (Section 6.10 of the Restated DA) and provide an tree canopy assessment for its site and a 5-, 10-, 15-, and 20-year forecast for the tree canopy on the entire Property.

Open Space

All site plans will demonstrate adherence to the Masterplan and Appendix C - Placemaking Goals.

- a. Open spaces shall be directly accessible from all buildings in the development (building occupants should not have to walk around the building to get outside)
- b. Avoid inconvenient or circuitous ped access to amenities.
- c. Both greenscaping and useable accessible hardscaping elements shall count as open space
- d. Hardscape open spaces shall be designed for four season use and durable for urban intensity.
- e. Neighborhood open spaces
 - i. Refer to Circulation and Open Public Space Plan for targeted locations.
 - ii. Neighborhood open spaces shall be a minimum of 2,000 sf.
 - iii. Neighborhood open spaces shall incorporate interactive amenities such as pavilions, picnic facilities, and play structures.

Street Cross Sections

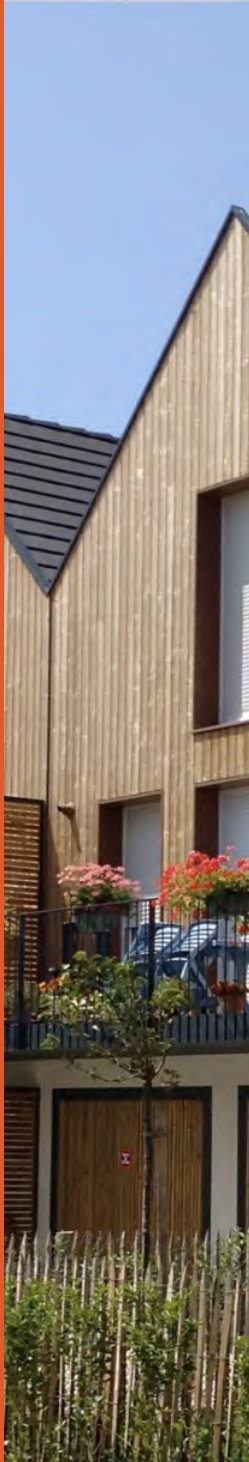
See DA for street section implementation options for the Vancouver Innovation Center.

APPENDIX A

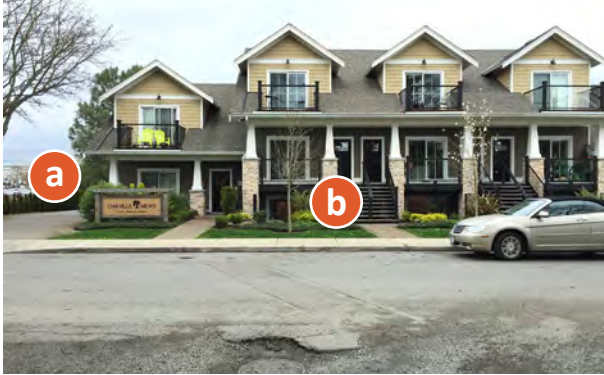
Single Family Residential Design Reference Guide

Vancouver Innovation Center Master Plan

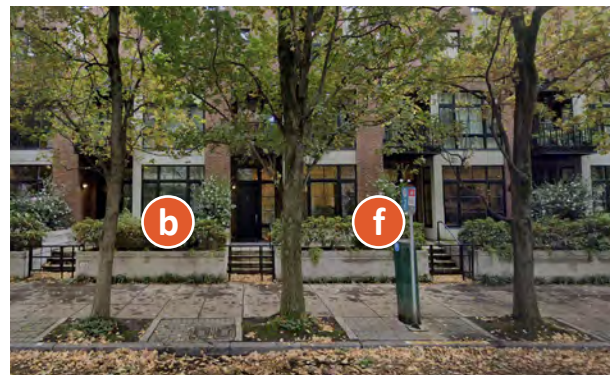
Updated April 2023



SINGLE FAMILY ATTACHED



- a. Find opportunities to alley-load attached single family residential units to minimize driveway and garage exposure.
- b. Orient residential buildings to the “sidewalk zone” through the use of front porch features.
- c. Incorporate a range of natural color tones, architectural styles and horizontal and vertical relief.
- d. Seek opportunities to orient units to courtyards and open spaces.
- e. Create visual interest through horizontal and vertical relief and variation of architectural styles of adjoining attached units.
- f. Encourage reduced setbacks for residential units to engage entrances with the sidewalk.



SINGLE FAMILY ATTACHED – *CONTINUED*

- g.** Allow front-loaded attached units when accessed from a local street and when the garage exposure is minimized by site and building design features.
- h.** Allow for a mix of scale and size of attached product including larger duplexes.
- i.** Natural material elements including wood and stone should be prioritized for use.
- j.** Provide substantial window and trim relief on units to break up the potential for monolithic appearances on taller units.
- k.** For continuous banks of attached units, provide vertical, horizontal and roof relief variation to minimize the scale of the structures.



APPENDIX B

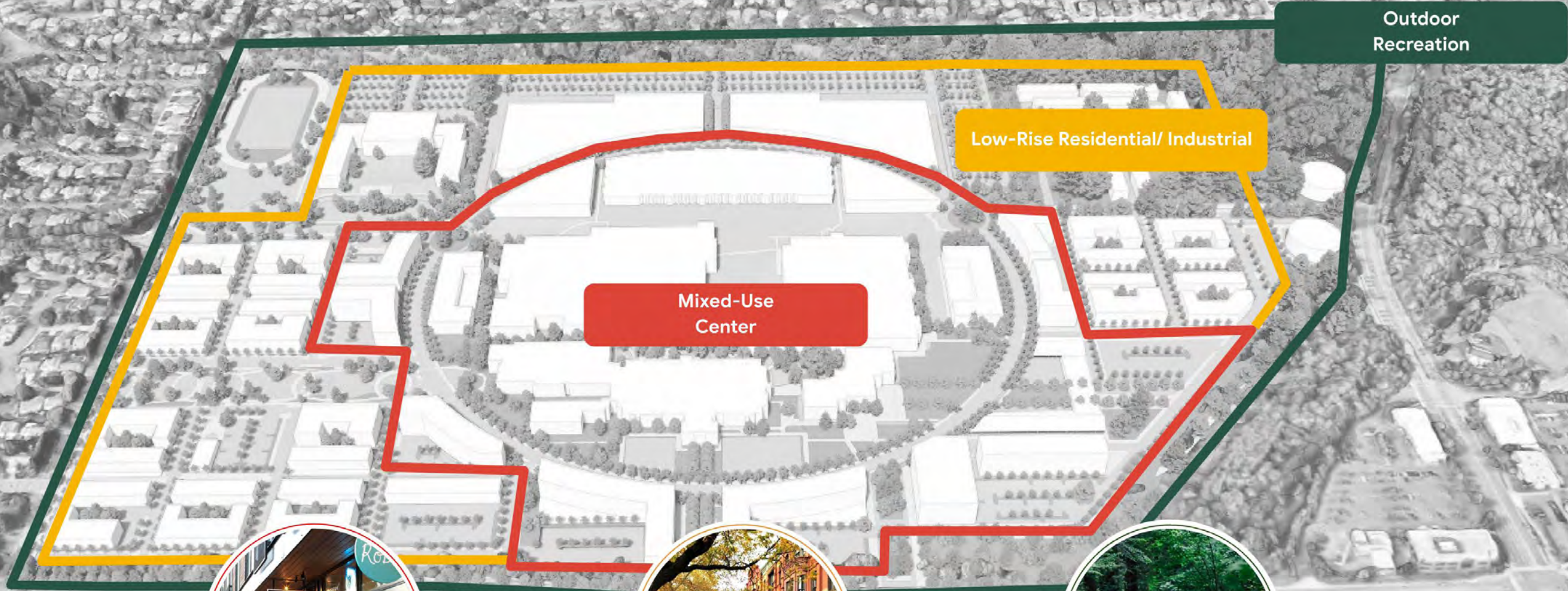
Placemaking Goals

Vancouver Innovation Center Master Plan

Updated April 2023





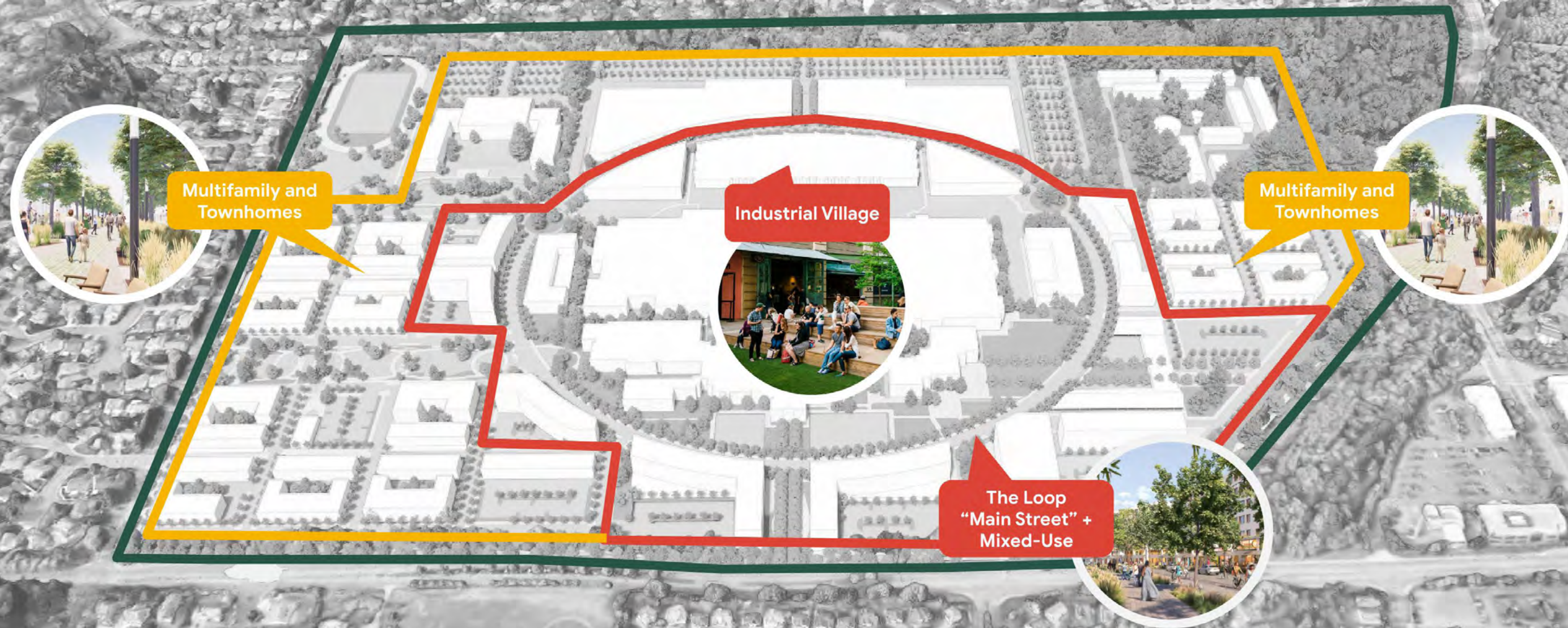


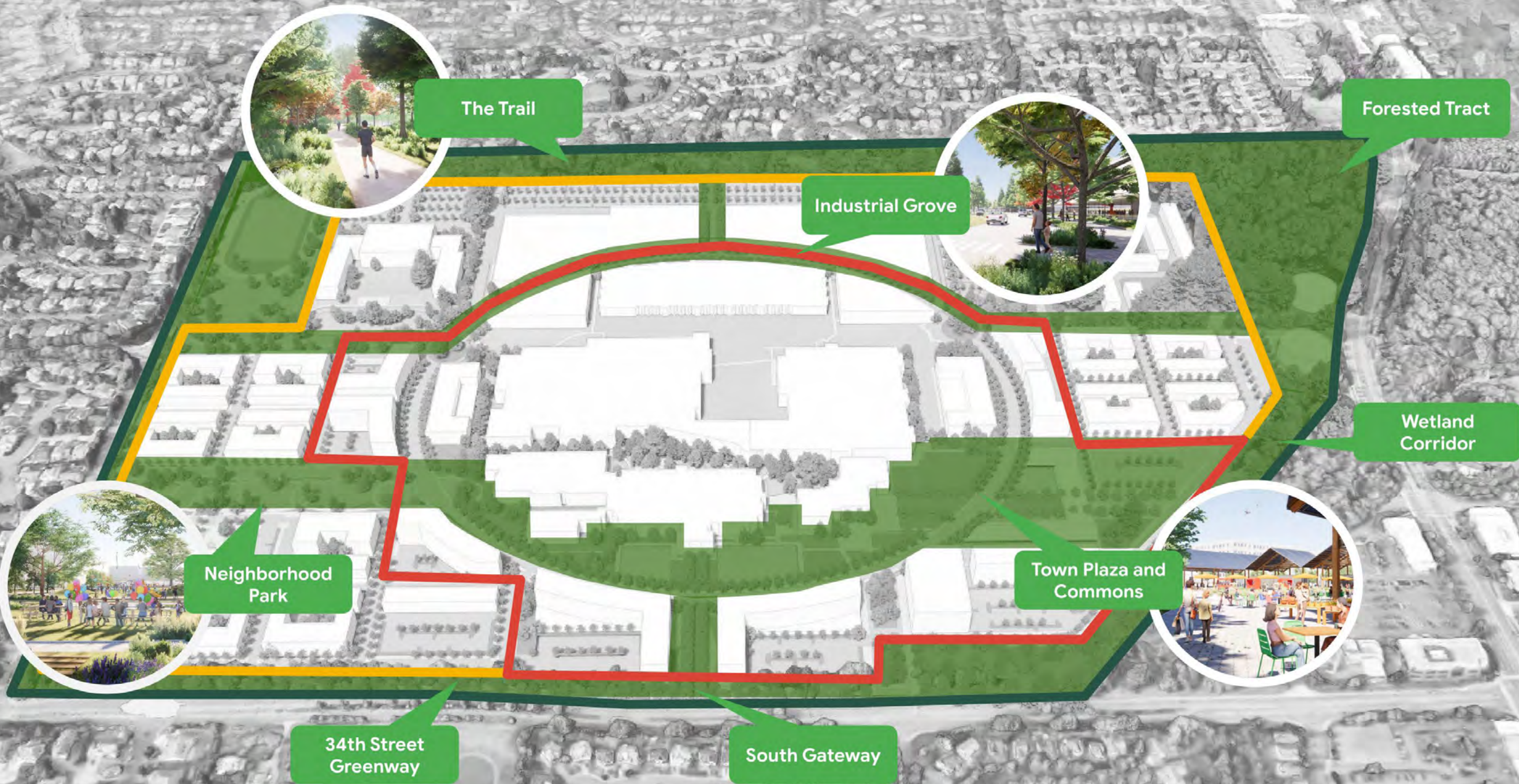
Outdoor
Recreation

Low-Rise Residential/
Industrial

Mixed-Use
Center









Multi-Use Public Trail



Existing Landscape



Hiking Trails

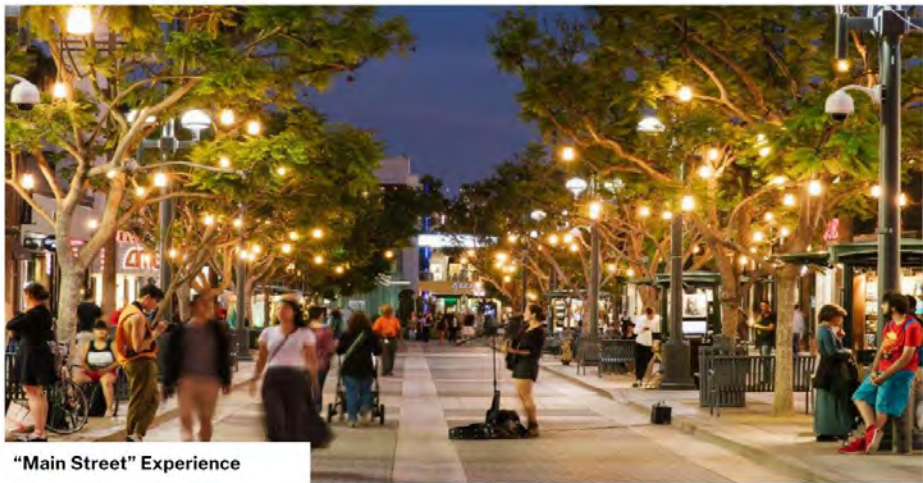


Connection to Forest Park



VIC - The Trail





“Main Street” Experience



Destination Retail and F&B



Natural Features + Seating



Community Amenities



VIC - The Loop



Placemaking // Town Plaza and VIC Commons



Community Events



Outdoor Fitness



Water Play Features



Indoor-Outdoor Dining



Flexible Public Plaza



VIC - Town Plaza



Placemaking // Multi-family and Townhomes - Neighborhood Park



Seating + Picnic Areas



Dog Park



Playscapes



Walking Paths



Community Garden



VIC - Neighborhood Park



Placemaking // Multi-family and Townhomes - Pedestrian Laneways



Variety of Residential Types



Bioretention Landscape



Porches + Stoops



Pedestrian + Bike Laneway



VIC - Pedestrian Laneway





Light Industrial + Manufacturing



29th St. Parkway



Pedestrian Pathways



Parking Area



Innovation + Makerspace



VIC - Industrial Grove





CITY OF
Vancouver
WASHINGTON

GC/CM Project Delivery Method

Geraldene Moyle, Director, General Services (GS)

Craig Redlinger, Construction Services Division
Manager, Public Works

Jean Singer, Capital Projects Division Manager, GS

Anna Vogel, Procurement Manager, Financial and
Management Services

January 22, 2024



Agenda

- Strategic Plan Alignment
- General Contractor / Construction Manager (GC/CM) Overview
- Procurement Process
- City Council Engagement



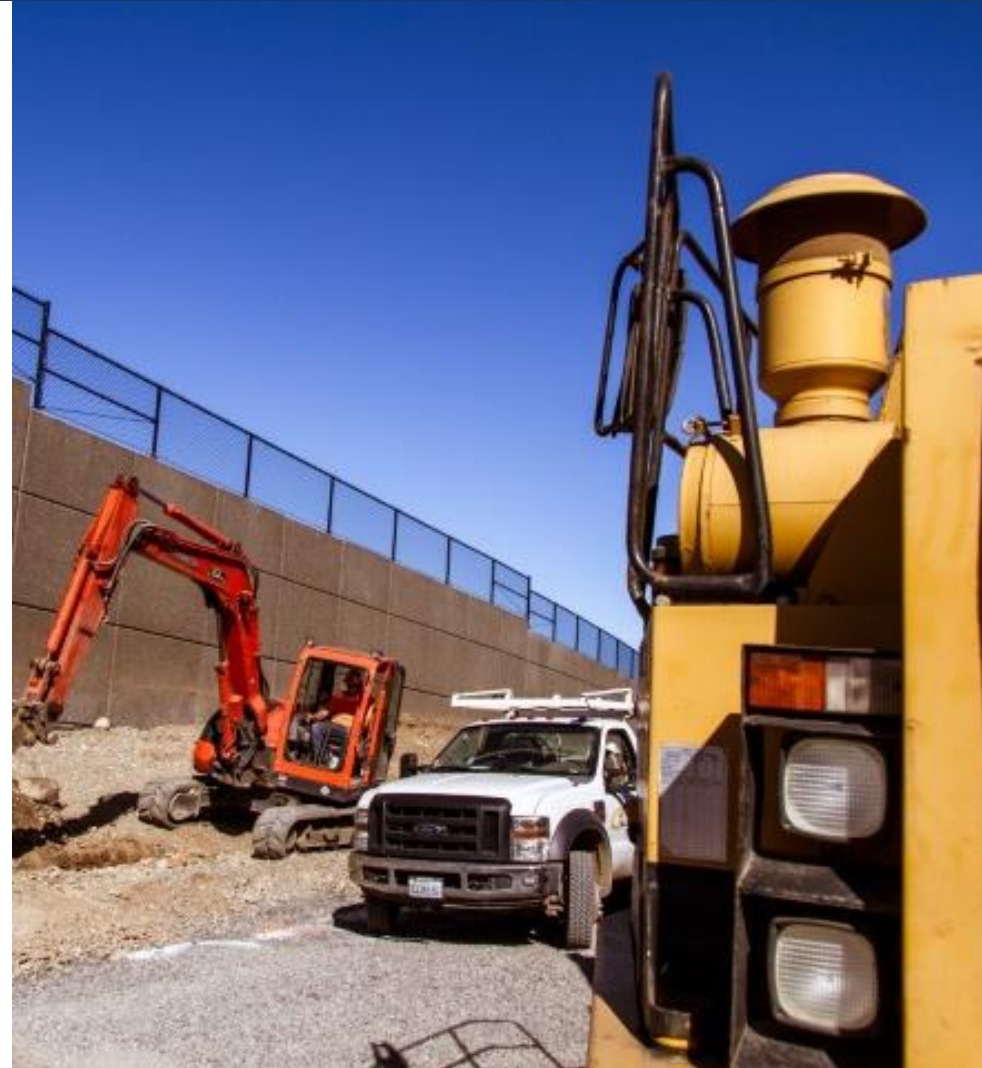
Strategic Plan Alignment

GC/CM advances Council objectives

- Promotes Innovation Core Value
- Project delivery opportunities across multiple Focus Areas
- Addresses efficiency and output Performance Measures



GC/CM Overview



GC/CM Project Delivery Method

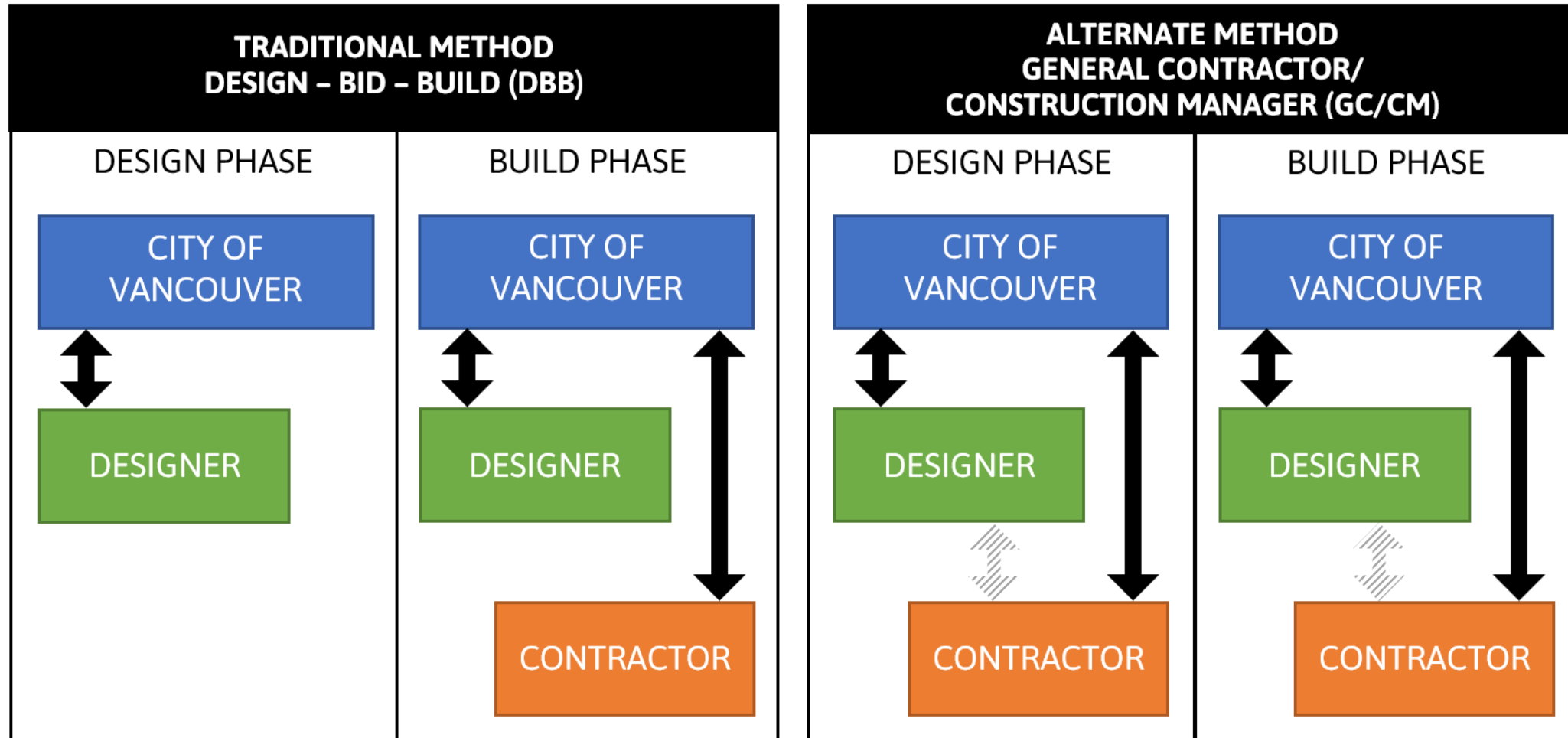
RCW 39.10.340-410

- City Leads the Project Team
- Construction Firm Selected on Qualifications and Fee Structure
- Owner and Design Team Works with the Construction Firm During Project Development
- Maximum Allowable Construction Cost is Negotiated after 90% Design



Project Delivery Methods

Traditional DBB vs. Alternate GC/CM



Project Considerations

Utilization of GC/CM Project Delivery Method

Large,
Complex
Projects

Alternatives
Affect Cost
and
Schedule

Unique
Design
Elements

Material
Long Lead
Times

Risk
Management



GC/CM Considerations

- Fully integrated project team (owner/design/contractor) = high value and quality project
- Opportunity for innovation and Shared risk management
- Advanced Thoughtful Planning – clear project definition, resourcing, additional steps required
- Strong teamwork and communication critical to success



Procurement Process



GC/CM Approval Process

RCW 39.10.280 and 39.10.340

- Proposed projects must meet specific criteria
- Two step approval process that includes an application and interview
- Project Review Committee (PRC) reviews each application for approval



GC/CM Projects

Washington Agency Examples

- Chelan County Public Utility District
- City of Everett
- Spokane County
- School Districts and Universities



GC/CM Projects

Potential City of Vancouver Projects

- Facility Projects
- PFAS Mitigation Projects
- Marine Park Wastewater Treatment Plant Expansion



City Council Engagement



GC/CM at City Council

Council Actions, project budgets, and upcoming items

- Council Actions
 - Contract awarded to construction firm during Design phase
- Project budgets balance contractor quality, risk and timing
- Upcoming Council Agenda items:
 - Owner's Representative professional services contract
 - Public Works Operations Center construction firm contract award



Thank You





MEMORANDUM

DATE: January 22, 2024

TO: City Council

FROM: Eric Holmes, City Manager

RE: **General Contractor/Construction Manager Project Delivery Method Workshop Materials**

CC: Cary Driskell, Assistant City Attorney III; Ryan Knox, Public Works Senior Civil Engineer; Ryan Lopossa, Public Works Transportation Division Manager; Geraldene Moyle, General Services Director; Udobong Obotette, Financial and Management Services Senior Budget Analyst; Craig Redlinger, Public Works Construction Services Division Manager; Jean Singer, General Services Facilities Capital Project Division Manager; Terry Snyder, Parks, Recreation and Cultural Services Senior Park Developer; Anna Vogel, Financial and Management Services Procurement Manager

This memo provides background information ahead of the January 22, 2024, GC/CM City Council workshop. The workshop will provide an overview of General Contractor / Construction Manager (GC/CM) as a new City of Vancouver project delivery method, how the delivery method aligns with the City's Strategic Plan, the procurement process, and upcoming related City Council actions.

Citywide Project Delivery Group collaboration

A Citywide Capital Projects Delivery team convenes monthly to discuss delivery methods, project management practices and the various elements needed to advance a project. The current focus is General Contractor/Construction Manager (GC/CM) as an alternative public works delivery method for projects over \$10M and where the design is less than 30% complete.

GC/CM Background

General Contractor/Construction Manager (GC/CM) contracting is an alternative public works delivery method that is available to a Public Owner under RCW 39.10. Unlike traditional design-bid-build contracts, the GC/CM contractor is selected early and is

engaged during the design phase to meet the cost, scheduling and quality criteria for the project. The owner competitively selects a GC/CM firm early in the design process based primarily on qualifications and specified cost elements such as their fee and staffing costs. As the design is developed, the GC/CM works with the Architect to help control project costs, ensure constructability, identify/manage risks and complete the project on schedule.

To utilize the GC/CM contracting method, Public Owners must be approved by the State of Washington Capital Projects Advisory Review Board (CPARB) Project Review Committee (PRC). There are many potential benefits to the GC/CM route, with three significant ones as follows:

- Allows qualifications of the Contractor and their proposed staff to be part of basis for selection.
- Brings the Contractor on board early to work as a team member with the Owner and Architect during the design and preconstruction phases and provide Pre-Construction Services.
- The PRC approval and Contractor selection process will offer an opportunity for consideration of Citywide strategic objectives, such as work force development, which is not possible with a low bid contract award format.

GC/CM Owners Representative Need

The experience and availability of the Project Team is vital in the success of the project, and documentation of the Team's experience is required per RCW 39.10.350.

The importance of a dedicated and experienced team cannot be overstated. City of Vancouver has the option to use outside professional services as needed to supplement current in-house staff to meet state requirement and assure a successful project.

Definitions

- Alternative Public Works Delivery Method: Alternatives to standard design-bid-build public works construction contracting procedures, authorized by RCW 39.10.
- GC/CM Contracting Method: An alternative public works procedure, authorized by 39.10.340 through 39.10.410, where the City contracts with a firm to provide services during the design phase (pre-construction services) and to provide general contractor and construction management services during the construction phase for a negotiated maximum allowable construction cost (MACC), a percent fee bid by the firm based on the MACC, and a bid fixed price for general conditions work.
- General Contractor/ Construction Manager (GCCM): A firm the City has selected and agreed with on a maximum allowable construction cost to provide pre-construction services during the design phase and to act as construction manager and general contractor during the construction phase.
- Pre-Construction Services: During the design phase of the project, the GC/CM provides construction-related services such as constructability analysis, value

engineering, cost estimating, scheduling, life-cycle cost design considerations, and alternative construction options for costs savings, and sequencing of the work to make the construction process smooth and produce a better product. The scope of work for GC/CM during pre-construction services does not include professional services such as civil engineering, which are the City's responsibility.

- Maximum Allowable Construction Cost (MACC): The negotiated construction costs which includes 4 components: -the maximum cost of the work to construct the project (total of subcontract packages) -percentage for risk contingency -negotiated support services -approved change orders.
- Total Contract Cost: Fixed amount for the Specified General Conditions Work, Percent Fee on the MACC, and the MACC.

Further Information Links

- [RCW 39.10.340: General contractor/construction manager procedure—Uses. \(wa.gov\)](#)
- [RCW 39.10.350: General contractor/construction manager procedure—Project management and contracting requirements. \(wa.gov\)](#)
- [Capital Projects Advisory Review Board \(CPARB\) | Department of Enterprise Services \(DES\) \(wa.gov\)](#)
- [Project Review Committee \(PRC\) | Department of Enterprise Services \(DES\) \(wa.gov\)](#)

Staff Report: 010-24

TO: Mayor and City Council

FROM: Eric Holmes, City Manager

DATE: 1/22/2024

SUBJECT 2023 Slurry Seal Project Acceptance and Release

Key Points

- Blackline Inc, of Vancouver, Washington, was awarded the 2023 Slurry Seal Project in April 2023 as an amendment to the 2021 Vancouver-Clark County Joint Agency Slurry Seal Project.
- Construction began in July 2023 and was physically complete in September 2023.
- This project was funded by the Pavement Management Program in the Street Fund.
- There were no apprenticeship goals for this project as the contracted amount fell below the \$500,000 threshold for the establishment of an apprenticeship goal.

Strategic Plan Alignment

Transportation and Mobility - a safe, future-ready and convenient transportation system.

Present Situation

The 2023 Slurry Seal project included approximately 25 lane miles of street preservation. Blackline Inc. of Vancouver, WA, has satisfactorily completed the subject improvements in accordance with the contract plans and specifications.

The original contract bid amount was \$358,430. Quantity adjustments during construction reduced the contract for a final contract value of \$355,319.78. There were no apprenticeship requirements for this project as the contracted amount fell below the policy threshold of \$500,000 for the establishment of an apprenticeship goal.

Advantage(s)

1. Completes the City's contractual and statutory process for accepting the project.
2. Formal project acceptance allows for closure on third-party bond claims and facilitates release of the Contractor's retainage

Disadvantage(s)

None

Budget Impact

This project was funded by the Pavement Management Program in the Street Fund.

Prior Council Review

Amended 2021 Joint Agency Slurry Seal project, Staff Report #044-23, April, 3 2023.

Action Requested

On January 22, 2024, accept the 2023 Slurry Seal Project as constructed by Blackline Inc., of Vancouver, Washington, and authorize release of retainage in the amount of \$17,765.99, subject to receipt of all documentation required by law.

Madeline Burke, Civil Engineer, 360-487-7763

Staff Report: 011-24

TO: Mayor and City Council

FROM: Eric Holmes, City Manager

DATE: 1/22/2024

SUBJECT 2023 East Curb Ramps Acceptance and Release

Key Points

- Accepts construction improvements to facilitate the release of the contractor's bond.
- The project constructed 38 ADA-compliant curb ramps on streets that were scheduled for resurfacing, microsurfacing, or cape seal in the summer of 2023, in accordance with Federal Highway Administration and ADA requirements. Final construction costs for the project are \$414,820.25.
- This project did not have an apprenticeship utilization goal.

Strategic Plan Alignment

Transportation and Mobility - a safe, future-ready and convenient transportation system.

Present Situation

Advanced Excavating Specialists LLC of Kelso, Washington has completed construction of 38 ADA-compliant curb ramps in advance of 2023 preservation treatment. The work was completed satisfactorily in accordance with the plans and specifications. The original bid amount was \$376,000.00 compared to the final amount of \$414,820.25, an approximate 10% cost increase. The cost increase is attributed to the additional flagging costs beyond the original \$32,500.00 budget. The payment for flaggers is based on the number of actual hours that flaggers work each day during the project. The number of flaggers needed to safely perform the work varies by location and is agreed to by the Contractor and the City Inspector each day.

The Engineer's Estimate was below the threshold to require an Apprentice Utilization Goal for this project.

Advantage(s)

1. Completes the City's contractual and statutory process for accepting the project.
2. Formal project acceptance allows for closure on third-party bond claims and facilitates release of the Contractor's bond.

Disadvantage(s)

None

Budget Impact

The funds for this project were approved in the Pavement Management Program in the Street Fund.

Prior Council Review

Staff Report 052-23, award of bid for 2023 East Curb Ramps project on April 10, 2023.

Action Requested

On January 22, 2024, accept the 2023 East Curb Ramps project as constructed by Advanced Excavating Specialists LLC of Kelso, Washington, and authorize release of bond, subject to receipt of all documentation required by law.

Mario Lechuga, Civil Engineer, 360-487-7795

Staff Report: 012-24

TO: Mayor and City Council

FROM: Eric Holmes, City Manager

DATE: 1/22/2024

SUBJECT 2023 Pavement Repairs Acceptance and Release

Key Points

- Accepts construction improvements to facilitate the release of the contractor's bond.
- Street improvements, including pavement repairs, planning of roadways, paving of existing roads, minor utility adjustments, and temporary striping have been completed.
- Repaving and striping the Historic Trust's parking lot has been completed.
- Final construction costs for the project are \$755,057.57.
- This project did not have an apprenticeship utilization goal.

Strategic Plan Alignment

Transportation and Mobility - a safe, future-ready and convenient transportation system.

Present Situation

Lakeside Industries of Vancouver, Washington has completed construction of street repairs, planning of roadways, paving of existing roads, minor utility adjustments, and temporary striping in advance of 2023 pavement preservation treatment. Repairing and restriping the Historic Trust's parking lot was also added to the original scope of this project.

The work was completed satisfactorily in accordance with the plans and specifications. The original bid amount was \$688,687.00 compared to the final amount of \$755,057.57, an approximate 10% cost increase. The cost increase is attributed to the additional pavement repair and striping work for the Historic Trust's parking lot that was added after project award. The addition of the Historic Trust's parking lot repairs was requested and paid for by the Parks, Recreation and Cultural Services department.

The apprenticeship goal for this project was waived per procurement's policy due to the following conditions: (1) a disproportionately high ratio of material costs to labor hours on the particular project does not make feasible the required minimum level of apprentice participation; (2) the project is less than 30 calendar days or working days in duration and will render apprentice utilization unfeasible at the required levels.

Advantage(s)

1. Completes the City's contractual and statutory process for accepting the project.
2. Formal project acceptance allows for closure on third-party bond claims and facilitates release of the Contractor's bond.

Disadvantage(s)

None

Budget Impact

The funds for this project were approved in the Pavement Management Program in the Street Fund.

Prior Council Review

Staff Report 088-23, award of bid for 2023 Pavement Repairs project on May 15, 2023.

Action Requested

On January 22, 2024, accept the 2023 Pavement Repairs project as constructed by Lakeside Industries of Vancouver, Washington, and authorize release of bond, subject to receipt of all documentation required by law.

Mario Lechuga, Civil Engineer, 360-487-7795

Staff Report: 013-24

TO: Mayor and City Council

FROM: Eric Holmes, City Manager

DATE: 1/22/2024

SUBJECT Award of Janitorial Maintenance Services Contract, per RFP 66-23

Key Points

- An RFP for Janitorial Maintenance Services was issued on November 1, 2023, and closed on November 29, 2023, with the intent to select and award a Janitorial Maintenance Service contract for a period of five (5) years.
- The City received six (6) proposals in response to the RFP and after proposal evaluations, the two highest scored proposers were invited to interview. The top scoring company was Del-Sol Inc. 4602 Kennedy Rd. West Richland, WA 99353
- Total not-to-exceed price of \$10,000,000.00 over the five-year term of the contract including approved extra work per the RFP document pricing. Contract payments will be based on actual work performed in accordance with a pricing schedule submitted with RFP. Anticipated cost, including extra work, under the first year of the contract is \$2,000,000.
- Annual adjustments to the pricing schedule are allowed in accordance with the RFP and contract documents.
- The Contract and Washington State law require the contractor to pay Washington State prevailing wages for all services rendered.

Strategic Plan Alignment

High Performing Government – a government that is reliable, fiscally responsible, equitable, and open to compromise.

Safe and Prepared Community – a safe place to live, work, learn, and play.

Present Situation

A Procurement Contract has been in place since February 1, 2019, with Del-Sol, Inc. 4602 Kennedy Rd. W. Richland, WA. 99353. The RFP was not intended to be a "low bid" solicitation, but rather meant to provide an opportunity for the City to select a vendor based on a range of criteria, including cost.

The City received six proposals in response to the RFP. The current vendor, Del-Sol, also

submitted a new proposal. Each proposal was evaluated by six individual evaluators (City employees) on four criteria: project approach and understanding; proposer capabilities and qualifications; qualifications and experience of the team; and cost. Based on the criteria and ratings, Del Sol, Inc. was the top-rated proposer.

The “base service” under the contract is for regular janitorial services at 26 facility locations throughout the City. In addition, there are provisions for extra work as needed on an on-call basis at those facilities as well as other City facilities, including eleven fire stations and eleven park restrooms. The anticipated cost for the first year under this contract is expected to be approximately \$2,000,000. Under the current janitorial contract, the annual costs would be approximately \$1,500,000, although the current contract is for a lesser amount of services so it is not an equal comparison.

Any contractor who provides janitorial services to the City is required to pay prevailing wage, which is determined by the Washington State Department of Labor and Industries, as well as comply with all applicable labor laws, including the recently adopted sick leave and family leave laws.

Services under contract would begin February 1, 2024, and run through January 31, 2029.

Advantage(s)

1. Preserves the investment in existing City buildings.
2. Avoids service disruptions and preserves janitorial maintenance and service at affected facilities.
3. A five (5) year contract creates efficiency and financial savings along with stability for janitorial staff, which in turn creates a better attitude and product in the end for the City.

Disadvantage(s)

No disadvantages identified.

Budget Impact

Baseline budget was provided in the 2023-24 biennium for approximately \$1,100,000 annually. The December 2023 supplemental budget approval added \$108,000 to fund an additional day porter; for a total of \$1,208,000 budget in 2024. Any additional contract cost increases, such as annual adjustments to the pricing schedule, will be submitted for future budget approval, including the 2025-2026 biennium.

Prior Council Review

None

Action Requested

Authorize the City Manager or designee to award a five (5) year contract for Janitorial Services Maintenance with Del-Sol Inc. 4602 Kennedy Rd. West Richland, WA 99353, effective February 1, 2024, at City-owned or occupied facilities for an amount not to exceed \$10,000,000.00 over the five-year term of the contract. Contract payments will be based on actual work performed in accordance with pricing schedule submitted with the RFP.

Joseph Cathey, Public Works Supervisor, 360-487-8386

ATTACHMENTS:

- ▣ Contract #C-101534



**CITY OF VANCOUVER
CONSTRUCTION CONTRACT # C-101534**

RFP 66-23: Janitorial Maintenance Services

This Contract (hereinafter referred to as the "Contract") is entered into by and between the City of Vancouver, Washington, a municipal corporation organized under the laws of the State of Washington (hereinafter referred to as the "City") and Del Sol, Inc., 4602 Kennedy Rd, West Richland, WA 99353, (hereinafter referred to as the "Contractor"). The City and Contractor may be collectively referred to herein as the "parties" or individually as a "party".

WHEREAS, the City desires to engage the Contractor to provide public works construction and other related services for the work described herein;

WHEREAS, Contractor has agreed to offer its services to perform said work per the City issued Request for Proposals (RFP) No. 66-23 and all addenda thereto, Contractor's Proposal to said RFP, the Project Plan Set and Special Provisions, and

WHEREAS, the Contractor represents by entering into this Contract that it is fully qualified to perform the work to which it will be assigned in a competent and professional manner, and to the standards required by the City.

NOW, THEREFORE, in consideration of the terms, conditions, covenants, and performance contained herein, or attached and incorporated and made a part hereof, the parties hereto agree as follows:

- 1. STATEMENT OF WORK:** The Contractor hereby agrees to furnish all materials, labor, tools, machinery and implements of every description necessary to complete the work in a professional manner within the time limits stated in this Contract for the construction and installation of the following improvements and will make all necessary arrangements for the obtaining of permits from the United States, State of Washington, and/or any of its agencies as may be necessary to do the work required and covered by this Contract.

The City of Vancouver is seeking an experienced, highly qualified Janitorial Contractor to provide services for City buildings and sites per attached specifications.

The period of the prices shall be for one (1) year, commencing on the effective date of the Contract. This Contract shall have prevailing wage rates updated annually; yearly cost

adjustments may be made accordingly at the discretion of the City in instances where prevailing wage rates increased above the annual Consumer Price Index-All Urban Consumers (CPI-U). An Intent to Pay Prevailing Wages must be filed at the beginning of the Contract year and an Affidavit of Wages Paid must be filed annually for any public work completed within the previous twelve (12) month period.

Yearly cost adjustments may be made accordingly at the discretion of the City. Cost adjustments shall be in accordance with the CPI-U for the Seattle-Tacoma-Bremerton area. Contractor shall submit request and justification for cost adjustments at least thirty (30) days prior to Contract renewal. The adjusted price will be approved at the beginning of each year's extension at the sole discretion of the City and must be firm for the remainder of year.

2. **EFFECTIVE DATE:** This Contract is effective as of the last signature of the Contract. The initial term of this Contract shall be for five (5) years.
3. **E-VERIFY PROGRAM:** Contractor shall register and enter into a Memorandum of Understanding (MOU) with the Department of Homeland Security E-Verify program within sixty (60) days after execution of this Contract. Contractor shall ensure all Contractor employees and any sub-contractor(s) assigned to perform work under this Contract are eligible to work in the United States. Contractor shall provide verification of compliance upon City request. Failure by Contractor to comply with this subsection shall be considered a material breach.
4. **DELINQUENT STATE TAXES:** The Contractor shall not owe delinquent taxes to the Washington State Department of Revenue without a payment plan approved by the Department of Revenue.
5. **COMPENSATION AND SCHEDULE OF PAYMENTS:** In consideration of the promises and agreements of the Contractor as set forth herein, and in consideration of the faithful performance and furnishing of the work and materials required by this Contract to the satisfaction of the City, the City agrees to pay to the Contractor as prescribed in the solicitation and Contractor's Bid, and in accordance with the ordinances of the City of Vancouver and the laws of the State of Washington, the following sum as indicated, which amount does includes 8.7% Washington State Sales Tax (if applicable) \$10,000,000.00 USD.

The amount finally to be paid is, however, variable upon the Work actually performed and final payment will be made upon the basis of the amount of work performed and the materials furnished, and at the lump sum or unit prices fixed in the Contractor's Bid and as modified by any and all approved Change Orders.

6. **CONTRACTOR'S INSURANCE:** The Contractor agrees to the following requirements relating to insurance coverage. Provide a Certificate of Liability Insurance. Said certificate must be provided on a standard "ACORD" form, or its equivalent, and must provide that coverage shall not be canceled or modified without 30 days prior written notice to the City of Vancouver.

In addition, all policies shall be issued by an insurance company licensed to do business in the State of Washington. The City of Vancouver may inspect all policies and copies shall be provided to the City upon request.

The Contractor agrees to procure insurance coverage as required below:

COVERAGE	LIMITS OF LIABILITY
I. Commercial General Liability:	
Policy shall include Bodily Injury, Property Damage, Personal Injury and Broad Form Contractual Liability	
Each Occurrence	\$1,000,000
General Aggregate Per Occurrence	\$2,000,000
Products & Completed Operations Aggregate	\$2,000,000
Personal and Advertising Injury	\$1,000,000
Blanket Contractual Liability	\$1,000,000
II. Commercial Automobile Liability	
Policy shall include Bodily Injury and Property Damage, for any owned, Hired, and/or Non-owned vehicles used in the operation, installation and maintenance of facilities under this Contract.	
Combined Single Limit	\$1,000,000
III. Workers' Compensation (applicable to the State of Washington)	
Per Occurrence	Statutory
Employer's Liability	\$1,000,000
Disease Each Employee	\$1,000,000
Disease Policy Limit	\$1,000,000
Each Claim	\$1,000,000
Annual Aggregate	\$2,000,000

In addition to the coverage and limits listed above the Contractor's insurance must all contain the following:

- a. City Listed as an Additional Insured. The City of Vancouver, its Agents, Representatives, Officers, Directors, Elected and Appointed Officials, and Employees must be named as an additional insured. The required Additional Insured endorsements shall be at least as broad as ISO CG 20 10 11 85, or its equivalent CG 20 10 07 04 and CG 20 37 07 04 must be included with the Certificate of Insurance.

- b. Either the Commercial General Liability or the Workers' Compensation policy must be endorsed to include "Washington Stop Gap" insurance. The limits and aggregates referenced must apply to the Stop Gap coverage as well and must be indicated on the certificate.
- c. Employment Security. The Contractor shall comply with all employment security laws of the State in which services are provided and shall timely make all required payments in connection therewith.
- d. The City of Vancouver shall be listed on the Certificate as the Certificate Holder.
- e. Coverage Trigger: The insurance must be written on an "occurrence" basis. This must be indicated on the Certificate.

Contractor shall provide evidence of all insurance required, at the City's request, by submitting an insurance certificate to the City on a standard "ACORD" or comparable form.

All policies shall be issued by an insurance company licensed to do business in the State of Washington. The City of Vancouver may inspect all policies and copies shall be provided to the City upon request.

- 7. **CONTRACTOR'S BOND:** The Contractor agrees that before it undertakes performance of the Contract, it will file with the Owner a Performance and Payment Bond in the full amount of the yearly Contract amount, executed by itself as a principal and one or more surety companies authorized to do business in the State of Washington as surety. The bonds shall comply with the laws of the State of Washington, and especially with the provisions of Chapter 39.08 RCW. The bonds shall be renewed each Contract year.
- 8. **DISPUTE RESOLUTION:** In the event of a dispute between the Parties which cannot be resolved by the contract managers, the Contractor and the City shall review such dispute and may attempt to resolve the dispute. Any controversy or claim arising out of or relating to this Contract or the alleged breach of this Contract that cannot be resolved by the Parties within 30 days of receipt of written notice may be submitted to mediation. If the dispute cannot be resolved through mediation, either party may initiate litigation pursuant to the governing law and venue provisions of this Contract the Parties agree to pay their own attorneys' fees and expenses.
- 9. **GOVERNING LAW/VENUE:** This Contract shall be deemed to have been executed and delivered within the State of Washington, and the rights and obligations of the parties

hereunder shall be construed and enforced in accordance with, and governed by, the laws of the State of Washington without regard to the principles of conflict of laws. Any action or suit brought in connection with this Contract shall be brought in the Superior Court of Clark County, Washington.

10. EMPLOYMENT OF LABOR: The Contractor agrees that all persons employed by Contractor and by any of its subcontractors and any of their lower tier contractors in work performed pursuant to this Contract shall not be employed in excess of eight (8) hours in any one day, except as provided or allowed by Chapter 49.28 RCW and WAC 296-127 and any amendment thereto.

11. PAYMENT OF LABOR: The Contractor agrees that all laborers, workers, or mechanics employed by it or by any subcontractor in the performance of this Contract will be paid not less than the prevailing rate of wage for an hour's work, in accordance with the provisions of the Chapter 39.12 RCW, and all rules and regulations promulgated pursuant thereto.

In case any dispute arises as to what the prevailing rates of wages for work of a similar nature are and such dispute cannot be adjusted by the parties involved, the matter shall be referred to the director of the Department of Labor and Industries of the State of Washington for arbitration, and the director's decision shall be final, conclusive and binding on all parties involved in the dispute.

12. PAYMENT TO THE CONTRACTOR: Progress payments to the Contractor shall be made within 30 days of a fully executed Pay Estimate pending all compliance with all contractual requirements. The City reserves the right to require Contractor to correct any submitted or paid erroneous invoices according to the rates set forth herein. City and Contractor agree that any amount paid in error by City does not constitute a change in the agreed upon amount; Contractor agrees to issue a refund of any overages paid in error by the City.

No payment shall be made to the Contractor, however, until the Contractor and all subcontractors who have performed work shall have filed and received approval of a Statement of Intent to Pay Prevailing Wage as required by RCW 39.12.040 from the Washington State Department a Labor and Industries. Said Contractor and all subcontractors shall also keep accurate payroll records for three years from the date of acceptance as described in RCW 39.12.120. A Contractor and all subcontractors shall, file a copy of its certified payroll records using the Department of Labor and Industries online system on a monthly basis. A Contractor's noncompliance with this section shall constitute a violation of RCW 39.12.050.

13. INDEMNIFICATION: Contractor agrees to indemnify, defend, save and hold harmless the City, its officials, employees and agents from any and all liability, including but not limited to demands, claims, causes of action, suits or judgments, claims of copyright or patent infringement, including costs, attorney fees and expenses incurred in connection therewith,

or whatsoever kind or nature, arising out of, or in connection with, or incident to, the performance of services by Contractor pursuant to this Contract.

In the event that any suit based on such a claim, demand, loss, damage, cost, or cause of action is brought against the Contractor, the City retains the right to participate in said suit.

This indemnity and hold harmless shall include any claim made against the City by an employee of Contractor or subcontractor or agent of the Contractor, even if Contractor is thus otherwise immune from liability pursuant to the workers' compensation statute, Title 51 RCW. To the extent that such liability arises from the concurrent negligence of both the City and the Contractor, such cost, fees and expenses shall be shared between the City and the Contractor in proportion to their relative degrees of negligence. This indemnity and hold harmless shall NOT apply in the case where liability arises from the sole negligence of the City. Contractor specifically acknowledges that the provisions contained herein have been mutually negotiated by the Parties and it is the intent of the Parties that Contractor provide the broadest scope of indemnity permitted by RCW 4.24.115.

- 14. OWNERSHIP OF RECORDS AND DOCUMENTS:** Any and all work product prepared by the Contractor in the course of performing this Contract shall immediately become the property of the City. In consideration of the compensation provided for by this Contract, the Contractor hereby further assigns all copyright interests in such work product to the City. A copy may be retained by the Contractor. Previously owned intellectual property of Contractor or any third party, and any know-how, methodologies or processes used by Contractor to provide the services or project deliverables under this Contract shall remain property of the original City.
- 15. PUBLIC DISCLOSURE COMPLIANCE:** The parties acknowledge that the City is an "agency" within the meaning of the Washington Public Records Act, Chapter 42.56 RCW, and that materials submitted by the Contractor to the City become public record. Such records may be subject to public disclosure, in whole or part and may be required to be released by the City in the event of a request for disclosure. In the event the City receives a public record request for any data or deliverable that is provided to the City and that is licensed from the Contractor, the City shall notify the Contractor of such request and withhold disclosure of such information for not less than five (5) business days, to permit the Contractor to seek judicial protection of such information, provided that the Contractor shall be responsible for attorney fees and costs in such action and shall save and hold harmless the City from any costs, attorney fees or penalty assessment under Chapter 42.17 RCW for withholding or delaying public disclosure of such information.
- 16. AMENDMENTS:** All changes to this Contract, including changes to the statement of work and compensation, must be made by written Change Order and/or Amendment and signed by all parties to this Contract.

- 17. AUTHORIZATION AND COMPLIANCE WITH THE LAW:** The Contractor certifies that the person signing the Contract is legally authorized to enter into this binding Contract and that the Contractor shall fully comply with all relevant, federal, state and municipal laws, rules, regulations and policies.
- 18. RELATION OF PARTIES:** The Contractor, its subcontractors, agents and employees are independent contractors performing services for The City and are not employees of City; shall not, as a result of this Contract, accrue leave, retirement, insurance, bonding or any other benefits afforded to City employees; and, shall not have the authority to bind the City in any way except as may be specifically provided in the Statement of Work.
- 19. ASSIGNMENT:** This Contract is binding on each party, its successors, assigns, and legal representatives and may not, under any circumstances, be assigned or transferred by either party without the other party's express written authorization.
- 20. TERMINATION FOR CONVENIENCE:** The City, at its sole discretion, may terminate this Contract for convenience at any time for any reason deemed appropriate. Termination is effective immediately upon notice of termination given by the City.

In the event this Contract is terminated prior to the completion of Work, Contractor will only be paid for the Work completed at the time of termination of the Contract.

- 21. TERMINATION FOR CAUSE:** In the event the Contractor is, or has been, in violation of the terms of this Contract, including the solicitation, the City reserves the right, upon written notice to the Contractor, to cancel, terminate, or suspend this contract in whole or in part for default. Termination shall be affected by serving a notice of termination on the Contractor setting forth the manner in which the Contractor is in default. The Contractor will be paid only the contract price for services performed in accordance with the manner of performance set forth in the Contract.

If it is later determined by the City that the Contractor had an excusable reason for not performing, such as a strike, fire, or flood, or events which are not the fault of or are beyond the control of the Contractor, the City after setting up a new delivery or performance schedule, may allow the Contractor to continue work or treat the termination as a termination for convenience.

- 22. OPPORTUNITY TO CURE:** The City at its sole discretion may in lieu of a termination allow the Contractor to cure the defect(s), by providing a "Notice to Cure" to Contractor setting forth the remedies sought by City and the deadline to accomplish the remedies. If the Contractor fails to remedy to the City's satisfaction the breach or default of any of the terms, covenants, or conditions of this Contract within the time stated time, the City shall have the right to terminate the Contract without any further obligation to the Contractor. Any such termination for default shall not in any way operate to preclude the City from also pursuing

all available remedies against the Contractor and its sureties for said breach or default, including but not limited to termination of this Contract for convenience.

- 23. WAIVER AND REMEDIES:** City's failure to enforce the terms or conditions herein or to exercise any right or privilege, or the City's waiver of any breach hereunder shall not thereafter waive any other term, condition, or privilege, whether of the same or similar type. Remedies under this Contract are cumulative; the use of one remedy shall not be taken to exclude or waive the right to use another.
- 24. ENTIRETY OF CONTRACT:** This Contract incorporates all the agreements, covenants and understanding between the parties hereto and are merged into this written Contract. No prior agreement or prior understanding, verbal or otherwise, of the parties or their agents shall be valid or enforceable unless set forth in this Contract.
- 25. USE OF CITY'S NAME:** Contractor may not use any of City's name, trademark, service marks, or logo in connection with the services contemplated by this Contract or otherwise without the prior written permission of City, which permission may be withheld for any or no reason and may be subject to certain conditions.
- 26. NON-DISCRIMINATION AND EQUAL EMPLOYMENT OPPORTUNITY:** During the term of this Contract, Contractor will not discriminate against any employee or applicant for employment in accordance with RCW Chapter 49.60, including, but not limited to creed, religion, race, color, age, sex, marital status, sexual orientation, sexual identity, pregnancy, military status, political ideology, ancestry, national origin, or the presence of any sensory, mental or physical disability, unless based upon a bona fide occupational qualification. The Contractor will take affirmative action to ensure that applicants and employees are treated fairly, without regard to their creed, religion, race, color, sex, national origin, or the presence of any sensory, mental or physical disability. Such action shall include all terms and conditions of employment, compensation, and benefits, including apprenticeship.
- 27. BINDING EFFECT:** The provisions, covenants and conditions in this Contract bind the parties, their legal heirs, representatives, successors, and assigns.
- 28. RATIFICATION:** Acts taken pursuant to this Contract but prior to its effective date are hereby ratified and confirmed.
- 29. CONTRACT DOCUMENTS AND ORDER OF PRECEDENCE:** The complete Contract includes these parts and any inconsistency in the parts of the contract shall be resolved by following this order of precedence (e.g., 1 presiding over 2, 2 over 3, 3 over 4, and so forth):

1. Amendments to the Contract,
2. This Contract,
3. Proposal,

4. Addenda to the Request for Proposals,
5. Request for Proposals.

30. NOTICES: All notices which are given or required to be given pursuant to this Contract shall be hand delivered, mailed postage paid, or sent by electronic mail as follows:

For the Owner:

Anna Vogel

City of Vancouver

415 W 6th Street

P O Box 1995

Vancouver WA 98668-1995

anna.vogel@cityofvancouver.us

For the Contractor:

Priscilla Martinez

Del Sol, Inc.

4602 Kennedy Rd.

West Richland, WA 99353

Priscilla@delsolinc.com

The undersigned, as the authorized representatives of the Owner and Contractor respectively, agree to all of the terms and conditions contained in this Contract, as of the dates set forth below.

CITY OF VANCOUVER

A municipal corporation

CONTRACTOR:

Del Sol, Inc.

Eric Holmes, City Manager

Signature

Date

Printed Name /Title

Attest:

Date

Natasha Ramras, City Clerk

Approved as to form:

Jonathan Young, City Attorney

Staff Report: 014-24

TO: Mayor and City Council

FROM: Eric Holmes, City Manager

DATE: 1/22/2024

SUBJECT Bid Award for NE 192nd Avenue and NE 13th Street Intersection Improvement (Bid # 23-50) Project No. PRJ072331

Key Points

- The project will add a northbound right turn lane on NE 192nd Avenue at NE 13th Street. The intersection striping will be refreshed with pedestrian crosswalks on the north and east legs of the intersection.
- The project will add Americans with Disabilities Act (ADA) compliant curb ramps for the north and east leg marked crosswalks.
- The project will upgrade the existing traffic signal to include Audible Pedestrian Signal (APS) pushbuttons and include additional intersection lighting.
- Completion of this project will facilitate the future improvements at the west side of the intersection. Future development of the Harmony Sports Complex will include construction of the west leg of the intersection.
- The project is funded through developer contributions and Transportation Capital Fund.

Strategic Plan Alignment

Transportation and Mobility - a safe, future-ready and convenient transportation system. Miles of complete streets/mobility lanes/sidewalks and number of Americans with Disabilities Act (ADA) compliant curb ramps/audible pedestrian signal (APS) conversions.

Economic Opportunity - a place where a wide variety of businesses of all sizes grow and thrive.

Vibrant and Distinct Neighborhoods – a variety of accessible places and spaces.

Present Situation

The existing NE 192nd Avenue and NE 13th Street intersection has three approaches: north, east, and south. The west leg of the intersection lies on the Harmony Sports Complex parcel. NE 192nd Avenue is a two-lane facility with narrow asphalt shoulders and no bike lane or sidewalk. NE 13th Street east of the intersection is within Clark County. NE 13th Street is a two-lane asphalt roadway

approximately 30 feet wide, with attached sidewalk on the north side of the road. The south side of the road has approximately 1 foot asphalt shoulder and no sidewalk.

A future corridor project on NE 192nd Avenue from SE 1st Street to NE 18th Street is currently in design to improve NE 192nd Avenue Corridor.

On December 12, 2023, the City received 8 bids for the subject project. The bids ranged between \$313,528 and \$520,520. The low bidder was responsive. The bids were as follows:

SUMMARY OF BIDS	
BIDDER	AMOUNT
Halme Excavating, Inc., Battle Ground, WA	\$313,528.00
Advanced Excavating, Kelso, WA	\$323,729.00
Clark and Sons, Battle Ground, WA	\$326,771.81
Slateco LLC, Woodland, WA	\$392,034.00
Western United Civil Group, LLC, Yacolt, WA	\$389,474.50
McDonald Excavating, Washougal, WA	\$436,675.00
Jeffries Company, Woodland, WA	\$451,725.00
Granite Construction Company, Vancouver, WA	\$520,520.00
Engineer's Estimate	\$275,000

Pursuant to City policy, this project does not include City's apprenticeship utilization requirements since the engineer's estimate is under \$500,000.

Advantage(s)

1. Efficiency through the intersection will be improved with the addition of the right turn lane.
2. Drainage on the east side of the intersection will be improved at the crosswalk.
3. The project will facilitate and accelerate economic development activity for the Harmony Sports Complex on the west leg of the intersection.

Disadvantage(s)

1. Neighborhood residents, businesses and local traffic will be inconvenienced during the construction period; and
2. Construction will generate noise and dust; however, the contractor will implement dust control and erosion control strategies.

Budget Impact

The project is currently funded through developer contributions and other local revenues. The project is included in the 2023-2024 biennial budget.

Prior Council Review

1. Approval of the 2023-2024 biennial budget which included the referenced project,
2. Approval of the 2024-2029 Transportation Improvement Program (TIP), Resolution No. M-4235. (June 26, 2023)

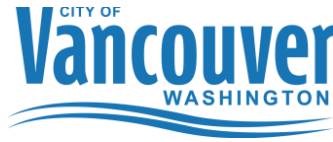
Action Requested

On January 22, 2024, award a construction contract for the NE 192nd Avenue at NE 13th Street Intersection Improvements project to the lowest responsive and responsible bidder, Halme Excavating, Inc., of Battle Ground, Washington at their bid price of \$313,528.00, which includes Washington State Sales Tax and authorize the City Manager or designee to execute the same.

Hassan Abdalla, PE, Engineering Manager, 360-487-7704

ATTACHMENTS:

- ▣ Contract
- ▣ Project Map



CONSTRUCTION CONTRACT # C-101528
BID 23-50: NE 192nd Ave at NE 13th St Intersection Improvements

This Contract (hereinafter referred to as the "Contract") is entered into by and between the City of Vancouver, Washington, a municipal corporation organized under the laws of the State of Washington (hereinafter referred to as the "City") and Halme Excavating, Inc., 22514 NE 72nd Ave., Battle Ground, WA 98604 (hereinafter referred to as the "Contractor"). The City and Contractor may be collectively referred to herein as the "parties" or individually as a "party".

WHEREAS, the City desires to engage the Contractor to provide public works construction and other related services for the work described herein;

WHEREAS, Contractor has agreed to offer its services to perform said work per the City issued Invitation to Bid (ITB) No. 23-50 and all addenda thereto, Contractor's Bid to said ITB, the Project Plan Set and Special Provisions, and City Council's approval on **Month Day, Year** per Staff Report No. **##-##**; and

WHEREAS, the Contractor represents by entering into this Contract that it is fully qualified to perform the work to which it will be assigned in a competent and professional manner, and to the standards required by the City.

NOW, THEREFORE, in consideration of the terms, conditions, covenants, and performance contained herein, or attached and incorporated and made a part hereof, the parties hereto agree as follows:

1. **STATEMENT OF WORK:** The Contractor hereby agrees to furnish all materials, labor, tools, machinery and implements of every description necessary to complete the work in a professional manner within the time limits stated in this Contract for the construction and installation of the following improvements and will make all necessary arrangements for the obtaining of permits from the United States, State of Washington, and/or any of its agencies as may be necessary to do the work required and covered by this Contract.

This Contract provides for the improvement of NE 192nd Ave and NE 13th St within the City of Vancouver including northbound right turn lane, curb ramps, signing, striping, illumination, signal modifications and other work, all in accordance with the attached Contract Plans, these Contract Provisions, and the Standard Specifications, hereafter referred to as "Work."

The Work shall be Physically Complete within 45 Working Days from the Notice to Proceed (NTP) date.

2. **EFFECTIVE DATE:** This Contract is effective as of the last signature of the Contract.

3. **E-VERIFY PROGRAM:** Contractor shall register and enter into a Memorandum of Understanding (MOU) with the Department of Homeland Security E-Verify program within sixty (60) days after execution of this Contract. Contractor shall ensure all Contractor employees and any sub-contractor(s) assigned to perform work under this Contract are eligible to work in the United States. Contractor shall provide verification of compliance upon City request. Failure by Contractor to comply with this subsection shall be considered a material breach.
4. **CONTRACTOR RESPONSIBILITIES FOR SUBCONTRACTORS:** The Contractor shall include the language of this section in all tier subcontracts and shall require each of its subcontractors to include the same language of this section in each of their subcontracts, adjusting only as necessary the terms used for the contracting parties. The requirements of this section apply to all subcontractors regardless of tier. The Contractor shall require all subcontractors to comply with all relevant federal, state and municipal laws, rules and regulations whatsoever.

At the time of subcontract execution, the Contractor shall verify that all tier subcontractors meet the following bidder responsibility criteria:

1. Have a current certificate of registration in compliance with chapter 18.27 RCW, which must have been in effect at the time of subcontract bid submittal;
 2. Have a current Washington Unified Business Identifier (UBI) number;
 3. Have received training on the requirements related to public works and prevailing wage as required by RCW 39.04.350;
 4. Within the three-year period immediately preceding the date of the bid solicitation, not have been determined by a final and binding citation and notice of assessment issued by the department of labor and industries or through a civil judgment entered by a court of limited or general jurisdiction to have willfully violated, as defined in RCW 49.48.082, any provision of chapter 49.46, 49.48, or 49.52 RCW.
 5. If applicable, have:
 - i. Have Industrial Insurance (workers' compensation) coverage for the subcontractor's employees working in Washington, as required in Title 51 RCW;
 - ii. A Washington Employment Security Department reference number, as required in Title 50 RCW;
 - iii. A Washington Department of Revenue state excise tax registration number, as required in Title 82 RCW;
 - iv. An electrical contractor license, if required by Chapter 19.28 RCW;
 - v. An elevator contractor license, if required by Chapter 70.87 RCW.
 6. Not be disqualified from bidding on any public works contract under RCW 39.06.010 or 39.12.065 (3).
5. **DELINQUENT STATE TAXES:** The Contractor shall not owe delinquent taxes to the Washington State Department of Revenue without a payment plan approved by the Department of Revenue.

- 6. COMPENSATION AND SCHEDULE OF PAYMENTS:** In consideration of the promises and agreements of the Contractor as set forth herein, and in consideration of the faithful performance and furnishing of the work and materials required by this Contract to the satisfaction of the City, the City agrees to pay to the Contractor as prescribed in the solicitation and Contractor's Bid, and in accordance with the ordinances of the City of Vancouver and the laws of the State of Washington, the following sum as indicated, which amount does includes 8.5% Washington State Sales Tax (if applicable) \$313,528.00 USD.

The amount finally to be paid is, however, variable upon the Work actually performed and final payment will be made upon the basis of the amount of work performed and the materials furnished, and at the lump sum or unit prices fixed in the Contractor's Bid and as modified by any and all approved Change Orders.

- 1. CONTRACTOR'S INSURANCE:** The Contractor agrees to the following requirements relating to insurance coverage. Provide a Certificate of Liability Insurance. Said certificate must be provided on a standard "ACORD" form, or its equivalent, and must provide that coverage shall not be canceled or modified without 30 days prior written notice to the City of Vancouver.

In addition, all policies shall be issued by an insurance company licensed to do business in the State of Washington. The City of Vancouver may inspect all policies and copies shall be provided to the City upon request.

The Contractor agrees to procure insurance coverage as required below:

COVERAGE	LIMITS OF LIABILITY
I. Commercial General Liability:	
Policy shall include Bodily Injury, Property Damage, Personal Injury and Broad Form Contractual Liability	
Each Occurrence	\$1,000,000
General Aggregate Per Occurrence	\$2,000,000
Products & Completed Operations Aggregate	\$2,000,000
Personal and Advertising Injury	\$1,000,000
Blanket Contractual Liability	\$1,000,000
II. Commercial Automobile Liability	
Policy shall include Bodily Injury and Property Damage, for any owned, Hired, and/or Non-owned vehicles used in the operation, installation and maintenance of facilities under this Contract.	
Combined Single Limit	\$1,000,000
III. Workers' Compensation (applicable to the State of Washington)	
Per Occurrence	Statutory
Employer's Liability	\$1,000,000
Disease Each Employee	\$1,000,000

COVERAGE	LIMITS OF LIABILITY
Disease Policy Limit	\$1,000,000
Each Claim	\$1,000,000
Annual Aggregate	\$2,000,000
IV. Pollution Legal Liability	
Each Claim	\$1,000,000
Annual Aggregate	\$2,000,000

In addition to the coverage and limits listed above the Contractor's insurance must all contain the following:

- a. City Listed as an Additional Insured. The City of Vancouver, its Agents, Representatives, Officers, Directors, Elected and Appointed Officials, and Employees must be named as an additional insured. The required Additional Insured endorsements shall be at least as broad as ISO CG 20 10 11 85, or its equivalent CG 20 10 07 04 and CG 20 37 07 04 must be included with the Certificate of Insurance.
- b. Either the Commercial General Liability or the Workers' Compensation policy must be endorsed to include "Washington Stop Gap" insurance. The limits and aggregates referenced must apply to the Stop Gap coverage as well and must be indicated on the certificate.
- c. Employment Security. The Contractor shall comply with all employment security laws of the State in which services are provided and shall timely make all required payments in connection therewith.
- d. The City of Vancouver shall be listed on the Certificate as the Certificate Holder.
- e. Coverage Trigger: The insurance must be written on an "occurrence" basis. This must be indicated on the Certificate.

Contractor shall provide evidence of all insurance required, at the City's request, by submitting an insurance certificate to the City on a standard "ACORD" or comparable form.

All policies shall be issued by an insurance company licensed to do business in the State of Washington. The City of Vancouver may inspect all policies and copies shall be provided to the City upon request.

2. **CONTRACTOR'S BOND:** The Contractor agrees that before it undertakes performance of this Contract, it will file with the City of Vancouver a Performance Bond and Payment Bond, in the forms prescribed by the City of Vancouver, in the full amount of the Contract price with a company authorized to do business in the State of Washington as a surety. The bonds shall

comply with the laws of the State of Washington, and especially with the provisions of Chapter 39.08 RCW.

3. **DISPUTE RESOLUTION:** In the event of a dispute between the Parties which cannot be resolved by the contract managers, the Contractor and the City shall review such dispute and may attempt to resolve the dispute. Any controversy or claim arising out of or relating to this Contract or the alleged breach of this Contract that cannot be resolved by the Parties within 30 days of receipt of written notice may be submitted to mediation. If the dispute cannot be resolved through mediation, either party may initiate litigation pursuant to the governing law and venue provisions of this Contract. The Parties agree to pay their own attorneys' fees and expenses.
4. **GOVERNING LAW/VENUE:** This Contract shall be deemed to have been executed and delivered within the State of Washington, and the rights and obligations of the parties hereunder shall be construed and enforced in accordance with, and governed by, the laws of the State of Washington without regard to the principles of conflict of laws. Any action or suit brought in connection with this Contract shall be brought in the Superior Court of Clark County, Washington.
5. **EMPLOYMENT OF LABOR:** The Contractor agrees that all persons employed by Contractor and by any of its subcontractors and any of their lower tier contractors in work performed pursuant to this Contract shall not be employed in excess of eight (8) hours in any one day, except as provided or allowed by Chapter 49.28 RCW and WAC 296-127 and any amendment thereto.
6. **PAYMENT OF LABOR:** The Contractor agrees that all laborers, workers, or mechanics employed by it or by any subcontractor in the performance of this Contract will be paid not less than the prevailing rate of wage for an hours work, in accordance with the provisions of the Chapter 39.12 RCW, and all rules and regulations promulgated pursuant thereto.

The prevailing wage in effect for the first contract year is **Tuesday, December 12, 2023**. This rate will be updated annually on the anniversary of the contract.

In case any dispute arises as to what the prevailing rates of wages for work of a similar nature are and such dispute cannot be adjusted by the parties involved, the matter shall be referred to the director of the Department of Labor and Industries of the State of Washington for arbitration, and the director's decision shall be final, conclusive and binding on all parties involved in the dispute.

7. **PAYMENT TO THE CONTRACTOR:** Progress payments to the Contractor shall be made within 30 days of a fully executed Pay Estimate pending all compliance with all contractual requirements. A sum equal to 5% may be reserved and retained from monies earned by the Contractor in accordance with Chapter 60.28 RCW. The City reserves the right to require Contractor to correct any submitted or paid erroneous invoices according to the rates set forth herein. City and Contractor agree that any amount paid in error by City does not constitute a change in the agreed upon amount; Contractor agrees to issue a refund of any overages paid in error by the City.

Release of the retained percentage or the retainage bond shall be in accordance with Chapter 60.28 RCW. Every person performing labor or furnishing supplies toward the completion of said improvement of work shall have a lien upon said monies so reserved; provided, that such notice of the lien of such claimant shall be given in the manner provided in RCW 39.08.030 and within the time provided in Chapter 60.28 RCW as now existing and in accordance with any amendments that may hereafter be made thereto.

No payment shall be made to the Contractor, however, until the Contractor and all subcontractors who have performed work shall have filed and received approval of a Statement of Intent to Pay Prevailing Wage as required by RCW 39.12.040 from the Washington State Department of Labor and Industries. Said Contractor and all subcontractors shall also keep accurate payroll records for three years from the date of acceptance as described in RCW 39.12.120. A Contractor and all subcontractors shall, file a copy of its certified payroll records using the Department of Labor and Industries online system on a monthly basis. A Contractor's noncompliance with this section shall constitute a violation of RCW 39.12.050.

8. **INDEMNIFICATION:** Contractor agrees to indemnify, defend, save and hold harmless the City, its officials, employees and agents from any and all liability, including but not limited to demands, claims, causes of action, suits or judgments, claims of copyright or patent infringement, including costs, attorney fees and expenses incurred in connection therewith, or whatsoever kind or nature, arising out of, or in connection with, or incident to, the performance of services by Contractor pursuant to this Contract.

In the event that any suit based on such a claim, demand, loss, damage, cost, or cause of action is brought against the Contractor, the City retains the right to participate in said suit.

This indemnity and hold harmless shall include any claim made against the City by an employee of Contractor or subcontractor or agent of the Contractor, even if Contractor is thus otherwise immune from liability pursuant to the workers' compensation statute, Title 51 RCW. To the extent that such liability arises from the concurrent negligence of both the City and the Contractor, such cost, fees and expenses shall be shared between the City and the Contractor in proportion to their relative degrees of negligence. This indemnity and hold harmless shall NOT apply in the case where liability arises from the sole negligence of the City. Contractor specifically acknowledges that the provisions contained herein have been mutually negotiated by the Parties and it is the intent of the Parties that Contractor provide the broadest scope of indemnity permitted by RCW 4.24.115.

9. **OWNERSHIP OF RECORDS AND DOCUMENTS:** Any and all work product prepared by the Contractor in the course of performing this Contract shall immediately become the property of the City. In consideration of the compensation provided for by this Contract, the Contractor hereby further assigns all copyright interests in such work product to the City. A copy may be retained by the Contractor. Previously owned intellectual property of Contractor or any third party, and any know-how, methodologies or processes used by Contractor to provide the services or project deliverables under this Contract shall remain property of the original City.

10. **PUBLIC DISCLOSURE COMPLIANCE:** The parties acknowledge that the City is an “agency” within the meaning of the Washington Public Records Act, Chapter 42.56 RCW, and that materials submitted by the Contractor to the City become public record. Such records may be subject to public disclosure, in whole or part and may be required to be released by the City in the event of a request for disclosure. In the event the City receives a public record request for any data or deliverable that is provided to the City and that is licensed from the Contractor, the City shall notify the Contractor of such request and withhold disclosure of such information for not less than five (5) business days, to permit the Contractor to seek judicial protection of such information, provided that the Contractor shall be responsible for attorney fees and costs in such action and shall save and hold harmless the City from any costs, attorney fees or penalty assessment under Chapter 42.17 RCW for withholding or delaying public disclosure of such information.
11. **COOPERATIVE PURCHASING:** The Washington State Inter-local Cooperation Act, Ch. 39.34 RCW, authorizes public agencies to cooperatively purchase goods and services if all parties agree. By having executed this Agreement, the Contractor agrees that other public agencies may purchase goods and services under this solicitation or contract at their own cost and without the City incurring any financial or legal liability for such purchases. The City agrees to allow other public agencies to purchase goods and services under this solicitation or contract, provided that the City is not held financially or legally liable for purchases and that any public agency purchasing under such solicitation or contract file a copy of this invitation and such contract in accordance with RCW 39.34.040.
12. **AMENDMENTS:** All changes to this Contract, including changes to the statement of work and compensation, must be made by written Change Order and/or Amendment and signed by all parties to this Contract.
13. **AUTHORIZATION AND COMPLIANCE WITH THE LAW:** The Contractor certifies that the person signing the Contract is legally authorized to enter into this binding Contract and that the Contractor shall fully comply with all relevant, federal, state and municipal laws, rules, regulations and policies.
14. **CITY BUSINESS AND OCCUPATION LICENSE:** The Contractor will be required to obtain a business license when contracting with the City unless allowable exemptions apply. The Contractor shall contact the State of Washington Business License Service (BLS) at: <http://bls.dor.wa.gov/file.aspx>, or by phone at 800-451-7985, or go to www.bls.dor.wa.gov/cities/vancouver.aspx or www.cityofvancouver.us/businesslicense, to determine whether a business license is required pursuant to the Vancouver Municipal Code (VMC) Chapter 5.04.
15. **RELATION OF PARTIES:** The Contractor, its subcontractors, agents and employees are independent contractors performing services for The City and are not employees of City; shall not, as a result of this Contract, accrue leave, retirement, insurance, bonding or any other benefits afforded to City employees; and, shall not have the authority to bind the City in any way except as may be specifically provided in the Statement of Work.

16. **ASSIGNMENT:** This Contract is binding on each party, its successors, assigns, and legal representatives and may not, under any circumstances, be assigned or transferred by either party without the other party's express written authorization.

17. **TERMINATION FOR CONVENIENCE:** The City, at its sole discretion, may terminate this Contract for convenience at any time for any reason deemed appropriate. Termination is effective immediately upon notice of termination given by the City.

In the event this Contract is terminated prior to the completion of Work, Contractor will only be paid for the Work completed at the time of termination of the Contract.

18. **TERMINATION FOR CAUSE:** In the event the Contractor is, or has been, in violation of the terms of this Contract, including the solicitation, the City reserves the right, upon written notice to the Contractor, to cancel, terminate, or suspend this contract in whole or in part for default. Termination shall be effected by serving a notice of termination on the Contractor setting forth the manner in which the Contractor is in default. The Contractor will be paid only the contract price for services performed in accordance with the manner of performance set forth in the Contract.

If it is later determined by the City that the Contractor had an excusable reason for not performing, such as a strike, fire, or flood, or events which are not the fault of or are beyond the control of the Contractor, the City after setting up a new delivery or performance schedule, may allow the Contractor to continue work or treat the termination as a termination for convenience.

19. **OPPORTUNITY TO CURE:** The City at its sole discretion may in lieu of a termination allow the Contractor to cure the defect(s), by providing a "Notice to Cure" to Contractor setting forth the remedies sought by City and the deadline to accomplish the remedies. If the Contractor fails to remedy to the City's satisfaction the breach or default of any of the terms, covenants, or conditions of this Contract within the time stated time, the City shall have the right to terminate the Contract without any further obligation to the Contractor. Any such termination for default shall not in any way operate to preclude the City from also pursuing all available remedies against the Contractor and its sureties for said breach or default, including but not limited to termination of this Contract for convenience.

20. **WAIVER AND REMEDIES:** City's failure to enforce the terms or conditions herein or to exercise any right or privilege, or the City's waiver of any breach hereunder shall not thereafter waive any other term, condition, or privilege, whether of the same or similar type. Remedies under this Contract are cumulative; the use of one remedy shall not be taken to exclude or waive the right to use another.

21. **ENTIRETY OF CONTRACT:** This Contract incorporates all the agreements, covenants and understanding between the parties hereto and are merged into this written Contract. No prior agreement or prior understanding, verbal or otherwise, of the parties or their agents shall be valid or enforceable unless set forth in this Contract.

22. **USE OF CITY'S NAME:** Contractor may not use any of City's name, trademark, service marks, or logo in connection with the services contemplated by this Contract or otherwise without the prior written permission of City, which permission may be withheld for any or no reason and may be subject to certain conditions.
23. **DEBARMENT:** The Contractor certifies that that it is not presently debarred, suspended, proposed for debarment, and declared ineligible or voluntarily excluded from covered transactions by any Federal, State or local department or agency.
24. **NON-DISCRIMINATION AND EQUAL EMPLOYMENT OPPORTUNITY:** During the term of this Contract, Contractor will not discriminate against any employee or applicant for employment in accordance with RCW Chapter 49.60, including, but not limited to creed, religion, race, color, age, sex, marital status, sexual orientation, sexual identity, pregnancy, military status, political ideology, ancestry, national origin, or the presence of any sensory, mental or physical disability, unless based upon a bona fide occupational qualification. The Contractor will take affirmative action to ensure that applicants and employees are treated fairly, without regard to their creed, religion, race, color, sex, national origin, or the presence of any sensory, mental or physical disability. Such action shall include all terms and conditions of employment, compensation, and benefits, including apprenticeship.
25. **BINDING EFFECT:** The provisions, covenants and conditions in this Contract bind the parties, their legal heirs, representatives, successors, and assigns.
26. **RATIFICATION:** Acts taken pursuant to this Contract but prior to its effective date are hereby ratified and confirmed.
27. **CONTRACT DOCUMENTS AND ORDER OF PRECEDENCE:** The complete Contract includes these parts, all of which are incorporated herein by reference, and any inconsistency in the parts of the contract shall be resolved by following this order of precedence (e.g., 1 presiding over 2, 2 over 3, 3 over 4, and so forth):
1. Amendments to the Contract,
 2. This Contract,
 3. Contractor's Bid including all Addenda to the Solicitation,
 4. Special Provisions,
 5. Contract Plan Set,
 6. City of Vancouver Standard Plans,
 7. WSDOT Standard Specifications,
 8. WSDOT Standard Plans.

On the Contract Plans, Working Drawings, and Standard Plans, figured dimensions shall take precedence over scaled dimensions.

Whenever reference is made in these Specifications or the Special Provisions to codes, rules, specifications, and standards, the reference shall be construed to mean the code, rule, specification, or standard that is in effect on the Invitation to Bid advertisement date, unless otherwise stated or as required by law.

If any part of the Contract requires Work that does not include a description for how the Work is to be performed, the Work shall be performed in accordance with standard trade practice(s). For purposes of the Contract, a standard trade practice is one having such regularity of observance in the trade as to justify an expectation that it will be observed by the Contractor in doing the Work.

28. **NOTICES:** All notices which are given or required to be given pursuant to this Contract shall be hand delivered, mailed postage paid, or sent by electronic mail as follows:

For the Owner:
Anna Vogel
City of Vancouver
415 W 6th Street
P O Box 1995
Vancouver WA 98668-1995
anna.vogel@cityofvancouver.us

For the Contractor:
Andrew Halme
Halme Excavating, Inc.
22514 NE 72nd Ave.
Battle Ground, WA 98604
office@halmepnw.com

The undersigned, as the authorized representatives of the Owner and Contractor respectively, agree to all of the terms and conditions contained in this Contract, as of the dates set forth below.

CITY OF VANCOUVER
A municipal corporation

CONTRACTOR:
Halme Excavating, Inc.

Eric Holmes, City Manager

Signature

Date

Printed Name /Title

Attest:

Date

Natasha Ramras, City Clerk

Approved as to form:

Jonathan Young, City Attorney



NE 192ND AVE AND NE 13TH ST
INTERSECTION IMPROVEMENTS

Staff Report: 015-24

TO: Mayor and City Council

FROM: Eric Holmes, City Manager

DATE: 1/22/2024

SUBJECT Approval of an increase for purchasing bucket truck lift bodies and related equipment using Sourcewell Contract 110421 with Versalift NW; C-101525

Key Points

- The City contracts with Versalift NW through Sourcewell Contract 110421 for purchasing and installing bucket lift bodies and related equipment onto new cab and chassis trucks purchased by Fleet Services.
- Purchases from this contract will exceed the City's \$300,000 purchasing threshold.
- The contract is set to expire December 27th, 2025.
- The original contract was competitively bid and conforms to the bidding requirements set forth by Sourcewell and the City of Vancouver.

Strategic Plan Alignment

Safe and Prepared Community – a safe place to live, work, learn, and play.

Present Situation

Currently, there are two bucket lift trucks in the fleet that are due for replacement. This contract is for purchasing the parts and labor needed to build these two trucks. Included on this build is an all-electric Power Take Off (PTO) that will allow the operator to turn the truck's engine off and still operate the bucket lift and all its hydraulic implements. This Electric Power Take Off (E-PTO) will be a standard piece of equipment on all our bucket lift trucks moving forward and all other fleet pieces of equipment where applicable. Fleet Service's staff is requesting that the contract be amended for purchases to be made according to the departments' current authorized budget in place of setting a new spending threshold.

Advantage(s)

1. The services purchased through this contract match current City standards.
2. The vendor covered under this contract has continuously provided vehicles and services that help maintain uniformity in the City fleet and the operational needs of multiple City maintenance departments.

3. The approval for continued use of this contract will enable Fleet Services to replace existing bucket lift trucks due for replacement with newer trucks upfitted with carbon reducing technologies.

Disadvantage(s)

None

Budget Impact

None. The City will utilize the contract and stay within the current authorized 2023-2024 biennial budget for purchasing equipment.

Prior Council Review

N/A

Action Requested

Authorize the City Manager, or their designee, to approve purchases under Sourcewell Contract 110421 for the life of the contract with Versalift NW, up to the current authorized budget. Authorize an increase to the maximum authorized amount under the agreement to \$15,000,000 with Versalift NW.

Jake Mahan, Senior Management Analyst, 360-487-8195

ATTACHMENTS:

- ▣ Sourcewell contract
- ▣ PO-65938 Versalift Draft

**Solicitation Number: RFP #110421****CONTRACT**

This Contract is between Sourcewell, 202 12th Street Northeast, P.O. Box 219, Staples, MN 56479 (Sourcewell) and Time Manufacturing Company, 7601 Imperial Drive, P.O. Box 20368, Waco, TX 76712 (Supplier).

Sourcewell is a State of Minnesota local government unit and service cooperative created under the laws of the State of Minnesota (Minnesota Statutes Section 123A.21) that offers cooperative procurement solutions to government entities. Participation is open to eligible federal, state/province, and municipal governmental entities, higher education, K-12 education, nonprofit, tribal government, and other public entities located in the United States and Canada. Sourcewell issued a public solicitation for Public Utility Equipment with Related Accessories and Supplies from which Supplier was awarded a contract.

Supplier desires to contract with Sourcewell to provide equipment, products, or services to Sourcewell and the entities that access Sourcewell's cooperative purchasing contracts (Participating Entities).

1. TERM OF CONTRACT

- A. **EFFECTIVE DATE.** This Contract is effective upon the date of the final signature below.
- B. **EXPIRATION DATE AND EXTENSION.** This Contract expires December 27, 2025, unless it is cancelled sooner pursuant to Article 22. This Contract may be extended one additional year upon the request of Sourcewell and written agreement by Supplier.
- C. **SURVIVAL OF TERMS.** Notwithstanding any expiration or termination of this Contract, all payment obligations incurred prior to expiration or termination will survive, as will the following: Articles 11 through 14 survive the expiration or cancellation of this Contract. All other rights will cease upon expiration or termination of this Contract.

2. EQUIPMENT, PRODUCTS, OR SERVICES

- A. **EQUIPMENT, PRODUCTS, OR SERVICES.** Supplier will provide the Equipment, Products, or Services as stated in its Proposal submitted under the Solicitation Number listed above.

Supplier's Equipment, Products, or Services Proposal (Proposal) is attached and incorporated into this Contract.

All Equipment and Products provided under this Contract must be new and the current model. Supplier may offer close-out or refurbished Equipment or Products if they are clearly indicated in Supplier's product and pricing list. Unless agreed to by the Participating Entities in advance, Equipment or Products must be delivered as operational to the Participating Entity's site.

This Contract offers an indefinite quantity of sales, and while substantial volume is anticipated, sales and sales volume are not guaranteed.

B. **WARRANTY.** Supplier warrants that all Equipment, Products, and Services furnished are free from liens and encumbrances, and are free from defects in design, materials, and workmanship. In addition, Supplier warrants the Equipment, Products, and Services are suitable for and will perform in accordance with the ordinary use for which they are intended. Supplier's dealers and distributors must agree to assist the Participating Entity in reaching a resolution in any dispute over warranty terms with the manufacturer. Any manufacturer's warranty that extends beyond the expiration of the Supplier's warranty will be passed on to the Participating Entity.

C. **DEALERS, DISTRIBUTORS, AND/OR RESELLERS.** Upon Contract execution and throughout the Contract term, Supplier must provide to Sourcewell a current means to validate or authenticate Supplier's authorized dealers, distributors, or resellers relative to the Equipment, Products, and Services offered under this Contract, which will be incorporated into this Contract by reference. It is the Supplier's responsibility to ensure Sourcewell receives the most current information.

3. PRICING

All Equipment, Products, or Services under this Contract will be priced at or below the price stated in Supplier's Proposal.

When providing pricing quotes to Participating Entities, all pricing quoted must reflect a Participating Entity's total cost of acquisition. This means that the quoted cost is for delivered Equipment, Products, and Services that are operational for their intended purpose, and includes all costs to the Participating Entity's requested delivery location.

Regardless of the payment method chosen by the Participating Entity, the total cost associated with any purchase option of the Equipment, Products, or Services must always be disclosed in the pricing quote to the applicable Participating Entity at the time of purchase.

A. **SHIPPING AND SHIPPING COSTS.** All delivered Equipment and Products must be properly packaged. Damaged Equipment and Products may be rejected. If the damage is not readily apparent at the time of delivery, Supplier must permit the Equipment and Products to be

returned within a reasonable time at no cost to Sourcewell or its Participating Entities. Participating Entities reserve the right to inspect the Equipment and Products at a reasonable time after delivery where circumstances or conditions prevent effective inspection of the Equipment and Products at the time of delivery. In the event of the delivery of nonconforming Equipment and Products, the Participating Entity will notify the Supplier as soon as possible and the Supplier will replace nonconforming Equipment and Products with conforming Equipment and Products that are acceptable to the Participating Entity.

Supplier must arrange for and pay for the return shipment on Equipment and Products that arrive in a defective or inoperable condition.

Sourcewell may declare the Supplier in breach of this Contract if the Supplier intentionally delivers substandard or inferior Equipment or Products.

B. SALES TAX. Each Participating Entity is responsible for supplying the Supplier with valid tax-exemption certification(s). When ordering, a Participating Entity must indicate if it is a tax-exempt entity.

C. HOT LIST PRICING. At any time during this Contract, Supplier may offer a specific selection of Equipment, Products, or Services at discounts greater than those listed in the Contract. When Supplier determines it will offer Hot List Pricing, it must be submitted electronically to Sourcewell in a line-item format. Equipment, Products, or Services may be added or removed from the Hot List at any time through a Sourcewell Price and Product Change Form as defined in Article 4 below.

Hot List program and pricing may also be used to discount and liquidate close-out and discontinued Equipment and Products as long as those close-out and discontinued items are clearly identified as such. Current ordering process and administrative fees apply. Hot List Pricing must be published and made available to all Participating Entities.

4. PRODUCT AND PRICING CHANGE REQUESTS

Supplier may request Equipment, Product, or Service changes, additions, or deletions at any time. All requests must be made in writing by submitting a signed Sourcewell Price and Product Change Request Form to the assigned Sourcewell Supplier Development Administrator. This approved form is available from the assigned Sourcewell Supplier Development Administrator. At a minimum, the request must:

- Identify the applicable Sourcewell contract number;
- Clearly specify the requested change;
- Provide sufficient detail to justify the requested change;

- Individually list all Equipment, Products, or Services affected by the requested change, along with the requested change (e.g., addition, deletion, price change); and
- Include a complete restatement of pricing documentation in Microsoft Excel with the effective date of the modified pricing, or product addition or deletion. The new pricing restatement must include all Equipment, Products, and Services offered, even for those items where pricing remains unchanged.

A fully executed Sourcewell Price and Product Change Request Form will become an amendment to this Contract and will be incorporated by reference.

5. PARTICIPATION, CONTRACT ACCESS, AND PARTICIPATING ENTITY REQUIREMENTS

A. PARTICIPATION. Sourcewell's cooperative contracts are available and open to public and nonprofit entities across the United States and Canada; such as federal, state/province, municipal, K-12 and higher education, tribal government, and other public entities.

The benefits of this Contract should be available to all Participating Entities that can legally access the Equipment, Products, or Services under this Contract. A Participating Entity's authority to access this Contract is determined through its cooperative purchasing, interlocal, or joint powers laws. Any entity accessing benefits of this Contract will be considered a Service Member of Sourcewell during such time of access. Supplier understands that a Participating Entity's use of this Contract is at the Participating Entity's sole convenience and Participating Entities reserve the right to obtain like Equipment, Products, or Services from any other source.

Supplier is responsible for familiarizing its sales and service forces with Sourcewell contract use eligibility requirements and documentation and will encourage potential participating entities to join Sourcewell. Sourcewell reserves the right to add and remove Participating Entities to its roster during the term of this Contract.

B. PUBLIC FACILITIES. Supplier's employees may be required to perform work at government-owned facilities, including schools. Supplier's employees and agents must conduct themselves in a professional manner while on the premises, and in accordance with Participating Entity policies and procedures, and all applicable laws.

6. PARTICIPATING ENTITY USE AND PURCHASING

A. ORDERS AND PAYMENT. To access the contracted Equipment, Products, or Services under this Contract, a Participating Entity must clearly indicate to Supplier that it intends to access this Contract; however, order flow and procedure will be developed jointly between Sourcewell and Supplier. Typically, a Participating Entity will issue an order directly to Supplier or its authorized subsidiary, distributor, dealer, or reseller. If a Participating Entity issues a purchase order, it may use its own forms, but the purchase order should clearly note the applicable Sourcewell

contract number. All Participating Entity orders under this Contract must be issued prior to expiration or cancellation of this Contract; however, Supplier performance, Participating Entity payment obligations, and any applicable warranty periods or other Supplier or Participating Entity obligations may extend beyond the term of this Contract.

Supplier's acceptable forms of payment are included in its attached Proposal. Participating Entities will be solely responsible for payment and Sourcewell will have no liability for any unpaid invoice of any Participating Entity.

B. ADDITIONAL TERMS AND CONDITIONS/PARTICIPATING ADDENDUM. Additional terms and conditions to a purchase order, or other required transaction documentation, may be negotiated between a Participating Entity and Supplier, such as job or industry-specific requirements, legal requirements (e.g., affirmative action or immigration status requirements), or specific local policy requirements. Some Participating Entities may require the use of a Participating Addendum; the terms of which will be negotiated directly between the Participating Entity and the Supplier. Any negotiated additional terms and conditions must never be less favorable to the Participating Entity than what is contained in this Contract.

C. SPECIALIZED SERVICE REQUIREMENTS. In the event that the Participating Entity requires service or specialized performance requirements not addressed in this Contract (such as e-commerce specifications, specialized delivery requirements, or other specifications and requirements), the Participating Entity and the Supplier may enter into a separate, standalone agreement, apart from this Contract. Sourcewell, including its agents and employees, will not be made a party to a claim for breach of such agreement.

D. TERMINATION OF ORDERS. Participating Entities may terminate an order, in whole or in part, immediately upon notice to Supplier in the event of any of the following events:

1. The Participating Entity fails to receive funding or appropriation from its governing body at levels sufficient to pay for the equipment, products, or services to be purchased; or
2. Federal, state, or provincial laws or regulations prohibit the purchase or change the Participating Entity's requirements.

E. GOVERNING LAW AND VENUE. The governing law and venue for any action related to a Participating Entity's order will be determined by the Participating Entity making the purchase.

7. CUSTOMER SERVICE

A. PRIMARY ACCOUNT REPRESENTATIVE. Supplier will assign an Account Representative to Sourcewell for this Contract and must provide prompt notice to Sourcewell if that person is changed. The Account Representative will be responsible for:

- Maintenance and management of this Contract;
- Timely response to all Sourcewell and Participating Entity inquiries; and
- Business reviews to Sourcewell and Participating Entities, if applicable.

B. BUSINESS REVIEWS. Supplier must perform a minimum of one business review with Sourcewell per contract year. The business review will cover sales to Participating Entities, pricing and contract terms, administrative fees, sales data reports, supply issues, customer issues, and any other necessary information.

8. REPORT ON CONTRACT SALES ACTIVITY AND ADMINISTRATIVE FEE PAYMENT

A. CONTRACT SALES ACTIVITY REPORT. Each calendar quarter, Supplier must provide a contract sales activity report (Report) to the Sourcewell Supplier Development Administrator assigned to this Contract. Reports are due no later than 45 days after the end of each calendar quarter. A Report must be provided regardless of the number or amount of sales during that quarter (i.e., if there are no sales, Supplier must submit a report indicating no sales were made).

The Report must contain the following fields:

- Participating Entity Name (e.g., City of Staples Highway Department);
- Participating Entity Physical Street Address;
- Participating Entity City;
- Participating Entity State/Province;
- Participating Entity Zip/Postal Code;
- Participating Entity Contact Name;
- Participating Entity Contact Email Address;
- Participating Entity Contact Telephone Number;
- Sourcewell Assigned Entity/Participating Entity Number;
- Item Purchased Description;
- Item Purchased Price;
- Sourcewell Administrative Fee Applied; and
- Date Purchase was invoiced/sale was recognized as revenue by Supplier.

B. ADMINISTRATIVE FEE. In consideration for the support and services provided by Sourcewell, the Supplier will pay an administrative fee to Sourcewell on all Equipment, Products, and Services provided to Participating Entities. The Administrative Fee must be included in, and not added to, the pricing. Supplier may not charge Participating Entities more than the contracted price to offset the Administrative Fee.

The Supplier will submit payment to Sourcewell for the percentage of administrative fee stated in the Proposal multiplied by the total sales of all Equipment, Products, and Services purchased

by Participating Entities under this Contract during each calendar quarter. Payments should note the Supplier's name and Sourcewell-assigned contract number in the memo; and must be mailed to the address above "Attn: Accounts Receivable" or remitted electronically to Sourcewell's banking institution per Sourcewell's Finance department instructions. Payments must be received no later than 45 calendar days after the end of each calendar quarter.

Supplier agrees to cooperate with Sourcewell in auditing transactions under this Contract to ensure that the administrative fee is paid on all items purchased under this Contract.

In the event the Supplier is delinquent in any undisputed administrative fees, Sourcewell reserves the right to cancel this Contract and reject any proposal submitted by the Supplier in any subsequent solicitation. In the event this Contract is cancelled by either party prior to the Contract's expiration date, the administrative fee payment will be due no more than 30 days from the cancellation date.

9. AUTHORIZED REPRESENTATIVE

Sourcewell's Authorized Representative is its Chief Procurement Officer.

Supplier's Authorized Representative is the person named in the Supplier's Proposal. If Supplier's Authorized Representative changes at any time during this Contract, Supplier must promptly notify Sourcewell in writing.

10. AUDIT, ASSIGNMENT, AMENDMENTS, WAIVER, AND CONTRACT COMPLETE

A. **AUDIT.** Pursuant to Minnesota Statutes Section 16C.05, subdivision 5, the books, records, documents, and accounting procedures and practices relevant to this Agreement are subject to examination by Sourcewell or the Minnesota State Auditor for a minimum of six years from the end of this Contract. This clause extends to Participating Entities as it relates to business conducted by that Participating Entity under this Contract.

B. **ASSIGNMENT.** Neither party may assign or otherwise transfer its rights or obligations under this Contract without the prior written consent of the other party and a fully executed assignment agreement. Such consent will not be unreasonably withheld. Any prohibited assignment will be invalid.

C. **AMENDMENTS.** Any amendment to this Contract must be in writing and will not be effective until it has been duly executed by the parties.

D. **WAIVER.** Failure by either party to take action or assert any right under this Contract will not be deemed a waiver of such right in the event of the continuation or repetition of the circumstances giving rise to such right. Any such waiver must be in writing and signed by the parties.

E. **CONTRACT COMPLETE.** This Contract represents the complete agreement between the parties. No other understanding regarding this Contract, whether written or oral, may be used to bind either party. For any conflict between the attached Proposal and the terms set out in Articles 1-22 of this Contract, the terms of Articles 1-22 will govern.

F. **RELATIONSHIP OF THE PARTIES.** The relationship of the parties is one of independent contractors, each free to exercise judgment and discretion with regard to the conduct of their respective businesses. This Contract does not create a partnership, joint venture, or any other relationship such as master-servant, or principal-agent.

11. INDEMNITY AND HOLD HARMLESS

Supplier must indemnify, defend, save, and hold Sourcewell and its Participating Entities, including their agents and employees, harmless from any claims or causes of action, including attorneys' fees incurred by Sourcewell or its Participating Entities, arising out of any act or omission in the performance of this Contract by the Supplier or its agents or employees; this indemnification includes injury or death to person(s) or property alleged to have been caused by some defect in the Equipment, Products, or Services under this Contract to the extent the Equipment, Product, or Service has been used according to its specifications. Sourcewell's responsibility will be governed by the State of Minnesota's Tort Liability Act (Minnesota Statutes Chapter 466) and other applicable law.

12. GOVERNMENT DATA PRACTICES

Supplier and Sourcewell must comply with the Minnesota Government Data Practices Act, Minnesota Statutes Chapter 13, as it applies to all data provided by or provided to Sourcewell under this Contract and as it applies to all data created, collected, received, stored, used, maintained, or disseminated by the Supplier under this Contract.

13. INTELLECTUAL PROPERTY, PUBLICITY, MARKETING, AND ENDORSEMENT

A. INTELLECTUAL PROPERTY

1. *Grant of License.* During the term of this Contract:

- a. Sourcewell grants to Supplier a royalty-free, worldwide, non-exclusive right and license to use the trademark(s) provided to Supplier by Sourcewell in advertising and promotional materials for the purpose of marketing Sourcewell's relationship with Supplier.
- b. Supplier grants to Sourcewell a royalty-free, worldwide, non-exclusive right and license to use Supplier's trademarks in advertising and promotional materials for the purpose of marketing Supplier's relationship with Sourcewell.

2. *Limited Right of Sublicense.* The right and license granted herein includes a limited right of each party to grant sublicenses to their respective subsidiaries, distributors, dealers,

resellers, marketing representatives, and agents (collectively “Permitted Sublicensees”) in advertising and promotional materials for the purpose of marketing the Parties’ relationship to Participating Entities. Any sublicense granted will be subject to the terms and conditions of this Article. Each party will be responsible for any breach of this Article by any of their respective sublicensees.

3. *Use; Quality Control.*

- a. Neither party may alter the other party’s trademarks from the form provided and must comply with removal requests as to specific uses of its trademarks or logos.
- b. Each party agrees to use, and to cause its Permitted Sublicensees to use, the other party’s trademarks only in good faith and in a dignified manner consistent with such party’s use of the trademarks. Upon written notice to the breaching party, the breaching party has 30 days of the date of the written notice to cure the breach or the license will be terminated.

4. As applicable, Supplier agrees to indemnify and hold harmless Sourcewell and its Participating Entities against any and all suits, claims, judgments, and costs instituted or recovered against Sourcewell or Participating Entities by any person on account of the use of any Equipment or Products by Sourcewell or its Participating Entities supplied by Supplier in violation of applicable patent or copyright laws.

5. *Termination.* Upon the termination of this Contract for any reason, each party, including Permitted Sublicensees, will have 30 days to remove all Trademarks from signage, websites, and the like bearing the other party’s name or logo (excepting Sourcewell’s pre-printed catalog of suppliers which may be used until the next printing). Supplier must return all marketing and promotional materials, including signage, provided by Sourcewell, or dispose of it according to Sourcewell’s written directions.

B. PUBLICITY. Any publicity regarding the subject matter of this Contract must not be released without prior written approval from the Authorized Representatives. Publicity includes notices, informational pamphlets, press releases, research, reports, signs, and similar public notices prepared by or for the Supplier individually or jointly with others, or any subcontractors, with respect to the program, publications, or services provided resulting from this Contract.

C. MARKETING. Any direct advertising, marketing, or offers with Participating Entities must be approved by Sourcewell. Send all approval requests to the Sourcewell Supplier Development Administrator assigned to this Contract.

D. ENDORSEMENT. The Supplier must not claim that Sourcewell endorses its Equipment, Products, or Services.

14. GOVERNING LAW, JURISDICTION, AND VENUE

The substantive and procedural laws of the State of Minnesota will govern this Contract. Venue for all legal proceedings arising out of this Contract, or its breach, must be in the appropriate state court in Todd County, Minnesota or federal court in Fergus Falls, Minnesota.

15. FORCE MAJEURE

Neither party to this Contract will be held responsible for delay or default caused by acts of God or other conditions that are beyond that party's reasonable control. A party defaulting under this provision must provide the other party prompt written notice of the default.

16. SEVERABILITY

If any provision of this Contract is found by a court of competent jurisdiction to be illegal, unenforceable, or void then both parties will be relieved from all obligations arising from that provision. If the remainder of this Contract is capable of being performed, it will not be affected by such determination or finding and must be fully performed.

17. PERFORMANCE, DEFAULT, AND REMEDIES

A. **PERFORMANCE.** During the term of this Contract, the parties will monitor performance and address unresolved contract issues as follows:

1. *Notification.* The parties must promptly notify each other of any known dispute and work in good faith to resolve such dispute within a reasonable period of time. If necessary, Sourcewell and the Supplier will jointly develop a short briefing document that describes the issue(s), relevant impact, and positions of both parties.
2. *Escalation.* If parties are unable to resolve the issue in a timely manner, as specified above, either Sourcewell or Supplier may escalate the resolution of the issue to a higher level of management. The Supplier will have 30 calendar days to cure an outstanding issue.
3. *Performance while Dispute is Pending.* Notwithstanding the existence of a dispute, the Supplier must continue without delay to carry out all of its responsibilities under the Contract that are not affected by the dispute. If the Supplier fails to continue without delay to perform its responsibilities under the Contract, in the accomplishment of all undisputed work, the Supplier will bear any additional costs incurred by Sourcewell and/or its Participating Entities as a result of such failure to proceed.

B. **DEFAULT AND REMEDIES.** Either of the following constitutes cause to declare this Contract, or any Participating Entity order under this Contract, in default:

1. Nonperformance of contractual requirements, or
2. A material breach of any term or condition of this Contract.

The party claiming default must provide written notice of the default, with 30 calendar days to cure the default. Time allowed for cure will not diminish or eliminate any liability for liquidated or other damages. If the default remains after the opportunity for cure, the non-defaulting party may:

- Exercise any remedy provided by law or equity, or
- Terminate the Contract or any portion thereof, including any orders issued against the Contract.

18. INSURANCE

A. REQUIREMENTS. At its own expense, Supplier must maintain insurance policy(ies) in effect at all times during the performance of this Contract with insurance company(ies) licensed or authorized to do business in the State of Minnesota having an "AM BEST" rating of A- or better, with coverage and limits of insurance not less than the following:

1. *Workers' Compensation and Employer's Liability.*

Workers' Compensation: As required by any applicable law or regulation.

Employer's Liability Insurance: must be provided in amounts not less than listed below:

Minimum limits:

\$500,000 each accident for bodily injury by accident

\$500,000 policy limit for bodily injury by disease

\$500,000 each employee for bodily injury by disease

2. *Commercial General Liability Insurance.* Supplier will maintain insurance covering its operations, with coverage on an occurrence basis, and must be subject to terms no less broad than the Insurance Services Office ("ISO") Commercial General Liability Form CG0001 (2001 or newer edition), or equivalent. At a minimum, coverage must include liability arising from premises, operations, bodily injury and property damage, independent contractors, products-completed operations including construction defect, contractual liability, blanket contractual liability, and personal injury and advertising injury. All required limits, terms and conditions of coverage must be maintained during the term of this Contract.

Minimum Limits:

\$1,000,000 each occurrence Bodily Injury and Property Damage

\$1,000,000 Personal and Advertising Injury

\$2,000,000 aggregate for Products-Completed operations

\$2,000,000 general aggregate

3. *Commercial Automobile Liability Insurance.* During the term of this Contract, Supplier will maintain insurance covering all owned, hired, and non-owned automobiles in limits of liability not less than indicated below. The coverage must be subject to terms

no less broad than ISO Business Auto Coverage Form CA 0001 (2010 edition or newer), or equivalent.

Minimum Limits:

\$1,000,000 each accident, combined single limit

4. *Umbrella Insurance*. During the term of this Contract, Supplier will maintain umbrella coverage over Employer's Liability, Commercial General Liability, and Commercial Automobile.

Minimum Limits:

\$2,000,000

5. *Network Security and Privacy Liability Insurance*. During the term of this Contract, Supplier will maintain coverage for network security and privacy liability. The coverage may be endorsed on another form of liability coverage or written on a standalone policy. The insurance must cover claims which may arise from failure of Supplier's security resulting in, but not limited to, computer attacks, unauthorized access, disclosure of not public data – including but not limited to, confidential or private information, transmission of a computer virus, or denial of service.

Minimum limits:

\$2,000,000 per occurrence

\$2,000,000 annual aggregate

Failure of Supplier to maintain the required insurance will constitute a material breach entitling Sourcewell to immediately terminate this Contract for default.

B. CERTIFICATES OF INSURANCE. Prior to commencing under this Contract, Supplier must furnish to Sourcewell a certificate of insurance, as evidence of the insurance required under this Contract. Prior to expiration of the policy(ies), renewal certificates must be mailed to Sourcewell, 202 12th Street Northeast, P.O. Box 219, Staples, MN 56479 or sent to the Sourcewell Supplier Development Administrator assigned to this Contract. The certificates must be signed by a person authorized by the insurer(s) to bind coverage on their behalf.

Failure to request certificates of insurance by Sourcewell, or failure of Supplier to provide certificates of insurance, in no way limits or relieves Supplier of its duties and responsibilities in this Contract.

C. ADDITIONAL INSURED ENDORSEMENT AND PRIMARY AND NON-CONTRIBUTORY INSURANCE CLAUSE. Supplier agrees to list Sourcewell and its Participating Entities, including their officers, agents, and employees, as an additional insured under the Supplier's commercial general liability insurance policy with respect to liability arising out of activities, "operations," or "work" performed by or on behalf of Supplier, and products and completed operations of Supplier. The policy provision(s) or endorsement(s) must further provide that coverage is

primary and not excess over or contributory with any other valid, applicable, and collectible insurance or self-insurance in force for the additional insureds.

D. **WAIVER OF SUBROGATION.** Supplier waives and must require (by endorsement or otherwise) all its insurers to waive subrogation rights against Sourcewell and other additional insureds for losses paid under the insurance policies required by this Contract or other insurance applicable to the Supplier or its subcontractors. The waiver must apply to all deductibles and/or self-insured retentions applicable to the required or any other insurance maintained by the Supplier or its subcontractors. Where permitted by law, Supplier must require similar written express waivers of subrogation and insurance clauses from each of its subcontractors.

E. **UMBRELLA/EXCESS LIABILITY/SELF-INSURED RETENTION.** The limits required by this Contract can be met by either providing a primary policy or in combination with umbrella/excess liability policy(ies), or self-insured retention.

19. COMPLIANCE

A. **LAWS AND REGULATIONS.** All Equipment, Products, or Services provided under this Contract must comply fully with applicable federal laws and regulations, and with the laws in the states and provinces in which the Equipment, Products, or Services are sold.

B. **LICENSES.** Supplier must maintain a valid and current status on all required federal, state/provincial, and local licenses, bonds, and permits required for the operation of the business that the Supplier conducts with Sourcewell and Participating Entities.

20. BANKRUPTCY, DEBARMENT, OR SUSPENSION CERTIFICATION

Supplier certifies and warrants that it is not in bankruptcy or that it has previously disclosed in writing certain information to Sourcewell related to bankruptcy actions. If at any time during this Contract Supplier declares bankruptcy, Supplier must immediately notify Sourcewell in writing.

Supplier certifies and warrants that neither it nor its principals are presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from programs operated by the State of Minnesota; the United States federal government or the Canadian government, as applicable; or any Participating Entity. Supplier certifies and warrants that neither it nor its principals have been convicted of a criminal offense related to the subject matter of this Contract. Supplier further warrants that it will provide immediate written notice to Sourcewell if this certification changes at any time.

21. PROVISIONS FOR NON-UNITED STATES FEDERAL ENTITY PROCUREMENTS UNDER UNITED STATES FEDERAL AWARDS OR OTHER AWARDS

Participating Entities that use United States federal grant or FEMA funds to purchase goods or services from this Contract may be subject to additional requirements including the procurement standards of the Uniform Administrative Requirements, Cost Principles and Audit Requirements for Federal Awards, 2 C.F.R. § 200. Participating Entities may have additional requirements based on specific funding source terms or conditions. Within this Article, all references to “federal” should be interpreted to mean the United States federal government. The following list only applies when a Participating Entity accesses Supplier’s Equipment, Products, or Services with United States federal funds.

A. **EQUAL EMPLOYMENT OPPORTUNITY.** Except as otherwise provided under 41 C.F.R. § 60, all contracts that meet the definition of “federally assisted construction contract” in 41 C.F.R. § 60-1.3 must include the equal opportunity clause provided under 41 C.F.R. §60-1.4(b), in accordance with Executive Order 11246, “Equal Employment Opportunity” (30 FR 12319, 12935, 3 C.F.R. §, 1964-1965 Comp., p. 339), as amended by Executive Order 11375, “Amending Executive Order 11246 Relating to Equal Employment Opportunity,” and implementing regulations at 41 C.F.R. § 60, “Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor.” The equal opportunity clause is incorporated herein by reference.

B. **DAVIS-BACON ACT, AS AMENDED (40 U.S.C. § 3141-3148).** When required by federal program legislation, all prime construction contracts in excess of \$2,000 awarded by non-federal entities must include a provision for compliance with the Davis-Bacon Act (40 U.S.C. § 3141-3144, and 3146-3148) as supplemented by Department of Labor regulations (29 C.F.R. § 5, “Labor Standards Provisions Applicable to Contracts Covering Federally Financed and Assisted Construction”). In accordance with the statute, contractors must be required to pay wages to laborers and mechanics at a rate not less than the prevailing wages specified in a wage determination made by the Secretary of Labor. In addition, contractors must be required to pay wages not less than once a week. The non-federal entity must place a copy of the current prevailing wage determination issued by the Department of Labor in each solicitation. The decision to award a contract or subcontract must be conditioned upon the acceptance of the wage determination. The non-federal entity must report all suspected or reported violations to the federal awarding agency. The contracts must also include a provision for compliance with the Copeland “Anti-Kickback” Act (40 U.S.C. § 3145), as supplemented by Department of Labor regulations (29 C.F.R. § 3, “Contractors and Subcontractors on Public Building or Public Work Financed in Whole or in Part by Loans or Grants from the United States”). The Act provides that each contractor or subrecipient must be prohibited from inducing, by any means, any person employed in the construction, completion, or repair of public work, to give up any part of the compensation to which he or she is otherwise entitled. The non-federal entity must report all suspected or reported violations to the federal awarding agency. Supplier must be in compliance with all applicable Davis-Bacon Act provisions.

C. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT (40 U.S.C. § 3701-3708). Where applicable, all contracts awarded by the non-federal entity in excess of \$100,000 that involve the employment of mechanics or laborers must include a provision for compliance with 40 U.S.C. §§ 3702 and 3704, as supplemented by Department of Labor regulations (29 C.F.R. § 5). Under 40 U.S.C. § 3702 of the Act, each contractor must be required to compute the wages of every mechanic and laborer on the basis of a standard work week of 40 hours. Work in excess of the standard work week is permissible provided that the worker is compensated at a rate of not less than one and a half times the basic rate of pay for all hours worked in excess of 40 hours in the work week. The requirements of 40 U.S.C. § 3704 are applicable to construction work and provide that no laborer or mechanic must be required to work in surroundings or under working conditions which are unsanitary, hazardous or dangerous. These requirements do not apply to the purchases of supplies or materials or articles ordinarily available on the open market, or contracts for transportation or transmission of intelligence. This provision is hereby incorporated by reference into this Contract. Supplier certifies that during the term of an award for all contracts by Sourcewell resulting from this procurement process, Supplier must comply with applicable requirements as referenced above.

D. RIGHTS TO INVENTIONS MADE UNDER A CONTRACT OR AGREEMENT. If the federal award meets the definition of “funding agreement” under 37 C.F.R. § 401.2(a) and the recipient or subrecipient wishes to enter into a contract with a small business firm or nonprofit organization regarding the substitution of parties, assignment or performance of experimental, developmental, or research work under that “funding agreement,” the recipient or subrecipient must comply with the requirements of 37 C.F.R. § 401, “Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts and Cooperative Agreements,” and any implementing regulations issued by the awarding agency. Supplier certifies that during the term of an award for all contracts by Sourcewell resulting from this procurement process, Supplier must comply with applicable requirements as referenced above.

E. CLEAN AIR ACT (42 U.S.C. § 7401-7671Q.) AND THE FEDERAL WATER POLLUTION CONTROL ACT (33 U.S.C. § 1251-1387). Contracts and subgrants of amounts in excess of \$150,000 require the non-federal award to agree to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. § 7401- 7671q) and the Federal Water Pollution Control Act as amended (33 U.S.C. § 1251- 1387). Violations must be reported to the Federal awarding agency and the Regional Office of the Environmental Protection Agency (EPA). Supplier certifies that during the term of this Contract will comply with applicable requirements as referenced above.

F. DEBARMENT AND SUSPENSION (EXECUTIVE ORDERS 12549 AND 12689). A contract award (see 2 C.F.R. § 180.220) must not be made to parties listed on the government wide exclusions in the System for Award Management (SAM), in accordance with the OMB guidelines at 2 C.F.R. § 180 that implement Executive Orders 12549 (3 C.F.R. § 1986 Comp., p. 189) and 12689 (3 C.F.R. § 1989 Comp., p. 235), “Debarment and Suspension.” SAM Exclusions contains the names

of parties debarred, suspended, or otherwise excluded by agencies, as well as parties declared ineligible under statutory or regulatory authority other than Executive Order 12549. Supplier certifies that neither it nor its principals are presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation by any federal department or agency.

G. BYRD ANTI-LOBBYING AMENDMENT, AS AMENDED (31 U.S.C. § 1352). Suppliers must file any required certifications. Suppliers must not have used federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any federal contract, grant, or any other award covered by 31 U.S.C. § 1352. Suppliers must disclose any lobbying with non-federal funds that takes place in connection with obtaining any federal award. Such disclosures are forwarded from tier to tier up to the non-federal award. Suppliers must file all certifications and disclosures required by, and otherwise comply with, the Byrd Anti-Lobbying Amendment (31 U.S.C. § 1352).

H. RECORD RETENTION REQUIREMENTS. To the extent applicable, Supplier must comply with the record retention requirements detailed in 2 C.F.R. § 200.333. The Supplier further certifies that it will retain all records as required by 2 C.F.R. § 200.333 for a period of 3 years after grantees or subgrantees submit final expenditure reports or quarterly or annual financial reports, as applicable, and all other pending matters are closed.

I. ENERGY POLICY AND CONSERVATION ACT COMPLIANCE. To the extent applicable, Supplier must comply with the mandatory standards and policies relating to energy efficiency which are contained in the state energy conservation plan issued in compliance with the Energy Policy and Conservation Act.

J. BUY AMERICAN PROVISIONS COMPLIANCE. To the extent applicable, Supplier must comply with all applicable provisions of the Buy American Act. Purchases made in accordance with the Buy American Act must follow the applicable procurement rules calling for free and open competition.

K. ACCESS TO RECORDS (2 C.F.R. § 200.336). Supplier agrees that duly authorized representatives of a federal agency must have access to any books, documents, papers and records of Supplier that are directly pertinent to Supplier's discharge of its obligations under this Contract for the purpose of making audits, examinations, excerpts, and transcriptions. The right also includes timely and reasonable access to Supplier's personnel for the purpose of interview and discussion relating to such documents.

L. PROCUREMENT OF RECOVERED MATERIALS (2 C.F.R. § 200.322). A non-federal entity that is a state agency or agency of a political subdivision of a state and its contractors must comply with Section 6002 of the Solid Waste Disposal Act, as amended by the Resource Conservation

and Recovery Act. The requirements of Section 6002 include procuring only items designated in guidelines of the Environmental Protection Agency (EPA) at 40 C.F.R. § 247 that contain the highest percentage of recovered materials practicable, consistent with maintaining a satisfactory level of competition, where the purchase price of the item exceeds \$10,000 or the value of the quantity acquired during the preceding fiscal year exceeded \$10,000; procuring solid waste management services in a manner that maximizes energy and resource recovery; and establishing an affirmative procurement program for procurement of recovered materials identified in the EPA guidelines.

M. FEDERAL SEAL(S), LOGOS, AND FLAGS. The Supplier not use the seal(s), logos, crests, or reproductions of flags or likenesses of Federal agency officials without specific pre-approval.

N. NO OBLIGATION BY FEDERAL GOVERNMENT. The U.S. federal government is not a party to this Contract or any purchase by an Participating Entity and is not subject to any obligations or liabilities to the Participating Entity, Supplier, or any other party pertaining to any matter resulting from the Contract or any purchase by an authorized user.

O. PROGRAM FRAUD AND FALSE OR FRAUDULENT STATEMENTS OR RELATED ACTS. The Contractor acknowledges that 31 U.S.C. 38 (Administrative Remedies for False Claims and Statements) applies to the Supplier's actions pertaining to this Contract or any purchase by a Participating Entity.

P. FEDERAL DEBT. The Supplier certifies that it is non-delinquent in its repayment of any federal debt. Examples of relevant debt include delinquent payroll and other taxes, audit disallowance, and benefit overpayments.

Q. CONFLICTS OF INTEREST. The Supplier must notify the U.S. Office of General Services, Sourcewell, and Participating Entity as soon as possible if this Contract or any aspect related to the anticipated work under this Contract raises an actual or potential conflict of interest (as described in 2 C.F.R. Part 200). The Supplier must explain the actual or potential conflict in writing in sufficient detail so that the U.S. Office of General Services, Sourcewell, and Participating Entity are able to assess the actual or potential conflict; and provide any additional information as necessary or requested.

R. U.S. EXECUTIVE ORDER 13224. The Supplier, and its subcontractors, must comply with U.S. Executive Order 13224 and U.S. Laws that prohibit transactions with and provision of resources and support to individuals and organizations associated with terrorism.

S. PROHIBITION ON CERTAIN TELECOMMUNICATIONS AND VIDEO SURVEILLANCE SERVICES OR EQUIPMENT. To the extent applicable, Supplier certifies that during the term of this Contract it will comply with applicable requirements of 2 C.F.R. § 200.216.

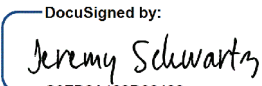
T. DOMESTIC PREFERENCES FOR PROCUREMENTS. To the extent applicable, Supplier certifies that during the term of this Contract will comply with applicable requirements of 2 C.F.R. § 200.322.

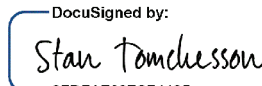
22. CANCELLATION

Sourcewell or Supplier may cancel this Contract at any time, with or without cause, upon 60 days' written notice to the other party. However, Sourcewell may cancel this Contract immediately upon discovery of a material defect in any certification made in Supplier's Proposal. Cancellation of this Contract does not relieve either party of financial, product, or service obligations incurred or accrued prior to cancellation.

Sourcewell

Time Manufacturing Company

DocuSigned by:

By: C0FD2A139D06489...
Jeremy Schwartz
Title: Chief Procurement Officer
Date: 12/20/2021 | 2:07 PM CST

DocuSigned by:

By: 0FDFAF837C74435...
Stan Tomchesson
Title: Government Contract Sales Coordinator
Date: 1/27/2022 | 8:25 AM CST

Approved:

DocuSigned by:

By: 7E42B8F817A64CC...
Chad Coauette
Title: Executive Director/CEO
Date: 1/27/2022 | 8:26 AM CST

RFP 110421 - Public Utility Equipment with Related Accessories and Supplies

Vendor Details

Company Name:	Time Manufacturing Company
Address:	7601 Imperial Dr
	Waco, Texas 76712
Contact:	Stan Tomchesson
Email:	stantomchesson@versalift.com
Phone:	254-399-2167
Fax:	254-399-2167
HST#:	74-1609717

Submission Details

Created On:	Monday October 18, 2021 20:48:32
Submitted On:	Wednesday November 03, 2021 16:22:23
Submitted By:	Stan Tomchesson
Email:	stantomchesson@versalift.com
Transaction #:	ef951bba-c55f-48cf-838c-7873a9b0e524
Submitter's IP Address:	72.48.132.83

Specifications**Table 1: Proposer Identity & Authorized Representatives**

General Instructions (applies to all Tables) Sourcewell prefers a brief but thorough response to each question. Do not merely attach additional documents to your response without also providing a substantive response. Do not leave answers blank; respond "N/A" if the question does not apply to you (preferably with an explanation).

Line Item	Question	Response *	
1	Proposer Legal Name (one legal entity only): (In the event of award, will execute the resulting contract as "Supplier")	Time Manufacturing Company	*
2	Identify all subsidiary entities of the Proposer whose equipment, products, or services are included in the Proposal.	Time Manufacturing Company Brands include: Versalift, BrandFX, Ruthmann, Steiger, Ecoline, Eagle. Blueline, & Aspen Aerials	*
3	Identify all applicable assumed names or DBA names of the Proposer or Proposer's subsidiaries in Line 1 or Line 2 above.	Not Applicable	*
4	Proposer Physical Address:	Time Manufacturing Company 7601 Imperial Drive P.O. Box 20368 Waco, Texas 76712	*
5	Proposer website address (or addresses):	Timemfg.com, Versalift.com, Brandfxbody.com, Ruthmannreachmaster.com, Aspenaerials.com	*
6	Proposer's Authorized Representative (name, title, address, email address & phone) (The representative must have authority to sign the "Proposer's Assurance of Compliance" on behalf of the Proposer and, in the event of award, will be expected to execute the resulting contract):	Stan Tomchesson Government Contract Sales Coordinator Time Manufacturing Company 7601 Imperial Drive P.O. Box 20368 Waco, Texas 76712 Phone: (254) 399-2167 Email: StanTomchesson@versalift.com	*
7	Proposer's primary contact for this proposal (name, title, address, email address & phone):	STAN TOMCHESSON Government Contract Sales Coordinator Phone: (254) 399-2167 Email: StanTomchesson@versalift.com Time Manufacturing Company 7601 Imperial Drive P.O. Box 20368 Waco, Texas 76712	*
8	Proposer's other contacts for this proposal, if any (name, title, address, email address & phone):	N/A	

Table 2: Company Information and Financial Strength

Line Item	Question	Response *	
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9	Provide a brief history of your company, including your company's core values, business philosophy, and industry longevity related to the requested equipment, products or services.	Brief History of Time Manufacturing Company Time Manufacturing Company has been manufacturing and servicing bucket trucks, digger derricks, and cable placers for public utilities under the Versalift brand for more than 50 years with a proven history of supporting government agencies in the electric utility transmission and distribution sectors. Additionally, the company provides equipment service, parts, testing, training, warranty, financing and rental fleet support to agencies and municipal departments responsible for telecommunications, tree care, and signage & lighting. We strongly emphasize creating value for our customers in every step of our manufacturing process with a focus on first time quality, and seek to build the safest and most reliable equipment in the market. Time Manufacturing Company has built a portfolio of innovative brands in recent years, adding to the success of the Versalift brand and broadening the company's ability to serve core markets. Recent acquisitions have included Aspen Aerials, the leading bridge inspection truck manufacturer in North America, BrandFX Body Company, the country's largest composite truck body manufacturer, and Ruthmann, a prominent European manufacturer of premium quality high reach, telescoping and compact aerial lifts. Over this same period of time, we have deepened our distribution and service network across the United States and Canada. All of the company's acquisitions are perfectly aligned with this RFP. Global Growth at Time Manufacturing Company Since 2017, Time Manufacturing Company has grown in size from 700 to more than 2,000 employees. This growth has been powered by both significant organic growth, and by several acquisitions in North America and Europe. This growth has resulted in significantly enhanced capability to manufacture and distribute products in a timely manner to customers all over the world. Significant manufacturing improvements have led to decreased lead time, improved first time quality, facilities revamps, and data driven process improvements that allow management to address parts delivery, supply chain management, decreased warranty claims, and vastly improved customer satisfaction. The most recent acquisition of Ruthmann, allows the company to significantly expand aerial lift offerings in complement to its current line up. By adding the Ruthmann portfolio (Ruthmann, Steiger, Ecoline and BlueLift) to its existing set of premium brands (Versalift, BrandFX and Aspen Aerials), the company is well-positioned to more efficiently serve and meet the needs of a growing customer base serving infrastructure needs across the US and Canada. Across our organization, our global growth plan has resulted in a much stronger capability to design, manufacture, distribute and service aerial lifts, in a timely manner, to more customers in U.S. and Canadian markets. Core Values & Business Philosophy of Time Manufacturing Company To deliver upon our value proposition of "a lower true cost of ownership" to our customers, we continue to improve and refine our production and assembly operations to deliver safe, reliable, high quality equipment that stands the test of time. At Time Manufacturing Company, the principles of safety, integrity, first time quality, continual improvement, transparency, pride and community are built around our commitment to the highest standards of quality. We meet these high standards by focusing on manufacturing excellence, engineering innovation and product safety, and by always putting operator safety first. Quotes From Executive Leadership: Time Manufacturing Company's management team believes that it is their job to create a sustainable organization that serves the community as whole. Not just committed to profits, but to also enhance safety, operations efficiency, and value for its customer and the community as a whole through a culture of innovation: Curt S. Howell, CEO: "Our goal is to bring the safest products to market. As we implement our global growth plan, we are creating a sustainable, profitable, and transparent organization. This transformation results in a better product, which lowers cost of ownership, and leads the industry in protecting the operator." Robert Martz, VP Manufacturing: "The people who use our products risk their lives doing hazardous work, at height, every day. That is what motivates us to drive first time product quality to 100%. This leads to improved operator safety." James Christian, VP Engineering: "We are doing everything possible to provide products that have a carbon neutral footprint including lightweight, high strength aerial lifts combined with lightweight truck bodies and ePTO systems or electric/hybrid chassis. Our wind energy generation maintenance equipment helps propel a carbon neutral world forward, not just for us, but also for future generations."
10	What are your company's expectations in the event of an award?	Each Time Manufacturing Company brand, including Versalift, BrandFX and Aspen Aerials, consider Government Agencies and Municipalities, including Sourcewell members, to be a core element of its business model. In order to better serve Sourcewell participating members, we have developed a Government Services website, which can be viewed at https://versalift.com/government. With a staff that is dedicated to serving Sourcewell member needs, Time Manufacturing Company has developed programs to ensure that equipment procurement through an awarded contract is fast, easy, and consistent throughout the award term. Dedicated programs for Sourcewell members include Sales, Training, Financing, and Service. Unique from some other manufacturers' offerings, Time Manufacturing Company has partner relationships with dozens of full service facilities that provide nationwide coverage with hundreds of service locations across North America. Our distribution and service network will make sure that Sourcewell members have quick and reliable access to routine maintenance, equipment service and testing, parts, and training. The company's RFP response and Sourcewell Response programs are now integrated into our Government Contract department with a dedicated Sales Coordination team that is well trained on Sourcewell contract offerings across the board. Our Coordination Lead, Stan Tomchessen has decades of experience managing a team of experts in procurement response. Delivering on hundreds of RFP's responses per year, his team has a proven track record of fast, concise, and accurate handling of all Sourcewell leads. In a recent National Sales Meeting for the company which took place at the 2021 Utility Expo late September, the company reaffirmed its commitment to better marketing Sourcewell options for its customers. In attendance at the meeting were hundreds of representatives from all of the companies distribution/dealer-partners. Program literature, links to contact information, and followup information was provided. Additionally, we have invited Sourcewell representatives to speak at our local sales meetings in the past, and intend to continue to do so.

11	Demonstrate your financial strength and stability with meaningful data. This could include such items as financial statements, SEC filings, credit and bond ratings, letters of credit, and detailed reference letters. Upload supporting documents (as applicable) in the document upload section of your response.	Time Manufacturing Company is very well capitalized through its ownership by a well-funded (\$10B) Private Equity Firm. We have working capital, credit, and ratings that will allow us to service Sourcewell member needs for the next decade and beyond. See attached financial statement attached
12	What is your US market share for the solutions that you are proposing?	We are leaders (top 3 position) in every category of product that we sell. Aspen Aerials is the undisputed leader in bridge inspection equipment across North America, BrandFX is the largest composite truck body maker in the World. Versalift products can be found in every contiguous United State, every Canadian Province, as well as regionally in the Caribbean Territories, Alaska, and Hawaii. We have sales and distribution centers across the nation that ensure that all states have access to product, service, and training. Our commitment to better-manufacturing, shorter lead time, and to producing the highest quality products has served the company well. Since 2017, the company has grown in every category consistently. Profitable growth in the aerials divisions related to this contract have provided the company the ability to provide the most-available products in the market when compared to our competitors. A short video explaining the growth goals of the company can be found at: https://www.youtube.com/watch?v=uxJ65la1xvs
13	What is your Canadian market share for the solutions that you are proposing?	In June of 2021 Time Manufacturing Company acquired CALCO Equipment Lmt, one of the leading distributors of Aerial Devices and a long time partner of Versalift. With an influx of capital, technology, and by adding people, The company now serves all of Canada, including hubs in Nova Scotia, Quebec, British Columbia, Alberta, and Ontario. Through these distribution hubs, our Versalift Canada service team provides service all of Canada
14	Has your business ever petitioned for bankruptcy protection? If so, explain in detail.	No
15	How is your organization best described: is it a manufacturer, a distributor/dealer/reseller, or a service provider? Answer whichever question (either a) or b) just below) best applies to your organization. a) If your company is best described as a distributor/dealer/reseller (or similar entity), provide your written authorization to act as a distributor/dealer/reseller for the manufacturer of the products proposed in this RFP. If applicable, is your dealer network independent or company owned? b) If your company is best described as a manufacturer or service provider, describe your relationship with your sales and service force and with your dealer network in delivering the products and services proposed in this RFP. Are these individuals your employees, or the employees of a third party?	b) Time Manufacturing Company is unique in its complete-solution-capability. This is because it is a manufacturer with both company-owned distribution and service capabilities, and a network of third-party service partners. Versalift has company-owned distributor locations, as well as a strong third-party distribution network throughout the United States and Canada. More than half of the dealers in our distribution network have been providers of our products for decades. A broad base of experienced distributors, provides regionally significant subject matter expertise, which has resulted in best-in-class experience, and thousands of repeat customers. Time Manufacturing Company manufactures industry leading Vehicle-Mounted Aerial Lifts (VMALs) that support essential businesses such as Electric utility, Telecommunications, Forestry, Sign, Light & Traffic, Construction, and Wind Turbine Blade Maintenance in the private and public sectors. "Our distributor network consists of aerial lift, bucket truck, digger derrick and cable placer dealers across North America. Versalift dealers deliver world-class products with the highest levels of safety, reliability and overall quality in the world. Versalift dealers are industry experts, engineers and technicians who provide sales, service and support to our customers. While we are a global company, we believe that local expertise is an essential component of superior service." (https://versalift.com/distribution). With hundreds of additional sales, service and installation locations across North America, BrandFX, Ruthmann, and Aspen Aerials each have their own established and highly successful distribution networks as well. The contacts managing the RFP to fruition are employees of the firm.
16	If applicable, provide a detailed explanation outlining the licenses and certifications that are both required to be held, and actually held, by your organization (including third parties and subcontractors that you use) in pursuit of the business contemplated by this RFP.	Not Applicable, however all units sold, and all service provided adhere to ANSI and OSHA guidelines.
17	Provide all "Suspension or Debarment" information that has applied to your organization during the past ten years.	Does not Apply

Table 3: Industry Recognition & Marketplace Success

Line Item	Question	Response *	
18	Describe any relevant industry awards or recognition that your company has received in the past five years	https://en.ruthmann.de/profile/awards https://www.ruthmann.us/news/press-releases?page=1 https://versaliftinternational.com/versalift-nominated-for-product-of-the-year/ While in Europe the companies often submit for awards, it is important to understand that Time Manufacturing Company has global design teams that report to the VP of Engineering located in Waco, TX. Additionally, the same award-winning engineering and designs are used on several American and Canadian units. Holding positions on the steering committees of various safety boards such as ANSI, the company is a leader in innovation and safety. Our product design is constantly evolving to meet the changing needs of decision makers across the industries we serve.	*
19	What percentage of your sales are to the governmental sector in the past three years	As a private company, we do not reveal specific information regarding our customer base. However several million dollars worth of sales were transacted during our 1st Sourcewell RFP award. Our sales goals include materially improving these numbers throughout the next contract period.	*
20	What percentage of your sales are to the education sector in the past three years	As a private company, we do not reveal specific information regarding our customer base. However several million dollars worth of sales were transacted during our 1st Sourcewell RFP award. Our sales goals include materially improving these numbers throughout the next contract period.	*
21	List any state, provincial, or cooperative purchasing contracts that you hold. What is the annual sales volume for each of these contracts over the past three years?	As the manufacturer, we do not hold regional contracts. However we have hundreds of distributor-dealers with regional subject matter expertise that do hold these contracts.	*
22	List any GSA contracts or Standing Offers and Supply Arrangements (SOSA) that you hold. What is the annual sales volume for each of these contracts over the past three years?	GS-30F-019GA - This FSS contract for Automotive Parts & Products > Sustainment S&E, Automotive Parts & Products > Transportation and Logistics Services was awarded in FY2017 on July 13, 2017 to TIME MANUFACTURING COMPANY by Office of Travel, Transportation and Logistics Categories. There have been \$1.5M in obligations to date with a ceiling value of \$12M, showing a 13% burn rate so far on the contract. The contract was not completed under any preference program with 999 offers received. We expect a 5 year duration with ultimate completion date of July 12, 2022. 2018 - \$473,527.00 2019 - \$231,043.00 2020 - \$99,924.00	*

Table 4: References/Testimonials

Line Item 23. Supply reference information from three customers who are eligible to be Sourcewell participating entities.

Entity Name *	Contact Name *	Phone Number *	
Ciallum County PUD	Terry Manning	(360) 452-9771	*
REA Energy	Bryon Roland	(724) 349-4800	*
City of Mascoutah, IL	Jesse Carlton	(618) 566-2964	*

Table 5: Top Five Government or Education Customers

Line Item 24. Provide a list of your top five government, education, or non-profit customers (entity name is optional), including entity type, the state or province the entity is located in, scope of the project(s), size of transaction(s), and dollar volumes from the past three years.

Entity Name	Entity Type *	State / Province *	Scope of Work *	Size of Transactions *	Dollar Volume Past Three Years *
NA	Government	Connecticut - CT	As a private company, we do not reveal specific information regarding our customer base. However several million dollars worth of sales were transacted during our 1st Sourcewell RFP award. Our sales goals include materially improving these numbers throughout the next contract period.	As a private company, we do not reveal specific information regarding our customer base. However several million dollars worth of sales were transacted during our 1st Sourcewell RFP award. Our sales goals include materially improving these numbers throughout the next contract period.	As a private company, we do not reveal specific information regarding our customer base. However several million dollars worth of sales were transacted during our 1st Sourcewell RFP award. Our sales goals include materially improving these numbers throughout the next contract period.
NA	Education	Colorado - CO	As a private company, we do not reveal specific information regarding our customer base. However several million dollars worth of sales were transacted during our 1st Sourcewell RFP award. Our sales goals include materially improving these numbers throughout the next contract period.	As a private company, we do not reveal specific information regarding our customer base. However several million dollars worth of sales were transacted during our 1st Sourcewell RFP award. Our sales goals include materially improving these numbers throughout the next contract period.	As a private company, we do not reveal specific information regarding our customer base. However several million dollars worth of sales were transacted during our 1st Sourcewell RFP award. Our sales goals include materially improving these numbers throughout the next contract period.
NA	Non-Profit	California - CA	As a private company, we do not reveal specific information regarding our customer base. However several million dollars worth of sales were transacted during our 1st Sourcewell RFP award. Our sales goals include materially improving these numbers throughout the next contract period.	As a private company, we do not reveal specific information regarding our customer base. However several million dollars worth of sales were transacted during our 1st Sourcewell RFP award. Our sales goals include materially improving these numbers throughout the next contract period.	As a private company, we do not reveal specific information regarding our customer base. However several million dollars worth of sales were transacted during our 1st Sourcewell RFP award. Our sales goals include materially improving these numbers throughout the next contract period.
NA	Government	Alaska - AK	As a private company, we do not reveal specific information regarding our customer base. However several million dollars worth of sales were transacted during our 1st Sourcewell RFP award. Our sales goals include materially improving these numbers throughout the next contract period.	As a private company, we do not reveal specific information regarding our customer base. However several million dollars worth of sales were transacted during our 1st Sourcewell RFP award. Our sales goals include materially improving these numbers throughout the next contract period.	As a private company, we do not reveal specific information regarding our customer base. However several million dollars worth of sales were transacted during our 1st Sourcewell RFP award. Our sales goals include materially improving these numbers throughout the next contract period.
NA	Government	Alabama - AL	As a private company, we do not reveal specific information regarding our customer base. However several million dollars worth of sales were transacted during our 1st Sourcewell RFP award. Our sales goals include materially improving these numbers throughout the next contract period.	As a private company, we do not reveal specific information regarding our customer base. However several million dollars worth of sales were transacted during our 1st Sourcewell RFP award. Our sales goals include materially improving these numbers throughout the next contract period.	As a private company, we do not reveal specific information regarding our customer base. However several million dollars worth of sales were transacted during our 1st Sourcewell RFP award. Our sales goals include materially improving these numbers throughout the next contract period.

Table 6: Ability to Sell and Deliver Service

Describe your company's capability to meet the needs of Sourcewell participating entities across the US and Canada, as applicable. Your response should address in detail at least the following areas: locations of your network of sales and service providers, the number of workers (full-time equivalents) involved in each sector, whether these workers are your direct employees (or employees of a third party), and any overlap between the sales and service functions.

Line Item	Question	Response *
25	Sales force.	Time Manufacturing Company, which has grown to more than 2,000 employees, and includes the brands Versalift, BrandFX, Aspen Aerials and Ruthmann. It has one of the largest North American sales forces in the industry. This includes both inside sales representatives, who focus on strategic, municipal, government, and national telecommunications accounts, and also regional sales managers, who focus on managing our North American and international corporate-owned, and third-party distribution networks. Our North American distributor network, many of whom have been partners for decades, have multiple locations throughout the US and Canada. They have built long-term relationships with government agencies, facilitators, municipalities and contractors. We believe that our strong relationships, and "lowest true cost of ownership" value proposition are at the core of our customer support-focused business.
26	Dealer network or other distribution methods.	Our distributor networks in the United States and Canada include dozens of corporate-owned and hundreds of partner companies that each have multiple locations. We strive to have multiple dealers in every U.S. state and nationwide coverage in every part of Canada. Through this network, which is closely-managed through a best-in-class technology consumer relationship management system, we ensure immediate followup to inquiries with a check and balance system designed to understand customer needs, account for any customizations, and ensure that this information is properly communicated across the entire sales, and manufacturing team.

27	Service force.	The distribution network includes aerial equipment upfitting, sales, parts, testing, maintenance, troubleshooting and service at every location. Experienced, certified service technicians are available to perform scheduled and unscheduled maintenance at each location. Additionally, mobile service technicians are available throughout the US and Canada, with well-equipped trouble-trucks that can service equipment on the worksite. One of Time Manufacturing Company's brands is TRL, which provides Rental Fleets to our customers throughout the country. We rent equipment that spans the entire lineup, to ensure that when our customers need to augment their owned-fleets to get the job done. We have the ability to provide rental fleets where and when they need them. We strive to always have parts in stock where they will be needed and have the ability to expedite when needed to our entire coverage areas. In the case of Versalift customers, thousands of bucket truck replacement parts and accessories are available through our online parts store located at https://parts.versalift.com. These can be expedited and are shipped within 24 hours. Because every product is unique, we require that our customers know the part number before ordering. While these are found in the use manuals required by law to be kept in the vehicles, we also have staff available to answer both parts and service questions at our 24/7 (866-LIFT-U-UP) hotline number.	*
28	Describe the ordering process. If orders will be handled by distributors, dealers or others, explain the respective roles of the Proposer and others.	Sourcewell customers have the opportunity of ordering equipment in many ways. Our websites provide hundreds of leads monthly and are linked to a best in class Consumer Relationship Management (CRM) System that routes inquiries directly to a dealer in the customers region. This action takes just seconds and copies of the inquiry go to our dealers and also to the Regional Sales Manager responsible for that area. Additionally through the DEDICATED SOURCEWELL and GOVERNMENT website pages, customers can reach the Sourcewell Contract Administration team directly. https://versalift.com/government/ A dedicated resource will be assigned to chaperone the inquiry to delivery. This will include the ability for customers to speak with sales, engineering, and procurement associates that have deep familiarity with the use-cases for our equipment. When the order is placed a customer will receive a login to our Global Partner Program, as we believe that customers should be treated like Partners. This system will allow customers to explore all aspects of their purchasing process. This includes who to call, units, purchased, and many additional tools that will be used throughout the lifecycle of the product.	*
29	Describe in detail the process and procedure of your customer service program, if applicable. Include your response-time capabilities and commitments, as well as any incentives that help your providers meet your stated service goals or promises.	Customer Service requests at Versalift can be made several ways: • Directly contacting any one of numerous locations in every state through a Versalift Certified Service Center • Visiting versalift.com/service and submitting a request online 24 hours a day, 7 days a week • Calling our toll free customer support center at 1-866-LIFT-U-UP from anywhere in the contiguous United States We have the ability to expedite, ship or transport parts to any service center within the country, in some cases within the same day of request. Expedited shipping is also available. In the case of service-only, we have technicians available from all of our locations who, upon agreement with the client, can perform many operations, including repairs and part replacements, on site. Customer Service requests at BrandFX Body Company can also be made in several ways. Customers are able to contact their equipment distributors directly, to contact BrandFX directly by telephone, or to fill out a service form on the contact page at https://BrandFXbody.com/contact Customer Service requests at Aspen Aerials can be made in several ways as well. With regard to equipment service and support, the company offers an annual bridge inspection equipment service school at its headquarters in Duluth, MN, where bridge inspection equipment repair technicians from around the world gather to learn. Customers can submit a service request at any time through the contact form at https://aspnaerials.com/contact Additionally, the Aspen Aerials service and sales teams are available during regular business hours at (toll-free) 800-888-2773. At Time Manufacturing Company, once a call is received, a service ticket is issued on our customized internal Consumer Relationship Management (CRM) system, and a resolution course of action is established by appointing key personnel. All service contacts and leads are followed up on. Service staff performance is measured on response-time, first-time-solution, and the number of hours to close-out a ticket. Results of these tickets are shared with department heads in a REAL TIME manner. Each service representative is tracked for speed and accuracy through the ticketing system and challenging requests can be expedite immediately to the person in the organization best suited.	*
30	Describe your ability and willingness to provide your products and services to Sourcewell participating entities in the United States.	Time Manufacturing Company has a deep bench of dealers and authorized service providers throughout the United States. The network includes dealers (both corporate and 3rd party), 250 approved service centers for Versalift products. BrandFX has over 240 dealers nationwide. All Aspen Aerials inquiries are handled through our national service teams. Sourcewell contract sales training for all dealers is provided through the companies website and via our, and headquarters in Waco, TX. The Ruthmann brand has been popular in Europe for decades, and after the acquisition of Ruthmann including its facilities in America, we are now able to bring a unique set of high reach products to the US market. Time Manufacturing Company's websites include direct links to Government, Municipal, and Non-profit alternatives, and as of 2018, we have had a dedicated resource to handle all inquiries, RFP's and service requests. In addition a dedicated page with Sourcewell links is now available on all websites.	*
31	Describe your ability and willingness to provide your products and services to Sourcewell participating entities in Canada.	Time Manufacturing Company has a deep bench of dealers across Canada and recently acquired Calco, our largest dealer with locations across the country to launch Versalift Canada. A press release describing the acquisition can be found here - https://www.prnewswire.com/news-releases/versalift-acquires-calco-establishes-versalift-canada-301305642.html and in addition a dedicate Website providing service can be found at Canada.versalift.com. Further BrandFX with its 25 dedicated dealers in Canada offer Sourcewell engagements for the company. Sourcewell contract training for all dealers is provided through the company's website and via dedicated resources in our headquarters in Waco, TX. The Ruthmann brand has been popular in Europe for decades, and after the acquisition of Ruthmann including its facilities in America, we are proud to bring a unique set of high reach products to Canada. A recent delivery of a North America dedicate high reach product resulted in industry news coverage here - https://www.liftandaccess.com/article/first-ruthmann-t-235-canada Time Manufacturing Company's websites include direct links to Government, Municipal, and Non-profit alternatives, and as of 2018, we have had a dedicated resource to handle all inquiries, RFP's and service requests. In addition a dedicated page with Sourcewell links is now available on all websites.	*
32	Identify any geographic areas of the United States or Canada that you will NOT be fully serving through the proposed contract.	None, we have dedicated teams to service all areas.	*

33	Identify any Sourcewell participating entity sectors (i.e., government, education, not-for-profit) that you will NOT be fully serving through the proposed contract. Explain in detail. For example, does your company have only a regional presence, or do other cooperative purchasing contracts limit your ability to promote another contract?	None	*
34	Define any specific contract requirements or restrictions that would apply to our participating entities in Hawaii and Alaska and in US Territories.	None, we have dedicated teams for these areas.	*

Table 7: Marketing Plan

Line Item	Question	Response *
35	Describe your marketing strategy for promoting this contract opportunity. Upload representative samples of your marketing materials (if applicable) in the document upload section of your response.	Time Manufacturing Company prides itself on its sales and marketing capabilities, as they are regionalized and organized to meet the needs of all of our customers. Sourcewell members vary in their size, structure and procurement strategy, and our team has been working to better understand and build marketing materials that address each of these members based on a stakeholder persona model. Time Manufacturing Company has built a dedicated web page for government resources at https://versalift.com/government, where Sourcewell members can access the Government Services team, get additional information and use links that pertain to them. Sourcewell members can search for equipment by industry focus through an equipment menu, and search by Fleet Application and several attributes, including working height. Additionally, equipment can be compared, sorted and filtered at https://versalift.com/bucket-truck, using our custom-built bucket truck comparison tool. There are several other ways to locate a distributor, including dedicated third party distributor landing pages and prominently located Dealer link at the top of every Time Manufacturing Company website, including TimeMFG.com Versalift.com, BrandFXBody.com, AspenAerials.com, RuthmannReachmaster.com, TRLRents.com, and UtilityTruckTrader.com We have an experienced user experience (UX) team that has been working to make the Versalift, BrandFX, Ruthmann, and Aspen Aerials websites the best in the industry. These websites enjoy success as Page 1 search results for over 100 keywords used to describe the product and industry applications of the company. For example, this has led the Versalift website traffic to increase from less than 2,000 visits a month in 2017 to over 15,000 monthly visits in 2021. As a leader in providing knowledge, engineering application for the electric utility, telecommunications, sign light and traffic, forestry, wind energy, and plane deicing industries, we have worked hard to make the website easy to navigate and to provide a knowledge orientation for customer seeking information. An advanced mega-menu system has been developed which provides fast access to all industries including Government. In addition, in order to make purchasing easier for Sourcewell members, website viewers they can search Versalift equipment by product type rather than application, as RFPs are often written with this language. Because Time Manufacturing Company is focused on providing Sourcewell Members with exactly the right choice of product to meet their needs, we have made available on our website all specifications, as well as links to contact engineering, to ensure that the buying process is simple, straightforward, and efficient. Examples include: Versalift's popular 45 foot Articulated Telescopic Insulated Aerial lift: https://versalift.com/bucket-truck/vst-40-i/ Ruthmann Steiger 295ft high Reach Aerial Lift https://ruthmanreach.wpengine.com/ruthmann-models/ruthmann-t-295a/ BrandFX has a dedicated Government Website which discusses in detail the advantages of using advanced lightweight composite materials to save fuel and reduce a carbon footprint. https://brandfxbody.com/industry/municipal-government/ ADVERTISING IN INDUSTRY JOURNALS - Our products are designed to deliver a complete solution, and often multiple units are designed to be used as part of a crew. We often market in this manner through email, advertising, and by promoting them through our network of websites. For example, advertisements are shown in industry quarterly periodicals.

36	Describe your use of technology and digital data (e.g., social media, metadata usage) to enhance marketing effectiveness.	With a strong digital presence across its portfolio of brands, Time Manufacturing Company has a network of websites that are used in support of sales, service, parts support, warranty claims management, and equipment training. We have deep, communication-oriented content throughout the site and regularly update our blog pages in order to share valuable information with our customers. We track all website behavior using established best practices designed by Google Analytics. We maintain a highly active network and update our social media daily, with dedicated social media coordinators who are responsible for sharing valuable detailed information with our followers. Our websites are content-driven, built in the world-class Wordpress Foundation, and we have a dedicated team of experts who have custom-coded the site for optimal performance on desktop, laptop, tablet, and mobile devices. Using only clean, necessary coding, the sites experience super fast load times that are additionally benefited from cache servers on a top tier hosting facility. Website analytics are examined bimonthly for audience, behavior, lead generation, and product engagement. This information is reported in a virtual Policy Meeting which includes all department heads. We use website activity as an indicator of interest in products and services. This allows the company to better understand customer behavior and also efficiently predict needs for supply chain and human operations. Google analytics are reported and added to a company-wide Dashboard which is accessible to all division heads, managers, and decision-making associates. Linked to the websites are a top tier E-commerce store and Time Manufacturing Company world-class Customer Relationship Management (CRM) System that is used to track and personalize all client communications. This allows the company to quickly understand and sort client needs, view previous orders, and quickly route questions to dedicated associates. In support of our customers, we have developed a Global Partner Program Portal which allows any customer to login from any device anywhere in the country to find part-lists, order parts, track service dates, and schedule service based on unit serial numbers. This program is a best-in-class, value-added service that comes standard for every Sourcewell customer purchase.	*
37	In your view, what is Sourcewell's role in promoting contracts arising out of this RFP? How will you integrate a Sourcewell-awarded contract into your sales process?	In our view, Sourcewell's role in promoting contracts arising from this RFP is limited to presenting the opportunity to its membership and updating contact information to the Time Manufacturing Company Dedicated Sourcewell Liaison. We are aware that Sourcewell members are not obligated to purchase, and we are confident in our ability to deliver the best equipment, service, training and replacement parts to all Sourcewell member organizations. Sourcewell-awarded contracts will be managed by a dedicated Sourcewell liaison, who will integrate contracts into the company's production cycle. Tools for order tracking and customer relationship management accessible to the Sourcewell Liaison will ensure that Sourcewell members receive the best quality service available. Time Manufacturing Company has regularly scheduled meetings with both its internal sales, marketing, and sales support staff, as well as monthly meetings with distribution partners. When awarded the Sourcewell contract we will execute upon a 3 phase rollout program across the country. Sourcewell Sales Meetings Our company has dedicated Regional Sales Managers (RSMs) that are responsible for territorial distribution partners. These RSMs regularly visit with Distributors in their territories and can call a meeting of a distributor's sales staff in order to relay important information, such as the awarding of a Sourcewell member contract, as needed. In this meeting, which will include the Sourcewell member liaison, contact information, pricing information and access to configurations will be shared. Additional documentation will be made readily available to all pertinent sales teams with our distribution network. Dedicated Sourcewell Website Upon clicking on the link on the Sourcewell website, qualified customers will be able to access a secure website designed to facilitate fast access to general pricing, request for quote, access to designated parts and service locations. The Versalift salesforce will have direct access to pricing and other relevant details. Integrated Marketing Time Manufacturing Company brands will launch a term-wide marketing program that will include social media, email, and print collateral that can be shared internally as well as with Sourcewell members.	*
38	Are your products or services available through an e-procurement ordering process? If so, describe your e-procurement system and how governmental and educational customers have used it.	Because our products have many optional features designed to meet specific customer needs, initial orders should be placed directly through members of the sales team. However, parts and service, and several other benefits, can be accessed through our Global Partner Program (described above), a proprietary, web-based client service portal. Initially launched to serve only our largest strategic accounts, Global Partner Program is now available to all customers who purchase equipment through the Sourcewell Contract.	*

Table 8: Value-Added Attributes

Line Item	Question	Response *	
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39	Describe any product, equipment, maintenance, or operator training programs that you offer to Sourcewell participating entities. Include details, such as whether training is standard or optional, who provides training, and any costs that apply.	According to ANSI A92.2, Section 10.2, all aerial lift operators must be trained, familiarized, and authorized to use the aerial lift on which they operate. The Versalift training offering is designed to familiarize learners with ANSI safety guidelines and key operational features of the aerial lift. An initial in-service training is included with the purchase of the aerial unit and will be administered at the time the aerial is delivered. Additional training options are available and can be customized, as needed, to the user and the aerial unit. These options include: Instructor-led service technician training: Classes typically last 2 days, are model-specific, and class size is limited to 12 people. The class will be facilitated by a Versalift qualified instructor. The facilitator will familiarize learners with the contents of the Operator Manual. The class is built around the ANSI A92.2 standard and focuses on safety when working on or around an aerial lift, lift operation, maintenance procedures and adjustments, troubleshooting techniques, and emergency retrieval procedures. This class requires access to the aerial lift. Self paced e-learning: This class is accessible by any internet compatible device. Online courses take approximately 1 to 1-1/2 hours to complete. It has been developed and tested by Versalift. Each section of the course is linked to a specific section of the ANSI A92.2 guidelines, allowing for analysis of the learner's grasp of core concepts before final authorization to operate is granted. Learners may complete the course in one sitting or over a period of time, as the Learning Management System (LMS) will track and save the learner's progress throughout the course. Tracking of assessments and course completion is stored in a secure LMS and accessible at any time. Online and in person operational training classes are now available for every product that we manufacture. Versalift also offers maintenance training classes on an as-needed basis. Online Training for Aerial Lift Operation at Versalift Versalift offers online aerial lift training for operation by a suite of digital and online learning tools focused specifically on the safe operation of Versalift vehicle-mounted aerial lifts. The goal of Versalift Aerial Lift Training interactive training programs is to ensure operator safety and to support a perfect safety record, while reinforcing the operator behaviors that extend the useful working life of the aerial lifts themselves. Those operators and technicians who complete Versalift Aerial Lift Training training courses are trained to be safety advocates. https://versalift.com/aerial-lift-training/ Bridge Inspection Equipment Service School at Aspen Aerials Bridge inspection school at Aspen Aerials is an annual opportunity for bridge inspection engineers and technicians to benefit from classroom training, hands-on maintenance training, safe equipment setup and operation and ANSI A92.8 Safety review. Aspen Aerials is the market leader in North American bridge inspection equipment, and is attended by professionals from across North America.	
40	Describe any technological advances that your proposed products or services offer.	Versalift, BrandFX, Aspen Aerials, Ruthmann and BlueLine are each Time Manufacturing Company brands that are innovation and engineering leaders. Versalift has several innovative new product offerings that simplify decision making and task completion for technicians on the job. For example, new Versalift bucket trucks for 5G installation feature climate controlled splicing cabins that enable technicians to work long hours. BrandFX has innovated in designing a truck body that is made from 100% composite material, and is the lightest commercial truck body available in North America. Ruthmann Advanced Safety Isolation Systems - Versalift Electroguard and TruGuard® safety systems combine to offer the safest telescopic insulated aerial units on the market, at any height and position, including fully retracted. SlopeMax is a brand new engineering innovation that allows technicians to work in safer conditions without the need to constantly check slope angle indicators. SlopeMax is a passive operating system that will measure the slope angle of the surface and boom, and limit the horizontal reach via the lower boom function when necessary. It is a great example of the culture of innovation and safety at Time Manufacturing Company, and allows the firm to maintain compliance with soon-to-be released ANSI standards for safe operation. SlopeMax - Technical Explanation A system of angular sensors located to measure the aerial base angle and lower boom angle relative to horizontal. The system limits the operating envelope depending on the aerial lift base angle. With the base angle within 5 degrees (or predetermined angle depending on aerial lift model) of horizontal, the aerial lift is allowed to operate to its full envelope range. When the base angle exceeds 5 degrees (or predetermined angle depending on aerial lift model) above horizontal, the structural, functional, and overturning stability limits may be exceeded when the lift platform is at a maximum horizontal position. To prevent this the lower boom maximum raised position is limited, which will reduce the horizontal position and thus reduce loading due to horizontal position below the aerial lift maximum load limits. If the base angle exceeds a maximum-operating angle, the lower boom raise (elevate) function will be disabled and not allowed to raise from its stowed position. The sensors are part of a control system that will control the hydraulic limit of the lower boom. Quality Assurance Checkpoints - Torque striping is an extra step taken to ensure the quality of Versalift equipment. All critical bolts are torque seal marked, which allows lift operators to efficiently conduct daily visual inspections. Additionally, every critical pin on the bucket truck and lift assembly has a redundant pin-set, which is then torque striped. Special Innovations - Versalift, Ruthmann, and Aspen Aerials have innovations that have evolved from decades of feedback from customers. Too numerous to illustrate in details here, just some of these includes specialized cockpit controls (fy by wire, metal handles, emergency stop features, bluetooth controls, secondary (on ground controls), remote controls, etc), stability technologies such as multiple types of outriggers with the capability to short-jack as needed on some of the larger units. BrandFX has hundreds of design variables to meet the needs of any fleet customer with a custom-designed mold that decreases weight, increases strength, and creates the most durable products in the industry. Aspen Aerial uses a proprietary design to allow for bridge inspection without the need for outriggers which impede traffic and damage bridge surfaces. In addition, multiple basket-designs and multiple reach machines with multiple booms allow their series of bridge inspection equipment to be outfitted for any job.	
41	Describe any "green" initiatives that relate to your company or to your products or services, and include a list of the certifying agency for each.	Environmental Policy Statement - Time Manufacturing Company At Time Manufacturing Company we will conduct our business in ways that responsibly sustain, protect and preserve the natural environment. Time Manufacturing is committed to a goal of zero environmental occurrences in our operations. We will accomplish this goal by:	

Ensuring the proper disposal of chemicals and waste
Proactively reducing, reusing and recycling of waste
Using resources, including energy and water, efficiently
Educating employees on plant environmental mitigation
Complying with all environmental regulations

Time Manufacturing Company Environmental Programs Include:
Accidental Chemical Spills Management and Response
Non RCRA Regulated & Universal Waste Management
Wastewater Monitoring and Testing Program
Storm Water Pollution Prevention (SWPP) Program
Spill Prevention Control and Countermeasure (SPCC) Program

Biodegradable Hydraulic Oil is Always an Available Option at Versalift
As a hydraulic systems manufacturer, Versalift works with the nation's top supplier of environmentally friendly hydraulic fluid. The oil is biodegradable, which reduces some of the unintended impacts of accidental leakage. As of 2019, every Versalift bucket truck in the North American market is available with Versalift's proprietary green oil. Learn more about Versalift green initiatives at <https://versalift.com/green-initiatives/>

Product Carbon Footprint

"Time Manufacturing is doing everything possible to provide products that have a carbon neutral footprint like lightweight truck bodies, the ePTO and electric/hybrid chassis. We have equipment that is designed and developed to maintain wind energy generators, something that is important to reduce our carbon footprint. It is important for our company to support that type of industry to be carbon neutral to protect our planet. Because it's not just for us. There are other generations coming along, and we have to think about that." James Christian, VP Engineering

Improved First Time Quality is Waste Reduction

According to the United States Environmental Protection Agency, one of the most effective ways to optimize the carbon footprint of a manufacturing company is to improve the first time quality of the output. Improved first time quality drives the overall level of waste downward, which reduces input costs. According to the EPA note on sustainability, companies that improve their operational efficiency by reducing waste are building long-term business viability and success.

The Strong Business Case for Sustainability

By building a business case for sustainability, the EPA shows that reducing waste is a highly profitable way to respond to regulatory constraints, while at the same time accessing new customers, strengthening the brand, building public trust, and being well-positioned to respond to any new opportunities that might increase its competitive advantage. - <https://epa.gov/sustainability/sustainable-manufacturing>

Opportunities in Clean Technology/Renewable Energy

Time Manufacturing Company Lightweights Units to Improve Safety and Efficiency

Fleets Can Do More Than Go Hybrid - Lightweighting Makes an Impact

The U.S. Department of Energy states that for every 100 pounds of weight added to a vehicle, MPG is reduced by up to 2 percent. Conversely, by reducing vehicle weight, MPG is increased, saving fleets money. Many fleets are going green by incorporating hybrid and CNG trucks, but they shouldn't stop there. By incorporating lightweight composite truck bodies, fleets will continue to see improved return on investment.

BrandFX - Fiberglass Division - Advanced Composite Materials

BrandFX advanced composite truck bodies allow fleets to downsize the weight of their equipment with minimal impact on payload. That means thousands of dollars in bottom line life cycle savings per fleet unit. Data suggests that by taking advantage of truck rightsizing, alternative fuels and lightweight materials, fleets can accomplish up to 50% fuel savings as well. Lightweight, long-lasting truck bodies have lower emissions and lower maintenance costs.

BrandFX manufactures truck bodies from advanced composite materials which prove not only to be lighter than steel, stronger than aluminum, but also have enumerable environmental advantages by being lightweight. Many of the truck body units sold are transferred to new chassis and many are seen in operation more than 30 years after their purchase date. Time Manufacturing Company's acquisition of BrandFX enabled resources to extend manufacturing to include buckets and booms.

Versalift ePTO Systems Reduce Environmental Impact

Versalift Provides Power Source Solutions

Versalift creates aerial lift equipment with the future in mind. The solution for how to run multiple mechanical systems using one vehicle's power source has been in development by Versalift for decades. Versalift offers their customers Electric Drive™.

Electric Drive™ Saves Fuel and Improves Efficiency

Versalift delivers the highest levels of safety, quality and reliability to its customers every day. The cost savings and reduced environmental impact that can be found within the Versalift Green Initiative represent another way the company delivers value to its customers.

Electric Drive™ offers fleet managers a way to save fuel and improve efficiency by powering the lift and other functional systems of a bucket truck without running its engine.

Electric Drive™ Advantages

Electric Drive™ operates during aerial run time and includes features like full flow for hydraulic tool circuit operation, battery recharge of existing truck alternator, and full power-to-tool circuit operation. During its nearly 40 years of field operation, Electric Drive™ has been extensively tested and proven to create significant savings on fleet fuel costs. With Electric Drive™, fleets can eliminate idle time, spend less money on fuel, stop contributing to noise pollution, decrease the amount of emissions from your truck, eliminate tailpipe emissions while working at the site, minimize impact on payload and reduce maintenance costs.

Ruthmann, a Time Manufacturing Company Brand, a Leader in Wind Energy Blade Maintenance

The United States Increases Wind Energy Initiatives

Wind generated electricity now accounts for approximately 8.5% of total output in the United States, and approximately 45% of sustainably generated electric power. Electric power generated by wind is remarkably inexpensive to produce once the infrastructure is in place. The states of Texas and Oklahoma, which are perhaps best known as big oil states, also happen to be the nation's leaders in wind-generated electricity. This is not an accident: wind-generated electricity is currently the most efficient application of renewable energy generation. The most effective and efficient way to service and maintain wind turbines is through the use of high access work platforms reaching in excess of 200 feet.

		Ruthmann, a Time Manufacturing brand, Supports the Wind Energy Industry High access work platforms are an integral part of wind energy installation, maintenance and repair. Ruthmann high access work platforms are a wind energy industry leader and directly contribute to how wind energy will succeed in generating greater amounts of electric power. Principally through Ruthmann, but also through its other high reach brands, Time Manufacturing Company supports the wind-powered electricity generation and wind farm maintenance industries in the United States, and around the world, deploying wind-turbine blade maintenance units to organizations across Europe, Africa, Asia and South America. Safer and More Reliable Wind Energy Production with Ruthmann Equipment Internationally, Ruthmann is known for its high reach innovations designed to support the wind energy industry. Ruthmann engineers design units with enormous reach on relatively lightweight work platforms. At heights commonly exceeding 200 feet, these units are capable of remaining highly stable at full working height and load in windy conditions, ensuring efficiency and safety of wind energy technicians. Ruthmann high access work platforms stow quickly, designed to return to their stowed traveling position in minutes. Exceeding dielectric testing of ANSI and OSHA, they offer the highest quality of safety for effective installation, blade/turbine maintenance, repair and inspection of wind turbines and blades.	
42	Identify any third-party issued eco-labels, ratings or certifications that your company has received for the equipment or products included in your Proposal related to energy efficiency or conservation, life-cycle design (cradle-to-cradle), or other green/sustainability factors.	Not Applicable	*
43	Describe any Women or Minority Business Entity (WMBE), Small Business Entity (SBE), or veteran owned business certifications that your company or hub partners have obtained. Upload documentation of certification (as applicable) in the document upload section of your response.	Not Applicable	*
44	What unique attributes does your company, your products, or your services offer to Sourcewell participating entities? What makes your proposed solutions unique in your industry as it applies to Sourcewell participating entities?	Time Manufacturing Company brands offer a complete solution to Sourcewell members in our family of utility vehicles and equipment - bucket trucks, high access arials, compact arials, service trucks, cable placers and digger derricks. We support our customers by providing a complete fleet solution through hundreds of locations across North America. This complete fleet solution includes sales, service, parts, equipment testing, onsite and virtual training, equipment financing, warranty service, used equipment and short term rental solutions. Since the company has both manufacturer-owned, and also 3rd party distributors, service centers, and parts suppliers, we can provide Sourcewell members with everything that they need to keep our products in service, on the jobsite, and performing the work that they were designed to do. In addition, since Time Manufacturing Company provides Sourcewell with a dedicated liaison, we can ensure that Sourcewell members will know who to contact and where to find answers. Having multiple brands across multiple industries allows Time Manufacturing Company the unique ability to employ economies of scale to achieve more competitive supply chain function. As a large organization with manufacturing facilities on several continents, we can leverage internal teams to help meet demand, even when global forces make this difficult for the industry.	*

Table 9: Warranty

Describe in detail your manufacturer warranty program, including conditions and requirements to qualify, claims procedure, and overall structure. You may upload representative samples of your warranty materials (if applicable) in the document upload section of your response in addition to responding to the questions below.

Line Item	Question	Response *	
45	Do your warranties cover all products, parts, and labor?	All products are covered (parts and labor) for a period of one year from the date of service. In addition, longer term warranties are available for an additional charge. Warranties are valid throughout the term, can be extended for additional periods, and can be serviced through any of our manufacturer-owned, or 3rd party distribution partners in every state.	*
46	Do your warranties impose usage restrictions or other limitations that adversely affect coverage?	The only limitations of warranty coverage is abuse of the equipment or failure to adhere to the periodic maintenance schedule.	*
47	Do your warranties cover the expense of technicians' travel time and mileage to perform warranty repairs?	Yes. Travel is covered for a period of thirty (30) days.	*
48	Are there any geographic regions of the United States or Canada (as applicable) for which you cannot provide a certified technician to perform warranty repairs? How will Sourcewell participating entities in these regions be provided service for warranty repair?	All geographic areas in the U.S. are covered. Sourcewell members will be able to access certified technicians to perform warranty repairs, as Time Manufacturing Company distributors cover the entire United States and Canada.	*
49	Will you cover warranty service for items made by other manufacturers that are part of your proposal, or are these warranties issues typically passed on to the original equipment manufacturer?	Time Manufacturing Company covers and manages all warranty claims for components used in the assembly of our equipment. During the warranty periods, our team covers all items.	*
50	What are your proposed exchange and return programs and policies?	While we do not have an exchange program, the return policy is thirty (30) days from date of sale. Warrantied parts can be returned via RMA for credit. Electronic components are not available for return due to their sensitive nature. Our company's products are known for their reliability and longevity. This in turn gives them a better than average retained value as they age. We recommend that unit should be traded in towards a new product at planned intervals and have our Utility Truck Trader brand to facilitate this.	*
51	Describe any service contract options for the items included in your proposal.	Two extended warranty periods are available	*

Table 10: Payment Terms and Financing Options

Line Item	Question	Response *
52	Describe your payment terms and accepted payment methods?	NET 30 Time Manufacturing Company facilitates multiple payment, financing, flexible leasing, and transfer options with a dedicated Versalift Capital division with dedicated staff to help facilities purchase and payment through disposition. More information is available at https://versalift.com/capital
53	Describe any leasing or financing options available for use by educational or governmental entities.	YES, details and contact information can be found at https://versalift.com/versalift-capital/ Versalift Capital offers industry knowledge, responsiveness and personal service to fleet and contractor customers across North America. We can offer competitive financing options because we know our equipment, its durability, and its residual value better than anyone else. We have extremely competitive programs for the single lift buyer, a private or investor owned utility or a municipality with hundreds in their fleet. We offer Operating (Fair Market Value) Leases which are based on a residual purchase option at the end of the lease. This allows you to structure your lease for the period of time you will need to use the equipment and decide at the end if you want to buy it or walk away. Operating lease programs are also available with a fixed price Early Buyout Option (EBO). Capital (\$1 out) Leases are very similar to a traditional loan, in that you finance the cost of the purchase over time with a resulting final payment of \$1 which then transfers ownership. The advantage of Capital Leases over Purchase Financing is in regard to the rules of ownership whereby Capital leases remain operation expenses from an accounting standpoint throughout the length of the lease. Terminal Rental Adjustment Clause (TRAC) Leases combine all of the advantages of leasing while retaining an option to buy out the equipment at the end of the lease at an agreed upon residual value. This is particularly attractive with Versalift High Reach equipment as they have been known to remain in service for over 30 years
54	Describe any standard transaction documents that you propose to use in connection with an awarded contract (order forms, terms and conditions, service level agreements, etc.). Upload a sample of each (as applicable) in the document upload section of your response.	Sourcewell member purchase orders will be processed directly through Versalift (Time Manufacturing Company) only. Upon receipt of purchase orders, they are stamped and identified as "SOURCEWELL", therefore all processes including order entry, installation, invoicing, etc. are referenced to Sourcewell. During invoicing, Accounting documents each sale to a Sourcewell account, which generates total sales along with Sourcewell administrative fees calculated for quarterly reporting.
55	Do you accept the P-card procurement and payment process? If so, is there any additional cost to Sourcewell participating entities for using this process?	Yes we accept P-cards

Table 11: Pricing and Delivery

Provide detailed pricing information in the questions that follow below. Keep in mind that reasonable price and product adjustments can be made during the term of an awarded Contract as described in the RFP, the template Contract, and the Sourcewell Price and Product Change Request Form.

Line Item	Question	Response *
56	Describe your pricing model (e.g., line-item discounts or product-category discounts). Provide detailed pricing data (including standard or list pricing and the Sourcewell discounted price) on all of the items that you want Sourcewell to consider as part of your RFP response. If applicable, provide a SKU for each item in your proposal. Upload your pricing materials (if applicable) in the document upload section of your response.	See attached price spreadsheet.
57	Quantify the pricing discount represented by the pricing proposal in this response. For example, if the pricing in your response represents a percentage discount from MSRP or list, state the percentage or percentage range.	Base pricing reflects a 30% percentage discount off our standard price of the aerial portion only. Accessory pricing reflects a 15% discount off standard prices.
58	Describe any quantity or volume discounts or rebate programs that you offer.	Quantity Discounts: 2 to 4 -1% 5 to 10 - 2% 11 to 20 - 3% 21 plus - 4%
59	Propose a method of facilitating "sourced" products or related services, which may be referred to as "open market" items or "nonstandard options". For example, you may supply such items "at cost" or "at cost plus a percentage," or you may supply a quote for each such request.	Open market items requested by the Sourcewell member will be included in the quote and identified as "Open market Item."
60	Identify any element of the total cost of acquisition that is NOT included in the pricing submitted with your response. This includes all additional charges associated with a purchase that are not directly identified as freight or shipping charges. For example, list costs for items like pre-delivery inspection, installation, set up, mandatory training, or initial inspection. Identify any parties that impose such costs and their relationship to the Proposer.	NONE
61	If freight, delivery, or shipping is an additional cost to the Sourcewell participating entity, describe in detail the complete freight, shipping, and delivery program.	All Sourcewell sales are FOB our installation locations. (See Distributor Map) Because these installation locations are positioned throughout the country and Canada, delivery costs are kept at a minimum to the Sourcewell member. Delivery freight will be quoted from these locations to the end user at a rate of \$2.27 per mile. All deliveries are set up by Company or arranged through our install distributor.
62	Specifically describe freight, shipping, and delivery terms or programs available for Alaska, Hawaii, Canada, or any offshore delivery.	In addition to shipping process above in Item 61, any additional off shore freight charges to the nearest port will be quoted to the Sourcewell member during the quoting process.
63	Describe any unique distribution and/or delivery methods or options offered in your proposal.	All Sourcewell sales are FOB our installation locations. (See Distributor Map) Because these installation locations are positioned throughout the country and Canada, delivery costs are kept at a minimum to the NJPA member.

Table 12: Pricing Offered

Line Item	The Pricing Offered in this Proposal is: *	Comments
64	c. better than the Proposer typically offers to GPOs, cooperative procurement organizations, or state purchasing departments.	Sourcwell members receive a significant discount when compared to our typical customers.

Table 13: Audit and Administrative Fee

Line Item	Question	Response *	
65	Specifically describe any self-audit process or program that you plan to employ to verify compliance with your proposed Contract with Sourcwell. This process includes ensuring that Sourcwell participating entities obtain the proper pricing, that the Vendor reports all sales under the Contract each quarter, and that the Vendor remits the proper administrative fee to Sourcwell. Provide sufficient detail to support your ability to report quarterly sales to Sourcwell as described in the Contract template.	A Sourcwell work procedure form was developed to self audit each NJPA order from receipt of purchase order to filing NJPA administration fee. Each individual form will be included in the job file.	*
66	If you are awarded a contract, provide a few examples of internal metrics that will be tracked to measure whether you are having success with the contract.	All information regarding customers, products, service, warranty claims, and customer satisfaction are recorded for all customer of Time Manufacturing Company. This information is shared through our internal dashboarding system and transparently shown to all stakeholders relevant to the sale.	*
67	Identify a proposed administrative fee that you will pay to Sourcwell for facilitating, managing, and promoting the Sourcwell Contract in the event that you are awarded a Contract. This fee is typically calculated as a percentage of Vendor's sales under the Contract or as a per-unit fee; it is not a line-item addition to the Member's cost of goods. (See the RFP and template Contract for additional details.)	A 2% administrative fee will be paid to Sourcwell calculated on sales under this contract.	*

Table 14A: Depth and Breadth of Offered Equipment Products and Services

Line Item	Question	Response *
68	Provide a detailed description of the equipment, products, and services that you are offering in your proposal.	A Portfolio of Innovation Time Manufacturing Company has a portfolio of industry-leading brands that are all known for their innovative products. • Versalift provides state-of-the-art lightweight, durable aerial lifts from 29 to 180 feet. Additionally, the company manufactures digger derricks, cable placers, high reach aeriels and provides service coverage across the United States and Canada. • BrandFX provides lightweight, advanced composite truck Line & Service truck bodies that improve payload capacity, improve fuel efficiency and reduce wear on basic systems such as brakes and suspension. Additionally, the company offers a full suite of Topper and Tonneau covers that improve function and security for lightweight commercial vehicles. The vertically integrated company also manufactures Booms and Buckets. • Aspen Aerials is the leading North American manufacturer of bridge inspection equipment. Headquartered in Duluth, MN, the company provides innovative bridge inspection equipment that can be found in every US State, and hosts a popular service and operation school for its equipment. • Ruthmann is a leading manufacturer of aerial lifts in Europe and now available in North America. The company's innovative product line includes the most capable high reach aerial work platforms at 90 meters in North America. Ruthmann high access aerial lifts are used to service wind turbines and blades. Time Manufacturing Company websites are organized to help you quickly obtain detailed information on each family of products including spec sheets and contact information. The flagship websites can be found at: • https://versalift.com/ • https://brandfxbody.com/ • https://www.ruthmannreachmaster.com/ • https://aspenaerials.com/
69	Within this RFP category there may be subcategories of solutions. List subcategory titles that best describe your products and services.	Versalift - Aerial Lifts With a Lower True Cost of Ownership Versalift provides fleets with lower true cost of ownership through smarter and more reliable design. Through the use of stronger, lightweight materials, Versalift equipment is safer and more reliable, while being easier to maintain. (Sustainability, p.7) Versalift End Markets • Telecommunications Construction & Maintenance • Electric Utility Distribution and Transmission Construction & Maintenance • Forestry, Line Clearing, Tree care • Gas, Oil, and Mining Inspection • Sign, Light & Signal Maintenance • Residential & Commercial Services Fleet and Building Maintenance • Wind Turbine Blade Maintenance • Other Construction Applications BrandFX Advanced Composite - Fiberglass Division Brand FX was acquired by Time Manufacturing Company in 2019. As a vertically integrated fiberglass division manufacturing advanced lightweight composite Bodies, Boom, and Buckets for the Line and Service Worktrucks. BrandFX sells to both internal Versalift and also external OEM and retail fleet end-markets. • Telecommunications • Construction • Roadside Mechanics • Agriculture • Electric Utility • Forestry, Line Clearing, Tree care • Gas, Oil, and Water Utilities • Sign, Light & Signal Maintenance • HVAC and Plumbing • Pest Control • Commercial Fleets Aspen Aerials Supports Industries that Strengthen our Infrastructure Aspen Aerials provides world-class bridge inspection equipment to bridge engineering and inspection companies and government entities in the United States and Europe. Recent infrastructure and public safety legislation will ensure the improvement and maintenance of more than 45,000 American bridges. Aspen Aerials, a Time Manufacturing Company brand, is growing its capacity to meet significant demand for bridge inspection and repair services across the United States. Ruthmann - European Manufacturer Of Aerial Work Platforms Ruthmann goes to market under the brands Ruthmann, Steiger, Ecoline, and Bluelift. The company's line of aerial lift devices expand Time Manufacturing Company's offering to include Wind Turbine Blade Maintenance business in North America as well as support the many specialized access needs of telecommunications, electric utility and other essential end customers around the world. The Blueline, JIBBI, and BIBBI products are also used for building maintenance activities.

Table 14B: Depth and Breadth of Offered Equipment Products and Services

Indicate below if the listed types or classes of equipment, products, and services are offered within your proposal. Provide additional comments in the text box provided, as necessary.

Line Item	Category or Type	Offered *	Comments	
70	Telescopic, articulated, mast, and boom, aerial lifts, towers, buckets, and platforms	☒ Yes ☐ No	Complete fleet solutions are available	*
71	Digger derricks, and cable placing, pulling, and tensioning equipment	☒ Yes ☐ No	Complete fleet solutions are available	*
72	Directional drills, trenchless excavation equipment, thrust and boring machines, soil piercing tools, trenchers, rock wheels, and pile drivers	☐ Yes ☒ No	NA	*
73	Utility locating equipment	☐ Yes ☒ No	NA	*
74	Accessories, supplies, replacement or wear parts, and services related to the offering of equipment in Lines 69-72	☒ Yes ☐ No	Complete fleet solutions are available	*

Table 15: Exceptions to Terms, Conditions, or Specifications Form

Line Item 75. NOTICE: To identify any exception, or to request any modification, to the Sourcwell template Contract terms, conditions, or specifications, a Proposer must submit the exception or requested modification on the **Exceptions to Terms, Conditions, or Specifications Form** immediately below. The contract section, the specific text addressed by the exception or requested modification, and the proposed modification must be identified in detail. Proposer's exceptions and proposed modifications are subject to review and approval of Sourcwell and will not automatically be included in the contract.

Contract Section	Term, Condition, or Specification	Exception or Proposed Modification

Documents

Ensure your submission document(s) conforms to the following:

- Documents in PDF format are preferred. Documents in Word, Excel, or compatible formats may also be provided.
- Documents should NOT have a security password, as Sourcwell may not be able to open the file. It is your sole responsibility to ensure that the uploaded document(s) are not either defective, corrupted or blank and that the documents can be opened and viewed by Sourcwell.
- Sourcwell may reject any response where any document(s) cannot be opened and viewed by Sourcwell.
- If you need to upload more than one (1) document for a single item, you should combine the documents into one zipped file. If the zipped file contains more than one (1) document, ensure each document is named, in relation to the submission format item responding to. For example, if responding to the Marketing Plan category save the document as "Marketing Plan."

- [Pricing](#) - 2022 Sourcwell Price List.xlsx - Wednesday November 03, 2021 13:04:49
- [Financial Strength and Stability](#) - FS - Time Manufacturing - 12-31-20 - Final.pdf - Wednesday November 03, 2021 13:05:07
- [Marketing Plan/Samples](#) - Sourcwell RFP 2021 - Marketing & Training Plan - TIME MANUFACTURING COMPANY.pdf - Tuesday November 02, 2021 14:41:32
- WMBE/MBE/SBE or Related Certificates (optional)
- [Warranty Information](#) - STANDARD Warranty Statement.pdf - Wednesday November 03, 2021 13:05:23
- [Standard Transaction Document Samples](#) - Sourcwell Sales Order Acknowledgement.pdf - Wednesday November 03, 2021 14:56:00
- [Upload Additional Document](#) - Certificate of Insurance.pdf - Wednesday November 03, 2021 14:32:08

Addenda, Terms and Conditions**PROPOSER AFFIDAVIT AND ASSURANCE OF COMPLIANCE**

I certify that I am the authorized representative of the Proposer submitting the foregoing Proposal with the legal authority to bind the Proposer to this Affidavit and Assurance of Compliance:

1. The Proposer is submitting this Proposal under its full and complete legal name, and the Proposer legally exists in good standing in the jurisdiction of its residence.
2. The Proposer warrants that the information provided in this Proposal is true, correct, and reliable for purposes of evaluation for contract award.
3. The Proposer, including any person assisting with the creation of this Proposal, has arrived at this Proposal independently and the Proposal has been created without colluding with any other person, company, or parties that have or will submit a proposal under this solicitation; and the Proposal has in all respects been created fairly without any fraud or dishonesty. The Proposer has not directly or indirectly entered into any agreement or arrangement with any person or business in an effort to influence any part of this solicitation or operations of a resulting contract; and the Proposer has not taken any action in restraint of free trade or competitiveness in connection with this solicitation. Additionally, if Proposer has worked with a consultant on the Proposal, the consultant (an individual or a company) has not assisted any other entity that has submitted or will submit a proposal for this solicitation.
4. To the best of its knowledge and belief, and except as otherwise disclosed in the Proposal, there are no relevant facts or circumstances which could give rise to an organizational conflict of interest. An organizational conflict of interest exists when a vendor has an unfair competitive advantage or the vendor's objectivity in performing the contract is, or might be, impaired.
5. The contents of the Proposal have not been communicated by the Proposer or its employees or agents to any person not an employee or legally authorized agent of the Proposer and will not be communicated to any such persons prior to Due Date of this solicitation.
6. If awarded a contract, the Proposer will provide to Sourcewell Participating Entities the equipment, products, and services in accordance with the terms, conditions, and scope of a resulting contract.
7. The Proposer possesses, or will possess before delivering any equipment, products, or services, all applicable licenses or certifications necessary to deliver such equipment, products, or services under any resulting contract.
8. The Proposer agrees to deliver equipment, products, and services through valid contracts, purchase orders, or means that are acceptable to Sourcewell Members. Unless otherwise agreed to, the Proposer must provide only new and first-quality products and related services to Sourcewell Members under an awarded Contract.
9. The Proposer will comply with all applicable provisions of federal, state, and local laws, regulations, rules, and orders.
10. The Proposer understands that Sourcewell will reject RFP proposals that are marked "confidential" (or "nonpublic," etc.), either substantially or in their entirety. Under Minnesota Statutes Section 13.591, subdivision 4, all proposals are considered nonpublic data until the evaluation is complete and a Contract is awarded. At that point, proposals become public data. Minnesota Statutes Section 13.37 permits only certain narrowly defined data to be considered a "trade secret," and thus nonpublic data under Minnesota's Data Practices Act.
11. Proposer its employees, agents, and subcontractors are not:
 1. Included on the "Specially Designated Nationals and Blocked Persons" list maintained by the Office of Foreign Assets Control of the United States Department of the Treasury found at: <https://www.treasury.gov/ofac/downloads/sdnlist.pdf>;
 2. Included on the government-wide exclusions lists in the United States System for Award Management found at: <https://sam.gov/SAM/>; or
 3. Presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from programs operated by the State of Minnesota; the United States federal government or the Canadian government, as applicable; or any Participating Entity. Vendor certifies and warrants that neither it nor its principals have been convicted of a criminal offense related to the subject matter of this solicitation.

☒ By checking this box I acknowledge that I am bound by the terms of the Proposer's Affidavit, have the legal authority to submit this Proposal on behalf of the Proposer, and that this electronic acknowledgment has the same legal effect, validity, and enforceability as if I had hand signed the Proposal. This signature will not be denied such legal effect, validity, or enforceability solely because an electronic signature or electronic record was used in its formation. - Stan Tomchesson, Government Contracts Sales Coordinator, Time Manufacturing Company

The Proposer declares that there is an actual or potential Conflict of Interest relating to the preparation of its submission, and/or the Proposer foresees an actual or potential Conflict of Interest in performing the contractual obligations contemplated in the bid.

☒ Yes ☐ No

The Bidder acknowledges and agrees that the addendum/addenda below form part of the Bid Document.

Check the box in the column "I have reviewed this addendum" below to acknowledge each of the addenda.

File Name	I have reviewed the below addendum and attachments (if applicable)	Pages
Addendum_4_Public_Utility_Equipment_RFP_110421 Thu October 14 2021 04:33 PM	☒	2
Addendum_3_Public_Utility_Equipment_RFP_110421 Mon September 27 2021 05:28 PM	☒	1
Addendum_2_Public_Utility_Equipment_RFP_110421 Fri September 24 2021 03:55 PM	☒	1
Addendum_1_Public_Utility_Equipment_RFP_110421 Mon September 20 2021 02:54 PM	☒	1



CITY OF VANCOUVER
Procurement Services
 (360) 487-8430
procurement.services@cityofvancouver.us
www.cityofvancouver.us
 Federal Tax ID No. 91-6001288

Purchase Order #:	PO-65938
Revision #:	1
Effective Date:	1/8/24
Contract #:	C-101511

This Purchase Order number must appear on all invoices, packing lists, and correspondence related to this order.

Versalift Northwest, LLC
 1200 Texas Central Parkway
 Waco, TX 76712

Submit Invoice To:

City of Vancouver
 Jacob Mahan
 PO Box 1995
 Vancouver, WA 98668
Jacob.Mahan@cityofvancouver.us
accpay@cityofvancouver.us

Ship To:

City of Vancouver
Jacob Mahan
 Ops Center - Fleet Services
 4711 E Fourth Plain Blvd
 Vancouver, WA 98661

If you have any questions regarding this order, please contact:

Jacob Mahan / (360) 487-8195 Jacob.Mahan@cityofvancouver.us

Line #	Line Description	Qty	UOM	Unit Price	Tax	Amount
1	Service body and bucket lift to be installed on the cab and chassis replacing #3140 in Traffic	1	Each	178,192.00	15,502.71	178,192.00
2	2. Service body and bucket lift to be installed on the cab and chassis replacing #3155 in Traffic	1	Each	178,192.00	15,502.70	178,192.00
Subtotal:						\$356,384.00
Tax:						\$31,005.41
Total:						\$387,389.41

Note to Supplier

Acceptance of this purchase order shall bind the Contractor to the City's terms and conditions, which can be reviewed at <https://www.cityofvancouver.us/business/procurement-services/>. No other agreement shall modify said terms and conditions, unless a Contract Number is listed on the first page of the purchase order, in which case, the Supplier Contract terms shall govern in the event of any conflict with the City's terms and conditions.

The Sourcwell Contract 110421 per quote SOURCEWELL N-24166 and Amendments thereto ("Primary Contract") between the Contractor and Sourcwell is adopted and incorporated herein by this reference. The City shall have and be afforded all contractual rights and privileges owed to "Sourcwell" under the terms of the Primary Contract. Supplier shall be deemed to have agreed to be bound by the aforementioned terms by accepting the Purchase Order, delivering the goods, and/or performing the services.

Authorized Signature

Staff Report: 016-24

TO: Mayor and City Council

FROM: Eric Holmes, City Manager

DATE: 1/22/2024

SUBJECT Grant a perpetual utility easement to Clark Public Utilities District #1 (CPU) for the relocation of power lines located along the west side of NE 137th Avenue between NE 49th Street and NE Fourth Plain Boulevard

Key Points

- The project will upgrade and provide urban complete street standards for NE 137th Avenue, originally constructed by Clark County as a rural two-lane roadway.
- The planned corridor improvements will require relocation of existing Clark Public Utilities (CPU) facilities along the west side of this project.
- This easement will allow CPU to move their facilities out of the proposed construction zone for the NE 137th Avenue Corridor Completion Project.
- The perpetual utility easement will be in-kind to replace an existing easement, and the City is not requesting any payment from CPU. The easement is within recently acquired Right of Way and adjacent to parcels 986036-473, 986036-472, 109591-000, 109650-000, 107835-000, 602026-000, 107761-000, 107760-000, 107738-000, 107736-000, 107735-000, 107669-052, 107669-038, 107669-052, 107669-036, 017669-020, 107669-018, 107669-002, 107721-000.

Strategic Plan Alignment

Transportation and Mobility - a safe, future-ready and convenient transportation system.

Economic Opportunity - a place where a wide variety of businesses of all sizes grow and thrive.

Vibrant and Distinct Neighborhoods – a variety of accessible places and spaces.

Climate and Natural Systems – Environmental stewardship and efforts to address climate change to ensure a sustainable future.

Present Situation

The City of Vancouver's NE 137th Avenue Corridor Completion Project proposes street and

mobility upgrades for the NE 137th Avenue corridor between NE 49th Street and NE Fourth Plain Boulevard. The project is currently advertised for bids.

In order for the City to safely complete planned improvements, the existing CPU overhead power system must be relocated outside the city's project boundaries. CPU has provided a proposed perpetual easement exhibit and legal description for City Council consideration to replace an existing grandfathered easement from early days in the County. Staff is requesting City Council approval to grant this perpetual utility easement to CPU.

Advantage(s)

Approval of this perpetual easement will allow CPU to relocate their facilities on NE 137th Avenue out of the project conflict area.

Disadvantage(s)

None

Budget Impact

None. The project is currently funded through federal grants, state Transportation Improvement Board (TIB) grant, the Vancouver Transportation Benefit District and other local matching dollars. The project is included in the 2023-2024 biennial budget.

Prior Council Review

1. Approval of the 2023-2024 biennial budget which included the referenced project.
2. Approval of the 2024-2029 Transportation Improvement Program (TIP), Resolution No. M-4235. (June 26, 2023)
3. Approval of the design contract with PBS Engineering and Environmental (previously HDJ Design Group, RFQ #2-14, Staff Report 060-14 on June 9, 2014), and approval of an amendment to the PBS Engineering and Environmental contract (Staff Report 076-22 on June 13, 2022).

Action Requested

Grant a perpetual utility easement to Clark Public Utilities District #1 (CPU) and authorize the City Manager or designee to sign easement document subject to receipt of all documentation required by law.

Hassan Abdalla, PE, Engineering Manager, 360-487-7704

ATTACHMENTS:

- ▣ Perpetual Easement
- ▣ Project Map

RETURN ADDRESS:

Clark Public Utilities
Attn: ROW Dept.
P.O. Box 8900
Vancouver, WA 98668

Document: Utility Easement
Grantors: City of Vancouver
Grantee: PUD No. 1 of Clark County
Legal Desc.: A portion of the City of Vancouver controlled Right of Way along NE 137th Avenue in the NW and SW ¼ Sec. 11 T2N R2E and in the NW ¼ Sec. 14 T2N R2E WM
Serial No. Affects Right of Way adjacent to Serial No.s 986036-473, 986036-472, 109591-000, 109650-000, 107835-000, 602026-000, 107761-000, 107760-000, 107738-000, 107736-000, 107735-000, 107669-052, 107669-038, 107669-036, 107669-020, 107669-018, 107669-002, 107721-000
Geo No. 2211432, 2211331, 2211332, 2211341, 2211342, 2214431, 2214432, 2214441, 2214442
Engineer: Pilling
WO: 426291

**EASEMENT AND RIGHT OF WAY
UTILITY EASEMENT**

The GRANTOR(S), **CITY OF VANCOUVER, a municipal corporation of the state of Washington**, for and in consideration of mutual benefits, hereby acknowledged, does grant and convey to **PUBLIC UTILITY DISTRICT NO. 1 OF CLARK COUNTY, a municipal corporation of the state of Washington**, GRANTEE, its successors and assigns, including joint users, a non-exclusive, perpetual easement and right of way, ten (10) feet in width, together with the right of ingress and egress for the purpose of installing, constructing, erecting, altering, repairing, maintaining and operating thereon and therein an electric system, facilities and appurtenances including communication and service conductors, with surface-mounted transformer(s) and appurtenances necessary thereto, together with the right and easement to tap into said facilities to serve adjacent and/or adjoining lands, in, on, over, under and across the lands in Clark County, Washington, described as follows:

A portion of City controlled Right of Way in the NW and SW ¼ of Section 11, Township 2 North, Range 2 East and NW ¼ of Section 14, Township 2 North, Range 2 East of the Willamette Meridian, along NE 137th Avenue, adjacent to APNs 986036-473, 986036-472, 109591-000, 109650-000, 107835-000, 602026-000, 107761-000, 107760-000, 107738-000, 107736-000, 107735-000, 107669-052, 107669-038, 107669-036, 107669-020, 107669-018, 107669-002, 107721-000 , Clark County, Washington, more particularly described and shown on the attached Exhibits “A” and “B”, by this reference made a part hereof

Upon completion of installation of all facilities, THE EASEMENT HEREIN GRANTED SHALL BE CENTERED ON THE LOCATION OF THE FACILITIES AS PLACED WITH REASONABLE RIGHTS OF INGRESS AND EGRESS FOR THE PURPOSES ABOVE STATED.

The Grantor covenants for itself successors and assigns that it will not build or place, or allow to be built or placed, any structure of any kind over the easement granted herein without written approval of Grantee. PUBLIC UTILITY DISTRICT NO 1 OF CLARK COUNTY has the right at all times to cut and/or trim all brush, trees or other growth standing or growing upon the lands of the Grantor which, in the opinion of the Grantee, constitute a menace or danger to said electric system facilities.

The Grantor also covenants to and with the Grantee that Grantor has the right and power to convey an Easement and Right of Way over the tract of land described herein.

EXHIBIT ‘A’
LEGAL DESCRIPTION
Permanent Easements for CPU
On City of Vancouver Right-of-Way

A ten foot wide strip of land, in the NW ¼ and SW ¼ of Section 11 and the NW 1/4 of Section 14, Township 2 North, Range 2 East of the Willamette Meridian, Clark County, the centerline of which is described as follows;

Beginning at a point lying 30.72 feet left of Engineer’s Station 102+94.45, when measured at a right angle or radial to the construction and roadway centerline of Northeast 137th Avenue for the City of Vancouver’s road improvement project #071237, as shown in Exhibit ‘B’, attached:

Thence northerly to a point lying 27.73 feet left of Engineer’s Station 120+34.59;

Thence northerly to a point lying 39.62 feet left of Engineer’s Station 131+74.79;

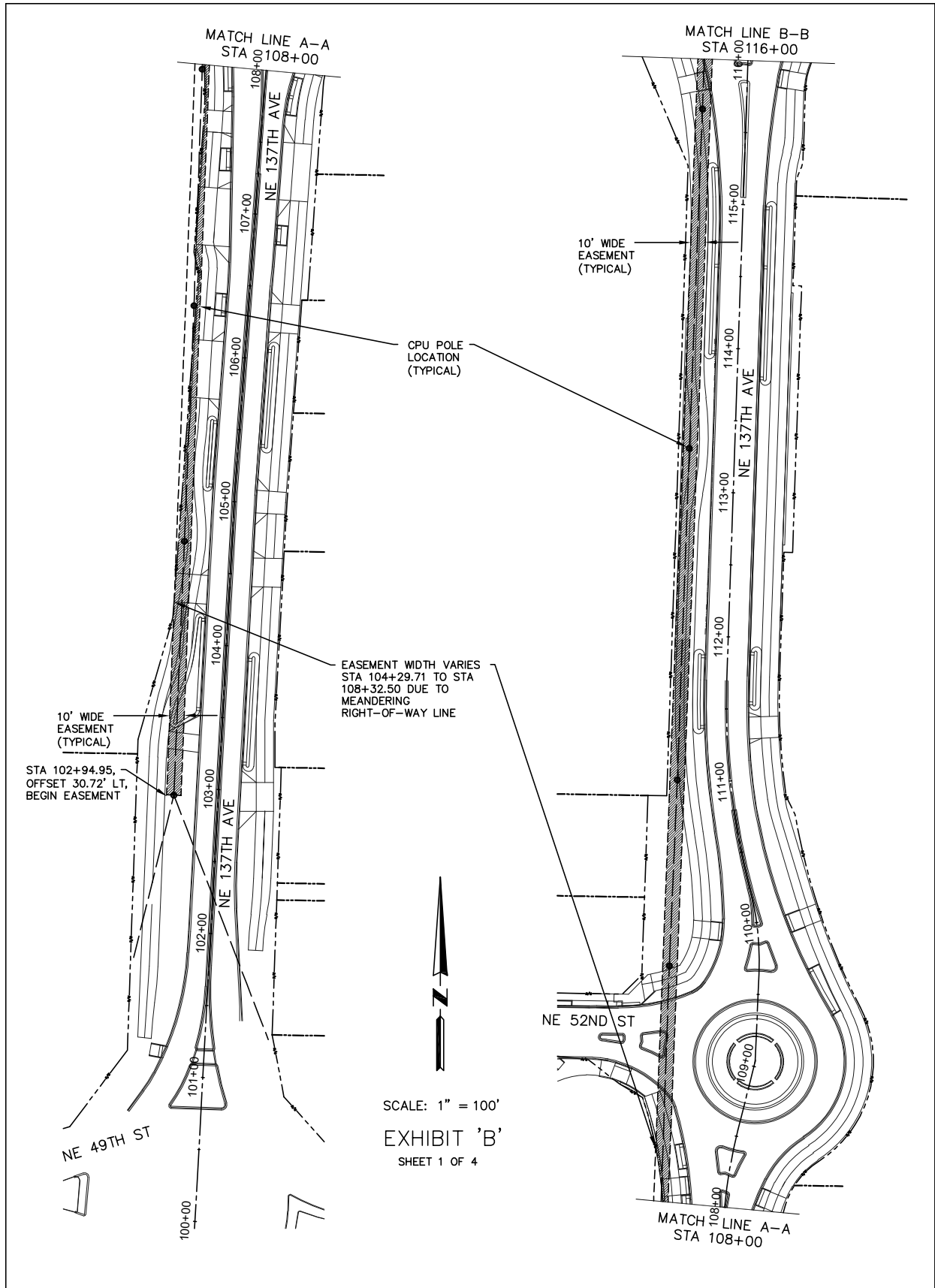
Thence northerly to a point lying 37.67 feet left of Engineer’s Station 142+67.39;

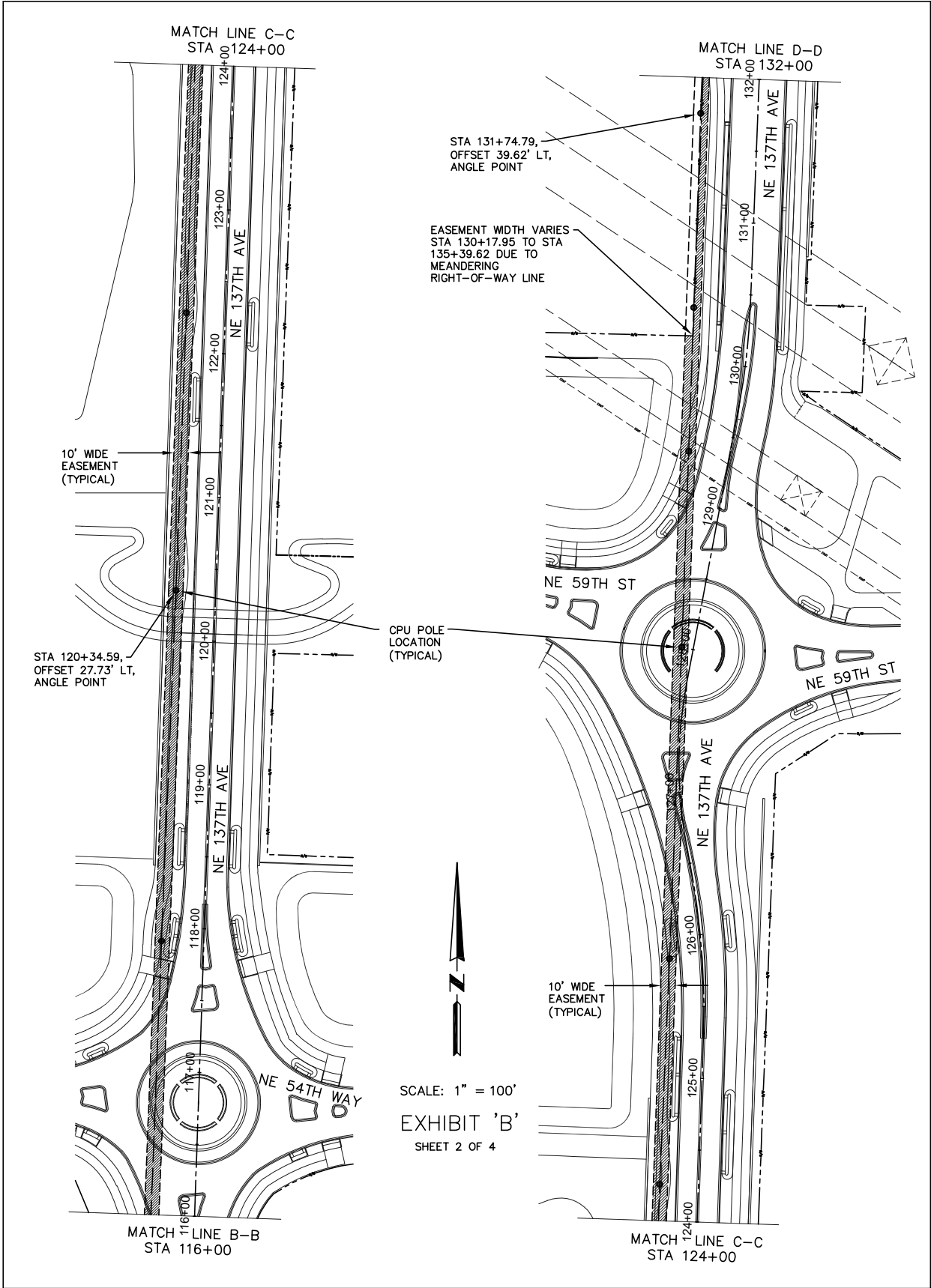
Thence northerly to a point lying 38.32 feet left of Engineer’s Station 154+18.29; being the terminus of the centerline of the easement;

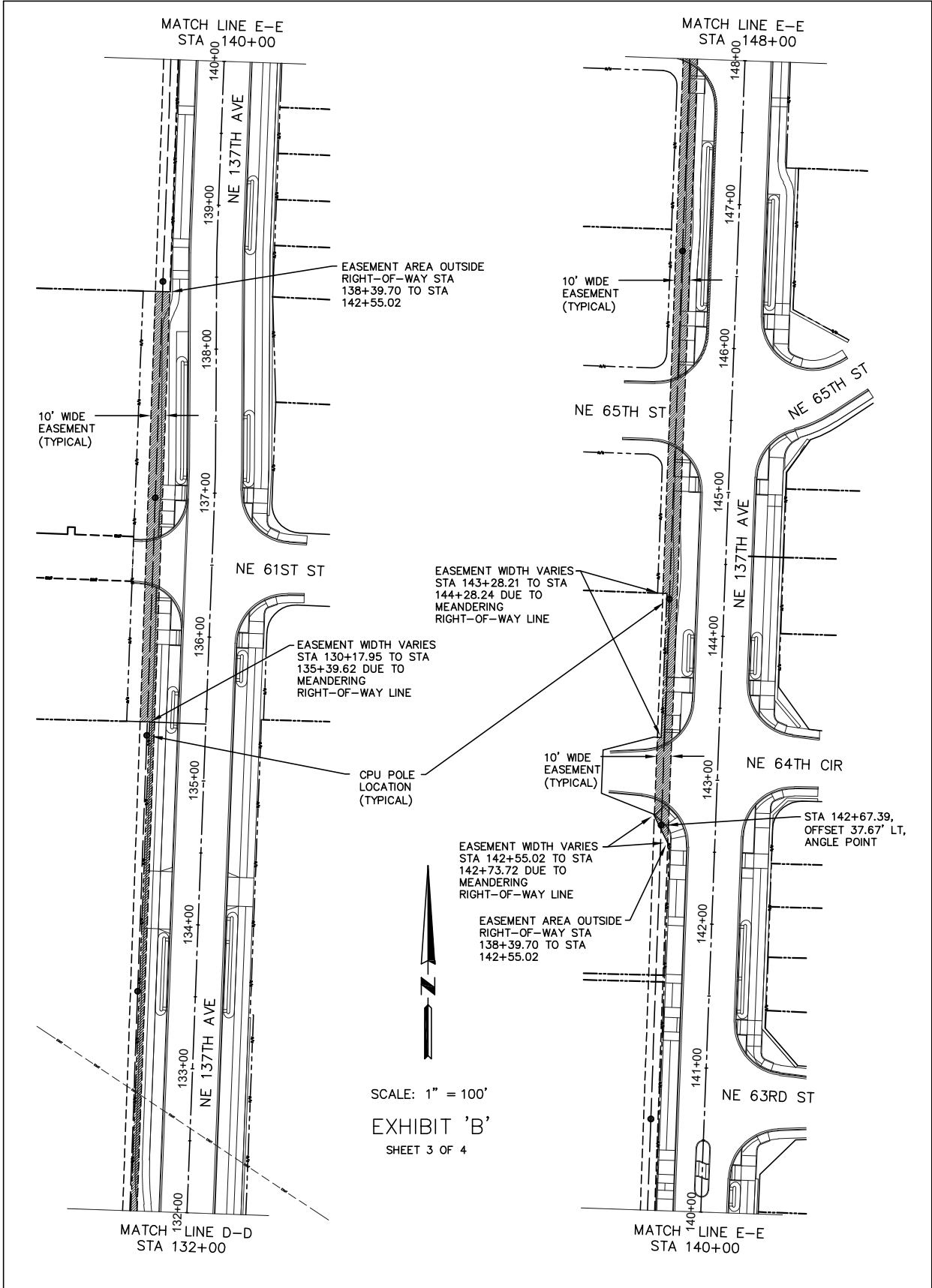
Excepting those areas lying outside of the Northeast 137th Avenue right-of-way as established by the city’s road improvement project #071237.

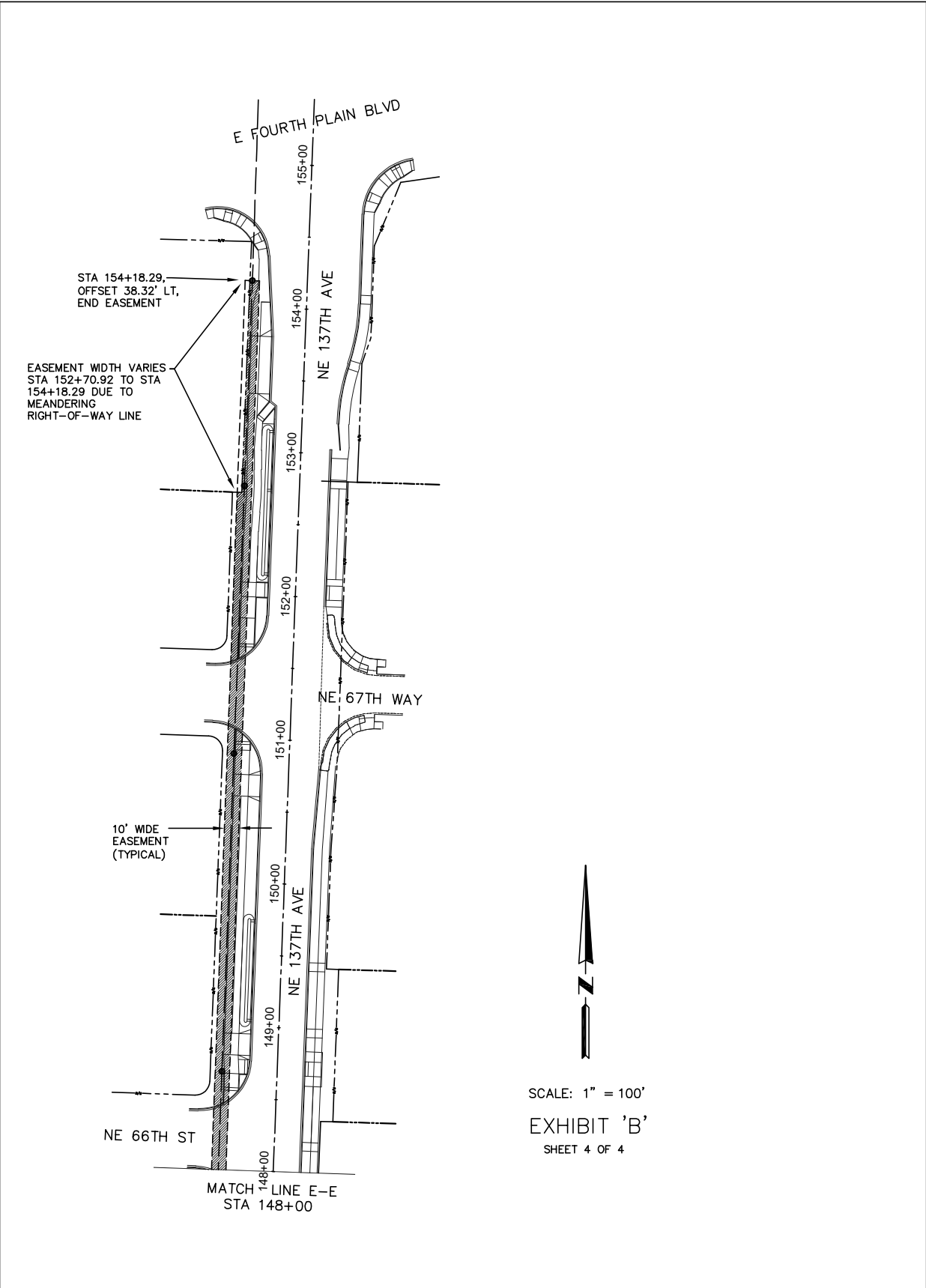
Easement Description:

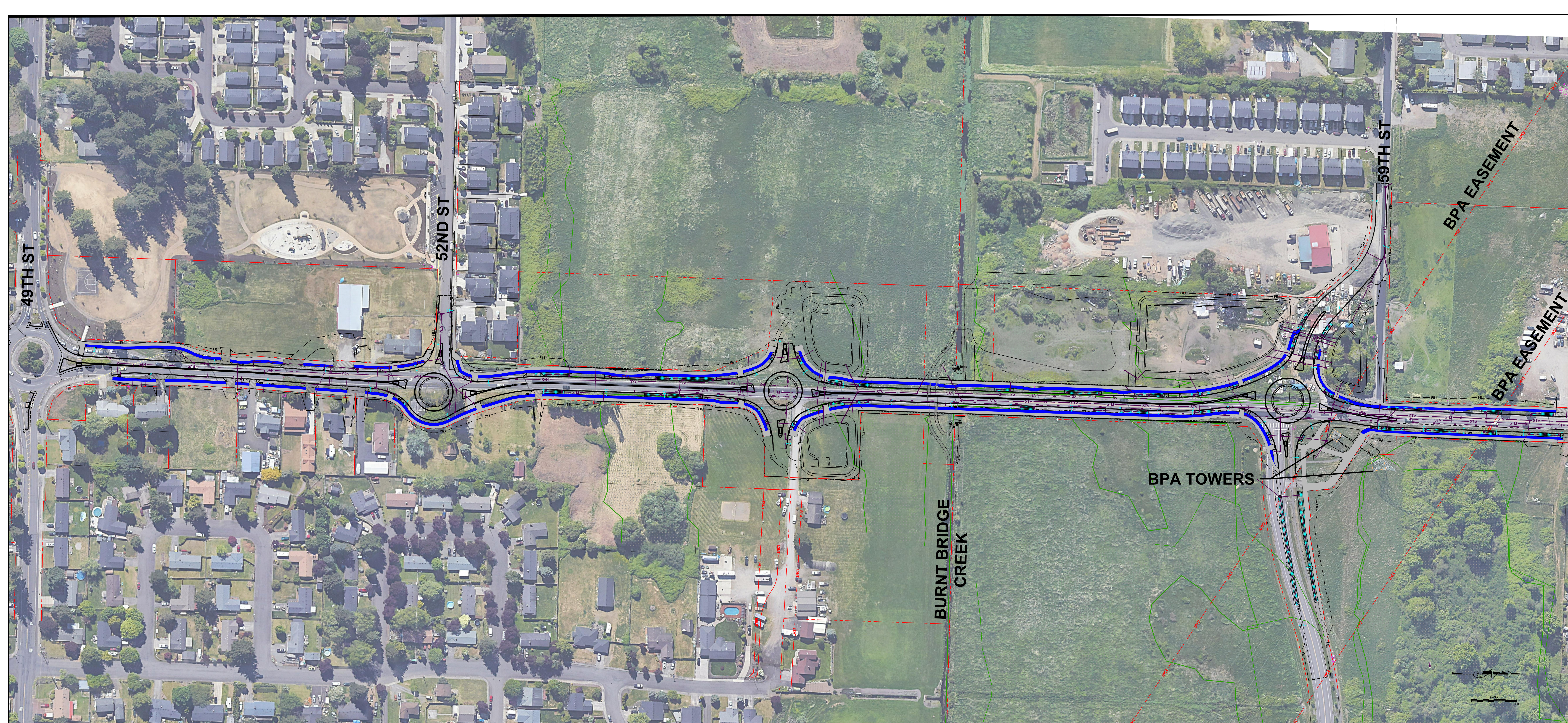
An easement 10 feet wide for electrical facilities near and along the West right-of-way line of NE 137th Avenue, from NE 49th Street to E Fourth Plain Boulevard, and general location shown on Exhibit “B”, with the right of reasonable ingress and egress over and across Grantor’s lands during all periods of construction, maintenance, installation repair/or removal of Grantee’s facilities.

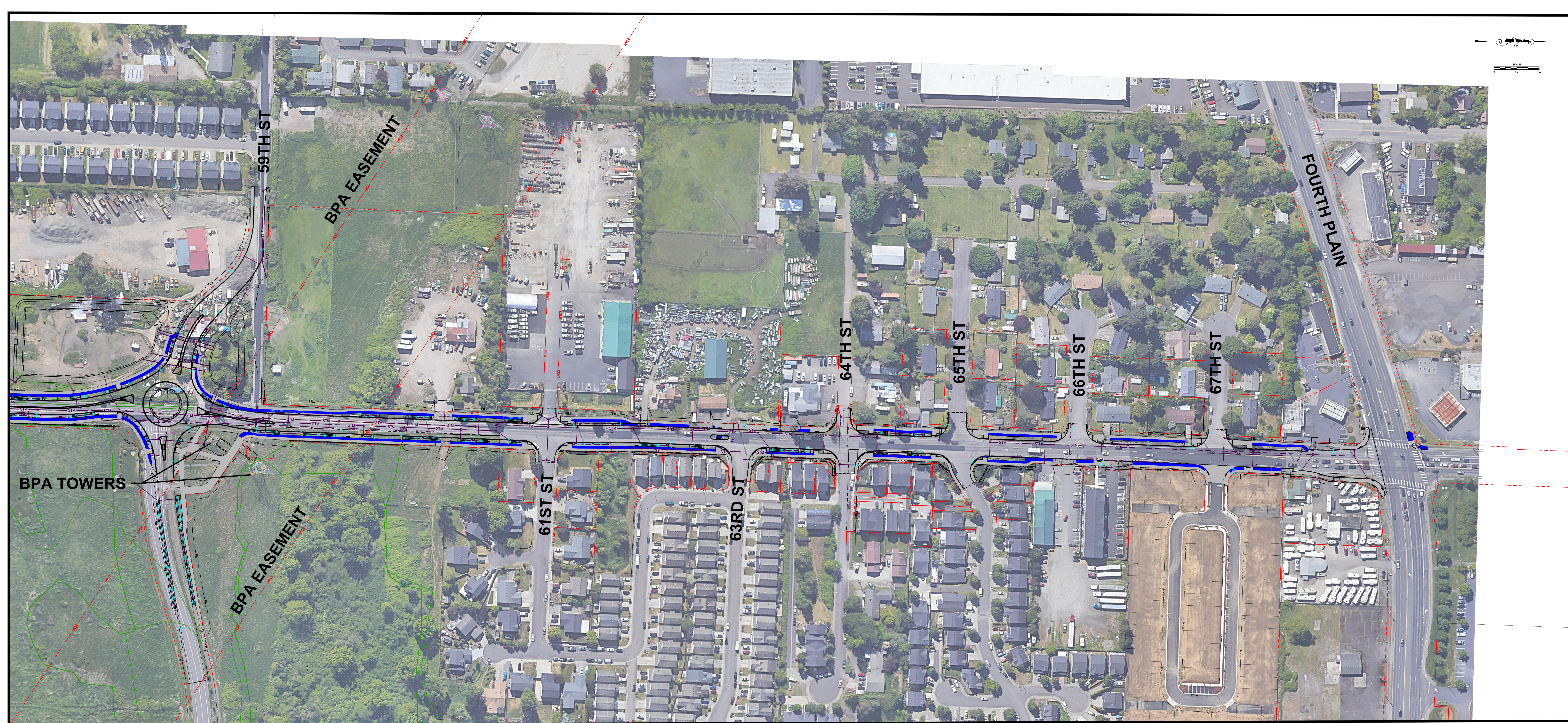
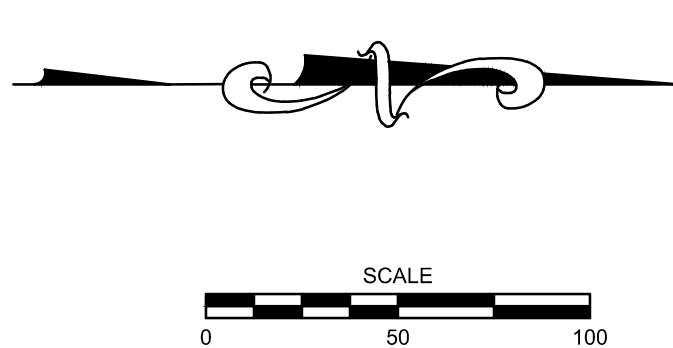












NE 137th AVENUE CORRIDOR COMPLETION PROJECT



Staff Report: 017-24

TO: Mayor and City Council

FROM: Eric Holmes, City Manager

DATE: 1/22/2024

SUBJECT Approval of an Interlocal Agreement, with Clark Public Utilities (CPU) for Overhead/Underground Electric Line Relocation associated with the NE 137th Avenue (NE 49th Street to NE Fourth Plain Boulevard) project (Project # PRJ071237)

Key Points

1. The project will upgrade and provide urban complete street standards for NE 137th Avenue, originally constructed by Clark County as a rural two-lane roadway.
2. City Council approved professional services agreements for design, environmental documentation and permitting, and for right-of-way acquisition. The design and right-of-way acquisition is complete, and the project is currently advertised for bids.
3. Clark Public Utilities (CPU) owns certain facilities adjacent to the project area, located in easements, that must be relocated in order to complete the road improvement project.
4. The City desires that existing facilities be relocated in order to allow the road improvement project to proceed. Consistent with past practice, because the facilities are located in private easements, the City is responsible to compensate CPU for the performance of the relocation work.

Strategic Plan Alignment

Transportation and Mobility - a safe, future-ready and convenient transportation system.

Economic Opportunity - a place where a wide variety of businesses of all sizes grow and thrive.

Vibrant and Distinct Neighborhoods – a variety of accessible places and spaces.

Climate and Natural Systems – Environmental stewardship and efforts to address climate change to ensure a sustainable future.

Present Situation

The City and CPU have been working cooperatively to complete the NE 137th Avenue – NE 49th

Street to NE Fourth Plain Boulevard project. The project is currently advertised for bids, and relocation is required for CPU facilities.

When CPU has facilities located within the right-of-way and governed by franchise agreement, CPU is responsible for the cost of relocation to accommodate roadway reconstruction. When the facilities are located in CPU easements, CPU can require reimbursement for the relocation of the facilities. An Interlocal Agreement must be executed to enable the City to reimburse CPU for these costs.

Advantage(s)

This Interlocal Agreement will provide staff authority to reimburse CPU for the relocation of their facilities needed for the City's project to be completed. costs.

Disadvantage(s)

The City will need to reimburse for the costs, but these costs have been planned and budgeted.

Budget Impact

The project is currently funded through federal grants, state Transportation Improvement Board (TIB) grant, the Vancouver Transportation Benefit District, and other local matching dollars. The project is included in the 2023-2024 biennial budget.

Prior Council Review

1. Approval of the 2023-2024 biennial budget which included the referenced project.
2. Approval of the 2024-2029 Transportation Improvement Program (TIP), Resolution No. M-4235. (June 26, 2023)
3. Approval of the design contract with PBS Engineering and Environmental (previously HDJ Design Group, RFQ #2-14, Staff Report 060-14 on June 9, 2014), and approval of an amendment to the PBS Engineering and Environmental contract (Staff Report 076-22 on June 13, 2022).

Action Requested

Authorize the City Manager or designee to sign an Interlocal Agreement with Clark Public Utilities for reimbursement of expenses for Overhead/Underground Electric Line Relocation – NE 137th Avenue Road Project, estimated to be \$870,375.93, which includes sales tax.

Hassan Abdalla, PE, Engineering Manager, 360-487-7704

ATTACHMENTS:

- ▢ Interlocal Agreement
- ▢ Project Map

**INTERLOCAL AGREEMENT BY AND BETWEEN
THE CITY OF VANCOUVER AND
CLARK PUBLIC UTILITIES**

Overhead Electric Line Relocation – NE 137th Avenue Road Project

This Interlocal Agreement (the “Agreement”) (MOU) is made and entered into pursuant to Chapter 39.34 of the Revised Code of Washington, by and between the City of Vancouver (the “City”), a municipal corporation with an address of P.O. Box 1995, Vancouver, WA 98668, and Clark Public Utilities (“CPU”), a municipal corporation with an address of P.O. Box 8900, Vancouver, WA 98668 on the dates indicated below. The City and CPU are sometimes collectively referred to as the “Parties” or to either one individually as a “Party.”

RECITALS

WHEREAS, the Interlocal Cooperation Act, as amended, and codified in Chapter 39.34 of the Revised Code of Washington provides for cooperative efforts between governmental entities; and

WHEREAS, the City has concluded that construction of road improvements to widen NE 137th Avenue between NE 49th Street and E Fourth Plain Boulevard (the “Project Area”) is necessary in order to provide an acceptable level of road and pedestrian safety; and

WHEREAS, CPU owns certain facilities adjacent to the project area roadway, located on easements, which must be relocated in order to complete the road improvements to widen NE 137th Avenue; and

WHEREAS, the City desires these facilities be relocated elsewhere in order to allow the road improvements to widen NE 137th Avenue to proceed; and

WHEREAS, CPU has requested compensation from the City for the performance of the relocation work and the City has agreed; and

WHEREAS, both the City and CPU agree that it is in the best interests of the Parties to collaborate on the relocation work in a timely and cost-effective manner.

NOW, THEREFORE, in consideration of the terms and conditions contained herein, the Parties hereby mutually agree as follows.

AGREEMENT

1. **PURPOSE** This Agreement is entered into pursuant to the authority of RCW 39.34.080. The purpose of this Agreement is to set forth the mutual obligations, responsibilities and rights of the City and CPU relating to the relocation of CPU facilities as described herein.
2. **TERM** This Agreement shall become effective upon the date of last signature of the Parties below, and shall continue until December 31, 2024, or until the relocation work has been

completed by CPU, and accepted by the City (in a timely manner) and the City has paid CPU in full, unless terminated sooner.

3. ADMINISTRATION. No new or separate legal or administrative entity is created to administer the provisions of this Agreement. The Parties hereto shall be jointly responsible for administering the performance herein. The Parties will not acquire any jointly-owned real or personal property in connection with performance of this Agreement. The Parties shall each be responsible for their own individual financial costs of performance of this Agreement, except as otherwise described herein. No joint budget will be prepared to carry out the performance of this Agreement.
4. TERMINATION. Either Party may choose to terminate this Agreement by notifying the other Party upon thirty (30) days written notice. Should this Agreement be terminated prior to completion of the relocation work by CPU, the City agrees to compensate CPU for the relocation costs incurred up to that date.
5. SCOPE OF WORK.
 - a. CPU agrees to relocate existing electrical facilities on behalf of the City to accommodate construction of road improvements to widen NE 137th Avenue between NE 49th Street and E Fourth Plain Boulevard, as described on the project map attached as Exhibit 'A' (the "City Relocation Work"), which is incorporated herein by this reference.
 - b. As part of this work, CPU agrees to relocate overhead transmission and distribution lines including all poles, framing, conductors, guying, anchors, risers, upright pedestals, transformers, equipment, cable in conduit, etc. as necessary to complete the relocation of a portion of the existing north/south line alignment, and the conversion to underground of a portion of the north/south distribution line alignment to accommodate construction of road improvements to widen NE 137th Avenue between NE 49th Street and E Fourth Plain Boulevard.
 - c. All materials provided by CPU subject to reimbursement by the City are to be Build America Buy America (BABA) compliant, except those materials CPU is unable to procure as such and for which CPU will provide to the City the necessary information in order for the City to document for governing authorities.
 - d. The City, as the recipient of FHWA grant funding, will be responsible for documenting all non-compliant materials to be installed by CPU in performing the reimbursable relocation work. The City acknowledges that it may be necessary to use some non-compliant material during construction and directs CPU to proceed with construction using non-compliant materials where no alternative is available. The City agrees to reimburse to CPU any additional material and labor costs necessary in order to bring those materials into compliance as may be required at a future date, if directed to do so by the FHWA or any other governing authority. CPU shall invoice the City for such costs following any mandated reconstruction.

- e. CPU currently has agreements with communications companies and allows joint use contacts along the existing pole alignment. The City agrees to work with these companies to ensure their facilities are relocated in a timely manner. CPU shall not be responsible for the relocation of joint use facilities or the cost there of.

6. PAYMENT.

- a. CPU agrees that it shall initially pay for the actual direct and related indirect costs of the relocation, including but not limited to, permitting, property rights (including acquiring replacement easements), materials, construction, construction engineering, contract administration and overhead costs, associated with the City Relocation Work.
- b. City agrees to provide reimbursement to CPU for the actual direct and related indirect costs of the City Relocation Work, as identified in Exhibit 'A', currently estimated to be Eight Hundred Seventy Thousand, Three Hundred and Seventy Five Dollars and Ninety Three Cents (\$870,375.93 USD).
- c. CPU shall invoice the City and provide supporting documentation therefore, and the City agrees to pay CPU within thirty (30) calendar days of receipt of an invoice.

7. DISPUTE RESOLUTION. In the event of a dispute between the City and CPU regarding performance of this Agreement, the Parties shall proceed as follows:

- a. The City Manager of the City and the General Manager of CPU, or their designated representatives, shall first review such dispute and provide the Parties options for mutual resolution of the dispute.
- b. Any controversy or claim arising out of or relating to this Agreement or the alleged breach of such Agreement that cannot be resolved by the City Manager of the City and the General Manager of CPU, or their designated representatives, may be submitted to mediation and if still not resolved, shall be submitted to binding arbitration in accordance with the rules and procedures set forth in Chapter 7.04 RCW, and the judgment or award rendered by the arbitrator may be entered in any court having jurisdiction thereof.

8. INDEPENDENT CONTRACTOR. Both Parties shall be deemed independent contractors for all purposes, and the employees of each Party and any of its contractors, subcontractors, consultants, and the employees thereof, shall not in any manner be deemed to be the employees of the other Party. CPU shall retain all authority for provision of services, standards of performance, discipline and control of personnel, and other matters incident to its performance of services pursuant to this Agreement. Nothing in this Agreement shall make any employee of a Party an employee of the other Party for any purpose, including but not limited to, for withholding of taxes, payment of benefits, workers' compensation pursuant to Title 51 RCW, or any other rights or privileges accorded their respective employees by virtue of their employment.

9. INDEMNIFICATION. To the extent authorized by law, the City and CPU shall indemnify and hold harmless one another and their employees and/or officers from and shall process and defend at its own expense any and all claims, demands, suits at law or equity, actions, penalties, losses,

damages (both to persons and/or property), or cost, of whatsoever kind of nature, brought against one Party arising out of, in connection with, or incident to the other Party's performance or failure to perform any aspect of this Agreement, provided, however, that if such claims are caused by or result from the concurrent negligence of (a) the City and (b) CPU, their respective employees and/or officers, this indemnity provision shall be valid and enforceable only to the extent of the negligence of the City or CPU, and provided further, that nothing herein shall require the City or CPU to hold harmless or defend the other or its employees and/or officers from any claims arising from that Party's sole negligence or that of its employees and/or officers. Notwithstanding the foregoing, since the City is directing CPU to install materials that may not be compliant with the Build America Buy America (BABA) requirement, CPU shall not be responsible to the City for any loss, claim, penalty, or expense attributed to a violation of the Build America Buy America (BABA) requirements and the City shall indemnify and defend CPU from any such claim, loss, penalty, or expense. The terms of this section shall survive the termination of this Agreement.

10. AMENDMENTS. This Agreement shall not be modified or amended in any manner except by an instrument in writing executed by the Parties hereto.
11. ASSIGNMENT. No Party hereto shall assign its rights or obligations under this Agreement without the prior written consent of the other Party hereto.
12. NOTICES. All communications, notices and demands of any kind which are required by this Agreement shall be in writing and shall be deemed given when deposited in the U.S. mail, first class postage prepaid, to the following addresses or to such other addresses as the Parties shall from time to time give notice to the other Parties:

If to the City:
City of Vancouver
Attn: Hassan Abdalla
P.O. Box 1995
Vancouver, WA 98668

If to CPU:
Clark Public Utilities
Attn: Jonathan Pilling
P.O. Box 8900
Vancouver, WA 98668

13. COUNTERPARTS. This Agreement may be executed simultaneously in several counterparts, each of which shall be deemed an original, and all of which together shall constitute one and the same instrument.
14. ENTIRE AGREEMENT. This Agreement contains all of the agreements of the Parties with respect to the subject matter covered or mentioned therein, and no prior Agreements shall be effective to the contrary.
15. FILING. Executed copies of this Agreement shall be filed as required by RCW 39.34.040 or alternatively listed on the Parties' respective web sites or other electronically retrievable public source.
16. SEVERABILITY. Any provision of this Agreement, which is prohibited or unenforceable, shall be ineffective to the extent of such prohibition or unenforceability, without invalidating the remaining provisions or affecting the validity or enforcement of such provisions.

17. RATIFICATION. Acts taken pursuant to this Agreement but prior to its effective date are hereby ratified and confirmed.
18. GOVERNING LAW. This Agreement shall be deemed to have been executed and delivered within the State of Washington, and the rights and obligations of the Parties hereunder shall be construed and enforced in accordance with, and governed by, the laws of the State of Washington without regard to the principles of conflict of laws. The contractor shall have legal authority to enter into this agreement and be at least 18 years of age. Any action or suit brought in connection with this Agreement shall be brought in the Superior Court of Clark County, Washington.

IN WITNESS WHEREOF, the authorized representatives of the Parties have executed this Amendment on the dates indicated below.

For the **CITY:**

CITY OF VANCOUVER, WA
A municipal corporation

Eric Holmes, City Manager

DATED: _____

Attest:

Natasha Ramras, City Clerk

Approved as to Form:

Jonathan Young, City Attorney

For **CPU:**

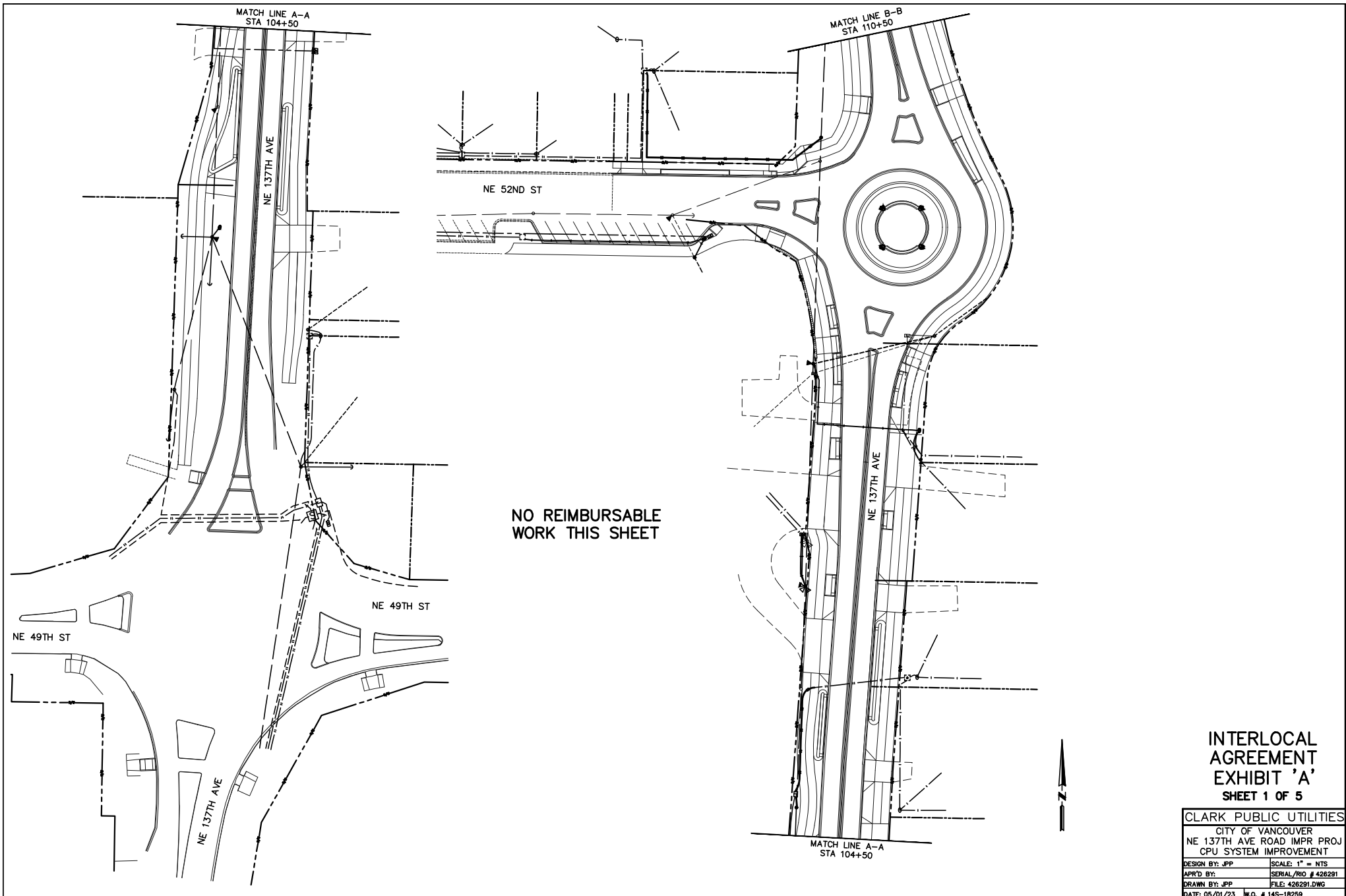
CLARK PUBLIC UTILITIES
A municipal corporation

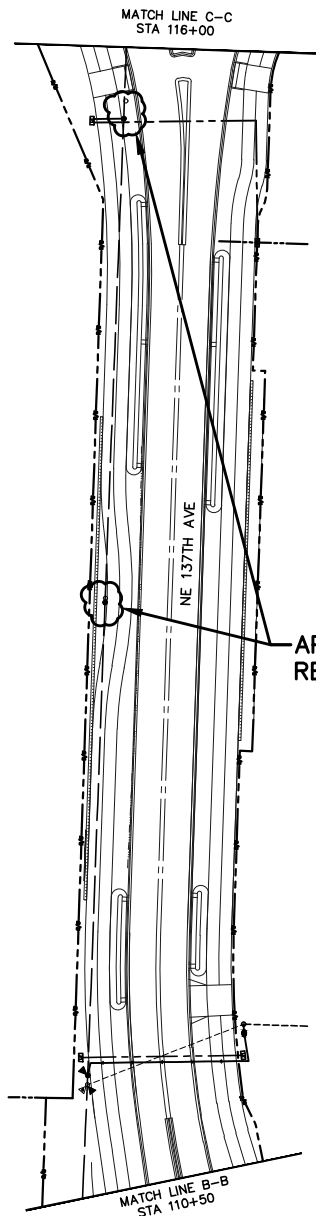
Lena Wittler, General Manager

DATED: _____

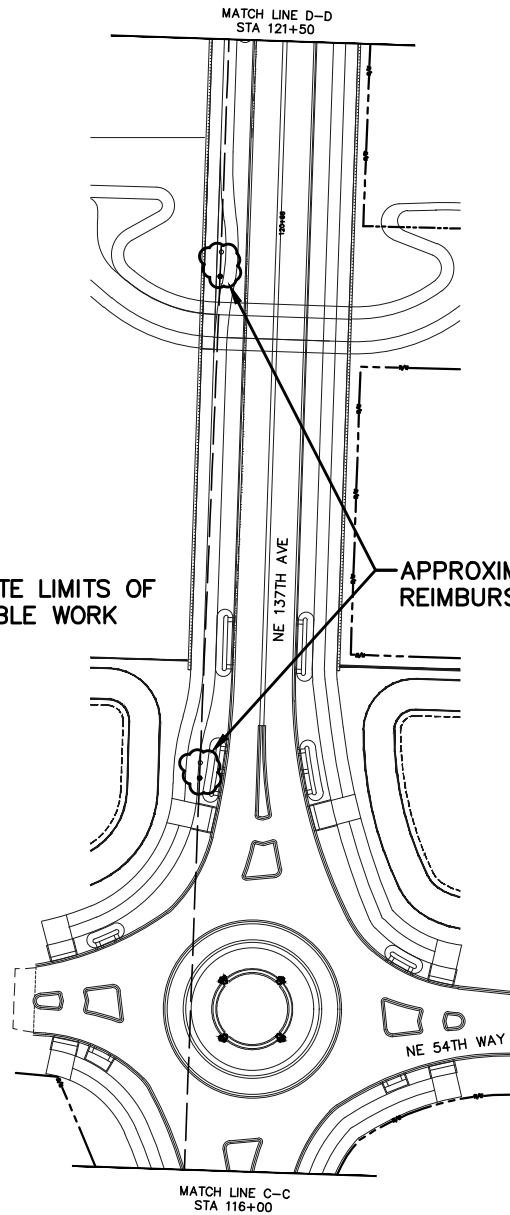
Approved as to Form:

John Eldridge, General Counsel

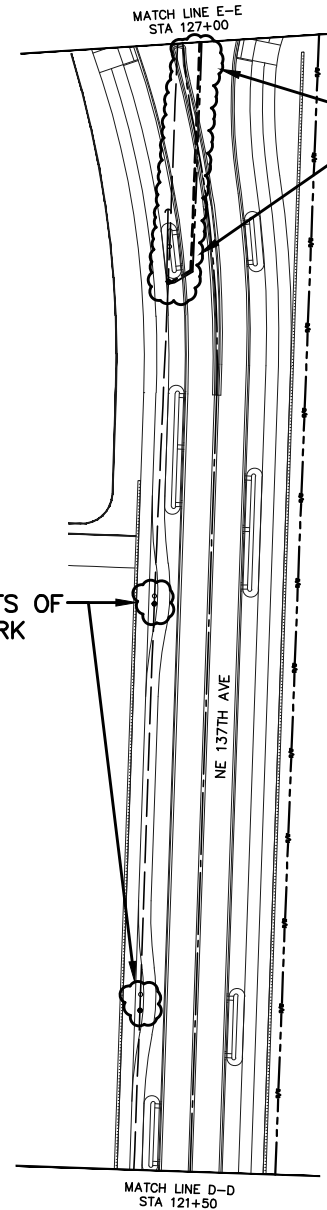




APPROXIMATE LIMITS OF
REIMBURSABLE WORK



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REIMBURSABLE WORK

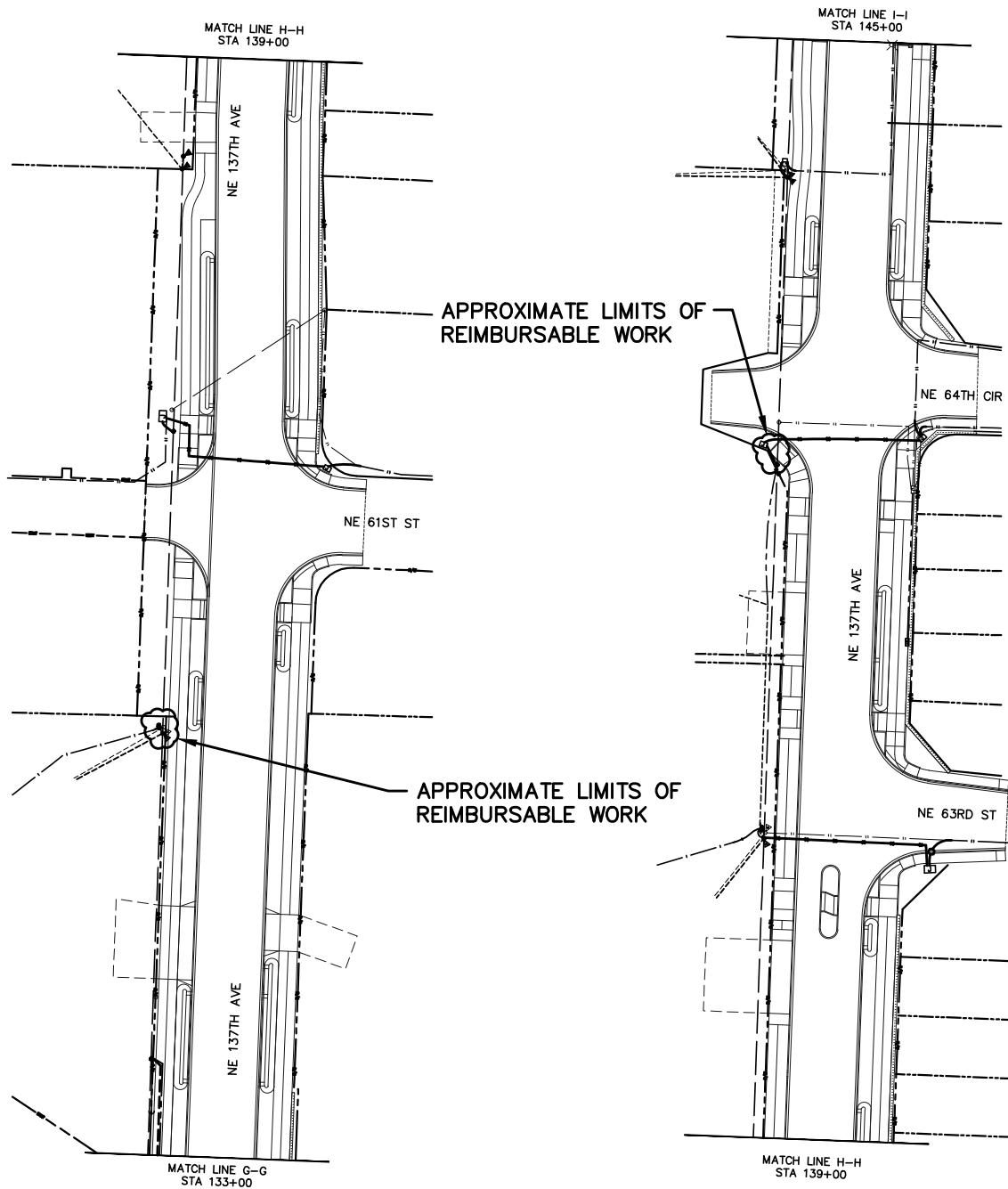


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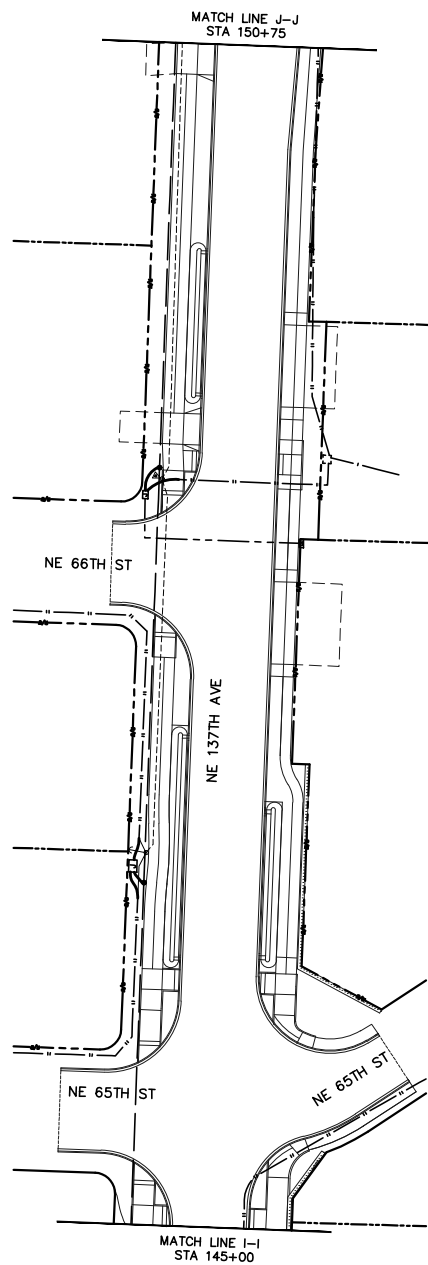
INTERLOCAL
AGREEMENT
EXHIBIT 'A'
SHEET 2 OF 5

CLARK PUBLIC UTILITIES			
CITY OF VANCOUVER			
NE 137TH AVE ROAD IMPR PROJ			
CPU SYSTEM IMPROVEMENT			
DESIGN BY: JPP	SCALE: 1" = NTS		
APPR'D BY:	SERIAL/RIO # 426291		
DRAWN BY: JPP	FILE: 426291.DWG		
DATE: 05/01/23	W.O. # 145-18259		

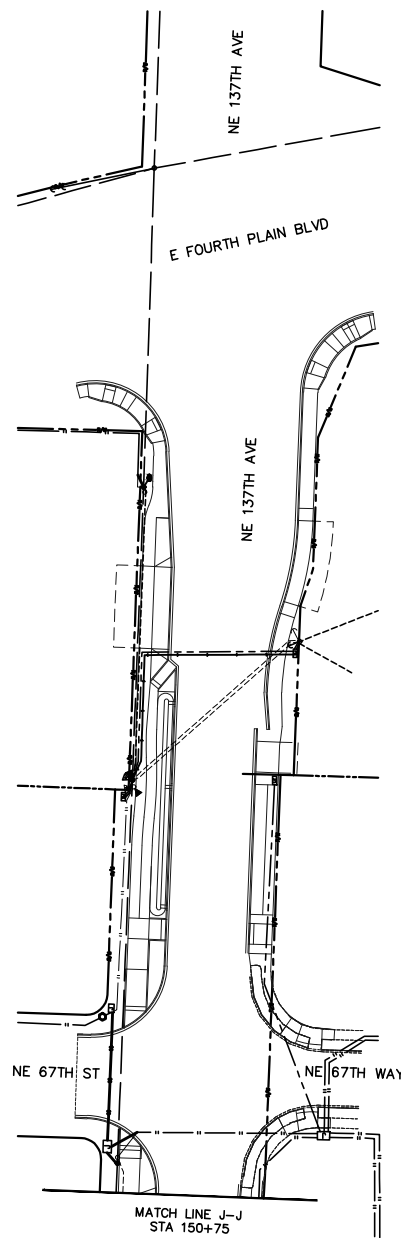


**INTERLOCAL
AGREEMENT
EXHIBIT 'A'
SHEET 4 OF 5**

CLARK PUBLIC UTILITIES			
CITY OF VANCOUVER			
NE 137TH AVE ROAD IMPR PROJ			
CPU SYSTEM IMPROVEMENT			
DESIGN BY: JPP	SCALE: 1" = NTS		
APPR'D BY:	SERIAL/PROJ # 426291		
DRAWN BY: JPP	FILE: 426291.DWG		
DATE: 05/01/23	W.O. # 145-18259		



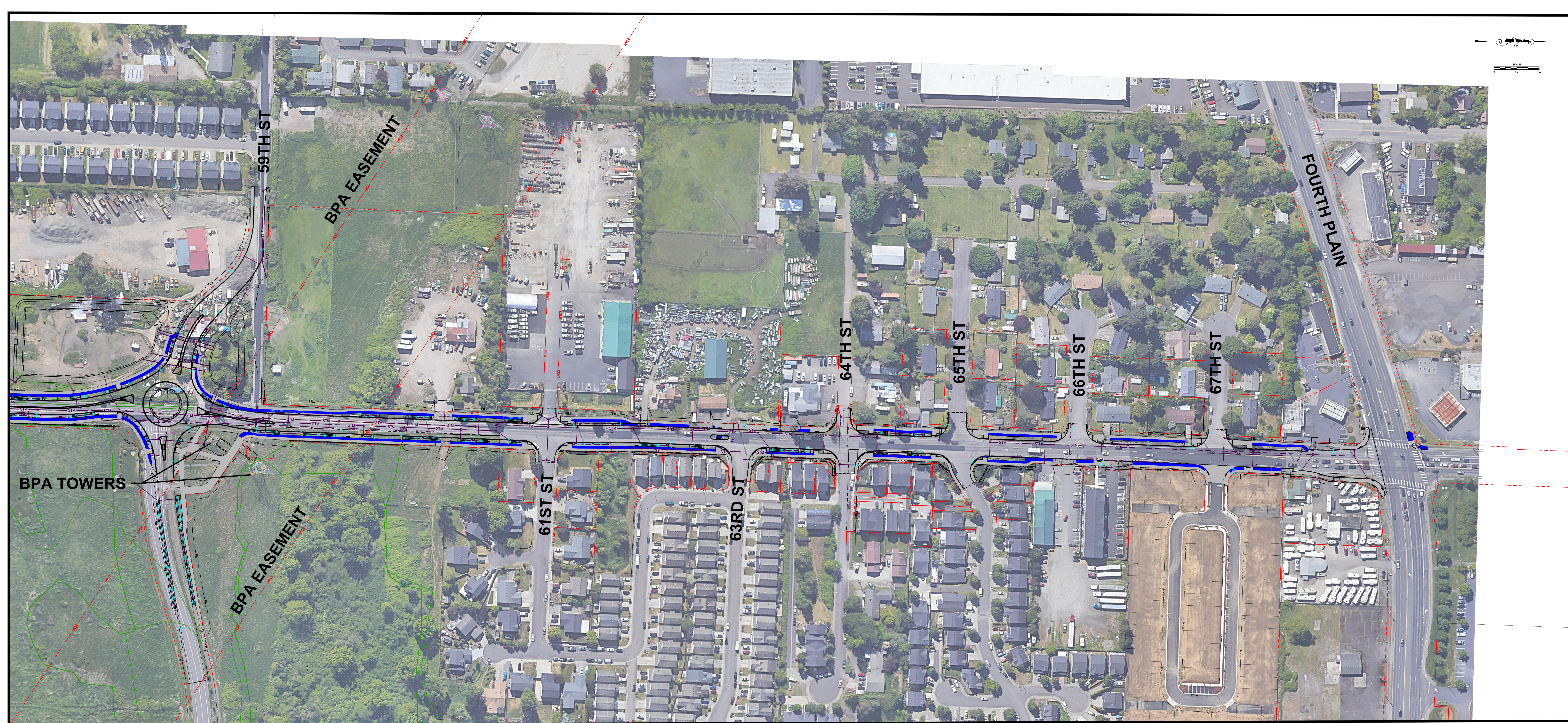
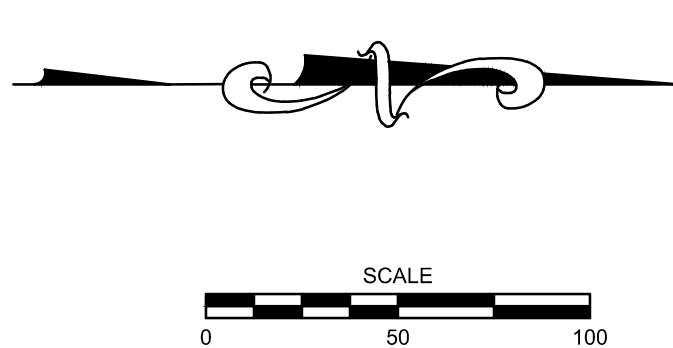
NO REIMBURSABLE
WORK THIS SHEET



INTERLOCAL
AGREEMENT
EXHIBIT 'A'
SHEET 5 OF 5

CLARK PUBLIC UTILITIES			
CITY OF VANCOUVER			
NE 137TH AVE ROAD IMPR PROJ			
CPU SYSTEM IMPROVEMENT			
DESIGN BY: JPP	SCALE: 1" = NTS		
APPR'D BY:	SERIAL/PROJ # 426291		
DRAWN BY: JPP	FILE: 426291.DWG		
DATE: 05/01/23	W.O. # 145-18259		





NE 137th AVENUE CORRIDOR COMPLETION PROJECT



Staff Report: 018-24

TO: Mayor and City Council

FROM: Eric Holmes, City Manager

DATE: 1/22/2024

SUBJECT Approval of an Interlocal Agreement, with Clark Public Utilities (CPU) for Overhead/Underground Electric Line Relocation associated with the SE 1st Street (SE 177th Avenue to SE 192nd Avenue) project. (Project #PRJ072617)

Key Points

- The project will upgrade and provide urban compete street standards for SE 1st Street, originally constructed by Clark County as a rural two-lane roadway.
- Clark Public Utilities (CPU) owns certain facilities adjacent to the project area, located in easements, that must be relocated in order to complete the road improvement project.
- The City desires that existing facilities be relocated elsewhere in order to allow the road improvement project to proceed. Consistent with past practice, because the facilities are located in private easements, the City is responsible to compensate CPU for the performance of the relocation work.

Strategic Plan Alignment

Transportation and Mobility - a safe, future-ready and convenient transportation system.

Economic Opportunity - a place where a wide variety of businesses of all sizes grow and thrive.

Vibrant and Distinct Neighborhoods – a variety of accessible places and spaces.

Present Situation

The City and CPU have been working cooperatively to complete the SE 1st Street – SE 177th Avenue to SE 192nd Avenue project. The project is currently advertised for bids, and relocation is required for CPU facilities.

When CPU has facilities located within the right-of-way, CPU is responsible for the cost of relocation to accommodate roadway reconstruction. When the facilities are located in CPU easements, CPU can require reimbursement for the relocation of the facilities. An Interlocal Agreement must be executed to enable the City to reimburse CPU for these costs.

Advantage(s)

This Interlocal Agreement will provide staff authority to reimburse CPU for the relocation of their facilities needed for the City's project to be completed.

Disadvantage(s)

The City will need to reimburse for the costs but these costs have been planned and budgeted.

Budget Impact

The project is currently funded through federal grants, state Transportation Improvement Board (TIB) grant, the Vancouver Transportation Benefit District and other local matching dollars. The project is included in the 2023-2024 biennial budget.

Prior Council Review

1. Approval of the 2023-2024 biennial budget which included the referenced project.
2. Approval of the 2024-2029 Transportation Improvement Program (TIP), Resolution No. M-4235. (June 26, 2023)
3. Approval of the design contract with Mackay Sposito, and approval of an amendment to the design, public involvement and construction support contract with MacKay Sposito. (August 8, 2022)

Action Requested

Authorize the City Manager or designee to sign an Interlocal Agreement with Clark Public Utilities for reimbursement of expenses for Overhead/Underground Electric Line Relocation – SE 1st St Phase 2 Road Project, estimated to be \$629,407.82, which includes sales tax.

Leslie Degenhart, PE, Senior Civil Engineer, 360-487-7710; Hassan Abdalla, PE, Engineering Manager, 360-487-7704

ATTACHMENTS:

- ▣ Interlocal Agreement
- ▣ Project map

**INTERLOCAL AGREEMENT BY AND BETWEEN
THE CITY OF VANCOUVER AND
CLARK PUBLIC UTILITIES**

Overhead Electric Line Relocation – SE 1st Street Road Project (Phase 2)

This Interlocal Agreement (the “Agreement”) (MOU) is made and entered into pursuant to Chapter 39.34 of the Revised Code of Washington, by and between the City of Vancouver (the “City”), a municipal corporation with an address of P.O. Box 1995, Vancouver, WA 98668, and Clark Public Utilities (“CPU”), a municipal corporation with an address of P.O. Box 8900, Vancouver, WA 98668 on the dates indicated below. The City and CPU are sometimes collectively referred to as the “Parties” or to either one individually as a “Party.”

RECITALS

WHEREAS, the Interlocal Cooperation Act, as amended, and codified in Chapter 39.34 of the Revised Code of Washington provides for cooperative efforts between governmental entities; and

WHEREAS, the City has concluded that construction of road improvements along SE 1st Street between SE 177th Avenue and SE 190th Avenue (the “Project Area”) is necessary in order to provide an acceptable level of road and pedestrian safety; and

WHEREAS, CPU owns certain facilities adjacent to the project area roadway, located on easements, which must be relocated in order to complete the road improvements along SE 1st Street; and

WHEREAS, the City desires these facilities be relocated elsewhere in order to allow the road improvements along SE 1st Street to proceed; and

WHEREAS, CPU has requested compensation from the City for the performance of the relocation work and the City has agreed; and

WHEREAS, both the City and CPU agree that it is in the best interests of the Parties to collaborate on the relocation work in a timely and cost-effective manner.

NOW, THEREFORE, in consideration of the terms and conditions contained herein, the Parties hereby mutually agree as follows.

AGREEMENT

1. **PURPOSE** This Agreement is entered into pursuant to the authority of RCW 39.34.080. The purpose of this Agreement is to set forth the mutual obligations, responsibilities and rights of the City and CPU relating to the relocation of CPU facilities as described herein.
2. **TERM** This Agreement shall become effective upon the date of last signature of the Parties below, and shall continue until December 31, 2024, or until the relocation work has been completed by CPU, and accepted by the City (in a timely manner) and the City has paid CPU in full, unless terminated sooner.

3. ADMINISTRATION. No new or separate legal or administrative entity is created to administer the provisions of this Agreement. The Parties hereto shall be jointly responsible for administering the performance herein. The Parties will not acquire any jointly-owned real or personal property in connection with performance of this Agreement. The Parties shall each be responsible for their own individual financial costs of performance of this Agreement, except as otherwise described herein. No joint budget will be prepared to carry out the performance of this Agreement.
4. TERMINATION. Either Party may choose to terminate this Agreement by notifying the other Party upon thirty (30) days written notice. Should this Agreement be terminated prior to completion of the relocation work by CPU, the City agrees to compensate CPU for the relocation costs incurred up to that date.
5. SCOPE OF WORK.
 - a. CPU agrees to relocate existing electrical facilities on behalf of the City to accommodate construction of road improvements to along SE 1st Street between SE 177th Avenue and SE 190th Avenue. The project map attached as Exhibits 'A' and 'B' incorporate the section of the reimbursable work (between SE 177th Avenue and SE 184th Avenue), which is incorporated herein by this reference.
 - b. As part of this work, CPU agrees to relocate overhead transmission and distribution lines including all poles, framing, conductors, guying, anchors, risers, upright pedestals, transformers, equipment, cable in conduit, etc. as necessary to complete the relocation of a portion of the existing transmission line alignment, and the conversion to underground of a portion of the distribution line alignment to accommodate construction of road improvements to widen SE 1st Street between SE 177th Avenue and SE 190th Avenue.
 - c. All materials provided by CPU subject to reimbursement by the City are to be Build America Buy America (BABA) compliant, except those materials CPU is unable to procure as such and for which CPU will provide to the City the necessary information in order for the City to document for governing authorities.
 - d. The City, as the recipient of FHWA grant funding, will be responsible for documenting all non-compliant materials to be installed by CPU in performing the reimbursable relocation work. The City acknowledges that it may be necessary to use some non-compliant material during construction and directs CPU to proceed with construction using non-compliant materials where no alternative is available. The City agrees to reimburse to CPU any additional material and labor costs necessary in order to bring those materials into compliance as may be required at a future date, if directed to do so by the FHWA or any other governing authority. CPU shall invoice the City for such costs following any mandated reconstruction.
 - e. CPU currently has agreements with communications companies and allows joint use contacts along the existing pole alignment. The City agrees to work with these companies to ensure their facilities are relocated in a timely manner. CPU shall not be responsible for the relocation of joint use facilities or the cost there of.

6. PAYMENT.

- a. CPU agrees that it shall initially pay for the actual direct and related indirect costs of the relocation, including but not limited to, permitting, property rights (including acquiring replacement easements), materials, construction, construction engineering, contract administration and overhead costs, associated with the City Relocation Work.
- b. City agrees to provide reimbursement to CPU for the actual direct and related indirect costs of the City Relocation Work, as identified in Exhibit 'A', currently estimated to be Six Hundred Twenty Nine Thousand, Four Hundred and Seven Dollars and Eighty Two Cents (\$629,407.82 USD).
- c. CPU shall invoice the City and provide supporting documentation therefore, and the City agrees to pay CPU within thirty (30) calendar days of receipt of an invoice.

7. DISPUTE RESOLUTION. In the event of a dispute between the City and CPU regarding performance of this Agreement, the Parties shall proceed as follows:

- a. The City Manager of the City and the General Manager of CPU, or their designated representatives, shall first review such dispute and provide the Parties options for mutual resolution of the dispute.
- b. Any controversy or claim arising out of or relating to this Agreement or the alleged breach of such Agreement that cannot be resolved by the City Manager of the City and the General Manager of CPU, or their designated representatives, may be submitted to mediation and if still not resolved, shall be submitted to binding arbitration in accordance with the rules and procedures set forth in Chapter 7.04 RCW, and the judgment or award rendered by the arbitrator may be entered in any court having jurisdiction thereof.

8. INDEPENDENT CONTRACTOR. Both Parties shall be deemed independent contractors for all purposes, and the employees of each Party and any of its contractors, subcontractors, consultants, and the employees thereof, shall not in any manner be deemed to be the employees of the other Party. CPU shall retain all authority for provision of services, standards of performance, discipline and control of personnel, and other matters incident to its performance of services pursuant to this Agreement. Nothing in this Agreement shall make any employee of a Party an employee of the other Party for any purpose, including but not limited to, for withholding of taxes, payment of benefits, workers' compensation pursuant to Title 51 RCW, or any other rights or privileges accorded their respective employees by virtue of their employment.

9. INDEMNIFICATION. To the extent authorized by law, the City and CPU shall indemnify and hold harmless one another and their employees and/or officers from and shall process and defend at its own expense any and all claims, demands, suits at law or equity, actions, penalties, losses, damages (both to persons and/or property), or cost, of whatsoever kind of nature, brought against one Party arising out of, in connection with, or incident to the other Party's performance or failure to perform any aspect of this Agreement, provided, however, that if such claims are caused by or result from the concurrent negligence of (a) the City and (b) CPU, their respective employees and/or officers, this indemnity provision shall be valid and enforceable only to the extent of the

negligence of the City or CPU, and provided further, that nothing herein shall require the City or CPU to hold harmless or defend the other or its employees and/or officers from any claims arising from that Party's sole negligence or that of its employees and/or officers. Notwithstanding the foregoing, since the City is directing CPU to install materials that may not be compliant with the Build America Buy America (BABA) requirement, CPU shall not be responsible to the City for any loss, claim, penalty, or expense attributed to a violation of the Build America Buy America (BABA) requirements and the City shall indemnify and defend CPU from any such claim, loss, penalty, or expense. The terms of this section shall survive the termination of this Agreement.

10. AMENDMENTS. This Agreement shall not be modified or amended in any manner except by an instrument in writing executed by the Parties hereto.
11. ASSIGNMENT. No Party hereto shall assign its rights or obligations under this Agreement without the prior written consent of the other Party hereto.
12. NOTICES. All communications, notices and demands of any kind which are required by this Agreement shall be in writing and shall be deemed given when deposited in the U.S. mail, first class postage prepaid, to the following addresses or to such other addresses as the Parties shall from time to time give notice to the other Parties:

If to the City:
City of Vancouver
Attn: Hassan Abdalla
P.O. Box 1995
Vancouver, WA 98668

If to CPU:
Clark Public Utilities
Attn: Aleksey Shkuratkov
P.O. Box 8900
Vancouver, WA 98668

13. COUNTERPARTS. This Agreement may be executed simultaneously in several counterparts, each of which shall be deemed an original, and all of which together shall constitute one and the same instrument.
14. ENTIRE AGREEMENT. This Agreement contains all of the agreements of the Parties with respect to the subject matter covered or mentioned therein, and no prior Agreements shall be effective to the contrary.
15. FILING. Executed copies of this Agreement shall be filed as required by RCW 39.34.040 or alternatively listed on the Parties' respective web sites or other electronically retrievable public source.
16. SEVERABILITY. Any provision of this Agreement, which is prohibited or unenforceable, shall be ineffective to the extent of such prohibition or unenforceability, without invalidating the remaining provisions or affecting the validity or enforcement of such provisions.
17. RATIFICATION. Acts taken pursuant to this Agreement but prior to its effective date are hereby ratified and confirmed.
18. GOVERNING LAW. This Agreement shall be deemed to have been executed and delivered within the State of Washington, and the rights and obligations of the Parties hereunder shall be construed

and enforced in accordance with, and governed by, the laws of the State of Washington without regard to the principles of conflict of laws. The contractor shall have legal authority to enter into this agreement and be at least 18 years of age. Any action or suit brought in connection with this Agreement shall be brought in the Superior Court of Clark County, Washington.

IN WITNESS WHEREOF, the authorized representatives of the Parties have executed this Amendment on the dates indicated below.

For the **CITY**:

CITY OF VANCOUVER, WA

A municipal corporation
corporation

Eric Holmes, City Manager

DATED: _____

Attest:

Natasha Ramras, City Clerk

Approved as to Form:

Jonathan Young, City Attorney

For **CPU**:

CLARK PUBLIC UTILITIES

A municipal

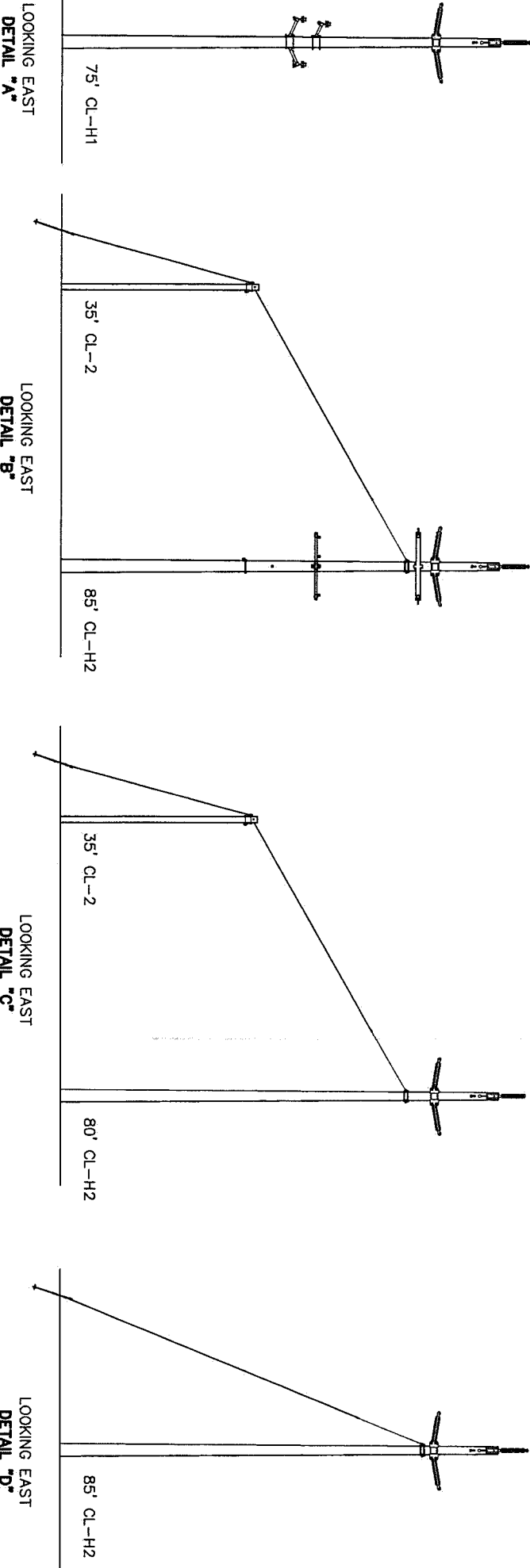
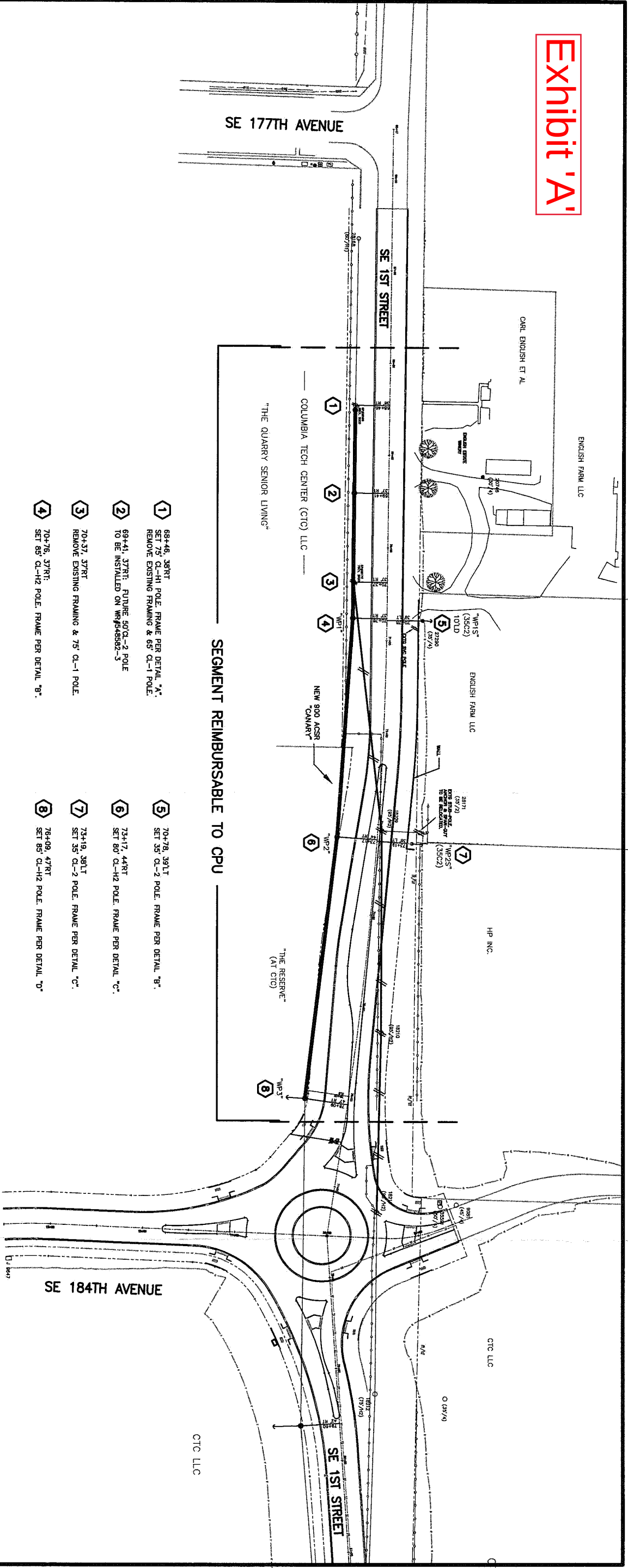
Lena Wittler, General Manager

DATED: _____

Approved as to Form:

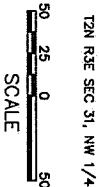
John Eldridge, General Counsel

Exhibit 'A'



- 1 68+46, 38'RT
SET 75' CL-H1 POLE. FRAME PER DETAIL "A".
REMOVE EXISTING FRAMING & 65' CL-1 POLE.
- 2 69+44, 37'RT. FUTURE 50'CL-2 POLE
TO BE INSTALLED ON W#9548592-3
- 3 70+37, 37'RT
REMOVE EXISTING FRAMING & 75' CL-1 POLE.
- 4 70+76, 37'RT.
SET 85' CL-H2 POLE. FRAME PER DETAIL "B".
- 5 70+76, 39'LT
SET 35' CL-2 POLE. FRAME PER DETAIL "B".
- 6 73+17, 44'RT
SET 80' CL-H2 POLE. FRAME PER DETAIL "C".
- 7 73+19, 38'LT
SET 35' CL-2 POLE. FRAME PER DETAIL "C".
- 8 76+09, 47'RT
SET 85' CL-H2 POLE. FRAME PER DETAIL "D".

CONTACTS:
CPU TRANSMISSION DESIGN:
DAVE SANDERS
OFFICE: 360-992-8822 CELL: 360-921-2214
CPU DISTRIBUTION DESIGN:
ALEXEY SHURBATKOV
OFFICE: 360-992-8593 CELL: 360-624-3681
AREA CONSTRUCTION SUPERINTENDENT:
MICHAEL REDINGER, 360-992-8828 CELL:
TRANSMISSION WR NO.S:
548592-1: NON-REIMBURSABLE (NOT ON EASEMENT)
548592-4: REIMBURSABLE (ON EASEMENT)
DISTRIBUTION WR NO.S: 548592-2, 548592-5



SE 1ST ST TRANSMISSION RELOCATION				Clark Public Utilities	
O.H. TRANSMISSION RELOCATION REIMBURSABLE SEGMENT (ON CPU EASEMENT)				DATE:	5/21/2023
ENGINEER:	D. SANDERS	DRAWN:	D. SANDERS	SCALE:	SEE SCALE BAR
WC:	548592-4				SHEET 1 OF 1

Exhibit 'B'

ENGLISH FARM LLC

ENGLISH FARM LLC

CARL ENGLISH ET AL

SE 1ST STREET

COLUMBIA TECH CENTER LLC
"THE QUARRY SENIOR LIVING"

BEGIN TRANSMISSION
RELOCATION

EXISTING 65' C1 P# 28169 TO REMAIN
LAST POLE JOINT COULD ATTACH.
SEE M&S E-MAIL DATED 2/7/22.

STA: 69+41, 37' RT
SET 50'C2 DISTRIBUTION POLE.
INSTALL 1000 KCM RISER.

REMOVE EXISTING 75C1
TRANSMISSION P# 28170.
REMOVE DOWN-GUY & ANCHOR.

SET 75°H2 POLE, 14' DEEP.
EL=287.
LINE ANGLE = 2.9°.

REMOVE EXTG 35'C4 SVC P#27290.

SEE SHT G12
FOR EXTG
GRADES

SET 75°H2 POLE 14' DEEP
EXTG EL=262', FINAL EL=276'
LINE ANGLE = 2.82°

SET BOLT HOLE, 14" DEEP
EL=265, LINE ANGLE = 6.2°
INSTALL ANCHOR (20' LD) & D0

DOWN-GUY.

“THE RESERVE”
(AT CTC)

SE 177TH AVENUE

SE 1ST ST - PHASE 2		Clark Public Utilities 
DISTRIBUTION RELOCATION (REIMBURSABLE)		
ENGINEER:	PERMIT:	DATE:
WORK #	CHECKED:	DWG:
548582-2	SCALE:	6/02/76

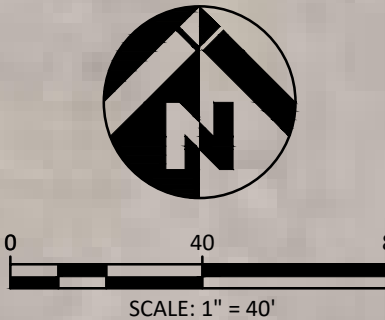
SE 177TH AVE.

SE 184TH AVE.

SE 1ST ST.

SE 190TH AVE.

SE 192ND AVE.



Staff Report: 019-24

TO: Mayor and City Council

FROM: Eric Holmes, City Manager

DATE: 1/22/2024

SUBJECT Interlocal Agreement (ILA) between Clark County and the City of Vancouver to provide for a coordinated fall leaves disposal program for residents

Key Points

- The City of Vancouver and Clark County have coordinated a seasonal program to assist residents with the disposal of leaves for more than 15 years.
- The City maintains contracts with disposal sites, designs and distributes disposal coupons, and promotes the availability of the services. Clark County Public Works coordinates with the City to offer the promotion and cover the costs of disposal for non-City residents, as well as for administration of the program.
- This coordinated effort is an efficient way for both organizations to offer disposal options to residents, and to help prevent costly localized flooding associated with leaves blocking stormwater drains.
- The proposed agreement replaces the prior expired agreement for fall leaves.

Strategic Plan Alignment

Climate and Natural Systems – Environmental stewardship and efforts to address climate change to ensure a sustainable future.

High Performing Government – a government that is reliable, fiscally responsible, equitable, and open to compromise.

Present Situation

For nearly two decades the City and County have coordinated efforts to offer free leaves disposal to residents using a coupon system. In October 2018, the City and County executed an interlocal agreement (ILA) to provide for a coordinated fall leaves disposal program for residents. Prior to that time the City and County made use of the Grounds Equipment and Maintenance Services Intergovernmental Agreement as the instrument for this program.

The City and County are seeking to enter into a replacement ILA. The current (and proposed) approach allows the City to specifically track where fall leaves are coming from, which vendors they are delivered to, and quantities of material, all of which allows us to achieve our program

diversion goals.

Advantage(s)

1. The program will remain in place and the costs associated with it will be tracked to this ILA.
2. This proposed ILA provides a written understanding of what each agency is expected to provide for the program and helps each agency budget for the services.
3. The fall leaves disposal coupons provide all residents within the County with a method to keep leaves out of streets where they may cause localized flooding due to blocking storm drains.

Disadvantage(s)

None

Budget Impact

The operational costs associated with this program are paid from the Solid Waste budget and are a part of the annual solid waste programs. This ILA will allow the County to fully reimburse the City for the administrative and disposal costs associated with City managing the regional leaves coupon program.

Prior Council Review

Council approved the previous ILA for Fall Leaves Disposal on September 24, 2018.

Action Requested

Authorize the City Manager or their designee to sign the Interlocal Agreement with Clark County for a coordinated fall leaves disposal program for residents.

Julie Gilbertson, Solid Waste Supervisor, 360-487-7162

ATTACHMENTS:

- ▣ Interlocal Services Agreement for Fall Leaves Disposal Program

**INTERLOCAL SERVICES AGREEMENT
BETWEEN CLARK COUNTY AND THE CITY OF VANCOUVER
FOR FALL LEAVES DISPOSAL PROGRAM**

This is an interlocal agreement (“Agreement”) pursuant to RCW 39.34.080, between Clark County, a political subdivision of the State of Washington (“County”), and the City of Vancouver, a municipal corporation of the State of Washington (“City”), collectively referred to herein as the (“Parties”).

WHEREAS, the Parties share a common desire to protect and maintain public stormwater infrastructure, to protect the quality of water that runs off the urban landscape through public infrastructure and into the regional rivers and streams, and to encourage composting of organic waste over disposal in a landfill; and

WHEREAS, each year when deciduous trees drop their leaves there is an increased need to maintain the stormwater infrastructure to prevent localized flooding by removing organic materials that collect in the infrastructure; and

WHEREAS, encouraging support from City and County residents to keep leaves raked up and out of the street helps prevent localized flooding, and providing residents with free disposal coupons has been an effective incentive to help them control both their own individual disposal costs and the City and County Public Works program costs; and

WHEREAS, both Parties desire to continue this collaborative relationship in order to ensure a consistent and easy-to-use service is available for all residents regardless of which disposal vendor they choose or whether they live in the County or City; and

WHEREAS, for over 20 years, the City has provided administrative services for this coupon program and the County has reimbursed the City for the disposal and a relative proportion of the admin costs for the leaves collected from non-City residents under a 2018 Interlocal Agreement specific to the fall leaves disposal program and prior to that in the Grounds Equipment and Maintenance Services agreement; and

WHEREAS, the Parties wish to execute a second, separate Interlocal Agreement specific to the fall leaves disposal program so that program-specific costs can be better tracked, rather than combined with the other services and expenses in the Grounds Equipment and Maintenance Services agreement; and

WHEREAS, City staff dedicates time and resources to the procurement, contract management, and communications associated with the fall leaves coupon program, including processing the coupons to track the volume of leaves coming from each Party.

NOW, THEREFORE, Clark County and the City of Vancouver agree as follows:

INTERLOCAL SERVICE AGREEMENT
FALL LEAVES DISPOSAL PROGRAM

SECTION 1. PURPOSE. The purpose of this Agreement is to formalize the regional approach to offering fall leaves disposal coupons in the City and County.

SECTION 2. TERM. The term of this Agreement is from January 1, 2024, through December 31, 2028, subject to earlier termination as set forth herein below.

SECTION 3. TERMINATION. Either Party may choose to terminate this Agreement by notifying the other Party in writing with at least 60 days' notice; however, 120 days' notice is required if the termination date falls within the active program dates between October 1 and December 31 in any given year. If such notice is given, the Parties may each opt to coordinate individual programs. The City will be responsible for notifying its residents and disposal contractors of changes to the program but shall not be responsible for notifying County residents of program changes.

SECTION 4. SCOPE OF SERVICES. The City agrees to manage and maintain contracts with vendors that can accept loads of leaves from residents who present coupons. The vendors will then bill the City at the agreed upon rate. City staff will review and approve invoices each month. The City will provide a monthly invoice to the County with copies of the vendor invoices attached for review and payment. The City will maintain actual receipts (redeemed coupons) with resident information on file as needed for auditing purposes. Disposal costs for leaves collected from County residents will be passed through to the County. County agrees to reimburse the City for the disposal costs associated with coupons redeemed by County residents plus an administration fee of 20%, calculated on the total disposal costs for coupons redeemed by County residents. The County also agrees to help promote the program by posting the coupon on its website.

The City will design, print, and distribute the coupons, including an online coupon, for use by all County residents. Costs for these services are included in the administration fee and will not be charged separately.

SECTION 5. HOLD HARMLESS/INDEMNIFICATION. Each Party shall defend, indemnify, and hold the other Party harmless from all claims, injuries, damages, losses, or suits, including attorney fees, to the extent resulting from the indemnifying Party's negligent or intentional acts arising out of the performance of this Agreement. If both Parties are found liable, each Party's duty to indemnify shall be limited to the extent of each Party's own negligence.

It is further understood that this indemnification provision constitutes a waiver under Industrial Insurance, Title 51 RCW by each Party to the other solely for the purposes of this indemnification.

SECTION 6. ASSIGNMENT/SUBCONTRACTING. Neither Party shall transfer or assign, in whole or in part, any of its respective rights or obligations under this Agreement without the prior written consent of the other.

INTERLOCAL SERVICE AGREEMENT
FALL LEAVES DISPOSAL PROGRAM

SECTION 7. NO THIRD-PARTY BENEFICIARY. The Parties do not intend there be any third-party beneficiary to this Agreement.

SECTION 8. APPLICABLE LAW; VENUE. This Agreement is governed by and construed according to the laws of the State of Washington. Either Party may file suit to enforce this Agreement in Clark County Superior Court.

SECTION 9. NOTICE. Any notices to be given under this Agreement shall, at minimum, be delivered, postage prepaid and addressed to:

To the City:
CITY OF VANCOUVER SOLID WASTE
P.O. Box 1995
Vancouver, WA 98668-1995
Attn: Julie Gilbertson
360-487-7162

To Clark County:
CLARK COUNTY PUBLIC WORKS
P.O. Box 9810
Vancouver, WA 98666-9810
Attn: Josh Lipscomb
564-397-2446 x1626

The name and address to which notices shall be directed may be changed by either Party by giving the other Party written notice.

SECTION 10. WAIVER. No waiver or failure to enforce by either Party of any term of this Agreement shall be construed to constitute a waiver of any other term or of any subsequent breach, whether of the same or different provision.

SECTION 11. ADMINISTRATION. This Agreement does not establish or create a separate legal or administrative entity or a joint board to accomplish the purposes hereof. The Parties shall each be responsible for administering the performance of their respective duties. The Parties will not acquire any jointly owned real or personal property in connection with performance of this Agreement. Each Party shall each be responsible for their own financial costs of performance of this Agreement. Any property used or acquired by the Parties in connection with performance of this Agreement shall be disposed of by that Party in its discretion.

SECTION 12. INTERLOCAL COOPERATION ACT COMPLIANCE. This is an interlocal services agreement pursuant to RCW 39.34.080. Its purpose is set forth in Section 1, its duration is set forth in Section 2, and the means of termination are set forth in Section 3. Administration and financial provisions are set forth in Section 11.

SECTION 13. ENTIRE AGREEMENT. This Agreement contains the entire agreement of the Parties with respect to the subject matter hereof, and no prior agreements shall be effective to the contrary.

SECTION 14. AMENDMENT. This Agreement may be amended by mutual written
INTERLOCAL SERVICE AGREEMENT
FALL LEAVES DISPOSAL PROGRAM

consent of the Parties.

SECTION 15. DOCUMENT EXECUTION AND POSTING. The Parties agree there shall be two duplicate originals of this Agreement. Upon execution, one original shall be retained by the Vancouver City Clerk and the other original shall be provided to the County for the County's records. County shall file a copy with the County Auditor or shall cause a copy of this Agreement to be posted on the County website pursuant to RCW 39.34.040. Each executed duplicate original shall constitute an agreement binding upon both Parties.

SECTION 16. RATIFICATION. Acts consistent with this Agreement that were done prior to its execution are hereby ratified.

SECTION 17. SEVERABILITY. If any part of this Agreement is held by a court to be invalid, such action shall not affect the validity of any other part of this Agreement.

CITY OF VANCOUVER:

CLARK COUNTY:

Eric Holmes, City Manager Date

Kathleen Otto, County Manager Date

APPROVED AS TO FORM ONLY:

APPROVED AS TO FORM ONLY:

ANTHONY F. GOLIK
Clark County Prosecuting Attorney

Jonathan Young, City Attorney Date

Kevin A. McDowell Date
Deputy Prosecuting Attorney

Attest:

Natasha Ramras, City Clerk Date

INTERLOCAL SERVICE AGREEMENT
FALL LEAVES DISPOSAL PROGRAM

Staff Report: 020-24

TO: Mayor and City Council

FROM: Eric Holmes, City Manager

DATE: 1/22/2024

SUBJECT Community Roots Impact Fee Exemption- O Street Low Income Housing

Key Points

- City Council may partially exempt or fully waive Transportation and Park development impact fees for low-income housing developments.
- In return, the applicant is required to maintain the low-income affordability requirements for the project in perpetuity.
- The applicant is requesting an 80% reduction in Transportation and Park development impact fees for a 8-unit cottage housing development for low-income households.
- Under the municipal code impact fee section low-income is defined as housing for which the monthly housing expense is no greater than 30 percent of 80 percent of the median-family income adjusted for family size for Clark County, Washington, as reported by the United States Department of Housing and Urban Development.

Strategic Plan Alignment

Housing and Human Needs – meeting basic needs and partnering with organizations to support the community.

Present Situation

The development project is located at 3600 O street. The applicant has received land use permit approval for an 8-unit, cottage style residential development. The project site initially contained two houses. The home on the south portion of the development site, which was not occupied, was removed to make way for the seven new cottage units. The home on the north portion of the site was retained resulting in a total of eight units. The new units will be 2-bedroom units.

The project is also receiving Vancouver affordable housing funds that have a separate and distinct affordability period restricting households to those earning 50 percent or less of the area median income for 20 years. Following the expiration of the Affordable Housing Fund contract restriction, the new units will then adhere to the annual income and monthly housing cost restrictions of Vancouver Municipal Code 20.915, which defines low-income housing as housing for which the monthly housing expense is no greater than 30 percent of 80 percent of the median-family income

adjusted for family size for Clark County, Washington, as reported by the United States Department of Housing and Urban Development. The impact fee exemption income and housing cost restrictions will apply in perpetuity.

As a reference, at 50 percent of the area median income, the Affordable Housing Fund contract maximum annual income for a family of three is currently \$50,800. At 80 percent area median income, the impact fee exemption covenant maximum annual income for a family of three is \$81,200 with a maximum monthly housing cost of \$2,030.

The applicant's request is for a partial 80-percent exemption of City of Vancouver Transportation and Park development impact fees.

The transportation impact fees are based on the new vehicle trips generated from the development and the designated fee subarea in which the development is located. The project is located in the Columbia impact fee subarea, which requires \$238 per new average daily vehicle trip generated. A total of 37 new daily vehicle trips are expected from the development. After a vehicle trip credit for the home that was removed, the total transportation impact fee for the development is \$7,889.70. After the requested 80% exemption of \$6,311.76, the remaining transportation impact fee paid by the developer would be \$1,577.94.

Park impact fees are based on the number of new residential units and the park district subarea in which the project is located. The site is located within Park District A, which requires \$3,476 per new unit. Based on seven new units, the total park impact fee is \$24,332. After an 80% exemption of \$19,465.60, the remaining required park impact fee to be paid by the applicant would be \$4,866.40.

School impact fees are based on the number of residential units and the school district subarea. The project site is located within the Vancouver School District, which requires \$2,486 per unit. The Vancouver School District has declined to waive impact fees in this case.

To receive the requested impact fee exemption the applicant/owner is required to record a covenant with the Clark County auditor, in perpetuity, that prohibits using the property for any purpose other than for low-income housing. If in the future the property is converted to a use other than for low-income housing, the property owner must pay the applicable impact fees in effect at the time of conversion. To ensure on-going compliance the property owner will be required to maintain records and report to the City of Vancouver annually relating to tenant income and housing cost compliance.

Advantage(s)

1. Supports creation of 7 new low-income residential units.
2. Initially new units to be restricted for households earning 50% or less of the area median income for 20 years through the Affordable Housing Fund contract.
3. Following the Affordable Housing Fund contract expiration, the units will then be income restricted where the monthly housing expense is no greater than 30 percent of 80 percent of the median-family income.

Disadvantage(s)

1. Loss of \$6,311.76 in Transportation impact fees
2. Loss of \$19,465.60 in Park impact fees

Budget Impact

The current biennial budget will not be impacted, however the loss of revenue in Park district and Transportation district would impact future projects that could have used this revenue source.

Prior Council Review

None

Action Requested

Adopt a resolution to exempt 80% of Transportation and Park impact fees in support of low-income housing development.

Bryan Monroe, Associate Housing Project Coordinator, 360-487-7958

ATTACHMENTS:

- ▢ Community Roots Impact Fee Exemption Presentation
- ▢ Community Roots Impact Fee Waiver Resolution
- ▢ Community Roots Impact Fee Exemption Exhibits
- ▢ Community Roots O Street Impact Fee Waiver Covenant Template



CITY OF
Vancouver
WASHINGTON

Community Roots O Street Development Impact Fee Exemption

Bryan Monroe

**Associate Housing Project
Coordinator**

Economic Prosperity and Housing

January 22, 2023





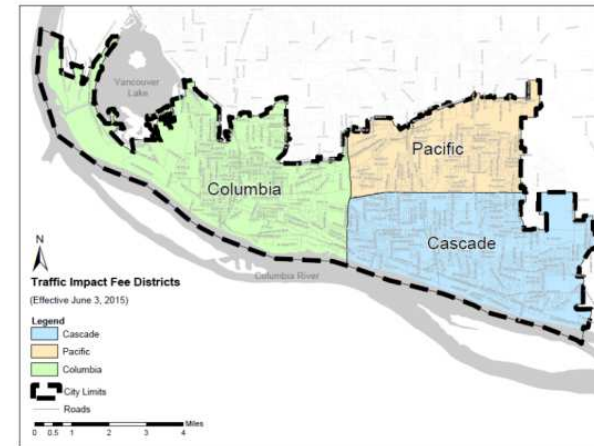
Agenda

- Impact Fee District Overview
- VMC Impact Fee Exemptions
- Project Description
- Proposed Fee Exemption
- Low-income Definition
- Staff Recommendation

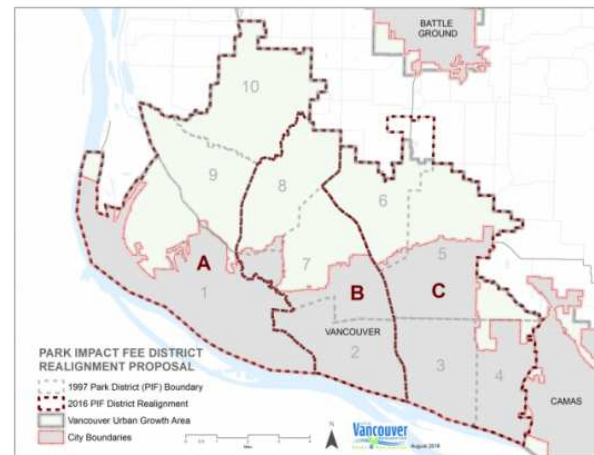


Impact Fee Districts

Traffic Impact Fee District	Rate per Trip
Columbia	\$238
Cascade	\$326
Pacific	\$424



Park Impact Fee District	Rate per Trip
A	\$3,476
B	\$3,476
C	\$3,476



3 | Community Roots- O Street Impact Fee Exemption



VMC Impact Fee Exemptions

VMC 20.915.080

For low-income housing the City Council may:

- Grant a partial exemption of up to 80% of impact fees, or
- Provide a full waiver of impact fees

Developers must record a covenant with the Clark County Auditor.

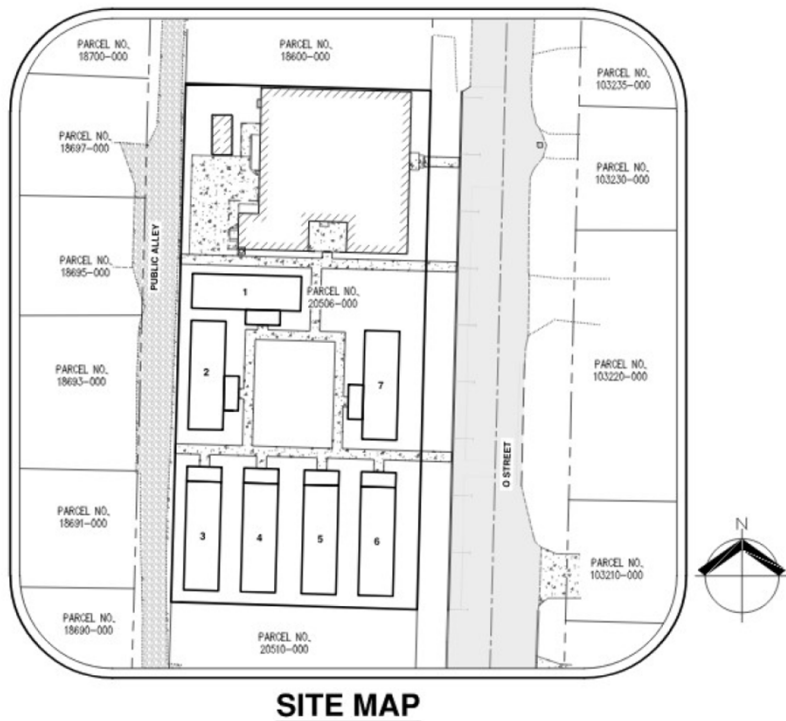
- Property only for low-income housing use
- Covenant runs in perpetuity
- Any change of use requires re-payment of impact fees.



O Street Project Description

I existing home

7 additional 2-bedroom units in a cottage configuration



5 | Community Roots- O Street Impact Fee Exemption



Proposed Impact Fee Exemption

Fee Type	Total	80% Exemption	20% Remainder
Traffic Impact Fee	\$7,889.70	\$6,311.76	\$1,577.94
Park Impact fee	\$24,332.00	\$19,465.60	\$4,866.40
Total	\$32,221.70	\$25,777.36	\$6,444.34



Low Income Definition

2023 HUD 80% AMI Income

Household Size	80% AMI Maximum Income	30% Maximum Monthly Housing Expense
1 Person	\$63,150	\$1,579
2 People	\$72,200	\$1,805
3 People	\$81,200	\$2,030



Staff Recommendation

Adopt the resolution granting an 80% exemption to Park and Transportation impact fees for the Community Roots affordable housing development



Thank You



01/22/24

RESOLUTION NO. _____

A RESOLUTION of the City Council of the City of Vancouver Washington approving a partial exemption of the collection of Traffic Impact fees in the amount of \$6,311.76 and Park Impact Fees in the amount of \$19,465.60 for the Community Roots O Street low-income, cottage housing development.

WHEREAS, the City Comprehensive Plan encourages development and funding for affordable housing and opportunities to provide unsubsidized housing; and

WHEREAS, pursuant to RCW 82.02.060, Vancouver Municipal Code 20.915.080 allows for conditional reduction, exemption, or waiver of Traffic and Park Impact Fees; and

WHEREAS, local governments may either: (1) grant a partial exemption of not more than eighty percent of impact fees, in which case there is no requirement under state law to pay the exempted portion of the fee from the City or other than impact fee accounts; or (2) provide a full exemption, in which case the remaining twenty percent of the waived fee must be paid from City funds other than impact fee accounts; and

WHEREAS, Community Roots Collaborative, is a Washington nonprofit agency dedicated to addressing affordable housing; and

WHEREAS, Community Roots Collaborative has applied for a partial 80% exemption in the amount of \$6,311.76 for Traffic impact fees and \$19,465.60 for Park Impact Fees which would otherwise be due prior of issuance of building permits; and

WHEREAS, the applicant has met the eligibility criteria of VMC 20.915.080 and agreed, through proposed covenant, to provide low-income housing in perpetuity, and annual compliance program monitoring; and

WHEREAS, the City Council recognizes the importance of providing low-income housing within the City of Vancouver.

NOW, THEREFORE,

BE IT RESOLVED BY THE CITY OF VANCOUVER:

Section 1. Findings. Community Roots Collaboration has applied for partial impact fee exemption for a low-income cottage housing project located at 3600 O Street Vancouver, WA 98663 (Tax ID#s 20506000). Pursuant to VMC 20.915.080 D, the City Council makes the following findings:

1. The Applicant has documented that the housing can meet appropriate standards regarding household income, rent levels, and number of units by submitting evidence of agreements or contracts.
2. The Applicant has agreed to be monitored by the City of Vancouver to ensure compliance with the income requirements of VMC 20.915.
3. The developer will record a covenant with the Clark County Auditor that includes the following commitments::
 - a. The property is prohibited from being used for any purpose other than for low-income housing.
 - b. If the property is converted to a use other than for low-income housing, the current property owner must pay the applicable impact fees in effect at the time of conversion.
 - c. Low-income housing is defined as housing for which the monthly housing expense is no greater than thirty percent of eighty percent of the median family income adjusted for

RESOLUTION - 2

family size for Clark County, as reported and adjusted annually by the United States Department of Housing and Urban Development.

4. The City of Vancouver will not collect revenue lost through the granting of the exemption by increasing impact fees unrelated to the exemption.

Section 2. Partial Exemption of Impact Fees. The impact fee exemption is for seven new low-income housing units. Total Park impact fees for the development are \$24,332. The applicant is requesting a partial exemption of Park impact fees at 80%, or \$19,465.60, that results in a remaining Park impact fee of \$4,866.40 to be paid by applicant to the City of Vancouver at time of building permit issuance.

The total Traffic impact fee is \$7,889.70. The applicant is requesting a partial exemption of Traffic impact fees at 80%, or \$6,311.76, that results in a remaining impact fee of \$1,577.94 to be paid by applicant to the City of Vancouver at the time of building permit issuance.

The total combined impact fee exemption of \$25,777.36 will result in a combined remaining impact fee of \$6,444.34 for Parks and Transportation to be paid by Community Roots Collaborative.

Section 3. Severability. If any provision of this resolution or its application to any person or circumstance is held invalid, the remainder or the application of the provision to other persons or circumstances is not affected.

Section 4. Effective Date. This resolution shall become effective immediately upon final adoption.

RESOLUTION - 3

DATE OF FINAL PASSAGE by the Vancouver City Council: _____.

SIGNED this _____ day of _____, 2024.

Anne McEnerny-Ogle, Mayor

Attest:

Natasha Ramras, City Clerk

Approved as to form:

Jonathan Young, City Attorney

RESOLUTION - 4

Impact Fee Waiver Application (Affordable - Multi-Family)



Ownership Information

List full legal name of all owners or lien holders on title:

Community Roots Collaborative

Applicant Name: Peggy Sheehan / Dan Whiteley

Preferred contact person: Peggy Sheehan

Mailing address: 215 W 4th St. Suite 200

Tel: 360 281 5645 Email: PSheehan4@msn.com

Property Information

Property address: 3600 O Street

Building permit #: CU-P-8382- Parcel #: 20506000

Abbreviated legal: lots 2, 3 and North 1/2 lot 4, Block 7

Describe project including unit mix and amenities, sustainability features:

Place 7 tiny Homes on South
side of lot.

of Multi-Family Units: 7 # of Buildings: 1
single

Other Affordability Requirements

Does your project include funding or other restrictions that limit the income of tenants or rent charged? ☒ Yes ☐ No

If yes, please list other funding or restrictions:

city of Vancouver Affordable Housing Fund
below 50% AMI

Things To Consider

#1 Impact fee waiver applies only to low-income housing*

#2 Waivers for more than three units require Council approval.

#3 Projects that receive Multi-Family Tax Exemption cannot receive impact fee waivers.

#4 Waiver applies to Park Impact, Traffic Impact and School Impact fees (School district must consent to any school impact fee waivers).

#5 Recorded covenant will restrict the property to affordable housing use.

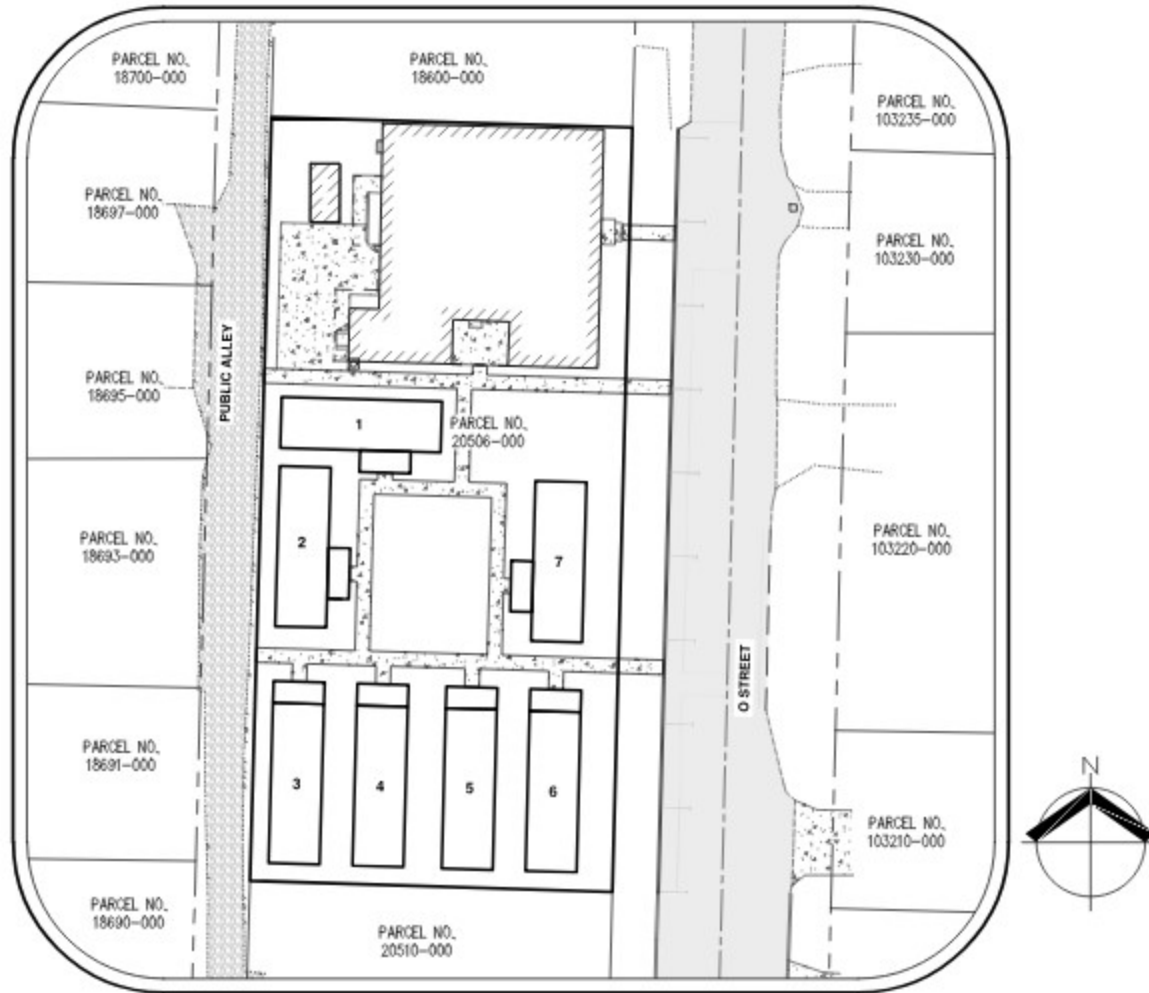
Additional detail available at VMC 20.915.080B

*Defined as a housing expense no greater than 30% of 80% of the median family income based on current U.S. Department of Housing and Urban Development income limits for the metropolitan area.

Please submit this application along with a prepared covenant provided by staff.

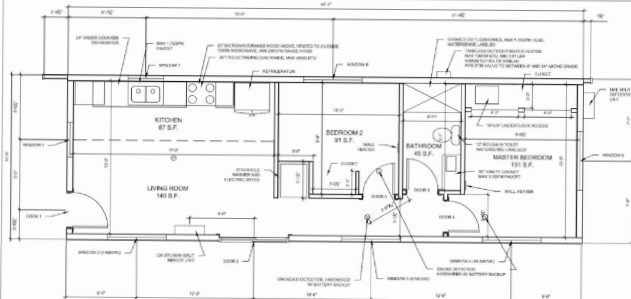
360-487-7800 | housing@cityofvancouver.us | www.cityofvancouver.us/housing





SITE MAP

OWNER



DOOR SCHEDULE

LABEL	WIDTH	HEIGHT	OPERATION	FRAME TYPE	DOOR TYPE
1	3'-0"	6'-8"	SWING	STANDARD	EXTENSION
2	3'-0"	6'-8"	SLIDING	STANDARD	SLIDING
3	3'-0"	6'-8"	SLIDING	STANDARD	SLIDING
4	3'-0"	6'-8"	SLIDING	STANDARD	SLIDING
5	3'-0"	6'-8"	SLIDING	STANDARD	SLIDING

WINDOW SCHEDULE

LABEL	WIDTH	HEIGHT	OPERATION	FRAME	GLASS	NOTES
1	3'-0"	6'-8"	SLIDING	STANDARD	STANDARD	
2	3'-0"	6'-8"	SLIDING	STANDARD	STANDARD	
3	3'-0"	6'-8"	SLIDING	STANDARD	STANDARD	
4	3'-0"	6'-8"	SLIDING	STANDARD	STANDARD	
5	3'-0"	6'-8"	SLIDING	STANDARD	STANDARD	
6	3'-0"	6'-8"	SLIDING	STANDARD	STANDARD	
7	3'-0"	6'-8"	SLIDING	STANDARD	STANDARD	
8	3'-0"	6'-8"	SLIDING	STANDARD	STANDARD	
9	3'-0"	6'-8"	SLIDING	STANDARD	STANDARD	
10	3'-0"	6'-8"	SLIDING	STANDARD	STANDARD	

MODEL E/F COTTAGE FLOOR PLAN
(NOT TO SCALE)

General Notes

ALL PERMANENTLY
INSTALLED LIGHTING
FIXTURES SHALL HAVE
HIGH EFFICIENCY LAMPS

File Name and Address
3047 E. 10th St.
807 SE East Blvd
Bath Ground, VA 99004

Project Name and Address

Project
Title
Scale
N/A

A1

MODEL E/F COTTAGE EXTERIOR ELEVATIONS
(NOT TO SCALE)

General Notes

No. Revision/Issue Date

File Name and Address

Project Name and Address

Well Industries
807 SE East Blvd
Bath Ground, VA 99004

Project
Title
Scale
N/A

A2

From: [Jeff Snell](#)
To: [Monroe, Bryan](#); [Brett Blechschmidt](#)
Subject: Re: Development Impact Fee Waivers
Date: Friday, December 1, 2023 2:59:57 PM

CAUTION: This email originated from outside of the City of Vancouver. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Bryan,

Thanks for reaching out. We actually just revisited this with our board, and they are remaining consistent and not waiving these fees.

Our board does appreciate the support these developers are providing our community with needed housing.

Let me know if you have any questions.

Jeff

On Fri, Dec 1, 2023 at 2:20 PM Monroe, Bryan <Bryan.Monroe@cityofvancouver.us> wrote:

Hi Jeff,

My name is Bryan Monroe with the City of Vancouver. I have received a request for you to consider regarding school development impact fees.

The City of Vancouver has an ordinance that allows for partial exemption of transportation, park, and school impact fees for low-income housing developments.

The exemptions help make low income housing developments more financially feasible.

The City of Vancouver has just received such a request to exempt 80% of the impact fees for a new low-income apartment development.

The project is for new construction of a 7-unit housing project located at 3600 O Street. The current impact fee rate for Vancouver School District is \$ 2,486 per new housing unit.

The total school impact fee for this development would be \$17,402. An 80% exemption of school impact fees would be \$13,921.60, with the developer paying the remaining 20% at \$3,480.40

The Vancouver City Council determines whether the City Park and Transportation impact fee exemption will be granted and VSD, likewise, determines the granting of any exemption of school impact fees.

As a courtesy we are reaching out on behalf of the applicant, Community Roots Foundation, to request consideration for partial exemption of Vancouver School District impact fees for their project.

To date, I am not aware of any cases for which VSD has waived school impact fees. However, we would appreciate your consideration in reducing school impact fees to help foster affordable housing in our community.

If you could provide a written response within the next week I would greatly appreciate it.

Please call if you have any questions.

Respectfully,

Bryan Monroe- Associate Housing Project Coordinator

Economic Prosperity and Housing Department

(He/Him/His)

Working Remotely / Available in office by appointment

City of Vancouver

415 W 6th Street

PO BOX 1995

Vancouver WA 98668

Phone: 360-487-7958

Fax: 360-487-7901

bryan.monroe@cityofvancouver.us

When Recorded Return To:
City of Vancouver
Housing Program
PO Box 1995
Vancouver, WA 98668-1995
Attention: Samantha Whitley, (360) 487-7952

**CITY OF VANCOUVER, WASHINGTON
LOW-INCOME HOUSING IMPACT FEE EXEMPTION COVENANT**

Grantor: ...
Grantee: City of Vancouver
Assessor’s Tax ID#:
Legal Description: ...
Full legal description attached as Exhibit A
Site Address:

COVENANT RUNNING WITH THE LAND:

This low-income housing covenant (hereinafter "Covenant") is made between Company, a State / entity type (hereinafter “Grantor”), whose address is Company address and the City of Vancouver, Washington, a municipal corporation (hereinafter “Grantee”), in consideration for partial exemption of development impact fee exemption in the amount of \$xx,xxx provided by the City of Vancouver to Grantor pursuant to an the authority granted under RCW 82.02.060 and VMC 20.915.080.

This COVENANT is made and effective this____ day of _____, 20__, and by _____ to the CITY OF VANCOUVER, State of Washington (hereinafter the “City”).

Recitals:

- A. _____ is the owner or party in interest of certain real property with tax ID # _____ and abbreviated legal description of _____, more particularly described in Exhibit “A” attached hereto and incorporated herein by reference (hereafter the “Site”).
- B. All or a portion of the development on the Site shall be low income housing to be owned and occupied by, or leased to, low-income persons with income no greater than eighty percent of the median family income adjusted for family size for Clark County, Washington, as reported and updated periodically by the United States Department of Housing and Urban Development. That portion of the development which is low income housing is hereinafter referred to as the “Property” and identified in Exhibit A.
- C. For the purposes of this covenant, low income housing is defined as housing for which the monthly housing expense is no greater than thirty percent of eighty percent of the median family income adjusted for family size for Clark County, Washington, as reported by the United States Department of Housing and Urban Development.
- D. City approved an impact fee waiver for the Property in accordance with Vancouver Municipal Code Section 20.915.080.

NOW, THEREFORE, it is hereby covenanted, that during the affordability period:

- A. Grantor is the sole and exclusive owner or party of interest of the Property in Clark County, State of Washington, specifically described in Exhibit “A” attached hereto and incorporated herein by reference (hereafter the “Property”).
- B. A copy of this covenant will be filed with the Clark County Washington Auditor.
- C. Development on the Property shall only be for the purpose of low-income housing.
- D. Grantor will provide housing to households where monthly the housing expense is no greater than 30 percent of 80 percent of the median-family income adjusted for family size for Clark County, Washington, as reported by the United States Department of Housing and Urban Development.
- E. Grantor shall keep all records and make any reports relating to compliance with this Covenant that the Grantee may reasonably require for matters consistent with this Covenant, in accordance with applicable law.
- F. Grantor shall report to Grantee the following information annually for the duration of the COVENANT:
 - Address and name of project
 - Total number of units
 - Individual unit data including:
 - Unit number
 - Number of bedrooms
 - Household size
 - Monthly rent payment
 - Utility allowance
 - Gross income for all household adults over 18 years of age
- G.
- H. Grantor will comply with all federal, state and local laws prohibiting discrimination on the basis of age, sex marital status, race, creed, color, national origin, handicap, or familial status. These requirements are specified in Section 109 of the Housing and Community Development Act of 1974; Civil Rights Act of 1964, Title VI; Civil Rights Act of 1968, Title VIII; Executive Order 11063; Executive Order 11246; Architectural Barriers Act of 1968; and Americans with Disabilities Act.
- I. In the event that that the Property is converted to a use other than for low-income housing, the owner must pay the applicable impact fees in effect at the time of conversion.
- J. The housing will remain exclusively available to low-income households in perpetuity.
- K. This covenant and all of its provisions shall be binding upon _____ and any and all of its assigns and successors in interest into whose ownership the Property may pass, and any obligations made herein by _____ shall be enforceable against all of its assigns and successors in interest into whose ownership the Property may pass, and all of them, except as this covenant shall expressly provide to the contrary.
- L. Those signatories who sign on behalf of a corporation are expressly vested by the by-laws of the corporation which they purport to represent with the authority to bind such corporation in the manner in which such signatories have purported to bind their principal herein.
- M. In the event of any litigation arising hereunder, or with respect hereto, the law of the State of Washington will control and, and all signatories hereto, do hereby submit themselves personally to the jurisdiction of the courts of the State of Washington, and do hereby agree that any action arising hereunder may be instituted in Clark County Superior Court, if the parties are served, including anywhere not within the State of Washington, ay any method authorized by Washington law.
- N. If any breach of this Covenant is believed to have occurred, the Grantee may, after 30 days-notice to the Grantor, demand payment in full or in part of the impact fee exemption at the impact fee rate applicable at the time of the breach of Covenant. Grantee may institute and

prosecute any proceeding at law or equity to recover all or a portion of the impact fee exemption as a result of the breach of this Covenant, or prevent, or enjoin any such violation or to compel specific performance by the Grantor of its obligations hereunder; provided that, the Grantor shall not be required by any provision herein to evict a residential tenant. No delay in enforcing the provisions hereof as to any breach or violation shall impair, damage, or waive the rights of the Grantee to enforce the provisions hereof or to obtain relief against or recover for the continuation or repetition of such breach or violations or any similar breach or violation hereof at any later time.

- O. This covenant shall remain in full force and effect until amended, modified, or terminated by the action of the City in proceedings appropriate for that purpose.

A copy of this covenant will be filed with the County Auditor.

IN WITNESS HEREOF, _____, a State / Entity _____, has executed this Covenant on the _____ day of _____, 20__.

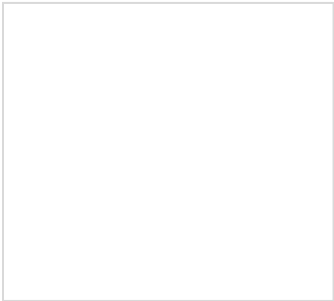
GRANTEE: _____

By: _____

Print Name: _____

CORPORATE NOTARY

STATE OF _____)
)ss
COUNTY OF _____)



On this ____ day of _____, 20____ before me, the undersigned, a Notary Public in and for the State of _____, personally appeared _____, known to me as the [title] _____ of _____, a Washington nonprofit corporation, the entity that executed the foregoing instrument, and acknowledged the said instrument to be the free and voluntary act and deed of the said entity, for uses and purposes therein mentioned, and on oath stated that he/she is authorized to execute the said instrument on behalf of the said entity.

WITNESS my hand and official seal hereto the day and year in the certificate above written.

NOTARY PUBLIC in and for the State of _____,
My Commission Expires: _____

EXHIBIT A:
SITE LEGAL DESCRIPTION

Tax ID #:

Description:



Item #13.

TO: Mayor and City Council

FROM: Council Committee 1 (Hansen, Paulsen, Perez)

DATE: 1/22/2024

SUBJECT Appointments to the City Center Redevelopment Authority Board

Present Situation

The City Center Redevelopment Authority (CCRA) is appointed by City Council to oversee downtown redevelopment consistent with the Vancouver City Center Vision (VCCV) Plan. The board advises the mayor and city council on public-private partnerships, public assistance to private developments, and the business aspects of redevelopment projects and agreements in downtown Vancouver.

Council Committee 1 recently interviewed candidates for this board and recommends the reappointment of Marc Fazio and David Copenhaver to a full-term positions effective Jan. 1, 2024, and expiring Dec. 31, 2027.

If there are no objections, this appointment will be presented for Council action at the at the Monday, January 22, Council meeting.

Action Requested

Reappoint Marc Fazio and David Copenhaver to the City Center Redevelopment Authority, terms effective Jan. 1, 2024, and expiring Dec. 31, 2027.

Council Committee 1

ATTACHMENTS:



Item #12.

TO: Mayor and City Council

FROM: Council Committee 1 (Hansen, Paulsen, Perez)

DATE: 1/22/2024

SUBJECT Appointments to the Lodging Tax Advisory Committee

Present Situation

The purpose of the Vancouver Lodging Tax Advisory Committee is to make recommendations to the Vancouver City Council regarding expenditures of lodging tax revenue for the purpose of tourism promotion and the marketing and operations of special events and festivals.

Council Committee 1 recently reviewed candidates for this committee and recommends the full-term appointment of Christie Rust and Terry Goldman to positions that would be effective September 30, 2023, and expire September 30, 2025. Committee 1 also recommends the reappointment of Steve Bowers and Carla Rise to terms that would be effective September 30, 2023, and expire September 30, 2025

If there are no objections, this appointment will be presented for Council action at the at the Monday, January 22nd, Council meeting.

Action Requested

Council Committee 1 recently reviewed candidates for this committee and recommends the full-term appointment of Christie Rust and Terry Goldman to positions that would be effective September 30, 2023, and expire September 30, 2025. Committee 1 also recommends the reappointment of Steve Bowers and Carla Rise to terms that would be effective September 30, 2023, and expire September 30, 2025

Council Committee 1

ATTACHMENTS:



Item #14.

TO: Mayor and City Council

FROM: Council Committee 2 (Stober, Fox, Harless)

DATE: 1/22/2024

SUBJECT Appointments to the Planning Commission

Present Situation

The Planning Commission serves as a volunteer advisory body and makes recommendations to the City Council on the topics related to the future growth and development of Vancouver.

Council Committee 2 recently interviewed candidates for this commission and recommends the full-term appointment of Sandra Beck and the reappointment of Zachary Pyle to positions that would be effective Jan. 1, 2024, and expire Dec. 31, 2027.

If there are no objections, this appointment will be presented for Council action at the at the Monday, Jan. 22, 2024, Council meeting.

Action Requested

Council Committee 2 recently interviewed candidates for this commission and recommends the full-term appointment of Sandra Beck and the reappointment of Zachary Pyle to positions that would be effective Jan. 1, 2024, and expire Dec. 31, 2027.

Council Committee 2

ATTACHMENTS:

VOUCHER APPROVAL

We, the undersigned council members of the City of Vancouver, Clark County, Washington, do hereby certify that the merchandise or services hereinafter specified have been received and that the vouchers listed below are approved for payment in the amount of:

\$ 17,174,629.23 this 22nd day of January 2024.

MAYOR

COUNCILMEMBER

AUDITING OFFICER

COUNCILMEMBER

DATE	INCLUSIVE CHECK NUMBERS	CHECK TOTAL
January 01, 2024 - January 14, 2023	Accounts Payable Checks (see attached)	\$ 12,739,529.50
January 01, 2024 - January 14, 2023	Hansen City Payments (see attached)	\$ 410,696.09
January 01, 2024 - January 14, 2023	Visa Refunds (see attached)	\$ 5,398.75
January 01, 2024 - January 14, 2023	Payroll Checks (see attached)	\$ 4,019,004.89
TOTAL		\$ 17,174,629.23

INVOICE PAYMENTS REPORT

<u>Payment Category</u>	<u>Payment Type</u>	<u>Transaction Reference</u>	<u>Payment Date</u>	<u>Payment Amount</u>	<u>Payment Payee</u>	<u>Memo</u>
Ad Hoc Payment	Check	15988	1/3/2024	38.89	Buck,Royce J	Utility Refunds: 0154000412-05
Ad Hoc Payment	Check	15989	1/3/2024	184.27	Clark County	Utility Refunds: 0118000330-06
Ad Hoc Payment	Check	15990	1/3/2024	278.00	Donnelly,Bryan	Utility Refunds: 0077000114-05 Consolidated refund created from multiple refunds
Ad Hoc Payment	Check	15991	1/3/2024	167.29	Estrada,Waldo H	Utility Refunds: 0097001412-02 Consolidated refund created from multiple refunds
Ad Hoc Payment	Check	15992	1/3/2024	121.71	Gano,Kris	Utility Refunds: 0002000111-02
Ad Hoc Payment	Check	15993	1/3/2024	184.71	Goodwin,Katie	Utility Refunds: 0123002672-04
Ad Hoc Payment	Check	15994	1/3/2024	59.54	Hoff Sr,Kenneth J	Utility Refunds: 0106053000-02
Ad Hoc Payment	Check	15995	1/3/2024	132.00	Joe Knight Trustee,Joe Knight Rev Trust	Utility Refunds: 0101003114-04
Ad Hoc Payment	Check	15996	1/3/2024	107.26	Krell,Nancy M or William J	Utility Refunds: 0069056200-07
Ad Hoc Payment	Check	15997	1/3/2024	96.17	Lapp,David	Utility Refunds: 0002000112-01
Ad Hoc Payment	Check	15998	1/3/2024	1,116.00	Luka,Moana	Utility Refunds: 0011027404-05
Ad Hoc Payment	Check	15999	1/3/2024	14.74	Martin,Jay	Utility Refunds: 0109000206-01
Ad Hoc Payment	Check	16000	1/3/2024	78.87	Nylund Inc	Utility Refunds: 0046057707-06
Ad Hoc Payment	Check	16001	1/3/2024	56.55	Patricia Hanby Personal Rep,Estate of Janet Brinkman	Utility Refunds: 0033068500-01
Ad Hoc Payment	Check	16002	1/3/2024	874.68	Paul C Riess Personal Rep,Estate of Julia M Riess	Utility Refunds: 0101000722-01 Consolidated refund created from multiple refunds
Ad Hoc Payment	Check	16003	1/3/2024	67.06	Pelyukhno,Viktor or Irina	Utility Refunds: 0500006383-01
Ad Hoc Payment	Check	16004	1/3/2024	131.54	Perkins,Alexander or Waverly	Utility Refunds: 0000003217-04
Ad Hoc Payment	Check	16005	1/3/2024	73.15	Peter Ellis or Jenica Cattin	Utility Refunds: 0050001500-11
Ad Hoc Payment	Check	16006	1/3/2024	384.00	Philip Higdon or Linda Johnson	Utility Refunds: 0101021018-03 Consolidated refund created from multiple refunds
Ad Hoc Payment	Check	16007	1/3/2024	64.49	Plamondon,Michael A	Utility Refunds: 0085023832-22
Ad Hoc Payment	Check	16008	1/3/2024	50.46	Representative of the Estate of Darlene W Baker,Gina McDonald-Marshall Personal	Utility Refunds: 0046066600-04
Ad Hoc Payment	Check	16009	1/3/2024	237.93	Summerfield Homes LLC	Utility Refunds: 0114008300-14
Ad Hoc Payment	Check	16010	1/3/2024	278.65	Surace,Andrea M or Brenton P	Utility Refunds: 0023016000-02
Ad Hoc Payment	Check	16011	1/3/2024	1,186.46	Villagio HOA	Utility Refunds: 0500006364-01
Ad Hoc Payment	Check	16012	1/3/2024	237.75	Zalk,Todd	Utility Refunds: 0027019803-01
Miscellaneous Payment	Check	16013	1/3/2024	50.00	LEAH KARINIEMI	DAMAGE DEPOSIT REFUND
Miscellaneous Payment	Check	16014	1/3/2024	197.50	Paul Davis Restoration	RES-345813 (jobsite: 4468 NE Nicholson Loop
Supplier Payment	Check	16015	1/3/2024	2,412.50	Able Fence Company Inc	
Supplier Payment	Check	16016	1/3/2024	81.90	Airgas, Inc	
Supplier Payment	Check	16017	1/3/2024	6,663.00	Allegis Group Holdings Inc - Remit-To: TekSystems Inc - Atlanta	
Supplier Payment	Check	16018	1/3/2024	13,620.00	Ankrom Moisan Associated Architects, Inc	
Supplier Payment	Check	16019	1/3/2024	148.84	Aramark Uniform & Career Apparel LLC - Remit-To: Aramark - Pasadena	
Supplier Payment	Check	16020	1/3/2024	2,400.10	Arborscape Ltd Inc	
Supplier Payment	Check	16021	1/3/2024	5,000.00	Bickmore Actuarial - Remit-To: Bickmore Actuarial	
Supplier Payment	Check	16022	1/3/2024	4,222.80	Bound Tree Medical LLC	
Supplier Payment	Check	16023	1/3/2024	13,800.00	Cascade Inn	
Supplier Payment	Check	16024	1/3/2024	15,892.81	CECO Inc	
Supplier Payment	Check	16025	1/3/2024	14,538.06	Clark County - Remit-To: Clark County - Treasurer Vancouver	
Supplier Payment	Check	16026	1/3/2024	6,200.00	Constangy, Brooks, Smith & Prophete, LLP.	

*Please contact Procurement Services if you would like to review the justification for EMERGENCY procurement.

INVOICE PAYMENTS REPORT

<u>Payment Category</u>	<u>Payment Type</u>	<u>Transaction Reference</u>	<u>Payment Date</u>	<u>Payment Amount</u>	<u>Payment Payee</u>	<u>Memo</u>
Supplier Payment	Check	16027	1/3/2024	2,873.39	CUES Inc - Remit-To: CUES Inc - Cincinnati	
Supplier Payment	Check	16028	1/3/2024	5,800.92	Cummins Inc	
Supplier Payment	Check	16029	1/3/2024	18,690.95	Day Management Corp - Remit-To: Day Wireless - Milwaukee	
Supplier Payment	Check	16030	1/3/2024	9,973.23	Eco Fencing and Decking LLC	
Supplier Payment	Check	16031	1/3/2024	275.00	ERF Company Inc	
Supplier Payment	Check	16032	1/3/2024	7,315.67	Esix Sportswear	
Supplier Payment	Check	16033	1/3/2024	56.52	Experian Marketing Solutions - Remit-To: Experian - Los Angeles	
Supplier Payment	Check	16034	1/3/2024	9,955.90	Farallon, Inc	
Supplier Payment	Check	16035	1/3/2024	9,579.00	Fehr & Peers	
Supplier Payment	Check	16036	1/3/2024	14,524.49	Ferguson Enterprises - Remit-To: Ferguson - Dallas	
Supplier Payment	Check	16037	1/3/2024	517.81	First-Citizens Bank & Trust Company	
Supplier Payment	Check	16038	1/3/2024	9,382.37	Fourth Plain Forward	
Supplier Payment	Check	16039	1/3/2024	154,533.09	GameTime - Remit-To: GameTime - Fort Payne	
Supplier Payment	Check	16040	1/3/2024	1,503.28	Genuine Parts Company - Remit-To: NAPA - Vancouver	
Supplier Payment	Check	16041	1/3/2024	2,568.28	HMI Oregon - Remit-To: Pacific WRO	
Supplier Payment	Check	16042	1/3/2024	1,416.85	Industrial Scientific Corporation - Remit-To: Industrial Scientific Corp - Pittsburgh	
Supplier Payment	Check	16043	1/3/2024	13,904.53	Janus Youth Programs Inc	
Supplier Payment	Check	16044	1/3/2024	750.00	Jeff Ellis & Associates	
Supplier Payment	Check	16045	1/3/2024	3,100.00	Juan Picho	
Supplier Payment	Check	16046	1/3/2024	2,187.50	Karapace Consulting , LLC	
Supplier Payment	Check	16047	1/3/2024	14,095.72	KBT Distributing LLC	
Supplier Payment	Check	16048	1/3/2024	10,570.38	Kennedy Jenks Consultants - Remit-To: Kennedy Jenks Consulting	
Supplier Payment	Check	16049	1/3/2024	18,700.60	Kittelson & Associates Inc	
Supplier Payment	Check	16050	1/3/2024	1,103.57	L.N. Curtis & Sons - Remit-To: Supplier L.N. Curtis & Sons	
Supplier Payment	Check	16051	1/3/2024	496.74	Lakeyland Inc	
Supplier Payment	Check	16052	1/3/2024	14,817.79	Nelson Nygaard Consulting Associates Inc - Remit-To: Nelson Nygaard Consulting Associates Inc	
Supplier Payment	Check	16053	1/3/2024	18,124.97	Northwest Staffing Resources Inc - Remit-To: Northwest Staffing Resources	
Supplier Payment	Check	16054	1/3/2024	20,661.70	Oregon Rifleworks LLC	
Supplier Payment	Check	16055	1/3/2024	13,920.75	PPC Solutions Inc	
Supplier Payment	Check	16056	1/3/2024	10,740.00	Prestige Care & Rehabilitation - Camas	
Supplier Payment	Check	16057	1/3/2024	9,726.91	Proforce Marketing Inc	
Supplier Payment	Check	16058	1/3/2024	1,111.00	Public Safety Testing Inc	
Supplier Payment	Check	16059	1/3/2024	13.58	Qwest Corporation - Remit-To: CenturyLink - Phoenix	
Supplier Payment	Check	16060	1/3/2024	6,262.64	Qwest Corporation - Remit-To: Qwest Corp- Seattle	
Supplier Payment	Check	16061	1/3/2024	1,341.00	Rapid Response Bio Clean Inc.	
Supplier Payment	Check	16062	1/3/2024	1,336.40	Resolute Documentation Services	
Supplier Payment	Check	16063	1/3/2024	814.65	River City Environmental	
Supplier Payment	Check	16064	1/3/2024	9,548.00	SafeFire LLC	
Supplier Payment	Check	16065	1/3/2024	8,400.00	Scott M Stefan	
Supplier Payment	Check	16066	1/3/2024	1,597.40	Software House International SHI - Remit-To: SHI - Dallas	
Supplier Payment	Check	16067	1/3/2024	19,200.00	Somyot Laochumanvanit	
Supplier Payment	Check	16068	1/3/2024	3,567.78	State of Washington Department of Transportation	
Supplier Payment	Check	16069	1/3/2024	1,957.25	State of Washington State Patrol	
Supplier Payment	Check	16070	1/3/2024	13.42	Stericycle Inc - Remit-To: Shred-It	
Supplier Payment	Check	16071	1/3/2024	20.72	Stericycle Inc - Remit-To: Shred-It	
Supplier Payment	Check	16072	1/3/2024	27,253.09	Sunbelt Controls Inc - Remit-To: Sunbelt Controls - Pasadena	

*Please contact Procurement Services if you would like to review the justification for EMERGENCY procurement.

INVOICE PAYMENTS REPORT

<u>Payment Category</u>	<u>Payment Type</u>	<u>Transaction Reference</u>	<u>Payment Date</u>	<u>Payment Amount</u>	<u>Payment Payee</u>	<u>Memo</u>
Supplier Payment	Check	16073	1/3/2024	4,250.00	The Amy VanCamp Experience LLC	
Supplier Payment	Check	16074	1/3/2024	5,580.00	The Loudenback Corporation	
Supplier Payment	Check	16075	1/3/2024	402.20	Towing & Recovering Services Inc	
Supplier Payment	Check	16076	1/3/2024	5,430.00	Triangle Resources Inc	
Supplier Payment	Check	16077	1/3/2024	6,679.60	Triple J Enterprises	
Supplier Payment	Check	16078	1/3/2024	727.00	Vancouver Aire LLC	
Supplier Payment	Check	16079	1/3/2024	570.71	W.B. Sprague Co. Inc.	
Supplier Payment	Check	16080	1/3/2024	702.06	Walter E Nelson Company	
Supplier Payment	Check	16081	1/3/2024	5,400.00	Washington State Criminal Justice Training Commission	
Supplier Payment	Check	16082	1/3/2024	9,496.44	Waste Connections of Washington - Remit-To: Waste Connections - Vancouver	
Supplier Payment	Check	16083	1/3/2024	4,957.50	Water Systems Consulting Inc	
Supplier Payment	Check	16084	1/3/2024	5,744.74	Wex Bank	
Supplier Payment	Check	16085	1/3/2024	43,511.04	Whitney Equipment Company Inc	
Supplier Payment	Check	16086	1/10/2024	6,455.39	Aflac	
Supplier Payment	Check	16087	1/10/2024	5,749.54	AFSCME Local #307	
Supplier Payment	Check	16088	1/10/2024	334.00	California State Disbursement Unit	
Supplier Payment	Check	16089	1/10/2024	1,033.50	Chapter 13 - Trustee	
Supplier Payment	Check	16090	1/10/2024	491.00	Hawaii SDU	
Supplier Payment	Check	16091	1/10/2024	830.25	IAM Local #1374	
Supplier Payment	Check	16092	1/10/2024	9,178.48	Life Insurance Company of North America	
Supplier Payment	Check	16093	1/10/2024	950.00	MFS Service Center Inc	
Supplier Payment	Check	16094	1/10/2024	4,428.68	OPEIU Local #11	
Supplier Payment	Check	16095	1/10/2024	75.00	OPEIU Local #11	
Supplier Payment	Check	16096	1/10/2024	793.50	Teamsters Local #58	
Supplier Payment	Check	16097	1/10/2024	280.00	UA Local #290	
Supplier Payment	Check	16098	1/10/2024	2,739.62	Western Conference of Teamsters	
Supplier Payment	Check	16099	1/10/2024	1,126.08	Western Metal Industry Pension Plan	
Ad Hoc Payment	Check	16100	1/10/2024	93.27	Allison or John Kimber	Utility Refunds: 0071081500-09
Ad Hoc Payment	Check	16101	1/10/2024	235.74	Black,Brooke	Utility Refunds: 0106010255-05
Ad Hoc Payment	Check	16102	1/10/2024	81.07	Borovina,Sheila A	Utility Refunds: 0020030500-21
Ad Hoc Payment	Check	16103	1/10/2024	833.72	Carol Van Natta or Robert Burdick	Utility Refunds: 0111010974-04
Ad Hoc Payment	Check	16104	1/10/2024	47.70	Co- Trustees of the Rowan Family Trust,Dorothy J Rowan or Nancy K Herron	Utility Refunds: 0036021300-00
Ad Hoc Payment	Check	16105	1/10/2024	354.61	Coy,James M	Utility Refunds: 0087010318-05
Ad Hoc Payment	Check	16106	1/10/2024	306.28	Ekogenia Properties LLC	Utility Refunds: 0002052500-01 Consolidated refund created from multiple refunds
Ad Hoc Payment	Check	16107	1/10/2024	500.00	Hansen-Fitch,Christine	Utility Refunds: 0101010110-01 Consolidated refund created from multiple refunds
Ad Hoc Payment	Check	16108	1/10/2024	60.00	Knaust,Jordan	Utility Refunds: 0061054800-16
Ad Hoc Payment	Check	16109	1/10/2024	156.04	Kyle Breakey or David Ashcraft Jr, Co-Successor,Trustees of the Ashcraft/Shelton	Utility Refunds: 0040053479-18
Ad Hoc Payment	Check	16110	1/10/2024	225.10	Marquez,Lafa	Utility Refunds: 0079079900-23 Consolidated refund created from multiple refunds
Ad Hoc Payment	Check	16111	1/10/2024	171.80	Pattie Stewart or Kenneth Stewart Jr	Utility Refunds: 0101011960-04
Ad Hoc Payment	Check	16112	1/10/2024	295.25	Professional Credit Service	Utility Refunds: 0002000111-02
Ad Hoc Payment	Check	16113	1/10/2024	282.99	Professional Credit Service	Utility Refunds: 0003000303-01
Ad Hoc Payment	Check	16114	1/10/2024	343.70	Sasser,Jill	Utility Refunds: 0101021627-06
Ad Hoc Payment	Check	16115	1/10/2024	130.45	Schwesinger,Steven or Evelyn	Utility Refunds: 0084015074-06
Ad Hoc Payment	Check	16116	1/10/2024	100.01	Sherman,Phyllis	Utility Refunds: 0025003600-02
Ad Hoc Payment	Check	16117	1/10/2024	46.89	Stafford,Thomas or Brooke	Utility Refunds: 0000003860-02
Ad Hoc Payment	Check	16118	1/10/2024	19.17	Stewart,Kenneth	Utility Refunds: 0101011960-04

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Ad Hoc Payment	Check	16119	1/10/2024	44.70	Summerfield Homes LLC	Utility Refunds: 0114008586-14
Ad Hoc Payment	Check	16120	1/10/2024	106.00	The Estate of Mckean Morford	Utility Refunds: 0024042416-10
Ad Hoc Payment	Check	16121	1/10/2024	155.11	Thomas or Brooke Stafford Trustees, T and B Stafford Living Trust	Utility Refunds: 0000003860-02
Ad Hoc Payment	Check	16122	1/10/2024	183.00	Trustee of the Bruce Clow Living Trustee, Susan Sears,	Utility Refunds: 0101000700-03 Consolidated refund created from multiple refunds
Ad Hoc Payment	Check	16123	1/10/2024	212.00	Turchina, Leonid and Larisa	Utility Refunds: 0061084860-01
Ad Hoc Payment	Check	16124	1/10/2024	42.84	Waldrop, Michele	Utility Refunds: 0115000182-12
Ad Hoc Payment	Check	16125	1/10/2024	52.16	Zirkle, Glenn	Utility Refunds: 0002000112-01
Supplier Payment	Check	16126	1/10/2024	21,576.95	Able Fence Company Inc	
Supplier Payment	Check	16127	1/10/2024	1,564.81	Accurate Corporate Services Inc	
Supplier Payment	Check	16128	1/10/2024	3,767.67	Advanced Traffic Products Inc	
Supplier Payment	Check	16129	1/10/2024	3,273.75	Afghan Associates Inc	
Supplier Payment	Check	16130	1/10/2024	2.75	Airgas, Inc	
Supplier Payment	Check	16131	1/10/2024	73,460.04	Allcon LLC	
Supplier Payment	Check	16132	1/10/2024	798.00	Allegheny Answering Services	
Supplier Payment	Check	16133	1/10/2024	3,027.00	Allegis Group Holdings Inc - Remit-To: TekSystems Inc - Atlanta	
Supplier Payment	Check	16134	1/10/2024	145.02	Aramark Uniform & Career Apparel LLC - Remit-To: Aramark - Pasadena	
Supplier Payment	Check	16135	1/10/2024	3,884.54	Archaeological Services LLC	
Supplier Payment	Check	16136	1/10/2024	8,774.52	AT & T Mobility II LLC	
Supplier Payment	Check	16137	1/10/2024	3,567.00	BSK Associates - Remit-To: Supplier BSK Associates	
Supplier Payment	Check	16138	1/10/2024	22,500.53	BSN Sports LLC	
Supplier Payment	Check	16139	1/10/2024	100,074.99	Bud Clary Chevrolet, Cadillac Inc	
Supplier Payment	Check	16140	1/10/2024	19,825.13	CECO Inc	
Supplier Payment	Check	16141	1/10/2024	1,145.33	Cellco Partnership - Remit-To: Cellco - Dallas	
Supplier Payment	Check	16142	1/10/2024	24,662.94	Cessco Inc	
Supplier Payment	Check	16143	1/10/2024	1,318.75	Chicago Title Company of WA	
Supplier Payment	Check	16144	1/10/2024	1,850.00	City of Beaverton	
Supplier Payment	Check	16145	1/10/2024	1,472,806.51	Clark County - Remit-To: Clark County - Treasurer Vancouver	
Supplier Payment	Check	16146	1/10/2024	61,974.12	Clary Longview LLC	
Supplier Payment	Check	16147	1/10/2024	31,449.37	Columbia Resource Company	
Supplier Payment	Check	16148	1/10/2024	12,649.85	Columbia Resource Company	
Supplier Payment	Check	16149	1/10/2024	32.91	Comcast Holdings Corporation - Remit-To: Comcast Business - City of Industry	
Supplier Payment	Check	16150	1/10/2024	215.28	Comcast Holdings Corporation - Remit-To: Comcast Business - City of Industry	
Supplier Payment	Check	16151	1/10/2024	64.95	Comcast Holdings Corporation - Remit-To: Comcast Business - City of Industry	
Supplier Payment	Check	16152	1/10/2024	104.96	Comcast Holdings Corporation - Remit-To: Comcast Business - City of Industry	
Supplier Payment	Check	16153	1/10/2024	10,570.35	Comcast Holdings Corporation - Remit-To: Comcast Holding Corporation - Boston	
Supplier Payment	Check	16154	1/10/2024	11,652.27	Core and Main LP - Remit-To: Core and Main LP	
Supplier Payment	Check	16155	1/10/2024	1,777.63	CUES Inc - Remit-To: CUES Inc - Cincinnati	
Supplier Payment	Check	16156	1/10/2024	552.36	CyberSource Corporation - Remit-To: CyberSource - Los Angeles	
Supplier Payment	Check	16157	1/10/2024	1,030.47	Deep Roots Pest and Wildlife Innovations LLC	
Supplier Payment	Check	16158	1/10/2024	268.00	Dex Media West	
Supplier Payment	Check	16159	1/10/2024	6,864.84	DKS Associates Inc	
Supplier Payment	Check	16160	1/10/2024	4,928.25	Epic Land Solutions, Inc.	
Supplier Payment	Check	16161	1/10/2024	3,699.54	Esix Sportswear	
Supplier Payment	Check	16162	1/10/2024	4,348.00	ESRI Inc	

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Supplier Payment	Check	16163	1/10/2024	8,025.97	Ferguson Enterprises - Remit-To: Ferguson - Dallas	
Supplier Payment	Check	16164	1/10/2024	543.50	Fidelity National Title Co of Washington	
Supplier Payment	Check	16165	1/10/2024	437.50	Financial Consulting Solutions Group Inc	
Supplier Payment	Check	16166	1/10/2024	10,837.50	Fourth Plain Forward	
Supplier Payment	Check	16167	1/10/2024	5,490.00	Friends of Trees	
Supplier Payment	Check	16168	1/10/2024	7,468.78	GB Manchester Inc	
Supplier Payment	Check	16169	1/10/2024	2,591.25	Groundwater Solutions, Inc.	
Supplier Payment	Check	16170	1/10/2024	7,287.00	H&H Wood Recyclers	
Supplier Payment	Check	16171	1/10/2024	7,825.00	Harper Houf Peterson Righellis Inc	
Supplier Payment	Check	16172	1/10/2024	6,500.00	Hispanic Metropolitan Chamber	
Supplier Payment	Check	16173	1/10/2024	434.96	J-2 Blueprint Supply Co.	
Supplier Payment	Check	16174	1/10/2024	13,239.44	L.N. Curtis & Sons - Remit-To: Supplier L.N. Curtis & Sons	
Supplier Payment	Check	16175	1/10/2024	1,146.58	Lakeside Industries Inc - Remit-To: Lakeside - LB Seattle	
Supplier Payment	Check	16176	1/10/2024	3,492.84	Loomis Armored US LLC - Remit-To: Loomis - Palatine	
Supplier Payment	Check	16177	1/10/2024	281.26	Mallory Safety & Supply LLC	
Supplier Payment	Check	16178	1/10/2024	146.75	Mark IV Enterprises Inc	
Supplier Payment	Check	16179	1/10/2024	26,028.29	Maul Foster & Alongi Inc	
Supplier Payment	Check	16180	1/10/2024	11,279.88	McFarlanes Bark Inc	
Supplier Payment	Check	16181	1/10/2024	59,811.76	Municipal Emergency Services Inc - Remit-To: Municipal Emergency Services - Chicago	
Supplier Payment	Check	16182	1/10/2024	59,271.16	Northside Ford Truck Sales, Inc	
Supplier Payment	Check	16183	1/10/2024	12,942.91	Northwest Natural Gas Company - Remit-To: NW Natural - Portland	
Supplier Payment	Check	16184	1/10/2024	7,710.24	Northwest Staffing Resources Inc - Remit-To: Northwest Staffing Resources	
Supplier Payment	Check	16185	1/10/2024	2,074.00	Oldcastle Precast Inc	
Supplier Payment	Check	16186	1/10/2024	868.84	One Call Concepts Inc	
Supplier Payment	Check	16187	1/10/2024	165.51	Pacific Northwest Pollution Prevention Resources Center	
Supplier Payment	Check	16188	1/10/2024	18,425.92	PPC Solutions Inc	
Supplier Payment	Check	16189	1/10/2024	2,250.00	Public Safety Testing Inc	
Supplier Payment	Check	16190	1/10/2024	15,903.48	Raimi & Associates, Inc.	
Supplier Payment	Check	16191	1/10/2024	5,394.00	Rapid Response Bio Clean Inc.	
Supplier Payment	Check	16192	1/10/2024	9,593.86	S&B Inc	
Supplier Payment	Check	16193	1/10/2024	884.15	Shrums Pest Control	
Supplier Payment	Check	16194	1/10/2024	298.03	Software House International SHI - Remit-To: SHI - Dallas	
Supplier Payment	Check	16195	1/10/2024	4,400.00	Sonar Insights, LLC	
Supplier Payment	Check	16196	1/10/2024	13.48	State of Oregon Department of Transportation - Remit-To: OR DMV - Salem	
Supplier Payment	Check	16197	1/10/2024	165.49	State of Washington Department of Transportation	
Supplier Payment	Check	16198	1/10/2024	3,957.03	Sunbelt Controls Inc - Remit-To: Sunbelt Controls - Pasadena	
Supplier Payment	Check	16199	1/10/2024	7,356.82	SuperTrees Inc	
Supplier Payment	Check	16200	1/10/2024	1,954.00	Terraphase Engineering Inc	
Supplier Payment	Check	16201	1/10/2024	1,350.60	Transunion Risk & Alternative Data Solutions Inc	
Supplier Payment	Check	16202	1/10/2024	5,355.00	Triangle Resources Inc	
Supplier Payment	Check	16203	1/10/2024	516.13	United States Dosimetry Technology Inc	
Supplier Payment	Check	16204	1/10/2024	500.00	United States Postal Service - Remit-To: United States Postal Service Caples	
Supplier Payment	Check	16205	1/10/2024	3,207.36	Vancouver Farmers Market Association	
Supplier Payment	Check	16206	1/10/2024	190.00	Vancouver Granite Works Inc	
Supplier Payment	Check	16207	1/10/2024	24,794.30	Vanquish Investment Group	
Supplier Payment	Check	16208	1/10/2024	5,775.10	Waldron & Company Inc	

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Supplier Payment	Check	16209	1/10/2024	100.00	Washington Association of Telecommunications Officers and Advisors (WATOA)	
Supplier Payment	Check	16210	1/10/2024	53,185.07	Waste Connections of Washington - Remit-To: Waste Connections - Vancouver	
Supplier Payment	Check	16211	1/10/2024	5,737.96	Western Systems Inc	
Customer Refund	Check	16212	1/10/2024	56.00	MYKHAILO STANKANYNETS	Overpayment of completed Diversion contract.
Miscellaneous Payment	Check	16213	1/10/2024	13,151.60	AAA Septic Service, LLC	13816 NE 35th Cir - Klem & Stein - Invoice # 18-26000
Miscellaneous Payment	Check	16214	1/10/2024	56.00	Andrew Giesy	Refund parking payment made in error for multiple days. Lot 18 pay station #9
Miscellaneous Payment	Check	16215	1/10/2024	200.00	Angie Sineth	Establish Change Fund
Miscellaneous Payment	Check	16216	1/10/2024	250.00	Chrissy Chronert	Establish Change Fund
Miscellaneous Payment	Check	16217	1/10/2024	179.09	Evergreen School District	ENG-83901 (jobsite: 14300 NE 18th St / 1 of 2)
Miscellaneous Payment	Check	16218	1/10/2024	120.00	Fircrest Neighborhood Association	2023 RecycleU
Miscellaneous Payment	Check	16219	1/10/2024	12,619.20	Ginn Group	LUP-83498 (Parcel # 986027995)
Miscellaneous Payment	Check	16220	1/10/2024	115.00	Gordon Brazington	Refunding duplicate Jan 2024 Lot 18 parking permit payment
Miscellaneous Payment	Check	16221	1/10/2024	1,086.82	Interstate Roofing Inc	CMI-340558 (jobsite: 12302 NE Fourth Plain Blvd)
Miscellaneous Payment	Check	16222	1/10/2024	120.00	Lewis & Clark Woods Neighborhood Association	2023 RecycleU
Miscellaneous Payment	Check	16223	1/10/2024	6,425.00	Marita Sempio Sequences Graphics	Refund of Senior Messenger donations received after cutoff
Miscellaneous Payment	Check	16224	1/10/2024	10.06	Mark S. Peterson	SCIP Refund - overpayment loan#6000556
Miscellaneous Payment	Check	16225	1/10/2024	76.84	MD Electrical Services	MPE-347361 (jobsite: 1710 SE 158th Ave)
Miscellaneous Payment	Check	16226	1/10/2024	2,259.12	Peter Schrater	REIMBURSEMENT 2023
Miscellaneous Payment	Check	16227	1/10/2024	12.26	Professional Credit Service	Negative Trust Statement 12-17-2023 interest refund
Miscellaneous Payment	Check	16228	1/10/2024	4,309.00	State of Washington State Treasurer	4th Qtr 2023 A8 Form
			Check	3,097,214.52		
Expense Payment	Direct Deposit	EFT-00227618	1/4/2024	159.89	Christel Nelson	Employee Reimbursement
Expense Payment	Direct Deposit	EFT-00227619	1/4/2024	230.00	Chad Thurman	Employee Reimbursement
Expense Payment	Direct Deposit	EFT-00227620	1/4/2024	165.21	Michael Steuben	Employee Reimbursement
Expense Payment	Direct Deposit	EFT-00227621	1/4/2024	30.00	Steven Forgette	Employee Reimbursement
Expense Payment	Direct Deposit	EFT-00227622	1/4/2024	737.13	Matthew Thierfelder	Employee Reimbursement
Expense Payment	Direct Deposit	EFT-00227623	1/4/2024	47.00	Anne McEnerny-Ogle	Employee Reimbursement
Expense Payment	Direct Deposit	EFT-00227624	1/4/2024	125.00	Norman Ballhorn	Employee Reimbursement
Expense Payment	Direct Deposit	EFT-00227625	1/4/2024	0.69	Rick Lagerquist	Employee Reimbursement
Expense Payment	Direct Deposit	EFT-00227626	1/4/2024	185.50	Kate Drennan	Employee Reimbursement
Expense Payment	Direct Deposit	EFT-00227627	1/4/2024	501.34	Tyler Dawson	Employee Reimbursement
Expense Payment	Direct Deposit	EFT-00229517	1/11/2024	250.00	Jeremiah Jones	Employee Reimbursement
Expense Payment	Direct Deposit	EFT-00229518	1/11/2024	88.74	Rian Stein	Employee Reimbursement
Expense Payment	Direct Deposit	EFT-00229519	1/11/2024	130.01	Tim Higgins	Employee Reimbursement
Cash Advance Payment	Direct Deposit	EFT-00229520	1/11/2024	181.13	Anne McEnerny-Ogle	Travel Advance
Expense Payment	Direct Deposit	EFT-00229521	1/11/2024	494.87	Jason Ayers	Employee Reimbursement
Expense Payment	Direct Deposit	EFT-00229522	1/11/2024	217.35	Jay Arvidson	Employee Reimbursement
Expense Payment	Direct Deposit	EFT-00229523	1/11/2024	25.37	Patrick Moore	Employee Reimbursement
Expense Payment	Direct Deposit	EFT-00229524	1/11/2024	157.00	Joshua Potter	Employee Reimbursement
Expense Payment	Direct Deposit	EFT-00229525	1/11/2024	173.11	Mike McDonald	Employee Reimbursement
Expense Payment	Direct Deposit	EFT-00229526	1/11/2024	104.00	John Sexson	Employee Reimbursement
Expense Payment	Direct Deposit	EFT-00229527	1/11/2024	170.30	Tierney Ringnald	Employee Reimbursement
Expense Payment	Direct Deposit	EFT-00229528	1/11/2024	161.95	Fernando Marmolejo	Employee Reimbursement
Expense Payment	Direct Deposit	EFT-00229529	1/11/2024	250.00	James Rayner	Employee Reimbursement

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Expense Payment	Direct Deposit	EFT-00229530	1/11/2024	34.98	Philip Lavine	Employee Reimbursement
Expense Payment	Direct Deposit	EFT-00229531	1/11/2024	170.15	Adam Gibson	Employee Reimbursement
Expense Payment	Direct Deposit	EFT-00229532	1/11/2024	243.88	Jason Kitterman	Employee Reimbursement
Expense Payment	Direct Deposit	EFT-00229533	1/11/2024	171.00	Nicholas Kujava	Employee Reimbursement
Expense Payment	Direct Deposit	EFT-00229534	1/11/2024	230.00	Brandon Osborn	Employee Reimbursement
Expense Payment	Direct Deposit	EFT-00229535	1/11/2024	152.13	Gregory Straub	Employee Reimbursement
Expense Payment	Direct Deposit	EFT-00229536	1/11/2024	168.00	Eric Giacchino	Employee Reimbursement
Expense Payment	Direct Deposit	EFT-00229537	1/11/2024	185.00	Pennie McCarty	Employee Reimbursement
Expense Payment	Direct Deposit	EFT-00229538	1/11/2024	200.00	Gage Harrah	Employee Reimbursement
Expense Payment	Direct Deposit	EFT-00229539	1/11/2024	166.45	Ryan Laddusaw	Employee Reimbursement
Expense Payment	Direct Deposit	EFT-00229540	1/11/2024	290.00	Sky Greig	Employee Reimbursement
Expense Payment	Direct Deposit	EFT-00229541	1/11/2024	88.74	Nathanael Bambilla	Employee Reimbursement
			Direct Deposit	6,685.92		
Supplier Payment	EFT	EFT-00227628	1/4/2024	971.25	Allegiance Benefit Plan Management Inc - Remit-To: Pensioners	
Supplier Payment	EFT	EFT-00227629	1/4/2024	17,734.00	Mead and Hunt Inc	
Supplier Payment	EFT	EFT-00227630	1/4/2024	5,525.00	JCI Jones Chemicals, Inc.	
Supplier Payment	EFT	EFT-00227631	1/4/2024	1,820.00	Brad Piesch Aggressive Enterprises, Inc	
Supplier Payment	EFT	EFT-00227632	1/4/2024	5,857.19	New Life Friends Church	
Supplier Payment	EFT	EFT-00227633	1/4/2024	16,163.04	Tapani Inc	
Supplier Payment	EFT	EFT-00227634	1/4/2024	24,550.70	Lynn K Wittwer MD PC	
Supplier Payment	EFT	EFT-00227635	1/4/2024	6,329.50	PBS Engineering and Environmental Inc	
Supplier Payment	EFT	EFT-00227636	1/4/2024	9,670.49	Evoqua Water Technologies LLC	
Supplier Payment	EFT	EFT-00227637	1/4/2024	271.75	George Elevator Service LLC	
Supplier Payment	EFT	EFT-00227638	1/4/2024	394,933.64	Mackay Sposito Inc	
Supplier Payment	EFT	EFT-00227639	1/4/2024	214,702.05	Share Inc	
Supplier Payment	EFT	EFT-00227640	1/4/2024	240.00	Rotschy Inc	
Supplier Payment	EFT	EFT-00227641	1/4/2024	171,082.93	SDB Inc	
Supplier Payment	EFT	EFT-00227642	1/4/2024	12,632.90	Jacobs Engineering Group Inc	
Supplier Payment	EFT	EFT-00227643	1/4/2024	6,322.50	Environmental Science Associates	
Supplier Payment	EFT	EFT-00227644	1/4/2024	14,992.00	Universal Field Services Inc	
Supplier Payment	EFT	EFT-00227645	1/4/2024	7,373.38	YWCA Clark County	
Supplier Payment	EFT	EFT-00227646	1/4/2024	6,787.50	CBG Communications Inc	
Supplier Payment	EFT	EFT-00227647	1/4/2024	7,700.14	Halbert Construction Services LLC	
Supplier Payment	EFT	EFT-00227648	1/4/2024	10,761.50	Thrive2Survive	
Supplier Payment	EFT	EFT-00227649	1/4/2024	114.11	Praxair Distribution Inc	
Supplier Payment	EFT	EFT-00227650	1/4/2024	3,578.77	Boys and Girls Clubs of Southwest Washington	
Supplier Payment	EFT	EFT-00227651	1/4/2024	239.14	Distinctive Landscape LLC	
Supplier Payment	EFT	EFT-00227652	1/4/2024	4,079.93	Restored and Revived - Remit-To: Restored and Revived	
Supplier Payment	EFT	EFT-00227653	1/4/2024	10,758.28	Wapiti NW LLC	
Supplier Payment	EFT	EFT-00227654	1/4/2024	3,350.00	Brown and Caldwell - Remit-To: Brown & Caldwell - San Francisco	
Supplier Payment	EFT	EFT-00227655	1/4/2024	84.00	Sonic Boom Wellness LLC	
Supplier Payment	EFT	EFT-00227656	1/4/2024	43,826.36	Council for the Homeless	
Supplier Payment	EFT	EFT-00227657	1/4/2024	28,016.00	Liberty Mutual Group Inc.	
Supplier Payment	EFT	EFT-00227658	1/4/2024	54,653.80	Pacific Landscape Services Inc	
Supplier Payment	EFT	EFT-00227659	1/4/2024	5,667.04	Lifeline Connections	
Supplier Payment	EFT	EFT-00227660	1/4/2024	2,073.19	Harrys Key Service Inc	
Supplier Payment	EFT	EFT-00229512	1/10/2024	16,198.63	Allegiance Benefit Plan Management Inc	
Supplier Payment	EFT	EFT-00229513	1/10/2024	12,664.92	Vancouver Police Officer Guild	
Supplier Payment	EFT	EFT-00229514	1/10/2024	29,820.86	IAFF Local #452	
Supplier Payment	EFT	EFT-00229515	1/10/2024	1,297.00	Vancouver Command Guild	
Supplier Payment	EFT	EFT-00229516	1/10/2024	144.43	Legal Shield	
Supplier Payment	EFT	EFT-00229542	1/11/2024	6,800.00	Thrive2Survive	
Supplier Payment	EFT	EFT-00229543	1/11/2024	6,689.34	Lifeline Connections	
Supplier Payment	EFT	EFT-00229544	1/11/2024	55,797.60	Brown and Caldwell - Remit-To: Brown & Caldwell - San Francisco	
Supplier Payment	EFT	EFT-00229545	1/11/2024	521.08	Praxair Distribution Inc	
Supplier Payment	EFT	EFT-00229546	1/11/2024	2,287.96	Canopy Wellbeing	
Supplier Payment	EFT	EFT-00229547	1/11/2024	3,013.80	Consolidated Supply Co	
Supplier Payment	EFT	EFT-00229548	1/11/2024	735.00	Brad Piesch Aggressive Enterprises, Inc	

*Please contact Procurement Services if you would like to review the justification for EMERGENCY procurement.

INVOICE PAYMENTS REPORT

Payment Category	Payment Type	Transaction Reference	Payment Date	Payment Amount	Payment Payee	Memo
Supplier Payment	EFT	EFT-00229549	1/11/2024	328,514.59	Operations Management International Inc	
Supplier Payment	EFT	EFT-00229550	1/11/2024	412.87	Retail Lockbox Inc	
Supplier Payment	EFT	EFT-00229551	1/11/2024	16,704.86	Global Software	
Supplier Payment	EFT	EFT-00229552	1/11/2024	25,467.51	Meteredeaders LLC	
Supplier Payment	EFT	EFT-00229553	1/11/2024	49,878.12	Jacobs Engineering Group Inc	
Supplier Payment	EFT	EFT-00229554	1/11/2024	250,702.10	Halbert Construction Services LLC	
Supplier Payment	EFT	EFT-00229555	1/11/2024	40.81	Ziply Fiber	
Supplier Payment	EFT	EFT-00229556	1/11/2024	5,521.19	JH Kelly, LLC	
Supplier Payment	EFT	EFT-00229557	1/11/2024	5,283.48	CBG Communications Inc	
Supplier Payment	EFT	EFT-00229558	1/11/2024	7,734.55	Distinctive Landscape LLC	
Supplier Payment	EFT	EFT-00229559	1/11/2024	22,749.84	Live Love Outreach	
Supplier Payment	EFT	EFT-00229560	1/11/2024	185,077.45	Doolittle Acquisitions	
Supplier Payment	EFT	EFT-00229561	1/11/2024	759.39	Workforce Southwest Washington	
Supplier Payment	EFT	EFT-00229562	1/11/2024	25,731.68	Micro Enterprise Services of Oregon	
Supplier Payment	EFT	EFT-00229563	1/11/2024	29,794.69	Share Inc	
Supplier Payment	EFT	EFT-00229564	1/11/2024	187,145.53	SDB Inc	
Supplier Payment	EFT	EFT-00229565	1/11/2024	19,806.00	Salazar Architect Inc	
Supplier Payment	EFT	EFT-00229566	1/11/2024	614.28	Purple Communications Inc	
Supplier Payment	EFT	EFT-00229567	1/11/2024	6,453.75	Del Sol Inc	
Supplier Payment	EFT	EFT-00229568	1/11/2024	6,901.80	New Life Friends Church	
Supplier Payment	EFT	EFT-00229569	1/11/2024	4,446.16	Waxie's Enterprises Inc	
Supplier Payment	EFT	EFT-00229570	1/11/2024	8,549.36	Columbia West Engineering	
Supplier Payment	EFT	EFT-00229571	1/11/2024	604.00	Rotschy Inc	
Supplier Payment	EFT	EFT-00229572	1/11/2024	1,760.84	Accurate Investigation Services	
			EFT	2,419,487.55		
Supplier Payment	Manual Wire		1/2/2024	15,763.62	Washington Dental Service	
Supplier Payment	Manual Wire		1/2/2024	276,002.60	Blue Cross Blue Shield of Oregon	
Supplier Payment	Manual Wire		1/2/2024	3,163.66	Internal Revenue Service	
Supplier Payment	Manual Wire		1/3/2024	21,846.47	United States Postal Service	
Supplier Payment	Manual Wire		1/3/2024	61,894.95	Liberty Mutual Group Inc.	
Supplier Payment	Manual Wire		1/3/2024	51,709.44	JP Morgan Chase Bank, N.A.	
Supplier Payment	Manual Wire		1/4/2024	890,344.68	State of Washington Department of Retirement Systems (DRS)	
Supplier Payment	Manual Wire		1/5/2024	11,255.90	VSP Vision Care Inc	
Supplier Payment	Manual Wire		1/5/2024	393,555.64	Kaiser Permanente - Remit To: Kaiser Permanente	
Supplier Payment	Manual Wire		1/5/2024	209,887.74	Western States Health & Welfare Trust	
Supplier Payment	Manual Wire		1/5/2024	536,487.30	Vancouver Firefighters Union Health & Welfare Trust	
Supplier Payment	Manual Wire		1/5/2024	4,578.00	State of Washington Department of Licensing - Remit-To: DOL - Seattle Remit	
Supplier Payment	Manual Wire		1/8/2024	308,355.16	Blue Cross Blue Shield of Oregon	
Supplier Payment	Manual Wire		1/8/2024	15,100.55	Washington Dental Service	
Supplier Payment	Manual Wire		1/9/2024	210.55	Keybank National Association	
Supplier Payment	Manual Wire		1/10/2024	31,215.00	Vancouver Firefighters Union Health & Welfare Trust	
Supplier Payment	Manual Wire		1/10/2024	21,400.00	Washington State Firefighters	
Supplier Payment	Manual Wire		1/10/2024	5,555.08	Washington SDU	
Supplier Payment	Manual Wire		1/10/2024	286,640.18	International City Management Association Retirement Corporation	
Supplier Payment	Manual Wire		1/10/2024	22,072.24	Western States Health & Welfare Trust	
Supplier Payment	Manual Wire		1/10/2024	654.00	Oregon SDU	
Supplier Payment	Manual Wire		1/10/2024	58,378.13	State of Washington Department of Retirement Systems (DRS)	
Supplier Payment	Manual Wire		1/11/2024	1,192,223.68	Internal Revenue Service	
Supplier Payment	Manual Wire		1/12/2024	884,025.70	State of Washington Department of Retirement Systems (DRS)	
Supplier Payment	Manual Wire		1/12/2024	446,004.44	Bank Of America N.A. - Remit-To: Charlotte NC	
Supplier Payment	Manual Wire		1/12/2024	79,776.55	Liberty Mutual Group Inc.	
Supplier Payment	Manual Wire		1/12/2024	19,336.60	Washington Dental Service	
Supplier Payment	Manual Wire		1/12/2024	213,289.27	Blue Cross Blue Shield of Oregon	
Supplier Payment	Manual Wire		1/12/2024	44,286.43	State of Oregon Department of Revenue	

*Please contact Procurement Services if you would like to review the justification for EMERGENCY procurement.

INVOICE PAYMENTS REPORT

<u>Payment Category</u>	<u>Payment Type</u>	<u>Transaction Reference</u>	<u>Payment Date</u>	<u>Payment Amount</u>	<u>Payment Payee</u>	<u>Memo</u>
Procurement Card Payment	Manual Wire		1/12/2024	1,111,127.95	CoV JPM Procurement Card	
	Manual Wire		Manual Wire	7,216,141.51		
			Checks	3,097,214.52		
			Direct Deposit	6,685.92		
			EFT	2,419,487.55		
			1/8/2024	406,613.69	City Payments	Posted 01-01-24 to 01-07-24
			1/16/2024	4,082.40	City Payments	Posted 01-08-24 to 01-14-24
			Hansen Total	410,696.09		
			1/8/2024	1,796.75	Miscellaneous	Parks Class Refunds FCC 01-01-24 to 01-07-24
			1/8/2024	1,230.00	Miscellaneous	Parks Class Refunds MCC 01-01-24 to 01-07-24
			1/16/2024	808.00	Miscellaneous	Parks Class Refunds FCC 01-08-24 to 01-14-24
			1/16/2024	1,564.00	Miscellaneous	Parks Class Refunds MCC 01-08-24 to 01-14-24
			VISA Total	5,398.75		
			Payroll Total	4,019,004.89		
			GRAND TOTAL	17,174,629.23		

City of Vancouver
Payroll Council Report
January 1, 2024 - January 14, 2024

Check No.	Date	Explanation	Amount
1843 - 1859	01/10/24	January 10th Payroll	\$ 8,470.14
227699 - 229511	01/10/24	January 10th Direct Deposits	\$ 4,010,534.75

\$ 4,019,004.89

Staff Report: 009-24

TO: Mayor and City Council

FROM: Eric Holmes, City Manager

DATE: 1/22/2024

SUBJECT Fircrest Meadows Planned Development

Key Points

- The applicant, Ginn Development Group, requests approval of a 57-lot planned development, subdivision and zone change from R-6 to R-9 in the Fircrest Neighborhood south of 18th Street, east of NE 121st Avenue.
- Per VMC 20.210-1 planned developments and zone changes to the next highest zone require a Type IV process and recommendation by the hearing examiner to the City Council for final approval. Planned developments provide flexibility for innovative planning practices that result in well-designed, efficient and functional urban environments.
- The proposed development includes the preservation of existing trees on site and over an acre of open space. The City Hearing Examiner, following a duly noticed public hearing, has determined that the proposed development will meet all applicable approval criteria and is recommending that City Council approve the planned development, subdivision and zone change.
- City Council may approve the application, add conditions of approval, or deny the application as the final decision maker. The decision by City Council is appealable to Superior Court.

Strategic Plan Alignment

Vibrant and Distinct Neighborhoods – a variety of accessible places and spaces.

Present Situation

The applicant requests approval of a proposed planned development consisting of a 57-lot single-family subdivision and zone change from R-6 to R-9 on a 7.46-acre parcel.

Planned developments allow for flexibility in certain development standards in order to promote creativity in design and efficient use of land; increase economic feasibility; and preserve existing landscape features and amenities. The proposed planned development includes over an acre of open space, preservation of existing trees, and an innovative lot size arrangement.

Planned developments allow for an increase in density of up to 15%. The proposed development is within the maximum density of the R-9 zone including the 15% density bonus allowed by the

planned development.

Advantage(s)

1. Approval will allow for additional housing units to be constructed.
2. Approval will allow for flexible design and environmental preservation.
3. Approval will allow for development in an area currently served by public utilities.

Disadvantage(s)

There will be additional traffic generated by the development. However, the City has reviewed the traffic impacts that the proposal will generate and determined there is adequate capacity on city streets to accommodate the anticipated increase in traffic.

Budget Impact

None

Prior Council Review

Council has not previously reviewed this development.

Action Requested

On Monday, January 22, 2024, following a quasi-judicial public hearing, approve the ordinance.

Mark Person, Senior Planner, 360-487-7885

ATTACHMENTS:

- ▣ Presentation
- ▣ Ordinance
- ▣ Staff Report Exhibits
- ▣ Staff Report_11-21-23
- ▣ Hearing Examiner Recommendation and Final Order



CITY OF
Vancouver
WASHINGTON

Fircrest Meadows PD, Subdivision and Zone Change

Mark Person

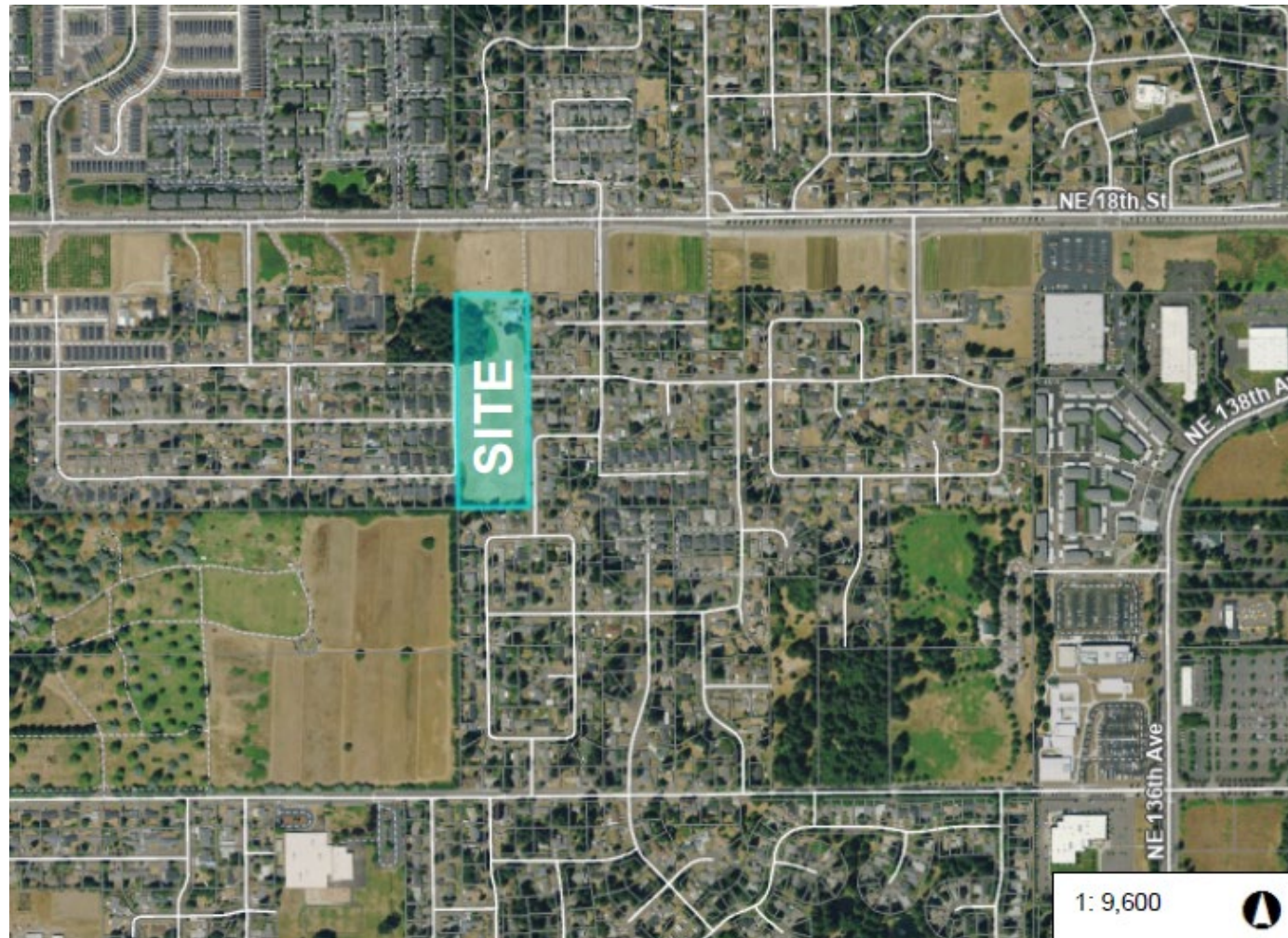
Senior Planner

Community Development

January 22, 2024

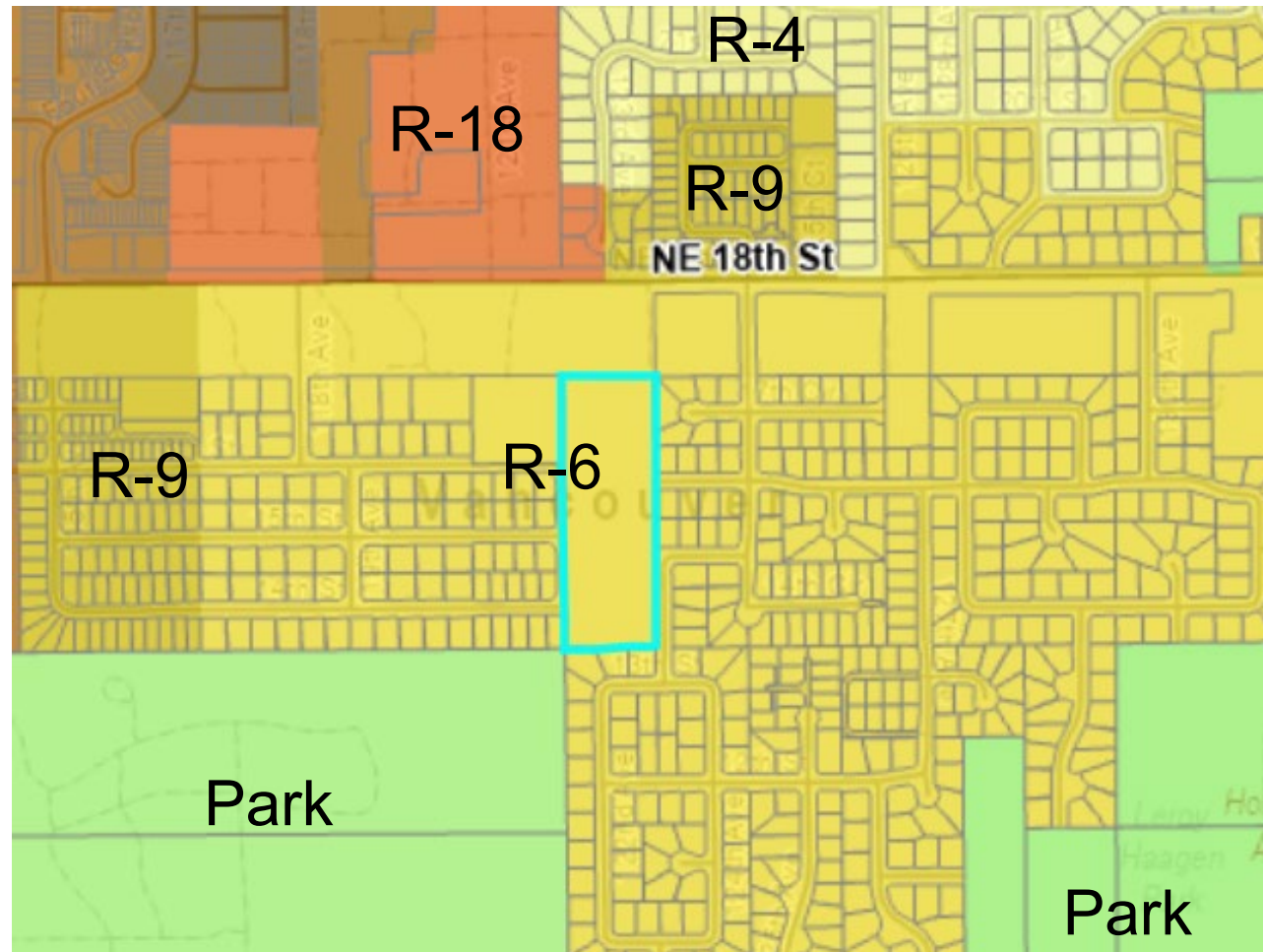
Aerial Photo

Fircrest Meadows 57-lot planned development, subdivision and zone change



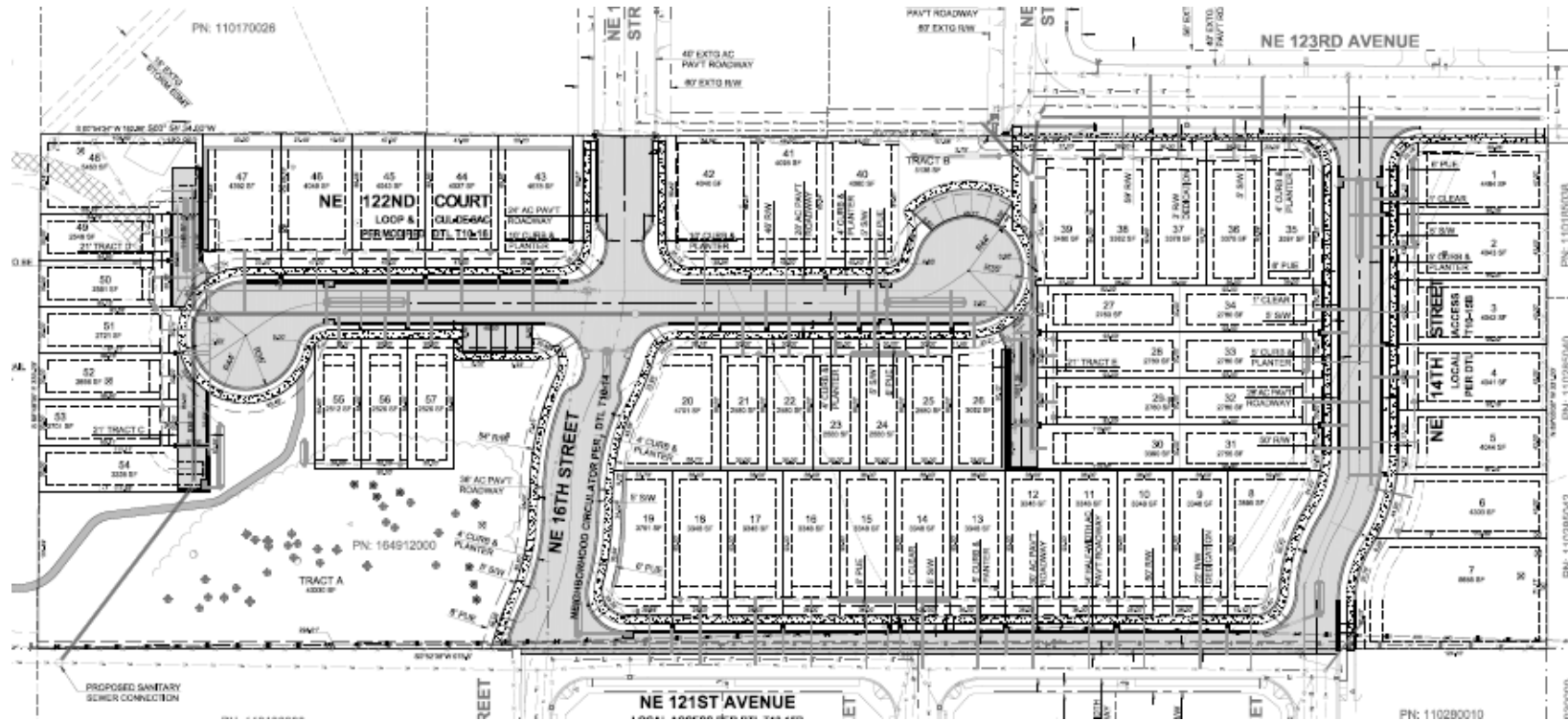
Zoning

Fircrest Meadows 57-lot planned development, subdivision and zone change



Preliminary Plat

Fircrest Meadows 57-lot planned development, subdivision and zone change



Applicable Regulations

Fircrest Meadows 57-lot planned development, subdivision and zone change

Title 20 – Land Use and Development Code

- Planned Developments VMC 20.260
- Zone Change 20.285
- Subdivisions VMC 20.320

Title 11 – Transportation Code

Title 14 – Water, Sewer and Stormwater Codes

Title 16 – Fire Code

Title 17 – Building Code



Thank You - Questions



Mark.person@cityofvancouver.us 360-487-7885



January/8/2024 (Date of First Reading)
January/22/2024 (Date of Public Hearing)

ORDINANCE NO. M- [Ordinance Number]

AN ORDINANCE rendering findings and issuing a decision on a proposed concept development plan for the Fircrest Meadows Planned Development and Zone Change; and providing for severability and an effective date.

WHEREAS, on November 21, 2023, a hearing was held before the Vancouver Hearings Examiner regarding the approval of the concept development plan for the Fircrest Meadows Planned Development and Zone Change.

WHEREAS, on December 5, 2023, the Vancouver Hearing Examiner recommended approval of the concept development plan for the Fircrest Meadows Planned Development and Zone Change under File PRJ-168703, LUP-83548; and

WHEREAS, the concept development plan is consistent with the Comprehensive Plan and more consistent with the Vancouver Strategic Plan by allowing for a higher density of housing, which would better address the City's housing shortage. The R-9 zone is compatible with the current Comprehensive Plan designation.

NOW, THEREFORE,

BE IT ORDAINED BY THE CITY OF VANCOUVER:

Section 1. Findings.

ORDINANCE - 1

A. The Vancouver Hearing Examiner has found that all of the following criteria have been met, with conditions, as required by VMC 20.260.050:

1. Content. The concept plan contains all of the components required in Section 20.260.070. Compliance with all applicable standards. The proposed development and uses comply with all applicable standards of the Title, except where adjustments are being approved as part of the concept plan application, pursuant to Section 20.260.030(D)(2).
2. Architectural and site design. The proposed development demonstrates the use of innovative, aesthetic, energy-efficient and environmentally-friendly design and materials.
3. Transportation system capacity. There is either sufficient capacity in the transportation system to safely support the development proposed in all future phases or there will be adequate capacity by the time each phase of development is completed.
4. Availability of public services. There is either sufficient capacity within public services such as water supply, police and fire services, and sanitary waste and storm water disposal, to adequately serve the development proposed in all future phases, or there will be adequate capacity available by the time each phase of development is completed.
5. Protection of designated resources. City-designated resources such as historic landmarks, significant trees and sensitive natural resources are protected in compliance with the standards in this and other Titles of the VMC.

6. Compatibility with adjacent uses. The concept plan contains design, landscaping, parking, traffic management and multi-modal transportation elements that limit conflicts between the planned development and adjacent uses. If zoning districts are shifted per Section 20.260.020(C) VMC, there shall be a demonstration that the reconfiguration of uses is compatible with surrounding uses by means of appropriate setbacks, design features or other techniques.
 7. Mitigation of off-site impacts. All potential off-site impacts including litter, noise, shading, glare and traffic, will be identified and mitigated to the extent practicable.
- B. The information for the concept development plan has been submitted and approved, as required by VMC 20.260.070.
- C. The concept development plan of the Fircrest Meadows Planned Development and Zone Chagne is consistent with the Comprehensive Plan and more consistent with the Vancouver Strategic Plan by allowing for a higher density of housing, which would better address the City's housing shortage. The R-9 zone is compatible with the current Comprehensive Plan designation..
- D. City Council hereby adopts the foregoing findings and the findings of the Vancouver Hearings Examiner contained in the Findings, Conclusions, and Recommendation, which are hereby incorporated by reference, as its own.

Section 2. Legal Description.

The legal description of the lands referred to in this ordinance is as follows:

Parcel 164912000 located in a portion of the northeast quarter of Section 27, Township 2 North, Range 2 East, Willamette Meridian, and Clark County, Washington.

Section 3. Approval Granted.

Based upon the foregoing findings, as well as the findings contained in Staff Report No. PRJ-168703/LUP-83548, which are hereby incorporated by reference, approval of the concept development plan for the Fircrest Meadows Planned Development and Zone Change is hereby granted, with the conditions outlined in the Hearing Examiner's Findings, Conclusions, and Recommendation, incorporated above by reference and the additional conditions outlined above.

Section 4. Severability.

If any provision of this ordinance or its application to any person or circumstance is held invalid, the remainder or the application of the provision to other persons or circumstances is not affected.

Section 5. Effective Date.

This ordinance shall take effect fifteen (15) days after passage and publication.

DATE OF FINAL PASSAGE by the Vancouver City Council: _____

SIGNED this _____ day of _____, 2024.

Anne McEnery-Ogle, Mayor

Attest:

Natasha Ramras, City Clerk

Approved as to form:

Jonathan Young, City Attorney

ORDINANCE - 4

SUMMARY

ORDINANCE NO. _____

AN ORDINANCE rendering findings and issuing a decision on a proposed concept development plan for the Fircrest Meadows Planned Development and Zone Change; and providing for severability and an effective date. The full text of this ordinance will be mailed upon request. Contact Raelyn McJilton, Records Officer at 487-8711, or via www.cityofvancouver.us (Go to City Government and Public Records).

ORDINANCE - 5

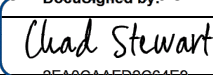


Planning Permit Application

LAND USE PRELIMINARY APPLICATION (LUP)

415 W 6th ST ~ Vancouver, WA 98660, P.O. Box 1995 ~ Vancouver, WA 98668, Phone (360) 487-7800

Email completed application to plans@cityofvancouver.us

REVIEW TYPE (Check one review and one process type)					
Review Type: ☐ Type I ☐ Type II ☐ Type III ☒ Type IV ☐ Tree Removal Only (nuisance or hazard)					
Process Type: ☒ Standard ☐ Streamline (Type I & II applications only. Pre-submittal Meeting required. By selecting streamline process, applicant waives all land use review timelines in VMC Title 20)					
USE					
☒ Single-Family		☐ Commercial		☐ Multi-family	
		☐ Mixed Use (commercial with multi-family)		☐ Industrial	
☐ Duplex		☐ Wireless Communications Facility (new) see VMC 20.890			
PROJECT INFORMATION					
Site Acres: 7.45		Disturbed Acres:		Zoning: R-9	
		Sewer: ☐ Septic ☒ Public		Water: ☐ Well ☒ Public	
Proposed # of Lots: 57		Proposed Dwelling Units:			
Non-Residential Bldg. Square Footage:		Ground Floor:		Total of All Upper Floors:	
Hard Surface Area Square Feet - New:		Replacement:		Total:	
PROJECT NAME AND LOCATION					
Proposed project name: Fircrest Meadows					
Project site address: 12301 NE 18th Street				Parcel #(s): 164912000	
PROJECT DESCRIPTION					
(Briefly describe the proposed project. Provide more detail in project narrative)					
57 lot Planned Unit Development					
PRIMARY APPLICANT			CONTACT		
Business Name: Ginn Group			Business Name: PLS Engineering		
Contact Name: Chad Stewart			Contact Name: Travis Johnson		
Address: 502 NE 72nd St.			Address: 604 W Evergreen Blvd		
City/State/Zip: Vancouver, WA 98665			City/State/Zip: Vancouver, WA 98660		
Phone: (360) 608-6026			Phone: (360) 944-6519		
Email: chad@ginngrp.com			Email: pm@plsengineering.com		
ELECTRONIC PLANS SUBMITTER (required)			OWNER		
(responsible for ePlans uploading and correspondence)			(attached additional sheets for multiple owners)		
Name: PLS Engineering			Name: Roger Bradstreet		
Address: 604 W Evergreen Blvd			Address: 12301 NE 18th Street		
City/State/Zip: Vancouver, WA 98660			City/State/Zip: Vancouver, WA 98684		
Email (required): pm@plsengineering.com			Email: rbbradstreet@comcast.net		
Phone: (360) 944-6519			Phone:		
ONLINE PAYMENT					
Existing ePermits User Name: projects@ginndevelopment.com				Request an ePermits Account	
REQUIRED SIGNATURES					
As evidenced by my signature below, I/we agree that City of Vancouver staff has my/our full permission to enter upon the subject property at any reasonable time to consider the merits of the application, to take photographs and to post public notices.					
Applicant Signature: 		DocuSigned by:		Date: 7/10/2023	
Property Owner or Owner's Authorized Agent Signature: 				Date: 7/11/2023	

LUP APPLICATION SUB TYPES

Please check all applicable applications and information where necessary

☐ Airport Height Overlay District
☒ Archaeological Pre-determination
☐ Binding Site Plan ☐ Conceptual (without Site Plan Review) ☐ Detailed (with Site Plan Review)
☐ Boundary Line Adjustment # of lots to be adjusted:
☐ Comprehensive Plan Amendment (Including Zone Map Amendment with Comp Plan)
☐ Conditional Use Permit ☐ Initial (Type III) (Comm. Centers, Group Meal Service, Shelters) ☐ Major Modification (Type III) ☐ Minor Modification (Type I) Engineering Review Required ☐ Yes ☐ No
☐ Covenant Release
☒ Critical Areas (not used when in Shoreline) Check one → ☐ Duplex/Single Family ☐ All Other Uses Check one → ☐ Permit ☐ Statement of Exemption (No Fee) Check the applicable critical area(s) ☒ Fish & Wildlife ☐ Frequently Flooded ☐ Geological Hazards ☐ Wetlands ☐ Minor Exception (not common) ☐ Reasonable Use (not common)
☐ Design Review ☐ Exterior Modification Only ☐ All Others
☐ Development Agreement ☐ Initial ☐ Modification ☐ Extension
☐ Historic Preservation ☐ Modification ☐ Registry ☐ Historic Preservation – Special Valuation
☐ Legal Lot Determination # of lots to be reviewed:
☐ Master Plan (Mixed Use) ☐ Public Facilities MP ☐ Conceptual (without Site Plan Review) ☐ Detailed (with Site Plan Review) ☐ Hybrid (Some areas with Site Plan Review)
☒ Planned Development ☐ Commercial ☒ Residential ☐ Mixed Use* *Ground Floor SF: Upper Floor SF:
☐ Plat Alteration
☐ Post Decision Review/Modification (Includes Planned Development/Master Plan Modifications) ☐ Type I ☐ Type II ☐ Type III Engineering Review Required ☐ Yes ☐ No

☒ Road Modification ☒ Minor ☐ Technical ☐ Major Submitted: ☒ Before ☐ After Decision (submitted after decision is not common)
☐ Shoreline Permits ☐ Substantial Development Permit ☐ Shoreline Permit - Statement of Exemption (no fee) ☐ Shoreline Conditional Use ☐ Shoreline Variance
☐ Site Plan Review ☐ Type I ☐ Type II <u>Check Use Type below</u> ☐ Residential ☐ Non-Residential ☐ Qualified Planned Action ☐ Unoccupied Commercial/Utility Structure ☐ Commercial Pad ☐ Land Extensive Stormwater ☐ Yes ☐ No Transportation ☐ Yes ☐ No
☒ State Environmental Policy Act (SEPA) ☐ Check if for Single-Family Residential house (only) ☐ Residential Site Plan Review (SPR) ☐ Grading Only ☒ Subdivision or Planned Development ☐ Non-Project Actions (not common) ☐ All Other (Includes Comm/Indust SPR) (When more than one applies check All Other)
☒ Subdivision/Short Subdivision ☐ Short Subdivision (2-9 lots) ☒ Subdivision (10+ Lots)
☐ Temporary Use ☐ Commercial/Industrial ☐ Unforeseen Emergency ☐ Seasonal Event ☐ Model Home ☐ Sales Office
☒ Tree Plan Enter Tree Plan Level (1 to 7): 5 (Tree Removal for nuisance or hazard tree(s) is Level 3)
☐ Variance ☐ Check if for Single Family Residential house ☐ Type I - # requested: ☐ Type II - # requested: Stormwater ☐ Yes ☐ No Transportation ☐ Yes ☐ No
☒ Zoning Map Amendment (Not involving Comprehensive Plan Amendment)

PLS

ENGINEERING

PROJECT NARRATIVE FOR FIRCREST MEADOWS

A TYPE IV PLANNED DEVELOPMENT, REZONE, AND SUBDIVISION APPLICATION

Submitted to
THE CITY OF VANCOUVER

**FOR
GINN GROUP
502 NE 72nd Street
Vancouver, WA 98665
(360) 608-6026**

July 2023

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General Information

Owner:

Roger Bradstreet
12301 NE 18th Street
Vancouver, WA 98684
rbbradstreet@comcast.net

Applicant:

Ginn Group
Contact: Chad Stewart
502 NE 72nd St.
Vancouver, WA 98665
(360) 608-6026
chad@ginngrp.com

Project Contacts:

PLS Engineering
Travis Johnson, PE
604 W Evergreen Boulevard
Vancouver, WA 98660
(360) 944-6519
pm@plsengineering.com

Location:	NE ¼ of Section 27, T2N, R2E, WM
Address:	12301 NE 18 th Street, Vancouver, WA
Project Size:	7.46 acres
Zoning:	R-6 with zone change proposal to R-9
Comprehensive Plan:	UL
Current Use:	Single Family Residential
Tax Lot Information:	164912000
School District:	Evergreen
Elementary:	Fircrest
Middle School:	Cascade
High School:	Evergreen
Water District:	Vancouver
Sewer District:	Vancouver
Fire District:	Vancouver Fire
Park District:	C
Case File:	PRJ-168703/PIR-83264
Transportation Impact Fee:	Cascade

Project Description

The Fircrest Meadows project is located at 12301 NE 18th Street (Parcel 164912000) in the City of Vancouver. Spanning 7.46 acres, this site is zoned Low Density Residential (R-6) and is situated south of NE 18th Street and east of 112th Avenue. The northern property line of Fircrest Meadows abuts the BPA overhead powerlines and is surrounded by existing single-family residential homes to the west, east, and south that are also zoned R-6. The subject parcel currently has an existing single-family residence with attached garage.

The need for housing is rapidly increasing within the City of Vancouver, and there continues to be a housing shortage. In response to this, the development of Fircrest Meadows aims to provide new housing supply within the city. The proposed plan is to create 57 individual lots, accommodating single-family detached homes under the City's Planned Development process.

To achieve this vision, a thoughtful increase in density is required, and as such, a zone change from R-6 to R-9 is proposed. This development will offer much-needed housing options for the community and will seamlessly integrate into the established single-family homes surrounding the site.

The development proposal includes lots with a minimum width of 30', a minimum lot depth of 84', and a minimum lot area of 2,500 sf. Larger lots are proposed around the perimeter to reduce perceived impacts of the smaller lots to the nearby neighbors. 14% of the site will be retained as open space for both passive and active recreational uses.

In summary, the development of Fircrest Meadows presents an excellent opportunity to increase housing supply and provide middle-housing in the City of Vancouver. With a thoughtful increase in density and a focus on seamless integration with the surrounding neighborhood, this development will create a balanced and harmonious environment that will benefit the community for years to come.

Transportation and Utilities:

Multiple existing streets will be improved/extended with the proposed development. NE 16th Street will be extended through the site and will meet the standards of a neighborhood circulator. Bulb-outs will be included at the intersection with NE 122nd Court to provide traffic calming along this stretch of roadway. NE 121st Ave and NE 123rd Ave are existing half width street that were constructed along the western and eastern ends of the property. The applicant is proposing to complete the construction of the roadway meeting the standards of a local access roadway. NE 14th Street is proposed to be extended through the site as a local access road. NE 122nd Court is proposed as a local access road with a reduced right-of-way (ROW) width. A road modification request is being submitted regarding the reduced ROW request.

Stormwater runoff from the site will be collected, treated, and routed to infiltration trenches located throughout the site.

Landscape and Critical Areas:

An Oregon white oak is located in the NE corner of the site and is proposed to be retained with site development. There are no proposed impacts to critical areas onsite.

A small portion of the NW corner of the site has slopes that are between fifteen and twenty-five percent. This area is addressed in the geotechnical report and has been found to not be a geological or landslide hazard.

While the site is not within an area of high probability for discovery of archaeological resources, it is over 5 acres in size and therefore requires an archaeological predetermination. An Archaeological Predetermination Report is included with this application.

A Level V Tree Plan and Landscape Plan are submitted with this application demonstrating compliance with code. Most of the existing fir trees are retained in the open space in the NW corner of the site.

Proposal & Code Compliance Discussion

Land Use and Development Code – VMC Title 20

Decision Making Procedures – 20.210

The subdivision is proposed as a planned development and the application will follow a type IV process. The application will be required to follow the timelines for review and approval as indicated in this code section.

Planned Developments – 20.260

Purpose (20.260.010):

The purpose of the planned development provisions as stated in section 20.260.010 are to provide:

- Flexibility that will result in well designed, efficient, and functional urban environments.
- Efficient use of urban land.
- Increase economic feasibility.
- Critical Area resource protection.

The Fircrest Meadows project complies with the purpose of these provision as shown in the discussions below.

Applicability (20.260.020):

Planned developments are allowed in all zoning districts except for park, greenway and natural area districts. Single-family detached residential units are allowed by right within planned developments in the R-9 zone.

Approval Process (20.260.030):

A concurrent planned development review is proposed for this project. Initial approval of a concept plan as discussed in this section is proposed to be concurrently reviewed with the detailed site plan, a zoning map amendment, and a preliminary plat. A Hearings Examiner will be the initial review authority for the planned development and the City Council will be the final authority. A Type IV review is required for this process.

Approval Criteria (20.260.050):

The following is the approval criteria for the proposed planned development:

A. Concept development plan approval criteria:

1. *Content.* The concept plan contains all of the components required in Section 20.260.070. The proposed development and uses comply with all applicable standards of the Title. The

applicant is not proposing any adjustments that are not outright allowed by this planned development process.

2. *Architectural and site design.* The proposed development demonstrates the use of innovative, aesthetic, energy-efficient and environmentally friendly architectural and site design.

- The site design was generally dictated by existing features around and within the site. The adjacent roadways were required to be extended and widened to meet city standards. Most of the onsite trees are also proposed to be retained within an open space at the NW corner of the site. The combination of roadway design and tree retention resulted in an efficient site design that will benefit the public by providing vehicular and pedestrian connections through the site as well as providing open spaces for the community to enjoy.
- The applicant is currently proposing homes that are no larger than 1500 sqft. These smaller homes and the compact subdivision design results in an environmentally friendly development. The smaller homes are planned to maximize functionality without wasted space. Larger homes would be less environmentally friendly due to the additional heating/cooling and energy costs. The subdivision is efficiently planned and compact. Higher density development within urban areas with existing urban services are significantly more environmentally friendly than large-lot subdivisions or development outside of the urban areas. The compact design of the site also limits the impervious surfaces and retains valuable open space within the site.
- Lots 40-47 on the preliminary plat directly abut existing homes in the Sandcastle Heights Subdivision to the east. Lots 1-7 directly abut existing homes in the Evergreen Park Subdivision to the south. These lots have been designed with a wider lot width of 42' - 45', rather than the reduced width of 30', to create a buffer along the perimeter where adjacent single-family homes exist. These homes are also planned to be single level homes which will reduce perceived impacts of the development for adjacent neighbors.
- The proposed homes will be energy efficient. The homes will be served by electricity only – no natural gas will be brought into the development. The smaller sized homes (less than 1,500sf) will result in efficient 3-bedroom floorplans. The applicant generally proposes slab on grade homes with efficient building envelopes and better than industry standard windows. The homes will likely include high efficiency HVAC systems using electric heat pumps with a minimum HSPF rating of 9.5. The project's electric design will account for all homes to have EV chargers, and all garages will be EV charger-ready.

3. *Transportation system capacity.* There is sufficient capacity in the transportation system to safely support the development as proposed. A Traffic Study has been prepared for this site and is included with this application.

4. *Availability of public services.* There is sufficient capacity within public services such as water supply, police and fire services, and sanitary waste and storm water disposal, to adequately serve the development as proposed. Please see the Preliminary Plans for further information.

5. *Protection of designated resources.* There are no historic landmarks. The single critical area onsite (an oregon white oak tree) will be retained and protected.

6. *Compatibility with adjacent uses.* In order to provide a transition of density from adjacent sites and to avoid perceived impacts to adjacent single-story homes, the applicant is proposing the following minimum lot area/widths:

	Minimum lot area (sqft)	Lot area reduction	Lot width (ft)	Lot width reduction	Average lot area (sqft)
Perimeter lots adjacent to existing single level homes	4000	20%	43	5%	4427.0
Perimeter lots adjacent to existing roadways	3333.3	33.3%	36	20%	3661.1
Interior lots or lots adjacent to BPA	2500	50%	30	33.3%	2821.0

Proposed lots 1-7 and 40-47 directly abut existing residences with larger lot sizes and mostly single level homes. The lots will have a minimum 40' lot width with a minimum 4000 sqft lot size and are currently planned to be single level homes. Lots 8-19 and 35-39 are across the road from existing development. Because the roadway already provides a buffer these lots are designed to have a minimum 36' lot width and a 3333 sqft lot area. The remaining lots are internal or adjacent to the BPA right-of-way and will have a minimum 30' lot width and a 2,500 sqft lot area. This transitioning of densities will minimize perceived impacts and result in a compatible design with the existing neighborhood.

7. *Mitigation of off-site impacts.* Potential off-site impacts include noise, shading, glare, parking, and traffic.

- Noise – Construction will occur only during the approved hours according to VMC 7.05.010. At full buildout the general residential noise from the new development is not expected to cause any off-site impacts.
- Shading – The proposed homes are proposed to be well under the 35' height limit and will meet depth standards and setbacks. This will significantly minimize potential shading of adjacent properties. The homes directly adjacent to existing single level homes are also planned to be single level homes.
- Glare – Street lights are proposed on the new streets. These lights will include shielding to prevent excessive lighting of adjacent properties.

- Parking – Ample parking is provided on each lot in addition to common parking areas and on-street parking. The available onsite parking will minimize the need for new residents to park along existing streets away from the proposed development.
- Traffic – While there will be a slight increase in traffic, the existing roadways will continue to operate at acceptable levels and per the traffic report, no off-site mitigation is required. The applicant is proposing to include curb return bulb-outs at the intersection of NE 122nd Court and NE 16th Street as a traffic calming feature along the proposed roadway connection.

B. Adjustment approval criteria:

The applicant is proposing to adjust the lot coverage standards for lots 1-6, and 40-47 to allow for flexibility in the design for potential single-story homes on the lots. The maximum lot coverage is 50% and the applicant is requesting a 10% increase to 55%. This requested increase is only intended to apply to single story homes and would not be applicable to potential 2-story homes.

1. The adjustment(s) is warranted given site conditions and/or characteristics of the design.

Increasing the flexibility for single-level homes on the proposed lots is warranted given the site design. Increasing the flexibility for single-level homes is important given the benefits and reduced impacts that are discussed below.

2. The benefits accruing from the implementation of the adjustment outweigh any potential adverse impacts.

Introducing a mix of housing types will be beneficial to the community as single level homes are more accessible to larger segments of potential buyers. The single level homes would benefit older residents that need more accessible housing.

3. Any impacts resulting from the adjustment are mitigated to the extent practical.

The potential impacts are mitigated by restricting the increased lot coverage to single-level homes. The single level home will have less of a visual impact on the neighbors than a potential 2-story home.

Development Standards (20.260.060):

For planned developments the minimum lot depth and width standards of the base zone do not apply and the hearings examiner can reduce the minimum lot size requirements.

The applicant is proposing the following minimum lot widths and areas given the location of the proposed lot:

	Minimum lot area (sqft)	Lot area reduction	Lot width (ft)	Lot width reduction	Average lot area (sqft)
Perimeter lots adjacent to existing single level homes	4000	20%	43	5%	4427.0
Perimeter lots adjacent to existing roadways	3333.3	33.3%	36	20%	3661.1
Interior lots or lots adjacent to BPA	2500	50%	30	33.3%	2821.0

VMC 20.260.060.C states, “In exchange for the approval of higher residential densities, smaller lots and relaxed development standards, the developer of a planned development is required to provide common open space for the active and passive recreational activities of residents, employees and visitors.”

The applicant is required to provide at least 10% of the gross area of the site as open space. This area must be fully accessible to the future residents of the subdivision.

With a 7.45-acre site, 0.75 acres of open space is required. A total of 1 acre of open space is provided between Tract A and B. These tracts meet the requirements for unencumbered open space. These areas will feature a grass lawn, picnic area, and appealing landscaping along the perimeter. The applicant is also showing a conceptual alignment for a trail that extends through tract A, across the BPA ROW and to NE 18th Street. The applicant is willing to construct this trail if staff sees this as a useful trail connection that will benefit the community. The alignment of the trail is subject to modification and will be finalized when construction drawings are completed. This trail segment may also be subject to BPA approval and it’s inclusion in this project can’t be guaranteed.

The applicant is also willing to provide a public easement for a potential trail connection at the SW corner of the lot along the west side of proposed lot 7. We understand that the city and neighborhood association have had past discussions regarding a trail connection in this area and the applicant is willing to include the necessary easements to facilitate a future improvement.

Residential density may be adjusted to allow for on-site density transfers and a density bonus of 15% above the maximum density is allowed. The proposed density calculation is included further below in the section that discusses Lower Density Residential Districts – 20.410.

Concept and Detailed Development Plan Submission Requirements (20.260.070 and 080):

All elements of these sections have been submitted with this application. The applicant is proposing that the concept and detailed development plans be reviewed concurrently. Per VMC 20.260.070.B, a planning history is required to be addressed. A search of past permits and plats on Clark County GIS shows that there are no open or active application, and no outstanding conditions of approval that affect the property.

Text and Map Amendments – 20.285

As stated previously in this narrative the applicant is proposing a zoning map amendment to rezone the parcel from R-6 to R-9. This rezone will facilitate the applicant's vision of providing a "middle-housing" development in the City of Vancouver.

This section addresses process and approval criteria of zoning map amendments. A zoning map amendment not involving associated comprehensive plan map amendments must demonstrate the following:

- 1. How the proposal is more consistent with applicable policies of the Vancouver strategic plan and comprehensive plan than the existing designation;*

The City adopted a 2016-2021 Strategic Plan, and updated it in November 2018. The city is currently working on a new Strategic Plan, but it appears that it has not yet been adopted.

This request is consistent with Objective 6.2.1:

"Develop a broader range of housing choices through incentives, changes in regulations and implementation of the Affordable Housing Task Force recommendations."

In the final 2016 report the Affordable Housing Task Force discussed potential tools and programs to increase the supply of affordable housing units in the city. One of the high priority items discussed amending zoning/development regulations to encourage affordable housing options.

The intent of the option would be to increase the overall supply of housing in the city which would result in lower purchase prices and rental costs. While this does not provide "affordable housing" it goes a long way to make housing more affordable. Since the adoption of the strategic plan housing prices have continued to soar. This is partly due to a high demand for housing in the Vancouver region that far outpaces the new housing supply.

In response to the strategic plan and the Affordable Housing Task Force recommendations, the City Council studied and approved housing code updates. The Housing Code Updates webpage states the following as a purpose of the update:

"Vancouver, like many communities, is facing a housing crisis. As the city continues to grow, there is a desire and need for new types of housing that would allow residents to live more affordably while also maintaining neighborhood livability. However, current city zoning rules prohibit many of these housing options. Changes to the development code can create opportunities for the private sector to deliver a more diverse, affordable housing stock."

The project goals of the housing update are stated as the following:

"The goal of the project is to update City codes to allow for different, smaller and more affordable types of housing choices. Many are recommended in the Affordable Housing Task

Force report (2016) and many are similar to what is allowed in Clark County and other Washington cities nearby and statewide.”

The specific goals include:

- Allowing for the development of diverse housing types to meet changing demographic needs and consumer preferences
- Expanding market rate, middle income, and affordable housing choices
- Maintaining neighborhood livability with incremental, rather than wholesale, change
- Providing more opportunities for people to live near where they work and attend school, and reduce costly commutes
- Facilitating development in areas with full existing public services

The current proposal is consistent with this plan and will help meet the City’s goals. The subdivision proposal associated with the zone change will accomplish the following:

- The project will add diversity to the housing options in the immediate vicinity of the site.
- It will provide middle income housing geared toward families wanting to live and own homes in the City of Vancouver.
- The rezone is only an incremental change in density and through the proposed lot size transition the overall neighborhood livability will be maintained.
- The site is located in the middle of the urban area of Vancouver and is surrounded by existing development.
- The project in is an area with full existing public services.

2. *That a change in circumstances has occurred since the existing designation was established.*

The housing and affordability crisis represents a change in circumstance since the existing zoning designation was established. Well planned site-specific rezone requests are a way to increase the housing supply in the urban areas of the city. This increase in housing supply will help improve affordability within the city.

Subdivisions – 20.320

The purpose of this narrative is to demonstrate compliance with City and State standards and to show that there are adequate public facilities to serve the site. The following addresses VMC 20.320.040:

- A. There are adequate public facilities at or near the site to support the development.
 - a. Mitigation is not required for the minor traffic impacts that the development will produce in the area. See the Transportation Impact

Study prepared by Kittelson and Associates included with this application.

- b. Public water access is available at the site and there is adequate capacity to support the development with minimal impacts.
 - c. Onsite stormwater will be managed according to the applicable standards. Any offsite impacts will be negligible.
 - d. A grading plan has been included with the application. A SWPPP is included in the Stormwater report. Applicable regulations will be followed to minimize the risk of erosion related impacts.
 - e. Public sanitary sewer is available at the site and will be extended to serve all the proposed lots.
- B. The proposed improvements are consistent with the City's current ordinances, standards, and plans.
- C. The subdivision will provide ample open space with a proposed trail and picnic tables for the community. Impact fees will be paid for parks and schools to offset the potential impacts.
- D. The subdivision design has taken into account the physical characteristics of the site. There is an Oregon white oak onsite that will be retained and protected. A portion of the NW corner of the site has slopes that are between fifteen and twenty-five percent. This area is addressed in the geotechnical report and has been found to not be a geological or landslide hazard.
- E. There are no known existing subdivision conditions that apply to the proposed project.
- F. The proposal complies with the applicable requirement of VMC Title 20 as indicated in other sections discussed in more detail below.
- G. The subdivision complies with the requirements of RCW 58.17.110 as indicated at the end of the narrative.
- H. This subdivision complies with the additional criteria for narrow lots as displayed in VMC 20.927. This section of code is discussed below in more detail.

The proposed subdivision meets the technical standards listed under VMC 20.320.070. Many of these items are discussed in additional detail below under the applicable section of the narrative.

The proposed subdivision meets the technical standards listed under VMC 20.320.070. Many of these items are discussed in additional detail below under the applicable section of the narrative.

- A.1. The subdivision layout meets the applicable code and shows the required improvements.
- a. All proposed streets comply with VMC Title 11 and the approved transportation standard details.
 - b. Block lengths proposed provide for convenient access and circulation.

- c. The site is surrounded by existing development. A BPA right-of-way exists to the north, therefore no street is proposed to stub to the north. Existing streets are continued through the site where necessary to provide blocks.
 - d. Easements are shown on plan for access and utilities. Utility easements will be reviewed and approved by the appropriate utility provider.
 - e. Flag lots are not proposed.
 - f. The side lot lines run at right angles to the proposed streets as far as practical.
 - g. All lots meet the minimum frontage requirement of 20'.
 - h. Park impact fees will be paid at the time of building permit issuance for each lot. The proposed open space tract will provide recreational opportunities for residents in this area.
 - i. The narrow lots comply with VMC 20.927. Additional discussion of this section has been provided below.
 - j. Existing trees have been addressed with the tree plan provided with this application and are also discussed below.
- B. Public utility improvements are proposed with this subdivision. The public improvements will be designed under the direct supervision of a professional civil engineer and meet the requirements stated in the VMC.
- C. Monument setting will meet the requirements of this section at the time of construction.
- D. Surveys will comply with the standards of the state and of the VMC.
- E. The project drawings comply with the drafting standards stated in this section. Future drawings will also comply with these standards.

Lower Density Residential Districts – 20.410

The applicant proposes to construct a 57-lot subdivision for single-family detached homes with with a request to rezone the site from R-6 to R-9. The existing single-family residence will be removed. This proposal will utilize the Planned Development standards. The Planned Development standards allow for reduced lot sizes, widths and depths. This is addressed under the section above that discusses VMC 20.260.

Standard	Required (R-9 zone)	Proposed
Minimum Lot Size	5,000 sf	2,500 sf
Maximum Average Lot Size	7,400 sf	
Minimum Lot Width	45'	30'
Minimum Lot Depth	65'	65'
Maximum Lot Coverage	50%	50%*
Front Yard	10', 18' to garage	10', 18' to garage
Rear Yard	5'	5'

Side Yard	0'5'	5'
Street Side Yard	8'	8'
Maximum Bldg Height	35'	35'
Minimum Landscape	10%	10%

*55% for potential single-level homes on lots 1-6 and 40-47

Density:

- The maximum allowable density under the R-9 zone is 8.7 units/per acre.
- The net area of the site is 5.69 acres once right-of-way and street tracts are subtracted from the gross site area.
- Planned Developments are allowed a 15% density bonus.
- The maximum density for the site is 57 units. ($5.69 \times 8.7 \times 1.15 = 56.9$)

Open Space:

Nestled in the northwest corner of the site is an existing tree grove amongst sloping topography that distinguishes the area. This area has been retained as open space in Tract A, with a meandering trail that traverses the open space, ensuring that it remains accessible and open to the community. A pocket park is located in Tract B with picnic tables and lawn area, further enhancing the community.

Approximately 1 acre of the site will be designated as common open space, largely situated in the northwest corner. This accounts for 14 % of the site and fulfills the Planned Development's minimum open space requirements (10% of the gross site area).

Archaeological Resource Protection – 20.710

An Archaeological Predetermination for this site was done by Archaeological Services LLC. A site visit performed on May 19, 2023 which found no artifacts. The report recommends that based on age the existing home should be recorded on a DAHP Historic Property Inventory form prior to demolition. A report summarizing their field work is included with this application. In the unlikely event that cultural or historical resources are discovered during construction activity, construction will cease, and all applicable authorities will be contacted.

Critical Areas Protection – 20.740

The site contains a single Oregon white oak in the NE corner of the site. No other critical areas were found onsite. A Critical Areas Memo has been prepared for this project by Ecological Land Services which provided the following key data:

- There are no wetlands onsite.
- 1 Oregon white oak measuring greater than 12 inches DBH was located onsite on proposed Lot 48.
- To ensure the oak is protected after the development of Lot 48 a covenant will be recorded protecting the Oregon white oak from future homeowner activity involving digging or excavation which may damage the oak root system or branch

removal activities, unless the case arises where a licensed arborist determines that branch removal or other pruning activities would be beneficial to the tree. The oak will also be outside of the approved building envelope for lot 48.

A small portion of the NW corner of the site has slopes that are between fifteen and twenty-five percent. This area is addressed in the geotechnical report and has been found to not be a geological or landslide hazard.

Please see the reports included with this application for further details.

Tree, Vegetation, and Soil Conservation – 20.770

A Level V tree plan is required for this application. Please reference the landscape and tree plans included with the application that show the retained trees, proposed trees, and includes a calculation of tree density. A large portion of the site will remain undeveloped and retain significant native vegetation. Silt fence will be installed onsite prior to construction to ensure that the retained areas are not impacted during construction.

SEPA Regulations – 20.790

The State Environmental Policy Act (SEPA) procedures require documentation of critical areas as well as discussion on earth, air, water, plants and animals, energy and natural resources, environmental health, noise, land and shoreline uses, aesthetics, recreation, historic and cultural preservation, transportation, and public services and utilities. A SEPA application has been submitted with this application.

Impact Fees – 20.915

Newly constructed homes will be required to pay impact fees at the time of building permit issuance. Impact fees are collected to ensure that adequate public facilities are available to serve new growth and development; promote orderly growth and development by requiring that new development pay a proportionate share of the cost of new facilities needed to serve growth; and ensure that impact fees are imposed through established procedures and criteria so that specific developments do not pay arbitrary fees or duplicate fees for the same impact. Impact fees for traffic, Parks, and Schools will be paid at the time of building construction. The applicant requests impact fee credits for the existing single-family home that is proposed to be removed.

Landscaping – 20.925

A landscape and tree plan has been provided with the development plans showing compliance with this section.

Landscaping equal to 10% of the net lot area of the site is required. These criteria will be reviewed for compliance at building permit review.

Street trees are proposed along all street frontages.

Landscape buffers are not required for this project based on adjacent zoning.

Narrow Lot Developments– 20.927

Developments that propose lot widths less than 40' are subject to the narrow lot development standards. Lots are proposed to vary in width with the narrowest lots approximately 30' wide, therefore this section applies to the development.

The approval criteria must be addressed, which includes the following:

A. Conflicts on narrow lots shall be eliminated.

The development has been designed to eliminate conflicts between on-site and off-site improvements. Driveways, public and private utilities (water, fire hydrants, sewer, roof infiltration, gas, cable, phone, electricity, etc.), on-street parking spaces, street trees, existing trees, light poles, common mailboxes, street signs, etc., have been considered in the design of the development and any conflicts have been eliminated.

B. Adequate guest parking shall be provided.

A guest parking space is required for every 3 narrow lots. With 41 narrow lots a total of 14 parking spaces are required. Guest parking areas near Tract A and Tract B provide a total of 10 additional parking spaces. There are also large portions of the roads that will accommodate street parking. With over 760 lf of roadway frontage available for parking, up to 34 cars will be able to park on the street.

C. Solid waste and recycling collection and access shall be provided.

The development has been designed to provide for safe access and maneuvering by solid waste and recycling collection vehicles along public roadways. Solid waste collection areas will be located in front of each lot on the adjacent street. The carts can be set out either on the street or over the curb/planter. Lots that are served by the shared driveways will be required to set out the carts on the public road. General locations of collection areas are shown on the narrow lot plan.

Parking and Loading – 20.945

Each lot will have a minimum 12' wide driveway that can accommodate at least 1 parked vehicle on the lot. The homes will also have at least a single car garage. 18' wide driveways are also an option for certain lots within the development. 10 additional parking spaces have been designed in guest parking lots near Tracts A and B. This configuration will exceed the required parking standards for single family homes.

Signs – 20.960

No signs are proposed at this time.

Vision Clearance – 20.985

Vision clearance triangles and sight distance triangles are shown on the preliminary plat. Vision clearance meets the requirements in standard Plan T04-04.

Streets and Sidewalks – VMC Title 11

Concurrency - 11.70

A Transportation Impact Study has been prepared by Kittelson and Associates for this development and is included with this application. The analysis found the following:

- The trip generation calculations show that the proposed project is projected to generate 45 morning peak hour trips, 59 evening peak hour trips, and 570 average weekday trips.
- All of the study intersections were found to operate acceptably under existing and future conditions with full build out of the development.
- No safety based mitigation needs were identified based on review of historic crash data at the study intersections.

Street and Development Standards – 11.80

Roadway Standards for NE 16th Street:

NE 16th Street is a proposed Neighborhood Circulator that will be extended east/west through the site to connect to the existing sections of NE 16th Street. The full width of the street will be constructed with this plat and will include a 54' right-of-way with 36' paved width, 4' planter and 5' sidewalks. To provide traffic calming, bulb-outs are proposed at the intersection with NE 122nd Court. The street at this intersection is proposed to be reduced to a 24' paved section with a wider 10' planter.

Roadway Standards for NE 123rd Avenue:

NE 123rd Avenue is an existing Neighborhood Circulator that abuts the site along the southeast edge. Existing improvements include a 56' right-of-way with 40' paved width and no sidewalks along the site frontage. Proposed improvements for this roadway include a 3' right-of-way dedication with 5' sidewalk and 4' planter along the site frontage. The ROW dedication and improvements are designed as a continuation of the existing improvements located to the south.

Roadway Standards for NE 121st Avenue:

NE 121st Avenue is an existing Local Access Street that runs along the west property line. Existing improvements off-site include a 28' right-of-way with 16' paved width and no sidewalks along the site frontage. Proposed improvements for this roadway include a 22' right-of-way dedication with an additional 14' paved surface to provide a 30' paved width, as well as a 5' sidewalk and 4' planter along the site frontage.

Roadway Standards for NE 14th Street:

NE 14th Street is a proposed Local Access Street. The full width of the street will be constructed with this plat and will include a 50' right-of-way with 28' paved width, 4' planters and 5' sidewalks on each side.

Roadway Standards for NE 122nd Court:

NE 122nd Avenue is a proposed Local Access Street that will terminate on the north and south ends with a cul-de-sac turnaround. This road was originally proposed as a private street, which would be allowed under the planned development standards. The city requested that the roadway remain public even with the slightly reduced ROW proposed for the street. A road modification request has been submitted that addresses the reduced ROW for the roadway. The proposed design includes a 46' right-of-way with 28' paved roadway, 4' planters and 5' sidewalks on each side.

Private Access Roads:

Tracts C, D, and E contain short narrow private drives that serve up to 4 lots each. These driveways will follow a modified standard detail T10-18, providing a 21' wide tract with an 18'-20' paved width.

Road Modifications:

A road modification request has been submitted regarding the reduced ROW width for NE 122nd Court.

Trees and Vegetation – VMC Title 12

Street trees are required on all public roads constructed with this project. After street trees are installed and the right-of-way is dedicated to the city, any work that is proposed on or near street trees will need to meet the requirements of VMC Title 12. Future property owners will have responsibilities regarding street tree maintenance as described in this section.

Water and Sewers – VMC Title 14.04, 14.10 and 14.16

All lots will be served by public sewer and water.

A public water main currently crosses the site in the location of the proposed NE 16th Street extension. The applicant will also connect the existing water main in NE 121st Ave to the water main in NE 123rd Ave along the proposed NE 14th Street.

An existing sanitary sewer main is located within NE 121st Ave along the western end of the site. This main extends to the north to NE 18th Street within an easement. The proposed lots adjacent to NE 121st Ave will utilize the existing main for sewer service, the rest of the site will be served by a new sewer extension that will begin at the NW corner of the site and will extend to the SE corner of the site.

Erosion Control – 14.24

An Erosion Control Plan in conformance with VMC 14.24 has been designed and included in this submittal. The plan clearly shows existing topography, specific erosion prevention BMPs, and includes measures to ensure that sediment and sediment laden runoff does not leave the site. In the final site configuration, the contributing drainage area runoff will be conveyed to infiltration trenches so that runoff does not leave the site.

Stormwater – 14.25

Stormwater will be collected from impervious surfaces, then treated and routed to infiltration trenches located on site. Stormwater from pollution generation surfaces will be treated using filter cartridges.

A preliminary stormwater plan and technical information report (TIR) has been submitted with this application. The report shows how the project complies with the standards of the VMC.

Water Resource Protection – 14.26

The entire city is located within a Critical Aquifer Recharge area. The proposal does not include any prohibited discharges to groundwater or surface waters. Infiltration of stormwater is proposed and will follow the applicable stormwater regulations. Stormwater from streets and driveways will be treated using filter cartridges prior to entering infiltration facilities.

Fire – VMC Title 16

All onsite streets provide the opportunity for emergency vehicles to circulate or turnaround within the site. New fire hydrants are proposed within the development to meet the applicable spacing requirements.

Building & Construction – VMC Title 17

Future residential structures will be built under a separate permit. The homes will be required to follow this section of code at that time.

Grading, Excavation, Fill, and, Stockpile:

The site contractors will be required to follow the recommendations found in the geotechnical report regarding temporary and permanent cut slopes in order to preserve a safe worksite and safeguard property.

A stormwater protection plan will be provided prior to construction. This plan will help prevent potential water quality degradation, prevent excessive sedimentation or erosion by surface waters, and prevent the creation of public nuisances such as the fouling of surface or groundwater.

Revised Code of Washington (RCW)

The subdivision complies with the applicable portions of RCW 58.17. The preliminary plat is in the public interest and will provide additional housing that is needed in the City of Vancouver.

This application and narrative show that there are adequate facilities to serve the proposed subdivision. There are adequate public roads, open spaces, drainage facilities, potable water, sanitary waste collection and treatment, schools and educational services, pedestrian facilities, and fire prevention services.

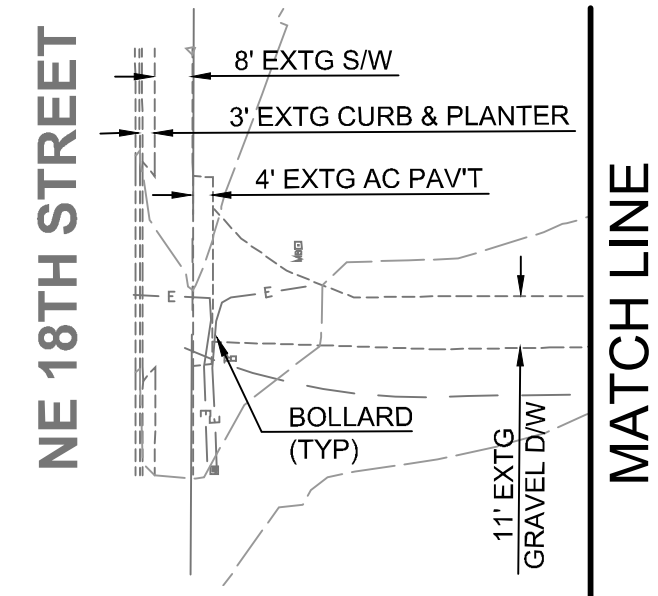
The proposed development is located over 1 mile away from Fircrest Elementary, Cascade Middle and Evergreen High Schools. Students living in the future development will be bused to schools.

This application and narrative also show compliance with the applicable standards of the Vancouver Municipal Code.

APPLICANT:
Ginn Group LLC
Chad Stewart
502 NE 72nd St
(360) 608-5048
chad@ginngrp.com

CONTACT:
PLS Engineering
Travis Johnson, PE
604 W Evergreen Blvd
Vancouver, WA 98660
(360) 944-6519
pm@plsengineering.com

SITE ADDRESS:
Parcel # 164912-000
12301 NE 18TH ST,
Vancouver, WA 98684



The site is zoned R-6 is located at 12301 NE 18th Street (parcel 16491200) and includes 7.46 acres of land. The site currently has a single family residence with a majority of the site including vacant land. All existing structures are proposed to be removed with site development. The site is bordered by single family residential development to the east, south and west. BPA right-of-way abuts the north end of the site.

NE 14th Street, NE 15th Street, and NE 121st Avenue are proposed as Local Access Streets. NE 16th Street and NE 123rd Avenue are Neighborhood Circulators. The existing residence is accessed from NE 18th Street through the BPA easement to the north of the site.

The City of Vancouver is the public water and sanitary sewer purveyor. The existing neighborhoods to the east and west have existing water and sanitary sewer mains that can be extended through the site to serve the proposed lots. An existing septic tank and water well exist on the site. These will be decommissioned prior to development of the site.

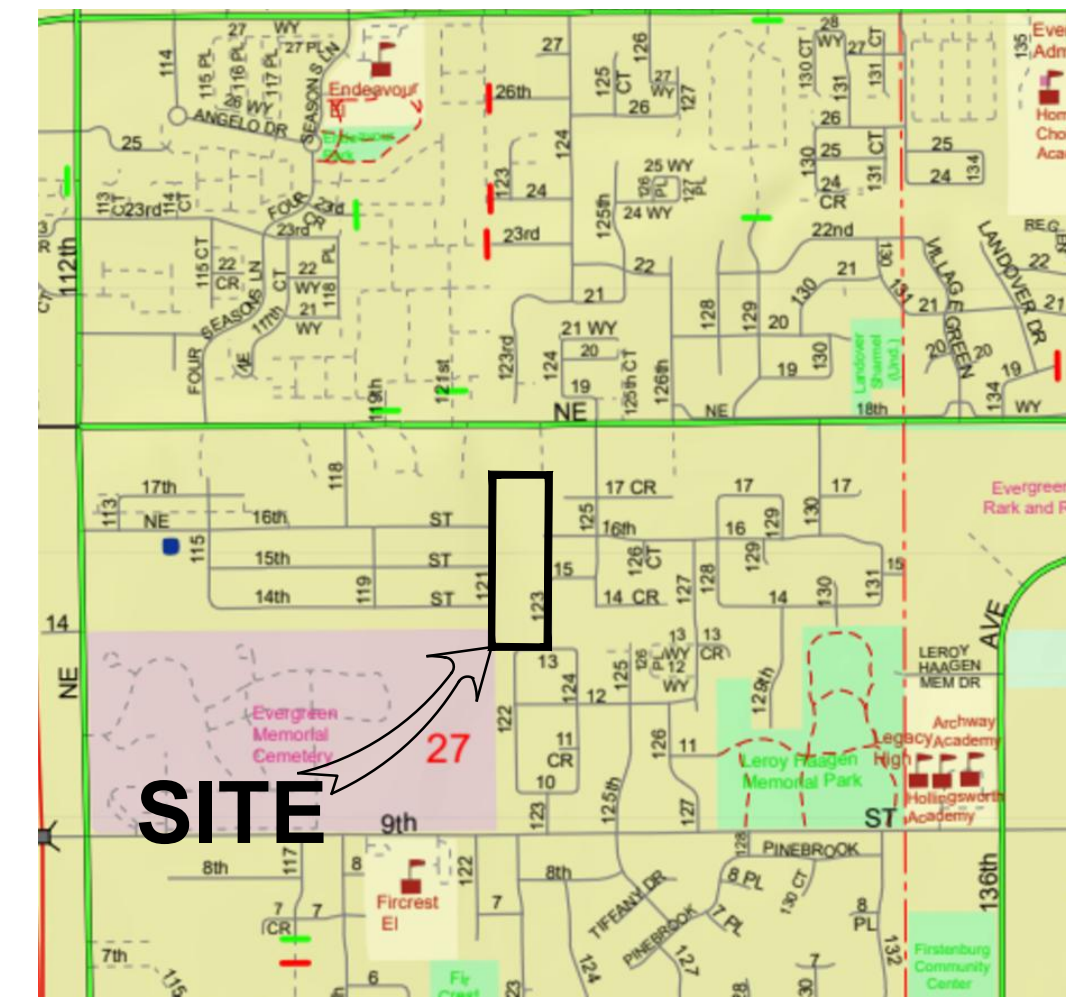
Located in the NE ¼ of Section 27, T2N, R2E, W.M.
City of Vancouver, Washington

There is an Oregon white oak located in the NE corner of the site. This tree is proposed to be retained. There are no other known critical areas located onsite

NAD 83 (2011). Washington State plane
coordination system, South zone, U.S. survey
feet. Based on real time kinematic
corrections from the Washington State reference
network.

NGVD29. City of Vancouver Datum based on
based on real time kinematic corrections from the
Washington State Reference Network.

LINETYPES		SYMBOLS	
	STORM SEWER LINE		CATCH BASIN
	OVERHEAD POWER LINE		STORM MANHOLE
	WATER LINE LOCATE		CURB INLET
	SANITARY SEWER PIPE		FIRE HYDRANT
	TELECOMM UTILITY		WATER VALVE
	UNDERGROUND		SAN SEWER MH
	ELECTRIC FENCE		UTILITY POLE
	CENTERLINE		EXTG WELL
	RIGHT OF WAY		TEL PEDESTAL
	EDGE OF PAVEMENT		GUY WIRE
	CURB LINE		MAILBOX
	EDGE OF GRAVEL		EXTG TREES
	SIDEWALK		
	PAVEMENT STRIPING		
	LOT LINE		
	PROPERTY BOUNDARY		
	CONTOUR LINE		



VICINITY MAP

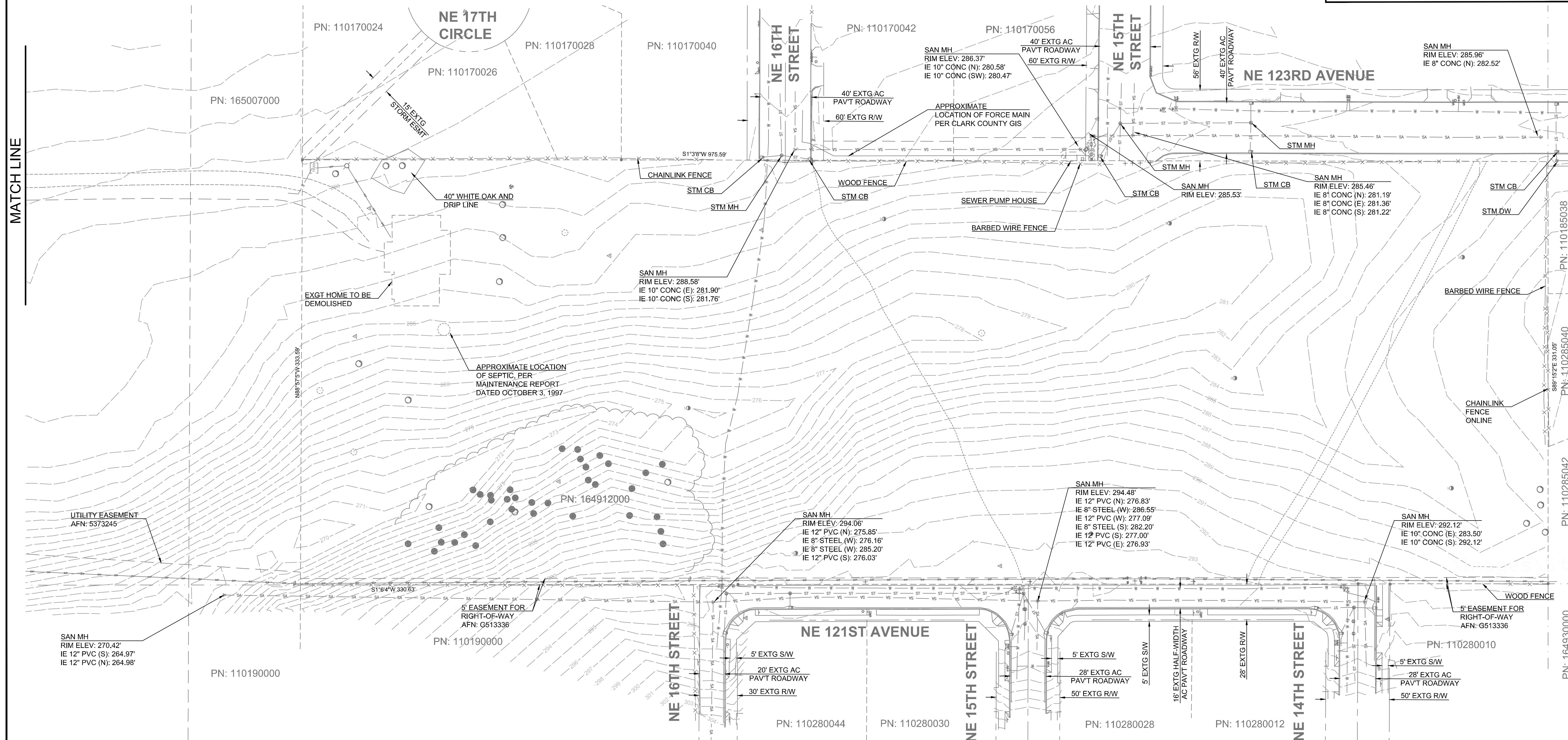
NOT TO SCALE

Scale 1" = 40'



The graphic scale bar is a horizontal bar divided into four equal segments. Above the bar, the numbers 40, 20, 0, and 40 are written from left to right, indicating distances in feet. To the right of the scale bar is a north arrow pointing towards the top right of the page.

Sheet Index	
1.	Existing Conditions Plan
2.	Preliminary Plat
3.	Narrow Lot Plan
4.	Grading & Erosion Control Plan
5.	Stormwater Plan
6.	Water & Sanitary Plan
7.	Street, Striping, Signing & Street Lighting Plan
T1.	Existing Tree & Soil Protection Plan
L1.	Preliminary Landscape & Tree Plan



Existing Conditions Plan For:

Fircrest Meadows

A Subdivision Located In The City Of Vancouver, Washington

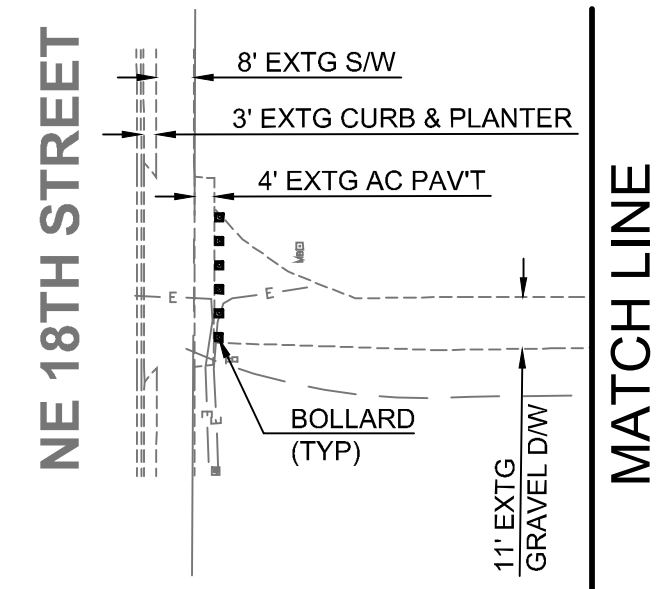
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Project No. 3615	
SCALE:	H: 1"= 40' V: N/A
DESIGNED BY:	MJM
DRAFTED BY:	MEA
REVIEWED BY:	TGJ

01	09
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APPLICANT:
Ginn Group LLC
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502 NE 72nd St
(360) 608-5048
chad@ginngrp.com

CONTACT:
PLS Engineering
Travis Johnson, PE
604 W Evergreen Blvd
Vancouver, WA 98660
(360) 944-6519
pm@plsengineering.com



Located in the NE ¼ of Section 27, T2N, R2E, W.M.
City of Vancouver, Washington

The applicant is proposing a 57 lot planned development concurrent with a rezone from R-6 to R-9. The site is located at 12301 NE 18th Street (parcel 16491200) and includes 7.46 acres of land. The site currently has a single family residence with a majority of the site including vacant land. All existing structures are proposed to be removed with site development. The existing driveway serving the residence from NE 18th Street to the north will be closed to vehicular traffic. The site is bordered by single family residential development to the east, south and west. BPA right-of-way abuts the north end of the site.

Minimum Lot Size Proposed: 2520 sqft
Minimum Lot Width Proposed: 30 ft

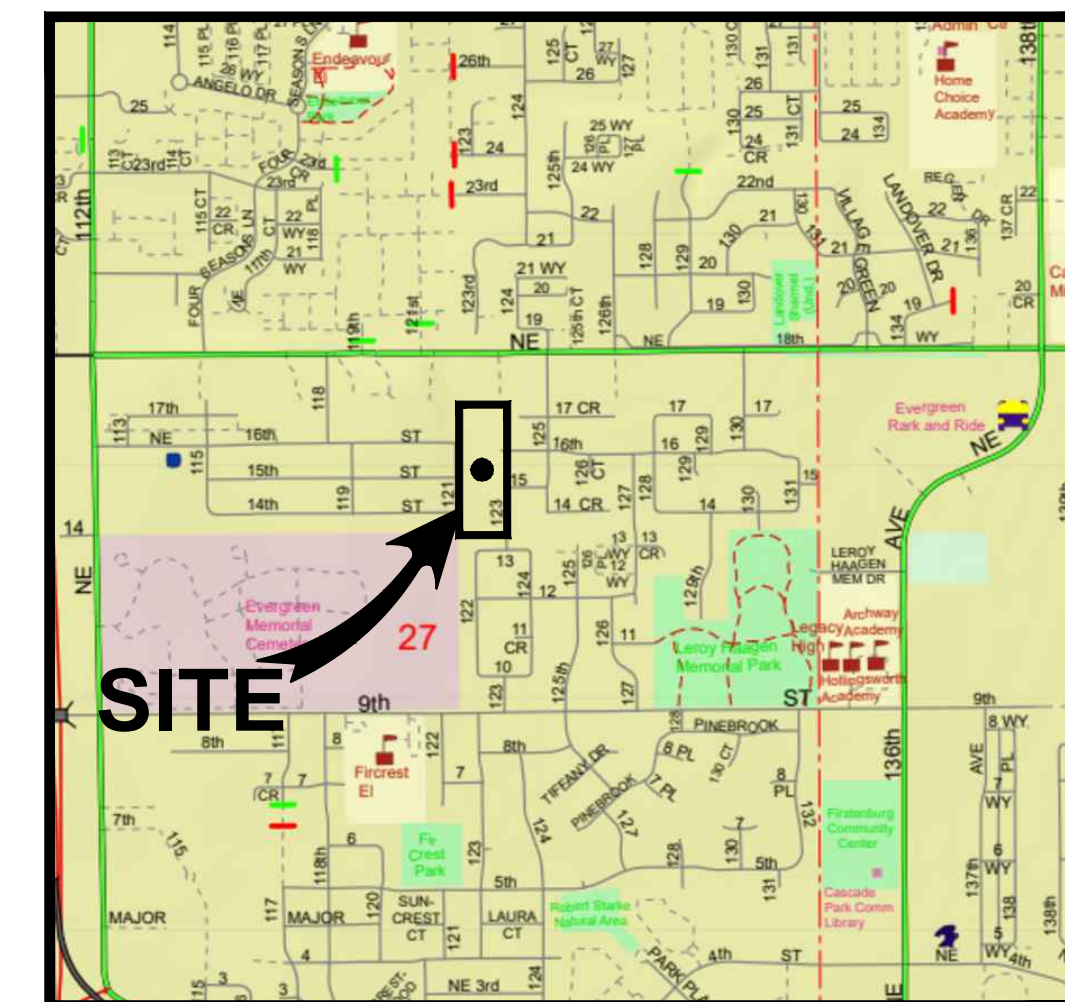
Setbacks

Front yard:	10'
Garage:	18'
Rear yard:	5'
Side yard:	5'
Street side yard:	10'

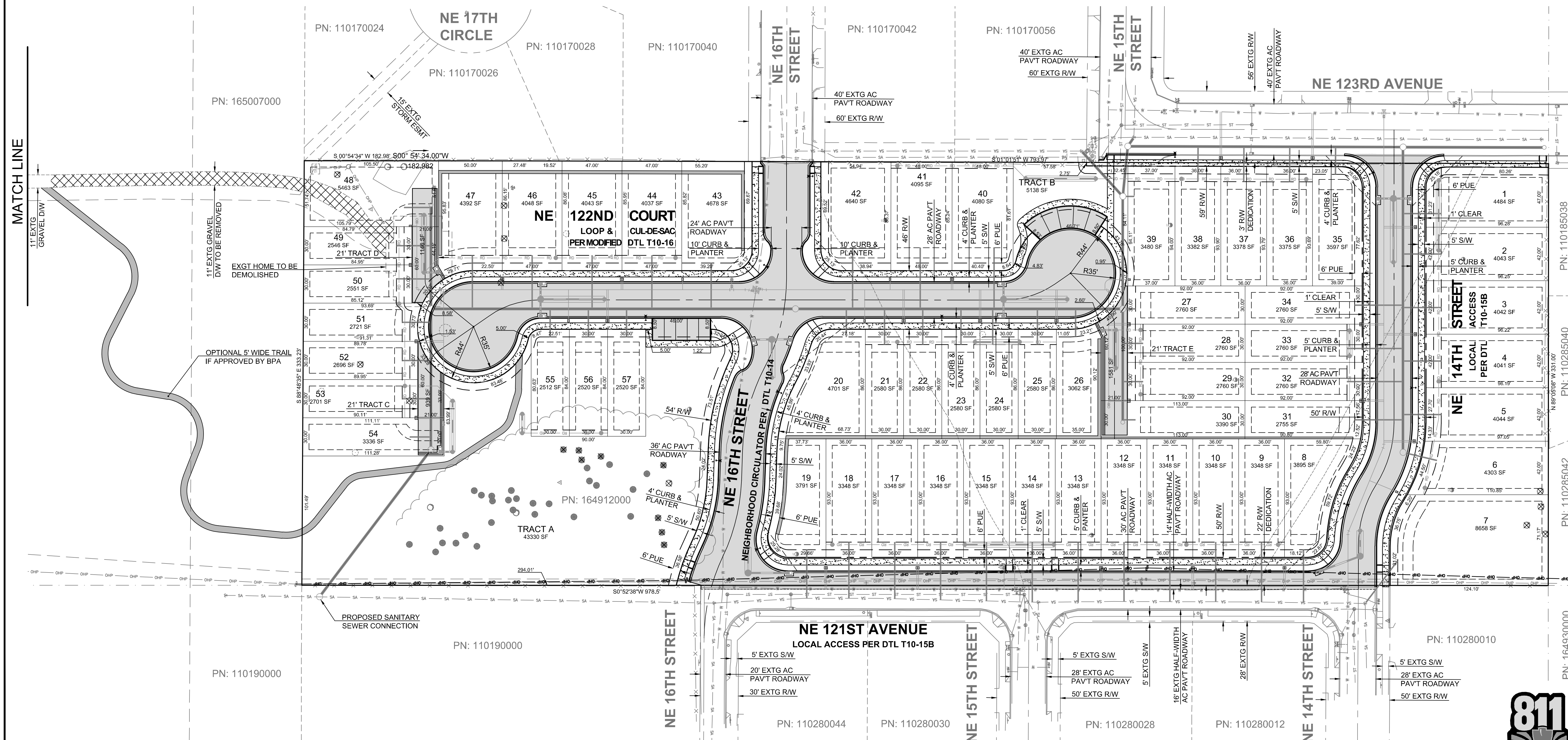
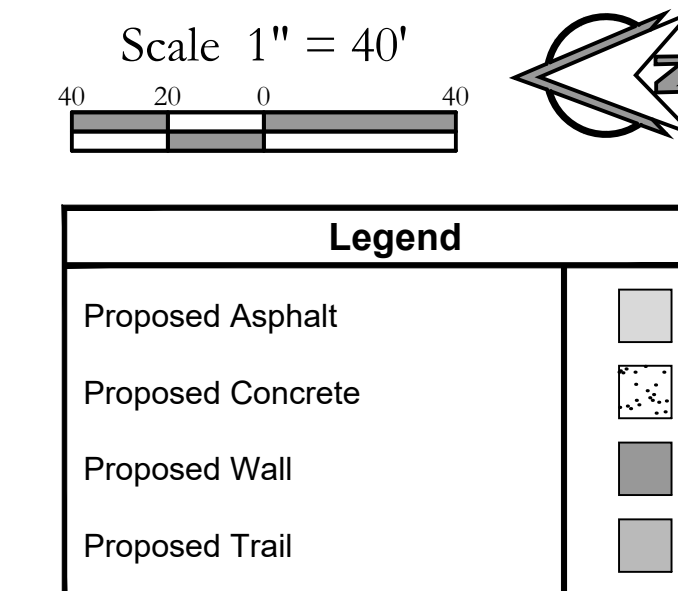
NE 14th Street is proposed as a Local Access Street per standard detail T10-15B. NE 16th Street is proposed as a Neighborhood Circulator per standard detail T10-14. NE 121st Avenue is a Local Access road and requires a minimum 50' full right-of-way width and 28' paved street full-width. NE 122nd Court is proposed as two street segments per modified standard detail T10-16 with dead end cul-de-sacs. NE 123rd Avenue is a Neighborhood Circulator and requires a minimum 54' full right-of-way width and 36' paved street full-width. The applicant is

The City of Vancouver is the public water and sanitary sewer purveyor. The existing neighborhoods to the east and west have existing water and sanitary sewer mains that can be extended through the site to serve the proposed lots. Stormwater is proposed to be collected, treated and routed to infiltration trenches located onsite. An existing septic tank and water well exist on the site. These will be decommissioned prior to development of the site.

There is an Oregon white oak located in the NE corner of the site. This tree is proposed to be retained. There are no other known critical areas located onsite.



VICINITY MAP
NOT TO SCALE



Preliminary Plat For:

Preliminary Plat For: Firecrest Meadows

A Subdivision Located In The City Of Vancouver, Washington

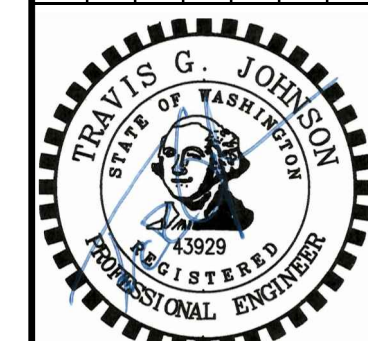
Engineering - Surveying - Planning

604 W. Evergreen Blvd., Vancouver, WA 98660

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7-14-23

Project No. 3615

SCALE: H: 1"=40

DESIGNED BY:

DESIGNED BY:	
DRAFTED BY:	

02

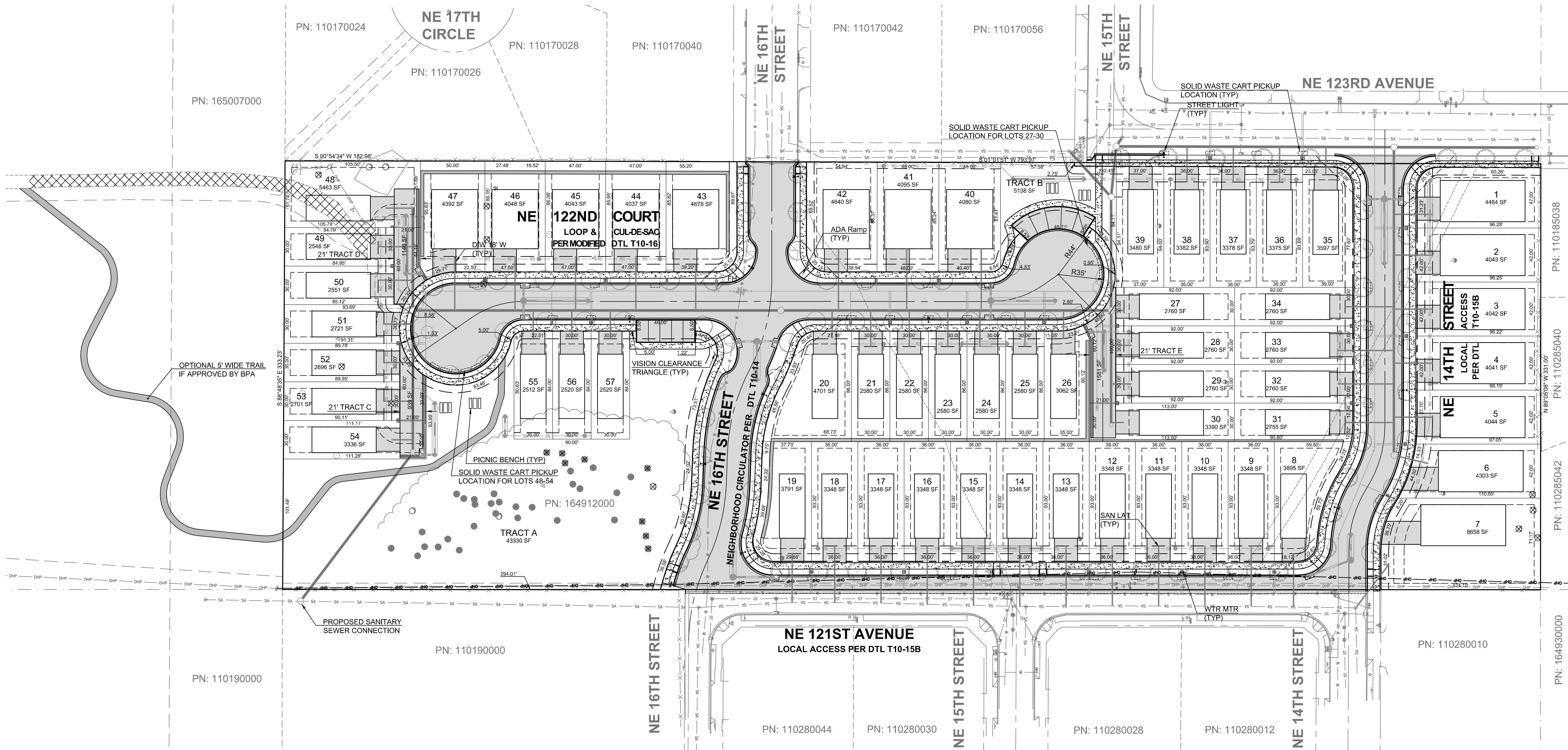
09



Know what's **below**.
Call before you dig.

Fircrest Meadows

Located in the SE ¼ of Section 33, T5N, R1E and
the NE ¼ of Section 4, T4N, R1E, W.M.
Some City, Washington



GENERAL NOTES

APPLICANT:
Ginn Group LLC
Chad Stewart
502 NE 72nd St
(360) 608-5048
chad@ginngrp.com

OWNER:
Roger Bradstreet
12301 NE 18th Street

CONTACT:
PLS Engineering
Travis Johnson, PE
604 W Evergreen Blvd
Vancouver, WA 98660
(360) 944-6519
pm@plsengineering.com

SITE ADDRESS:

Parcel # 164912-000
12301 NE 18TH ST,
Vancouver, WA 98684

NARROW LOT STANDARDS

The Fircrest Meadows Planned Development proposes to divide 7.46 acres into 57 lots with a rezone from R-6 to R-9. The subdivision was prepared in accordance with the requirements of VMC sections 20.927.030 and 20.927.040. All utilities, driveways, street trees, and other features have been placed such that they avoid conflict with one another.

See the landscape plan sheet L1 for details on the location, species, and size of street trees, including the mature heights and crown widths.

Solid waste and recycling cart areas are shown along the street frontages for each lot.

All setback requirements are reflected in the building envelopes shown on the site plan.

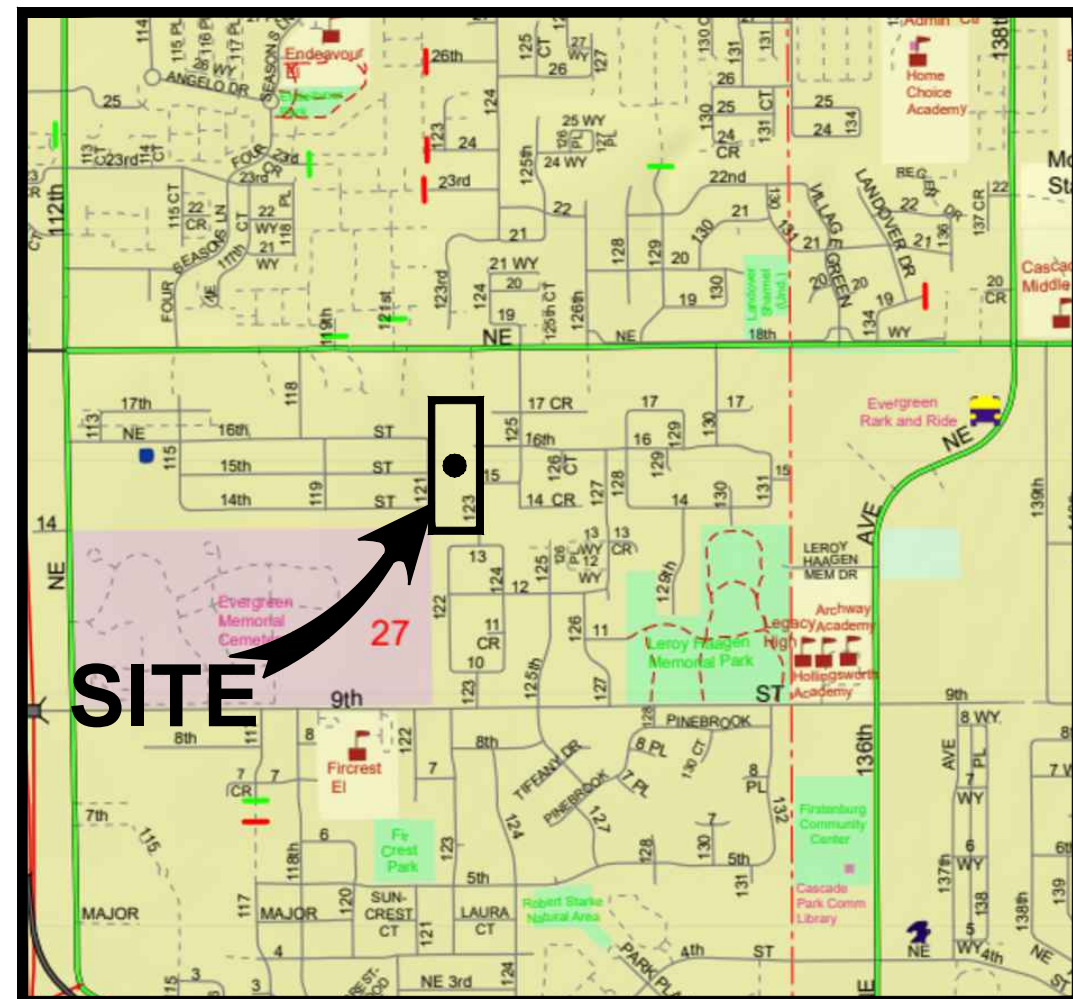
PROPOSED LINETYPE & HATCHING LEGEND

LINETYPES

	EDGE OF PAVEMENT
	CURB LINE
	PROPOSED SIDEWALK
	EDGE OF GRAVEL
	PAVEMENT SAWCUT
	SETBACK
	LOT LINE
	STORM LINE
	STORM ROOF DRAIN
	WATER MAIN LINE
	WATER SERVICE LINE
	SAN SEWER LATERAL
	SAN SEWER MAIN
	ROAD CENTERLINE
	RIGHT-OF-WAY
	EASEMENT LINE
	RETAINING WALL
	CONTOUR LINE
	DRAINAGE FLOW LINE

SYMBOLS

	CATCH BASIN
	OVERFLOW DRAIN
	AREA DRAIN W/ISUMP
	ROOF DRAIN
	SANITARY CLEANOUT
	SANITARY MANHOLE
	FIRE HYDRANT
	WATER METER
	WATER BACKFLOW DEVICE
	TEE W/TB
	GATE VALVE
	CAP W/TB
	WATER BEND W/TB



VICINITY MAP
NOT TO SCALE

Scale 1" = 40'

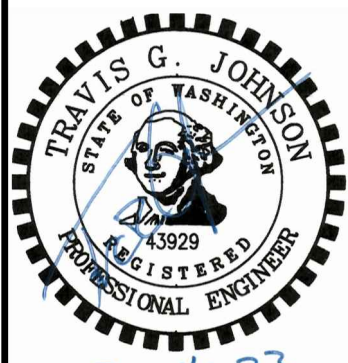
Legend

	Proposed Asphalt
	Proposed Concrete
	Proposed Wall
	Proposed Trail



Revisions

1	2	3	4	5	6



Project No. 3615
SCALE: H: 1"=40' V: N/A
DESIGNED BY: M/M
DRAFTED BY: MEA
REVIEWED BY: TGJ

03

09

Narrow Lot Plan For:

Fircrest Meadows

A Subdivision Located In The City Of Vancouver, Washington

Engineering - Surveying - Planning

604 W. Evergreen Blvd., Vancouver, WA 98660

PH (360) 944-6519

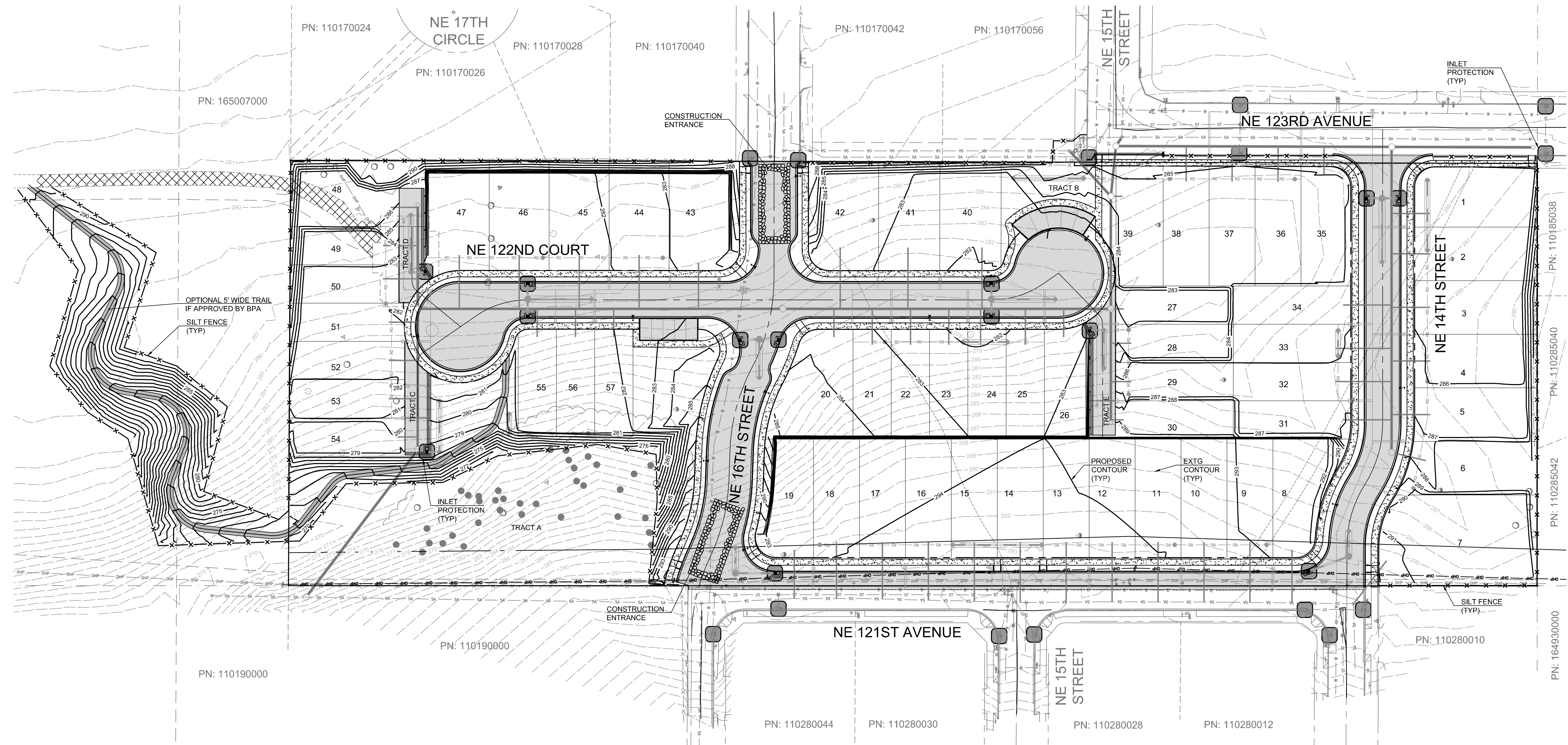
Fax (360) 944-6539

PLS

ENGINEERING

Fircrest Meadows

Located in the NE ¼ of Section 27, T2N, R2E, W.M.
City of Vancouver, Washington

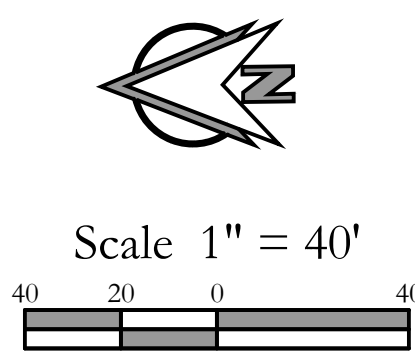


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NAD 83 (2011). Washington State plane coordination system, South zone, U.S. survey feet.
Based on real time kinematic corrections from the Washington State reference network.

VERTICAL DATUM:

NGVD29. City of Vancouver Datum based on based on real time kinematic corrections
from the Washington State Reference Network.



Legend	
Proposed Asphalt	
Proposed Concrete	
Proposed Wall	
Proposed Trail	

Grading & Erosion Control Plan For:

Fircrest Meadows

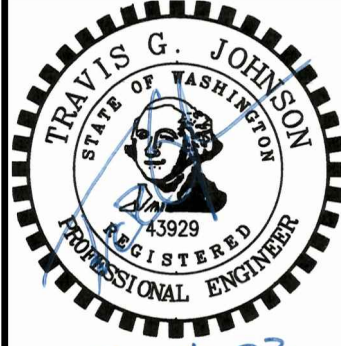
A Subdivision Located In The City Of Vancouver, Washington

Engineering - Surveying - Planning 604 W. Evergreen Blvd., Vancouver, WA 98660 PH (360) 944-6519 Fax (360) 944-6539

PLS ENGINEERING

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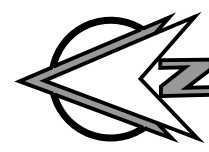
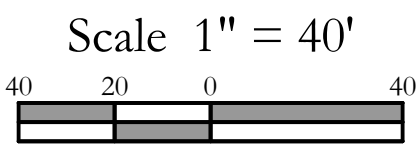
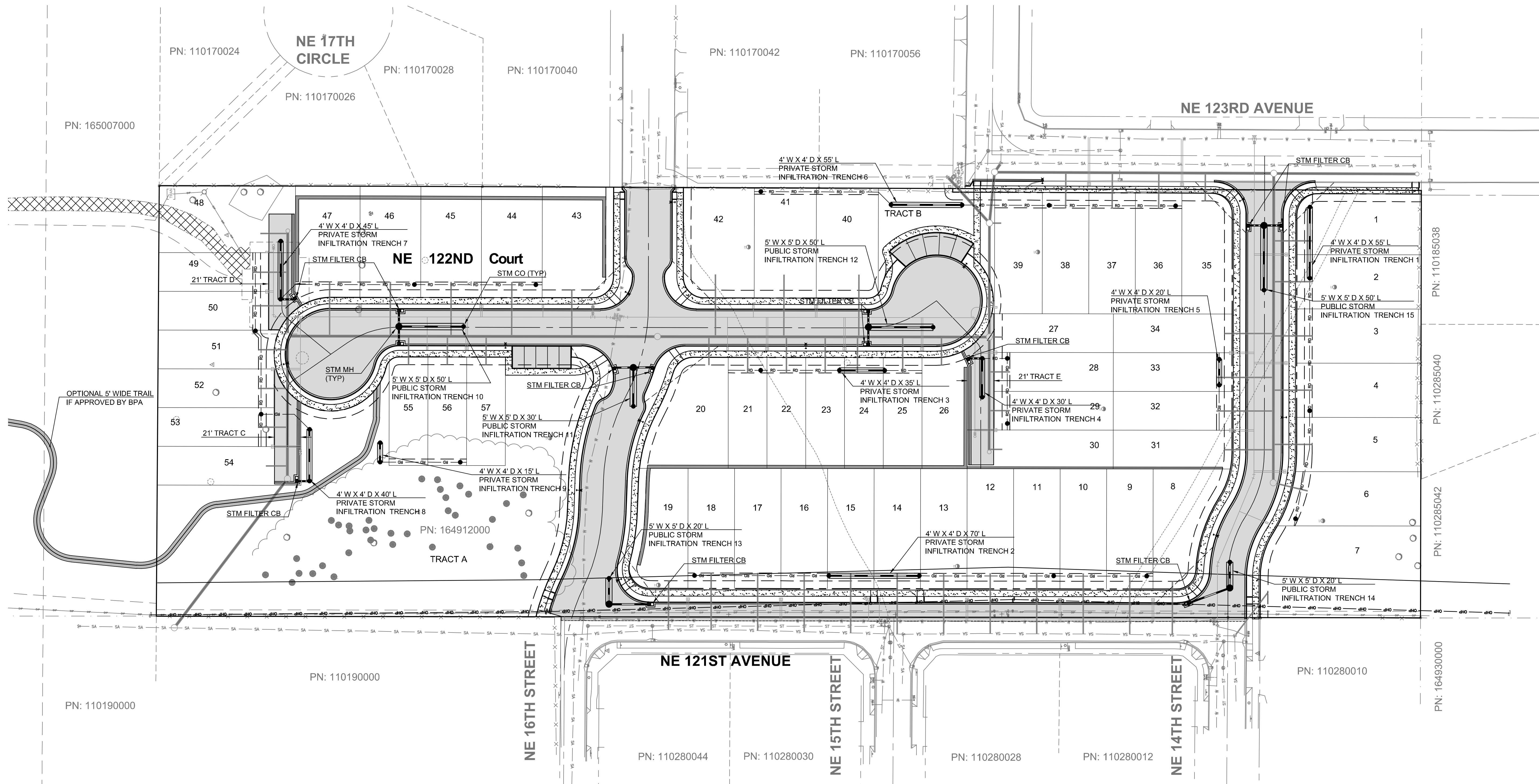
Project No.	3615
SCALE:	H: 1"=40' V: N/A
DESIGNED BY:	MJM
DRAFTED BY:	MEA
REVIEWED BY:	TGJ

04
09



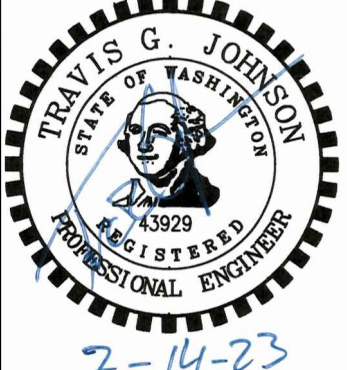
Fircrest Meadows

Located in the NE ¼ of Section 27, T2N, R2E, W.M.
City of Vancouver, Washington



Legend	
Proposed Asphalt	
Proposed Concrete	
Proposed Wall	
Proposed Trail	

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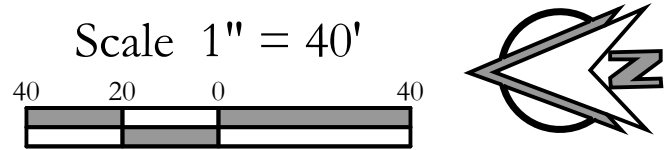
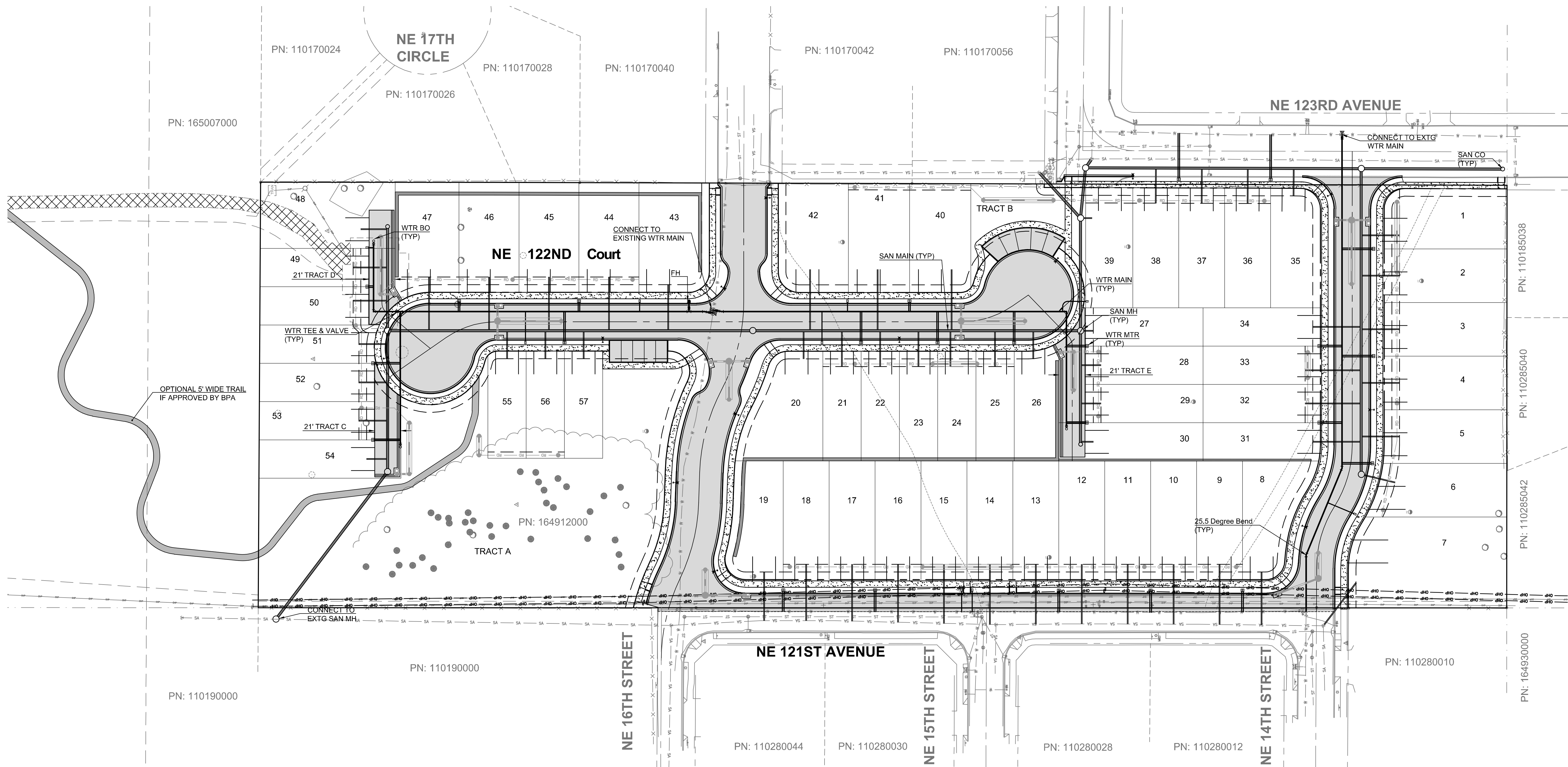
Project No. 3615
SCALE: H: 1"=40' V: N/A
DESIGNED BY: MJM
DRAFTED BY: MEA
REVIEWED BY: TGJ

05
09

Stormwater Plan For:
Fircrest Meadows
A Subdivision Located In The City Of Vancouver, Washington
Engineering - Surveying - Planning | 604 W. Evergreen Blvd., Vancouver, WA 98660 | PH (360) 944-6519 | Fax (360) 944-6539

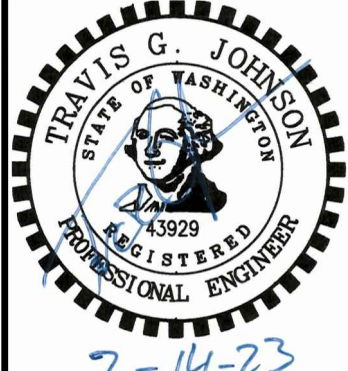
Fircrest Meadows

Located in the NE ¼ of Section 27, T2N, R2E, W.M.
City of Vancouver, Washington



Legend	
Proposed Asphalt	
Proposed Concrete	
Proposed Wall	
Proposed Trail	

Revisions					
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Project No.	3615
SCALE:	H: 1"=40' V: N/A
DESIGNED BY:	MJM
DRAFTED BY:	MEA
REVIEWED BY:	TGJ

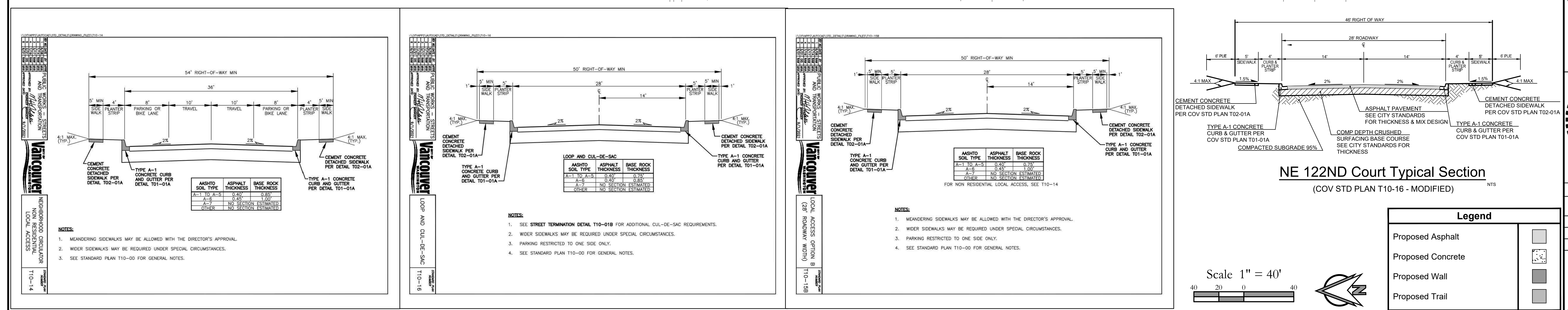
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Water & Sanitary Plan For:
Fircrest Meadows
A Subdivision Located In The City Of Vancouver, Washington
Engineering - Surveying - Planning | 604 W. Evergreen Blvd., Vancouver, WA 98660 | PH (360) 944-6519 | Fax (360) 944-6539

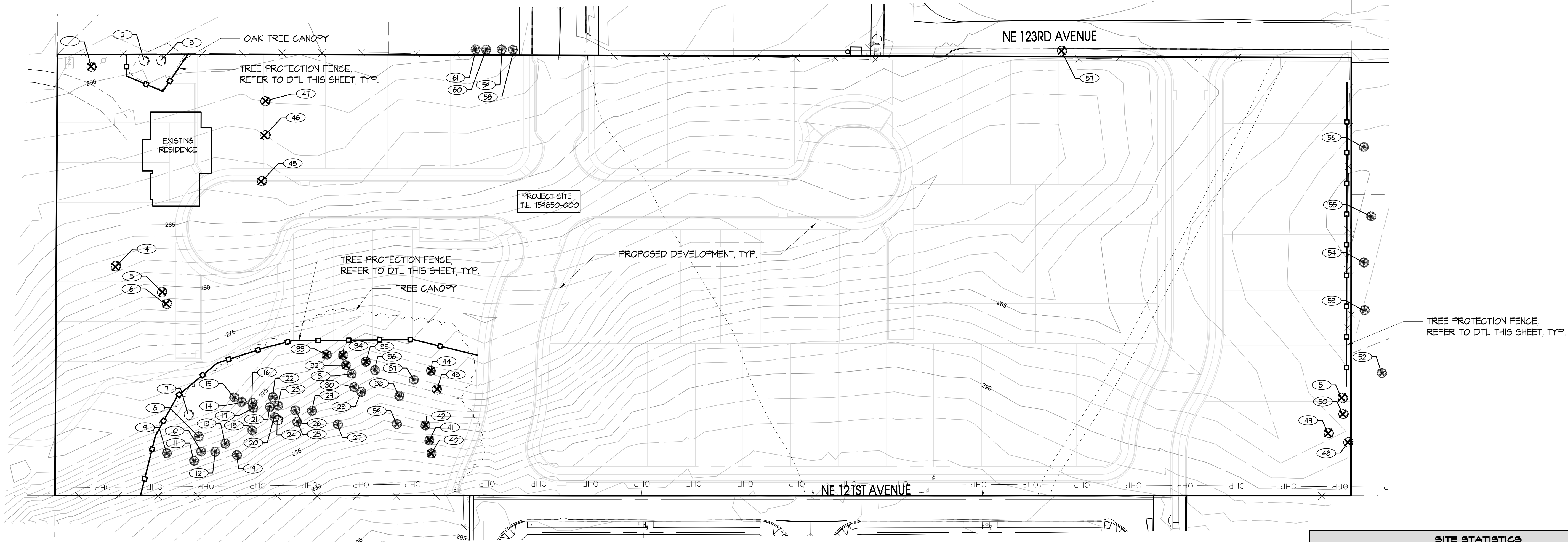
PLS ENGINEERING

Located in the NE ¼ of Section 27, T2N, R2E, W.M.
City of Vancouver, Washington

Located in the NE ¼ of Section 27, T2N, R2E, W.M.
City of Vancouver, Washington

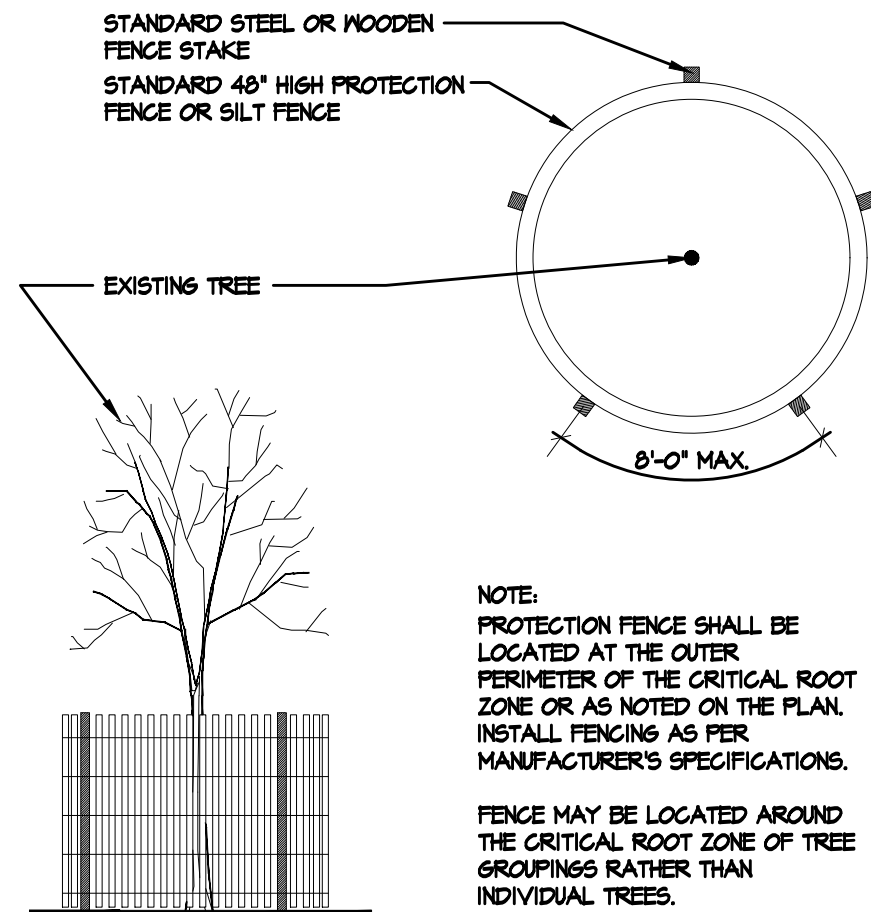


FIRCREST MEADOWS
12301 NE 18TH STREET
Vancouver, Washington

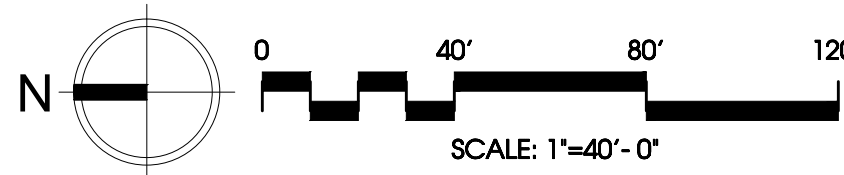


EXISTING TREE MATRIX						
#	TYPE	COMMENTS	SIZE	RECOMMENDATIONS	UNITS	
1	Mountain Ash	CBE OGD	17"	X		
2	Cherry		2 @ 9"	R		1.5
3	Oregon White Oak		40"	R		15
4	Cherry	CBE OGD	10"	X		
5	Pear	CBE OGD	8"	X		
6	Pear	CBE OGD	2 @ 8"	X		
7	Maple		8"	R		1.5
8	Fir		35"	R		12
9	Fir		30"	R		10
10	Fir		40"	R		15
11	Fir		37"	R		13
12	Fir		19"	R		4
13	Fir		23"	R		6
14	Fir		10"	R		1.5
15	Fir		47"	R		18
16	Fir		26"	R		8
17	Fir		19"	R		4
18	Fir		34"	R		12
19	Fir		35"	R		13
20	Fir		16"	R		3
21	Fir		26"	R		8
22	Fir		34"	R		12
23	Fir		27"	R		8
24	Alder		8"	R		1
25	Fir		36"	R		13
26	Fir		29"	R		9
27	Fir		36"	R		13
28	Fir		30"	R		10
29	Fir		27"	R		8
30	Fir		14"	R		2
31	Fir		20"	R		5
32	Fir	CGD	25"	X		
33	Fir	CGD	32"	X		
34	Fir	CGD	27"	X		
35	Fir	CGD	40"	X		
36	Fir		24"	R		7
37	Fir		36"	R		13
38	Fir		20"	R		5
39	Fir		23"	R		6
40	Fir	CGD	35"	X		
41	Fir	CGD	26"	X		
42	Fir	CGD	14"	X		
43	Hawthorn	CGD	7"	X		
44	Fir	CGD	36"	X		
45	Maple	CRC OGD	29"	X		
46	Maple	CBE OGD	22"	X		
47	Dogwood	CBE OGD	13"	X		
48	Maple	CBE OGD	3 @ 10"	X		
49	Maple	CBE OGD	9"	X		
50	Maple	CBE OGD	14"	X		
51	Maple	CBE OGD	7"	X		
52	Fir	offsite	46"	R		0
53	Fir	offsite	36"	R		0
54	Fir	offsite	36"	R		0
55	Fir	offsite	36"	R		0
56	Fir	offsite	44"	R		0
57	Walnut	CRC OGD	8"	X		
58	Cedar	offsite	3 @ 12"	R		0
59	Cedar	offsite	8 @ 8"	R		0
60	Pine	offsite	32"	R		0
61	Pine	offsite	30"	R		0
Total Units					257.5	

TREE MATRIX LEGEND	
R	TREE DESIGNATED FOR RETENTION (RETAIN & PROTECT DURING CONSTRUCTION)
X	TREE DESIGNATED FOR REMOVAL
TREE CONFLICTS WITH CONSTRUCTION	
CRC	CONFLICT WITH ROAD CONSTRUCTION
CGD	CONFLICT WITH SITE GRADING / DRAINAGE
CSW	CONFLICT WITH STORMWATER FACILITY
CBE	CONFLICT WITH BUILDING ENVELOPE
CUT	CONFLICT WITH UTILITY TRENCH
CDR	CONFLICT WITH DRIVE AND PATIO LOCATION

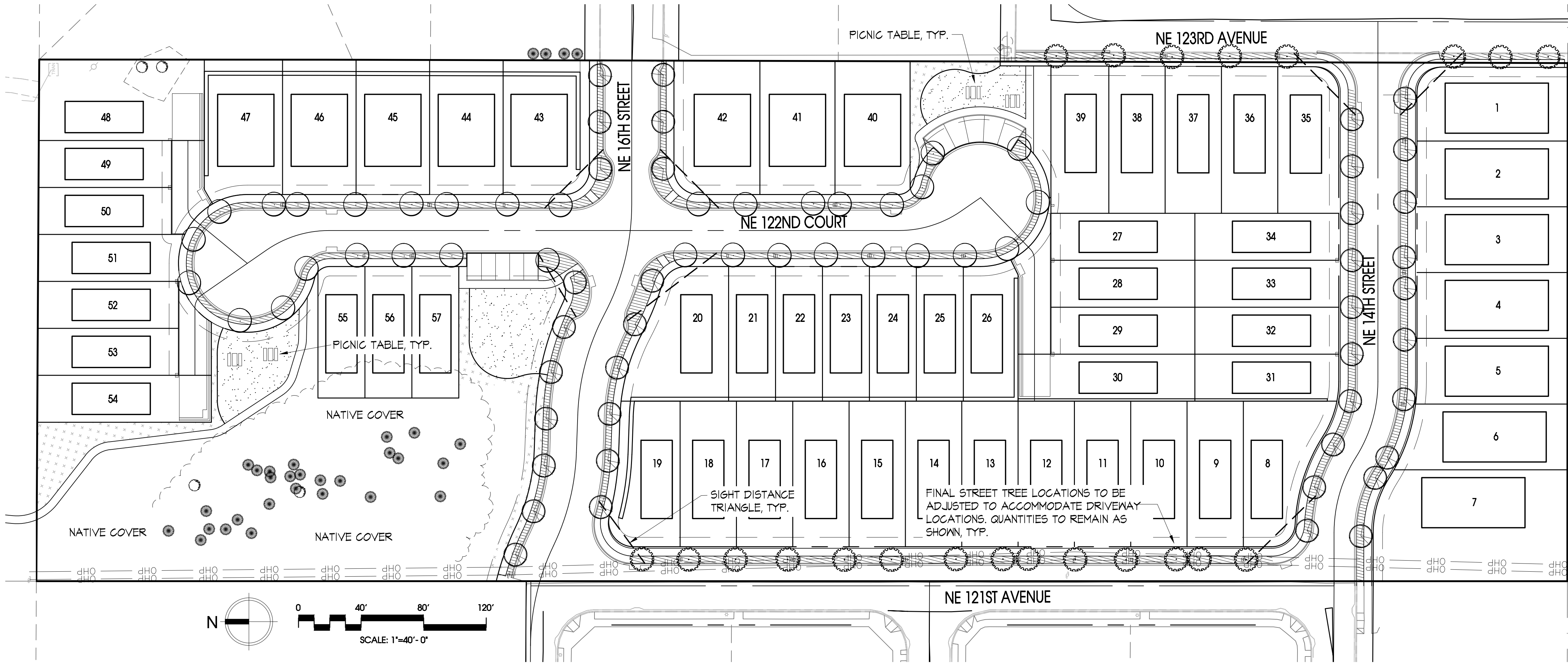


Tree Protection Fencing Detail
Not To Scale
SECTION / PLAN VIEW



TREE PROTECTION TIME LINE & NARRATIVE	
EXISTING ON-SITE AND OFF-SITE TREE LOCATIONS AND SIZES HAVE BEEN OBTAINED VIA SURVEY INFORMATION AND SITE OBSERVATIONS.	
9 EXISTING TREES WITHIN THE PROJECT BOUNDARIES ARE PROPOSED TO BE REMOVED DUE TO CONFLICTS WITH THE PROPOSED SITE GRADING AND ROAD IMPROVEMENTS.	
TREE PROTECTION FENCING SHALL BE PLACED AS SHOWN TO PROTECT THE EXISTING TREES NOTED FOR RETENTION.	
TREE PROTECTION / EROSION CONTROL FENCING SHALL BE ESTABLISHED PRIOR TO EXCAVATION. IT IS RECOMMENDED TO BE INSTALLED AT THE SAME TIME EROSION CONTROL MEASURES ARE INSTALLED. WHERE TREE FENCE AND EROSION CONTROL FENCE ARE LOCATED AT THE SAME LOCATION, EROSION FENCE THEN SERVES AS TREE PROTECTION FENCE. SEE DETAIL THIS SHEET.	
SOIL PROTECTION NOTES	
1) Refer to the grading plan prepared by the civil engineer for additional information.	
2) No grading operations shall take place within the critical root zones of the off-site trees.	
3) Stockpile existing topsoil during grading operations and replace prior to planting. Stockpiled shall be placed in a controlled area not adjacent to public resources or critical areas.	
4) The duff layer and native topsoil shall be retained in an undisturbed state to the maximum extent possible.	
5) All areas subject to clearing and grading that have not been covered by impervious surfaces, incorporated into a drainage facility or engineered as structural fill or slope shall receive the previously stockpiled topsoil.	
6) The stockpiled topsoil shall be placed in the areas defined above to achieve an 8" layer of topsoil. Subsoils below the topsoil layer shall be scarified at least to a 4" depth with some incorporation of the stockpiled topsoil to avoid stratified layers.	
7) Prior to placement of the stockpiled topsoil the contractor shall confirm the topsoil has a minimum organic matter content of ten percent dry weight in planting beds and 5 percent dry weight in turf areas. In addition the topsoil shall have a pH from 6.0 to 8.0 or matches the pH of the original undisturbed soil. Test results shall be submitted to the project manager.	
8) The quality of compost and other materials used to meet the organic content requirements must have an organic matter content of 35% to 65%, and a carbon to nitrogen ratio below 25:1.	
a. The organic content for "pre-approved" amendment rates can be met only by using using compost that meets the definition of "composted materials" in MAC 173-350-220.	
b. Calculated amendment rates may be met through the use of composted materials as defined above; or other organic materials amended to meet the carbon to nitrogen ratio requirements, and meeting the contaminant standards of Grade A Compost.	

SITE STATISTICS	
7.46± AC	SITE AREA
21	NUMBER OF JURISDICTIONAL TREES TO BE REMOVED
52	NUMBER OF JURISDICTIONAL TREES ON SITE
SYMBOL LEGEND	
SYMBOL	DESCRIPTION
	EXISTING TREE
	EXISTING TREE TO BE REMOVED
	CRITICAL ROOT ZONE AREA / CANOPY AREA
	TREE PROTECTION FENCE LOCATION (4' CHAIN LINK, ORANGE PVC FENCE OR SILT FENCE) (ALSO DENOTES AREA WHERE NO IMPACTS TO CRITICAL ROOT ZONE SHALL OCCUR)
TREE PROTECTION NOTES	
1) No person may conduct any of the following activities within the drip line of the trees designated to remain including, but not limited to: parking equipment, fueling, servicing equipment, placing solvents, storing building material and soil deposits, dumping concrete washout and locating burn holes.	
2) During construction, no person shall attach any object to the trees designated for protection.	
3) The contractor shall follow the grading plan provided by the project civil engineer. Grading activities shall be conducted in a manner to minimize the impacts to the trees marked for preservation.	
4) The excavator shall keep a sharp pair of loppers and a sharp 12" pruning saw accessible on-site during grading operations. Any roots larger than 1" shall be pruned to the face of the cut (using a sharp pair of loppers or a sharp 12" pruning saw) and shall not be torn from the ground by mechanical excavation.	
5) Special care shall be exercised in working within 20 feet of the trees to be retained. This includes hand excavating the roots at the edge of the excavation and cutting roots with a lopper or pruning saw. Pruning the roots at the edge of excavation will minimize breakage of healthy roots beyond the edge of the proposed excavation.	
6) Except for the proposed improvements shown within the drip lines of the trees noted to be retained the grade shall not be elevated or reduced from existing grade.	
7) If the grade adjacent to a preserved tree is raised such that it could slough or erode into the tree's drip line, it shall be permanently stabilized.	
8) The trees noted to be retained shall be protected from erosion and sedimentation. Clearing operations shall be conducted so as to expose the smallest practical area of soil to erosion for the least possible time. Refer to the project's erosion control plan for more information.	
4) The project shall not install an impervious surface other than those specifically shown on the plans within the drip line of the trees to be retained.	
10) Utility trenches shall be located outside of the drip line of the trees to be retained.	
11) Ongoing Tree Maintenance shall be the responsibility of the land owner. Trees shall be maintained in accordance with ANSI American National Standards Institute's as well as other applicable Federal, State and Local standards pertaining to Tree Care Operations.	
• ANSI Z133 Arboricultural Operations: Safety Requirements • ANSI A300 Part 1 Pruning	



TREE LEGEND				
SYMBOL	BOTANICAL / COMMON NAME	SIZE	QTY	UNITS
TREES				
	EXISTING TREES - REFER TO SHT TI RETAIN & PROTECT	SEE SHT TI	31	257.5
	AMUR MAACKIA MAACKIA STREET TREE	2" CAL. MIN.	34	0
	PARROTIA PERSICA 'VANESSA' VANESSA PERSIAN PARROTIA STREET TREE	2" CAL. MIN.	22	0
	ZELKOVA SERRATA 'CITY SPRITE' CITY SPRITE ZELKOVA STREET TREE	2" CAL. MIN.	34	0
TOTAL TREES PLANTED			121	
			TOTAL TREE UNITS	257.5
GROUND COVER				
	ARGTOSTAPHYLOS UVA URSI / KINKINICK OF DECORATIVE ROCK MULCH	1 GAL.	36"	O.C.
	TURF, DROUGHT RESISTANT, SUN & SHADE MIX (ALL NON SHRUB OR GC AREAS)			
	LANDSCAPE PER OWNER			

LANDSCAPE PLAN NARRATIVE

TIMELINE
REQUIRED TREES SHALL BE PLANTED AND MAINTAINED IN COMPLIANCE WITH VMC 20.925 (LANDSCAPING) AND VMC 20.110 (TREE CONSERVATION) AND AS SPECIFIED IN THE APPROVED PLANS AND MAINTAINED ON FILE AT THE CITY OF VANCOUVER. THE APPROVED PLANTING PLANS REQUIRE THE PLANTING OF A SPECIFIC NUMBER AND TYPE OF TREES.

THE DEVELOPER SHALL BE RESPONSIBLE FOR PLANTING AND MAINTAINING THE PROPOSED TREES.

IRRIGATION NOTE

ALL LANDSCAPE AREAS SHALL BE HAND WATERED OR IRRIGATED WITH AN AUTOMATIC DRIP AND/OR SPRAY IRRIGATION SYSTEM. REFER TO CIVIL ENGINEERING PLANS FOR WATER SOURCE.

REQUIRED TREE DENSITY

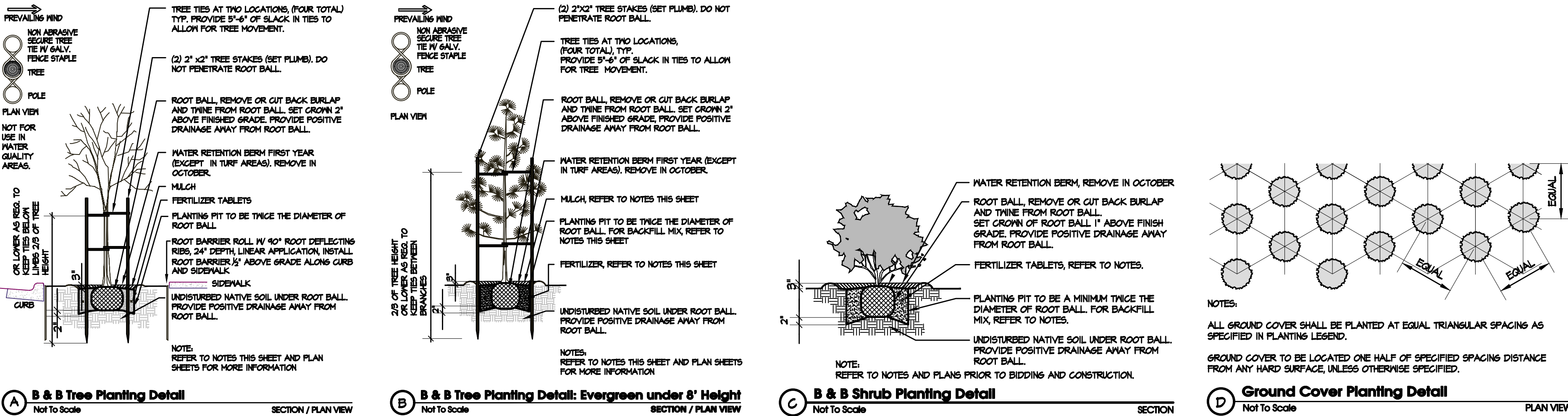
SITE AREA	REQUIRED TREE UNITS / ACRE DISTURBED	TOTAL REQUIRED TREE UNITS
1.46± AC	30	224

TREE DENSITY SUMMARY

EXISTING TREE UNITS RETAINED	257.5
TREE UNITS PROPOSED TO PLANT (SEE TREE DENSITY CALCULATIONS THIS SHEET)	
PROPOSED NON-STREET TREE DECIDUOUS TREE UNITS PLANTED	0
PROPOSED EVERGREEN TREE UNITS PLANTED	0
TREE UNITS PROVIDED	257.5

REQUIRED MAINTENANCE PRUNING

PRUNING OF DECIDUOUS TREES SHALL BE PERFORMED ON NEWLY PLANTED DECIDUOUS TREES PURSUANT TO THE FOLLOWING SCHEDULE AND STANDARDS.
A. YEAR 1 - ONLY DEAD, BROKEN OR CROSSING BRANCHES SHALL BE PRUNED WHEN THE TREE IS PLANTED.
B. YEAR 2 - A CLASS I PRUNE, PURSUANT TO NATIONAL ARBORIST ASSOCIATION STANDARDS, SHALL BE PERFORMED DURING YEAR TWO. THE PURPOSE OF THIS PRUNING IS TO ESTABLISH PROPER SCAFFOLD BRANCHING, RAISE THE CROWN FOR ROAD/SIDWALK CLEARANCE, AND REMOVE ANY DEAD, DYING OR CROSSING BRANCHES.
C. YEAR 3 - A CLASS I PRUNE, PURSUANT TO NATIONAL ARBORIST ASSOCIATION STANDARDS, SHALL BE PERFORMED DURING YEAR THREE. THE PURPOSE OF THIS PRUNING IS TO ESTABLISH PROPER SCAFFOLD BRANCHING, RAISE THE CROWN FOR ROAD/SIDWALK CLEARANCE, AND REMOVE ANY DEAD, DYING OR CROSSING BRANCHES.
D. YEAR 4 - A CLASS I PRUNE, PURSUANT TO NATIONAL ARBORIST ASSOCIATION STANDARDS, SHALL BE PERFORMED DURING YEAR FOUR. THE PURPOSE OF THIS PRUNING IS TO ESTABLISH PROPER SCAFFOLD BRANCHING, RAISE THE CROWN FOR ROAD/SIDWALK CLEARANCE, AND REMOVE ANY DEAD, DYING OR CROSSING BRANCHES.
E. YEAR 5 - A CLASS I PRUNE, PURSUANT TO NATIONAL ARBORIST ASSOCIATION STANDARDS, SHALL BE PERFORMED DURING YEAR FIVE. THE PURPOSE OF THIS PRUNING IS TO ESTABLISH PROPER SCAFFOLD BRANCHING, RAISE THE CROWN FOR ROAD/SIDWALK CLEARANCE, AND REMOVE ANY DEAD, DYING OR CROSSING BRANCHES.
F. YEAR 6 - A CLASS I PRUNE, PURSUANT TO NATIONAL ARBORIST ASSOCIATION STANDARDS, SHALL BE PERFORMED DURING YEAR SIX. THE PURPOSE OF THIS PRUNING IS TO ESTABLISH PROPER SCAFFOLD BRANCHING, RAISE THE CROWN FOR ROAD/SIDWALK CLEARANCE, AND REMOVE ANY DEAD, DYING OR CROSSING BRANCHES.
G. YEAR 7 - A CLASS I PRUNE, PURSUANT TO NATIONAL ARBORIST ASSOCIATION STANDARDS, SHALL BE PERFORMED DURING YEAR SEVEN. THE PURPOSE OF THIS PRUNING IS TO ESTABLISH PROPER SCAFFOLD BRANCHING, RAISE THE CROWN FOR ROAD/SIDWALK CLEARANCE, AND REMOVE ANY DEAD, DYING OR CROSSING BRANCHES.
H. YEAR 8 - A CLASS I PRUNE, PURSUANT TO NATIONAL ARBORIST ASSOCIATION STANDARDS, SHALL BE PERFORMED DURING YEAR EIGHT. THE PURPOSE OF THIS PRUNING IS TO ESTABLISH PROPER SCAFFOLD BRANCHING, RAISE THE CROWN FOR ROAD/SIDWALK CLEARANCE, AND REMOVE ANY DEAD, DYING OR CROSSING BRANCHES.
I. YEAR 9 - A CLASS I PRUNE, PURSUANT TO NATIONAL ARBORIST ASSOCIATION STANDARDS, SHALL BE PERFORMED DURING YEAR NINE. THE PURPOSE OF THIS PRUNING IS TO ESTABLISH PROPER SCAFFOLD BRANCHING, RAISE THE CROWN FOR ROAD/SIDWALK CLEARANCE, AND REMOVE ANY DEAD, DYING OR CROSSING BRANCHES.
J. YEAR 10 - A CLASS I PRUNE, PURSUANT TO NATIONAL ARBORIST ASSOCIATION STANDARDS, SHALL BE PERFORMED DURING YEAR TEN. THE PURPOSE OF THIS PRUNING IS TO ESTABLISH PROPER SCAFFOLD BRANCHING, RAISE THE CROWN FOR ROAD/SIDWALK CLEARANCE, AND REMOVE ANY DEAD, DYING OR CROSSING BRANCHES.



PLANTING NOTES

- ALL BOUNDARIES, EASEMENTS, UTILITIES AND LEGAL ENCUMBRANCES TO BE CONFIRMED WITH OWNER PRIOR TO BEGINNING WORK. PROPERTY LINES AND SURVEY INFORMATION PROVIDED BY PLS ENGINEERING.
- IN NO WAY IS THIS PLAN TO BE INTERPRETED TO EXCEED THE LEGAL BOUNDARIES OF THE OWNER'S REAL PROPERTY.
- THE LANDSCAPE DESIGNER ASSUMES NO RESPONSIBILITY FOR THE LOCATION OF BOUNDARIES, UTILITIES AND WETLANDS.
- THIS PLAN SHALL BE INSTALLED TO MEET ALL APPLICABLE CITY, COUNTY, STATE AND FEDERAL CODES. THIS PLAN SHALL BE CONSIDERED PRELIMINARY UNTIL APPROVED BY ALL GOVERNING AGENCIES.
- IMPLEMENTATION OF THIS PLAN SHALL NOT PROCEED UNTIL ISSUANCE OF ALL RELATED PERMITS.
- PLANT QUANTITIES ARE FOR INFORMATION ONLY. IN CASE OF ANY DISCREPANCY, THE PLAN SHALL GOVERN.
- ALL WORK IS TO BE PERFORMED BY LICENSED CONTRACTORS AND EXPERIENCED WORKERS.
- THE CONTRACTOR IS TO VERIFY THE LOCATION OF EXISTING UNDERGROUND UTILITIES AND STRUCTURES PRIOR TO PERFORMING ANY EXCAVATION. CONTRACTOR SHALL REPAIR ANY DAMAGE TO UTILITIES CAUSED BY THE CONTRACTOR'S WORK, AT NO ADDITIONAL COST TO THE OWNER. CONTACT ALL UTILITY PROVIDERS SERVING THE SITE AREA 48 HOURS PRIOR TO ANY EXCAVATION.
- ALL PLANT MATERIALS SHALL MATCH SPECIFICATIONS PER SPECIES AND SHALL COMPLY WITH ANSI Z60.1 STANDARD FOR NURSERY STOCK.
- THE CONTRACTOR SHALL ADHERE TO THE WASHINGTON ASSOCIATION OF NURSERYMEN'S GUIDELINES FOR PLANTING PRACTICES.
- THE CONTRACTOR SHALL REPAIR ANY DAMAGE TO EXISTING ELEMENTS ON AND OFF SITE, RESULTING FROM THE CONTRACTOR'S WORK.
- THE CONTRACTOR IS RESPONSIBLE FOR THE VIABILITY OF ALL PLANT MATERIAL FOR 2 YEARS AFTER COMPLETION OF PLANTING. DISEASED, DYING, OR DEAD PLANT MATERIAL SHALL BE REPLACED BY THE CONTRACTOR DURING THE TWO YEAR PERIOD AND MAINTAINED FOR AN ADDITIONAL 2 YEAR PERIOD.
- IMMEDIATELY UPON BID AWARD, CONTRACTOR SHALL SECURE THE PLANT MATERIALS AS SPECIFIED FROM AVAILABLE SOURCES. IN THE EVENT THAT PLANT MATERIALS ARE NOT AVAILABLE, CONTACT LANDSCAPE ARCHITECT FOR APPROVED SUBSTITUTIONS. NO SUBSTITUTION FOR PLANT MATERIAL WILL BE ALLOWED WITHOUT PRIOR WRITTEN APPROVAL OF THE LANDSCAPE ARCHITECT.
- TOP DRESS ALL SHRUB AND GROUND COVER AREAS (NOT LAWN) WITH 3" OF FIR BARK MULCH. SUBMIT SAMPLE TO THE LANDSCAPE ARCHITECT FOR APPROVAL PRIOR TO CONSTRUCTION.
- TREE LOCATIONS MAY BE ADJUSTED IN THE FIELD TO SUIT SITE REQUIREMENTS AS DIRECTED BY THE LANDSCAPE ARCHITECT.
- THE CONTRACTOR SHALL ENSURE THAT ALL EXCAVATED PLANTING PITS HAVE POSITIVE DRAINAGE. PLANT PITS FULLY FLOODED WITH WATER SHALL DRAIN WITHIN (2) HOURS OF FILLING.
- FINISH GRADE SHALL BE SET TO ALLOW POSITIVE DRAINAGE.
- ROTTILL 2" OF COMPOST INTO ALL PLANTED AREAS.
- INCORPORATE PEAT INTO THE ROOT ZONE OF RHODODENDRONS, AZALEAS AND OTHER ACID LOVING PLANTS.
- INCORPORATE 10-20-20 FERTILIZER INTO THE ROOT ZONE OF ALL NEW PLANTINGS.
- RONSTAR, OR APPROVED EQUAL, FREEMERGENT HERBICIDE TO BE APPLIED TO ALL PLANTED AREAS PER MANUFACTURER'S INSTRUCTIONS.
- EXISTING VEGETATION TO BE SPRAYED WITH ROUNDUP, OR APPROVED EQUAL, PER MANUFACTURER'S INSTRUCTIONS. SUFFICIENT TIME SHALL BE GIVEN TO ALLOW EXISTING MATERIAL TO DIE. REMOVE EXISTING 21. CROWN LAWN AREAS AND GRADE TO PROVIDE POSITIVE DRAINAGE.
- ROLL LAWN AREA TO INSURE PROPER COMPACTION TO MINIMIZE SETTLING.
- AMEND SOIL IN LAWN AREAS WITH 80 LBS. OF DOLOMITE LIME AND 40 LBS. OF 10-20-20 SLOW RELEASE FERTILIZER OR EQUIVALENT. PROVIDE A 3" LAYER TOPSOIL MEETING THE REQUIREMENTS OF bmp 7-513 FOR LAWN AND BED AREAS.
- SEED LAWN AREAS WITH GRASS SEED MANUFACTURER'S RECOMMENDATIONS. COVER SEED WITH FINE MULCH APPLIED WITH ROLLER OR HYDROSEED.
- THE PROPERTY OWNER IS RESPONSIBLE FOR MAINTAINING TURF PLANTED WITHIN THE RIGHT OF WAY.
- PLANT MATERIAL SHALL BE PLANTED 1/4" ABOVE FINISHED GRADE TO ALLOW POSITIVE DRAINAGE AWAY FROM CROWN.
- STAKE ALL TREES OVER 6 FT. IN HEIGHT PER DETAILS ON THIS SHEET.
- REFER TO DETAILS FOR ADDITIONAL INFORMATION.
- ALL PLANTING SHALL BE HAND WATERED OR IRRIGATED BY AN AUTOMATIC UNDERGROUND SPRINKLER SYSTEM.
- ALL PLANT MATERIALS FURNISHED ARE TO BE HEALTHY, UNIFORMLY BRANCHED AND WITH WELL DEVELOPED FIBROUS ROOT SYSTEMS.
- ALL PLANT MATERIALS FURNISHED ARE TO BE FREE FROM DEAD OR BROKEN BRANCHES, LICHENS, SCARS, BROKEN BARK OR WOUNDS. ALL PLANT MATERIALS WILL BE INSECT, WEED, AND DISEASE FREE ACCORDING TO THE REQUIREMENTS OF THE WASHINGTON STATE DEPARTMENT OF AGRICULTURE FOR NURSERY PLANT MATERIALS SOLD FOR WHOLESALE OR RETAIL. ALL PRUNING WOUNDS MUST BE WELL HEALED WITH NO EVIDENCE OF DECAY.
- FIELD CONFIRM ALL SITE CONDITIONS, AREAS AND SIZES PRIOR TO BIDDING & CONSTRUCTION. DO NOT SCALE FROM PLANS.

Lots: 8-39, 48-57



Front Elevation - NW
1/4" = 1'-0"



Left Elevation
1/8" = 1'-0"



Rear Elevation
1/8" = 1'-0"



Right Elevation
1/8" = 1'-0"

CONCEPTUAL DESIGN



FIRCREST 20' PLAN

FILE NAME :
20' PLAN 1499 SF
DRAWN BY:
E DRAFTING
SCALE :
As indicated
PLOT DATE :
6/21/2023
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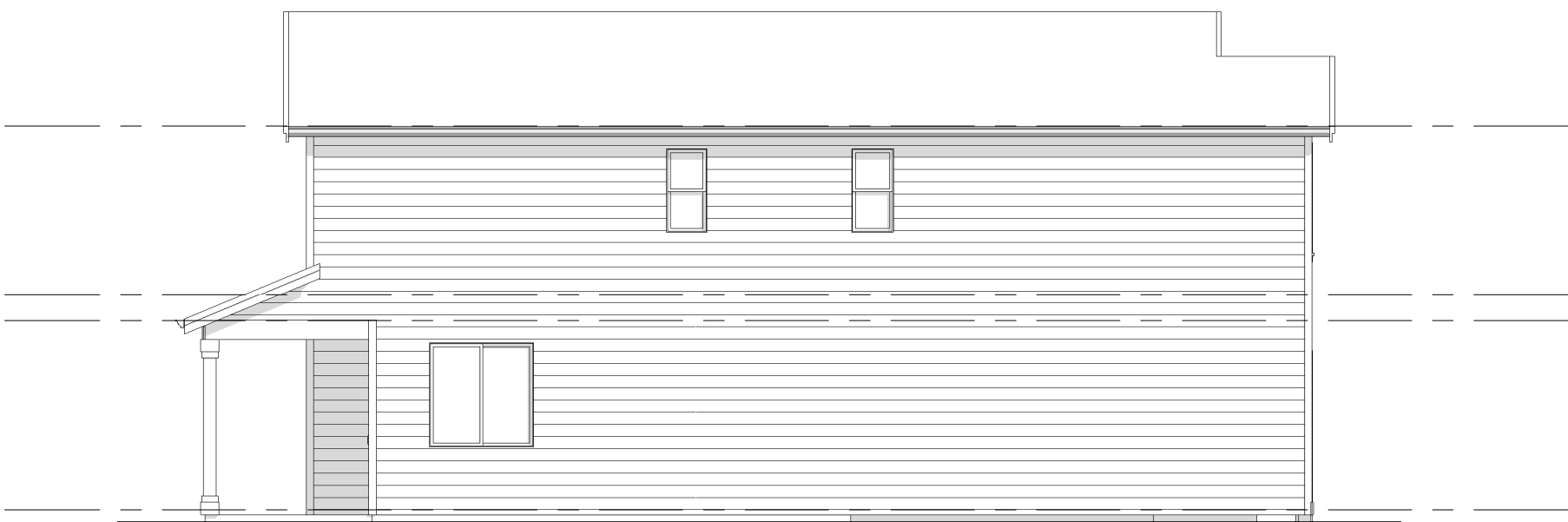
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SHEET
Building Elevations

A1



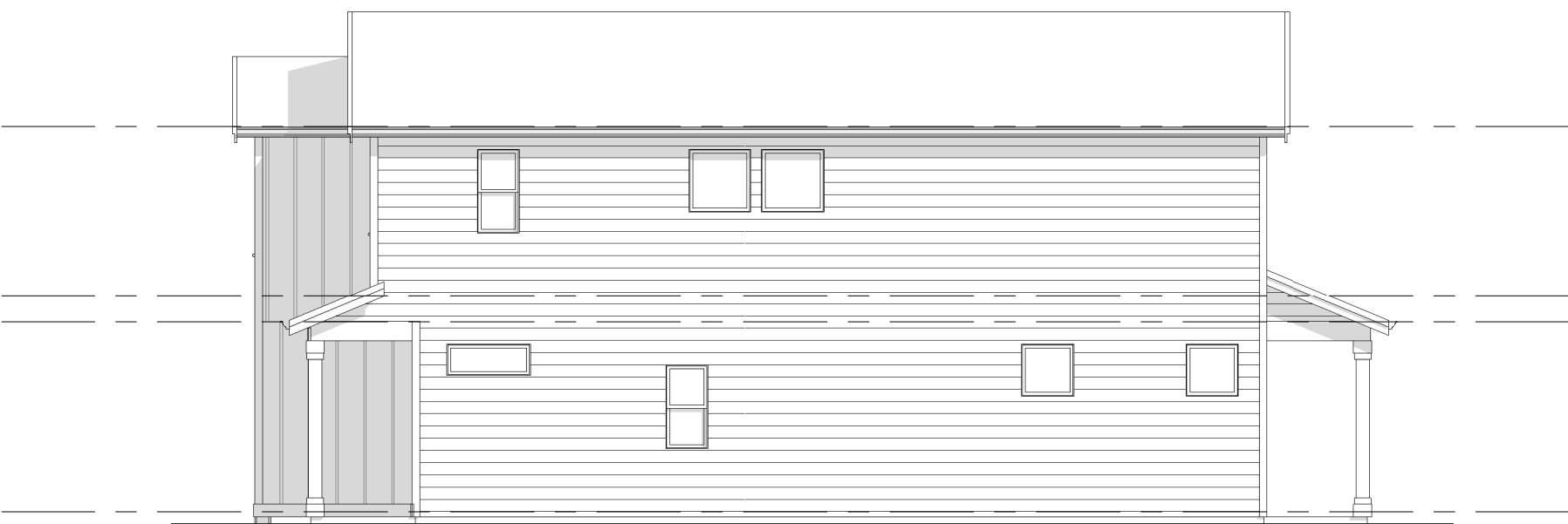
Front Elevation - Farmhouse
1/4" = 1'-0"



Left Elevation
1/8" = 1'-0"



Rear Elevation
1/8" = 1'-0"



Right Elevation
1/8" = 1'-0"

CONCEPTUAL DESIGN

Brian Emrich:
360-409-4592
Email:
edrafting@hotmail.com

FIRCREST 20' PLAN

FILE NAME :
20' PLAN 1499 SF
DRAWN BY:
E DRAFTING
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As indicated
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SHEET
Building Elevations

A1

1. KINNOX SIZES 4 ROUGH OPENINGS TO BE VERIFIED BY CONTRACTOR.
2. KINNOX THAT ARE BOTH WITHIN 24 INCHES OF A DOOR IN A CLOSED POSITION AND WITHIN 60 INCHES OF THE FLOOR SHOULD BE TEMPERED.
3. KINNOX IN ENCLOSURES FOR BATHTUBS, SHOWERS, HOT TUBS, WHIRLPOOLS, SAUNAS AND STEAM ROOMS WHERE THE KINNOX IS WITHIN 60 INCHES ABOVE A DRAIN INLET SHOULD BE TEMPERED.
4. KINNOX WITH A PANE LARGER THAN NINE SQUARE FEET, HAVING A BOTTOM EDGE CLOSER THAN 18 INCHES TO THE FLOOR AND A TOP EDGE HIGHER THAN 36 INCHES ABOVE THE FLOOR SHOULD BE TEMPERED.
5. FIREBLOCK ALL PLUMBING PENETRATIONS AND STEAR RUNS
6. ALL WOOD IN CONTACT WITH CONCRETE TO BE PRESSURE TREATED.
7. TOP OF HANDRAILS SHALL BE PLACED AT 36" ABOVE THE NOSING OF TREADS & LANDINGS THE NOSING OF TREADS AND LANDINGS. HANDRAILS SHALL BE CONTINUOUS THE FULL LENGTH OF THE STAIRS. HANDRAILS SHALL NOT BE LESS THAN 1 1/2" MORE THAN 2" IN CROSS-SECTIONAL DIMENSION. PROVIDE A SMOOTH SURFACE WITH NO SHARP CORNERS. HANDRAILS PROJECTING FROM A WALL SHALL HAVE A SPACE NOT LESS THAN 1 1/2" BETWEEN THE WALL AND THE HANDRAIL.
8. PREFABRICATED FIREPLACES, CHIMNEYS AND RELATED ACCESSORIES SHALL BE INSTALLED IN ACCORDANCE WITH APPROVAL AND TO BE INSTALLED PER MANUFACTURER'S SPECIFICATION.

THE NET FREE VENTILATING AREA SHALL NOT BE LESS THAN 1/150 OF THE AREA OF SPACE TO BE VENTILATED, EXCEPT THAT THE AREA MAY BE 1/300, PROVIDED AT LEAST 50% OF THE REQUIRED VENTILATING AREA IS PROVIDED BY VENTILATORS LOCATED IN THE UPPER PORTION OF THE SPACE TO BE VENTILATED AT LEAST 3 FEET ABOVE EAVE VENTS WITH THE BALANCE OF THE REQUIRED VENTILATION PROVIDED BY EAVE VENTS. THE OPENINGS SHALL BE COVERED WITH CORROSION-RESISTANT METAL MESH WITH MESH OPENINGS OF 1/4" IN DIMENSION.

1. EACH BEDROOM TO HAVE A MINIMUM WINDOW OPENINGS OF 5.7 SQ. FT. WITH A MINIMUM WIDTH OF 20" AND SHALL BE 44 IN. ABOVE FIN
FLR.
2. ALL WINDOWS WITHIN 12 IN. OF THE FLOOR, AND WITHIN 12 IN. OF ANY DOOR ARE TO HAVE TEMPERED GLAZING.
3. SHIFTSIGHTS ARE TO BE GLAZED WITH TEMPERED GLASS ON OUTSIDE AND LAMINATED GLASS ON INSIDE (UNLESS FLEXIGLASS). GLASS TO HAVE
MAXIMUM CLEAR GLASS OF 25 IN. AND FRAME IS TO BE ATTACHED TO A 2X6 CURB WITH A MINIMUM OF 1" OVER ROOF PLANE.
4. ALL TUB AND SHOWER ENCLOSURES ARE TO BE GLAZED WITH SAFETY GLASS.
5. EXTERIOR WOOD DOORS AND WINDOWS ARE TO BE DOUBLE GLASS. EXTERIOR DOORS ARE TO BE SOLID CORE WITH WEATHER STRIPPING.
6. PROVIDE 1 IN. DEADBOLT LOCKS ON ALL EXTERIOR DOORS, AND LOCKING DEVICES IN ALL DOORS AND WINDOWS WITHIN 10 FT. (VERTICAL
OF GRADE). PROVIDE PEEP-HOLE 54 - 66 IN. ABOVE FIN. FLOOR ON EXTERIOR ENTRY DOORS.
7. CONNECT ALL SWITCHES AND RECEPTS TO F.I.C. FOR LOCATION) TO HOUSE ELECTRICAL SERVICE AND INTER-CONNECT EACH ONE, SO THAT, WHEN
ANY ONE IS TRIPPED, THEY WILL ALL SHUT OFF.
8. PROVIDE COMBUSTION AIR VENTS (W/ SCREEN AND BACK DAMPER) FOR FIREPLACES, WOOD STOVES AND ANY APPLIANCES WITH AN OPEN
FLAME.
9. BATHROOMS AND UTILITY ROOMS ARE TO BE VENTED TO THE OUTSIDE IN A FAN CAPABLE OF PRODUCING A MINIMUM OF 4 AIR EXCHANGES
PER HOUR. RANGE HOODS ARE ALSO TO BE VENTED TO THE OUTSIDE.
10. ALL ELECTRICAL RECEPTABLES IN BATHROOMS, KITCHENS AND GARAGES ARE TO BE 5' OR 6' F.I.C. PER NATIONAL ELECTRICAL CODE
REQUIREMENTS.

1. ALL WORK SHALL BE DONE IN CONFORMANCE WITH THE LATEST EDITION OF LOCAL BUILDING CODE, ONE AND TWO FAMILY DWELLING CODES AND ALL OTHER GOVERNING CODES, LAWS AND REGULATIONS.

2. SITE/CONSTRUCTION DOCUMENTS AND CONSTRUCTION PHASE: CONTRACTOR SHALL NOT SCALE THE DRAWINGS, OR DETAILS CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, LOCATIONS, AND JOBSITE. NOTIFY DESIGN AGENCY IN WRITING OF ANY CORRECTIONS OR DEVIATIONS. MAKE ALL CORRECTIONS TO CONSTRUCTION DOCUMENTS IF ADDITIONAL DETAILS, SPECIFICATIONS ARE NEEDED FOR PROPER EXECUTION OF THE WORK. ALSO NOTIFY DESIGN AGENCY IN WRITING IF THERE ARE ANY CORRECTIONS OR CHANGES TO BE MADE TO THE CONSTRUCTION DOCUMENTS REQUIRED BY THE PLANNING/BUILDING DEPARTMENT OFFICIALS. PLANS, CLARIFICATION LIST OR COMMENTS (FROM THE PLANNING/BUILDING DEPARTMENT OFFICIALS) MUST BE SUBMITTED TO THE DESIGN AGENCY.

3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF ALL TRADES, INCLUDING ALL ARCHITECTURAL, STRUCTURAL, MECHANICAL AND ELECTRICAL REQUIREMENTS.

4. MECHANICAL AND ELECTRICAL WORK IS ON A CONTRACTOR DESIGN/BUILD BASIS. COORDINATE ALL ARCHITECTURAL AND STRUCTURAL REQUIREMENTS WITH MECHANICAL AND ELECTRICAL REQUIREMENTS.

5. ALL DIMENSIONS ARE TO THE FACE OF FRAMING MEMBERS UNLESS NOTED OTHERWISE. FOR ALL EXTERIOR AND INTERIOR WALL SPACING PLEASE REFER TO AO SHEET BUILDING INFORMATION.

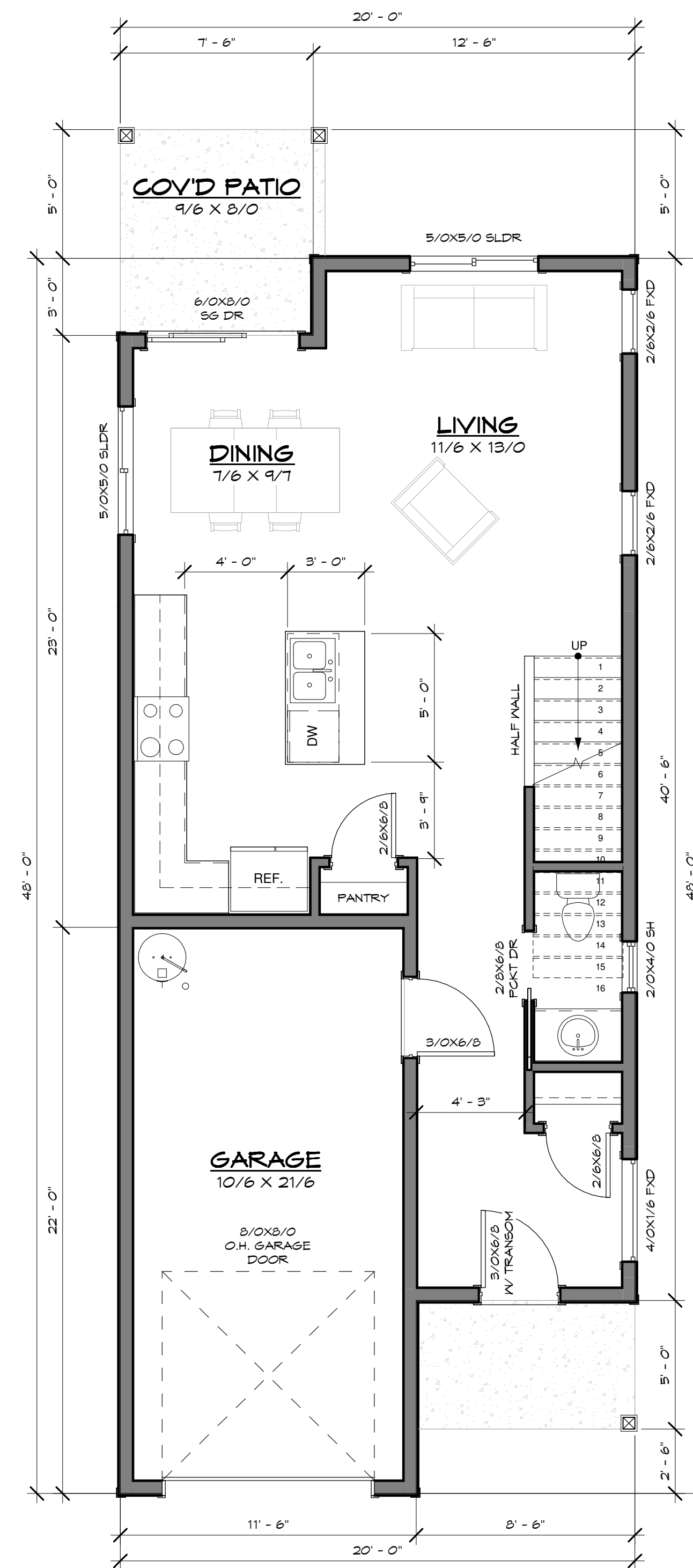
6. COORDINATE ALL ITEMS NOT SHOWN OR NOTED WITH OWNER AND/OR DESIGNER, INCLUDING BUT NOT LIMITED TO FINISHES, DOORS, CABINETS, HARDWARE, FIXTURES, ETC.

7. SEAL OR WEATHER STRIP ALL EXTERIOR OPENINGS AND PENETRATIONS IN MANNER TO PREVENT OUTSIDE AIR INFILTRATION AND MOISTURE FROM ENTERING STRUCTURAL AND OCCUPIED SPACES, INCLUDING AROUND PLUMBING AND ELECTRICAL LINES AND EQUIPMENT PASSING THROUGH WALLS, GUTTERS, DOWNSPOUTS, ETC.

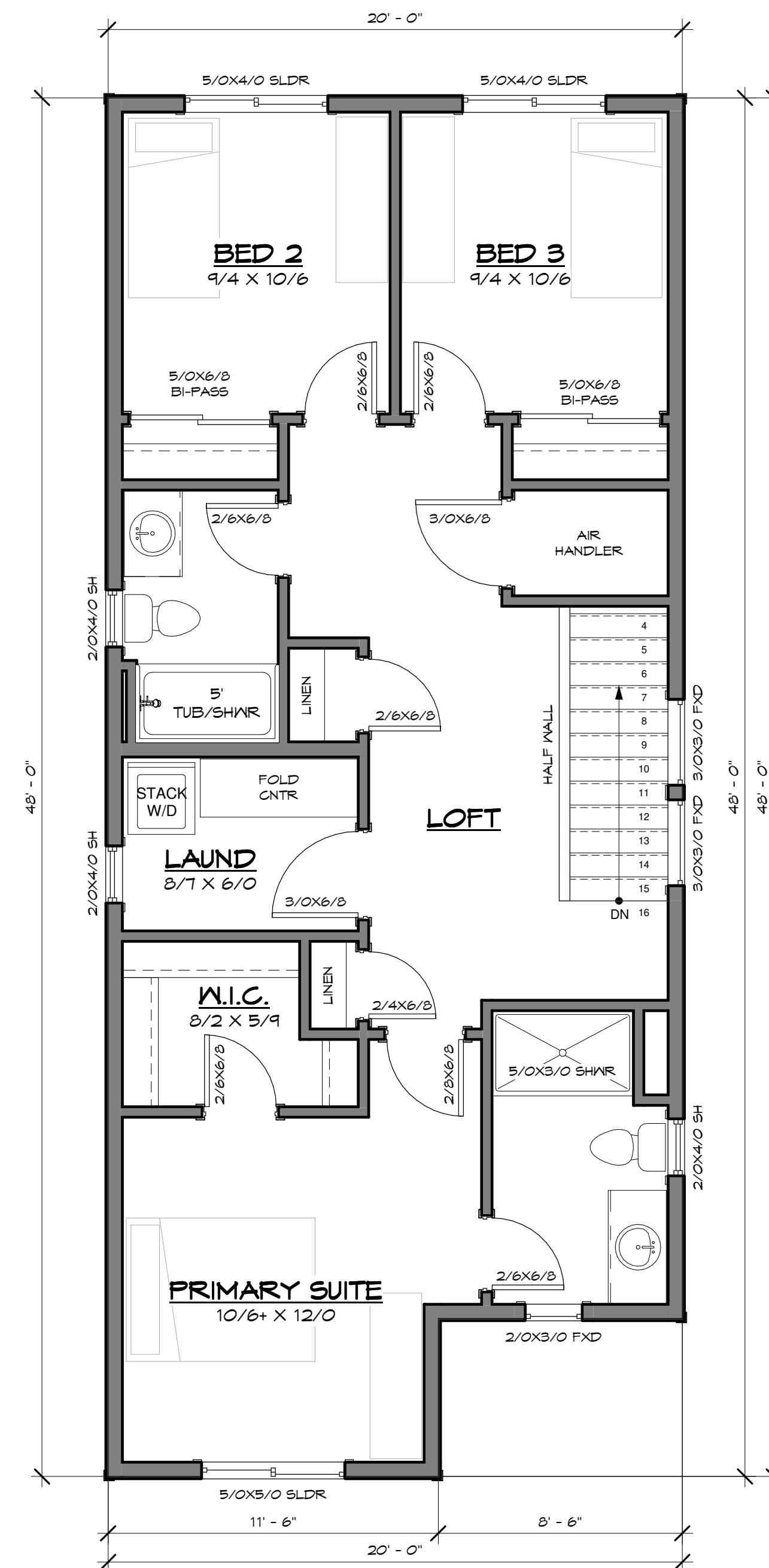
8. THE GENERAL CONTRACTOR IS NOT RESPONSIBLE TO THE DESIGN AGENCY PER THE MANUFACTURER'S PRINTED INSTRUCTIONS, SPECIFICATIONS AND INSTALLATION DETAILS THE INSTALLATION OF ALL BUILDING PRODUCTS (INTERIOR AND EXTERIOR), FIXTURES, EQUIPMENT, ETC., OR FOLLOW THE INDUSTRY STANDARD DETAILS FOR ALL THE CONDITIONS NOT SHOWN ON THE DRAWINGS FOR PROPER EXECUTION OF THE WORK IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS. DESIGN AGENCY WILL PROVIDE THE NECESSARY INFORMATION TO THE GENERAL CONTRACTOR FOR QUESTIONS OR INFORMATION PER REQUEST OF THE GENERAL CONTRACTOR OR OWNER FOR PROPER EXECUTION OF THE WORK.

THE DESIGNER SHALL NOT HAVE CONTROL OVER OR CHARGE OF AND SHALL NOT BE RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES, OR FOR SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK, SINCE THESE ARE SOLELY THE CONTRACTOR'S RESPONSIBILITY UNDER CONTRACT FOR CONSTRUCTION. THE DESIGNER SHALL NOT BE RESPONSIBLE FOR CONTRACTOR'S SCHEDULES OR FAILURE TO CARRY OUT THE WORK IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS.

THE DESIGNER DOES NOT RECOMMEND OR SPECIFY USE OF ANY TYPE OF "STUCCO PRODUCTS" OR EXTERIOR INSULATED AND FINISH SYSTEM "E.I.F.S." FOR THE EXTERIOR OF THE HOUSE. THE DESIGNER WILL NOT BE LIABLE FOR ANY KIND OF DAMAGES TO THE BUILDING (STRUCTURAL OR COSMETIC) IF THE OWNER OR THE CONTRACTOR DECIDE TO USE SUCH PRODUCTS.



Main Floor Plan



Upper Floor Plan

110V  S.D.	SMOKE & CARBON MONOXIDE COMBO DETECTORS TO BE INSTALLED AS REQUIRED PER IRC R313.3. SMOKE DETECTORS TO BE INTERCONNECTED AND POWERED BY PREMISE WIRING AND HAVE BATTERY BACKUP.	
FAN V.T.O.S 	DOMESTIC KITCHENS	
	RANGE HOODS/DO/INDRAFT EXHAUST.	150 CFM FAN
	BATHROOMS/ TOILET ROOMS	
ROOMS CONTAINING BATH AND SPA FACILITIES. (STATIC PRESSURE SHALL BE RATED AT 0.10-INCH WATER GAUGE FOR INTERMITTENT FANS.)	MIN. 80 CFM INTERMITTENT OR 20 CFM CONTINUOUS	
TOILET ROOMS WITHOUT BATHING OR SPA FACILITIES, WHEN NOT PROVIDED WITH NATURAL VENTILATION IN ACCORDANCE WITH SECTION R303.3.2.	MIN. 50 CFM	

Lots: 8-39, 48-57

FIRCREST 20' PLAN

TITLE NAME :
20' PLAN 1499 SF
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E DRAFTING
SCALE :
 $1/4" = 1'-0"$
PLOT DATE :
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SHEET
Floor Plans

A3



GENERAL FLOOR PLAN NOTES:

1. WINDOW SIZES & ROUGH OPENINGS TO BE VERIFIED BY CONTRACTOR.
2. WINDOWS THAT ARE BOTH WITHIN 24 INCHES OF A DOOR IN A CLOSED POSITION AND WITHIN 60 INCHES OF THE FLOOR SHOULD BE TEMPERED.
3. WINDOWS IN ENCLOSURES FOR BATHTUBS, SHOWERS, HOT TUBS, WHIRLPOOLS, SAUNAS AND STEAM ROOMS WHERE THE GLASS IS WITHIN 60 INCHES ABOVE A DRAIN INLET SHOULD BE TEMPERED.
4. WINDOWS WITH A PANE LARGER THAN NINE SQUARE FEET, HAVING A BOTTOM EDGE CLOSER THAN 18 INCHES TO THE FLOOR AND A TOP EDGE HIGHER THAN 36 INCHES ABOVE THE FLOOR SHOULD BE TEMPERED.
5. FIREBLOCK ALL PLUMBING PENETRATIONS AND STAIR RUNS.
6. ALL WOOD IN CONTACT WITH CONCRETE TO BE PRESSURE TREATED.
7. TOP OF HANDRAILS SHALL BE PLACED AT 38" ABOVE THE NOSING OF TREADS & LANDINGS THE NOSING OF TREADS AND LANDINGS. HANDRAILS SHALL BE CONTINUOUS THE FULL LENGTH OF THE STAIRS. THE HANDGRIP PORTION SHALL NOT BE LESS THAN 1 1/4" NOR MORE THAN 2" IN CROSS-SECTIONAL DIMENSION. PROVIDE A SMOOTH SURFACE WITH NO SHARP CORNERS. HANDRAILS PROJECTING FROM A WALL SHALL HAVE A SPACE NOT LESS THAN 1 1/2" BETWEEN THE WALL AND THE HANDRAIL.
8. PREFABRICATED FIREPLACES, CHIMNEYS AND RELATED COMPONENTS TO BEAR U.L. OR I.C.B.O. SEAL OF APPROVAL AND TO BE INSTALLED PER MANUFACTURER'S SPECIFICATION.
9. ELEV. OF FLOOR OR LAND'G 11/2" MAX (OR 13/4" MAX FOR INSUL'G DR) BELOW THRESHOLD IS REQ'D FROM THE REG'D EXIT DOOR, WHERE DOOR IS NOT THE REG'D EXIT DOOR. A STAIRWAY OF 2 OR FEWER RISERS IS PERMITTED WHERE DOOR DOES NOT SWING OVER RISER.

CEILING VENTILATION:

THE NET FREE VENTILATING AREA SHALL NOT BE LESS THAN 1/150 OF THE AREA OF SPACE TO BE VENTILATED, EXCEPT THAT THE AREA MAY BE 1/300, PROVIDED AT LEAST 50% OF THE REQUIRED VENTILATING AREA IS PROVIDED BY VENTILATORS LOCATED IN THE UPPER PORTION OF THE SPACE TO BE VENTILATED AT LEAST 3 FEET ABOVE EAVE VENTS WITH THE BALANCE OF THE REQUIRED VENTILATION PROVIDED BY EAVE VENTS. THE OPENINGS SHALL BE COVERED WITH CORROSION-RESISTANT METAL MESH WITH MESH OPENINGS OF 1/4" IN DIMENSION.

MISCELLANEOUS NOTES:

1. EACH BEDROOM TO HAVE A MINIMUM WINDOW OPENING OF 5.7 SQ. FT. WITH A MINIMUM WIDTH OF 20 IN. AND A SILL LESS THAN 44 IN. ABOVE FIN. FLR.
2. ALL WINDOWS WITHIN 18 IN. OF THE FLOOR, AND WITHIN 12 IN. OF ANY DOOR ARE TO HAVE TEMPERED GLAZING.
3. SKYLIGHTS ARE TO BE GLAZED WITH TEMPERED GLASS ON OUTSIDE AND LAMINATED GLASS ON INSIDE (UNLESS PLEXIGLAS). GLASS TO HAVE MAXIMUM CLEAR SPAN OF 25 IN. AND FRAME IS TO BE ATTACHED TO A 2X CURB WITH A MINIMUM OF 4 IN. ABOVE ROOF PLANE.
4. ALL TUB AND SHOWER ENCLOSURES ARE TO BE GLAZED WITH SAFETY GLASS.
5. ALL EXTERIOR WINDOWS ARE TO BE DOUBLE GLAZED AND ALL EXTERIOR DOORS ARE TO BE SOLID CORE WITH WEATHER STRIPPING, PROVIDE 1/2 IN. DEADBOLT LOCKS ON ALL EXTERIOR DOORS, AND LOCKING DEVICES ON ALL DOORS AND WINDOWS WITHIN 10 FT. (VERTICAL) OF GRADE. PROVIDE PEEP-HOLE 54 - 66 IN. ABOVE FIN. FLOOR ON EXTERIOR ENTRY DOORS.
6. CONNECT ALL SMOKE DETECTORS (SEE PLAN FOR LOCATION) TO HOUSE ELECTRICAL SYSTEM AND INTER-CONNECT EACH ONE, SO THAT, WHEN ANY ONE IS TRIPPED, THEY WILL ALL SOUND.
7. PROVIDE COMBUSTION AIR VENTS (W/ SCREEN AND BACK DAMPER) FOR FIREPLACES, WOOD STOVES AND ANY APPLIANCES WITH AN OPEN FLAME.
8. BATHROOMS AND UTILITY ROOMS ARE TO BE VENTED TO THE OUTSIDE WITH A FAN CAPABLE OF PRODUCING A MINIMUM OF 4 AIR EXCHANGES PER HOUR. RANGE HOODS ARE ALSO TO BE VENTED TO THE OUTSIDE.
9. ELECTRICAL RECEPTACLES IN BATHROOMS, KITCHENS AND GARAGES SHALL BE G.F.I. OR G.F.I.C. PER NATIONAL ELECTRICAL CODE REQUIREMENTS.

GENERAL NOTES:

1. ALL WORK SHALL BE DONE IN CONFORMANCE WITH THE LATEST EDITION OF LOCAL BUILDING CODE, ONE AND TWO FAMILY DWELLING CODES AND ALL OTHER GOVERNING CODES, LAWS AND REGULATIONS.
2. SITE/CONSTRUCTION DOCUMENTS AND CONSTRUCTION PHASE. CONTRACTOR SHALL NOT SCALE THE DRAWINGS, OR DETAILS. CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS AND CONDITIONS AT THE JOBSITE. NOTIFY DESIGN AGENCY IN WRITING OF ANY SIGNIFICANT DEVIATIONS, ANY CHANGES TO CONSTRUCTION DOCUMENTS OR IF ADDITIONAL DETAILS, SPECIFICATIONS ARE NEEDED FOR PROPER EXECUTION OF THE WORK. ALSO NOTIFY DESIGN AGENCY IN WRITING IF THERE ARE ANY CORRECTIONS OR CHANGES TO BE MADE TO THE CONSTRUCTION DOCUMENTS REQUIRED BY THE PLANNING/BUILDING DEPARTMENT OFFICIALS. PLANS CORRECTION LIST OR COMMENTS (FROM THE PLANNING/BUILDING DEPARTMENT OFFICIALS) MUST BE DELIVERED TO THE DESIGN AGENCY.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF ALL TRADES, INCLUDING ALL ARCHITECTURAL, STRUCTURAL, MECHANICAL AND ELECTRICAL REQUIREMENTS.
4. MECHANICAL AND ELECTRICAL WORK IS ON A CONTRACTOR DESIGN/BUILD BASIS. COORDINATE ALL ARCHITECTURAL AND STRUCTURAL WORK WITH MECHANICAL AND ELECTRICAL REQUIREMENTS.
5. ALL DIMENSIONS ARE TO THE FACE OF FRAMING MEMBERS UNLESS NOTED OTHERWISE. FOR ALL EXTERIOR AND INTERIOR WALL SPACINGS PLEASE REFER TO A0 SHEET BUILDING INFORMATION.
6. COORDINATE ALL ITEMS NOT SHOWN OR NOTED WITH OWNER AND/OR DESIGNER, INCLUDING BUT NOT LIMITED TO FINISHES, COLORS, CABINETS, HARDWARE, FIXTURES, ETC.
7. SEAL OR WEATHER STRIP ALL EXTERIOR OPENINGS AND PENETRATIONS IN MANNER TO PREVENT OUTSIDE AIR INFILTRATION AND MOISTURE FROM ENTERING STRUCTURAL AND OCCUPIED SPACES, INCLUDING AROUND PLUMBING AND ELECTRICAL LINES AND EQUIPMENT PASSING THROUGH WALLS, GUTTERS, DOWNSPOUTS, ETC.
8. IT IS THE GENERAL CONTRACTOR'S RESPONSIBILITY TO FOLLOW AND COORDINATE PER THE MANUFACTURER'S PRINTED INSTRUCTIONS, SPECIFICATIONS AND INSTALLATION DETAILS THE INSTALLATION OF ALL BUILDING PRODUCTS (INTERIOR AND EXTERIOR), FIXTURES, EQUIPMENT, ETC. OR FOLLOW THE INDUSTRY STANDARD DETAILS FOR ALL THE CONDITIONS NOT SHOWN ON THE DRAWINGS FOR PROPER EXECUTION OF THE WORK IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS. THE DESIGN AGENCY MUST BE NOTIFIED IN WRITING TO PROVIDE ADDITIONAL DETAILS, SPECIFICATIONS OR INFORMATION PER REQUEST OF THE GENERAL CONTRACTOR OR OWNER FOR PROPER EXECUTION OF THE WORK.

CONSTRUCTION PHASE:

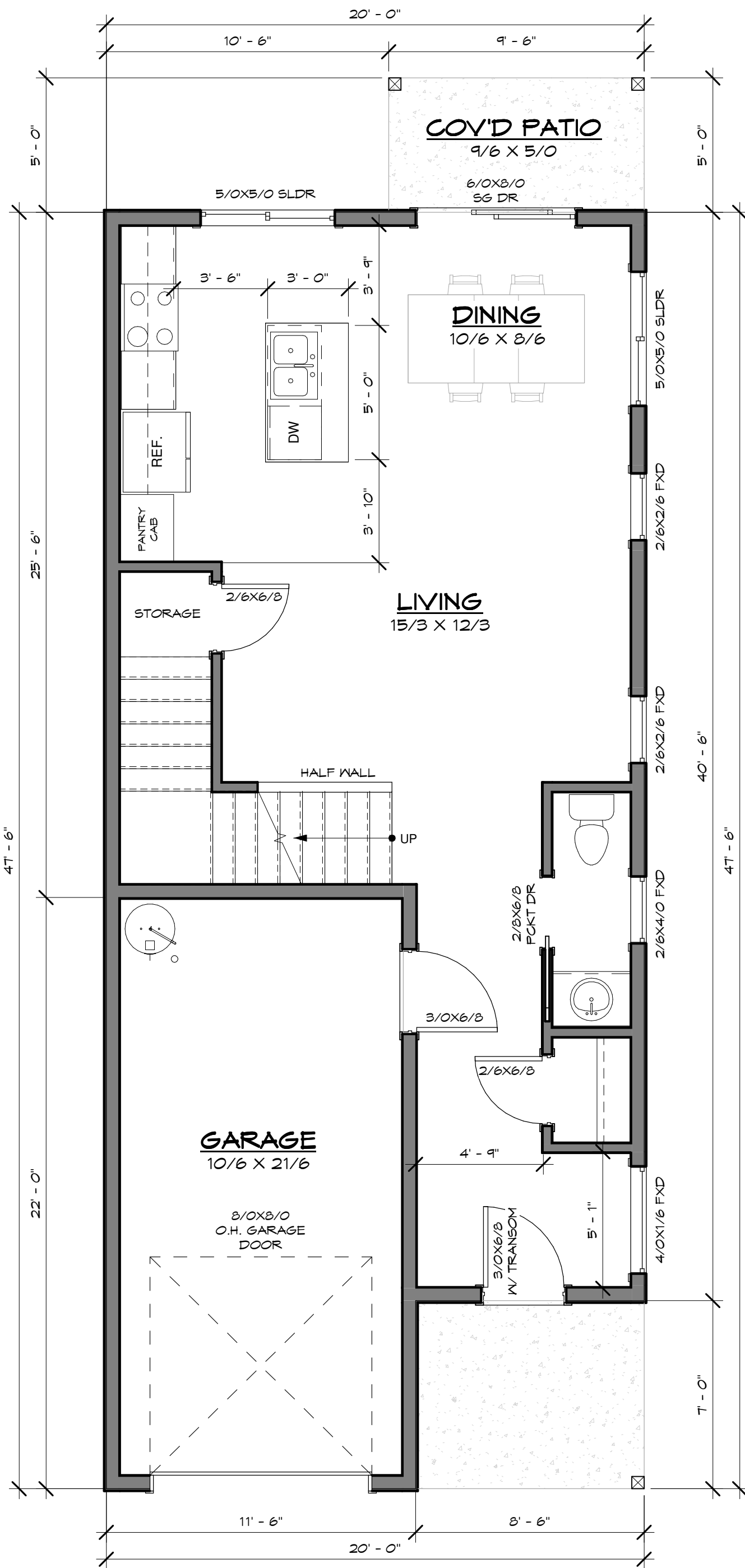
THE DESIGNER SHALL NOT HAVE CONTROL OVER OR CHARGE OF AND SHALL NOT BE RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES, OR FOR SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK, SINCE THESE ARE SOLELY THE CONTRACTOR'S RESPONSIBILITY UNDER CONTRACT FOR CONSTRUCTION. THE DESIGNER SHALL NOT BE RESPONSIBLE FOR CONTRACTOR'S SCHEDULES OR FAILURE TO CARRY OUT THE WORK IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS.

MATERIAL SPECIFICATION NOTE:

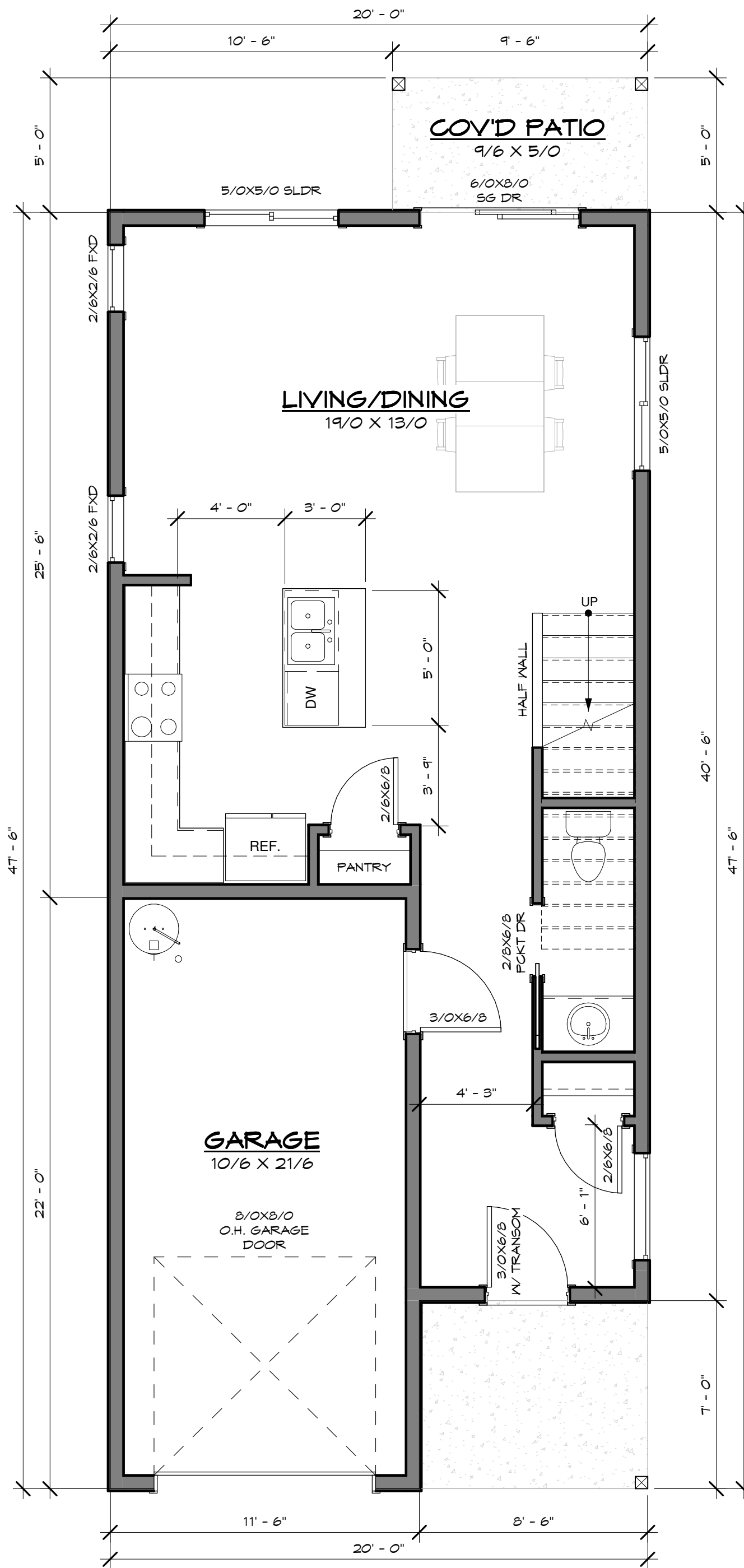
THE DESIGNER DOES NOT RECOMMEND OR SPECIFY USE OF ANY TYPE OF "STUCCO PRODUCTS" OR EXTERIOR INSULATED AND FINISH SYSTEM ("EIFS") FOR THE EXTERIOR OF THE HOUSE. THE DESIGNER WILL NOT BE LIABLE FOR ANY KIND OF DAMAGES TO THE BUILDING (STRUCTURAL OR COSMETIC) IF THE OWNER OR THE CONTRACTOR DECIDE TO USE SUCH PRODUCTS.

- 110V S.D. SMOKE & CARBON MONOXIDE COMBO DETECTORS TO BE INSTALLED AS REQUIRED PER IRC R319.3. SMOKE DETECTORS TO BE INTERCONNECTED AND POWERED BY PREMISE WIRING AND HAVE BATTERY BACKUP.

FAN V.T.O.S.	DOMESTIC KITCHENS	
	RANGE HOODS/DOWNDRAFT EXHAUST.	150 CFM FAN
	BATHROOMS/ TOILET ROOMS	
	ROOMS CONTAINING BATH AND SPA FACILITIES. (STATIC PRESSURE SHALL BE RATED @ 0.10-INCH WATER GAUGE FOR INTERMITTENT FANS.)	MIN. 80 CFM INTERMITTENT OR 20 CFM CONTINUOUS
	TOILET ROOMS WITHOUT BATHING OR SPA FACILITIES, WHEN NOT PROVIDED WITH NATURAL VENTILATION IN ACCORDANCE WITH SECTION R303.3.2.	MIN. 50 CFM



MAIN FLR OPT A
644 SF



MAIN FLR OPT B
644 SF

Main Floor Plan
1/4" = 1'-0"

CONCEPTUAL DESIGN

FIRCREST 20' PLAN

FILE NAME :

XXXX-X-XX-XX

DRAWN BY:

E DRAFTING

SCALE:

1/4" = 1'-0"

PLOT DATE :

6/30/2023
10:21:57 AM

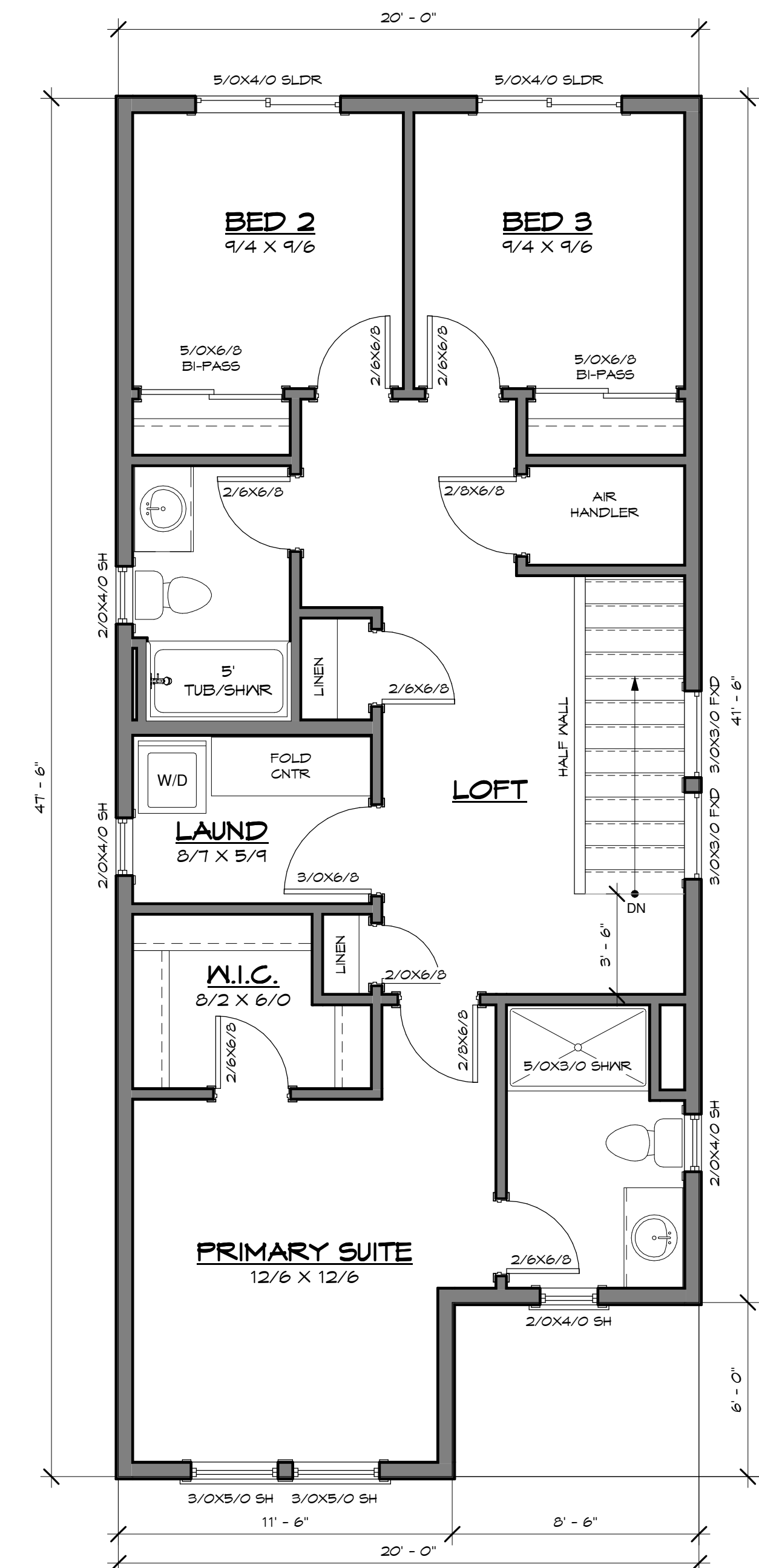
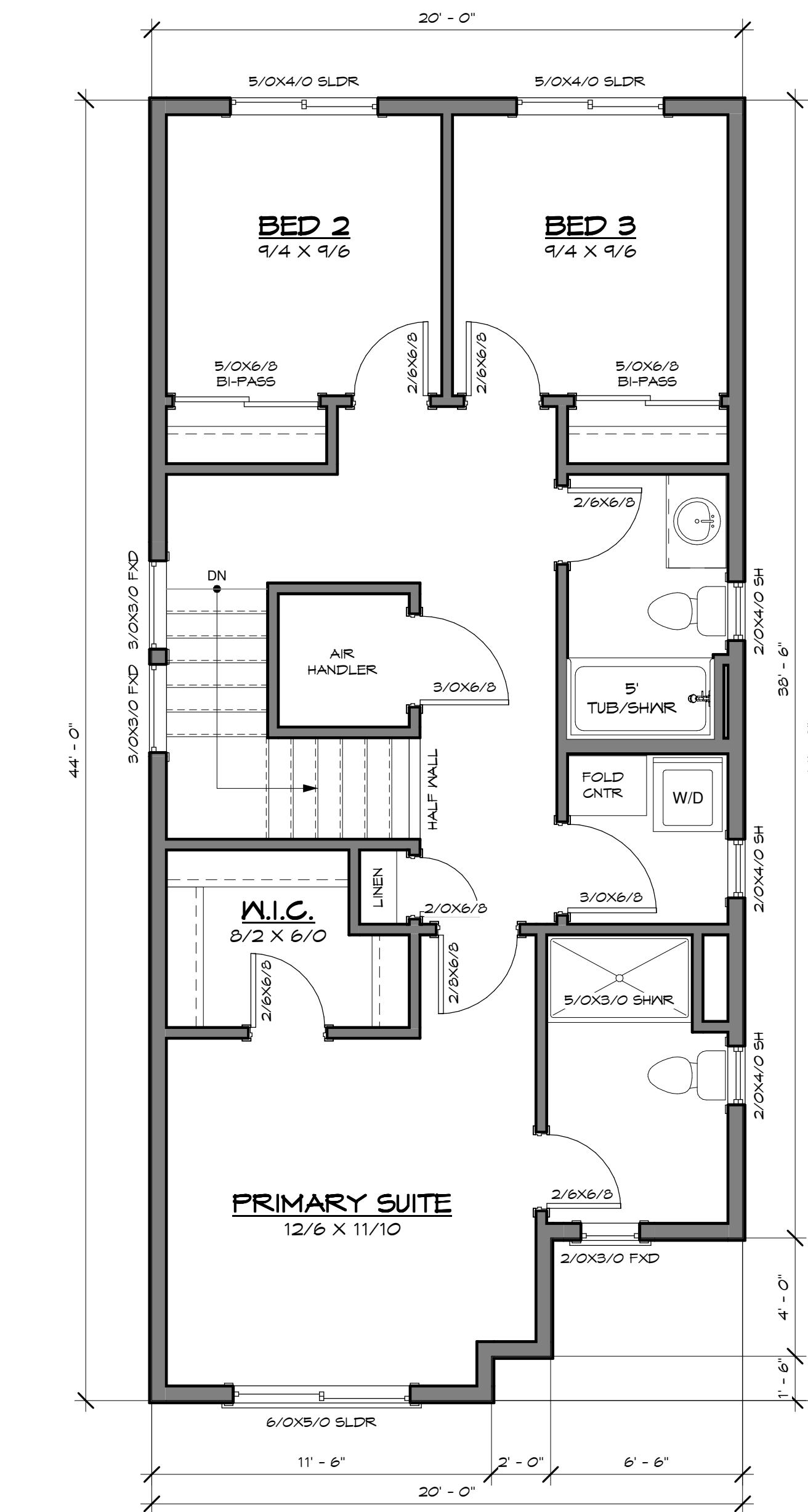
Written dimensions on these drawings shall have precedence over scaled dimensions. Contractor shall assume responsibility for all dimensions and conditions on the job. The designer must be notified and consent to any variations from dimensions set forth herein. The type of exterior finish, the installation and waterproofing details are all to be the full responsibility of the owner/builder. This Designer assumes no responsibility for the integrity of the building envelope. This document is the property of E Drafting Corp. No reuse or reproduction is allowed without the written consent from E Drafting Corp.

SHEET
Floor Plans

A3

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CONCEPTUAL DESIGN



Lots: 8-39, 48-57



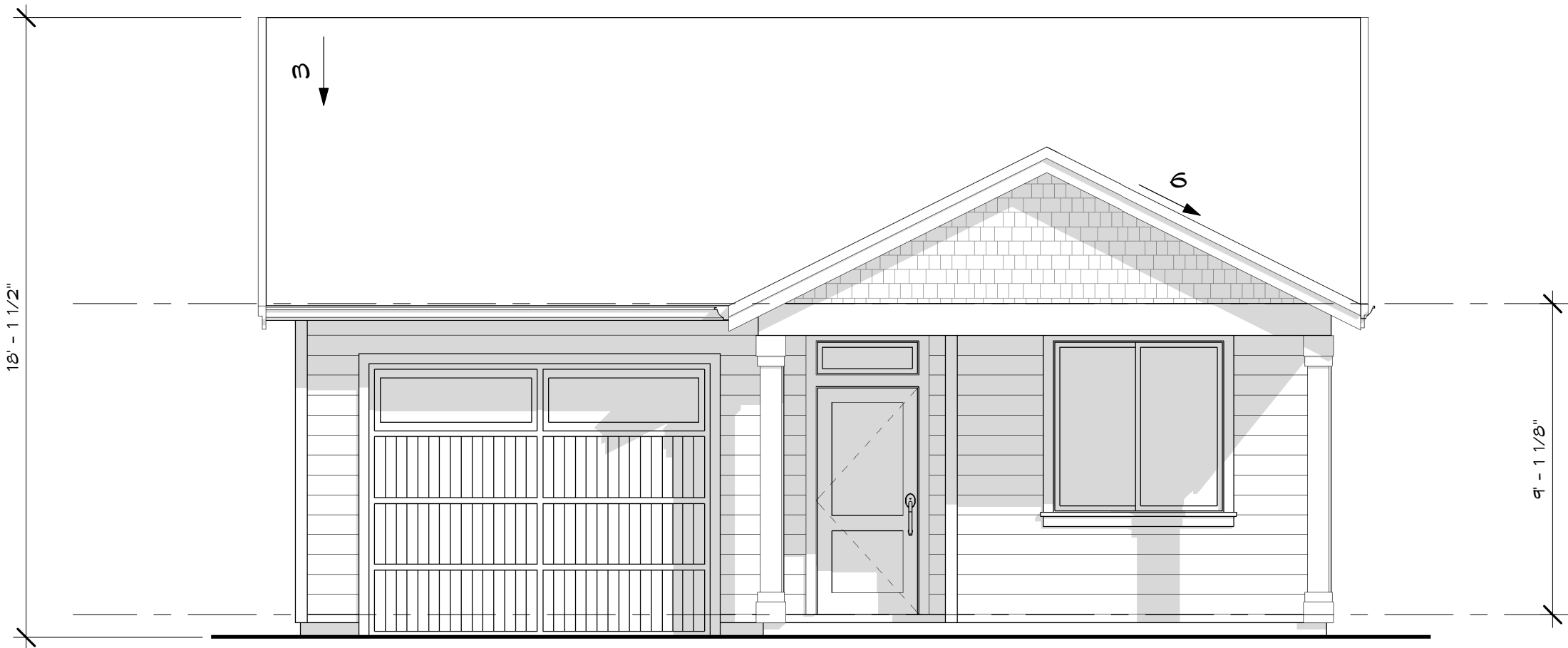
FIRCREST 20' PLAN

FILE NAME :
XXXX-X-XX-XX
DRAWN BY:
E DRAFTING
SCALE :
1/4" = 1'-0"
PLOT DATE :
6/30/2023
10:21:57 AM

Written dimensions on these drawings shall have precedence over scaled dimensions. Contractor shall assume responsibility for all dimensions and conditions on the job. The designer must be notified and consent to any variations from dimensions set forth herein. The type of exterior finish, the installation and waterproofing details are all to be the full responsibility of the owner/builder. This Designer assumes no responsibility for the integrity of the building envelope. This document is the property of E Drafting Corp. No reuse or reproduction is allowed without the written consent from E Drafting Corp.

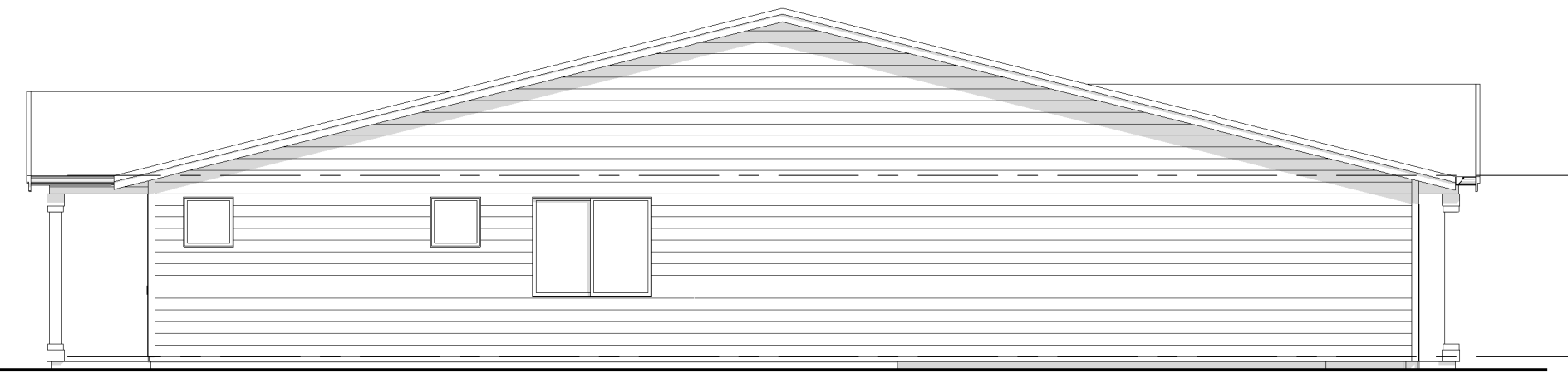
SHEET
Floor Plans

A3.1



Front Elevation - NW
1/4" = 1'-0"

CONCEPTUAL DESIGN



Left Elevation
1/8" = 1'-0"



Rear Elevation
1/8" = 1'-0"



Right Elevation
1/8" = 1'-0"



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Your new home starts here

Brian Emrich:

360-409-4592

Email:

edrafting@hotmail.com

FIRCREST 30' PLAN

FILE NAME :

XXXX-X-XX-XX

DRAWN BY:

E DRAFTING

SCALE :

As indicated

PLOT DATE :

6/28/2023
12:21:15 PM

Written dimensions on these drawings shall have precedence over scaled dimensions. Contractor shall assume responsibility for all dimensions and conditions on the job. The designer must be notified and consent to any variations from dimensions set forth herein. The type of exterior finish, the installation and waterproofing details are all to be the full responsibility of the owner/builder. This Designer assumes no responsibility for the integrity of the building envelope. This document is the property of E Drafting Corp. No reuse or reproduction is allowed without the written consent from E Drafting Corp.

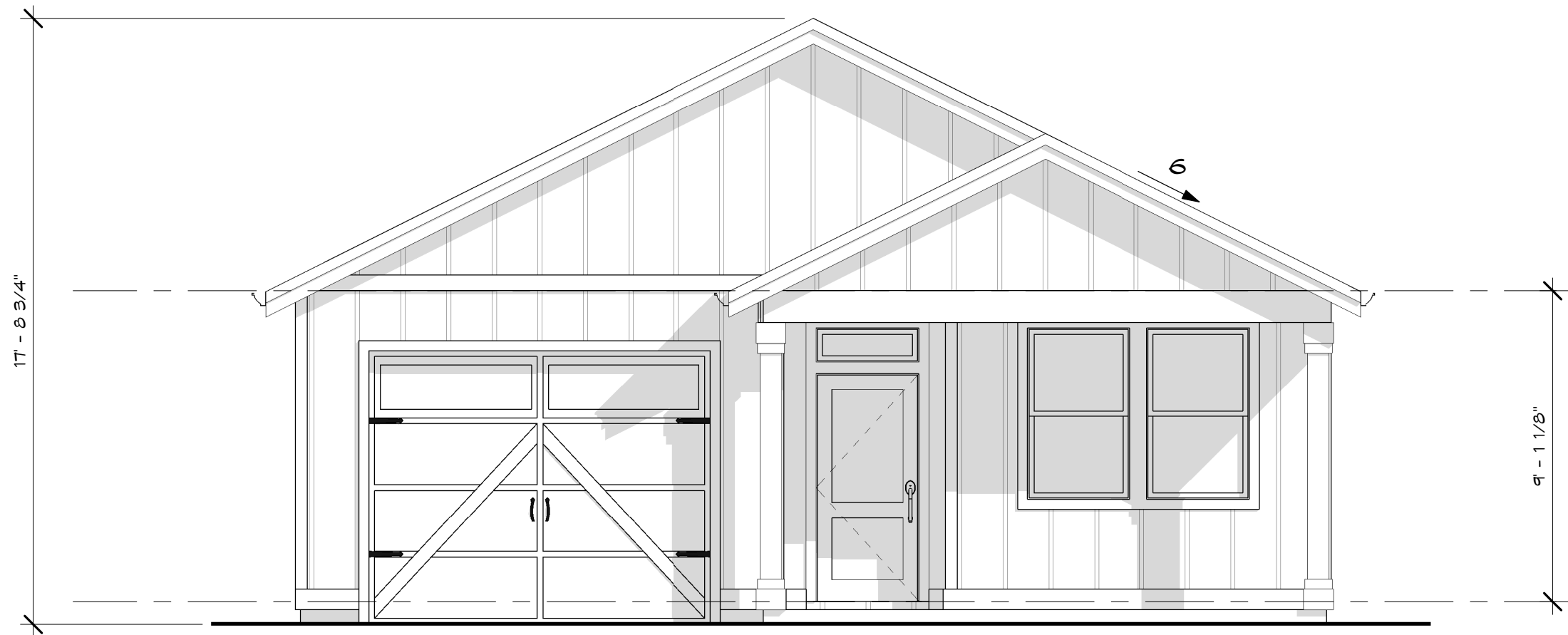
SHEET

Building Elevations

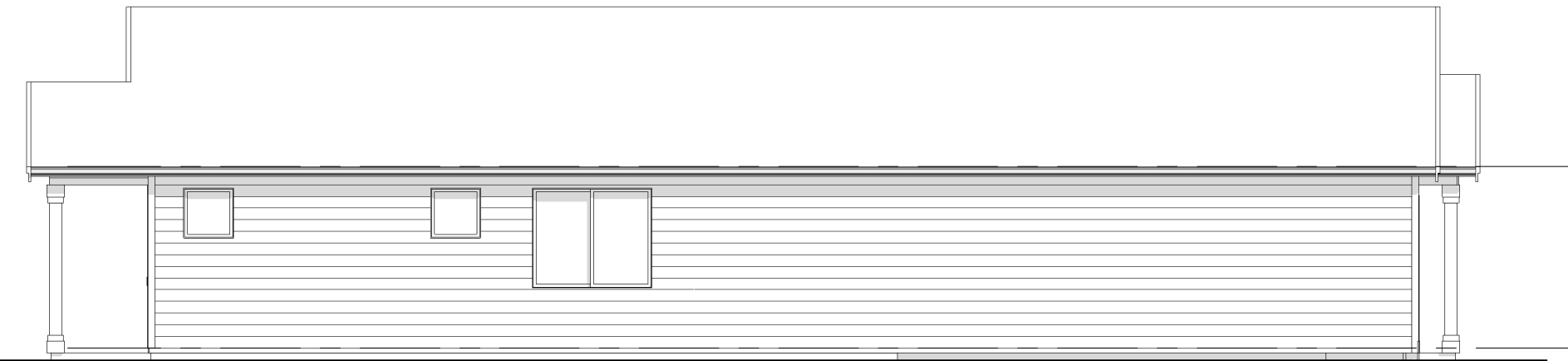
A1

Page 51 of 167

Lots: 1-7



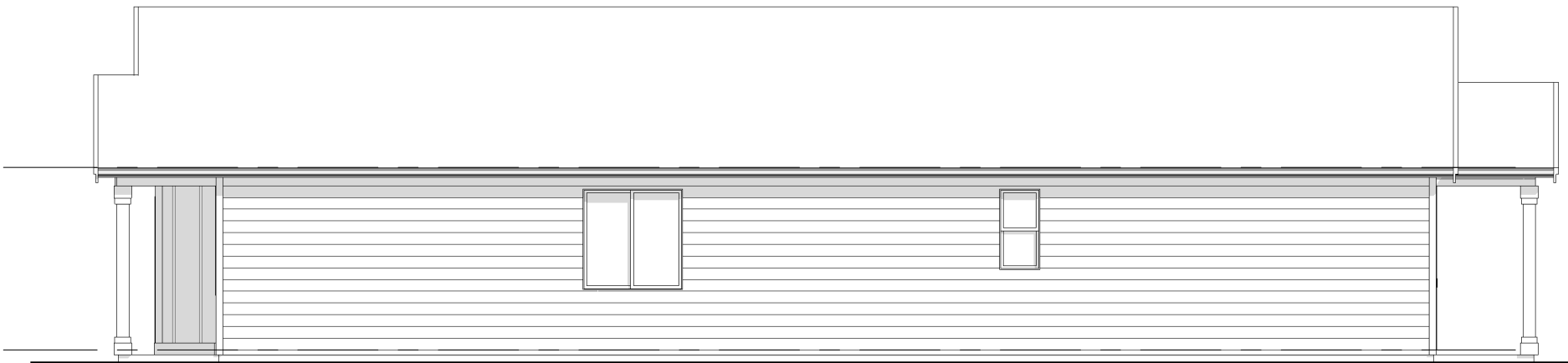
Front Elevation - Farmhouse
1/4" = 1'-0"



Left Elevation
1/8" = 1'-0"



Rear Elevation
1/8" = 1'-0"



Right Elevation
1/8" = 1'-0"

CONCEPTUAL DESIGN

Brian Emrich:
360-409-4592
Email:
edrafting@hotmail.com

FIRCREST 30' PLAN

FILE NAME :
XXXX-X-XX-XX
DRAWN BY:
E DRAFTING
SCALE :
As indicated
PLOT DATE :
6/28/2023
12:19:19 PM

Written dimensions on these drawings shall have precedence over scaled dimensions. Contractor shall assume responsibility for all dimensions and conditions on the job. The designer must be notified and consent to any variations from dimensions set forth herein. The type of exterior finish, the installation and waterproofing details are all to be the full responsibility of the owner/builder. This Designer assumes no responsibility for the integrity of the building envelope. This document is the property of E Drafting Corp. No reuse or reproduction is allowed without the written consent from E Drafting Corp.

SHEET
Building Elevations

A1

GENERAL FLOOR PLAN NOTES:

1. WINDOW SIZES & ROUGH OPENINGS TO BE VERIFIED BY CONTRACTOR.
2. WINDOWS THAT ARE BOTH WITHIN 24 INCHES OF A DOOR IN A CLOSED POSITION AND WITHIN 60 INCHES OF THE FLOOR SHOULD BE TEMPERED.
3. WINDOWS IN ENCLOSURES FOR BATHTUBS, SHOWERS, HOT TUBS, WHIRLPOOLS, SAUNAS AND STEAM ROOMS WHERE THE GLASS IS WITHIN 60 INCHES ABOVE A DRAIN INLET SHOULD BE TEMPERED.
4. WINDOWS WITH A PANE LARGER THAN NINE SQUARE FEET, HAVING A BOTTOM EDGE CLOSER THAN 10 INCHES TO THE FLOOR AND A TOP EDGE HIGHER THAN 36 INCHES ABOVE THE FLOOR SHOULD BE TEMPERED.
5. FIREBLOCK ALL PLUMBING PENETRATIONS AND STAIR RUNS.
6. ALL WOOD IN CONTACT WITH CONCRETE TO BE PRESSURE TREATED.
7. TOP OF HANDRAILS SHALL BE PLACED AT 36" ABOVE THE NOSING OF TREADS & LANDINGS THE NOSING OF TREADS AND LANDINGS. HANDRAILS SHALL BE CONTINUOUS THE FULL LENGTH OF THE STAIRS. THE HANDGRIP PORTION SHALL NOT BE LESS THAN 1 1/4" NOR MORE THAN 2" IN CROSS-SECTIONAL DIMENSION. PROVIDE A SMOOTH SURFACE WITH NO SHARP CORNERS. HANDRAILS PROJECTING FROM A WALL SHALL HAVE A SPACE NOT LESS THAN 1 1/2" BETWEEN THE WALL AND THE HANDRAIL.
8. PREFABRICATED FIREPLACES, CHIMNEYS AND RELATED COMPONENTS TO BEAR U.L. OR I.C.B.O. SEAL OF APPROVAL AND TO BE INSTALLED PER MANUFACTURER'S SPECIFICATION.
9. ELEV. OF FLOOR OR LAND'G 11/2" MAX (OR 13/4" MAX FOR INSURING DR) BELOW THRESHOLD IS REQ'D FROM THE REG'D EXIT DOOR, WHERE DOOR IS NOT THE REG'D EXIT DOOR. A STAIRWAY OF 2 OR FEWER RISERS IS PERMITTED WHERE DOOR DOES NOT SWING OVER RISER.

CEILING VENTILATION:

THE NET FREE VENTILATING AREA SHALL NOT BE LESS THAN 1/150 OF THE AREA OF SPACE TO BE VENTILATED, EXCEPT THAT THE AREA MAY BE 1/300, PROVIDED AT LEAST 50% OF THE REQUIRED VENTILATING AREA IS PROVIDED BY VENTILATORS LOCATED IN THE UPPER PORTION OF THE SPACE TO BE VENTILATED AT LEAST 3 FEET ABOVE EAVE VENTS WITH THE BALANCE OF THE REQUIRED VENTILATION PROVIDED BY EAVE VENTS. THE OPENINGS SHALL BE COVERED WITH CORROSION-RESISTANT METAL MESH WITH MESH OPENINGS OF 1/4" IN DIMENSION.

MISCELLANEOUS NOTES:

1. EACH BEDROOM TO HAVE A MINIMUM WINDOW OPENING OF 5.7 SQ. FT. WITH A MINIMUM WIDTH OF 20 IN. AND A SILL LESS THAN 44 IN. ABOVE FIN. FLR.
2. ALL WINDOWS WITHIN 10 IN. OF THE FLOOR, AND WITHIN 12 IN. OF ANY DOOR ARE TO HAVE TEMPERED GLAZING.
3. SKYLIGHTS ARE TO BE GLAZED WITH TEMPERED GLASS ON OUTSIDE AND LAMINATED GLASS ON INSIDE (UNLESS PLEXIGLAS). GLASS TO HAVE MAXIMUM CLEAR SPAN OF 25 IN. AND FRAME IS TO BE ATTACHED TO A 2X CURB WITH A MINIMUM OF 4 IN. ABOVE ROOF PLANE.
4. ALL TUB AND SHOWER ENCLOSURES ARE TO BE GLAZED WITH SAFETY GLASS.
5. ALL EXTERIOR WINDOWS ARE TO BE DOUBLE GLAZED AND ALL EXTERIOR DOORS ARE TO BE SOLID CORE WITH WEATHER STRIPPING. PROVIDE 1 IN. DEADBOLT LOCKS ON ALL EXTERIOR DOORS, AND LOCKING DEVICES ON ALL DOORS AND WINDOWS WITHIN 10 FT. (VERTICAL) OF GRADE. PROVIDE PEEP-HOLE 54 - 66 IN. ABOVE FIN. FLOOR ON EXTERIOR ENTRY DOORS.
6. CONNECT ALL SMOKE DETECTORS (SEE PLAN FOR LOCATION) TO HOUSE ELECTRICAL SYSTEM AND INTER-CONNECT EACH WIRE, SO THAT WHEN ANY ONE IS TRIPPED, THEY WILL ALL SOUND.
7. PROVIDE COMBUSTION AIR VENTS (W/ SCREEN AND BACK DAMPER) FOR FIREPLACES, WOOD STOVES AND ANY APPLIANCES WITH AN OPEN FLAME.
8. BATHROOMS AND UTILITY ROOMS ARE TO BE VENTED TO THE OUTSIDE WITH A FAN CAPABLE OF PRODUCING A MINIMUM OF 4 AIR EXCHANGES PER HOUR. RANGE HOODS ARE ALSO TO BE VENTED TO THE OUTSIDE.
9. ELECTRICAL RECEPTACLES IN BATHROOMS, KITCHENS AND GARAGES SHALL BE G.F.I. OR G.F.I.C. PER NATIONAL ELECTRICAL CODE REQUIREMENTS.

GENERAL NOTES:

1. ALL WORK SHALL BE DONE IN CONFORMANCE WITH THE LATEST EDITION OF LOCAL BUILDING CODE, STATE AND TWO FAMILY DWELLING CODES AND ALL OTHER GOVERNING CODES, LAWS AND REGULATIONS.
2. SITE/CONSTRUCTION DOCUMENTS AND CONSTRUCTION PHASE. CONTRACTOR SHALL NOT SCALE THE DRAWINGS, OR DETAILS. CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS AND CONDITIONS AT THE JOB. NOT A DESIGN AGENCY IN WRITING OF ANY SIGNIFICANT DEVIATIONS, ANY CHANGES TO CONSTRUCTION DOCUMENTS OR ADDITIONAL DETAILS. SPECIFICATIONS ARE NEEDED FOR PROPER EXECUTION OF THE WORK. ALSO NOTIFY DESIGN AGENCY IN WRITING IF THERE ARE ANY CORRECTIONS OR CHANGES TO BE MADE TO THE CONSTRUCTION DOCUMENTS REQUIRED BY THE PLANNING/BUILDING DEPARTMENT OFFICIALS. PLANS CORRECTION LIST OR COMMENTS (FROM THE PLANNING/BUILDING DEPARTMENT OFFICIALS) MUST BE DELIVERED TO THE DESIGN AGENCY.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF ALL TRADES, INCLUDING ALL ARCHITECTURAL, STRUCTURAL, MECHANICAL AND ELECTRICAL REQUIREMENTS.
4. MECHANICAL AND ELECTRICAL WORK IS ON A CONTRACTOR DESIGN/BUILD BASIS. COORDINATE ALL ARCHITECTURAL AND STRUCTURAL WORK WITH MECHANICAL AND ELECTRICAL REQUIREMENTS.
5. ALL DIMENSIONS ARE TO THE FACE OF FRAMING MEMBERS UNLESS NOTED OTHERWISE. FOR ALL EXTERIOR AND INTERIOR WALL SPACING PLEASE REFER TO A0 SHEET BUILDING INFORMATION.
6. COORDINATE ALL ITEMS NOT SHOWN OR NOTED WITH OWNER AND/OR DESIGNER, INCLUDING BUT NOT LIMITED TO FINISHES, COLORS, CABINETS, HARDWARE, FIXTURES, ETC.
7. SEAL OR WEATHER STRIP ALL EXTERIOR OPENINGS AND PENETRATIONS IN MANNER TO PREVENT OUTSIDE AIR INFILTRATION AND MOISTURE FROM ENTERING STRUCTURAL AND OCCUPIED SPACES, INCLUDING AROUND PLUMBING AND ELECTRICAL LINES AND EQUIPMENT PASSING THROUGH WALLS, GUTTERS, DOWNSPOUTS, ETC.
8. IT IS THE GENERAL CONTRACTOR'S RESPONSIBILITY TO FOLLOW AND COORDINATE PER THE MANUFACTURER'S PRINTED INSTRUCTIONS, SPECIFICATIONS AND INSTALLATION DETAILS THE INSTALLATION OF ALL BUILDING PRODUCTS (INTERIOR AND EXTERIOR), FIXTURES, EQUIPMENT, ETC., OR FOLLOW THE INDUSTRY STANDARD DETAILS FOR ALL THE CONDITIONS NOT SHOWN ON THE DRAWINGS FOR PROPER EXECUTION OF THE WORK IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS. THE DESIGN AGENCY MUST BE NOTIFIED IN WRITING TO PROVIDE ADDITIONAL DETAILS, SPECIFICATIONS OR INFORMATION PER REQUEST OF THE GENERAL CONTRACTOR OR OWNER FOR PROPER EXECUTION OF THE WORK.

CONSTRUCTION PHASE:

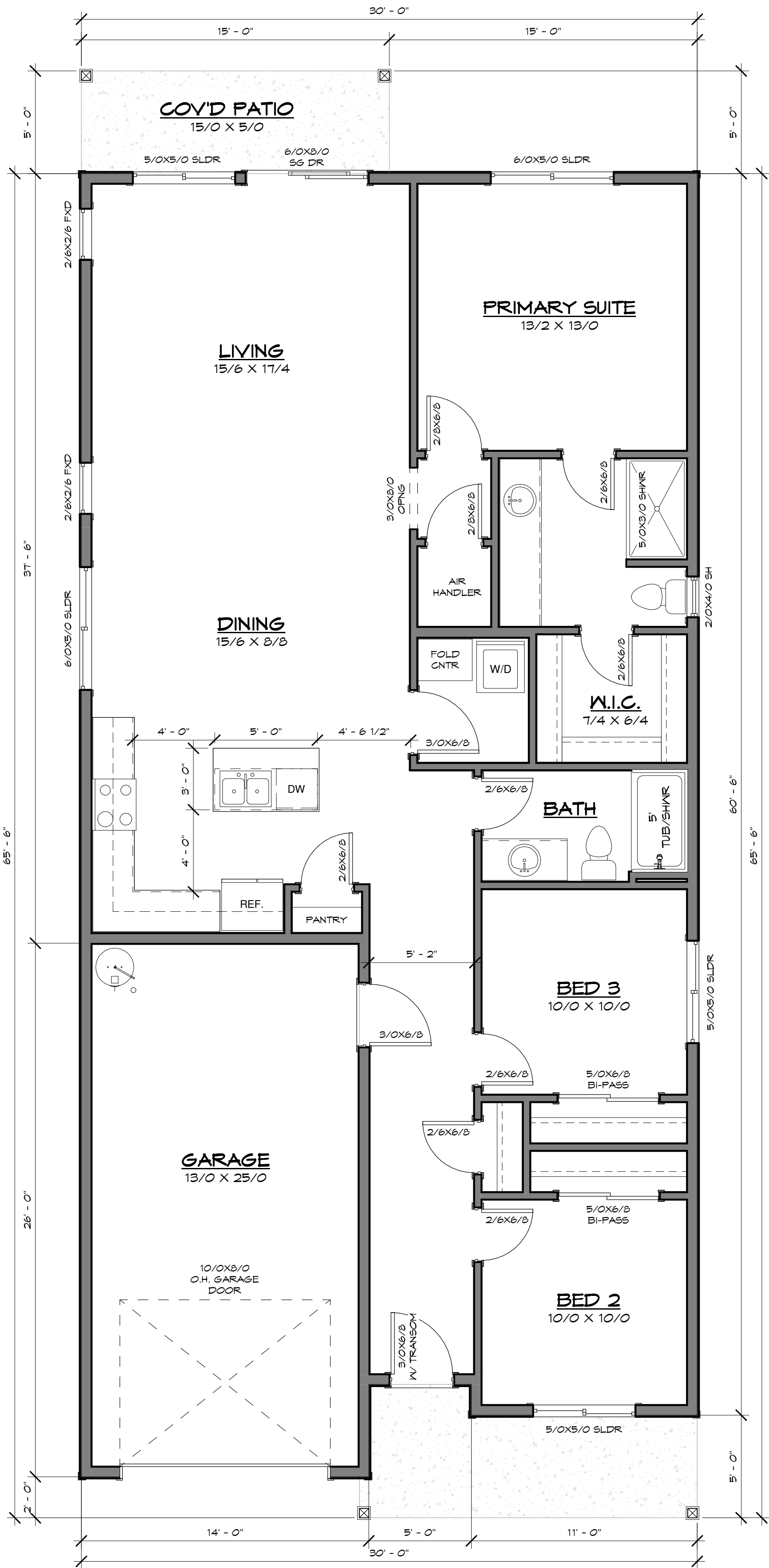
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MATERIAL SPECIFICATION NOTE:

THE DESIGNER DOES NOT RECOMMEND OR SPECIFY USE OF ANY TYPE OF "STUCCO PRODUCTS" OR EXTERIOR INSULATED AND FINISH SYSTEM ("EIF.S.") FOR THE EXTERIOR OF THE HOUSE. THE DESIGNER WILL NOT BE LIABLE FOR ANY KIND OF DAMAGES TO THE BUILDING (STRUCTURAL OR COSMETIC) IF THE OWNER OR THE CONTRACTOR DECIDE TO USE SUCH PRODUCTS.

- 110V S.D. SMOKE & CARBON MONOXIDE COMBO DETECTORS TO BE INSTALLED AS REQUIRED PER IRC R319.3. SMOKE DETECTORS TO BE INTERCONNECTED AND POWERED BY PREMISE WIRING AND HAVE BATTERY BACKUP.

FAN V.T.O.S	DOMESTIC KITCHENS	
	RANGE HOODS/DOWNDRAFT EXHAUST.	150 CFM FAN
	BATHROOMS/ TOILET ROOMS	
	ROOMS CONTAINING BATH AND SPA FACILITIES. (STATIC PRESSURE SHALL BE RATED @ 0.10-INCH WATER GAUGE FOR INTERMITTENT FANS.)	MIN. 80 CFM INTERMITTENT OR 20 CFM CONTINUOUS
	TOILET ROOMS WITHOUT BATHING OR SPA FACILITIES, WHEN NOT PROVIDED WITH NATURAL VENTILATION IN ACCORDANCE WITH SECTION R303.3.2.	MIN. 50 CFM



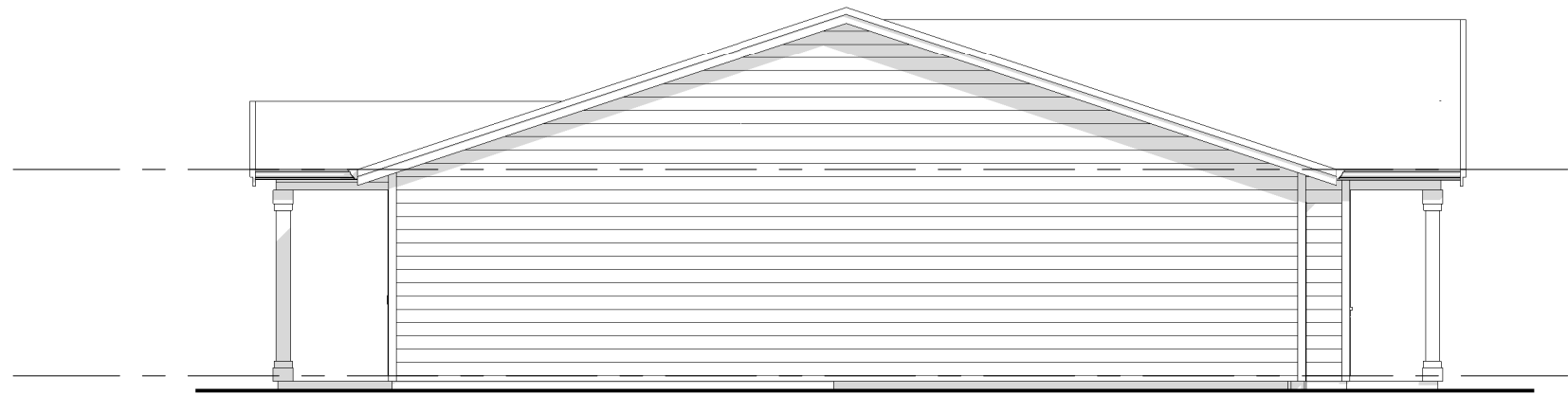
Main Floor Plan - 1495 SF
1/4" = 1'-0"

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Front Elevation - NW
1/4" = 1'-0"

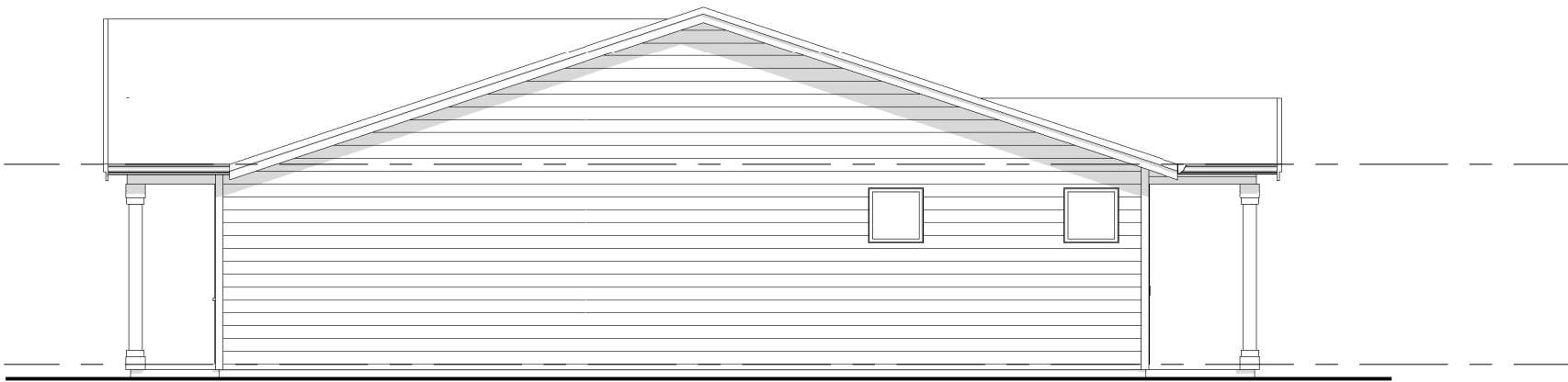
CONCEPTUAL DESIGN



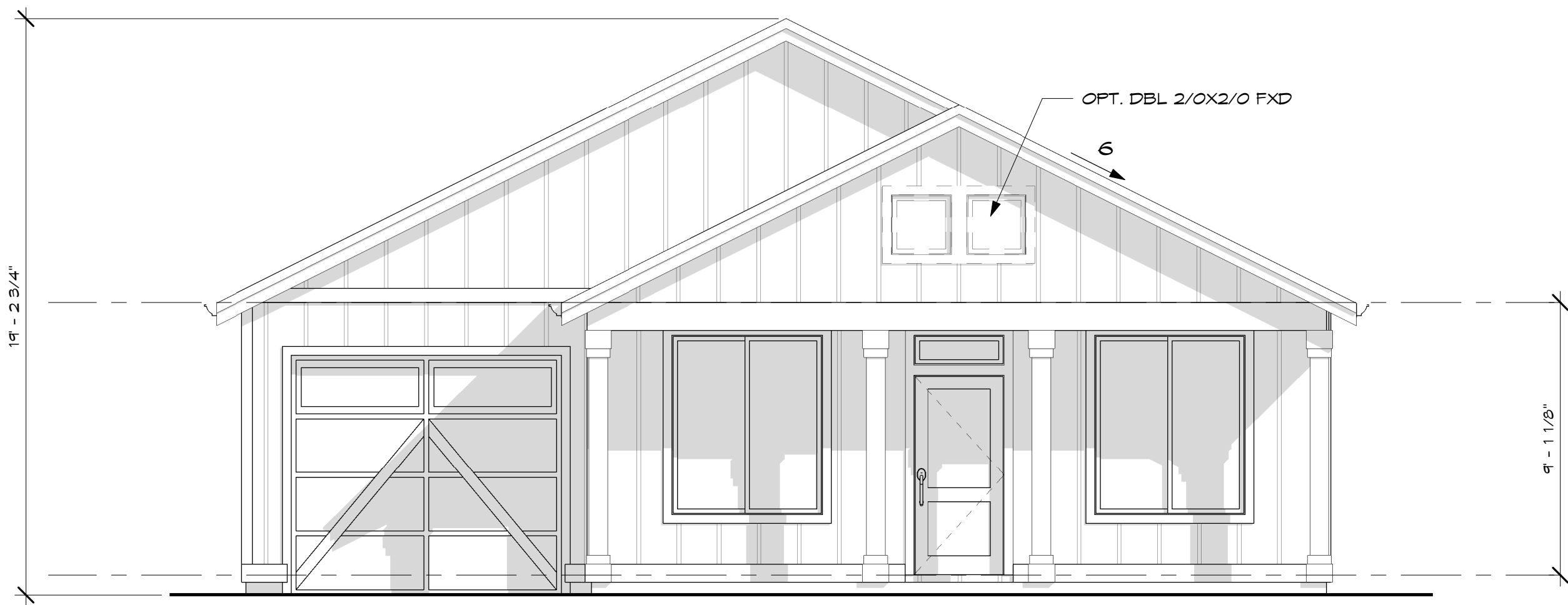
Left Elevation
1/8" = 1'-0"



Rear Elevation
1/8" = 1'-0"

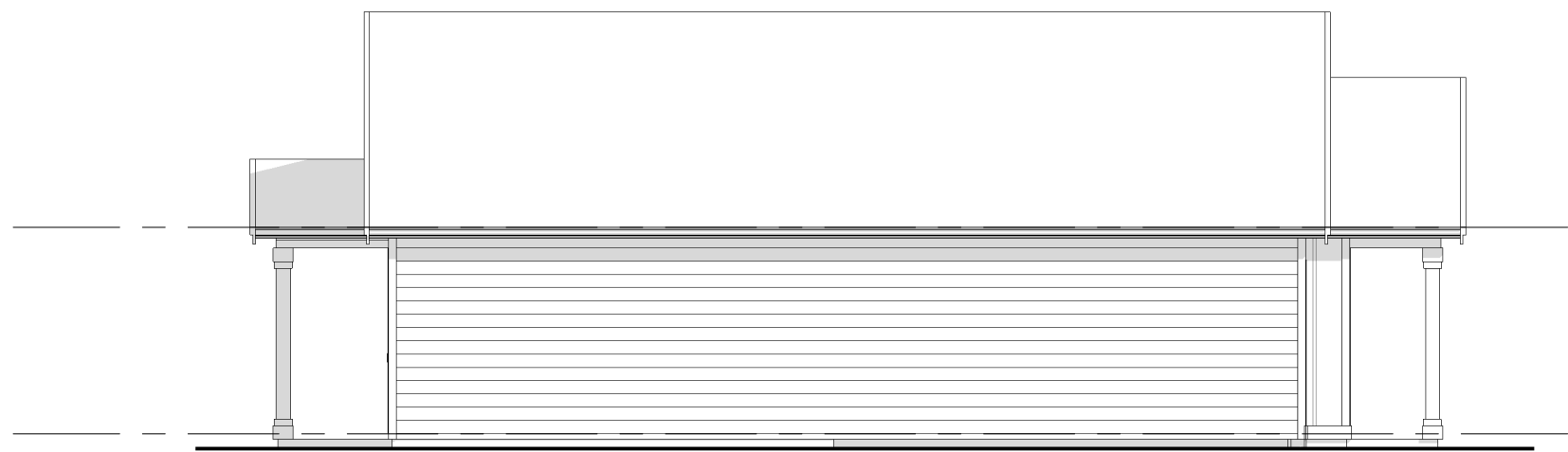


Right Elevation
1/8" = 1'-0"



Front Elevation - Farmhouse
1/4" = 1'-0"

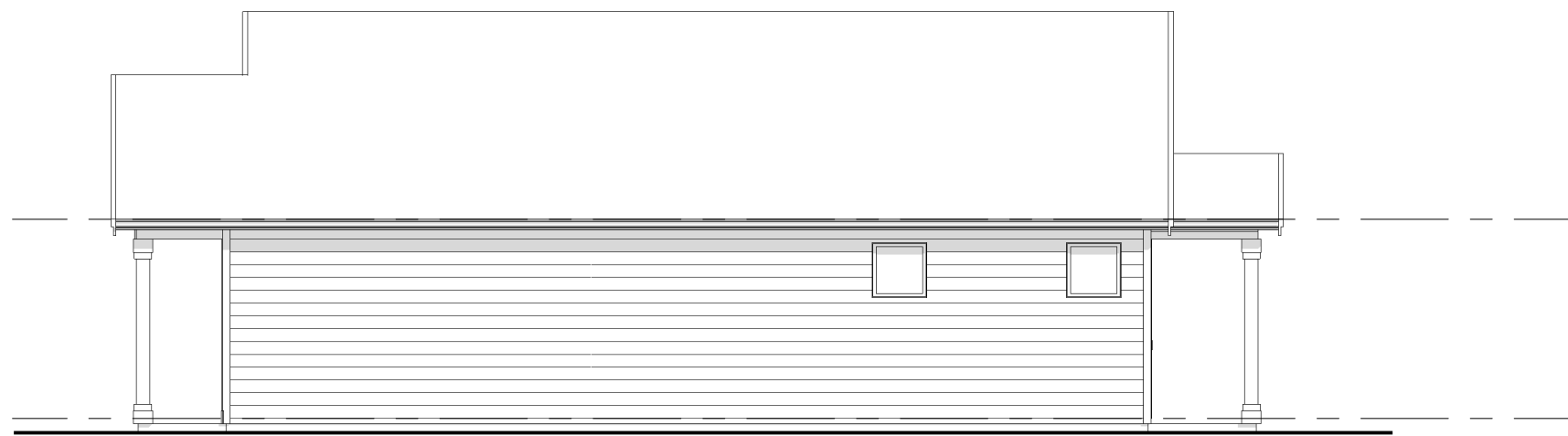
CONCEPTUAL DESIGN



Left Elevation
1/8" = 1'-0"



Rear Elevation
1/8" = 1'-0"



Right Elevation
1/8" = 1'-0"



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Brian Emrich:

360-409-4592

Email:

edrafting@hotmail.com

FIRCREST 36' PLAN

FILE NAME :

XXXX-X-XX-XX

DRAWN BY:

E DRAFTING

SCALE :

As indicated

PLOT DATE :

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SHEET

Building Elevations

A1

Page 55 of 167

GENERAL FLOOR PLAN NOTES:

1. WINDOW SIZES & ROUGH OPENINGS TO BE VERIFIED BY CONTRACTOR.
2. WINDOWS THAT ARE BOTH WITHIN 24 INCHES OF A DOOR IN A CLOSED POSITION AND WITHIN 60 INCHES OF THE FLOOR SHOULD BE TEMPERED.
3. WINDOWS IN ENCLOSURES FOR BATHTUBS, SHOWERS, HOT TUBS, WHIRLPOOLS, SAUNAS AND STEAM ROOMS WHERE THE GLASS IS WITHIN 60 INCHES ABOVE A DRAIN INLET SHOULD BE TEMPERED.
4. WINDOWS WITH A PANE LARGER THAN NINE SQUARE FEET, HAVING A BOTTOM EDGE CLOSER THAN 18 INCHES TO THE FLOOR AND A TOP EDGE HIGHER THAN 36 INCHES ABOVE THE FLOOR SHOULD BE TEMPERED.
5. FIREBLOCK ALL PLUMBING PENETRATIONS AND STAIR RUNS.
6. ALL WOOD IN CONTACT WITH CONCRETE TO BE PRESSURE TREATED.
7. TOP OF HANDRAILS SHALL BE PLACED AT 36" ABOVE THE NOSING OF TREADS & LANDINGS. HANDRAILS SHALL BE CONTINUOUS THE FULL LENGTH OF THE STAIRS. THE HANDGRIP PORTION SHALL NOT BE LESS THAN 1 1/4" NOR MORE THAN 2" IN CROSS-SECTIONAL DIMENSION. PROVIDE A SMOOTH SURFACE WITH NO SHARP CORNERS. HANDRAILS PROJECTING FROM A WALL SHALL HAVE A SPACE NOT LESS THAN 1 1/2" BETWEEN THE WALL AND THE HANDRAIL.
8. PREFABRICATED FIREPLACES, CHIMNEYS AND RELATED COMPONENTS TO BEAR U.L. OR I.C.B.O. SEAL OF APPROVAL AND TO BE INSTALLED PER MANUFACTURER'S SPECIFICATION.
9. ELEV. OF FLOOR OR LAND'G 11/2" MAX (OR 13/4" MAX FOR INSING DR) BELOW THRESHOLD IS REQ'D FROM THE REQ'D EXIT DOOR. WHERE DOOR IS NOT THE REQ'D EXIT DOOR A STAIRWAY OF 2 OR FEWER RISERS IS PERMITTED WHERE DOOR DOES NOT SWING OVER RISER.

GENERAL NOTES:

1. ALL WORK SHALL BE DONE IN CONFORMANCE WITH THE LATEST EDITION OF LOCAL BUILDING CODE, ONE AND TWO FAMILY DWELLING CODES AND ALL OTHER GOVERNING CODES, LAWS AND REGULATIONS.
2. SITE/CONSTRUCTION DOCUMENTS AND CONSTRUCTION PHASE: CONTRACTOR SHALL NOT SCALE THE DRAWINGS, OR DETAILS. CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS AND CONDITIONS AT THE JOBSITE. NOTIFY DESIGN AGENCY IN WRITING OF ANY SIGNIFICANT DEVIATIONS, ANY CHANGES TO CONSTRUCTION DOCUMENTS OR IF ADDITIONAL DETAILS, SPECIFICATIONS ARE NEEDED FOR PROPER EXECUTION OF THE WORK. ALSO NOTIFY DESIGN AGENCY IN WRITING IF THERE ARE ANY CORRECTIONS OR CHANGES TO BE MADE TO THE CONSTRUCTION DOCUMENTS REQUIRED BY THE PLANNING/BUILDING DEPARTMENT OFFICIALS. PLANS CORRECTION LIST OR COMMENTS (FROM THE PLANNING/BUILDING DEPARTMENT OFFICIALS) MUST BE DELIVERED TO THE DESIGN AGENCY.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF ALL TRADES, INCLUDING ALL ARCHITECTURAL, STRUCTURAL, MECHANICAL AND ELECTRICAL REQUIREMENTS.
4. MECHANICAL AND ELECTRICAL WORK IS ON A CONTRACTOR DESIGN/BUILD BASIS. COORDINATE ALL ARCHITECTURAL AND STRUCTURAL WORK WITH MECHANICAL AND ELECTRICAL REQUIREMENTS.
5. ALL DIMENSIONS ARE TO THE FACE OF FRAMING MEMBERS UNLESS NOTED OTHERWISE. FOR ALL EXTERIOR AND INTERIOR WALL SPACINGS PLEASE REFER TO A0 SHEET BUILDING INFORMATION.
6. COORDINATE ALL ITEMS NOT SHOWN OR NOTED WITH OWNER AND/OR DESIGNER, INCLUDING BUT NOT LIMITED TO FINISHES, COLORS, CABINETS, HARDWARE, FIXTURES, ETC...
7. SEAL OR WEATHER STRIP ALL EXTERIOR OPENINGS AND PENETRATIONS IN MANNER TO PREVENT OUTSIDE AIR INFILTRATION AND MOISTURE FROM ENTERING STRUCTURAL AND OCCUPIED SPACES, INCLUDING AROUND PLUMBING AND ELECTRICAL LINES AND EQUIPMENT PASSING THROUGH WALLS, GUTTERS, DOWNSPUTS, ETC.
8. IT IS THE GENERAL CONTRACTORS RESPONSIBILITY TO FOLLOW AND COORDINATE PER THE MANUFACTURER'S PRINTED INSTRUCTIONS, SPECIFICATIONS AND INSTALLATION DETAILS THE INSTALLATION OF ALL BUILDING PRODUCTS (INTERIOR AND EXTERIOR), FIXTURES, EQUIPMENT, ETC... OR FOLLOW THE INDUSTRY STANDARD DETAILS FOR ALL THE CONDITIONS NOT SHOWN ON THE DRAWINGS FOR PROPER EXECUTION OF THE WORK IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS. THE DESIGN AGENCY MUST BE NOTIFIED IN WRITING TO PROVIDE ADDITIONAL DETAILS, SPECIFICATIONS OR INFORMATION PER REQUEST OF THE GENERAL CONTRACTOR OR OWNER FOR PROPER EXECUTION OF THE WORK.

CONSTRUCTION PHASE:

THE DESIGNER SHALL NOT HAVE CONTROL OVER OR CHARGE OF AND SHALL NOT BE RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES, OR FOR SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK, SINCE THESE ARE SOLELY THE CONTRACTOR'S RESPONSIBILITY UNDER CONTRACT FOR CONSTRUCTION. THE DESIGNER SHALL NOT BE RESPONSIBLE FOR CONTRACTOR'S SCHEDULES OR FAILURE TO CARRY OUT THE WORK IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS.

MATERIAL SPECIFICATION NOTE:

THE DESIGNER DOES NOT RECOMMEND OR SPECIFY USE OF ANY TYPE OF "STUCCO PRODUCTS" OR EXTERIOR INSULATED AND FINISH SYSTEM "E.I.F.S." FOR THE EXTERIOR OF THE HOUSE. THE DESIGNER WILL NOT BE LIABLE FOR ANY KIND OF DAMAGES TO THE BUILDING (STRUCTURAL OR COSMETIC) IF THE OWNER OR THE CONTRACTOR DECIDE TO USE SUCH PRODUCTS.

110V S.D. FAN V.T.O.S.	SMOKE & CARBON MONOXIDE COMBO DETECTORS TO BE INSTALLED AS REQUIRED PER IRC R313.3. SMOKE DETECTORS TO BE INTERCONNECTED AND POWERED BY PREMISE WIRING AND HAVE BATTERY BACKUP.	
	DOMESTIC KITCHENS	
	RANGE HOODS/DOWNDRAFT EXHAUST.	150 CFM FAN
	BATHROOMS/ TOILET ROOMS	
	ROOMS CONTAINING BATH AND SPA FACILITIES. (STATIC PRESSURE SHALL BE RATED AT 0.10-INCH WATER GAUGE FOR INTERMITTENT FANS.)	MIN. 80 CFM INTERMITTENT OR 20 CFM CONTINUOUS
	TOILET ROOMS WITHOUT BATHING OR SPA FACILITIES, WHEN NOT PROVIDED WITH NATURAL VENTILATION IN ACCORDANCE WITH SECTION R303.3.2.	MIN. 50 CFM

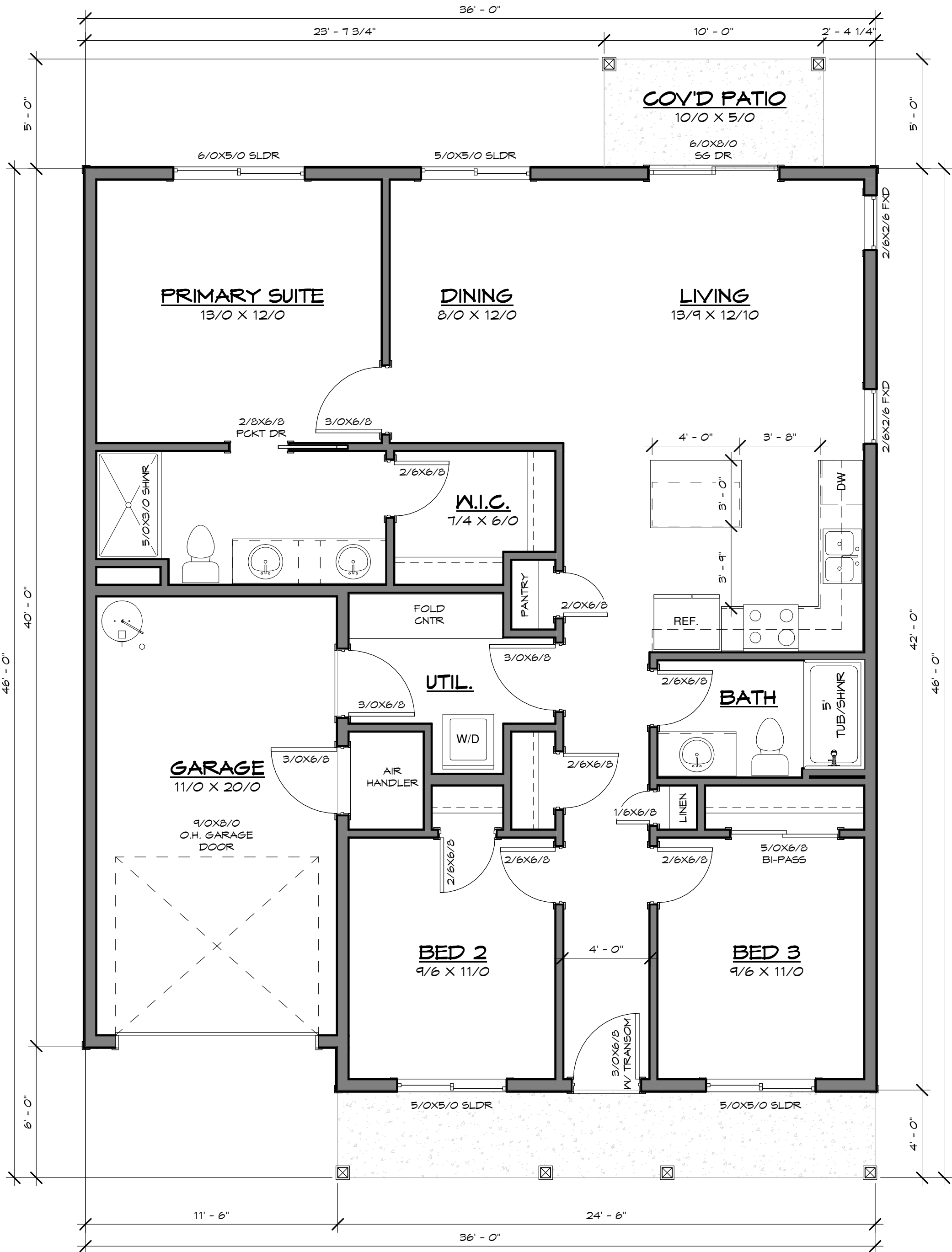
CEILING VENTILATION:

THE NET FREE VENTILATING AREA SHALL NOT BE LESS THAN 1/150 OF THE AREA OF SPACE TO BE VENTILATED, EXCEPT THAT THE AREA MAY BE 1/300, PROVIDED AT LEAST 50% OF THE REQUIRED VENTILATING AREA IS PROVIDED BY VENTILATORS LOCATED IN THE UPPER PORTION OF THE SPACE TO BE VENTILATED AT LEAST 3 FEET ABOVE EAVE VENTS WITH THE BALANCE OF THE REQUIRED VENTILATION PROVIDED BY EAVE VENTS. THE OPENINGS SHALL BE COVERED WITH CORROSION-RESISTANT METAL MESH WITH MESH OPENINGS OF 1/4" IN DIMENSION.

MISCELLANEOUS NOTES:

1. EACH BEDROOM TO HAVE A MINIMUM WINDOW OPENING OF 5.7 SQ. FT. WITH A MINIMUM WIDTH OF 20 IN. AND A SILL LESS THAN 44 IN. ABOVE FIN. FLR.
2. ALL WINDOWS WITHIN 18 IN. OF THE FLOOR, AND WITHIN 12 IN. OF ANY DOOR ARE TO HAVE TEMPERED GLAZING.
3. SKYLIGHTS ARE TO BE GLAZED WITH TEMPERED GLASS ON OUTSIDE AND LAMINATED GLASS ON INSIDE (UNLESS PLEXIGLAS). GLASS TO HAVE MAXIMUM CLEAR SPAN OF 25 IN., AND FRAME IS TO BE ATTACHED TO A 2X CURB WITH A MINIMUM OF 4 IN. ABOVE ROOF PLANE.
4. ALL TUB AND SHOWER ENCLOSURES ARE TO BE GLAZED WITH SAFETY GLASS.
5. ALL EXTERIOR WINDOWS ARE TO BE DOUBLE GLAZED AND ALL EXTERIOR DOORS ARE TO BE SOLID CORE WITH WEATHER STRIPPING. PROVIDE 1 IN. DEADBOLT LOCKS ON ALL EXTERIOR DOORS, AND LOCKING DEVICES ON ALL DOORS AND WINDOWS WITHIN 10 FT. (VERTICAL) OF GRADE. PROVIDE PEEP-HOLE 54 - 66 IN. ABOVE FIN. FLOOR ON EXTERIOR ENTRY DOORS.
6. CONNECT ALL SMOKE DETECTORS (SEE PLAN FOR LOCATION) TO HOUSE ELECTRICAL SYSTEM AND INTER-CONNECT EACH ONE, SO THAT, WHEN ANY ONE IS TRIPPED, THEY WILL ALL SOUND.
7. PROVIDE COMBUSTION AIR VENTS (W/ SCREEN AND BACK DAMPER) FOR FIREPLACES, WOOD STOVES AND ANY APPLIANCES WITH AN OPEN FLAME.
8. BATHROOMS AND UTILITY ROOMS ARE TO BE VENTED TO THE OUTSIDE WITH A FAN CAPABLE OF PRODUCING A MINIMUM OF 4 AIR EXCHANGES PER HOUR. RANGE HOODS ARE ALSO TO BE VENTED TO THE OUTSIDE.
9. ELECTRICAL RECEPTACLES IN BATHROOMS, KITCHENS AND GARAGES SHALL BE G.F.I. OR G.F.I.C. PER NATIONAL ELECTRICAL CODE REQUIREMENTS.

Lots: 40-47



OPT 1 - 1253 SF

Main Floor Plan

1/4" = 1'-0"

FIRECREST 36' PLAN

FILE NAME :
XXXX-X-XX-XX
DRAWN BY:
E DRAFTING
SCALE :
1/4" = 1'-0"
PLOT DATE :
6/29/2023
10:01:22 AM

Written dimensions on these drawings shall have precedence over scaled dimensions. Contractor shall assume responsibility for all dimensions and conditions on the job. The designer must be notified and consent to any variations from dimensions set forth herein. The type of exterior finish, the installation and waterproofing details are all to be the full responsibility of the owner/builder. This Designer assumes no responsibility for the integrity of the building envelope. This document is the property of E Drafting Corp. No reuse or reproduction is allowed without the written consent from E Drafting Corp.

SHEET
Floor Plans

A3

E DRAFTING CORP
Your new home starts here

Brian Emrich:
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CORP
Your new home starts here

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360-909-4552

Email:
edrafting@hotmail.com

FILE NAME :
XXXX-X-XX-XX
DRAWN BY:
E DRAFTING
SCALE :
1/4" = 1'-0"
PLOT DATE :
6/29/2023
10:01:23 AM

Written dimensions on these drawings shall have precedence over scaled dimensions. Contractor shall assume responsibility for all dimensions and conditions on the job. The designer must be notified and consent to any variations from dimensions set forth herein. The type of exterior finish, the installation and waterproofing details **shall all be the full responsibility of the owner/builder.** This Designer assumes no responsibility for the integrity of the building envelope. This document is the property of E Drafting Corp. No reuse or reproduction is allowed without the written consent of E Drafting Corp.

A3.1

[illegible]

Main Floor Plan

1/4" = 1'-0"



Evergreen Public Schools
Transportation Department

13909 NE 28th St. P.O. Box 8910 Vancouver, WA 98668-8910
(360) 604-4950 Fax: (360) 604-4962

April 21, 2023

Lisa Harker
PLS Engineering
604 W Evergreen Blvd
Vancouver, WA 98660

RE: Fircrest Meadows Subdivision

Dear Lisa,

After reviewing the information you sent regarding the Fircrest Meadows Subdivision development at 12301 NE 18th St, it is determined the Evergreen School District does provide school bus services to that area for Evergreen High School, Cascade Middle School, and Fircrest Elementary School.

The current nearby bus stops serving the schools are as follows:

Evergreen High School: NE 18th St @ NE 118th Ave

Cascade Middle School: NE 18th St @ NE 125th Ave

Fircrest Elementary School: NE 16th St @ NE 119th Ave, NE 119th Ave @ NE 15th St,
NE 119th Ave @ NE 14th St.

As construction takes place, families move in and students register for school, the routes will be reviewed and modified within our regulations as necessary.

If you have any questions you can reach me at 360-604-4950 ext 1208.

Respectfully,

Doreen Lane

Doreen Lane
Transportation Supervisor
Doreen.lane@evergreenps.org

**SUBMIT TO:**

City of Vancouver
Community & Economic Development
415 W. 6th ST
Vancouver, WA 98660
www.cityofvancouver.us

SEPA ENVIRONMENTAL CHECKLIST**WAC 197-11-960**

Property Owner: <u>Roger Bradstreet</u> (Print or Type Name)	Telephone: _____
Mailing Address: <u>12301 NE 18th Street, Vancouver, WA 98684</u> (No., City, State, ZIP)	
Applicant: <u>Ginn Group, LLC – contact Chad Stewart</u> (Print or Type Name)	Telephone: <u>360-608-6026</u>
Mailing Address: <u>502 NE 72nd St. Vancouver, WA 98665</u> (No., City, State, ZIP)	
Relationship to Owner: <u>developer</u>	
Tax Assessor Serial Number(s): <u>164912000</u>	
Legal description: Lot(s) <u>#2 SEC 27 T2N</u> Block(s) _____ Plat name _____ <u>R2EWM 7.58A (E)</u> (If a Metes and Bounds description, check here ☐ , and attach narrative to this application.)	
Site Address (if any): <u>12301 NE 18th Street, Vancouver, WA</u>	

② Include 8½" x 11" copies of ☐ Quarter Section Map, ☐ Topographic Map, ☐ Scaled Site Plan. Delineate site on maps.
Notice to Applicants: You must use the current revision of this form or your application will not be accepted. If you use our disk version of this form (MS Word 6.0) you may not alter the format. Make sure you have the current version before submittal.

Purpose of checklist:

Governmental agencies use this checklist to help determine whether the environmental impacts of your proposal are significant. This information is also helpful to determine if available avoidance, minimization or compensatory mitigation measures will address the probable significant impacts or if an environmental impact statement will be prepared to further analyze the proposal.

Instructions for applicants: [\[help\]](#)

This environmental checklist asks you to describe some basic information about your proposal. Please answer each question accurately and carefully, to the best of your knowledge. You may need to consult with an agency specialist or private consultant for some questions. You may use "not applicable" or "does not apply" only when you can explain why it does not apply and not when the answer is unknown. You may also attach or incorporate by reference additional studies reports. Complete and accurate answers to these questions often avoid delays with the SEPA process as well as later in the decision-making process.

The checklist questions apply to all parts of your proposal, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. The agency to which you submit this checklist may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

Instructions for Lead Agencies:

Additional information may be necessary to evaluate the existing environment, all interrelated aspects of the proposal and an analysis of adverse impacts. The checklist is considered the first but not necessarily the only source of information needed to make an adequate threshold determination. Once a threshold determination is made, the lead agency is responsible for the completeness and accuracy of the checklist and other supporting documents.

Use of checklist for nonproject proposals: [\[help\]](#)

For nonproject proposals (such as ordinances, regulations, plans and programs), complete the applicable parts of sections A and B plus the [SUPPLEMENTAL SHEET FOR NONPROJECT ACTIONS \(part D\)](#). Please completely answer all questions that apply and note that the words "project," "applicant," and "property or site" should be read as "proposal," "proponent," and "affected geographic area," respectively. The lead agency may exclude (for non-projects) questions in Part B - Environmental

Elements –that do not contribute meaningfully to the analysis of the proposal.

A. BACKGROUND [\[help\]](#)

1. Name of proposed project, if applicable: [\[help\]](#)

Fircrest Meadows

2. Name of applicant: [\[help\]](#)

Ginn Group, LLC

3. Address and phone number of applicant and contact person: [\[help\]](#)

Chad Stewart – (360) 608-6026
502 NE 72nd Street
Vancouver, WA 98665

4. Date checklist prepared: [\[help\]](#)

June 28, 2023

5. Agency requesting checklist: [\[help\]](#)

City of Vancouver

6. Proposed timing or schedule (including phasing, if applicable): [\[help\]](#)

Development is expected to start at the time of the final construction drawing approval. No phasing proposed.

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain. [\[help\]](#)

Not at this time.

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal. [\[help\]](#)

SEPA Checklist, Geotechnical Report, Archaeological
Predetermination, Critical Areas Memo

9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain. [\[help\]](#)

There are no other applications that are pending for governmental approvals directly affecting the property.

10. List any government approvals or permits that will be needed for your proposal, if known. [\[help\]](#)

- Preliminary Type IV Planned Development & Subdivision Review
- Public notification and staff report publications
- Land Use Hearing Examiner Decision
- City Council Approval
- Final engineering plan review and approval
- Final Plat Approval
- SEPA
- NPDES

11. Give brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include additional specific information on project description.) [\[help\]](#)

The project site is currently zoned R-6 (Residential) with a comprehensive plan designation of UL (Urban Low). The site covers 7.46 acres. The applicant proposes to rezone the site to R-9 and develop the site with a 57-lot single-family subdivision utilizing planned development standards.

12. Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist. [\[help\]](#)

The site address is 12301 NE 18th Street, Vancouver, WA and is located in the Northeast ¼ of Section 27, Township 2 North, Range 2 East of the Willamette Meridian. The site is identified as tax serial number 164912000.

B. ENVIRONMENTAL ELEMENTS [\[help\]](#)

1. Earth

- a. General description of the site [\[help\]](#)
(circle one): **Flat**, **rolling**, hilly, steep slopes, mountainous,
other _____
- b. What is the steepest slope on the site (approximate percent slope)? [\[help\]](#)

Approximately 25%.

- c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note

any agricultural land of long-term commercial significance and whether the proposal results in removing any of these soils. [\[help\]](#)

Per Clark County GIS the site contains the following soils:

LgF – Lauren gravelly loam (20-25% slopes)
LgD – Lauren gravelly loam (8-20% slopes)
WrF – Wind River gravelly loam (12-50% slopes)
LgB – Lauren gravelly loam (0-8% slopes)

- d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe. [\[help\]](#)

No, there are no surface indications or history of unstable soils.

- e. Describe the purpose, type, total area, and approximate quantities and total affected area of any filling, excavation, and grading proposed. Indicate source of fill. [\[help\]](#)

There will be grading for the construction of roads, driveways, the installation of utilities, and the preparation of the site for single family residential housing. Surplus material may be required to be hauled from the site to an approved dump site or offsite fill may be required. Quantities and source are unknown at this time.

- f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe. [\[help\]](#)

Standard erosion control measures will be followed during grading construction on the site. A final erosion control plan will be reviewed and approved by City of Vancouver prior to construction on the site. A copy of that final erosion control plan will be filed with the final construction plans with City of Vancouver Public Works.

- g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)? [\[help\]](#)

The site will be approximately 70% impervious surfaces post-development.

- h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any: [\[help\]](#)

Proposed measures to reduce and control erosion include providing an erosion control plan for review and approval prior to starting construction on the site and following the conditions of the approved drainage and erosion control plan during all phases of construction.

2. Air

- a. What types of emissions to the air would result from the proposal during construction, operation, and maintenance when the project is completed? If any, generally describe and give approximate quantities if known. [\[help\]](#)

Construction equipment emissions and dust on the short term. Long-term emissions will be produced by automobile traffic and normal residential activities, possibly including wood burning stoves and fireplaces.

- b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe. [\[help\]](#)

There are no known off-site sources of emissions or odor that would affect the proposal.

- c. Proposed measures to reduce or control emissions or other impacts to air, if any: [\[help\]](#)

Dust from construction can be mitigated by sprinkling the site with water during construction as needed.

3. Water

- a. Surface Water: [\[help\]](#)

- 1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into. [\[help\]](#)

There are no surface water bodies on or in the immediate vicinity of the site.

- 2) Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans. [\[help\]](#)

No, there will be no work within 200' of any waters.

- 3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material. [\[help\]](#)

Not applicable.

- 4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known. [\[help\]](#)

There will be no surface water withdrawals or diversions.

- 5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan. [\[help\]](#)

No, the site does not lie within a 100- year floodplain.

- 6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge. [\[help\]](#)

No, there are no proposals to discharge of waste material to surface waters.

b. Ground Water:

- 1) Will groundwater be withdrawn from a well for drinking water or other purposes? If so, give a general description of the well, proposed uses and approximate quantities withdrawn from the well. Will water be discharged to groundwater? Give general description, purpose, and approximate quantities if known. [\[help\]](#)

No ground water will be withdrawn from the site. Stormwater runoff from the site will be collected, treated, and routed to infiltration trenches on site.

- 2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals. . . ; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve. [\[help\]](#)

No waste material is proposed to be discharged into the ground.

c. Water runoff (including stormwater):

- 1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe. [\[help\]](#)

The main source of runoff is from stormwater. There will runoff from impervious roofs, driveways, roadways, and landscaped areas. Stormwater runoff from the site will be collected, treated, and routed to infiltration trenches on site.

- 2) Could waste materials enter ground or surface waters? If so, generally describe. [\[help\]](#)

Yes, if waste materials were somehow released or dumped into surface runoff flows, substances associated with the source material could enter ground or other surface waters.

- 3) Does the proposal alter or otherwise affect drainage patterns in the vicinity of the site? If so, describe.

No.

- 4) Proposed measures to reduce or control surface, ground, and runoff water, and drainage pattern impacts, if any:

All stormwater runoff is proposed to be routed to stormwater infiltration trenches located on site.

4. Plants [\[help\]](#)

- a. Check the types of vegetation found on the site: [\[help\]](#)
☒ deciduous tree: alder, maple, aspen, other : **hawthorn, Oregon white oak**
☒ evergreen tree: **fir**, cedar, pine, other
☒ shrubs
☒ grass
☐ pasture
☐ crop or grain
☐ Orchards, vineyards or other permanent crops.
☐ wet soil plants: cattail, buttercup, bullrush, skunk cabbage, other
☐ water plants: water lily, eelgrass, milfoil, other
☒ other types of vegetation: **English holly, English ivy**
- b. What kind and amount of vegetation will be removed or altered? [\[help\]](#)

Approximately 90% of the site vegetation will be stripped for site preparation.

- c. List threatened and endangered species known to be on or near the site. [\[help\]](#)

One Oregon white oak is located onsite.

- d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any: [\[help\]](#)

The single-family homes will be landscaped with grass lawns or other appealing landscaping. Most of the existing mature trees located onsite will be retained in an open space area in the NW corner of the site. In addition the existing Oregon white oak will be protected and retained.

- e. List all noxious weeds and invasive species known to be on or near the site.

None known.

5. Animals

- a. List any birds and other animals which have been observed on or near the site or are known to be on or near the site. Examples include: [\[help\]](#)

birds: hawk, heron, eagle, **songbirds**, other:

Local birds are observed on the site and in the area.

mammals: deer, bear, elk, beaver, **other**:

Small mammals, such as mice, voles, and rabbits are located on and near the site. This site is also in an area where larger mammals, such as raccoons, opossum, and mammals indigenous to the Clark County area are sometimes located.

fish: bass, salmon, trout, herring, shellfish, other:

- b. List any threatened and endangered species known to be on or near the site. [\[help\]](#)

There are no known threatened or endangered species on or near the site.

- c. Is the site part of a migration route? If so, explain. [\[help\]](#)

This site is part of the Pacific Flyway for migratory waterfowl.

- d. Proposed measures to preserve or enhance wildlife, if any: [\[help\]](#)

The site will be landscaped as required by code and a portion of the site will be used as open space, retaining existing trees and vegetation.

- e. List any invasive animal species known to be on or near the site.

None known.

6. Energy and natural resources

- a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc. [\[help\]](#)

The new homes on the site will be served primarily by electricity. Natural gas and Wood stoves are unlikely to be used on this site. Other forms of energy will depend on homeowners.

- b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe. [\[help\]](#)

No, the developed site will not affect the potential use of solar energy by adjacent properties.

- c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any: [\[help\]](#)

The new homes will comply with the state building codes which include conservation measures.

7. Environmental health

- a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste that could occur as a result of this proposal? If so, describe. [\[help\]](#)

There are no known environmental health hazards that could occur as a result of this proposal.

- 1) Describe any known or possible contamination at the site from present or past uses.

There are no known contaminants at the site from present or past uses. None known on site. Utilizing the Department of Ecology's (DOE), "What's in My Neighborhood" online mapping tool, there is one clean-up site within 0.25 miles of the site. The Kenan Advantage Group Inc Site cleanup is complete with a No Further Action status.

- 2) Describe existing hazardous chemicals/conditions that might affect project development and design. This includes underground hazardous liquid and gas transmission pipelines located within the project area and in the vicinity.

None known.

- 3) Describe any toxic or hazardous chemicals that might be stored, used, or produced during the project's development or construction, or at any time during the operating life of the project.

There are no known toxic or hazardous chemicals that will be stored, used, or produced during project development or construction.

- 4) Describe special emergency services that might be required.

There are no special emergency services that might be required, outside of those normally expected for a typical residential development, in association with the proposal.

- 5) Proposed measures to reduce or control environmental health hazards, if any:

There are no proposed measures to reduce or control environmental health hazards.

b. Noise

- 1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)? [\[help\]](#)

Light traffic noise from surrounding areas/roads along with typical residential noises. None of these will affect the proposal.

- 2) What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site. [\[help\]](#)

Short term noises would include construction noises which would occur during approved hours as mandated by The City of Vancouver and Washington State. Long term noises could include slight increase in traffic noise and normal household noises.

- 3) Proposed measures to reduce or control noise impacts, if any: [\[help\]](#)

Construction activities will only be performed during City of Vancouver approved construction hours.

8. Land and shoreline use

- a. What is the current use of the site and adjacent properties? Will the proposal affect current land uses on nearby or adjacent properties? If so, describe. [\[help\]](#)

The site currently has a single-family home. Surrounding parcels to the east, west and south are developed with single family homes. To the north are BPA overhead power lines. This development will not affect those current land uses.

- b. Has the project site been used as working farmlands or working forest lands? If so, describe. How much agricultural or forest land of long-term commercial significance will be converted to other uses as a result of the proposal, if any? If resource lands have not been designated, how many acres in farmland or forest land tax status will be converted to nonfarm or nonforest use? [\[help\]](#)

The applicant is not aware of the site ever having been used as working farmlands or working forest lands.

- 1) Will the proposal affect or be affected by surrounding working farm or forest land normal business operations, such as oversize equipment access, the application of pesticides, tilling, and harvesting? If so, how:

Not to the applicant's knowledge.

- c. Describe any structures on the site. [\[help\]](#)

One single-family residence with attached garage is located onsite.

- d. Will any structures be demolished? If so, what? [\[help\]](#)

Yes, the home will be demolished.

- e. What is the current zoning classification of the site? [\[help\]](#)

The site is zoned R-6, Low Density Residential.

- f. What is the current comprehensive plan designation of the site? [\[help\]](#)

UL-Urban Low Density Residential

- g. If applicable, what is the current shoreline master program designation of the site? [\[help\]](#)

There is no shoreline designation for the site.

- h. Has any part of the site been classified as a critical area by the city or county? If so, specify. [\[help\]](#)

The site contains one Oregon white oak.

- i. Approximately how many people would reside or work in the completed project? [\[help\]](#)

It is currently planned that this development will contain 57 single-family residential lots. At 2.8 people per household there would be approximately 160 people residing within this development at completion.

- j. Approximately how many people would the completed project displace? [\[help\]](#)

Up to 3 people will be displaced by this project.

- k. Proposed measures to avoid or reduce displacement impacts, if any: [\[help\]](#)

The buildout of this project will provide new housing options.

- l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any: [\[help\]](#)

By complying with the zoning designation, the comprehensive plan, and the City of Vancouver Municipal Code, the proposal will be compatible with the existing and projected land uses.

- m. Proposed measures to ensure the proposal is compatible with nearby agricultural and forest lands of long-term commercial significance, if any:

Not applicable, there are no nearby agricultural or forest lands.

9. Housing

- a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing. [\[help\]](#)

57 residential lots/homes are proposed. The housing will be for middle-income residents.

- b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing. [\[help\]](#)

One unit will be eliminated.

- c. Proposed measures to reduce or control housing impacts, if any: [\[help\]](#)

57 new housing units will be constructed on the site. Impact fees will be paid at the time of building permit for each new home.

10. Aesthetics

- a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed? [\[help\]](#)

All new home construction will meet City code for residential housing development and not exceed height limits of 35'. Exterior building materials are unknown at this time.

- b. What views in the immediate vicinity would be altered or obstructed? [\[help\]](#)

Views will be altered as the existing site will change from a vacant lot with large grassy and treed areas to a 57-lot subdivision.

- c. Proposed measures to reduce or control aesthetic impacts, if any: [\[help\]](#)

The single-family homes will be landscaped with grass lawns and other appealing landscaping. A portion of the site will be retained as open space.

11. Light and glare

- a. What type of light or glare will the proposal produce? What time of day would it mainly occur? [\[help\]](#)

When homes are constructed on the proposed lots, there will most likely be light produced from houses, yards, and porch lights during evenings and early mornings.

- b. Could light or glare from the finished project be a safety hazard or interfere with views? [\[help\]](#)

No, light or glare from the finished project will not be a safety hazard or interfere with views.

- c. What existing off-site sources of light or glare may affect your proposal? [\[help\]](#)

Light and glare from surrounding homes and buildings will not affect the proposed development.

- d. Proposed measures to reduce or control light and glare impacts, if any: [\[help\]](#)

Any lights used on the site will be oriented inward and will be shielded to reduce the light that may affect adjacent properties. Proposed lighting will comply with City of Vancouver code.

12. Recreation

- a. What designated and informal recreational opportunities are in the immediate vicinity? [\[help\]](#)

Mission Hills Park is located 0.4 miles NW of the site.

- b. Would the proposed project displace any existing recreational uses? If so, describe. [\[help\]](#)

No.

- c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any: [\[help\]](#)

The applicant proposes to pay all park impact fees associated with building permits.

13. Historic and cultural preservation

- a. Are there any buildings, structures, or sites, located on or near the site that are over 45 years old listed in or eligible for listing in national, state, or local preservation registers located on or near the site? If so, specifically describe. [\[help\]](#)

The existing home is over 45 years old and therefore is recommended to be recorded on a DAHP Historic Property Inventory form prior to demolition.

- b. Are there any landmarks, features, or other evidence of Indian or historic use or occupation? This may include human burials or old cemeteries. Are there any material evidence, artifacts, or areas of cultural importance on or near the site? Please list any professional studies conducted at the site to identify such resources. [\[help\]](#)

Archaeological Services LLC conducted an archaeological predetermination for this site and found no artifacts. The report concluded that no further work was required. Please see the report prepared by Archaeological Services LLC included with this application.

- c. Describe the methods used to assess the potential impacts to cultural and historic resources on or near the project site. Examples include consultation with tribes and the department of archeology and historic preservation, archaeological surveys, historic maps, GIS data, etc. [\[help\]](#)

Archaeological Services LLC did background review, reviewed existing literature on file with DAHP, conducted a field search and filed a copy of their report with DAHP.

- d. Proposed measures to avoid, minimize, or compensate for loss, changes to, and disturbance to resources. Please include plans for the above and any permits that may be required.

None proposed. If during development of the site any potentially significant artifacts are discovered, all work will cease, and proper notification will be given to City of Vancouver and DAHP.

14. Transportation

- a. Identify public streets and highways serving the site or affected geographic area and describe proposed access to the existing street system. Show on site plans, if any. [\[help\]](#)

NE 121st and 123rd Avenue are existing streets that abut the site to the east and west. NE 14th, 15th and 16th Streets are existing streets that stub to the site on each side. The proposal will provide frontage improvements as required to NE 121st and 123rd Avenue and will continue NE 14th and 16th Streets through the site providing connections to the east and west.

- b. Is the site or affected geographic area currently served by public transit? If so, generally describe. If not, what is the approximate distance to the nearest transit stop? [\[help\]](#)

C-Tran operates bus routes 30 and 80 in the vicinity of the site. The nearest bus stop is approximately 1 mile to the east along NE 136th Avenue.

- c. How many additional parking spaces would the completed project or non-project proposal have? How many would the project or proposal eliminate? [\[help\]](#)

2-4 parking spaces per single-family home are proposed. 10 spaces of shared parking are proposed near Tracts A and B. Approximately 118 parking spaces will be provided with this development.

- d. Will the proposal require any new or improvements to existing roads, streets, pedestrian, bicycle or state transportation facilities, not including driveways? If so, generally describe (indicate whether public or private). [\[help\]](#)

Frontage improvements are proposed along NE 121st and 123rd Avenues, both public streets, including right-of-way dedication, additional pavement as needed, planter strips and sidewalks. NE 14th and 16th Streets are public streets that will be extended through the site and will include sidewalks. Proposed NE 122nd Court will include modified full width improvements including sidewalks.

- e. Will the project or proposal use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe. [\[help\]](#)

No.

- f. How many vehicular trips per day would be generated by the completed project or proposal? If known, indicate when peak volumes would occur and what percentage of the volume would be trucks (such as commercial and nonpassenger vehicles). What data or transportation models were used to make these estimates? [\[help\]](#)

It is anticipated that 570 new average weekday trips would be generated by the project with 45 morning peak hour trips and 59 evening peak hour trips. Trip generation calculations utilized the Institute of Transportation Engineers (ITE), *Trip Generation Manual*, 11th Edition, 2021.

- g. Will the proposal interfere with, affect or be affected by the movement of agricultural and forest products on roads or streets in the area? If so, generally describe.

The proposed development will not interfere with, affect or be affected by the movement of agricultural and forest products on roads or streets in the area.

- h. Proposed measures to reduce or control transportation impacts, if any: [\[help\]](#)

The applicant will pay transportation impact fees.

15. Public Services

- a. Would the project result in an increased need for public services (for example: fire protection, police protection, public transit, health care, schools, other)? If so, generally describe. [\[help\]](#)

Yes. The completion of this development and the construction of new residential units will increase the need for public services in the area.

- b. Proposed measures to reduce or control direct impacts on public services, if any. [\[help\]](#)

This project will pay impact fees for schools, parks, and traffic at the time of building permit.

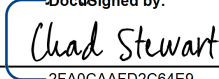
16. Utilities

- a. Circle utilities currently available at the site: [\[help\]](#)
electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other _____
- b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed. [\[help\]](#)

- Electricity: Clark Public Utilities
- Natural Gas: NW Natural
- Water: City of Vancouver
- Sanitary Sewer: City of Vancouver
- Garbage: Waste Connections

C. SIGNATURE [\[HELP\]](#)

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Signature:  _____

DocuSigned by:
2FA0CAAED2C64E9...
Chad Stewart

Name of signee: _____

Position and Agency/Organization: Project Manager Ginn Group, LLC

Date Submitted: 7/10/2023



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

Southwest Region Office
PO Box 47775, Olympia, WA 98504-7775 • 360-407-6300

September 18, 2023

Mark Person, AICP, Senior Planner
City of Vancouver
Community & Economics Development
PO Box 1995
Vancouver, WA 98668

Dear Mark Person:

Thank you for the opportunity to comment on the optional determination of nonsignificance/notice of application for the Fircrest Meadows Project (PRJ-168703/LUP-83548) located at 12301 Northeast 18th Street as proposed by Ginn Group. The Department of Ecology (Ecology) reviewed the environmental checklist and has the following comment(s):

SOLID WASTE MANAGEMENT: Derek Rockett (360) 407-6287

The applicant proposes to demolish an existing structure(s). In addition to any required asbestos abatement procedures, the applicant should ensure that any other potentially dangerous or hazardous materials present are removed prior to demolition. It is important that these materials and wastes are removed and appropriately managed prior to demolition. It is equally important that demolition debris is also safely managed, especially if it contains painted wood or concrete, treated wood, or other possibly dangerous materials. Please review the "Dangerous Waste Rules for Demolition, Construction, and Renovation Wastes," on Ecology's website at: [Construction & Demolition Guidance](#). All removed debris resulting from this project must be disposed of at an approved site. All grading and filling of land must utilize only clean fill. All other materials may be considered solid waste and permit approval may be required from your local jurisdictional health department prior to filling. Contact the local jurisdictional health department for proper management of these materials.

TOXICS CLEANUP: Dean Malte (360) 999-9584

No confirmed or suspected contaminated sites are located on or within 750 feet of the project area. If any contamination is unexpectedly encountered, please report it to Ecology (per WAC 173-340-300) via the online ERTS at <https://ecology.wa.gov/Footer/Report-an-environmental-issue/statewide-issue-reporting-form>.

Ecology's comments are based upon information provided by the lead agency. As such, they may not constitute an exhaustive list of the various authorizations that must be obtained or legal requirements that must be fulfilled in order to carry out the proposed action.

Mark Person
September 18, 2023
Page 2

If you have any questions or would like to respond to these comments, please contact the appropriate reviewing staff listed above.

Department of Ecology
Southwest Regional Office

(JKT:202301428)

cc: Derek Rockett, SWM
Sandy Smith, TCP
Joseph McCord, WQ



CLARK COUNTY WASHINGTON

PUBLIC WORKS

www.clark.wa.gov

1300 Franklin Street
PO Box 9810
Vancouver, WA 98666-9810
564.397.6118

June 7, 2023

Travis Johnson
PLS Engineering
604 W. Evergreen Blvd.
Vancouver, WA 98660

RE: Development Review Evaluation for the "Fircrest Meadows" Development located at 12301 NE 18th St. in Vancouver, WA 98684 (SR0061302; APN 164912000; PRJ-168703/PIR-83264)

****Final Approval Required by Clark County Public Health****

The Development Review Evaluation for which you applied has been completed by Clark County Public Health (CCPH). This evaluation is limited to the area of the proposed development.

On-Site Sewage Treatment Systems (CCC 24.17, WAC 246-272A, CCC 40.370, RCW 58.17):

Public sewer service is proposed and required for this development. County records indicate the presence of an operational on-site sewage system (OSS) on the parent parcel.

- 12301 NE 18th St, Parcel #164912000: Operational OSS ON0023260, unable to be located by CCPH staff during 5/23/23 site evaluation

Additional OSS components may exist at the site. This OSS and any additional OSS tanks or drywells discovered during development must be properly abandoned per CCC 24.17.210, with written notice provided to Clark County Public Health and Online RME Pumper Reports attached. Abandoned OSS locations must be marked on the final plat.

The proposed development must be served by public sewer. A copy of the final acceptance letter (or equivalent) from the sanitary sewer purveyor shall be submitted to the City of Vancouver Community & Economic Development Department with the final development site plan.

Water Systems (WAC 173-160, WAC 246-290, CCC 40.370, RCW 58.17):

Public water service is proposed and required for this project. An operational water well was observed in the field on the parent parcel by CCPH staff during a 5/23/23 field visit.

- 12301 NE 18th St, Parcel #164912000: Operational water well WP0013622 located south of existing residence

Other wells may exist on the parcel. This well and any others discovered during development must be properly decommissioned by a licensed well driller per WAC 173-160-381. Written verification and the decommissioned well report must be submitted to CCPH and decommissioned well locations must be shown on the final plat.

The proposed development must be served by public water. A copy of the final acceptance letter (or equivalent) from the purveyor shall be submitted to the City of Vancouver Community & Economic Development Department with the final site plan.

Underground Storage Tanks (WAC 173-360A):

CCPH staff located evidence of an underground storage tank (UST) on the eastern side of the parent parcel at the end of the driveway accessing the existing residence from 18th St. Above-ground components of this UST exhibited signs of extreme degradation. This UST is located within the 100' sanitary control area radius of the water well serving the existing

residence and lies within the 5-year impact municipal wellhead protection area of Vancouver Water Station 7 to the southeast. This UST may be leaking diesel or heating oil into surrounding soils and groundwater.

CCPH recommends evaluation of the tank and surrounding soils for evidence of leakage. USTs contributing to local contamination exceeding MTCA Method A Cleanup Levels fall under the purview of Washington State Department of Ecology and may require additional remediation measures after decommissioning.

If you have any questions concerning this letter, please contact me at (564) 397-7373.

Sincerely,

Salvador Robb-Chavez

Digitally signed by Salvador Robb-Chavez
Date: 2023.06.07 14:08:12 -07'00'

Salvador Robb-Chavez
Environmental Health Specialist II

Cc: Mark Person, City of Vancouver Community & Economic Development Department



August 17, 2023

**Notice of Application, Remote Public Hearing, and
Optional SEPA Determination of Nonsignificance
Fircrest Meadows
PRJ-168703/LUP-83548**

Request: 57-lot single-family planned development, rezone from R-6 to R-9 and critical area permit through a Type IV process.

Application was submitted July 24, 2023, and deemed fully complete August 9, 2023.

Location: 12301 NE 18th Street, Parcel 164912000 located within the NE ¼ of Section 27, Township 2N, Range 2E within the Willamette Meridian.

Contact: PLS Engineering, Travis Johnson, 604 W Evergreen Boulevard, Vancouver, WA 98660

Applicant: Ginn Group, Chad Stewart, 502 NE 72nd Street, Vancouver, WA 98665

Property Owner: Roger Bradstreet, 12301 NE 18th Street, Vancouver, WA 98684

Remote Public Hearing Scheduled Land Use Hearing conducted by the Hearing Examiner
Tuesday, November 21, 2023, 5 p.m.

The City of Vancouver will be holding a virtual hearing on this matter. Interested parties can participate in the virtual hearing by emailing the project manager at mark.person@cityofvancouver.us. **Due to remote work conditions, e-mail is strongly preferred.**

Under the authority of VMC 20.790.230, the City of Vancouver will use the optional combined determination of nonsignificance (DNS) and notice of application process. Based on the initial review of the proposed project, the city expects to issue a DNS on the proposal, finding the project will not create probable significant adverse environmental impacts.

The comment period for the notice of application may be the only opportunity to comment on the environmental impacts of the proposal. The proposal may include mitigation measures under applicable codes, and the review process may incorporate or require mitigation measures regardless of whether an environmental impact statement is prepared.

Comments on the project received electronically before 4 p.m., Sept. 18, 2023, will be incorporated into the staff report; comments received electronically after that date will be presented at the hearing.

A decision by the hearing examiner may be appealed to City Council by the applicant or any aggrieved person. Such an appeal must be in writing and be filed with Community and Economic Development Department within 14 calendar days after the hearing examiner's decision. In the absence of such appeal, the examiner's decision shall be final and conclusive.

Procedural appeals to the SEPA determination shall be filed in writing within 14 calendar days following the last day of the comment period. The hearing examiner's decision of the SEPA procedural appeal shall be final and not subject to further administrative appeal.

Substantive SEPA appeals shall be filed in writing within 14 calendar days of the issuance of staff's decision approving, conditioning, or denying the project.

A copy of the final determination may be obtained upon e-mail request. Please include any one of the project numbers listed.

Case Manager: Mark Person, AICP, Senior Planner
E-mail: mark.person@cityofvancouver.us



Aug. 17, 2023

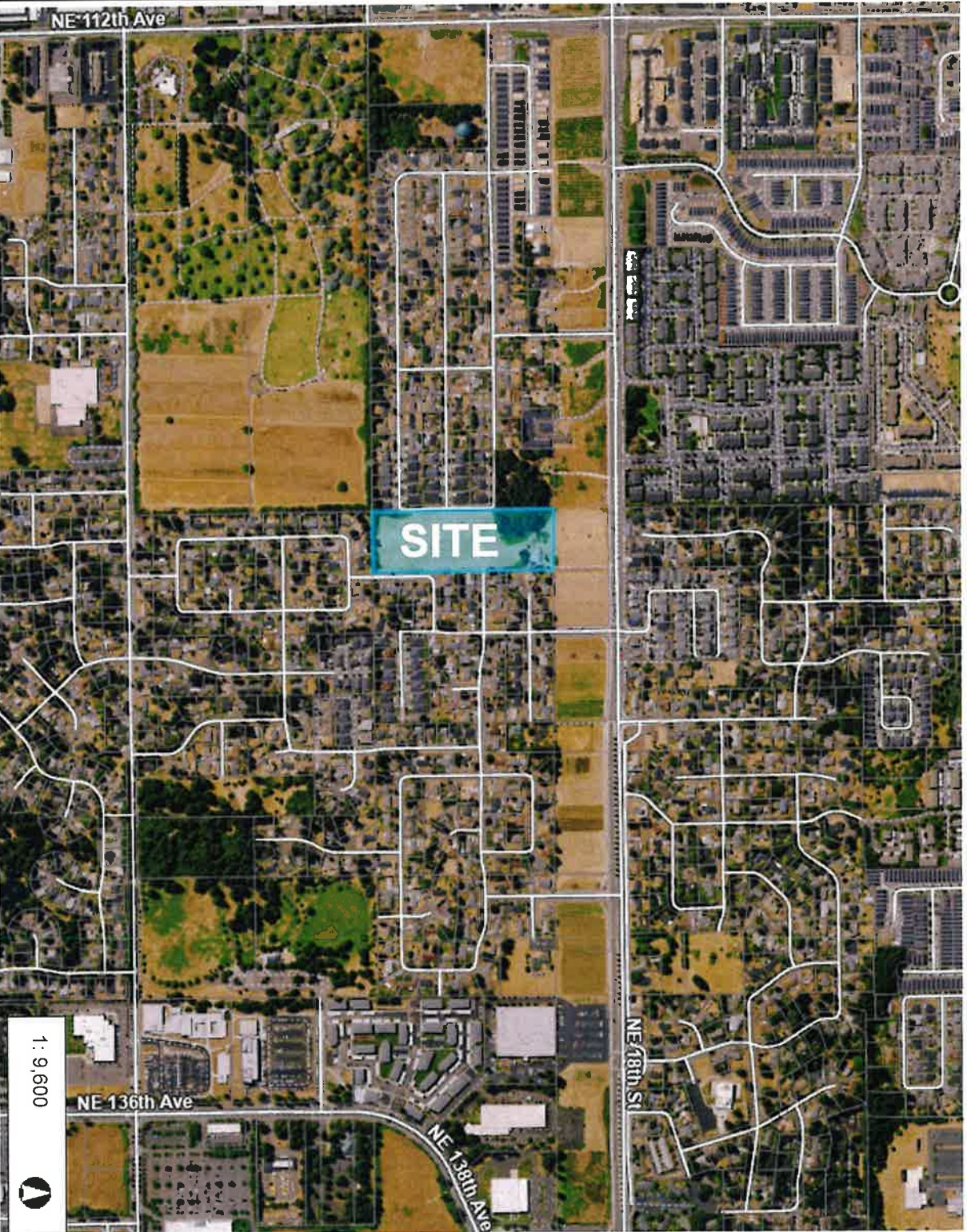
Name

Date

Coverage of this hearing is being cablecast live on Clark/Vancouver Television Channel 21 or 23, Comcast Cable Television System.



Fircrest Meadows



1,600.0 0 800.00 1,600.0 Feet

WGS_1984_Web_Mercator_Auxiliary_Sphere
Clark County, WA, GIS - <http://gis.clark.wa.gov>

1 : 9,600



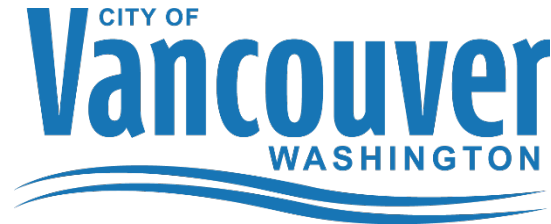
This map was generated by Clark County's "MapOnline" website. Clark County does not warrant the accuracy, reliability or timeliness of any information on this map, and shall not be held liable for losses caused by using this information. Taxlot (i.e., parcel) boundaries cannot be used to determine the location of property lines on the ground.



Legend

- ☐ Taxlots
- All Roads
 - Interstate or State Route
 - Arterial
 - Collector
 - Private or Other

Notes:



P.O. Box 1995 • Vancouver, WA 98668-1995
www.cityofvancouver.us

October 2, 2023

**Notice of Final Determination of Nonsignificance (DNS)
Fircrest Meadows
PRJ-168703/LUP-83548**

The city issued a determination of nonsignificance for this project Aug. 17, 2023; this determination is retained. The city received comments from the Department of Ecology and three members of the public.

It has been determined the following described project will not have a probable significant adverse impact on the environment. Under the authority of WAC 197-11-330(1) and 197-11-350, a determination of nonsignificance has been issued.

Request: 57-lot single-family planned development, rezone from R-6 to R-9 and critical area permit through a Type IV process.

Location: 12301 NE 18th Street, Parcel 164912000 located within the NE ¼ of Section 27, Township 2N, Range 2E within the Willamette Meridian.

Contact: PLS Engineering, Travis Johnson, 604 W Evergreen Boulevard, Vancouver, WA 98660

Applicant: Ginn Group, Chad Stewart, 502 NE 72nd Street, Vancouver, WA 98665

Property Owner: Roger Bradstreet, 12301 NE 18th Street, Vancouver, WA 98684

Requests to appeal this decision must be made in writing within 14 calendar days after the date the decision is mailed. The letter of appeal shall state the case number designated by the city, the name of the applicant, name and signature of each petitioner, a statement showing that each petitioner is entitled to file the appeal under VMC Chapter 20.210, the specific aspect(s) of the decision and/or SEPA issue being appealed, the reasons each aspect is in error as a matter of fact or law, and the evidence relied on to prove the error. A substantive appeal of the SEPA determination must be filed in conjunction with and within the limitation period applicable to an available administrative appeal of the applicable permit or approval (VMC 20.790.640.D).

All appeals, along with the required fee, must be received by 4 p.m., Oct. 16, 2023.

Due to the limited days the permit center is open for walk-in assistance, the appeal request shall be emailed to epplans@cityofvancouver.us as well as to the case manager's e-mail address below and the appeal fee electronically paid to the City of Vancouver.

Responsible Official: Mark Person, AICP, Senior Planner
E-mail: mark.person@cityofvancouver.us

A handwritten signature in blue ink, appearing to read "Mark Person", is written over a horizontal line.

Name

Oct. 2, 2023

Date

EXHIBIT J

Trip Generation and & Distribution Report

****Because of the size of the exhibit, it is not included with this report. The documents are available for review via email. Please email the case manager for this project to receive electronic copies of the requested exhibits.**

Project Name: <u>Fircrest Meadows</u>	Date: <u>9/20/2023 12:00:00 AM</u>
Project Address: <u>12301 NE 18TH ST</u>	TAZ: <u>TA281</u>
Project Number: <u>PRJ-168703</u>	Primary Corridor: <u>18TH #1</u>
ENG Number: _____	Parcel 1 ID: <u>164912000</u>
TIF District: <u>Cascade</u>	Parcel 2 ID: _____
TIF Overlay District: <u>Overlay - Mill Plain / I-205</u>	Parcel 3 ID: _____

Existing Site Trips ^^										
LU Description	ITE LU Code	Existing AM Peak Rate	Existing PM Peak Rate	Existing ADT Rate	Unit of Measure	Size**		Existing AM Peak Trips	Existing PM Peak Trips	Existing ADT
Single Family Det.Homes	210	0.75	1	10	1	1		1	1	10
^^ equals zero if this is a new development on greenfield or if old use has been gone > 1 year.								Existing Trips Total		
								1	1	10

New Trip Generation Calculation										
LU Description	ITE LU Code	AM Peak Rate	PM Peak Rate	ADT Rate	Unit of Measure*	Size**		New AM Peak	New PM Peak	New ADT
		0	0	0	0	0				0
Single Family Det.Homes	210	0.75	1	10	1	57		45	59	570
*Unit of measure = ITE Unit by which total size is divided by in order to calc. trip generation								New Project Trips		
								45	59	570
**Size - Total size of development, eg 10 dwelling units or 50,000 sqf.								Net New Project Trips (new trip - existing trips)		
								44	58	560

***% reduction applied to trip generation, eg. .35 passby reduction for 100 trips - (1 - .35) * 100 - .65 - from approved traffic impact study only

****% reduction applied to trip generation, eg. .10 internal capture reduction for 100 trips - (1 - .10) * 100 - .9 * 100 - 90 - from approved traffic impact study only

Traffic Impact Fee Calculation									
LU Description	ITE LU Code	Proposed Project ADT	Net New Proj ADT	TIF Rate/Trip	TIF Overlay rate/trip	BEF Reduction = .3 for retail commercial uses & ITE LU 912	Tax Reduction	TIF Due	Overlay TIF Due
Single Family Det.Homes	210	570	560.00	326	0		0.15	\$155,176.00	\$0.00
Sum		570	560	TIF Totals:				\$155,176.00	\$0.00

Disclaimer: This information is provided based on the TIF program in place as of the date shown above and is only an estimate of the fee. Per VMC 20.915.020, the fee shall be calculated at time of building permit application. See VMC 20.915 for more information.



City of Vancouver Transportation Services
Trip and Traffic Impact Fee Calculation Worksheet

Application Number: PRJ-168703

Project Name:	Fircrest Meadows	Date:	9/20/2023 12:00:00 AM
Project Address:	12301 NE 18TH ST	TAZ:	TA281
Project Number:	PRJ-168703	Primary Corridor:	18TH #1
ENG Number:		Parcel 1 ID:	164912000
TIF District:	Cascade	Parcel 2 ID:	
TIF Overlay District:	Overlay - Mill Plain / I-205	Parcel 3 ID:	

Concurrency Monitoring Fees			
Corridor	PM Peak Trips	Cost/Trip	max. \$1500
NE 112th Ave to NE 138th Ave	56	\$66.00	\$3,696.00
NE 138th Ave to NE 162nd Ave	8	\$66.00	\$528.00
Burton Rd: Andresen to NE 112th Ave	10	\$66.00	\$660.00
NE 112th Ave to NE 138th Ave	2	\$66.00	\$132.00
Mill Plain Blvd to NE 28th St	33	\$66.00	\$2,178.00
NE 28th St to NE 51st St	21	\$66.00	\$1,386.00
Mill Plain Blvd to NE 28TH	2	\$66.00	\$132.00
Calculated Total =			\$8,712.00

Total Monitoring Fee = \$1,500.00

Proportionate Shares				
Case Number	Project	Fee/Unit	Trips/Lots	Final Fee
	NE 172nd Ave - NE 18th St	\$300.00	2	\$600.00
	NE 187th Ave - NE 18th St	\$1,200.00	2	\$2,400.00
	NE 9th St - NE 162nd Ave	\$1,500.00	1	\$1,500.00
	NE 179th Place - NE 18th St	\$900.00	2	\$1,800.00
Total Proportionate Share Fees =				\$6,300.00

COMMENTS:

57 lot planned development subdivision with a zone change from R-6 to R-9.

District: Cascade	District TIF =	\$155,176.00
	Total TIF =	\$155,176.00

Disclaimer: This information is provided based on the TIF program in place as of the date shown above and is only an estimate of the fee. Per VMC 20.915.020, the fee shall be calculated at time of building permit application. See VMC 20.915 for more information.

EXHIBIT L

Geotechnical Report

****Because of the size of the exhibit, it is not included with this report. The documents are available for review via email. Please email the case manager for this project to receive electronic copies of the requested exhibits.**

EXHIBIT M

Preliminary Stormwater Report

****Because of the size of the exhibit, it is not included with this report. The documents are available for review via email. Please email the case manager for this project to receive electronic copies of the requested exhibits.**

July 13, 2023

City of Vancouver Development Review Services
4500 SE Columbia Way
Vancouver, WA 98661

**RE: Fircrest Meadows, PRJ-168703/PIR-83264
Road Modification Request**

Per Vancouver Municipal Code (VMC) 11.80.160 we are requesting a modification to the following roadway standards:

- Standard detail T10-16 concerning the roadway requirements for a Loop/Cul-de-sac street.

To be considered by the City and be granted modifications to the standards, the applicant must demonstrate at least one of the following conditions is applicable per VMC 11.80.160.C.2:

a. Topography, right of way, existing construction or physical conditions or other geographic conditions make compliance with standards clearly impractical for the circumstances, or

b. A change to a specification or standard is required to address a specific design or construction problem which, if not enacted, will result in an unusual hardship, or

c. An alternative design in proposed which will provide a plan that is functionally equivalent or superior to these standards, or

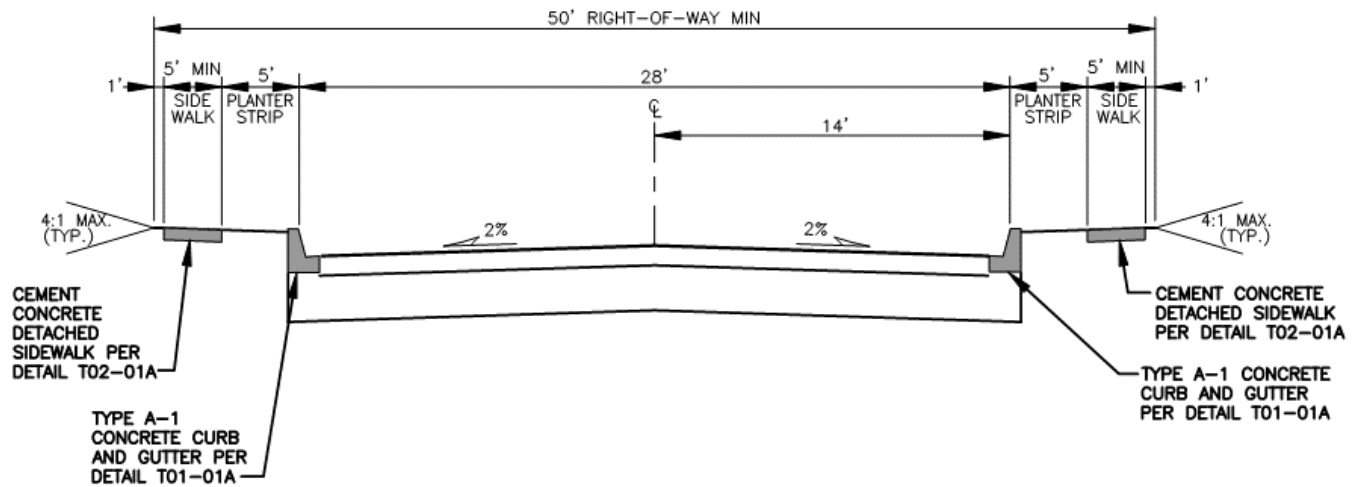
d. Application of the standards of Title 11 to the development would be grossly disproportional to the impacts created; or

e. A change to a specification or standard is required to ensure consistency with features adjacent to or affected by the site where those existing features are not expected to change over time.

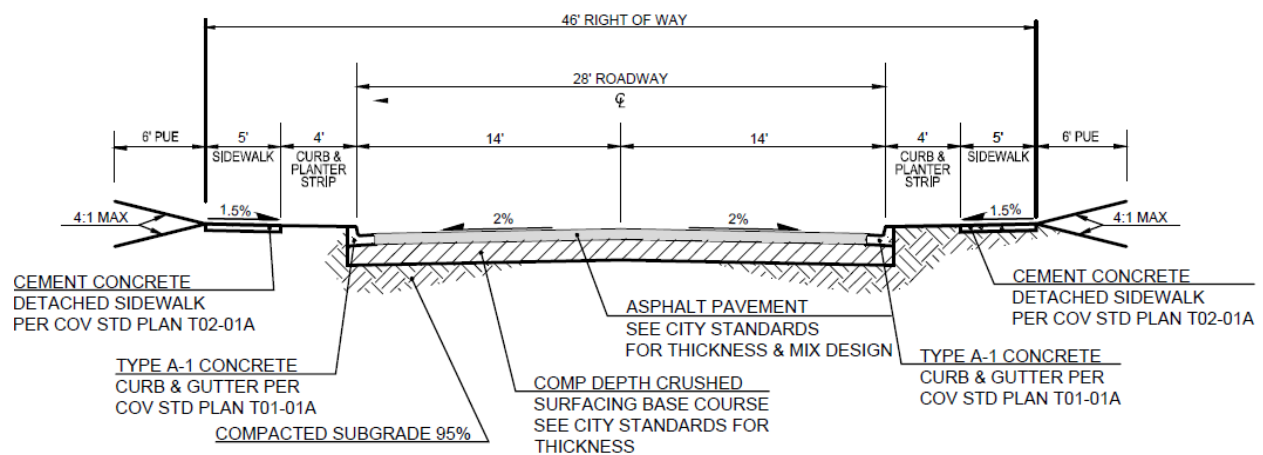
Loop/Cul-de-sac roadway Standards:

This modification request will use criteria c.

The applicant is proposing to modify the public roadway section for NE 122nd Court. The street will be classified as a cul-de-sac road per standard plan number T10-16. As shown in the figure below, the typical roadway section includes 50' of ROW, a 28' paved roadway width, 5' planter strip and curb, detached 5' sidewalk, and 1' of clear space behind the sidewalk. The applicant is proposing to modify this section by eliminating the 1' of clear space behind the sidewalk and reducing the width of the planter strip and curb from 5' to 4'. This will result in a right-of-way width of 46' and an unchanged 28' roadway width. The applicant is proposing to construct a modified roadway section that we believe will be functionally equivalent to the standards. The required and proposed roadway sections are shown below.



Cul-de-sac Roadway Standard Plan T10.16



NE 122ND Court Typical Section

(COV STD PLAN T10-16 - MODIFIED)

NTS

Proposed Roadway Section

NE 122nd Court will encompass two dead end cul-de-sac streets to the north and south of NE 16th Street that have no public interest for traffic circulation and will not conflict with the adopted arterial plan or circulation plan. The two dead-end streets will each serve more than 8 residential lots, however they are part of a planned unit development. The streets do not currently and do not have any potential to connect two public streets. Thus, the proposed NE 122nd Court will function as a private street per VMC 11.80.050.B, although the applicant has proposed a public street section for the roadway at the request of the city. The reduced 4' planter strip and curb and removed clear space behind the sidewalk meet the standards of a private street per standard plan number T10-17. For this reason, we believe that the proposed modified roadway section will be functionally equivalent to the standards. The sidewalk will meet the 5' standard width and the roadway will meet the 28' standard width requirements per the standard detail.

Another purpose of the modified roadway section is to allow for an increased lot depth. With a full 50' right-of-way width, the depth of the lots on either side of the street would be reduced by 2'. While this would meet the minimum lot depth standards it would decrease the lot areas below the proposed reduced area. The lots to the east of NE 122nd Court are perimeter lots adjacent to existing single level homes. The applicant is proposing a 4000 square foot minimum lot area for these lots, equaling a 20% reduction of the standard minimum lot area for the R-9 zone. The lots to the west of NE 122nd Court are interior lots with a proposed minimum lot area of 2,500 square feet, which is 50% of the standard minimum lot area. Reducing the lot depth by 2' on these lots would reduce lots 40-41, 44-46, & 55-57 below the reduced minimum lot areas described above.

There is also a substantial grade change from the west side of the site to the east side that will require retaining walls in the backyards of lots 20-26 & 43-47. NE 16th Street enters the site on the west at approximately 294' in elevation and will need to leave the east side at approximately 288.5'. There is also a depression running through the site from south to north with a low point of approximately 275' along the proposed alignment of NE 16th Street. The increased lot depth created by the modified roadway section for NE 122nd Court will allow for more clearance between the required retaining walls and back wall of the proposed residences.

C. Approval Criteria.

- 1. In reviewing a modification request, the City shall consider the applicable factors that include, but are not limited to, the following:**
 - a. Public safety, durability, cost of maintenance, function, and appearance;**

Public safety, durability, cost of maintenance, and function are not affected by this request. The appearance of the street is slightly changed, with the planter strip and distance reduced by 1' and the front of houses 1' closer to the back of sidewalk.

b. Advancing the goals of the comprehensive plan as a whole;

Approval of this road modification does not conflict with the goals of the comprehensive plan.

c. Any modification shall be the minimum necessary to achieve the stated purpose;

The proposed modifications are the minimum necessary to achieve the project goals.

d. Potential benefits of low impact development or innovative concepts; and

Low impact development or innovative concepts are not applicable to this request.

e. Self-imposed hardships shall not be used as a reason to grant a modification request.

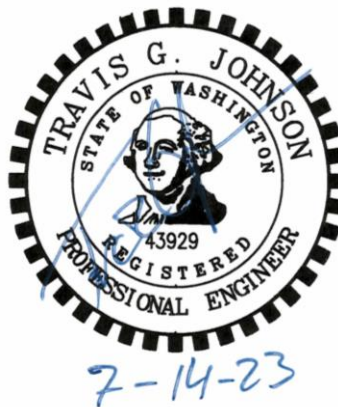
The applicant is not requesting approval based on self-imposed hardships.

In closing, we request that staff approve this road modification requests based on the reasoning above. If you have any questions or concerns, please contact me at (360) 944-6519 or matthew@plsengineering.com.

Sincerely,



Matthew Muller
PLS Engineering





September 19, 2023

PLS Engineering
 Attn: Travis Johnson, P.E.
 604 W Evergreen Boulevard
 Vancouver, WA 98660

PRJ-168703/LUP-83548
Road Modification Request – Modified Street Section
Fircrest Meadows PUD

Approved

Dear Mr. Johnson:

This letter is in response to the revised road modification request dated July 13, 2023. The applicant is requesting relief from City Standard Plans T10-16, which requires a 28-foot full-width pavement section with a five-foot wide detached sidewalk, a five-foot wide planter strip with a one-foot clear space behind the sidewalk on both sides of the street within a 50-foot full-width right-of-way.

The applicant is requesting approval of a modified version of City Standard Plan T10-16 for the design of NE 122nd Court, within the Fircrest Meadows PUD. The proposed modifications include:

- **Reducing the width of the planter strip to four-feet rather than five-feet, on both sides of the street.**
- **Eliminating the one-foot of extra right-of-way behind the sidewalk, on both sides of the street.**
- **These modifications will result in a total right-of-way width of 46-feet.**

The applicant is proposing a 57-lot, detached single-family home subdivision known as Fircrest Meadows PUD. The project is located at 12301 NE 18th Street, parcel #164912000. As part of the public improvements for this subdivision, the applicant is constructing NE 122nd Court, a public cul-de-sac street. There is a northern leg and a southern leg that intersect with NE 16th Street. The applicant proposes to construct the standard 28-foot full-width pavement section for NE 122nd Court and provide five-foot sidewalks with standard curb and gutter on both sides of the street; these street elements are consistent with the standard requirements per City Standard Plan T10-16. However, the applicant also proposes to construct four-foot planter strips and eliminate the

one-foot of extra right-of-way behind the sidewalk along both sides of the street, subsequently reducing the total right-of-way width to 46-feet.

NE 122nd Court will provide direct access to 24 single-family lots and will terminate in a cul-de-sac at both legs. The proposed street section with five-foot detached sidewalks, four-foot planter strips, and no additional right-of-way behind the sidewalk is consistent with the requirements of other public street types, including the Neighborhood Circulator (T10-14) and the Local Access Street – Type A (T10-15A). Therefore, the modifications proposed for the street are currently allowed on similar street types and will be functionally equivalent to the standard.

Also, by providing a reduced right-of-way section, lot depth will be increased. If the full 50 feet of right-of-way was provided, lot depth would be reduced by two feet and lots 40-41, 44-46 and 55-57 would be reduced below the allowable minimum lot areas. Finally, because of a substantial grade change from the west side to the east side of the site, retaining walls will be required in the back yards of lots 20-26 and 43-47. The increased lot depth created by the modified street section will allow for more clearance between the retaining walls and back wall of the proposed houses.

City staff has determined that the request to utilize a modified version of City Standard Plan T10-16 in the construction of NE 122nd Court, within Fircrest Meadows PUD, is consistent with the provisions of the City's code and will not create a safety hazard or other adverse condition. **Therefore, the road modification request is approved.**

Per VMC 11.80.160, modifications from the standards may be made in cases where unusual topographic conditions, nature of existing construction, unique or innovative development design or similar factors that would make adherence to the width, design, alignment undesirable or impracticable. A request for variation from the street section standards is categorized as a Technical (Minor) Modification, defined as a modification involving aspects of a particular standard that may change its general function, but not its essential function.

Per VMC 11.80.160, if a modification request is approved or denied by a City development approving authority (Public Works), such approval or denial may be appealed pursuant to the provisions of VMC 20.210.130 within fourteen (14) calendar days of the decision by submitting a letter to the approving authority through the Engineering Service Counter located at Vancouver City Hall (415 SE 6th Street, Vancouver, Washington).

If you have any questions or concerns pertaining to this matter, please contact our office at 360-487-7702.

Respectfully,

A handwritten signature in blue ink, appearing to read 'E. Hahn', is positioned above the printed name.

Eric Hahn, P.E.
Senior Civil Engineer
Public Works Department

Cc: File: PRJ-168703/LUP-83548

EXHIBIT P

Critical Areas Report

****Because of the size of the exhibit, it is not included with this report. The documents are available for review via email. Please email the case manager for this project to receive electronic copies of the requested exhibits.**

EXHIBIT Q

Person, Mark

From: Bowen, Clarissa
Sent: Monday, August 21, 2023 10:04 AM
To: WSDOT Aviation Land Use Inquiries and Application Submittals
Cc: Person, Mark
Subject: RE: [EXTERNAL] City of Vancouver NOA/DNS for PRJ-168703/LUP-83548 Fircrest Meadows

Hello,

Thank you for your email. I am including Mark Person, the case manager for this project.

Clarissa Bowen | Support Specialist
Land Use Planning
Community Development Department



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From: WSDOT Aviation Land Use Inquiries and Application Submittals <AviationLandUse@WSDOT.WA.GOV>
Sent: Monday, August 21, 2023 9:41 AM
To: Bowen, Clarissa <Clarissa.Bowen@cityofvancouver.us>
Subject: RE: [EXTERNAL] City of Vancouver NOA/DNS for PRJ-168703/LUP-83548 Fircrest Meadows

CAUTION: This email originated from outside of the City of Vancouver. Do not click links or open attachments unless you recognize the sender and know the content is safe.

M Bowen,

WSDOT Aviation Division reviewed the provided documents on 08/21/2023. We have no comments concerning land use issues. Please consult with the [FAA Obstruction Evaluation / Airport Airspace Analysis program](#) for any potential notification requirements.

Cheers,

David Ison, PhD | Aviation Planner
Emerging Aviation Technologies & Land Use Compatibility
Washington State Department of Transportation
isond@wsdot.wa.gov C: 360-890-5258

From: Bowen, Clarissa <Clarissa.Bowen@cityofvancouver.us>

Sent: Thursday, August 17, 2023 7:56 AM

To: Alan Haagen <alan@sureholder.com>; Wheeler, Chuleana <Chuleana.Wheeler@cityofvancouver.us>; Clark County Neighbors <ClarkCountyNeighbors@hotmail.com>; Clark Public Health Land Use email <CCPHLandUse@clark.wa.gov>; Clif Barnes <madbushido@gmail.com>; Whitlam, Rob (DAHP) <Rob.Whitlam@DAHP.WA.GOV>; DNR - SEPA <sepacenter@dnr.wa.gov>; Gary Yarne / VSD <Gary.Yarne@vansd.org>; Glen Yung <incrediblehistorichomes@gmail.com>; Lorie Clark <lclark@lcfrb.gen.wa.us>; mattlondon2001@yahoo.com; Melissa Johnston <Melis2jo@gmail.com>; Miles Johnson - Columbia Riverkeeper <miles@columbiariverkeeper.org>; Oliver Orjiako - Clark County <oliver.orjiako@clark.wa.gov>; Oregonian, The <clarkcounty@oregonian.com>; Port of Vancouver - Mary Mattix <mmattix@portvanusa.com>; Port of Vancouver - Matt Graves <mgraves@Portvanusa.com>; Port of Vancouver - Patty Boyden <pboyden@portvanusa.com>; Powell, Lee Jr <aero180@aol.com>; Raelynn Good/Evergreen School District <raelynn.good@evergreenps.org>; Regulatory.nws@usace.army.mil; Rob Palena <rpalena@mackaysposito.com>; Roxy Mikaeletupua <roxanne.mikaeletupua@vansd.org>; Southwest Clean Air <SEPA@swcleanair.org>; Susan Law <yummyslaw@yahoo.com>; Hanson, Sydney (DAHP) <Sydney.Hanson@dahp.wa.gov>; Taylor Eidt <taylor.eidt@c-tran.org>; The Columbian - Scott Hewitt <scott.hewitt@columbian.com>; US Army Corps Eng. SW WA field office <Steven.W.Manlow@usace.army.mil>; Michael Walker <director@vdausa.org>; WSDOT Aviation Land Use Inquiries and Application Submittals <AviationLandUse@WSDOT.WA.GOV>; Johnson, Eric <JohnsEL@wsdot.wa.gov>; WSDOT SW SEPA Review <SW-SEPA-REVIEW@WSDOT.WA.GOV>; Bowen, Clarissa <Clarissa.Bowen@cityofvancouver.us>; Delapena, Amanda <Amanda.Delapena@cityofvancouver.us>; Eiken, Chad <Chad.Eiken@cityofvancouver.us>; Holmes, Eric <Eric.Holmes@cityofvancouver.us>; Jones, Keith <Keith.Jones@cityofvancouver.us>; Kennedy, Rebecca <Rebecca.Kennedy@cityofvancouver.us>; Lehto, Kristin <Kristin.Lehto@cityofvancouver.us>; Nortz, Jason <Jason.Nortz@cityofvancouver.us>; Perlick, David <David.Perlick@cityofvancouver.us>; Person, Mark <mark.person@cityofvancouver.us>; Picchioni, Tina <Tina.Picchioni@cityofvancouver.us>; Rude, Becky <Becky.Rude@cityofvancouver.us>; Snodgrass, Bryan <Bryan.Snodgrass@cityofvancouver.us>; Thirunagari, Sree <Sree.Thirunagari@cityofvancouver.us>; Tubberville, Monica <Monica.Tubberville@cityofvancouver.us>; Turner, Greg <Greg.Turner@cityofvancouver.us>

Subject: [EXTERNAL] City of Vancouver NOA/DNS for PRJ-168703/LUP-83548 Fircrest Meadows

WARNING: This email originated from outside of WSDOT. Please use caution with links and attachments.

Attached are the NOA/DNS and map for the above listed project.
Comments are due by 4 p.m., Sept. 18, 2023.

For additional information about this project, contact the project case manager.

Mark Person, AICP, Senior Planner

Land Use Planning

Community Development Department

mark.person@cityofvancouver.us

~~~~~

If someone other than the person to whom this message was sent is a more appropriate recipient, please reply to this message and provide contact information.

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**Clarissa Bowen | Support Specialist**

**Land Use Planning**

**Community Development Department**



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**Lisa Harker**

---

**From:** DAHP SEPA (DAHP) <sepa@dahp.wa.gov>  
**Sent:** Friday, July 14, 2023 10:23 AM  
**To:** Jordan Haddad  
**Cc:** Lisa Harker; Alexander Gall; Thomas Odom; Chad Stewart  
**Subject:** RE: DAHP Project 2023-07-04120 | Fircrest Meadows | City of Vancouver Predetermination

Hi Jordan,

This predetermination report has been received by the DAHP. No formal review of this project has been undertaken at this time. However, we agree with the recommendation that the existing single family residence and attached garage should be recorded on a DAHP Historic Property Inventory form prior to demolition.

All the best,

**Sydney Hanson, MA** (she/her) | **Local Government Archaeologist**  
*Eastern Washington & Columbia River Counties*  
360.280.7563 | [sydney.hanson@dahp.wa.gov](mailto:sydney.hanson@dahp.wa.gov)

Department of Archaeology & Historic Preservation | [www.dahp.wa.gov](http://www.dahp.wa.gov)  
1110 Capitol Way S, Suite 30 | Olympia WA 98501  
PO Box 48343 | Olympia WA 98504-8343



Please consider the environment before printing this email

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**From:** Chad Stewart <Chad@ginngroup.com>  
**Sent:** Friday, July 14, 2023 8:10 AM  
**To:** Jordan Haddad <Jordan@archaeologicalservices.com>; DAHP SEPA (DAHP) <sepa@dahp.wa.gov>  
**Cc:** Lisa Harker <lisa@plseengineering.com>; Alexander Gall <alex@archaeologicalservices.com>; Thomas Odom <Tom@archaeologicalservices.com>  
**Subject:** RE: DAHP Project 2023-07-04120 | Fircrest Meadows | City of Vancouver Predetermination

External Email

Project: **Fircrest Meadows**

- DAHP Project #2023-07-04210

Good morning, Jordan.

Still no receipt confirmation from DAHP? Predetermination was sent/receipt confirmation requested on 7/5. Would you please follow-up directly with the appropriate DAHP staff member...phone call?

Thanks,  
Chad



---

**From:** Chad Stewart  
**Sent:** Tuesday, July 11, 2023 8:50 AM  
**To:** Jordan Haddad <[Jordan@archaeologicalservices.com](mailto:Jordan@archaeologicalservices.com)>; SEPA (DAHP) <[sepa@dahp.wa.gov](mailto:sepa@dahp.wa.gov)>  
**Cc:** Lisa Harker <[lisa@plsengineering.com](mailto:lisa@plsengineering.com)>; Alexander Gall <[alex@archaeologicalservices.com](mailto:alex@archaeologicalservices.com)>; Thomas Odom <[Tom@archaeologicalservices.com](mailto:Tom@archaeologicalservices.com)>  
**Subject:** RE: DAHP Project 2023-07-04120 | Fircrest Meadows | City of Vancouver Predetermination

Project: **Fircrest Meadows**

- DAHP Project #2023-07-04210

Hi, Jordan.

Has DAHP responded to your request for receipt confirmation you sent last Wednesday? If not, would you please follow-up today and ask them to send the standard, "The predetermination has been received. No formal review has been undertaken." We're submitting our land use application this week and need DAHP's receipt confirmation.

The attached email confirmation on our last Vancouver project came from Sydney Hanson. Perhaps follow-up directly with her?

Thanks,  
Chad

---

**From:** Jordan Haddad <[Jordan@archaeologicalservices.com](mailto:Jordan@archaeologicalservices.com)>  
**Sent:** Wednesday, July 5, 2023 2:54 PM  
**To:** SEPA (DAHP) <[sepa@dahp.wa.gov](mailto:sepa@dahp.wa.gov)>  
**Cc:** Chad Stewart <[Chad@ginngroup.com](mailto:Chad@ginngroup.com)>; Lisa Harker <[lisa@plsengineering.com](mailto:lisa@plsengineering.com)>; Alexander Gall <[alex@archaeologicalservices.com](mailto:alex@archaeologicalservices.com)>; Thomas Odom <[Tom@archaeologicalservices.com](mailto:Tom@archaeologicalservices.com)>  
**Subject:** DAHP Project 2023-07-04120 | Fircrest Meadows | City of Vancouver Predetermination

Hello,

A City of Vancouver archaeological predetermination report for the Fircrest Meadows project area has been submitted under DAHP Project 2023-07-04120 and is ready for review. When you are able, please provide proof of receipt by replying all to this email.

Thank you,

Jordan

-----  
**Jordan Haddad, B.S.**

Staff Archaeologist / Lab Coordinator

**Archaeological Services, LLC.**

601 Officers Row

Vancouver, WA 98661

(360) 260-8614

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"

**Person, Mark**

---

**From:** Dale Lewis <daletech48@gmail.com>  
**Sent:** Saturday, August 19, 2023 4:47 PM  
**To:** Person, Mark  
**Subject:** Fircrest Meadows PRJ-168703/LUP-83548

You don't often get email from daletech48@gmail.com. [Learn why this is important](#)

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I would like to attend the virtual meeting. I live at 12031 NE 16th St, Vancouver, WA 98684. Thank you Dale



## Person, Mark

---

**From:** Audra Koopmann <audramann113@gmail.com>  
**Sent:** Sunday, August 20, 2023 8:01 PM  
**To:** Person, Mark  
**Subject:** Fircrest Meadows PRJ-168703/LUP-83548

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Greetings Mark,

I received a notice regarding the application and remote public hearing and the optional SEPA determination of nonsignificance and would like to be included in the hearing. As I live on 125th Avenue between 16th and 17th Street (since 2008) this would impact my whole street from 15th Street to 18th Street.

If possible, is there a way to be able to review the plans? I would like to know if they included Fircrest Meadows' own ingress/egress or if they are opening up either 16th and or 15th Streeting for through traffic and expect them to use 125th Avenue? This would have the biggest impact on everyone who lives on and near these streets. Was a traffic study conducted?

I had to look up SEPA and while it does talk about the environmental impact this would have, I would like to know if there was a study done about watershed as this seems to be an area where rainwater and such run from the development that is west of the site. As it seems the city has a hard time keeping the current system from flooding on 15th street and 123rd Avenue.

Let me know if you have any questions about my requests.

Thank you,

Audra Koopmann | Vancouver, WA

*No trees were harmed in the creation of this electronically composed and digitally published email but a fair number of electrons were somewhat perturbed.*

## Person, Mark

---

**From:** Audra Koopmann <audramann113@gmail.com>  
**Sent:** Sunday, October 8, 2023 7:16 PM  
**To:** Bowen, Clarissa  
**Cc:** RBBRADSTREET@COMCAST.NET; Chad Stewart; Travis Johnson; Daletech48@gmail.com; Person, Mark; Turner, Greg  
**Subject:** Re: City of Vancouver Final DNS for PRJ-168703/LUP-83548 Fircrest Meadows  
**Attachments:** image003.png

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Greetings Clarissa,

I was under the impression that there would be a public hearing that I could attend and have been waiting for that notification. My concerns are that they did the traffic study AFTER school was out, so I feel the traffic impact on 125th will be much more than they are claiming. I have lived on 125th for 16 years and can tell you that it is already heavily used, with people going way too fast. Did you know that there is an elementary bus stop on 125th and 17th? I know I won't be able to stop the development, and honestly it is expected, but what I would like is a better way to mitigate the increase in traffic. I know they did not plan on adding their own ingress/egress because it probably made it more expensive and they would most likely lose one or two lots. Also your traffic study states that they expect some to go up the hill on 16th and then back down the hill on 118th, that will not be reality. Most people pick the path of least resistance, they will come to 125th, because they do not want to deal with two hills. 57 homes, with a minimum of 2 cars, that is 114 cars daily, not the 36 average cars the report states. Most homes are two income households, so 114 cars is more realistic.

Curb 'softening' at the beginning of the development is not going to stop people from driving too fast down 125th on the way to and from 18th street.

Ideally I would like to see that the development have its own in/out with a light on 18th street, this would also slow down the people who think they are in the Fast and Furious and that 18th is their personal runway. At least improve 125th from 15th street to 18th street with speed humps just after 15th street, just past 16th street and just after 17th street.

Please let me know who and where I submit a request for review & revision of the plans. Like I stated, I do not mind the homes and understand the field will be developed, but the established neighborhood and families need to be taken into consideration as well. The long term effects for us will be increased taxes and traffic.

Thank you,

Audra Koopmann | Vancouver, WA

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On Mon, Oct 2, 2023 at 9:06 AM Bowen, Clarissa <[Clarissa.Bowen@cityofvancouver.us](mailto:Clarissa.Bowen@cityofvancouver.us)> wrote:

Attached is the Final DNS for the above listed project.

The appeal period ends by 4 p.m., Oct. 16, 2023.

**For additional information about this project, contact the project case manager.**

**Mark Person, AICP, Senior Planner**

**Land Use Planning**

**Community Development Department**

[mark.person@cityofvancouver.us](mailto:mark.person@cityofvancouver.us)

~~~~~

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Clarissa Bowen | Support Specialist

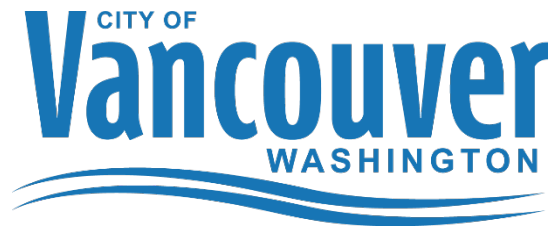
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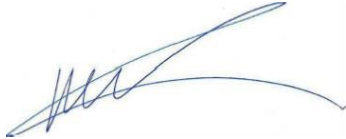
www.cityofvancouver.us

**Staff Report and Recommendation to the Hearing Examiner
Fircrest Meadows
PRJ-168703/LUP-83548**

Report Date	November 3, 2023
Hearing Date	November 21, 2023
Proposal	57-lot single-family planned development and zone change from R-6 to R-9 through a Type IV process
Location	12301 NE 18th Street, Parcel 164912000 located within the NE ¼ of Section 27, Township 2N, Range 2E within the Willamette Meridian
Contact	PLS Engineering, Travis Johnson, 604 W Evergreen Boulevard, Vancouver, WA 98660
Applicant	Ginn Group, Chad Stewart, 502 NE 72nd Street, Vancouver, WA 98665
Property Owner	Roger Bradstreet, 12301 NE 18th Street, Vancouver, WA 98684
Staff	Mark Person, Senior Planner / Case Manager Eric Hahn, Senior Civil Engineer, Transportation/Concurrency Kassidy Flaherty, Deputy Fire Marshal Amanda Romero, Solid Waste Giff Hancock, Civil Engineer -Water Aaron A. Odegard, Civil Engineer, Sewer Mike Swanson, Civil Engineer, Stormwater Eric Stinson, Building Plans Examiner
SEPA Determination	Final Determination of Nonsignificance
Approval Criteria	Planned Development – VMC20.260.050 Subdivision – VMC20.320.040 Zone Change – VMC20.285.060 Critical Area – VMC20.740.060
Recommendation	Preliminary approval with conditions. Project conditions and/or required revisions are identified in the conclusion of this report.

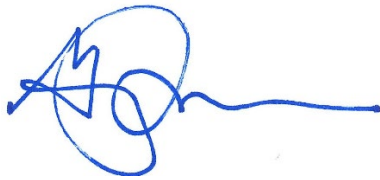
RECOMMENDATION

This report to the hearing examiner is a recommendation from Community Development Department. The examiner may adopt, modify or reject this recommendation. The hearing examiner recommendation will be forwarded to City Council for a final decision.



Report Prepared by
Mark Person, AICP, Senior Planner/Case Manager

November 3, 2023
Date



Greg Turner, Manager
Land Use Planning

November 3, 2023
Date

BACKGROUND

Project Summary

Proposed 57-lot single-family planned development, rezone from R-6 to R-9 and critical area permit for slopes greater than 25 percent through a Type IV process. Northeast 14th Street and NE 16th Street will be extended through the site. The heavily treed and steep slope area will be retained within proposed Tract 'A' at the northwest corner of the site.

General Site Information

Zoning District	R-6
Adjacent Zoning Designation	Easement to the north, R-6 to the east, R-6 to the south and R-6 to the west
Comprehensive Plan Designation	UL
Parcel Size	9.85 acres
Adjacent Land Uses	Easement/OS to the north, residential to the east, residential to the south and residential to the west
Access Roads	NE 121 st to the west, NE 16 th and NE 15 th to the east
Existing Vegetation	Grasses and trees in the northwest corner of the site
Existing Structures	Existing home in the northeast corner of the site
Topography	276 feet at the northwest corner and 294 feet at the south property line
Geologic Hazards	Slopes > 25%
Seismic Hazard	NEHRP Class C
Habitat and Species Impacts	No mapping indicators
Flood Plains	Outside flood area
Wetlands	No mapping indicators
Archaeology	Level B – Lower Probability
Drainage Basin	Burnt Bridge Creek
Wellhead Protection	Critical Aquifer Recharge Area
Soils	LgB, LgF and WrF
Park Impact Fee District	District C
School Impact Fee District	Evergreen
Impacted Schools	Fircrest, Cascade and Evergreen
Traffic Impact Fee District	Cascade
Transportation Analysis Zone	281
Sewer District	Vancouver
Water District	Vancouver
Fire Service	Vancouver
Neighborhood Association	Fircrest

Procedural History

Activity	Case #	Date
Pre-application conference	PIR-83264	04/13/2023
Application submitted	LUP-83548	07/24/2023
Application determined fully complete		08/09/2023
Notice of application and notice of public hearing		08/17/2023
SEPA determination: Final DNS		10/02/2023
Hearing Date		11/21/2023

APPLICABLE REGULATIONS

Vancouver Municipal Code

VMC Chapters 11.80 Street Standards; 11.90 Transportation; 11.95 Transportation Concurrency; 14.04 Water and Sewer Use Regulations; 14.16 Water and Sewer Service Connections; 14.24 Erosion Control; 14.25 Stormwater Control; 14.26 Water Resource Protection; 16.04.160 Water Supply and Fire Hydrants; 16.04.150 Fire Apparatus Access; 16.04.170 through 16.04.210 Fire Protection Systems; 16.04.010 Premises Identification; 20.210 Decision Making Procedures; 20.260 Planned Developments; 20.285 Text and Map Amendments; 20.320 Subdivisions; 20.740 Critical Areas Protection; 20.915 Impact Fees; 20.770 Tree Conservation; 20.410 Lower Density Residential Districts; 20.925 Landscaping and Open Storage; 20.945 Parking and Loading; 20.790 State Environmental Policy Act Regulations; and 20.970 Solid Waste Disposal and Recycling.

Comprehensive Plan

Public Works Publications

General Requirements & Details for Water Main Construction
General Requirements & Details for Sewer Main Construction

Other

RCW 58.17

Manual on Uniform Traffic Control Devices

ANALYSIS

Staff reviewed the proposal for compliance with applicable regulations, code criteria and standards in order to determine whether all potential impacts will be mitigated by the requirements of the code.

AGENCY AND PUBLIC COMMENTS

Agency and public comments are listed below. The proposed project has been reviewed and recommendations made in light of these comments.

Clark County Public Health

CCPH issued a Development Review Evaluation for the project dated June 7, 2023 (Exhibit G).

On-Site Sewage Treatment Systems (CCC 24.17, WAC 246-272A, CCC 40.370, RCW 58.17)

Public sewer services is proposed and required for this development. County records indicate the presence of an operational on-site sewage system (OSS) on the parent parcel.

- 12301 NE 18th Street, Parcel 164912000: Operational OSS ON0023260, unable to be located by CCPH staff during May23, 2023 site evaluation

Additional OSS components may exist at the site. This OSS and any additional OSS tanks or drywells discovered during development must be properly abandoned per CCC 24.17.210, with written notice provided to Clark County Public Health and Online RME Pumper Reports attached. Abandoned OSS locations must be marked on the final plat.

The proposed development must be served by public sewer. A copy of the final acceptance letter (or equivalent) from the sanitary sewer purveyor shall be submitted to the City of Vancouver Community Development Department with the final development site plan.

Water Systems (WAC 173-160, WAC 246-290, CCC 40.370, RCW 58.17)

Public water service is proposed and required for this project. An operational water well was observed in the field on the parent parcel by CCPH staff during a May 23, 2023 field visit.

- 12301 NE 18th Street, Parcel 164912000: Operational water well WP0013622 located south of existing residence

Other wells may exist on the parcel. This well and any others discovered during development must be properly decommissioned by a licensed well driller per WAC 173-160-381. Written verification and the decommissioned well report must be submitted to CCPH and decommissioned well locations must be shown on the final plat.

The proposed development must be served by public water. A copy of the final acceptance letter (or equivalent) from the purveyor shall be submitted to the City of Vancouver Community Development Department with the final development site plan.

Underground Storage Tanks (WAC 173-360A)

CCPH staff located evidence of an underground storage tank (UST) on the eastern side of the parent parcel at the end of the driveway accessing the existing residence from 18th Street. Above-ground components of this UST exhibited signs of extreme degradation. This UST is located within the 100-foot sanitary control area radius of the water well serving the existing residence and lies within the 5-year impact municipal wellhead protection area of Vancouver Water Station 7 to the southeast. This UST may be leaking diesel or heating oil into surrounding soils and groundwater.

CCPH recommends evaluation of the tank and surrounding soils for evidence of leakage. USTs contributing to local contamination exceeding MTCA Method A Cleanup Levels fall under the purview of Washington State Department of Ecology and may require additional remediation measures after decommissioning.

Department of Ecology

A letter was received from the Dept. of Ecology dated Sept. 18, 2023 (Exhibit F). The email contains standards for solid waste management, toxics cleanup and water quality. **The applicant shall comply with these requirements during construction.**

Evergreen Public Schools

A letter was received from Evergreen Public Schools dated April 21, 2023 (Exhibit D). The letter contains information on bus transportation.

Public Comment

A phone call was received by Jim Martin during the comment period. Mr. Martin was concerned about how narrow NE 16th Street is west of the site. The applicant and transportation staff both confirmed that there are no parking signs along this section of NE 16th Street. An email was received by Audra Koopmann regarding increased traffic, the watershed and stormwater. Transportation, erosion control and stormwater management are addressed within this report. Public comment is included with this report as Exhibit S.

FINDINGS

Land Use

20.210 Decision Making Procedures

Finding: Per VMC 20.210-1 Planned developments require a Type IV process and recommendation by the hearing examiner to the City Council for final approval. Per Table 20.210-1, preliminary subdivision (10 lots or more) requires a Type III process and preliminary approval by the hearing examiner.

Per VMC 20.210.020.D, when more than one application is submitted for a given development and those applications are subject to different types of procedure, then all of the applications are subject to the highest type of procedure that applies to any of the applications.

20.260 Planned Developments

Finding: Per VMC 20.260.030(1) planned developments, 25 acres or less require a Type IV process and a recommendation by the hearing examiner to the City Council for final approval.

20.260.010 Purpose

A. Flexibility. Provide a means for creating planned environments in any base zoning district through the application of flexible standards, i.e., zero-lot lines, narrower streets, and other innovative planning practices that will result well-designed, efficient and functional urban environments.

B. Efficiency. Facilitate the efficient use of land.

C. Economic feasibility. Increase economic feasibility by fostering the efficient arrangement of land use, buildings, circulation systems, open space and utilities.

D. Resource preservation. Preserve to the greatest extent possible the existing landscape features and amenities through the use of a planning procedure that can tailor the type and design of a development to a particular site.

Finding: The applicant is proposing a planned development to accommodate specific design elements, efficiency, feasibility, and resource preservation.

The proposal meets the goals and policies of providing new housing, flexibility and efficiency for a growing diverse population as listed in the Vancouver Comprehensive Plan 2011-2030.

20.260.020 Applicability

A. Applicable in all zones

The planned development is a development vehicle that may be used in all base zoning districts except in the Park, Greenway and Natural Area districts.

Finding: The base zone of the parcel is R-6 and the submitted application includes a proposal to rezone to R-9, a planned development is allowed.

B. Permitted Uses.

Finding: The subject site is currently zoned R-6. The application includes a rezone to change the site from R-6 to R-9. The applicant is proposing 57 single-family detached units. In the R-6 and R-9 residential districts, single-family detached dwellings are permitted by right within planned developments per VMC 20.260.020(B)(1)(a) & VMC 20.206.020(B)(2)(a).

C. More than one base zone

More than one base zone. When a site contains land that is in more than one zoning district, the allowed and conditional uses at the required minimum and maximum densities, if applicable, shall be

proportionate to the land within the development site devoted to each zoning district. The zoning may be shifted around the site provided that the same proportion acreage of each zoning district is retained. The concept and detailed plans shall explicitly illustrate such physical re-configuration of the site and shall be used as the basis for all subsequent land use reviews.

Finding: The entire site is zoned R-6 and does not contain more than one base zone.

20.260.030 Approval Process

A. Elements of approval process. The two elements of the planned development approval process

1. Approval of the planned development concept development plan which contains a substantial level of detail for the whole project; and
2. Approval of the detailed site plan(s) to be constructed in one or more phases that provide all of the additional detail not contained in the concept plan.

Finding: The applicant has submitted a concept development plan and a detailed development plan as part of their planned development application. In addition, the applicant is requesting approval of a subdivision and zone change from R-6 to R-9. Per VMC 20.260.030(C), filing multiple applications is permitted and shall be reviewed by the procedure type of the highest level. The review for a new planned development concept plan requires a Type IV procedure which is the highest level in this application. Staff finds the proposed concurrent reviews adhere to VMC 20.260.030(C).

B. Decision-making process.

1. *Initial approval.* A new planned development concept plan shall be processed by means of a Type IV review, per 20.210 VMC, using approval criteria contained in 20.260.050 VMC. The Planning Commission shall be the initial review authority for planned developments greater than 25 acres in size and the Hearings Examiner shall be the initial review authority for planned development 25 acres or less in size. The initial reviewer shall issue a recommendation to the City Council. The City Council shall be the final authority for planned developments.

Finding: As previously mentioned, a new development concept plan shall be processed by means of a Type IV review. Planned developments less than 25 acres in size shall be initially reviewed by the hearing examiner then subsequently the city council for final approval. The public hearing before the Hearing Examiner is scheduled for Nov. 21, 2023, and a first City Council reading is scheduled for Jan. 8, 2024, and a Jan. 22, 2024, public hearing.

C. Concurrent reviews. An applicant may file two or more related requests concurrently. These concurrent reviews will be reviewed by the procedure type of the higher/highest level, that is, if one review is subject to a Type III process and the other a Type II process, both will be subject to a Type III review process.

Finding: As previously mentioned, staff finds the proposed concurrent reviews adheres to VMC 20.260.030(C). The planned development and zoning map amendment are concurrently reviewed as a Type IV application.

D. Adjustments. Adjustments to numerical development standards in the underlying zoning district shall meet the criteria contained in Section 20.260.050(B) VMC below in lieu of requirements for variances contained in Chapter 20.290 VMC. The exception to this is a request to exceed the maximum height permitted in the underlying zone, which will require a concurrent variance request per 20.290 VMC.

Finding: The applicant is requesting an adjustment to lot coverage to a maximum of 55 percent and reduction in the minimum lot size requirement under the planned development provisions. The requested adjustments meet the adjustment approval criteria of 20.260.050.B 1-3. The plan identifies goals for a diversity of housing types in more urban areas for a growing demographically diverse population.

20.260.050 Approval Criteria

A. Concept development plan approval criteria. To receive approval for a planned development, the applicant shall demonstrate compliance with all of the following criteria:

1. Content. The concept plan contains all of the components required in Section 20.260.070. The proposed development and uses comply with all applicable standards of the Title, except where adjustments are being approved as part of the concept plan application, pursuant to Section 20.260.030 (D)(2).

Applicant Response: The concept plan contains all of the components required in Section 20.260.070. The proposed development and uses comply with all applicable standards of the Title. The applicant is not proposing any adjustments that are not outright allowed by this planned development process.

Finding: The applicant submitted a concept development plan with the application. Elements of this plan were reviewed against VMC 20.260.070. Further analysis of this plan will be addressed throughout this report.

2. Architectural and site design. The proposed development demonstrates the use of innovative, aesthetic, energy-efficient and environmentally friendly architectural and site design.

Applicant Response: The site design was generally dictated by existing features around and within the site. The adjacent roadways were required to be extended and widened to meet city standards. Most of the onsite trees are also proposed to be retained within an open space at the NW corner of the site. The combination of roadway design and tree retention resulted in an efficient site design that will benefit the public by providing vehicular and pedestrian connections through the site as well as providing open spaces for the community to enjoy.

The applicant is currently proposing homes that are no larger than 1 500 sq ft. These smaller homes and the compact subdivision design results in an environmentally friendly development. The smaller homes are planned to maximize functionality without wasted space. Larger homes would be less environmentally friendly due to the additional heating/cooling and energy costs. The subdivision is efficiently planned and compact. Higher density development within urban areas with existing urban services are significantly more environmentally friendly than large-lot subdivisions or development outside of the urban areas. The compact design of the site also limits the impervious surfaces and retains valuable open space within the site.

Lots 40-47 on the preliminary plat directly abut existing homes in the Sandcastle Heights Subdivision to the east. Lots 1-7 directly abut existing homes in the Evergreen Park Subdivision to the south. These lots have been designed with a wider lot width of 42'- 45', rather than the reduced width of 30', to create a buffer along the perimeter where adjacent single-family homes exist. These homes are also planned to be single level homes which will reduce perceived impacts of the development for adjacent neighbors.

The proposed homes will be energy efficient. The homes will be served by electricity only – no natural gas will be brought into the development. The smaller sized homes (less than 1,500sf) will result in efficient 3-bedroom floorplans. The applicant generally proposes slab on grade homes with efficient building envelopes and better than industry standard windows. The homes will likely include high efficiency HVAC systems using electric heat pumps with a minimum HSPF rating of 9.5. The project's electric design will account for all homes to have EV chargers, and all garages will be EV charger-ready.

Finding: The proposed development includes smaller, one-story homes, larger lots at the exterior of the development and energy efficient features.

3. Transportation system capacity. There is either sufficient capacity in the transportation system to safely support the development proposed in all future phases or there will be adequate capacity by the time each phase of development is completed.

Applicant Response: There is sufficient capacity in the transportation system to safely support the development as proposed. A Traffic Study has been prepared for this site and is included with this application.

Finding: A trip generation and distribution report dated June 28, 2023, was submitted to the City of Vancouver Transportation Department for review (Exhibit J). Comments on the traffic study are listed later in this report addressing this requirement.

4. Availability of public services. There is either sufficient capacity within public services such as water supply, police and fire services, and sanitary waste and storm water disposal, to adequately serve the development proposed in all future phases, or there will be adequate capacity available by the time each phase of development is completed.

Applicant Response: There is sufficient capacity within public services such as water supply, police and fire services, and sanitary waste and storm water disposal, to adequately serve the development as proposed. Please see the Preliminary Plans for further information.

Finding: The proposal has been reviewed by Vancouver Public Works for public service availability. Their comments are listed later in this report addressing this requirement.

5. Protection of designated resources. Protection of designated resources. City-designated resources such as historic landmarks, significant trees and sensitive natural resources are protected in compliance with the standards in this and other Titles of the VMC.

Applicant Response: There are no historic landmarks. The single critical area onsite (an Oregon white oak tree) will be retained and protected.

Finding: According to mapping records, a portion of the northwest corner of the site contains slopes greater than 25 percent. There is an Oregon white oak on-site that is not mapped as habitat but will be preserved. Slopes greater than 25 percent are regulated under the geologic hazard areas of VMC 20.240, addressed within this report.

6. Compatibility with adjacent uses. The concept plan contains design, landscaping, parking/traffic management and multi-modal transportation elements that limit conflicts between the planned development and adjacent uses. If zoning districts are shifted per Section 20.260.020(C) VMC,

there shall be a demonstration that the reconfiguration of uses is compatible with surrounding uses by means of appropriate setbacks, design features or other techniques.

Applicant Response: In order to provide a transition of density from adjacent sites and to avoid perceived impacts to adjacent single-story homes, the applicant is proposing the following minimum lot area/widths:

	Minimum lot area (sq ft)	Lot area reduction	Lot width (ft)	Lot width reduction	Average lot area (sq ft)
Perimeter lots adjacent to existing single level homes	4000	20%	43	5%	4427.0
Perimeter lots adjacent to existing roadways	3333.3	33.3%	36	20%	3661.1
Interior lots or lots adjacent to BPA	2500	50%	30	33.3%	2821.0

Proposed lots 1-7 and 40-47 directly abut existing residences with larger lot sizes and mostly single level homes. The lots will have a minimum 40-foot lot width with a minimum 4000-square-foot lot size and are currently planned to be single level homes. Lots 8-19 and 35-39 are across the road from existing development. Because the roadway already provides a buffer these lots are designed to have a minimum 36-foot lot width and a 3333-square-foot lot area. The remaining lots are internal or adjacent to the BPA right of way and will have a minimum 30-foot lot width and a 2,500-square-foot lot area. This transitioning of densities will minimize perceived impacts and result in a compatible design with the existing neighborhood.

Finding: The subject site is surrounded by residential uses to the east, south and west. To the north of the site is the BPA easement and NE 18th Street beyond that. Based on the surrounding uses, zoning and comprehensive plan designation, the proposed development is compatible with the adjacent uses.

7. Mitigation of off-site impacts. All potential off-site impacts including litter, noise, shading, glare and traffic, will be identified and mitigated to the extent practicable.

Applicant Response:

- Noise – Construction will occur only during the approved hours according to VMC 7.05.010. At full buildout the general residential noise from the new development is not expected to cause any off-site impacts.
- Shading – The proposed homes are proposed to be well under the 35' height limit and will meet depth standards and setbacks. This will significantly minimize potential shading of adjacent properties. The homes directly adjacent to existing single level homes are also planned to be single level homes.
- Glare – Street lights are proposed on the new streets. These lights will include shielding to prevent excessive lighting of adjacent properties.
- Parking – Ample parking is provided on each lot in addition to common parking areas and on-street parking. The available onsite parking will minimize the need for new residents to park along existing streets away from the proposed development.

- Traffic – While there will be a slight increase in traffic, the existing roadways will continue to operate at acceptable levels and per the traffic report, no off-site mitigation is required. The applicant is proposing to include curb return bulb-outs at the intersection of NE 122nd Court and NE 16th Street as a traffic calming feature along the proposed roadway connection.

Finding: The development will be subject to applicable building codes, routine site inspections during construction and VMC 8.20 Nuisances and VMC 20.935 Off-Site Impacts.

B. Adjustment approval criteria. Adjustments to numerical development standards may be processed as part of the request for concept if the applicant can demonstrate compliance with all of the following approval criteria:

The applicant is requesting the following adjustments to the PD standards:

Lot Coverage Adjustment

Applicant Response: The applicant is proposing to adjust the lot coverage standards for lots 1-6, and 40-47 to allow for flexibility in the design for potential single-story homes on the lots. The maximum lot coverage is 50 percent and the applicant is requesting a 10 percent increase to 55 percent. This requested increase is only intended to apply to single story homes and would not be applicable to potential 2-story homes.

1. *The adjustment(s) is warranted given site conditions and/or characteristics of the design.*

Applicant Response: Increasing the flexibility for single-level homes on the proposed lots is warranted given the site design. Increasing the flexibility for single-level homes is important given the benefits and reduced impacts that are discussed below.

2. *The benefits accruing from the implementation of the adjustment outweigh any potential adverse impacts.*

Applicant Response: Introducing a mix of housing types will be beneficial to the community as single level homes are more accessible to larger segments of potential buyers. The single level homes would benefit older residents that need more accessible housing.

3. *Any impacts resulting from the adjustment are mitigated to the extent practical.*

Applicant Response: The potential impacts are mitigated by restricting the increased lot coverage to single-level homes. The single level home will have less of a visual impact on the neighbors than a potential 2-story home.

Finding: The applicant requests an adjustment to maximum lot coverage under the planned development provisions from a maximum of 50 percent to 55 percent. In addition, the applicant requests an adjustment to the minimum lot size in the base zone of 5,000 square feet to a minimum of 2,520 square feet. Lots near the perimeter of the site are planned to be an average of 4,000 square feet with smaller lots internal to the site.

The proposal and requested adjustments meet the adjustment approval criteria of 20.260.050.B 1-3. The proposed housing features that include smaller homes on smaller lots and single level

homes. The proposed development meets the minimum and maximum density requirements for the zone. No impacts are anticipated by the proposed adjustments.

C. Conditions of approval. The review authority shall impose any conditions of approval necessary to mitigate potentially adverse impacts on surrounding properties to the greatest extent practicable.

Finding: Staff recommends conditions of approval that are listed at the end of this report.

D. Detailed site plan approval criteria. During the site plan review process, the planning official shall approve the detailed development plan for one or more phases of the development upon finding that the final plan conforms to the approved conceptual development plan, including all conditions of approval, unless the modification of the concept plan is sought concurrently as described in 20.260.030 (C)(6) VMC.

Finding: The applicant is not proposing phasing for this project.

20.260.060 Development Standards

A. Minimum development size. There shall be no minimum site size for any type of planned development.

Finding: The applicant is proposing a planned development for a tract of land 4.76 acres in size.

B. Applicability of base zone development standards. The provisions of the base zone are applicable as follows. When the zoning districts within the planned development have been shifted as permitted in Section 20.260.020 (C) VMC, the applicable development standards for the underlying zones shall shift accordingly.

1. *Lot dimensional standards:* The minimum lot depth and lot width standards shall not apply.

Finding: The proposal includes lots less than 40 feet in width. The narrow lot standards are addressed within this report.

2. *Lot coverage:* The site coverage provisions of the base zone shall apply.

Finding: The R-9 base zoning allows for 50 percent lot coverage. As previously mentioned, the applicant is requesting the following adjustment through the Planned Development to a maximum lot coverage of 55 percent.

3. *Setbacks:*

a. *Front and rear yard setbacks for structures at the perimeter of the project shall be the same as required by the base zone except when an adjustment is approved, per Section 20.260.030(D).*

Finding: All other setback requirements will adhere to the development standards of the underlying zoning and planned development standards.

b. *The side yard setback provisions shall not apply except that all detached structures shall meet*

the City's adopted building code requirements for type of construction.

Finding: The proposal meets side yard setback provisions per the adopted building code.

- c. *Front yard and rear yard setback requirements in the base zone setback shall not apply to structures on the interior of the project except that any garage facing a street shall be set back a minimum of 18 feet from the front or side street property line.*

Finding: The proposal meets the front yard and rear yard setback requirements in the base zone.

- d. *All buildings will meet the front and rear yard setback standards as modified pursuant to this Chapter, except for maximum height for which a variance shall be sought, as governed by Chapter 20.290 VMC.*

Finding: The applicant is not proposing any adjustments to the height requirements of the base zone; therefore, no variance is required for the requested adjustments.

C. Common open space. *In exchange for the approval of higher residential densities, smaller lots and relaxed development standards, the developer of a planned development is required to provide common open space for the active and passive recreational activities of residents, employees and visitors. Such space shall be aggregated and centralized to the development to the fullest extent feasible and shall consist primarily of a combination of landscaped open areas. Unlandscaped natural areas or paved hardscape areas may also be included if they also promote active or passive recreational uses. Features may include plazas, arbors, sitting areas, picnic areas, playing fields and trails.*

- In planned developments, the following requirements shall apply.
 - a. At least 10 percent of the gross area of the site must be devoted to such open space. Such space must be fully accessible to the residents, employees, visitors and/or other users of the site. Reduction of this standard in PDs of two acres or more is prohibited. A reduction of this standard in PDs of less than two acres is subject to an adjustment per Section 20.260.030(D) VMC using approval criteria in Section 20.260.050(B) VMC.

Finding: The applicant is proposing a one-acre open space tract that will be accessible to the residents of the proposed development. The open space area will encompass a number of existing trees on the site. A conceptual trail alignment through the open space to NE 18th Street is shown on the plans. This totals 13 percent of the gross area devoted to open space meeting the requirement of this section.

- b. Fenced yards associated with buildings immediately adjacent to designated open space and landscaping in parking lots shall not count toward the total requirement.

Finding: No fenced yards or landscaping associated with parking lots are counted toward the open space requirement.

- c. Environmentally-constrained land within the planned development, including wetlands, geologically hazardous areas, sensitive wildlife habitats, pursuant to Section 20.740 VMC or native vegetation and healthy soil preservation pursuant to 20.770 VMC or stormwater facilities pursuant to Chapter 14.25 VMC; may be used to meet up to 50 percent of the total requirement specified in Subsection (a) above, provided that these areas are not fenced and are either accessible to pedestrians to the extent practical or are visually accessible from adjacent and adjoining common open space.

Finding: Based on information taken from county data, there is a small area mapped that contain constraints within the subject site as listed in VMC 20.740 Critical Areas. The applicant has elected to use a portion of this area for the open space requirement. The steep slopes within the open space tract are far less than 50 percent of the one-acre area.

- The common open space designated to meet this requirement shall be permanently maintained by and conveyed to one of the following:
 - a. A homeowners' or property owners' association as regulated by state law.
 - b. A public agency that agrees to maintain the common open space and any buildings, structures or improvements placed within it.

Finding: A condition of approval has been added requiring the following note to be placed on the final plat, **"Homeowner Association is responsible for maintenance of all open space tracts listed on this plat."**

- The applicant may not seek a variance or adjustment to reduce the minimum open space requirement specified in Subsection (2)(a) above.

Finding: The applicant did not request a variance or adjustment to the minimum open space requirement.

20.285 Text and Map Amendments

Finding: The application includes a map amendment to change the zoning on the site from R-6 to R-9. Zoning map amendments not involving associated comprehensive plan map amendments shall demonstrate the following:

1. How the proposal is more consistent with applicable policies of the Vancouver strategic plan and comprehensive plan than the existing designation; and

Applicant Response: The City adopted a 2016-2021 Strategic Plan, and updated it in November 2018. The city is currently working on a new Strategic Plan, but it appears that it has not yet been adopted.

This request is consistent with Objective 6.2.1:

"Develop a broader range of housing choices through incentives, changes in regulations and implementation of the Affordable Housing Task Force recommendations."

In the final 2016 report the Affordable Housing Task Force discussed potential tools and programs to increase the supply of affordable housing units in the city. One of the high priority items discussed amending zoning/development regulations to encourage affordable housing options.

The intent of the option would be to increase the overall supply of housing in the city which would result in lower purchase prices and rental costs. While this does not provide "affordable housing" it goes a long way to make housing more affordable. Since the adoption of the strategic plan housing prices have continued to soar. This is partly due to a high demand for housing in the Vancouver region that far outpaces the new housing supply.

In response to the strategic plan and the Affordable Housing Task Force recommendations, the City Council studied and approved housing code updates. The Housing Code Updates webpage states the following as a purpose of the update:

“Vancouver, like many communities, is facing a housing crisis. As the city continues to grow, there is a desire and need for new types of housing that would allow residents to live more affordably while also maintaining neighborhood livability. However, current city zoning rules prohibit many of these housing options. Changes to the development code can create opportunities for the private sector to deliver a more diverse, affordable housing stock.”

The project goals of the housing update are stated as the following:

“The goal of the project is to update City codes to allow for different, smaller and more affordable types of housing choices. Many are recommended in the Affordable Housing Task Force report (2016) and many are similar to what is allowed in Clark County and other Washington cities nearby and statewide.”

The specific goals include:

- Allowing for the development of diverse housing types to meet changing demographic needs and consumer preferences
- Expanding market rate, middle income, and affordable housing choices
- Maintaining neighborhood livability with incremental, rather than wholesale, change
- Providing more opportunities for people to live near where they work and attend school, and reduce costly commutes
- Facilitating development in areas with full existing public services

The current proposal is consistent with this plan and will help meet the City’s goals. The subdivision proposal associated with the zone change will accomplish the following:

- The project will add diversity to the housing options in the immediate vicinity of the site.
- It will provide middle income housing geared toward families wanting to live and own homes in the City of Vancouver.
- The rezone is only an incremental change in density and through the proposed lot size transition the overall neighborhood livability will be maintained.
- The site is located in the middle of the urban area of Vancouver and is surrounded by existing development.
- The project is in an area with full existing public services.

Finding: Staff agrees that the proposed zone change is in alignment with the strategic plan and comprehensive plan. Additionally, the zone change addresses needs identified in the Affordable Housing Task Force Report and will help address the housing deficit in Vancouver.

2. *That a change in circumstances has occurred since the existing designation was established.*

Applicant Response: The housing and affordability crisis represents a change in circumstance since the existing zoning designation was established. Well planned site-specific rezone requests

are a way to increase the housing supply in the urban areas of the city. This increase in housing supply will help improve affordability within the city.

Finding: Staff agrees with the applicant response. Vancouver is experiencing a housing shortage and a zone change on this site will increase the density at this location.

20.320 Subdivisions

Finding: Per VMC 20.320.040, to receive approval of a preliminary plat, the applicant must demonstrate compliance with the following criteria.

Public facilities provision

Appropriate provisions to the extent necessary to mitigate an impact of the development have been made for transportation, water, storm drainage, erosion control and sanitary sewage disposal methods that are consistent with the city's current ordinances, standards and plans.

Finding: As discussed and conditioned in the following sections of this report, adequate provisions have been made for transportation, water, storm drainage, erosion control and sanitary sewage disposal.

Proposed improvements

Appropriate provisions have been made for proposed streets, alleys and public ways, utilities and other improvements that are consistent with the city's current ordinances, standards and plans, and Public Health and/or Washington State Department of Transportation standards and plans, where applicable.

Finding: The proposed land division will extend both NE 14th Street and NE 16th Street through the site. In addition, the development will complete the east side of NE 121st Avenue and include two short cul-de-sac streets to serve internal parcels. The future residences will be required to connect to the city's water and sanitary sewer systems. The applicant proposal, as discussed in the engineering section of this report, will meet the above-noted requirements as conditioned. Public Health requirements are noted in this report and made a condition of approval.

Open space and dedications

Appropriate provisions to the extent necessary to mitigate an impact of the development have been made for open space, parks, schools, dedications, easements and reservations.

Finding: Provisions for the acquisition and maintenance of open space, parks and schools will be provided with the payment of school and park impact fees, paid upon the issuance building permits. As a planned development, 10 percent open space is required. The proposal includes an open space area at the northwest corner of the site in conformance with this standard. Any required dedications, easements or reservations are required to be shown on the final plat.

Physical characteristics

The design of the proposed short subdivision or subdivision-site has taken into consideration the physical features of the site, including but not limited to topography, soil conditions, susceptibility to flooding, inundation or swamp conditions, steep slopes or unique natural features such as wildlife habitat or wetlands.

Finding: The physical characteristics of the site have been considered in the design of the subdivision as documented in this report.

Re-platting of existing subdivisions

When re-platting an existing subdivision, the short subdivision or subdivision shall comply with all the terms and conditions of the existing subdivision's conditions of approval.

Finding: No subdivision terms or conditions are known that impact the proposal.

Compliance with all requirements of this title

The proposed short subdivision or subdivision complies with all applicable requirements of this title unless modified through the approval.

Finding: The applicable requirements of Title 20 are addressed in this report and have been met or will be met with conditions of approval.

Compliance with state requirements

That the proposed short subdivision or subdivision complies with the requirements of RCW 58.17.110.

Finding: The Comprehensive Plan identifies goals and policies that are implemented through the city's Land Use and Development Code. They guide development in the City of Vancouver for the benefit of the public health, safety, and general welfare. The proposed plat complies with these requirements by providing new housing units at the density anticipated by the zoning code, by providing the necessary infrastructure to serve the development, the payment of impact fees for schools, parks, and transportation, and by demonstrating that applicable laws can be complied with as conditioned; therefore, the public interest should be served by the proposed plat.

The proposed plat will assist in the expansion of the city's housing supply; it will facilitate development in an area that is largely developed and has urban services; it will implement city goals promoting development while limiting urban sprawl.

Evergreen Public Schools received notification of the proposed development to assist in the forecasting growth within each school. Any additional bus stop locations will be determined by the school district. A letter from Evergreen Public Schools regarding bussing is included as Exhibit D.

This project complies with RCW 58.17.110.

Narrow Lot Additional Criteria

Land divisions which contain one or more residential lots having a width of less than 40 feet shall meet additional criteria of VMC 20.927.030 A, B and C.

Finding: The proposed development includes lots less than 40 feet in width, the narrow lot criteria are addressed with this report.

Street improvement standards

All proposed streets and street improvements shall comply with the provisions of Title 11 and approved transportation standards details on file with the Transportation Department.

Finding: As stated in the Transportation section of this report, street improvements will comply with the provisions of Title 11, subject to the conditions of approval.

Blocks

The length, width and shape of blocks shall be designed with due regard to providing adequate building sites for the use contemplated; consideration of the needs for convenient access, circulation, and control; safety of motor vehicular, bicycle and pedestrian traffic; and recognition of limitations and opportunities of topography.

Sizes of blocks

Blocks shall not exceed 1,300 feet in length between street lines, except blocks adjacent to arterial streets or unless a previous adjacent layout or topographical conditions justify variation. The recommended minimum distance between intersections of arterial streets is 1,800 feet. Minimum length of a block shall not be less than 180 feet.

Finding: The proposed block complies with the above standards.

Easements for utility lines

Easements for sewers, drainage, water lines, electric lines or other public use utilities shall be provided. The size and location of the easement shall be reviewed and approved by the appropriate utility provider.

Finding: All water, storm and sanitary sewer lines constructed within the public right of way do not require easements. However, if these lines, hydrants, water meters or other utilities are constructed outside the public right of way, dedication or easements will be required prior to final plat approval.

Watercourses

If a subdivision is traversed by a watercourse such as a drainage way, channel or stream, there shall be provided a stormwater easement for the width of the watercourse plus 15 feet on each side of the watercourse. Streets or parkways parallel to a major watercourse may be required.

Finding: No watercourse traverses the property.

Pedestrian/bicycle ways in and through residential subdivisions

In blocks over 800 feet in length, a pedestrian/bicycle way with a minimum width of 16 feet shall be required through the middle of the block when required by the transportation manager for public convenience and safety; 12 feet of the 16-foot corridor shall be paved in a durable material. If unusual conditions require blocks longer than 1,200 feet in length, two pedestrian/bicycle ways shall be required. When required by the transportation manager for public convenience and safety, pedestrian ways shall be required to connect cul-de-sacs or to pass through unusually shaped lots.

Finding: No blocks are being created over 800 feet in length by this subdivision.

Flag lots

Flag lots may be permitted, provided that the minimum width of the flag stem is 15 feet for a single lot and 20 feet for a shared flag access, and it is in compliance with fire access standards

contained in VMC 16.04.150. No more than four lots may be accessed from a single flag stem. A private maintenance agreement shall be recorded for driveways which serve more than one lot.

Finding: No flag lots are proposed.

Lot side lines

Side lines, as far as practical, shall run at right angles to the street on which the lot faces.

Finding: Side lot lines, as far as practical, run at right angles to the adjacent street.

Lot frontage. With the exception of flag lots, all lots shall abut on a public or private street with a minimum frontage of not less than 20 feet.

Finding: Each lot will have 20 feet or more of frontage.

Parks and playgrounds. The review authority shall see that appropriate provision is made for parks and playgrounds to serve the proposed subdivision.

Finding: Park impact fees assessed for the future residences are to be used for the acquisition of new parklands and improvements to existing parks.

Narrow lot land divisions. Land divisions which contain one or more residential lots having a width of less than 40 feet shall meet the development standards of VMC 20.927.040.

Finding: The development includes lots having a width of less than 40 feet, the narrow lot criteria of 20.927.040 are addressed within this report.

Existing trees. All subdivision developments shall comply with the tree and vegetation management provisions contained in Chapter 20.770 VMC Tree Conservation.

Finding: The proposal complies with the tree conservation ordinance, as noted in the tree conservation section of this report.

Conclusion: The proposal complies with the subdivision development standards as conditioned.

20.410.030-1 Lower-Density Residential Districts Use Table

Finding: Per Table 20.410.030-1, detached single-family dwellings are a permitted use in the R-9 zoning district provided the minimum required residential density is met, on an overall project basis.

Conclusion: The proposal complies with the use restrictions of the R-9 zone. Minimum and maximum densities are addressed within this report.

20.410.040 Minimum and Maximum Densities

Finding: The maximum density in the R-9 zone is 8.7 units per acre and the minimum density is 5.9 units per acre. The planned development standards of 20.260.020 allow a density bonus of 15 percent. The proposed 57-lot subdivision meets minimum and maximum allowed density.

Zone	Net Site Area	Minimum Units Allowed	Maximum Units Allowed	Maximum Units Allowed with 15% Bonus
R-9	5.69 acres	33.6	49.5	57.5

20.410.050 Development Standards

Development standards. Development standards in low-density residential zoning districts are contained in Table 20.410.050-1. These apply to all primary dwellings and accessory buildings on the site. For additional regulations governing accessory buildings, see Chapter [20.902](#) VMC.

1. *Additional standards within R-6, R-9, and R-17 Zoning Districts.* The following standards are in addition to the requirements in Table 20.410.050-1:

a. *Garages.* The width of the garage door facing the street may be up to 50 percent of the width of the street-facing building façade or 10 feet in length, whichever is greater. Garage limitations do not apply to residential development accessed through rear alleys, or where the garage is located in the rear of the lot.

Finding: Conceptual elevations included with the application show compliance with this garage standard. Detailed review of this requirement will be completed at building permit review.

b. *Main Entrances.* Main entrances shall be visible from the street and must have a porch or entry, and face the street or be oriented at an angle of not more than 45 degrees from the street-facing façade. Corner lot homes may face either street.

Finding: Conceptual elevations included with the application show compliance with this entry standard. Detailed review of this requirement will be completed at building permit review.

c. *Front Façade Variety.* Duplicative front façades of detached single-family structures facing the same street are prohibited. Sufficient differences can be achieved through meeting at least three of the following design features:

- i. Varied or staggered front setbacks, with variations of at least five feet;
- ii. Different building heights, with the two heights varying by at least five feet;
- iii. Varied rooflines such as hipped or pitched roofs;
- iv. Different window opening locations and designs;
- v. Different garage location, configuration, and design.

Finding: Detailed review of this requirement will be completed at building permit review.

d. *Alleys.* Where alleys are present, all garages and on-site parking shall be accessible from the alley. In R-17 zones, single-family residential developments shall utilize rear alley loading as follows:

- i. Alleys shall be required for developments on sites of four acres or larger where the proposed average new lot size is less than 3,000 square feet unless the application demonstrates and the planning official agrees that alleys are unfeasible due to significant site constraints such as significant variations in topography, irregular site shape, or presence of natural resource constraints.
- ii. Alleys are encouraged in all other cases.

Finding: No alleys are proposed as part of this application.

e. *Compliance with Narrow Lot Development Standards.* Developments within the R-17 zoning district shall be subject to Chapter [20.927](#) VMC, Narrow Lot Developments, with the exception of VMC [20.927.040\(A\)\(6\)\(d\)](#) garage width standards.

Finding: The narrow lot development standards are addressed within this report.

f. *Location and configuration of driveways.* Driveways shall be located to preserve space for on-street parking by meeting one of the following requirements:

- i. For housing units or developments on corner lots, off-street parking areas shall be accessed on the back façade or located in the rear yard. No off-street parking shall be allowed in the front yard or side yard.
- ii. Driveways providing access to the front façade must be consolidated for adjacent dwellings.
- iii. Consolidated driveways shall be tapered (i.e., narrower where they connect to the street and wider at the back of the driveway) to minimize the width of curb cuts and to enhance pedestrian safety.
- iv. Individual driveways must be separated by at least 20 feet as measured from the edge of the driveway apron.

Finding: Detailed review of this requirement will be completed at building permit review.

g. *Solid Waste Provisions.* The development application shall include a plan for access for solid waste and recycling collection service, indicating common or individual unit collection points with demonstrated access and turning space for solid waste vehicles.

Finding: Solid waste is addressed within VMC 20.927 of this report.

20.410.050-1 Development Standards in Lower-density Residential Zones

Standard	R-9	Proposal
Minimum Lot Size	5,000	2,500 ¹
Maximum Lot Coverage*	50%	50% [#]
Minimum Lot Width	N/A with PD	30'
Minimum Lot Depth	N/A with PD	65'
Minimum Setbacks		
Front yard*	10'	10'
Rear and through yards *	5'	5'
Side yard*	0' ² /5'	5'
Street side yard*	8'	8'
Garage/Carport from public/private street right of way or sidewalk easement*	18'	18'
Garage/Carport from alley*	5'	18'
Maximum Height*	35'	35'

Minimum Landscaping Requirement* (percentage of total net area)	10%	10%
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¹ Per 20.260.060.B.4 The planning commission or hearings examiner can reduce the minimum lot size requirement for attached and detached single-family residential uses in planned developments.

*Verified for compliance during individual site building permit review

The applicant has proposed an adjustment through the planned development for this change.

Finding: The proposed lots comply with the above standards as adjusted by the planned development addressed within this report. Development standards for the future dwellings will be reviewed at the time of building permit application.

20.710 Archaeological Resource Protection

Finding: This project is not located within an area of high probability for the discovery of archaeological resources; but is larger than five acres in size, therefore, a predetermination was required as part of the application. The city's consulting archeologist reviewed the predetermination and found that no additional review was required. However, if any cultural or historical resources are discovered during construction activity, construction shall cease until a qualified archaeologist assesses the find. **Prior to final civil and plat approval, a note shall be added to the plans and plat stating: "In the event that archaeological deposits are encountered during construction, work shall be halted immediately and the City of Vancouver's Community Development Department and the Washington State Department of Archaeology and Historic Preservation shall be notified in order for the findings to be investigated and assessed by a professional archaeologist."**

Conclusion: The proposal complies with the archaeological resource protection ordinance as conditioned.

20.740 Critical Areas

Finding: The subject site contains slopes greater than 25 percent which are regulated under the city's critical areas ordinance as geologic hazard areas. The applicant has provided a geotechnical report that address the soils and slopes in the subject area.

Any activity subject to this Chapter, unless otherwise provided for in this Chapter, shall be reviewed and approved, approved with conditions, or denied based on the proposal's ability to comply with all of the following criteria. The city may condition the proposed activity as necessary to mitigate impacts to critical areas and their buffers and to conform to the standards required by this Chapter. Activities shall protect the functions of the critical areas and buffers on the site.

- A. **Avoid Impacts.** *The applicant shall first seek to avoid all impacts that degrade the functions and values of a critical area. This may necessitate redesign of the proposal.*

Finding: The applicant has avoided steep slopes where feasible.

- B. **Minimize Impacts.** *Where avoidance is not feasible, the applicant shall minimize the impact of the activity and mitigate to the extent necessary to achieve the activity's purpose and the purpose of this ordinance. The applicant shall seek to minimize the fragmentation of the resource to the greatest extent possible.*

Finding: As noted above, impacts to critical areas have been avoided to the extent feasible; therefore, they have been minimized.

- C. Compensatory Mitigation. *The applicant shall compensate for unavoidable impacts by replacing each of the affected functions to the extent feasible. The compensatory mitigation shall be designed to achieve the functions as soon as practicable. Compensatory mitigation shall be in-kind and on-site, when feasible, and sufficient to maintain the functions of the critical area, and to prevent risk from a hazard posed by a critical area to a development or by a development to a critical area.*

Finding: No compensatory mitigation proposed, as the critical area slopes greater than 25 percent have been avoided.

- D. No Net Loss. *The proposal protects the critical area functions and values and results in no net loss of critical area functions and values.*

Finding: Slopes on-site will be retained where feasible in the open space tract.

- E. Consistency with General Purposes. *The proposal is consistent with the general purposes of this Chapter and does not pose a significant threat to public health, safety, or welfare on or off the development site.*

Finding: Based on the minimization of impacts and required mitigation, the proposal is consistent with the general purpose of maintaining and enhancing wildlife habitat and wetlands and does not pose a significant threat to public health, safety, or welfare on or off the development site.

- F. Performance Standards. *The proposal meets the specific performance standards of VMC 20.740 for Fish and Wildlife Habitat Conservation Areas and Wetlands.*

Finding: The critical area on the site is geologic hazard, this regulation is not applicable.

Conclusion: The proposal complies with the requirements of the critical areas ordinance for geologic hazard areas as conditioned.

20.770 Tree Conservation

Finding: Urban Forestry reviewed the application for compliance with tree conservation standards. Based on the site area of 7.56 acres, a minimum of 224 trees units are required. The tree plan shows 257.5 tree units will be retained on-site. This meets the minimum tree density requirement of 30 tree units per acre.

20.790 SEPA

Finding: The applicant submitted an environmental checklist for review. Staff issued a Notice of Application and optional SEPA Determination of Nonsignificance (DNS) Aug. 17, 2023. Comments were received from Ecology and three neighbors during the 30-day public comment period. A final Notice Determination of Nonsignificance (DNS) was issued Oct. 2, 2023 (Exhibit I). The SEPA appeal period ended Oct. 16, 2023. No appeals were received.

Additional Development Standards

20.915 Impact Fees

Finding: This project is subject to park, transportation and school impact fees. For a single-family residential subdivision, a per-lot impact fee shall be calculated at the time of preliminary plat approval, **noted on the face of the final plat**, and imposed on a per-lot basis at the time of individual building permit issuance.

Fee Type	Fee per new single-family dwelling
Park District C	\$4,757.00
Evergreen School District	\$6,432.00
Traffic Impact – Cascade Subarea	\$2,722.39

20.925 Landscaping

Finding: Street trees are required for all projects fronting on a public street or private street. Street trees shall be between 20-30 feet on center depending on conflicts such as streetlights. Street trees shall not be more than 30 feet on center. Street trees shall not be closer than 15 feet to streetlights.

Prior to civil approval, include this note on plans:

Trees and Shrubs in Sight Distance Triangles:

All shrubs within sight distance triangles shall be maintained so that foliage height above pavement does not exceed 2.5 feet. Street trees within sight distance triangles shall be limbed up to a height of 10 feet consistent with ANSI A300 standards to provide for sight distance visibility.

20.927 Narrow Lot Development

Finding: Forty two of the 57 single-family lots in this subdivision are less than 40 feet in width which requires adherence to the narrow lot development chapter. The purpose of this chapter is to provide additional standards to eliminate conflicts between the design and location of driveways with utilities, streetlights, fire hydrants, water meters etc.; provide adequate guest parking; and ensure adequate access for solid waste collection vehicles eliminating conflicts with frontage requirements.

20.927.040 Narrow lot Development Standards

- *On and off-site improvements plan required.*

Finding: The applicant has submitted a narrow lot plan showing street trees, fire hydrants etc. have been located and designed to minimize conflicts with one another. **Prior to final civil plan approval, the development plan shall be revised to include garbage and recycle set-out areas for each lot in addition to on-street parking.**

- *Standards for guest parking in common areas.*

Finding: Adequate guest parking shall be provided. At least one guest parking space for every three narrow lots in the development shall be provided. With 42 narrow lots, a minimum of 14 guest parking spaces are required. These spaces may be located on-street or in common parking areas. The proposed plan includes two dedicated guest parking areas near Tract A and Tract B that include 10 parking spaces. In addition, on-street parking is allowed between driveways and there appear to be at least 12 on-street parking spaces for a total of 22 potential guest parking spaces.

- *Standards for Solid Waste and recycling access and collection.*

Finding: Collection pick up areas shall be shown on the development plan for solid waste collection.

20.945 Parking

Finding: Each new single-family residence will require one off-street parking space. The space must be a minimum 9 feet wide by 17 feet deep, paved and located outside the minimum setbacks. Each lot will be reviewed for compliance with this requirement at the time of building permit review.

As discussed in the narrow lot section of this report, 22 guest parking spaces have been provided in compliance with the narrow lot ordinance requirement of one guest parking space per three narrow lots. These guest parking spaces are on-street.

20.945 Parking

Finding: Each new single-family residence will require one off-street parking space. The space must be a minimum 9 feet wide by 17 feet deep, paved and located outside the minimum setbacks. Each lot will be reviewed for compliance with this requirement at the time of building permit review.

20.927 Solid Waste Collection & Recycling

Narrow lot developments are subject to specific standards with regard to solid waste collection established by VMC 20.927.

Concerning Cart Set Out

Finding: The proposed Fircrest Meadows with 57 lots will need to plan for future garbage and recycling service. Each lot will be most likely served as a single-family customer; each will have cart for garbage, a cart for recycling and a bin for glass. As proposed, the collection will take place in front of each residence, or in a grouped set-out when direct collector access is not feasible. The applicant has illustrated on plans cart set out location for each lot (**003 Narrow Lot Plan.pdf V1**).

Per [VMC 20.927.040 \(A\)\(3\)\(c\)](#) where collection is not feasible on each lot, a designated common collection point to serve up to four lots, located no further than 150 feet from any lot it serves, may be provided. Common collection points shall be shown on the solid waste and recycling plan and sized to accommodate the carts and bins associated with the city's garbage, yard debris and recycling collection system. System specifics may be obtained from the city's Solid Waste Services department.

Per **VMC 20.927.040 (A)(3)(g)** collection points shall be illustrated on plans and show footprints of all intended carts using dimensions from city-provided solid waste receptacle standards. See <https://www.cityofvancouver.us/publicworks/page/solid-waste-development-review> for Solid Waste Access and Design Standards.

Per **VMC 20.927.040 (A)(3)(h)** each lot must have storage space outside of the right of way for carts when not set out for collection day.

Conclusion: The proposal has satisfied solid waste requirements for providing adequate cart set out.

Concerning Solid Waste Collector Access

Finding: The proposed streets appear sufficient for collection trucks to safely access and service the development. Turnaround appears feasible using the proposed 35-foot radii cul-de-sacs.

Per **VMC 20.927.040 (A)(3)(c)** all circulation and turnaround designs must be feasible using city-provided solid waste truck turning modelling templates and truck specifications. Collection vehicles shall be able to circulate the development and service receptacles with minimal backing required.

Templates for garbage/recycling trucks are available for users to model truck turning using either AutoTurn software or Autodesk Vehicle Tracking software; they can be downloaded from the city's website, <https://www.cityofvancouver.us/publicworks/page/truck-turning-radius>. Use the side

loader truck template to model maneuvering. If you require the truck dimensions in another format, please contact staff.

Conclusion: The proposal has satisfied solid waste requirements for providing collector access.

11.70 Transportation – Concurrency

Finding: The applicant is proposing a 57-lot planned development and subdivision utilizing the narrow lot development standards for the construction of single-family homes. The project is located at 12301 NE 18th Street (tax parcel 164912000). The site is currently vacant. Access to the lots will be by way of new street extensions and/or completion of the existing street network in this area.

The applicant submitted a Transportation Impact Analysis (TIA), dated Aug. 3, 2023, from Kittelson. The TIA included trip generation, trip distribution, intersection queueing and capacity analysis, and crash history analysis. Trip generation rates in the TIA were based on the Institute of Transportation Engineers (ITE) Trip Generation Manual, 11th Edition, utilizing Land Use Code 210 (Single-Family Detached Housing). Based on this information, the proposed project will generate 560 new Average Daily Trips, including 44 new a.m. peak hour trips and 58 new p.m. peak hour trips.

The results of the intersection analysis indicate that all study intersections will operate within the adopted standards under existing and future traffic conditions with full build-out of the proposed subdivision. Additionally, no safety-based mitigation needs were identified.

Pursuant to VMC 11.70.090, the segment of NE 18th Street between NE 112th Avenue and NE 138th Avenue is designated as a Category 1 Concurrency corridor, which stipulates that the corridor is operating at or above the city's adopted level of service standards. Based on the traffic report, the proposed development will generate 56 new p.m. peak hour trips to this corridor. This is not anticipated to cause the corridor to drop below the adopted level of service standard.

The proposed use is located within the 281 Transportation Analysis Zone. The proposed project contributes p.m. peak hour trips to the following Transportation Management Zones (TMZ):

Corridor Name	Corridor Limit	PM Peak Trips
112 th Avenue	Mill Plain Blvd. to 28 th Street	33
112 th Avenue	28 th Street to 51 st Street	21
Burton Road / 28 th St.	18 th Street to 112 th Ave.	10
Burton Road / 28 th St.	112 th Ave. to 138 th Ave.	2
NE 18 th Street	112 th Avenue to 138 th Avenue	56
NE 18 th Street	138 th Avenue to 162 nd Avenue	8
136 th / 137 th Ave.	Mill Plain Blvd. to NE 28 th St.	2

Based on the above table, **prior to the issuance of civil plan approval, the applicant shall pay concurrency modeling fees totaling \$1,500.** Pursuant to the applicant information, the project will not distribute trips to any other Transportation Management Zones.

The applicant traffic analysis provides distribution of trips used to establish the proportionate share contribution towards off-site traffic mitigation projects pursuant to VMC 11.80.080(C). A list of the intersection(s) slated for proportionate share contributions is as follows:

Proportionate Share Project Name	Fee Rate	Number of Trips	Proportionate Share Cost
NE 172 nd Ave & NE 18 th St	\$300 per PM peak hour trip	2	\$600
NE 179 th Place & NE 18 th St	\$900 per PM peak hour trip	2	\$1,800
NE 187 th Ave & NE 18 th St	\$1,200 per PM peak hour trip	2	\$2,400
NE 162 nd Ave & NE 9 th St	\$1,500 per PM peak hour trip	1	\$1,500
Total Proportionate Share Cost			\$6,300

Based on the above table, prior to the issuance of civil plan approval, the applicant shall pay proportionate share fees totaling \$6,300.

Transportation Impact Fees (TIF) are imposed per VMC 20.915. See the section of this staff report addressing VMC 20.915 for calculation of TIF. The submitted documentation fulfills the city's requirements for concurrency analysis.

Conclusion: The proposed development meets the requirements of VMC 11.70 as conditioned.

11.80 Transportation – Street & Development Standards

Finding: The applicant is proposing a 57-lot planned development and subdivision utilizing the narrow lot development standards for the construction of single-family homes. The project is located at 12301 NE 18th Street (tax parcel 164912000). The site is currently vacant. Access to the lots will be by way of new street extensions and/or completion of the existing street network in this area.

Northeast 16th Street is designated a neighborhood circulator which requires a minimum 54 feet full-width right of way and 36 feet paved street full-width per city standard plan T10-14. **Prior to issuance of final subdivision approval, the following improvements to NE 16th Street must be provided, per the appropriate City of Vancouver standards:**

- **Dedicate 54 feet full-width public right of way, per T10-14.**
- **Construct the full street section, consisting of a 36-foot paved street width, with curb, gutter, 5-foot detached sidewalks, planting strips, streetlights, and ADA ramps, per T10-14.**
- **Street lighting must be installed to current standards, see street lighting comments below.**
- **Install traffic control devices as warranted and storm drainage as required by the city stormwater ordinance.**

Northeast 14th Street is designated a local access street which requires a minimum 50 feet full-width right of way and 28 feet paved street full-width per city standard plan T10-15B. **Prior to issuance of final subdivision approval, the following improvements to NE 14th Street must be provided, per the appropriate City of Vancouver standards:**

- **Dedicate 50-feet full-width public right of way, per T10-15B.**
- **Construct the full street section, consisting of a 28-foot paved street width, with curb, gutter, 5-foot detached sidewalks, planting strips, streetlights, and ADA ramps, per T10-15B.**

- Install “No Parking – Fire Lane” signs at appropriate spacing on one side of the street.
- Install a stop sign at the intersection with NE 123rd Ave to stop-control eastbound traffic approaching the intersection.
- Street lighting must be installed to current standards, see street lighting comments below.
- Install traffic control devices as warranted and storm drainage as required by the city stormwater ordinance.

Northeast 121st Avenue is designated a local access street which requires a minimum 50 feet full-width right of way and 28 feet paved street full-width per city standard plan T10-15B. The existing road along the property frontage of NE 121st Avenue includes asphalt roadway only. **Prior to issuance of final subdivision approval, the following improvements to NE 121st Avenue must be provided, per the appropriate City of Vancouver standards:**

- Dedicate additional right of way as necessary to meet the standard, per T10-15B.
- Install additional pavement width as necessary to provide at least 28 feet full-width paved street, per T10-15B.
- Install City of Vancouver standard frontage improvements including curb, gutter, 5-foot detached sidewalks, planting strips, streetlights, and ADA ramps, per T10-15B.
- Install “No Parking – Fire Lane” signs at appropriate spacing on one side of the street.
- Install a stop sign at the intersection with NE 16th Street to stop-control northbound traffic approaching the intersection. Also install a stop sign at the intersection with NE 14th Street to stop-control southbound traffic approaching the intersection.
- Street lighting must be installed to current standards, see street lighting comments below.
- Utility trenching shall be restored per T05-04A&B and T05-05. Asphalt restoration shall meet T05-01A&B and T05-07. A single continuous width restoration is required.
- Install traffic control devices as warranted and storm drainage as required by the city stormwater ordinance.
- At the south end of NE 121st Avenue, dedicate a 20-foot public bicycle/pedestrian tract across the west edge of Lot 7 to accommodate a future bike-ped path connecting this neighborhood southward to NE 9th Street.

Northeast 122nd Court is designated a cul-de-sac street which typically requires a 28 foot full-width pavement section with 5-foot detached sidewalks, 5-foot planter strips, and 1-foot of extra right of way behind the sidewalk on both sides of the street, all within a 50-foot full-width right of way, per city standard plan T10-16. The applicant submitted a road modification request for NE 122nd Court to modify T10-16. The proposed modification reduces the width of the planter strips to four feet and eliminates the extra right of way behind the sidewalks, resulting in a total right of way width of 46 feet. All other elements of the street section provided in T10-16 would remain unchanged. **This road modification request has been reviewed and approved by city staff.**

Prior to issuance of final subdivision approval, the following improvements to NE 122nd Court must be provided, per the appropriate City of Vancouver standards:

- Dedicate 46 feet full-width public right of way, per the conditions of the approved road modification.
- Construct the full street section, consisting of a 28-foot paved street width, with curb, gutter, 5-foot detached sidewalks, planting strips, streetlights, and ADA ramps, per T10-16 and the conditions of the approved road modification.

- Construct cul-de-sacs at the ends of the dead-end streets. The minimum radius to the face of curb must be 35 feet.
- Install “No Parking – Fire Lane” signs at appropriate spacing on one side of the street and around the cul-de-sacs.
- Install stop signs at the intersection with NE 16th Street to stop-control northbound and southbound traffic approaching the intersection.
- Street lighting must be installed to current standards, see street lighting comments below.
- Install traffic control devices as warranted and storm drainage as required by the city stormwater ordinance.
- The areas of perpendicular parking shown on NE 122nd Court must be located within the abutting private HOA tracts, to be owned and maintained by the HOA. The parking areas must not be located within the public right of way.

Northeast 123rd Avenue is designated a neighborhood circulator which requires a minimum 54 feet full-width right of way and 36 feet paved street full-width per city standard plan T10-14. The existing road along the property frontage of NE 123rd Avenue includes asphalt roadway and curb. **Prior to issuance of final subdivision approval, the following improvements to NE 123rd Avenue must be provided, per the appropriate City of Vancouver standards:**

- Dedicate additional right of way as necessary to accommodate the required improvements and/or meet the standard, per T10-14.
- Install City of Vancouver standard frontage improvements including 5-foot detached sidewalks, planting strips, streetlights, and ADA ramps, per T10-14. The existing curb should be protected in place and repaired as necessary.
- Street lighting must be installed to current standards, see street lighting comments below.
- Utility trenching shall be restored per T05-04A&B and T05-05. Asphalt restoration shall meet T05-01A&B and T05-07. A single continuous width restoration is required.
- Install traffic control devices as warranted and storm drainage as required by the city stormwater ordinance.

On NE 122nd Court, there are short private streets serving lots at both ends of the street. The applicant shall, at a minimum, meet the applicable requirements of VMC 11.80.050 and city standard plan T10-18. **Prior to the issuance of final subdivision approval, the following improvements to the private streets must be provided, per City of Vancouver standards:**

- Dedicate an appropriate easement or tract at least 15 feet wide and install a minimum 12-foot-wide paved street surface, per T10-18. (The applicant may increase the width of the street, if desired or if required by the fire dept.)
- Construct a standard driveway approach to serve the private street, per T01-04.
- If the paved street width is less than 28 feet, must install “No Parking – Fire Lane” signs on both sides of the street.

The applicant shall also provide a shared access and maintenance agreement for the private streets to cover the cost of maintaining and operating street surface, signs and markings, and drainage system, as it applies to private streets and shared driveways. Any shared accesses shall be called out on the plat. The agreement shall be recorded on all parcels that are party to the private roadway. Shared access and maintenance agreements shall be provided prior to final subdivision approval.

Per VMC 11.80.050 (H), a statement with the following language is required on the face of any plat or short plat containing a private street:

WARNING: City of Vancouver has no responsibility to improve or maintain the private streets contained within or private streets providing access to the property described in this plat, nor does the City of Vancouver have responsibility for any of the infrastructure associated with the roadway such as sidewalks, drainage facilities, streetlights, curbs, or landscaping.

Per VMC 11.80.050 (I), where private streets are included in plats/subdivisions that include conditions, covenants and restrictions (CCRs), the CCRs must include the following statement:

WARNING: City of Vancouver has no responsibility to improve or maintain the private streets contained within or private streets providing access to the property described in this plat, nor does the City of Vancouver have responsibility for any of the infrastructure associated with the roadway such as sidewalks, drainage facilities, streetlights, curbs, or landscaping.

The CCRs also must include terms and condition of responsibility for liability, maintenance, maintenance methods, standards, distribution of expenses, remedies for noncompliance with the terms of the agreement, right of use easement, and other considerations.

Per VMC 11.80.050 (J), the city will not maintain streets, signs, streetlights, or drainage improvements associated with a private street. Prior to final inspection and approval of a private street, a maintenance agreement must be recorded with the Clark County Auditor as a covenant running with the land for any and all parcels served, or potentially served. The agreement must set forth the terms and conditions of responsibility for liability, maintenance, maintenance methods, standards, distribution of expenses, remedies for noncompliance with the terms of the agreement, right of use easements, and other considerations. The agreement also must include the creation of a private street maintenance fund and the annual assessment.

Street lighting is required on public streets per VMC 11.80.090 and on private streets per VMC 11.80.050(L). Any substandard street lighting shall be required to be upgraded to current city standards as part of this project. Street lighting shall be installed and/or updated to meet the design standards per city standard plans T21-01A through T21-01D. If the applicant proposes to retain the existing lighting or install lighting that exceeds the maximum spacing requirement a photometric analysis will be required to ensure the lighting level standards are met. If the maximum spacing per T21-01A is met, the photometric analysis is not necessary.

When required, photometrics shall be analyzed in zones. Zones for each direction of travel of a straight roadway are done in luminance method. Intersections, sidewalks, and curved roadway sections are their own zones and done in illuminance. Average maintained luminance is measured in candela per square meter. Veiling luminance shall be shown. Average maintained illuminance is measured in foot-candles. Stationing is a required item on the lighting plans. IES files for lighting software can be obtained from lighting manufacturer. Use lighting materials from the City of Vancouver approved material list.

New lights will be LED and existing HPS lights will be retrofitted to LED unless otherwise noted by Traffic. Any new or existing lights that are within 10 feet of primary power and/neutral lines, will require the developer to raise the power lines. The developer will need to work with Clark Public Utilities for requirements and costs.

Conclusion: The proposed development meets the requirements of VMC 11.80 as conditioned.

14.04 Water

Finding: City records indicate that the following utilities are existing:

- A 16-inch Ductile Iron (DI) transmission main crossing the parcel within the 16th St alignment.
- An 8-inch DI water main in NE 121st Ave, with 8-inch stubs in the alignments for NE 14th and 15th Streets.
- An 8-inch DI water main in NE 123rd Ave with a 6-inch DI stub in NE 15th St to the east property line of the subject parcel.

The applicant shall extend an 8-inch ZDI water main from the 8-inch DI stub in NE 14th Street to the 8-inch DI water main in NE 123rd Avenue. The applicant shall replace the 16-inch DI water main between NE 121st Avenue and NE 123rd Avenue with a new 24-inch ZDI water main. Current water system planning requires the existing 16-inch DI water main to be improved to a 24-inch water main. Upon agreement between the applicant and the city and in order to avoid future costs by the city and to meet the master plan sizing requirement, the applicant shall replace the 16-inch DI water main with 24-inch ZDI water main. If requested by the applicant and approved by the public works director, the city can participate by supplying materials for the 24-inch main.

A new 4-inch ZDI water main shall be extended to south in the proposed NE 122nd Avenue cul-de-sac. The applicant shall extend an 8-inch ZDI water main north in the proposed NE 122nd Avenue cul-de-sac to the proposed fire hydrant, reducing to 4-inch ZDI and continuing to the north end of the cul-de-sac. Extending 4-inch ZDI water main to the nearest property lines of lots 30, 48 and 54.

Current water system planning requires the existing 16-inch DI water main to be improved to a 24-inch water main. Upon agreement between the applicant and the city and in order to avoid future costs by the city and to meet the master plan sizing requirement, the applicant shall replace the 16-inch DI water main with 24-inch ZDI water main. If requested by the applicant and approved by the public works director, the city can participate by supplying materials for the 24-inch main.

Additional requirements may be outlined during the detailed site plan review process, meeting the water requirements as detailed in the *General Requirements & Details for the Design and Construction of Water, Sanitary Sewer and Surface Water Systems* (latest revision).

Conclusion: The submitted plans indicate the requirements can be met.

14.06 Sanitary Sewer

Finding: Three existing public sewers and a (temporary) pump station front the site. The first sewer flows north in 121st Avenue and is deeper than the others. A second sewers flows north in 123rd Avenue across the southeast frontage. This sewer is too shallow to serve the site. The third sewer resides on east adjoining parcel between NE 15th and 16th Streets and is not available for service. The Sandcastle Pump Station is located at the intersection of NE 15th Street and 123rd Avenue. This station and the east adjoining sewers will be abandoned by a later city project.

Developments are required to extend public sewers to and through the site and across frontages (VMC 14.04.280). Design criteria requires master plan sizing and alignments. Codes and standards also require service separate laterals for each lot (VMC 14.08.050 & 14.16.010).

These and other service conditions are outlined in a February utility review (RUS- 83146) and the April pre-application report (PIR-83264).

The parcel is identified in Section 7.1.10 of the General Sewer Plan. The collection system requires connection to the deeper sewer in the 121st Avenue alignment and construction through the site at adequate depth for future service to adjacent (Evergreen Park and Camelot Court) portions of Basin B4-1. Construction through the site will provide service to the subject parcel, allow the pump station to be removed, and will provide for deeper sewers in NE 123rd Avenue and their future extension.

The applicant provided the city with a preliminary sanitary sewer alignment thru the site. City staff provided the applicant minimum depths required for service to remaining portions of the basin. The applicant asked if the city could participate. Staff determined that the depth requirements are not extraordinary, and that city participation is not justified.

The application was reviewed for sanitary sewer in August. Sewer is mentioned on Page 18 of the narrative. A preliminary utility plan is included as Sheet 6 of the plans. The project proposes to connect to the existing sewer in the NE 121st Avenue alignment near the northwest corner of the site, to extend south and east through the site to the NE 15th Street, and to install a new deeper sewer in NE 123rd Avenue to the southeast corner of the site. The proposal also includes service laterals to each lot. The proposal satisfies the code's development and service criteria.

Sanitary Sewer Conditions

(Prior to Civil Plan Approval)

Complete the sanitary sewer design on the civil drawings. Prepare according to Vancouver's current General Requirements and Details for Design and Construction. Provide adequate depth. Address redline comments and submit the final design for civil plan approval.

(During Construction)

Secure construction permits and schedule and attend a pre-construction meeting. Construct new public sewers and laterals as shown on the approved plans. Satisfy construction services inspection requirements and secure construction acceptance.

Satisfy submittal and other requirements itemized in the Notifications of Civil Plan Approval and secure final civil project acceptance.

(Prior to Final Plat)

Show, note, and specify public sanitary sewer easements over shared driveway tracts where required. Record separately or include standard required plat easement recording language and record with the plat.

Sanitary Sewer Conclusions: The applicant has demonstrated the standards for public sewer can be met as conditioned.

14.24 Erosion Control

Finding: The majority of the 7.5-acre site will be disturbed during construction and the requirements of the ordinance apply. There is a gully that runs through the site with increasing side slopes to the north of the parcel. The main threat of erosion will be from the potential of erosion from disturbed slopes on-site and construction vehicles tracking sediment on to adjacent roadways.

The applicant has submitted preliminary erosion control plans and has demonstrated that the requirements of the ordinance can be met for the project. A final erosion/sediment control plan shall be submitted for civil review.

14.25 Stormwater

Finding: The proposed project will create over five acres of hard surfaces and the requirements of the ordinance apply. The project will use infiltration to dispose of runoff after it has been treated by approved runoff treatment best management practices. A soils investigation has been performed which confirmed that the soils on-site are suitable for infiltration. The applicant has submitted preliminary stormwater plans and a preliminary stormwater report and has demonstrated that the requirements of the ordinance can be met for the project. A final stormwater plan and a final stormwater report shall be submitted for civil review.

Fire Title 16

Finding: The fire department has reviewed the proposed project and determined it can meet the requirements of VMC Title 16 and the International Fire Code subject to conditions listed in the conditions of approval section of this report.

Building Title 17

Finding: 17.08.090 a building department plan review and permit will be required for this project. Building shall comply with the applicable codes listed in 17.08.010 in effect at the time of building permit application. A complete building code review of plans is not performed during site plan review. Filing of building permit application with required fees and review material is required for a complete building code review. At this time, plans and information necessary to verify compliance with all applicable building code provisions is neither required nor provided.

Finding: Plans provided propose to divide a 7.45-acre lot into 57 detached single-family residential lots.

Washington State Codes and Amendments: <http://www.sbccc.wa.gov/sbccindx.html>.

Please note the **2021 I-Codes with WA Amendments have an anticipated effective date of Oct. 29, 2023.**

DESIGN REQUIREMENTS

Seismic Design Category D-1, Soils class D or as determined by geotechnical engineer Wind 97 MPH (Vult) Exposure B, Minimum Ground and Roof Snow Load 25 psf, Frost depth 12 inches.

Prior to final grading: Condition of approval: **A final summary report by the geotechnical engineer of record shall be prepared and submitted to the City of Vancouver that states that the project soils were prepared in accordance with the governing geotechnical report and construction documents. Provide a current report with lot specific conditions and compaction test results by final grading. Please send to inspectionreports@cityofvancouver.us .**

Finding: Single-Family Dwelling: Per IRC R302, exterior walls, opening, penetrations and projections shall be as per Table R302.1(1) or if equipped with fire sprinklers, then Table R302.1(2) shall apply. Eaves may not extend closer than two feet to a property line.

Finding: Changes to property lines shall not put existing structures out of compliance with section R302.1 Exterior Walls.

Finding: Existing structures to be removed over 120 square feet or connected to utilities will require a separate demolition DMO permit.

Finding: If a septic system or well is proposed, prior approval will be required by Clark County Health.

Finding: Retaining walls over four feet in height from the bottom of the footing to the top of the wall, or that support a surcharge or impounding Class I, II, or III-A Liquids require a RES building permit and engineered design. VMC 17.08.090.

Finding: The proposed site plan appears acceptable for building codes related issues and accessibility issues; however, a complete building plan review will be required to determine final compliance.

Finding: Converting existing structures to conditioned habitable dwelling units requires compliance with all energy and building codes as a change of use.

Conclusion: As submitted, the project can be reviewed for building code issues related to the planned development/subdivision. The planned development/subdivision review process is a separate and distinct process from the building permit process.

As submitted, project could be approved for building code requirements pertaining to the planned development/subdivision.

RECOMMENDATION

Staff hereby recommends the Hearing Examiner approve the subdivision and variance request with conditions as noted below and throughout this report. Based upon the analysis and findings herein, the criteria for approval have been satisfactorily met, or shall be met with the conditions of approval and no significant adverse impacts have been identified. This approval does not grant the right to permits, but only determines the development can meet the requirements of the applicable ordinances as described in this report.

CONDITIONS OF APPROVAL

Prior to civil plan approval

1. Upload the civil plan review set showing all the revisions requested as well as all necessary reports (geotechnical, hydrology, traffic analysis, road modification, etc.). Include a detailed site plan in the civil plan review set. For questions on these requirements please contact 360-487-7804.
2. Grading plan review fees will be due upon submittal of civil plans for review. Contact Permit Center staff at 360-487-7802 to obtain a fee quote.
3. Pay concurrency monitoring fees totaling \$1,500.
4. Pay proportionate share fees totaling \$6,300.
5. Place the following note on the grading plans:
"If any archaeological deposits are found during construction, work shall stop and the City of Vancouver's Community Development and the Washington State Department of Archaeology and Historic Preservation shall be notified".
6. Place this note on the Engineering Plans, "Development within this subdivision is subject to an approved tree plan. Tree removal is subject to approval by the City of Vancouver. Street trees must be planted prior to occupancy per the approved plan."
7. Include this note on final landscape plans: "All shrubs within sight distance triangles shall be maintained so that foliage height above pavement does not exceed 2.5 feet. Street trees within sight distance triangles shall be limbed up to a height of 10 feet consistent with ANSI A300 standards to provide for sight distance visibility."
8. Revise the narrow lot development plan to include garbage and recycle set-out areas for each lot and indicate driveway widths.
9. Complete the sanitary sewer design on the civil drawings. Prepare according to Vancouver's current General Requirements and Details for Design and Construction. Provide adequate depth. Address redline comments and submit the final design for civil plan approval.
10. New and existing fire hydrant locations related to this project shall be shown.
11. A note shall be included on the water utility pages as applicable, "Underground fire sprinkler supply mains shall be installed only by contractors in compliance with WAC 212-80 and endorsed in accordance with VMC 16.04.095 under separate permit."
12. An approved fire response plan shall be included in both the civil plans and the architectural plans.

Prior to or During Construction

13. Comply with the applicable requirements in the letter from Ecology dated Sept. 18, 2023.
14. Comply with the applicable requirements in the letter from Clark County Public Health dated June 7, 2023.
15. Secure construction permits and schedule and attend a pre-construction meeting. Construct new public sewers and laterals as shown on the approved plans. Satisfy construction services inspection requirements and secure construction acceptance.

16. Satisfy submittal and other requirements itemized in the Notifications of Civil Plan Approval and secure final civil project acceptance.
17. Fire hydrants for emergency use shall be established and maintained accessible.
18. Fire apparatus access roads shall be established and maintained.
19. Site security measures shall be installed to prevent unauthorized access.
20. Temporary street and building address signage shall be visible and legible from the street fronting the property for emergency response during construction.
21. All fire safety provisions of the International Fire Code shall be adhered to.
22. No smoking signage shall be posted throughout the site except in designated smoking areas.
23. Site security shall be maintained to prevent unauthorized access.
24. Consideration for emergency vehicle access shall be taken when staging materials for construction.
25. The general construction manager shall ensure that all requested inspections for fire protection system work is requested by the permit holder and that the systems were pre-tested prior to being scheduled.

Prior to Final Plat Approval

26. Tracts A-E are to be owned and maintained by the Homeowners Association.
27. Submit a final plat application. Applications can be found under Building, Planning and Environment on the City of Vancouver website, www.cityofvancouver.us.
28. Record a covenant protecting the existing Oregon white oak on Lot 48.
29. The following improvements to NE 16th Street must be provided, per the appropriate City of Vancouver standards:
 - a. Dedicate 54 feet full-width public right of way, per T10-14.
 - b. Construct the full street section, consisting of a 36-foot paved street width, with curb, gutter, 5-foot detached sidewalks, planting strips, streetlights, and ADA ramps, per T10-14.
 - c. Street lighting must be installed to current standards, see street lighting comments below.
 - d. Install traffic control devices as warranted and storm drainage as required by the city stormwater ordinance.
30. The following improvements to NE 14th Street must be provided, per the appropriate City of Vancouver standards:
 - a. Dedicate 50 feet full-width public right of way, per T10-15B.
 - b. Construct the full street section, consisting of a 28-foot paved street width, with curb, gutter, 5-foot detached sidewalks, planting strips, streetlights, and ADA ramps, per T10-15B.
 - c. Install "No Parking – Fire Lane" signs at appropriate spacing on one side of the street.
 - d. Install a stop sign at the intersection with NE 123rd Ave to stop-control eastbound traffic approaching the intersection.
 - e. Street lighting must be installed to current standards, see street lighting comments below.
 - f. Install traffic control devices as warranted and storm drainage as required by the city stormwater ordinance.
31. The following improvements to NE 121st Avenue must be provided, per the appropriate City of Vancouver standards:
 - a. Dedicate additional right of way as necessary to meet the standard, per T10-15B.

- b. Install additional pavement width as necessary to provide at least 28 feet full-width paved street, per T10-15B.
 - c. Install City of Vancouver standard frontage improvements including curb, gutter, 5-foot detached sidewalks, planting strips, streetlights, and ADA ramps, per T10-15B.
 - d. Install “No Parking – Fire Lane” signs at appropriate spacing on one side of the street.
 - e. Install a stop sign at the intersection with NE 16th Street to stop-control northbound traffic approaching the intersection. Also install a stop sign at the intersection with NE 14th Street to stop-control southbound traffic approaching the intersection.
 - f. Street lighting must be installed to current standards, see street lighting comments below.
 - g. Utility trenching shall be restored per T05-04A&B and T05-05. Asphalt restoration shall meet T05-01A&B and T05-07. A single continuous width restoration is required.
 - h. Install traffic control devices as warranted and storm drainage as required by the city stormwater ordinance.
 - i. At the south end of NE 121st Avenue, dedicate a 20-foot public bicycle/pedestrian tract across the west edge of Lot 7 to accommodate a future bike-ped path connecting this neighborhood southward to NE 9th Street.
32. The following improvements to NE 122nd Court must be provided, per the appropriate City of Vancouver standards:
- a. Dedicate 46 feet full-width public right of way, per the conditions of the approved road modification.
 - b. Construct the full street section, consisting of a 28-foot paved street width, with curb, gutter, 5-foot detached sidewalks, planting strips, streetlights, and ADA ramps, per T10-16 and the conditions of the approved road modification.
 - c. Construct cul-de-sacs at the ends of the dead-end streets. The minimum radius to the face of curb must be 35 feet.
 - d. Install “No Parking – Fire Lane” signs at appropriate spacing on one side of the street and around the cul-de-sacs.
 - e. Install stop signs at the intersection with NE 16th Street to stop-control northbound and southbound traffic approaching the intersection.
 - f. Street lighting must be installed to current standards, see street lighting comments below.
 - g. Install traffic control devices as warranted and storm drainage as required by the city stormwater ordinance.
 - h. The areas of perpendicular parking shown on NE 122nd Court must be located within the abutting private HOA tracts, to be owned and maintained by the HOA. The parking areas must not be located within the public right of way.
33. The following improvements to NE 123rd Avenue must be provided, per the appropriate City of Vancouver standards:
- a. Dedicate additional right of way as necessary to accommodate the required improvements and/or meet the standard, per T10-14.
 - b. Install City of Vancouver standard frontage improvements including 5-foot detached sidewalks, planting strips, streetlights, and ADA ramps, per T10-14. The existing curb should be protected in place and repaired as necessary.
 - c. Street lighting must be installed to current standards, see street lighting comments below.

- d. Utility trenching shall be restored per T05-04A&B and T05-05. Asphalt restoration shall meet T05-01A&B and T05-07. A single continuous width restoration is required.
 - e. Install traffic control devices as warranted and storm drainage as required by the city stormwater ordinance.
34. The following improvements to the private streets must be provided, per City of Vancouver standards:
- a. Dedicate an appropriate easement or tract at least 15 feet wide and install a minimum 12-foot-wide paved street surface, per T10-18. (The applicant may increase the width of the street, if desired or if required by the fire dept.)
 - b. Construct a standard driveway approach to serve the private street, per T01-04.
 - c. If the paved street width is less than 28 feet, must install “No Parking – Fire Lane” signs on both sides of the street.
35. The applicant shall also provide a shared access and maintenance agreement for the private streets to cover the cost of maintaining and operating street surface, signs and markings, and drainage system, as it applies to private streets and shared driveways. Any shared accesses shall be called out on the plat. The agreement shall be recorded on all parcels that are party to the private roadway. Shared access and maintenance agreements shall be provided prior to final subdivision approval.
36. Show, note, and specify public sanitary sewer easements over shared driveway tracts where required. Record separately or include standard required plat easement recording language and record with the plat.
37. A final summary report by the geotechnical engineer of record shall be prepared and submitted to the City of Vancouver that states that the project soils were prepared in accordance with the governing geotechnical report and construction documents. Provide a current report with lot specific conditions and compaction test results by final grading.

Notes Required on Plat

- 38. If any archaeological deposits are found during construction, work shall stop, and the City of Vancouver’s Community Development and the Washington State Department of Archaeology and Historic Preservation shall be notified.
- 39. All lots within this plat are subject to a specific tree plan on file with the City of Vancouver. Required trees shall be planted on a per lot basis prior to final occupancy. No tree within the plat shall be removed without a permit.
- 40. Homeowner Association is responsible for maintenance of all open space tracts listed on this plat.

Prior to Issuance of any Building/Development Permits

- 41. All required fees, including Transportation, School and Park Impact Fees shall be paid.
- 42. Building permits subject to the narrow lot development standards of 20.927.040.
- 43. Building permits subject to the development standards of 20.410.050.B.
- 44. Street and address signage shall be visible and legible from the street fronting the property for emergency response. If applicable, individual suite numbers shall be posted at the suite doors. Where applicable, apartment building designations shall be visible and legible from all potential fire lane approaches.
- 45. Required fire lane signage shall be installed.
- 46. All fire protection features identified as being required during the construction permit review shall be installed and approved prior to occupancy.

47. If a fire department Knox-Box was identified as a requirement during the construction permit review, it shall be installed at an approved location and locked with the required content.
48. Permanent vehicle gates crossing required fire lanes shall remain unlocked or open until approved by the fire department.
49. Conditions identified in the construction permit shall be met.
50. All requirements of the applicable fire and building codes and their referenced standards shall be met notwithstanding approved construction plans.
51. A report shall be submitted demonstrating adequate Emergency Responder Radio Coverage.

EXHIBITS

1. Staff Report
 - A. Application
 - B. Applicant Narrative
 - C. Development Plans
 - D. Evergreen School District letter dated April 21, 2023
 - E. SEPA Checklist
 - F. Ecology Letter dated Sept. 18, 2023
 - G. Clark County Public Health letter dated June 7, 2023
 - H. Notice of Application, Public Hearing and Optional SEPA Determination dated Aug. 17, 2023
 - I. Final DNS dated Oct. 2, 2023
 - J. Trip Generation & Distribution Report by Kittelson & Associates dated June 28, 2023**
 - K. TIF Calculation worksheet dated Sept. 20, 2023
 - L. Geotechnical Report prepared by Earth Engineering, Inc. dated April 2023**
 - M. Preliminary Stormwater Report prepared by PLS dated July 2023**
 - N. road modification Request by PLS Engineering dated July 13, 2023
 - O. Approved road modification
 - P. Critical Areas Report by Ecological Land Services dated July 3, 2023**
 - Q. WSDOT email dated Aug. 21, 2023
 - R. DAHP email dated July 14, 2023
 - S. Public Comment

**Because of the size of the exhibit, it is not included with this report. The document is available for review via email. Please email the case manager for this project to receive electronic copies of the requested exhibit.

**BEFORE THE HEARING EXAMINER
FOR CITY OF VANCOUVER**

In the Matter of the Application of	)	NO. PRJ-168703/LUP-83548
	)	
	)	
Ginn Group	)	Fircrest Meadows
	)	
	)	
	)	
	)	
for Approval of a Preliminary Plat, Planned Development, and Rezone	)	FINDINGS, CONCLUSIONS, AND RECOMMENDATION

SUMMARY OF RECOMMENDATION

The City's Hearing Examiner recommends to the Vancouver City Council that the requested rezone, planned development, and preliminary plat to subdivide 7.46 acres into 57 single-family residential lots be **APPROVED** subject to conditions.

SUMMARY OF RECORD

Request:

Chad Stewart on behalf of Ginn Group (Applicant) requested a rezone from R-6 to R-9, a planned development, and a preliminary plat to subdivide 7.46 acres into 57 single-family residential lots. The subject property is located at 12301 NE 18th Street, Vancouver, Washington.

Hearing Date:

The Vancouver Hearing Examiner held a virtual open record hearing on the application on November 21, 2023. In an abundance of caution, the record was held open two business days to allow for written public comment from members of the public who may have had difficulty joining the virtual hearing, with additional time arranged for responses by the parties. No post-hearing public comment was submitted, and the record closed on November 23, 2023. No in-person site visit was conducted, but the undersigned viewed the subject property and its environs on Google Maps.

Testimony:

At the open record hearing the following individuals presented testimony under oath:

Mark Person, Senior Planner, City of Vancouver
Eric Hahn, Senior Civil Engineer, City of Vancouver
Chad Stewart, Senior Project Manager, Ginn Group

Jayson Taylor, Project Planner, Ginn Group
Audra Koopmann
Margaret Milem
Jim Martin

Exhibits:

At the open record hearing the following exhibits were admitted into the record:

1. Staff Report
 - A. Application
 - B. Applicant Narrative
 - C. Development Plans
 - D. Evergreen School District letter, dated April 21, 2023
 - E. SEPA Checklist
 - F. Department of Ecology letter, dated September 18, 2023
 - G. Clark County Public Health letter, dated June 7, 2023
 - H. Notice of Application, Public Hearing and Optional SEPA Determination, dated August 17, 2023
 - I. Final Determination of Non-Significance, dated October 2, 2023
 - J. Trip Generation & Distribution Report by Kittelson & Associates, dated June 28, 2023
 - K. TIF Calculation worksheet, dated Sept. 20, 2023
 - L. Geotechnical Report prepared by Earth Engineering, Inc., dated April 2023
 - M. Preliminary Stormwater Report prepared by PLS Engineering, dated July 2023
 - N. Road modification request by PLS Engineering, dated July 13, 2023
 - O. Approved road modification
 - P. Critical Areas Report by Ecological Land Services, dated July 3, 2023
 - Q. WSDOT email, dated August 21, 2023
 - R. Department of Archaeology and Historic Preservation email, dated July 14, 2023
 - S. Public Comment
2. Applicant PowerPoint Presentation
3. City PowerPoint Presentation
4. Email comment from Bev and Ken Tyler, dated November 21, 2023

After considering the testimony and exhibits admitted through the open record hearing process, the Hearing Examiner enters the following findings and conclusions:

Findings, Conclusions, and Recommendation
Vancouver Hearing Examiner
Fircrest Meadows, PRJ-168703/LUP-83548

page 2 of 22

FINDINGS

1. Ginn Group (Applicant) requested a rezone from R-6 to R-9, a planned development, and a preliminary plat to subdivide 7.46 acres into 57 single-family residential lots. The subject property is located at 12301 NE 18th Street, Vancouver, Washington.¹ *Exhibits 1, 1.A, 1.B, and 1.C.*
2. The application was received by the City on July 24, 2023 and determined fully complete on August 9, 2023. *Exhibits 1 and 1.H.*
3. There are no known previous subdivision terms or conditions that would affect the proposal. *Exhibits 1 and 1.B.*
4. The subject property is 7.46 acres in area and is developed with a single-family residence. The Applicant proposes to demolish the existing residence in conjunction with the proposed development of the site. *Exhibits 1 and 1.C.*
5. The subject property contains slopes exceeding 25% in gradient. Such slopes are classified as geologic hazard areas and are regulated under the City's critical areas ordinance (CAO). The project avoids impacts to steep slopes by preserving them within proposed Tract A. With respect to other types of critical areas, there are no wetlands or other surface waters on the subject property. *Exhibits 1, 1.C, 1.L, and 1.P.*
6. The subject property is zoned Low-Density Residential (R-6). *Exhibit 1.* The purpose of the R-6 zone is "to accommodate detached single dwellings with or without accessory residential units at a minimum lot size of 7,500 square feet and a density of 4.5 to 5.8 units/net acre." *Vancouver Municipal Code (VMC) 20.410.020.C.*
7. The Applicant seeks a rezone from R-6 to R-9, which is also a low-density residential zone. The purpose of the R-9 zone is "to accommodate detached single dwellings with or without accessory residential units at a minimum lot size of 5,000 square feet and a density of 5.9 to 8.7 units/net acre." *VMC 20.410.020.D.*
8. Planned developments are a land use development tool intended to provide a means for creating planned environments in any base zoning district through the application of flexible standards, including zero-lot lines, narrower streets, and other innovative planning practices that result in well-designed, efficient, and functional urban environments. *VMC 20.260.010.* Planned developments are allowed in the R-9 zone. *VMC 20.260.020.*
9. The Comprehensive Plan land use designation of the subject property is Urban Lower Density (UL). The UL designation can be implemented through the requested R-9 zone. *Exhibit 1; Comprehensive Plan, Table 1-5; Mark Person Testimony.* The general intent of

¹ The legal description of the subject property is a portion of the NE ¼ of Section 27, Township 2N, Range 2E within the Willamette Meridian; also known as Tax Parcel 164912000. *Exhibit 1.*

the UL designation is to provide for “predominantly single-family detached residential development, with some allowances for duplexes, townhouses, and single-family homes on small lots using infill standards.” *Comprehensive Plan, Table 1-5.*²

10. The version of the Vancouver Strategic Plan in effect at the time of project application (2016-2021 Strategic Plan) contained an objective to “develop a broader range of housing choices through incentives, changes in regulations, and implementation of the Affordable Housing Task Force recommendations.”³ *Exhibit 1.B.* Based on the affordable housing issues documented in the task force report, the City updated its zoning ordinance in 2022 (Ordinance No. M-4377) to encourage housing supply and housing options. *Ordinance No. M-4377.* The web page for the update process describes Vancouver as facing a housing crisis.⁴ *Exhibit 1.B.*
11. The recently adopted 2023 Vancouver Strategic Plan contains similar goals relating to housing options and housing supply, including:
 - To increase options for housing citywide, the City will propose and adopt revisions to its land use regulations (VMC Title 20) to allow a variety of housing types and sizes in low-density residential and other zoning districts and reduce or eliminate regulatory or procedural barriers to housing production when possible.
 - To meet new demand and close the deficit within 10 years, Vancouver must increase annual housing production to at least 2,500 new housing units, including 750 new housing units per year that are affordable to households earning 80% or less of the area median income.

*City of Vancouver Strategic Plan, 2023-2029 Update, page 28.*⁵
12. The Applicant argued, and Planning Staff agreed, that the proposal is consistent with the Strategic Plan in effect at time of application, that it would address the housing need identified in the Affordable Housing Task Force report, and that the housing shortage represents a change in circumstance warranting approval of the rezone. *Exhibit 1; Jayson Taylor Testimony.*
13. Adjacent properties to the west, south, and east are zoned R-6 and are developed with single-family residences. The BPA powerline corridor is immediately north of the subject property, between the subject property and NE 18th Street. The properties on the north side of NE 18th Street are zoned R-9 and R-18. There is also R-9 zoned land a few blocks west of the subject property. *Exhibits 1, 1.B, and 1.C; Exhibit 2.*

² https://www.cityofvancouver.us/wp-content/uploads/2023/09/Comprehensive_Plan_2011-2030_AUG_2021_Update.pdf

³ The 2016-2021 Strategic Plan and affordable housing task force report are no longer available online.

⁴ <https://www.behardvancouver.org/housingcodeupdates>

⁵ <https://www.cityofvancouver.us/wp-content/uploads/2023/11/2023-2029-Vancouver-Strategic-Plan.pdf>

14. The Applicant proposes 57 detached residences, a housing type that is allowed outright in both the existing R-6 and the proposed R-9 zones and within planned developments. *VMC 20.410.030; VMC 20.260.030.B.1*. The minimum net density (net of public and private streets and critical areas) in the R-9 zone is 5.9 dwelling units per acre, which is 34 dwelling units for the subject property, based on a net area of 5.69 acres. The maximum net density is 8.7 dwelling units per acre (excluding density bonus), which would allow up to 50 dwelling units on the subject property. With the planned development density bonus of 15%, which the Applicant proposes to utilize, the maximum number of dwelling units is 58. The proposed density falls within the allowed range for a planned development within the R-9 zone. *Exhibit 1; VMC 20.410.040; VMC 20.260.020*. For purposes of comparison, the number of residences that could be developed on the subject property in the absence of a rezone is a minimum of 26 and a maximum of 38 using the 15% density bonus.⁶ *VMC 20.410.040*.
15. The minimum lot area required in the R-9 zone is 5,000 square feet, but the Hearing Examiner can reduce the minimum lot size for single-family residential land uses in planned developments. In this case the Applicant proposes a minimum lot area of 2,500 square feet, with the smallest lots confined to the interior of the site or adjacent to the BPA corridor. The perimeter lots adjacent to existing roadways would be at least 3,333 square feet, and the perimeter lots adjacent to existing residences (Lots 1 through 7 along the southern property line and Lots 40 through 48 along the eastern property line) would be at least 4,000 square feet. *Exhibits 1.B and 1.C; VMC 20.260.060.B(4)*.
16. Consistent with *VMC 20.260.060.C*, the proposed smaller lot sizes would be offset by common open space. The Applicant proposes to provide approximately one acre of open space (43,338 square feet) within Tract A and 5,138 square feet of open space within B. This amount exceeds the 10% of overall site area required by *VMC 20.260.060.C.1(a)* by approximately one-quarter acre. Tract A, in the northwest corner of the subject property, would be used to preserve steep slopes and a large stand of trees. Consistent with *VMC 20.260.060.C.1(c)*, critical areas would constitute less than half of the required open space. Picnic tables would be provided in both open space tracts. The open space tracts would be maintained by the homeowners association. *Exhibits 1, 1.B, and 1.C*.
17. The Applicant proposes to construct a walking path between the northern boundary of the subject property and NE 18th Street within the driveway easement for the existing residence.⁷ The path would connect to the internal street system through an easement between Lots 48 and 49 or a separate tract within Lot 48. In addition, a 20 foot wide tract would be dedicated along the west edge of Lot 7 between the south terminus of NE 121st Avenue and the southern property line to provide a future bicycle and pedestrian path

⁶ 5.69 net acres x 4.5 units per acre is 25.605 (rounded up to 26 per *VMC 20.410.040.C.2.c*). 5.69 net acres x 5.8 units per acre is 33.002, or 37.95 with 15% density bonus (rounded up to 38 per *VMC 20.410.040.C.1(e)*).

⁷ The preliminary plat map (in Exhibit 1.C) depicts a meandering path to be located to the west of the driveway easement, but because BPA would not approve a new trail easement, the existing easement will be used. *Jayson Taylor Testimony*.

connection to NE 9th Street. *Exhibits 1, 1.B and 1.C; Jayson Taylor Testimony.*

18. The maximum lot coverage allowed in the R-9 zone is 50%. *VMC 20.410.050.* Adjustment of this development standard is authorized by *VMC 20.260.050.B* if: (1) the adjustment is warranted given site conditions and/or characteristics of the design; (2) the benefits outweigh any potential adverse impacts; and (3) any impacts are mitigated to the extent practical. *VMC 20.260.050.B.* The Applicant proposes to adjust the maximum lot coverage to 55% for Lots 1 through 6 and 40 to 47 to allow for development of single-story homes on those lots. The intent is to increase the mixture of housing types to include houses meeting the accessibility needs of older and/or disabled residents. The increased lot coverage would be limited to lots developed with single-story homes to minimize potential visual impacts on neighbors; two-story homes would comply with the 50% standard. *Exhibit 1.B.*
19. Although the minimum lot width requirement of the underlying zone does not apply to planned developments, subdivisions with lots of less than 40 feet in width must comply with the narrow lot criteria of *VMC 20.927.030* and the development standards of *VMC 20.927.040*. In this case only Lots 1 through 7 and 40 through 48 would be 40 or more feet wide; the remaining lots would be between 30 and 40 feet wide. The narrow lot criteria require that conflicts on narrow lots be eliminated, that adequate guest parking be provided, and that solid waste and recycling collection and access be provided. Consistent with the criteria and the associated development standards, the Applicant has submitted plans showing that utilities, driveways, street trees and other features have been located and designed to minimize conflicts with one another. Guest parking exceeding the standard of one space per three narrow lots would be provided in the form of guest parking stalls within Tracts A and B (five stalls each, for a total of 10 stalls) and street parking.⁸ In addition, each residence would have a garage that would accommodate at least one vehicle and all lots would have driveways designed to accommodate two parked vehicles. With respect to solid waste, the site design provides adequate truck access and circulation, and common cart set-out locations have been designated for those lots with insufficient street frontage for individual cart set-out. *Exhibits 1, 1.B, and 1.C; Jayson Taylor Testimony.*
20. The Applicant has submitted conceptual building elevations demonstrating compliance with the development standards of *VMC 20.410.050*. The garage doors would not exceed 50% of the building facades and the main entrances would be visible from the street and would have a porch or entry. Detailed review of the requirement to provide front façade variety with respect to residences facing the same street would be completed during building permit review. *Exhibits 1 and 1.C.*
21. The subdivision ordinance requires a minimum street frontage of 20 feet per lot and requires side lots to be at right angles to facing streets to the extent practical. Each of the

⁸ Per the conditions recommended by Planning Staff, the narrow lot guest parking stalls must be owned and maintained by the HOA and not located within public right-of-way. *Exhibit 1.*

proposed lots would satisfy these requirements. In addition, the length of blocks within the development would fall within the minimum of 180 feet and the maximum of 1,300 feet specified in the ordinance. No blocks would exceed 800 feet in length such as to trigger requirements to provide mid-block pedestrian access. *Exhibits 1 and 1.C; VMC 20.320.070.*

22. In support of the planned development request, the Applicant submitted a concept plan containing the components of VMC 20.260.070. *Exhibits 1, 1.B, 1.C, 1.J, 1.L, and 1.P.*
23. The proposal includes aesthetic, energy-efficient, and environmentally friendly design features, including small residences (maximum 1,500 square feet), higher density, tree retention, and pedestrian connections. With respect to source of energy, the residences would be served by electricity only, and the electric design would allow for electric vehicle chargers. Multiple building styles are proposed, with single story homes on larger lots along the exterior of the subdivision adjacent to existing lower density development. This site design, in combination with required building setbacks, would also protect against shading impacts to adjacent properties. *Exhibits 1, 1.B, and 1.C; Chad Stewart Testimony.*
24. In addition to providing open space on site, the Applicant must mitigate impacts to parks through payment of a mitigation fee pursuant to VMC 20.915. The fee amount is calculated at the time of building permit application and is payable at the time of building permit issuance.⁹ *VMC 20.915.020.* The current fee amount for Park District C is \$4,757.00 per dwelling unit. *Exhibit 1.*
25. VMC Chapter 20.925.060 requires street trees to be planted at a maximum spacing of 30 feet. The Applicant has submitted a landscape plan depicting street trees along the internal streets. *Exhibits 1 and 1.C.*
26. The proposal is subject to the requirements of the City's tree conservation ordinance, which requires tree preservation and planting to achieve a minimum of 30 tree units per acre. For the 7.46-acre site, 224 tree units are required. The Applicant proposes to retain 257.5 tree units of trees within Tract A and Lot 48. The tree to be retained on Lot 48 is an Oregon white oak with a trunk measuring more than 12 inches in diameter. Oregon white oaks are considered priority habitat by the Washington Department of Fish and Wildlife criteria. *Exhibits 1, 1.C, and 1.P.*
27. Access to the subdivision would be from extensions of NE 16th Street and NE 14th Street through the site, and from NE 121st Avenue and NE 123rd Avenue. Access to individual

⁹ The Staff Report on page 23 states that the fee amount is calculated at the time of preliminary plat approval, noted on the face of the final plat, and imposed on a per-lot basis at the time of building permit issuance. However, this procedure reflects the version of VMC 20.915.020 that was in effect prior to adoption of Ordinance M-4340 in 2021. The proposed subdivision application, which became complete on August 9, 2023, vested to the current version of the ordinance that specifies that for all new development requiring a building permit, impact fees are calculated at the time of building permit application.

lots would be from a new cul-de-sac street off the extension of NE 16th Street (proposed NE 122nd Court), NE 121st Avenue, NE 123rd Avenue, and NE 14th Street, and from private access tracts extending from NE 122nd Court. One private shared driveway tract at the south end of NE 122nd Court would serve Lots 27, 28, 29, and 30, while two private access tracts at the north end of NE 122nd Court would serve Lots 48, 49, and 50 and 52, 53, and 54. No lots would take direct access from NE 16th Street. *Exhibit 1.C.*

28. NE 16th Street is designated as a neighborhood circulator, requiring 36 feet of pavement, curbs, gutters, landscape strips, and detached sidewalks within 54 feet of right-of-way per City standard plan T10-14. *Exhibit 1.* The Applicant proposes curb return bulb-outs on NE 16th Street at the intersection with NE 122nd Court to serve as a traffic calming measure. The curb return bulb-outs result in a slightly narrower street section through the intersection. *Exhibits 1 and 1.C; Chad Stewart Testimony.*
29. NE 14th Street is designated as a local access street, requiring 28 feet of pavement, curbs, gutters, landscape strips, and detached sidewalks within 50 feet of right-of-way per City standard plan T10-15B. A stop sign would be required at the approach to NE 123rd Avenue, and on-street parking would be limited to one side of the street. *Exhibit 1.*
30. NE 121st Avenue is also designated as a local access street. The east half of the street is not fully improved to City standards along the subject property frontage. Additional right-of-way dedication and installation of curb, gutter, landscape strip, sidewalk, ADA ramps and street lighting would be required. A stop sign would be required at the northbound approach to NE 16th Street and the southbound approach to NE 14th Street, and on-street parking would be limited to one side of the street. *Exhibits 1 and 1.J.*
31. NE 123rd Avenue is designated as a neighborhood circulator. NE 123rd Avenue is not fully improved to City standards along the subject property frontage. Additional right-of-way dedication might be required, as well as installation of a planter strip, sidewalk, ADA ramps, and street lighting. *Exhibit 1.*
32. The new internal NE 122nd Court would be a designated cul-de-sac street (City standard plan T10-16). Previous to the public hearing, the Applicant had obtained Public Works Department approval of a road modification request to reduce the required right-of-way width from 50 feet to 46 feet, and to reduce the planter strip width from five feet to four feet. The street would otherwise conform to City standards, including five-foot wide detached sidewalks and a 28-foot wide paved surface. The approaches to NE 16th Street would be stop sign controlled, and on-street parking would be limited to one side of the street. *Exhibits 1, 1.J, 1.N, and 1.O.*
33. The private streets extending from NE 122nd Court would be designed consistent with City standard plan T10-18. As allowed by the standard, the tract widths of 21 feet would exceed the minimum of 15 feet required. Shared access and maintenance agreements would be required prior to final plat approval. *Exhibits 1 and 1.C.*

34. The Applicant submitted a professionally prepared trip generation and distribution report dated June 28, 2023. The City determined that the analysis is adequate under City standards. *Exhibit 1.J; Eric Hahn Testimony*. The proposal's trip generation was estimated using the rate contained in the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 11th Edition* for Land Use Code 210 – Single-Family Detached Housing. Using this rate, the trip generation of the development, net of the traffic generated by the existing residence, would be 560 average weekday daily trips, including 44 AM peak hour trips and 58 PM peak hour trips. *Exhibit 1.J*. It is typical for AM peak hour rates to be lower than PM peak hour rates because departure times are more spread out, whereas PM peak hour traffic is more concentrated. *Eric Hahn Testimony; Jayson Taylor Testimony*.
35. The Applicant's transportation engineer evaluated the traffic impact of the project on six existing intersections in the vicinity, including the intersections of NE 112th Avenue/NE 18th Street, NE Four Seasons Lane/NE 18th Street, NE 118th Avenue /NE 18th Street, NE 125th Avenue /NE 18th Street, NE 118th Avenue /NE 16th Street, and NE 125th Avenue /NE 16th Street. None of the studied intersections are expected to have a reduced level of service (LOS) from project traffic at the time of anticipated project build-out (2027), and all would operate at LOS C or better. By 2032, the combined effect of project traffic and background traffic is expected to cause the LOS of NE 112th Avenue and NE 18th Street to drop from C to D during the PM peak hour, a level that is still consistent with City standards. All other study intersections would continue to operate at LOS A or B. *Exhibit 1.J*.
36. The subject property is located within the #281 Transportation Analysis Zone. The project would add PM peak hour trips to seven Transportation Management Zones. Based on these impacts, the Applicant would be required to pay concurrency modeling fees of \$1,500.00. In addition, the Applicant would be required to pay a proportionate share towards the City's planned improvements at four intersections, including NE 172nd Avenue/NE 18th Street (\$600), NE 179th Place/NE 18th Street (\$1,800), NE 187th Avenue/NE 18th Street (\$2,400), and NE 162nd Avenue/NE 9th Street (\$1,500). Both fees would be due prior to civil plan approval. *Exhibits 1 and 1.K*.
37. Pursuant to VMC 11.70.090, the segment of NE 18th Street between NE 112th Avenue and NE 138th Avenue is designated as a Category 1 Concurrency Corridor, which stipulates that the corridor is operating at or above the City's adopted level of service standards. The number of PM peak hour trips generated by the instant development is not anticipated to cause the corridor to drop below the adopted level of service standard. *Exhibit 1*.
38. The Applicant is required to pay traffic impact fees pursuant to VMC 20.915. The fee amount is calculated at the time of building permit application and is payable at the time of building permit issuance. *VMC 20.915.020*. The current fee amount for the Cascade Subarea is \$2,722.39 per dwelling unit. *Exhibit 1*.

39. Compliance with the City's off-street parking requirement of one space per dwelling unit (VMC 20.945) would be confirmed at the time of building permit issuance. The proposed residences would each have a garage large enough to park one vehicle, and a driveway large enough to park one if not two vehicles. *Exhibits 1, 1.B, and 1.C; Jayson Taylor Testimony.*
40. The Fire Department has reviewed the proposed project and determined that it can meet the requirements of VMC Title 16 and the International Fire Code if properly conditioned. Planning Staff included the Fire Department's conditions in the recommended conditions of approval. *Exhibit 1.*
41. Public water is available to the site from mains located in NE 16th Street (a 16-inch transmission main crosses the subject property within the NE 16th Street alignment), NE 121st Avenue, and NE 123rd Avenue. The existing 16-inch main would be replaced with a 24-inch main for consistency with City water planning documents. *Exhibit 1; Chad Stewart Testimony.*
42. Public sewer is available to the site from a main located within the NE 121st Avenue alignment, which extends from the street terminus to NE 18th Street within an easement. The Applicant proposes to connect to the existing main near the northwest corner of the site, extend the sewer south and east through the site to NE 15th Street, install a new deeper sewer within NE 123rd Avenue, and provide service laterals to each lot. Staff submitted that the proposal satisfies City sewer standards. *Exhibits 1, 1.B, and 1.C.*
43. The Applicant has submitted preliminary erosion control plans demonstrating that City requirements for erosion control can be met on the site. *Exhibits 1 and 1.C.*
44. The subject property is located within the Evergreen School District. Students residing within the proposed subdivision would attend Fircrest Elementary School, Cascade Middle School, and Evergreen High School. The School District provides bus service to all three schools in the vicinity of the subject property. Impacts to schools would be mitigated through payment of mitigation fees pursuant to VMC 20.915. The fee amount is calculated at the time of building permit application and is payable at the time of building permit issuance. *VMC 20.915.020 (Ord. M-4340).* The current fee amount is \$6,432 per dwelling unit. *Exhibit 1.*
45. An archaeological predetermination report was prepared for the project pursuant to VMC 20.710.070. The findings of the report did not suggest the presence of archaeological resources on the site. However, Planning Staff recommended a stop work/notification condition of approval to address unanticipated discovery of archaeological deposits during construction, consistent with VMC Chapter 20.710. *Exhibits 1 and 1.B.*
46. Stormwater runoff would be infiltrated on site through infiltration trenches. Based on evaluation by a geotechnical engineer, the soils on site are suitable for infiltration. Water quality treatment of runoff from pollution-generating surfaces would be accomplished

with media filter cartridges. Stormwater treatment facilities placed within public rights-of-way would be owned and maintained by the City, and those placed within private access drives, tracts, or lots would be privately owned and maintained by the homeowners association. City Staff submitted that the submitted stormwater report and plans demonstrate that City stormwater requirements can be met on site. *Exhibits 1, 1.L, and 1.M.*

47. Pursuant to the State Environmental Policy Act (SEPA), the City of Vancouver acted as lead agency for review of environmental impacts caused by the proposal. After review of the Applicant's environmental checklist and application materials, the SEPA Responsible Official issued a notice of application, remote public hearing, and optional SEPA determination of non-significance (DNS) on August 17, 2023. After reviewing public and agency comments, the City issued a final DNS on October 2, 2023, which was not appealed. *Exhibits 1, 1.E, 1.H, and 1.I.*
48. Public comment on the proposal included concerns regarding increased traffic and traffic speeds on NE 125th Avenue, and a request that direct street access from the subject property to NE 18th Street be established. There is a school bus stop on NE 125th and some students in the area walk to school. The commenting neighbor submitted that existing traffic speeds excessively on NE 125th Avenue and that the additional vehicles from the proposed lots would increase the hazards already resulting from this situation. *Exhibit 1.S; Audra Koopmann Testimony.* There was also public comment in support of the proposal, citing the Applicant's community outreach, thoughtful design changes in response to public concerns, and willingness to provide the pedestrian connection between the subject property and the neighborhood to the south. *Margaret Milem Testimony; Exhibit 4.*
49. In response to public comment concerns about traffic, the Applicant submitted that the traffic analysis predicts that approximately 75% of the project traffic would travel to or from the west (away from NE 125th) as that would be the fastest path to I-205. Direct street access to NE 18th would not be feasible due to the location of existing intersections on NE 18th, as well as to the difficulties the Applicant is likely to encounter in attempting to acquire right-of-way where there is only easement access. *Jayson Taylor Testimony.* City Transportation Staff identified resources in place for neighborhoods to address speeding concerns.¹⁰ *Eric Hahn Testimony.*
50. Having considered all public comment and the full Applicant submittal, Planning Staff maintained their recommendation for approval of the rezone, subdivision, and planned development subject to conditions in the staff report. *Exhibits 1 and 3; Mark Person Testimony.* The Applicant did not object to the recommended conditions but requested an additional condition specifying that street trees and other landscaping would be installed

¹⁰ Anyone with concerns about speeding-related safety issues on City streets can contact the City's Transportation Planning Division Traffic Calming Group, which is accessible on the City's webpage. Also, concerns about streetlights not functioning can be brought to the City's attention on the webpage for the Traffic Operations section of the Transportation Planning Division. *Eric Hahn Testimony.*

prior to occupancy. Planning Staff concurred with the request. *Exhibit 2; Jayson Taylor Testimony; Mark Person Testimony.*

CONCLUSIONS

Jurisdiction:

The Hearing Examiner has jurisdiction to review and make a recommendation to City Council on the rezone and planned development, both Type IV applications, pursuant to VMC 20.285.040.C.2 and VMC 20.260.030.B.1.

Per Vancouver Municipal Code 20.210.020 Table 20.210-1, preliminary subdivisions are Type III development applications, which are decided by the Hearing Examiner. Pursuant to VMC 20.210.020.D, when more than one permit is required for a given proposal, all applications are consolidated into a single review subject to the highest type of procedure that applies to any of the applications. Thus, the Hearing Examiner also has jurisdiction to issue findings and a recommendation to City Council on the subdivision application.

Rezone Criteria for Review:

Pursuant to VMC 20.285.060, the approval criteria for a standalone zoning map amendment (i.e., a map amendment not involving a comprehensive plan amendment) require demonstration of the following:

1. How the proposal is more consistent with applicable policies of the Vancouver strategic plan and comprehensive plan than the existing designation; and
2. That a change in circumstances has occurred since the existing designation was established.

Planned Development Criteria for Review:

Pursuant to VMC 20.260.050.A, to receive approval for a planned development, the Applicant must demonstrate compliance with all of the following criteria:

1. Content. The concept plan contains all of the components required in Section 20.260.070. Compliance with all applicable standards. The proposed development and uses comply with all applicable standards of the Title, except where adjustments are being approved as part of the concept plan application, pursuant to Section 20.260.030(D)(2).
2. Architectural and site design. The proposed development demonstrates the use of innovative, aesthetic, energy-efficient and environmentally-friendly architectural and site design.
3. Transportation system capacity. There is either sufficient capacity in the transportation system to safely support the development proposed in all future phases

or there will be adequate capacity by the time each phase of development is completed.

4. Availability of public services. There is either sufficient capacity within public services such as water supply, police and fire services, and sanitary waste and storm water disposal, to adequately serve the development proposed in all future phases, or there will be adequate capacity available by the time each phase is completed.
5. Protection of designated resources. City-designated resources such as historic landmarks, significant trees and sensitive natural resources are protected in compliance with the standards in this and other Titles of the VMC.
6. Compatibility with adjacent uses. The concept plan contains design, landscaping, parking/traffic management and multi-modal transportation elements that limit conflicts between the planned development and adjacent uses. If zoning districts are shifted per section 20.260.020(C) VMC, there shall be a demonstration that the reconfiguration of uses is compatible with surrounding uses by means of appropriate setbacks, design features or other techniques.
7. Mitigation of off-site impacts. All potential off-site impacts including litter, noise, shading, glare, and traffic, will be identified and mitigated to the extent practicable.

Subdivision Criteria for Review:

Pursuant to VMC 20.320.040, to obtain approval of a preliminary subdivision, the Applicant must demonstrate compliance with all of the following criteria:

- A. Public facilities provision. Appropriate provisions to the extent necessary to mitigate an impact of the development have been made for transportation, water, storm drainage, erosion control and sanitary sewage disposal methods that are consistent with the City's current ordinances, standards, and plans;
- B. Proposed improvements. Appropriate provisions have been made for proposed streets, alleys and public ways, utilities and other improvements that are consistent with the City's current ordinances, standards and plans, and Department of Health and/or Washington State Department of Transportation standards and plans, where applicable;
- C. Open space and dedications. Appropriate provisions to the extent necessary to mitigate an impact of the development have been made for open space, parks, schools, dedications, easements, and reservations;
- D. Physical characteristics. The design of the proposed short subdivision or subdivision site has taken into consideration the physical features of the site, including but not limited, to: topography, soil conditions, susceptibility to flooding, inundation or

swamp conditions, steep slopes or unique natural features such as wildlife habitat or wetlands;

- E. Re-platting of existing subdivisions. When re-platting an existing subdivision, the short subdivision or subdivision shall comply with all of the terms and conditions of the existing subdivision's conditions of approval;
- F. Compliance with all requirements of this title. The proposed short subdivision or subdivision complies with all applicable requirements of this title unless modified through the approval; and
- G. Compliance with State requirements. That the proposed short subdivision or subdivision complies with the requirements of RCW 58.17.110.
- H. Narrow Lot Additional Criteria. Land divisions which contain one or more residential lots having a width of less than 40 feet shall meet additional criteria of VMC 20.927.030 A, B and C.

Conclusions Based on Findings:

A. Rezone

- 1. The requested R-9 zoning is more consistent with the Vancouver Strategic Plan by allowing for a higher density of housing, which would better address the City's housing shortage. The R-9 zone is compatible with the current Comprehensive Plan designation. *Findings 6, 7, 9, 10, 11, and 12.*
- 2. Circumstances have changed with respect to housing demand, which supports allowing higher density as proposed. *Findings 10 and 12.*

B. Planned Development

- 1. As conditioned, the plans demonstrate compliance with the content requirements and development standards for planned developments set forth in VMC 20.260, including those relating to housing type, density, lot dimensions, and open space. The requested reduction in lot area and increase in lot coverage are, or should be, approved. The slight increase in lot coverage would allow for one-story development at the subdivision boundary, which would act as a transition and would minimize impacts to adjacent lower density off-site development. The ability to provide one-story houses would also add to the demographic mix potentially served by the development. The reduced lot sizes would allow for increased preservation of open space and tree retention within Tract A. The smallest lots would be located in the interior of the development, which would minimize any off-site impacts of the reduced lot sizes and increased density. In addition to the common open space provided within Tracts A and B, off-site pedestrian connections would be provided to the north and south. *Findings 8, 14, 15, 16, 17, 18, 19, and 22.*

2. The proposed architectural and site design would be aesthetic, energy-efficient, and environmentally friendly. The proposed residences would be relatively small, and the utilities proposed would be compatible with electric vehicle charging. A large stand of trees would be preserved within Tract A. The design promotes nonmotorized transportation through the proposed pedestrian/bicycle connections to the north and south in addition to the internal sidewalk system. *Findings 16, 17, 20, 23, and 26.*
3. There is sufficient capacity in the transportation system for the traffic generated by the development. Traffic mitigation fees would be paid in accordance with ordinance requirements. *Findings 35, 36, 37, and 38.*
4. Adequate public services are available to serve the proposed community. *Findings 40, 41, and 42.*
5. As conditioned, significant trees and sensitive natural resources would be protected consistent with ordinance requirements. The City's tree density standard would be met through tree retention. The conditions of approval contain stop work requirements that would apply if archaeological resources are discovered during construction. *Findings 5, 26, and 45.*
6. As conditioned, the proposed development would be compatible with adjacent residential land uses. The site design places the largest lots next to existing lower-density development. Parking would be provided on individual lots and within designated guest parking areas to reduce spillover into the surrounding neighborhood. The plan provides for multi-modal neighborhood connectivity. *Findings 13, 15, 17, 19, and 39.*
7. Mitigation of off-site impacts would be accomplished through payment of park, school, and traffic mitigation fees. As conditioned, street lighting would be installed consistent with City standards. Potential noise impacts would be limited to construction noise. The evidence submitted did not suggest the need for noise mitigation in addition to existing code requirements and processes. Proposed site design minimizes shading effects by placing one story homes adjacent to existing development. The project was reviewed as required by the State Environmental Policy Act and a DNS was issued. *Findings 23, 24, 29, 30, 35, 36, 38, 44, 47, 49, and 50.*

C. Preliminary Plat

1. As conditioned, appropriate provision has been made for transportation, water, storm drainage, erosion control, and sewage disposal. The conditions of approval detail the applicable street requirements. The local street system has capacity to serve the development. Traffic mitigation fees would mitigate the impact of the project's increased trips on the surrounding transportation system. *Findings 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 41, 42, 43, 46, 48, 49, and 50.*
2. As conditioned, appropriate provision has been made for streets, alleys, utilities, and other improvements consistent with City and State standards. The conditions of approval

detail the applicable street requirements. *Findings 27, 28, 29, 30, 31, 32, 33, 40, 41, 42, 46, 48, 49, and 50.*

3. The proposed open space, which would serve residents of the subdivision, exceeds the 10% minimum requirement for planned developments. Impacts to schools and City parks would be mitigated through payment of mitigation fees. *Findings 16, 24, and 44.*
4. The design of the subdivision takes into account the physical features of the site, including steep slopes, an existing stand of mature trees to be retained, and an Oregon white oak tree to be retained. The proposed use of infiltration trenches for stormwater management is compatible with soil conditions. *Findings 5, 26, and 46.*
5. There are no prior subdivision terms or conditions that affect the proposal. *Finding 3.*
6. As conditioned, the subdivision complies with the applicable requirements of VMC 20.320, which address subdivision layout and access requirements. *Finding 21.*
7. The above criteria largely address the requirements of RCW 58.17.110. The RCW also includes a requirement that a subdivision make appropriate provision for safe walking conditions for students who only walk to and from school. In this case, school bus service would be available, and provision for safe walking conditions would be made by installing sidewalks along the internal streets and the pathway to NE 18th Street. The public interest would be served by the provision of housing consistent with the Strategic Plan, Comprehensive Plan, and the density standard of the R-9 zone. *Findings 10, 11, 14, 17, 28, 29, 30, 31, 32, 44, 49, and 50.*
8. As conditioned, the proposal is consistent with the narrow lot development criteria. *Finding 19.*

RECOMMENDATION

Based on the foregoing findings and conclusions, the requested rezone from R-6 to R-9 and the preliminary plat and planned development to subdivide 9.85 acres into 57 single-family residential lots at 12301 NE 18th Street **SHOULD BE APPROVED** subject to the following conditions to be satisfied by the Applicant or successors in interest:

Prior to civil plan approval, the Applicant or Applicant's Agent shall ensure the following requirements are satisfied:

1. The Applicant shall upload the civil plan review set showing all the revisions requested as well as all necessary reports (geotechnical, hydrology, traffic analysis, road modification, etc.). Include a detailed site plan in the civil plan review set. For questions on these requirements please contact 360-487-7804.
2. Grading plan review fees will be due upon submittal of civil plans for review. Contact Permit Center staff at 360-487-7802 to obtain a fee quote.

3. The Applicant shall pay concurrency monitoring fees totaling \$1,500.
4. The Applicant shall pay proportionate share fees totaling \$6,300.
5. Place the following note on the grading plans:
“If any archaeological deposits are found during construction, work shall stop and the City of Vancouver’s Community Development and the Washington State Department of Archaeology and Historic Preservation shall be notified”.
6. Place this note on the engineering plans: “Development within this subdivision is subject to an approved tree plan. Tree removal is subject to approval by the City of Vancouver. Street trees must be planted prior to occupancy per the approved plan.”
7. Include this note on final landscape plans: “All shrubs within sight distance triangles shall be maintained so that foliage height above pavement does not exceed 2.5 feet. Street trees within sight distance triangles shall be limbed up to a height of 10 feet consistent with ANSI A300 standards to provide for sight distance visibility.”
8. Revise the narrow lot development plan to include garbage and recycle set-out areas for each lot and indicate driveway widths.
9. Complete the sanitary sewer design on the civil drawings. Prepare according to Vancouver’s current General Requirements and Details for Design and Construction. Provide adequate depth. Address redline comments and submit the final design for civil plan approval.
10. New and existing fire hydrant locations related to this project shall be shown.
11. The following note shall be included on the water utility pages as applicable:
“Underground fire sprinkler supply mains shall be installed only by contractors in compliance with WAC 212-80 and endorsed in accordance with VMC 16.04.095 under separate permit.”
12. An approved fire response plan shall be included in both the civil plans and the architectural plans.

Prior to or During Construction, the Applicant or Applicant’s Agent shall ensure the following requirements are satisfied:

13. Comply with the applicable requirements in the letter from the Department of Ecology dated September 18, 2023.
14. Comply with the applicable requirements in the letter from Clark County Public Health dated June 7, 2023.

15. Secure construction permits and schedule and attend a pre-construction meeting. Construct new public sewers and laterals as shown on the approved plans. Satisfy construction services inspection requirements and secure construction acceptance.
16. Satisfy submittal and other requirements itemized in the Notifications of Civil Plan Approval and secure final civil project acceptance.
17. Fire hydrants for emergency use shall be established and maintained accessible.
18. Fire apparatus access roads shall be established and maintained.
19. Site security measures shall be installed to prevent unauthorized access.
20. Temporary street and building address signage shall be visible and legible from the street fronting the property for emergency response during construction.
21. All fire safety provisions of the International Fire Code shall be adhered to.
22. No smoking signage shall be posted throughout the site except in designated smoking areas.
23. Site security shall be maintained to prevent unauthorized access.
24. Consideration for emergency vehicle access shall be taken when staging materials for construction.
25. The general construction manager shall ensure that all requested inspections for fire protection system work is requested by the permit holder and that the systems were pre-tested prior to being scheduled.

Prior to Final Plat Approval, the Applicant or Applicant's Agent shall ensure the following requirements are satisfied:

26. Tracts A-E are to be owned and maintained by the Homeowners Association.
27. Submit a final plat application. Applications can be found under Building, Planning and Environment on the City of Vancouver website, www.cityofvancouver.us.
28. Record a covenant protecting the existing Oregon white oak on Lot 48.
29. The following improvements to NE 16th Street must be provided, per the appropriate City of Vancouver standards:
 - a. Dedicate 54 feet full-width public right-of-way, per T10-14.

- b. Construct the full street section, consisting of a 36-foot paved street width, with curb, gutter, five-foot detached sidewalks, planting strips, streetlights, and ADA ramps, per T10-14.
 - c. Street lighting must be installed to current standards.
 - d. Install traffic control devices as warranted and storm drainage as required by the city stormwater ordinance.
30. The following improvements to NE 14th Street must be provided, per the appropriate City of Vancouver standards:
- a. Dedicate 50 feet full-width public right-of-way, per T10-15B.
 - b. Construct the full street section, consisting of a 28-foot paved street width, with curb, gutter, five-foot detached sidewalks, planting strips, streetlights, and ADA ramps, per T10-15B.
 - c. Install “No Parking – Fire Lane” signs at appropriate spacing on one side of the street.
 - d. Install a stop sign at the intersection with NE 123rd Ave to stop-control eastbound traffic approaching the intersection.
 - e. Street lighting must be installed to current standards.
 - f. Install traffic control devices as warranted and storm drainage as required by the city stormwater ordinance.
31. The following improvements to NE 121st Avenue must be provided, per the appropriate City of Vancouver standards:
- a. Dedicate additional right-of-way as necessary to meet the standard, per T10-15B.
 - b. Install additional pavement width as necessary to provide at least 28 feet full-width paved street, per T10-15B.
 - c. Install City of Vancouver standard frontage improvements including curb, gutter, five-foot detached sidewalks, planting strips, streetlights, and ADA ramps, per T10-15B.
 - d. Install “No Parking – Fire Lane” signs at appropriate spacing on one side of the street.
 - e. Install a stop sign at the intersection with NE 16th Street to stop-control northbound traffic approaching the intersection. Also install a stop sign at the intersection with NE 14th Street to stop-control southbound traffic approaching the intersection.
 - f. Street lighting must be installed to current standards.
 - g. Utility trenching shall be restored per T05-04A&B and T05-05. Asphalt restoration shall meet T05-01A&B and T05-07. A single continuous width restoration is required.

- h. Install traffic control devices as warranted and storm drainage as required by the city stormwater ordinance.
 - i. At the south end of NE 121st Avenue, dedicate a 20-foot public bicycle/pedestrian tract across the west edge of Lot 7 to accommodate a future bike-ped path connecting this neighborhood southward to NE 9th Street.
- 32. The following improvements to NE 122nd Court must be provided, per the appropriate City of Vancouver standards:
 - a. Dedicate 46 feet full-width public right-of-way, per the conditions of the approved road modification.
 - b. Construct the full street section, consisting of a 28-foot paved street width, with curb, gutter, five-foot detached sidewalks, planting strips, streetlights, and ADA ramps, per T10-16 and the conditions of the approved road modification.
 - c. Construct cul-de-sacs at the ends of the dead-end streets. The minimum radius to the face of curb must be 35 feet.
 - d. Install “No Parking – Fire Lane” signs at appropriate spacing on one side of the street and around the cul-de-sacs.
 - e. Install stop signs at the intersection with NE 16th Street to stop-control northbound and southbound traffic approaching the intersection.
 - f. Street lighting must be installed to current standards.
 - g. Install traffic control devices as warranted and storm drainage as required by the city stormwater ordinance.
 - h. The areas of perpendicular parking shown on NE 122nd Court must be located within the abutting private HOA tracts, to be owned and maintained by the HOA. The parking areas must not be located within the public right-of-way.
- 33. The following improvements to NE 123rd Avenue must be provided, per the appropriate City of Vancouver standards:
 - a. Dedicate additional right-of-way as necessary to accommodate the required improvements and/or meet the standard, per T10-14.
 - b. Install City of Vancouver standard frontage improvements including five-foot detached sidewalks, planting strips, streetlights, and ADA ramps, per T10-14. The existing curb should be protected in place and repaired as necessary.
 - c. Street lighting must be installed to current standards.
 - d. Utility trenching shall be restored per T05-04A&B and T05-05. Asphalt restoration shall meet T05-01A&B and T05-07. A single continuous width restoration is required.
 - e. Install traffic control devices as warranted and storm drainage as required by the city stormwater ordinance.

34. The following improvements to the private streets must be provided, per City of Vancouver standards:
 - a. Dedicate an appropriate easement or tract at least 15 feet wide and install a minimum 12-foot-wide paved street surface, per T10-18. (The Applicant may increase the width of the street, if desired or if required by the Fire Department).
 - b. Construct a standard driveway approach to serve the private street, per T01-04.
 - c. If the paved street width is less than 28 feet, must install “No Parking – Fire Lane” signs on both sides of the street.
35. The Applicant shall also provide a shared access and maintenance agreement for the private streets to cover the cost of maintaining and operating street surface, signs and markings, and drainage system, as it applies to private streets and shared driveways. Any shared accesses shall be called out on the plat. The shared access and maintenance agreement shall be recorded on all parcels that are party to the private roadway. Shared access and maintenance agreements shall be provided prior to final subdivision approval.
36. Show, note, and specify public sanitary sewer easements over shared driveway tracts where required. Record separately or include standard required plat easement recording language and record with the plat.
37. A final summary report by the geotechnical engineer of record shall be prepared and submitted to the City of Vancouver that states that the project soils were prepared in accordance with the governing geotechnical report and construction documents. Provide a current report with lot specific conditions and compaction test results by final grading.

Notes Required on Plat

38. If any archaeological deposits are found during construction, work shall stop, and the City of Vancouver’s Community Development and the Washington State Department of Archaeology and Historic Preservation shall be notified.
39. All lots within this plat are subject to a specific tree plan on file with the City of Vancouver. Required trees shall be planted on a per lot basis prior to final occupancy. No tree within the plat shall be removed without a permit.
40. The Homeowners Association is responsible for maintenance of all open space tracts listed on this plat.

Prior to Issuance of any Building/Development Permits

41. All required fees, including transportation, school, and park impact fees shall be paid.
42. Building permits are subject to the narrow lot development standards of VMC 20.927.040.
43. Building permits are subject to the development standards of VMC 20.410.050.B.

44. Street and address signage shall be visible and legible from the street fronting the property for emergency response. If applicable, individual suite numbers shall be posted at the suite doors. Where applicable, apartment building designations shall be visible and legible from all potential fire lane approaches.
45. Required fire lane signage shall be installed.
46. All fire protection features identified as being required during the construction permit review shall be installed and approved prior to occupancy.
47. If a fire department Knox-Box was identified as a requirement during the construction permit review, it shall be installed at an approved location and locked with the required content.
48. Permanent vehicle gates crossing required fire lanes shall remain unlocked or open until approved by the Fire Department.
49. Conditions identified in the construction permit shall be met.
50. All requirements of the applicable fire and building codes and their referenced standards shall be met notwithstanding approved construction plans.
51. A report shall be submitted demonstrating adequate Emergency Responder Radio Coverage.

Prior to Occupancy

52. Install required street trees and landscape buffer plantings per VMC 20.925.030.E.

Issued December 5, 2023.

By:



Sharon A. Rice
City of Vancouver Hearing Examiner



Criminal Prosecution Services Update

Jonathan Young | City Attorney

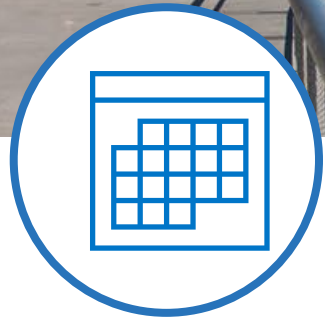
January 22, 2024





Background

Overview of recent equity-based criminal prosecution initiatives



eProsecutor

Convergence of climate, Lean Six Sigma, and equity initiatives



Next Steps

Criminal case metric reporting (2024)



Discussion

Confirmation of policy level alignment and future questions



Work to date



Previous equity-based initiatives of the City Attorney's Office:

- **DWS-III**
Creation of Driving While License Suspended Third Degree (DWS-III) Diversion Program
- **Substance Abuse**
Referral of qualifying substance abuse offenses to a pre-plea treatment alternative court
- **Asset Forfeiture Reform**
Self-initiated reform to protect constitutional rights before seizing property from drug crimes
- **Community Court**
Creation of a community court for low-level livability offenses committed while homeless
- **Reduced Diversion Fees**
Reduced Diversion Fees for indigent participants



eProsecutor

Implementation
Update

Climate Goal:

100% Paperless
Law Office

High Performing Government:

Lean/Six Sigma
Process Mapping

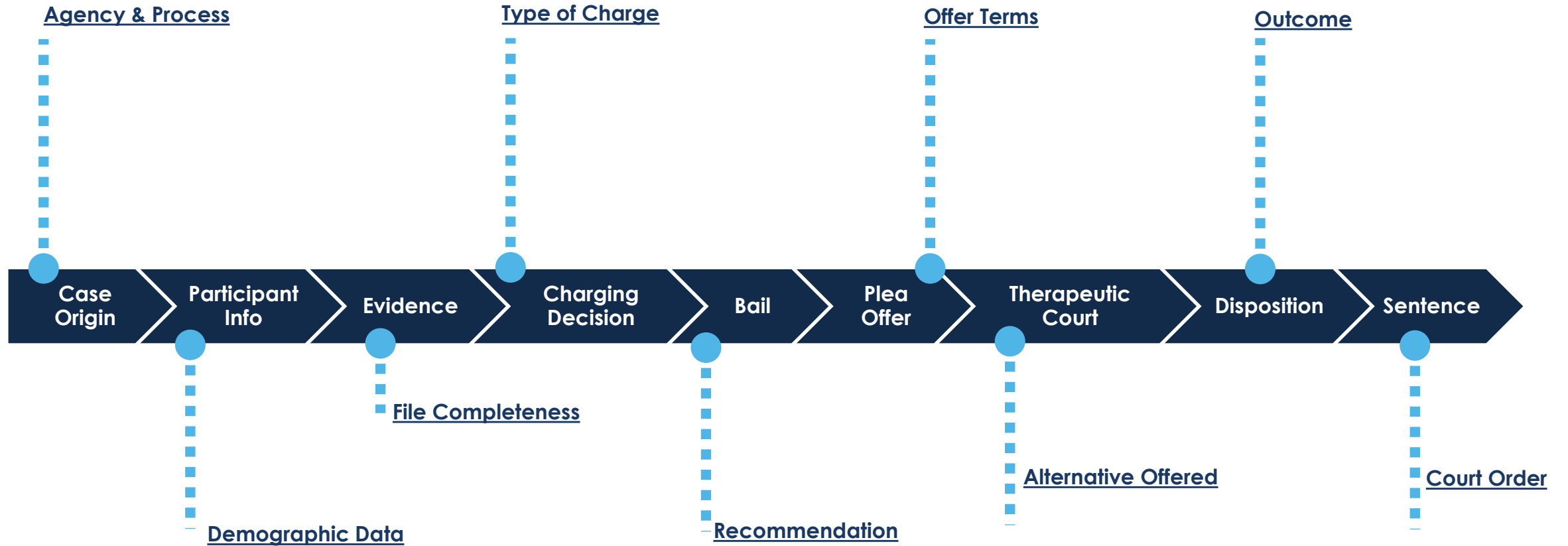
Social Justice and Equity:

(JEDI* Capstone)

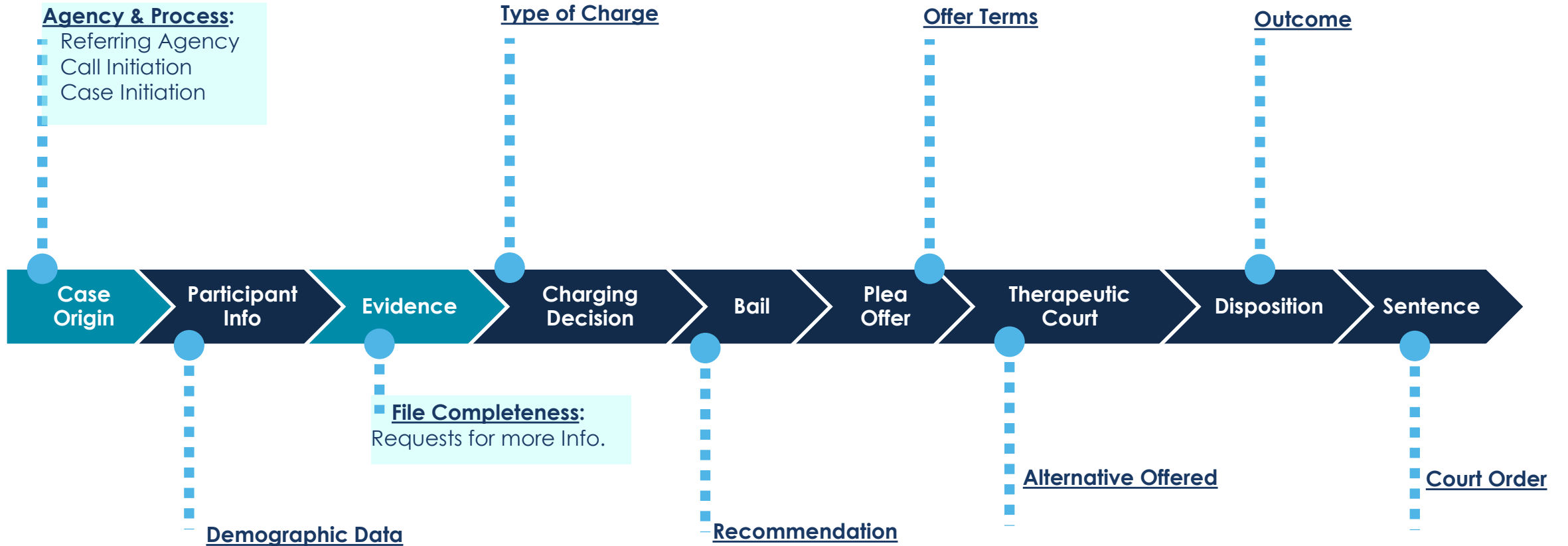
* City of Vancouver's Program:
Justice **E**quity **D**iversity **I**nclusion (**JEDI**)



Prosecutorial Discretion Metrics



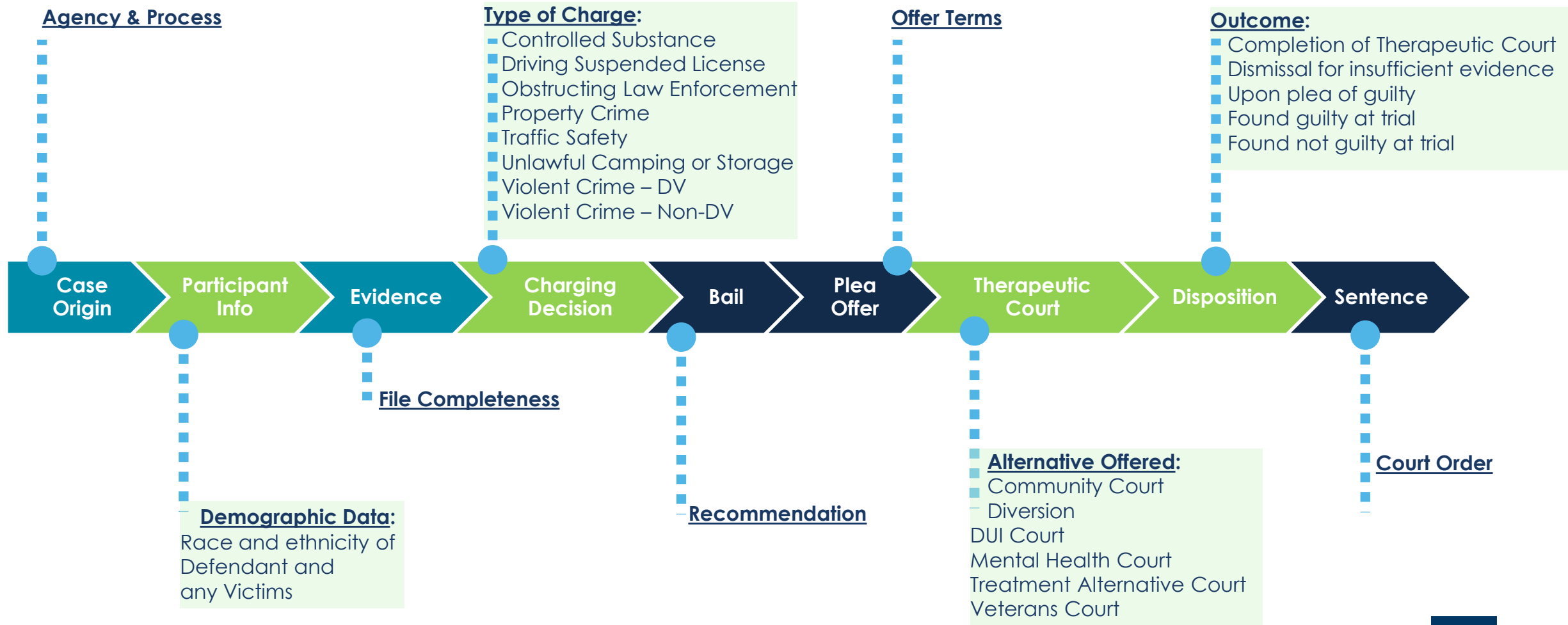
Prosecutorial Discretion Metrics



Tracking for Internal Training Purposes



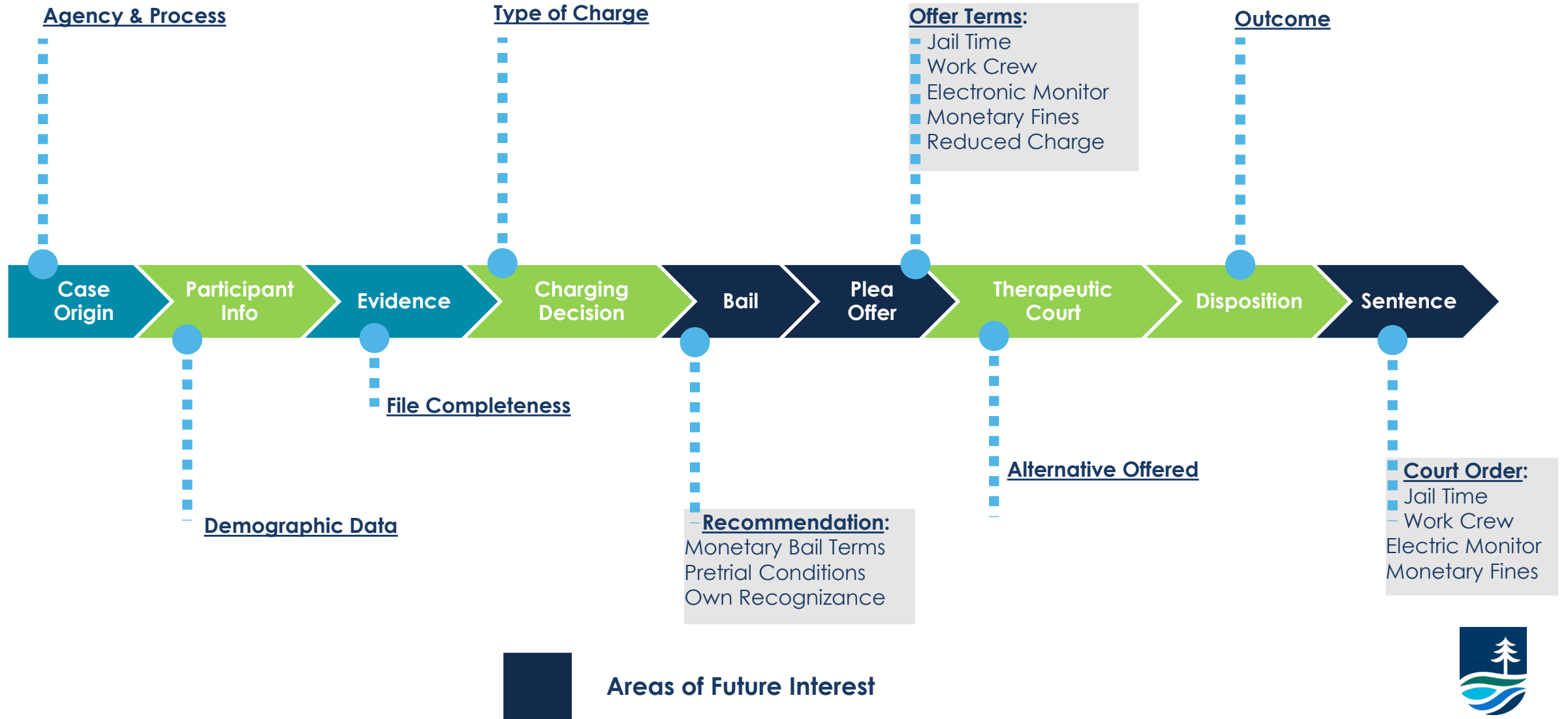
Prosecutorial Discretion Metrics



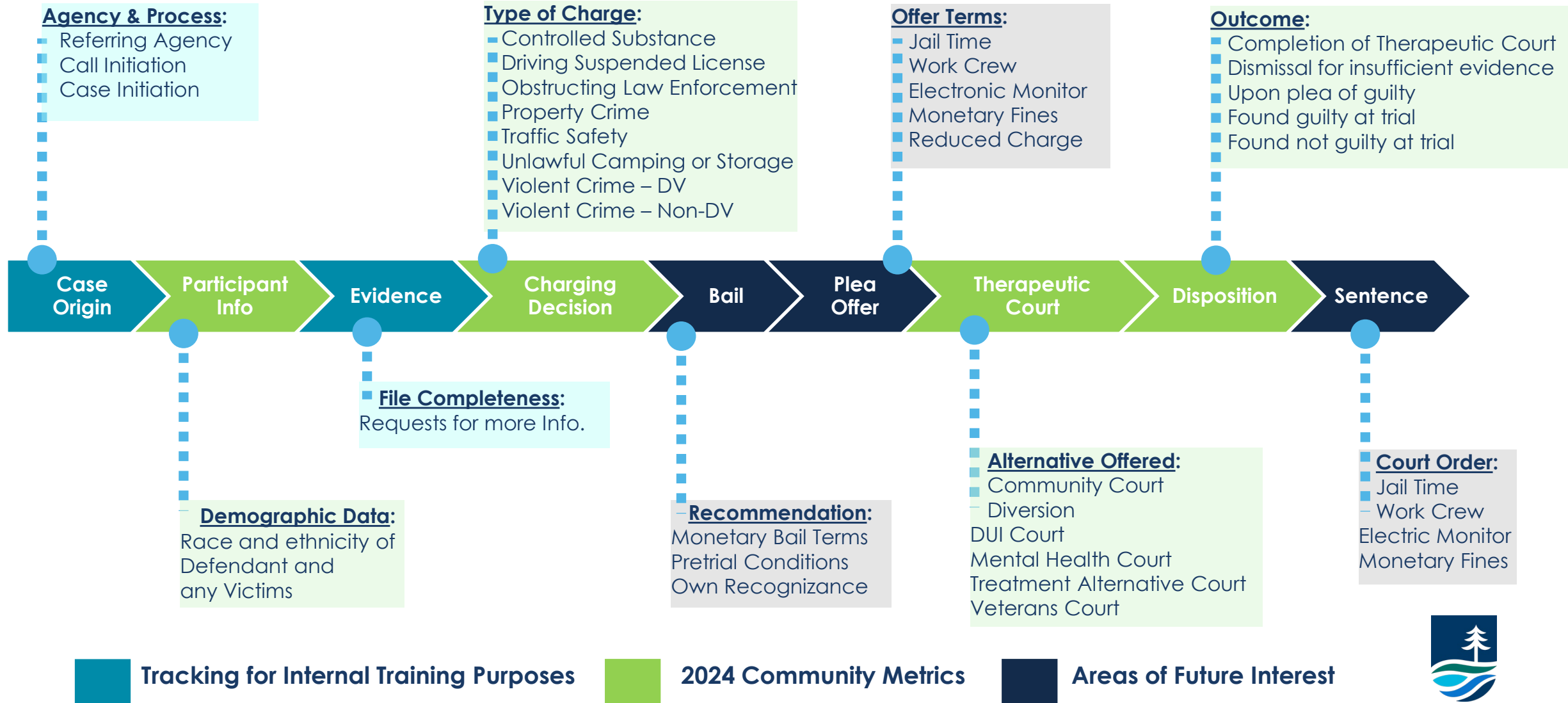
2024 Community Reporting Metrics



Prosecutorial Discretion Metrics



Prosecutorial Discretion Metrics



Vancouver Demographics per 2020 Census

Criminal Case Metrics Report (Publicly Available)

G Hispanic, Latino, or Spanish	H Unavailable	I Not Applicable
15.4		

Demographic by participant:

Defendant

Victims

Demographic of Defendant by type of criminal charge: (Measured at time of case opening)

Controlled Substance

Driving While License Suspended

Obstructing Law Enforcement

Property Crime

Traffic Safety

Demographic of Defendant by type of therapeutic court program offered: (Measured at time of case closure)

Community Court

Diversion

DUI Court

Mental Health Court

Treatment Alternative Court

Veterans Court

Demographic of Defendant by case outcome: (Measured at time of case closure)

Therapeutic alternative completed

Voluntary dismissal due to inability

	A White	B Black or African American	C American Indian and Alaska Native	D Asian	E Native Hawaiian and Pacific Islander	F Two or more races	G Hispanic, Latino, or Spanish	H Unavailable	I Not Applicable
Vancouver Demographics per 2020 Census	73.5	2.7	0.6	5.4	1.6	11.1	15.4		
Demographic by participant:									
Defendant									
Victims									
Demographic of Defendant by type of criminal charge: (Measured at time of case opening)									
Controlled Substance									
Driving While License Suspended									
Obstructing Law Enforcement									
Property Crime									
Traffic Safety									
Unlawful Camping or Storage									
Violent – DV									
Violent – Non-DV									
Other Offense									
Declined to Prosecute									
Demographic of Defendant by type of therapeutic court program offered: (Measured at time of case closure)									
Community Court									
Diversion									
DUI Court									
Mental Health Court									
Treatment Alternative Court									
Veterans Court									
Demographic of Defendant by case outcome: (Measured at time of case closure)									
Therapeutic alternative completed									
Voluntary dismissal due to inability to prove beyond reasonable doubt									
Plead guilty to one or more charge									
Found guilty at trial									
Found 'not guilty' at trial									





Policy Questions

Now:

Seeking confirmation of policy-level alignment.

With the benefit of qualitative and quantitative data in future years:

- What are the City of Vancouver's community safety priorities?
- Are the City's allocation of prosecution resources advancing these priorities?
- Are there any additional inputs that would aid future policy makers in making these decisions?



Thank You



Questions / Feedback:

city.attorneyemails@cityofvancouver.us
360.487.8500





TO: Mayor McEnery-Ogle, Vancouver City Council

CC: Eric Holmes, City Manager

FROM: Jonathan Young, City Attorney

DATE: January 22, 2024

RE: Criminal Prosecution Update

BACKGROUND

The Vancouver City's Attorney's Office is committed to advancing its understanding of who is, and who is not, benefitting from the institutions our society has created. We seek opportunities to lawfully balance inequities that have long existed and repair imperfections in our systems. Over just the past four years, the City Attorney's Office has made numerous tangible changes in service to this commitment, including:

- ✓ DWS-III: Creating a Driving While License Suspended Third Degree (DWS-III) Diversion Program;
- ✓ Substance Abuse: Referring qualifying substance abuse offenses to a pre-plea treatment alternative court;
- ✓ Asset Forfeiture Reform: Allowing individuals accused of drug offenses to fully assert their constitutional rights before seizing personal property used in drug transactions;
- ✓ Community Court: Creating a community court for low-level livability offenses committed by individuals experiencing unsheltered homelessness;
- ✓ Reduced Diversion Fees: Reducing Diversion Fees to a flat-rate fee of \$50 for indigent program participants.

What's next? Regrettably, in many communities, public understanding of one of government's most impactful systems – prosecution services – has long been obscured by complex jargon-laden processes, paper-driven systems, and incomplete recordkeeping. As a result, the Vancouver City Attorney's Office is committed to bringing transparency to the work done by its prosecutors.

On January 22, 2024, the Vancouver City Attorney's Office is scheduled to launch a new, electronic case management system called [eProsecutor](#). In doing so, the City Attorney's Office will be positioned to begin studying the impacts of decisions made, and actions taken, by its criminal prosecution division. The purpose of this memorandum is to share:

- An update on work that has been done to improve the efficiency and transparency of the City's Prosecution services;
- The benefits that thoughtful collection of demographic data stands to deliver for the Vancouver community over the months and years ahead;
- A description of the types of data the Vancouver City Attorney's Office will begin collecting on January 22, 2024, as well as an explanation of how that data will be used; and
- Plans for next-steps in sharing and using the data collected by the Vancouver City Attorney's Office to improve the delivery of prosecution services.

IMPROVED EFFICIENCY AND TRANSPARENCY

In order to bring clarity to the City's prosecution systems and processes (and scale for growth over the years ahead), during the 2023 calendar year, representatives from each position on the City's Prosecution Team participated in a multi-day process mapping exercise. During this process, Lean/Six Sigma methods were used to clarify the life cycle of a standard prosecution case, and then, identify inefficiencies, reduce redundancies, and untangle overlapping duties that have historically impaired the efficiency of the City's prosecution work. Building upon these exercises, the City Attorney's Office has capitalized on some 'early wins' to save time and taxpayer dollars, and also set in motion some more significant, longer-term changes:

Early Wins The City's 2023 process mapping exercise revealed that unnecessary steps and inconsistent practices from one attorney to the next were causing support staff unnecessary stress and wasting valuable time. To remedy these problems, the City Attorney's Office simplified and standardized some of its most common activities:

- ✓ **Simplified Forms**: The City's 2023 process mapping work revealed that, in every criminal case, support staff were being required to take extra steps to prepare the City's "Omnibus" forms (one of the City's most commonly used forms that discloses, to the Court and the defense, the types of issues that may require resolution prior to trial). Extra steps were being taken to add the name and bar number of each individual Assistant City Attorney assigned to each case. Following the City's process mapping work, the Prosecution Team quickly agreed that, moving forward, all forms should simply reflect the City Prosecutor's name and bar number at the bottom. This was a very small change, but it demonstrated that the Lean process could result in time-saving benefits for staff. At an average of 3200-4000 cases per year, this tiny

change has already alleviated needless ‘busy work’ and saved time that can be better spent on more impactful tasks.

- ✓ Standardized Processes: A more significant ‘early win’ was the recognition of the adverse impacts that were being caused as the result of inconsistent docket preparation practices used from one Assistant City Prosecutor to the next. The City’s 2023 process mapping effort revealed that over the life cycle of a standard criminal prosecution case, the most commonly repeated activity is to prepare a case to be considered on a court docket.^{FN1} The City’s 2023 process mapping efforts revealed that each Assistant City Prosecutor has historically prepared for these hearings slightly differently. These differences (albeit minor) caused considerable extra work for legal support staff. As a result, the City Attorney’s Office has now prepared a standardized ‘Docket Preparation and Docket Return’ form that is used by every attorney in every case. This change has increased consistency as well as the speed and accuracy with which cases are prepared for hearings.

More Significant Changes

- ✓ Decentralization of Charging Decisions: For over a decade, all cold referrals on non-domestic violence (non-DV) cases have been charged by the City Prosecutor. Following the City’s process mapping efforts, a decision was made to decentralize the responsibility for making these charging decisions. Notably, this change will allow the City Attorney’s Office to scale for growth over the years ahead. It also empowers Assistant City Prosecutors to use their knowledge, skill and abilities to make well-reasoned charging decisions. To ensure consistency in the methodology used to screen and evaluate cases, the City’s Prosecution Team has also added two important ‘checks & balances’ in tandem with this effort: (1) an effort to normalize conversations about implicit bias by making the topic of implicit bias part of its monthly all-staff meetings; and (2) implementing demographic data reporting which will be prepared using data from the City’s new eProsecutor system. (More on this topic below.)
- ✓ Roles, Duties, Timelines Policy: The City’s process mapping effort also revealed numerous redundancies, ambiguities, and inconsistencies in the process used to prepare cases for trial. To address these issues, the department has created a policy outlining the most common roles, duties, and timelines associated with work performed by Assistant City Prosecutors, Legal Assistants, and Legal Secretaries. This policy has undergone several rounds of edits and will become effective in tandem with the City’s go-live date of its new eProsecutor system on January 22, 2024.

^{FN1} A single case will typically appear on multiple court dockets between its initiation and conclusion. Court dockets are held to assess the adequacy of charges, the plea of the defendant, and any pretrial conditions of release (Arraignment Hearing), disclose the range of issues that require resolution prior to trial and set the case for trial if it has not resolved in the weeks after arraignment (Mandatory Pretrial/Omnibus Hearing), evaluate the status of pretrial discovery and determine whether the parties are ready to proceed to trial (Readiness Hearing), determine priority of trials scheduled on the same day and conduct a final confirmation that a case is proceeding to trial (Supplemental Readiness Hearings).

Future Advancements

There are also two significant efforts that remain actively under development:

- ❑ **On-going Training on Roles, Duties and Timelines:** The City Prosecution Team's 2024 Goals include having each Assistant City Prosecutor prepare a videotaped training for their peers in the Criminal Prosecution Division. These videos will each teach one aspect of CAO job duties. The videos will then be uploaded to the City's Workday and will be available on-demand for future training needs.
- ❑ **Criminal Case Calendar with Automated Updates:** Following the launch of the City's eProsecutor system on January 22, 2024, the City Attorney's Office is scheduled to begin working with the City's Information Technology Department to design a public-facing criminal case calendar that will be accessible from the City's website. This public-facing calendar will allow victims and witnesses to check the date, time and place that their matter is scheduled to proceed to trial. The City Attorney's Office also plans to evaluate technology solutions that allow the City to update witnesses on developments in their case via text message. (Similar to updates provided by most restaurant reservation systems.)

In the meantime, the City Attorney's Office is also interested in beginning to track the demographic data (race and ethnicity) of the participants in the City's prosecution cases using the new eProsecutor platform that will be launched on January 22, 2024.

MAKING THE CASE FOR DATA COLLECTION

In the 2017 Harvard Law Review commentary "[The President's Role in Advancing Criminal Justice Reform](#)" Barack Obama observed that data driven solutions are a key to advancing criminal justice reforms at state and local government levels. (130 Harv. L. Rev. 811, 848.) In New York, an organization called the [VERA Institute of Justice](#) agrees. The VERA Institute was founded in the 1960's in opposition to bail practices that disproportionately burdened the poor. In response, the VERA Institute launched what was known as the 'Manhattan Bail Project,' an effort to demonstrate that the attendance of arrestees with strong ties to the community could be secured without imposing cash bail.

Today, the VERA Institute still exists, but has broadened its mission to confront systemic racism throughout the justice system. The VERA Institute argues that "One of the ways that prosecutors can cause harm, whether intentionally or unintentionally, is by believing that they know what will make communities safe and thriving, particularly Black communities and other communities of color, as well as other marginalized communities that they themselves may not be deeply

connected to or engaged with outside of the courtroom.”^{FN2} To help prosecutors engage with their communities and find those answers, the [VERA Institute](#) in partnership with the [Institute for Innovation in Prosecution at John Jay College](#) has provided a [List of Recommended Action Steps for Prosecutors](#):

- (a) Engage: Be accountable to the most impacted communities;
- (b) Analyze: Collect data on disparities and understand their systemic causes;**
- (c) Educate: Teach racial justice principles to future lawyers to sustain reforms;
- (d) Train: Instill prosecutors with core values and practices;
- (e) Decline: Reduce the reach of the criminal justice system;
- (f) Divert: Pursue restorative responses to harm;
- (g) Refrain: Treat convictions and incarceration as a last resort;
- (h) Remedy: Repair past harms from reliance on convictions and incarceration;
- (i) Advocate: Seek sustainable change through legislative reforms;
- (j) Divest: Cede power and resources to impacted communities.

Over the course of the 2023 calendar year, a representative from the Civil Division of the Vancouver City Attorney’s Office participated in a “JEDI” (Justice Equity Diversity Inclusion) initiative led by the City’s Office of Equity and Inclusion. The JEDI Capstone Project produced from that program recommended that the Vancouver City Attorney’s Office take immediate steps to integrate the work of the VERA Institute into the City’s criminal prosecution practices by beginning to collect race and ethnicity data on participants to its criminal prosecution cases. Doing so will allow the City to consider quantitative data about criminal prosecution efforts over the months and years ahead.^{FN3}

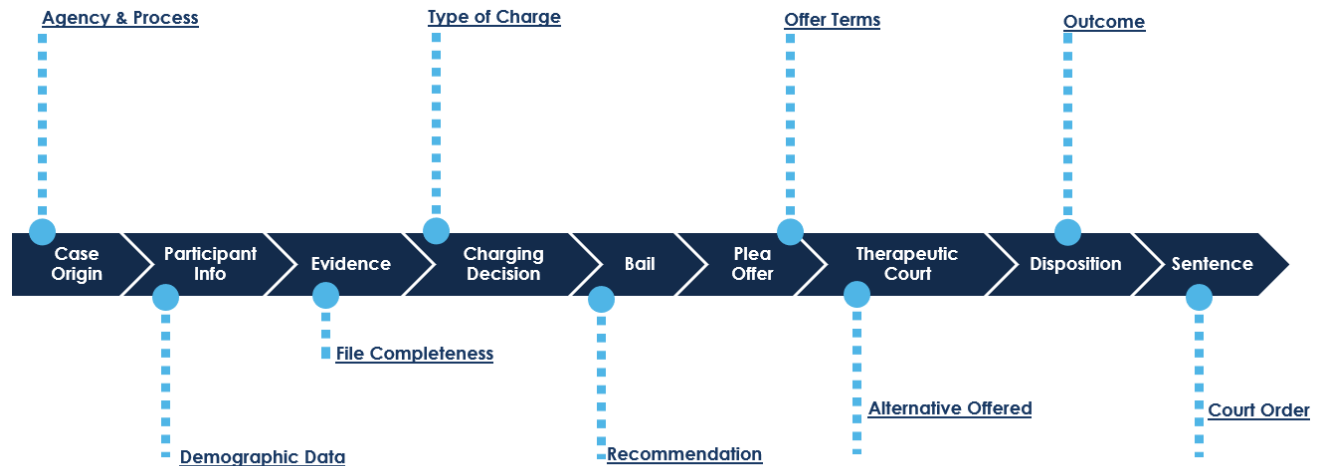
TYPE AND PURPOSE OF DATA COLLECTED

Building upon work of the [VERA Institute](#), the Vancouver City Attorney’s Office is interested in tracking the race and ethnicity of participants in the cases referred to the City Attorney’s Office for criminal prosecution. It should be noted at the onset that the purpose of this effort is not “police reform” but rather, an introspective effort to examine how the City Attorney’s Office delivers prosecution services to the community we serve. To this end, the City Attorney’s Office has asked the City’s Information Technology Department and Journal Technologies to program the City’s eProsecutor system in a manner that will allow staff to run reports containing the data fields containing the race and ethnicity of justice system participants (victims and defendants) at key moments in a prosecution case – specifically, those moments when prosecutors exercise the greatest degree of discretion.

^{FN2} Retrieved January 7, 2024 from: <https://motionforjustice.vera.org/action-steps>

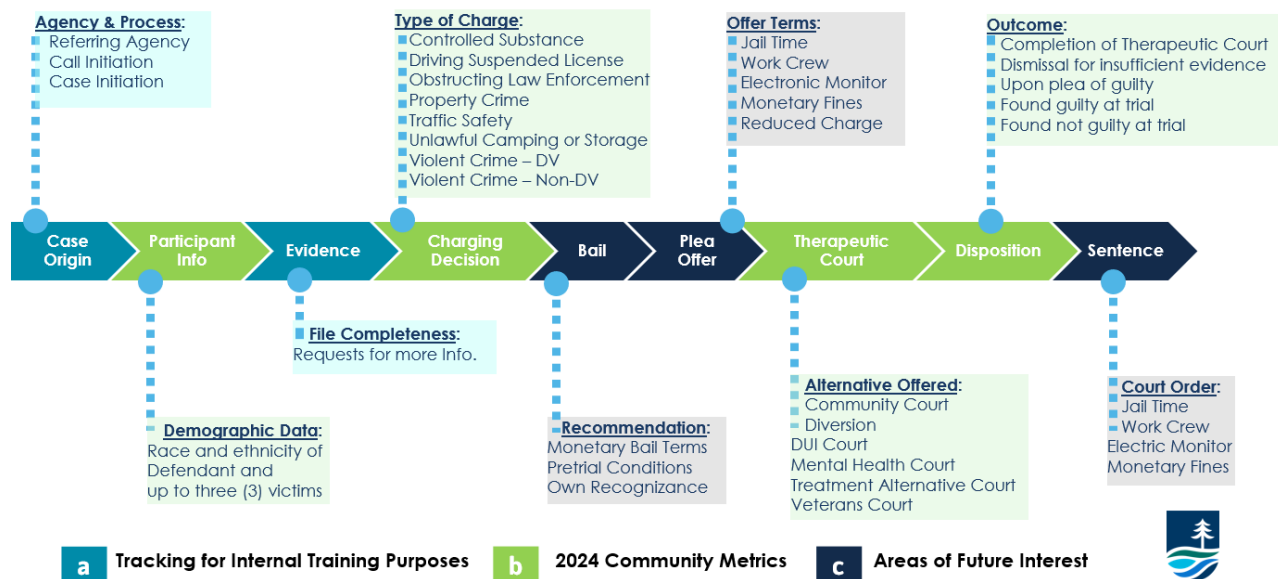
^{FN3} The JEDI Capstone Project also recommended that the City Attorney’s Office explore federal grant opportunities that might be used to hire volunteers to gather *qualitative* information from justice system participants via surveys. Such efforts could be used to explore experiences of individuals through a broader lens than just race and ethnicity. For instance, hearing from community members who identify as having one or more disabilities, LGBTQI2+, members of non-dominant religious groups, or non-native English speakers.

Figure 1 below depicts the inputs, outputs, and key moments in a prosecution case during which prosecutors exercise a high degree of discretion.



↑ **Figure 1**

Figure 2 below depicts the specific data fields that the City Attorney's Office is interested in tracking. The color coding indicates whether the City Attorney's Office is interested in gathering data **a** for internal training purposes, **b** to share with policy makers and the community, or **c** at some point in the future:



↑ **Figure 2**

Naturally, the decision to begin tracking the race and ethnicity of justice system participants can raise a number of questions:

- * **Why Now?** From a timing standpoint, this moment is opportune for several reasons. Over the past year, the City's Prosecution Team has conducted a series of Lean process improvement exercises to increase the efficiency with which prosecution services are delivered. A core recommendation of this effort was to decentralize charging decisions – which have historically been made by the City Prosecutor – to multiple Assistant City Prosecutors. A decentralized charging process stands to increase efficiency and ensure that the City Attorney's Office is prepared to scale for projected growth over the next decade. However, it also comes with a corresponding need to emphasize consistency in the way that Assistant City Prosecutors evaluate cases.

As referenced above, it is worth reiterating that the Prosecution Team has begun using recurring team meetings to normalize conversations about implicit bias to increase awareness of the role that bias can play in making discretionary decisions on prosecution cases. It also warrants noting that review of charging process historically used by the City of Vancouver identified many areas that were consistent with nationally recognized 'best practices' from an equity standpoint. For instance, Vancouver has historically made charging decisions about a pending referral **before** pulling any available criminal history information about defendants. This practice has ensured that a history of justice system contacts⁴ do not influence future charging decisions. While evaluating potential efficiencies that can be gained in the screening / charging process, the City's Prosecution Team has been careful to maintain these 'best practices' even where marginal increased efficiencies may be left unrealized.

The other key timing consideration is the City's upcoming implementation of [eProsecutor](#) system by Journal Technologies, Inc. The City's journey to select a Criminal Case Management System (CCMS) vendor started over five years ago and was originally envisioned solely a means to increase efficiency in the delivery of prosecution services. However, as responses to the City's Request for Proposal (RFP) were rated, it quickly became apparent that a CCMS system with a high degree of customization could be harnessed as a valuable information tool with a nexus to the City's commitment to advancing equity. As a result, funding for the eProsecutor system was requested, and approved, by City Council on July 18, 2022.

- * **How will this data be used?** Specifically, community members may legitimately wonder whether race and ethnicity data tracked by the City Attorney's Office will be used to set "quotas" or determine how an individual case is handled? The answer to this is: **No**.

⁴ The Washington State Supreme Court has observed that "implicit, institutional, and unconscious biases, in addition to purposeful discrimination," have resulted in disproportionate justice system contacts with Black, Indigenous, and other People of Color (BIPOC) in Washington. *State v. Sum*, 199 Wn.2d 627, 631, 511 P.3d 92, 97 (2022).

Nationally recognized standards, state and federal laws, Washington court rules, and the rules of professional conduct for attorneys guide the City's decisions to bring or maintain charges in any specific case. Rather, the purpose of collecting demographic data (race and ethnicity) is to inform future program decisions made by the Law Management Team, as well as policy-level recommendations made to the Vancouver City Council.

For example, if demographic data collected by the City Attorney's Office reveals that a particular therapeutic court program (e.g., Community Court) is seldom used by members of a particular demographic, then the Law Management Team might work to understand whether there is some type of barrier preventing members of that race or ethnicity from enjoying the full benefits of the City's program. Possible program changes (e.g., moving the location across town, or changing the time of day) may be explored to provide more equitable access to the City's services.

- * **Where is this data coming from?** The demographic data that will be tracked and studied by the City Attorney's Office will be supplied by law enforcement. Demographic data will be imported into the City's eProsecutor system from data fields prepared by law enforcement officers when filling out police reports. Admittedly, the demographic assigned to someone by law enforcement may not correspond perfectly to individuals' self-identified race and ethnicity. However, as noted by the VERA Institute, there can be value in considering the race and ethnicity that law enforcement *perceives* an individual to be – regardless of whether that perception differs from the individual's self-identified race or ethnicity.
- * **When will this information be available for the community to see?** As with implementation of every new piece of technology, the City is bracing for the possibility that go-live may be accompanied by unforeseen challenges. However, the City plans to begin validating the demographic data collected through eProsecutor immediately and running test reports in February and March, 2024. The City's goal is to be in a position to publish at least one month of community-facing data by May 2024.

The City Attorney will report back to City Council on the implementation of this data collection effort. Eventually, if this demographic information proves to be of value to City Council and the community, the City Attorney's Office intends to request budget authority to build a data dashboard to report demographic data in real time on the City's website.

- * **Whose demographic information will be collected?** The City Attorney's Office plans to collect demographic data regarding both the defendants charged with crimes as well as victims who are affected by each case. We are interested in considering not only who we are prosecuting but for whom we are seeking, and obtaining, justice. It warrants mentioning that not all cases will have victims (e.g., DUI), nor do all victims have demographic data (e.g., theft in which the victim is a corporation). Therefore, in numerous cases, victim demographic data may not be applicable.

* **How will demographic information be reported?** Demographic data collected by the City Attorney's Office will be reported in a manner comparable to the demographic fields populated by the United States Government in reporting **Census Data**.⁵ The City will be working to align its data fields with those already available to serve as a baseline for our community. The [2020 Census](#) notes that the concept of race is separate from the concept of Hispanic origin, and reports on demographic information according to the following fields:

- A. **White.** A person having origins in any of the original peoples of Europe, the Middle East, or North Africa. It includes people who indicate their race as "White" or report responses such as German, Irish, English, Italian, Lebanese, and Egyptian. The category also includes groups such as Polish, French, Iranian, Slavic, Cajun, Chaldean, etc.
- B. **Black or African American.** A person having origins in any of the Black racial groups of Africa. It includes people who indicate their race as "Black or African American," or report responses such as African American, Jamaican, Haitian, Nigerian, Ethiopian, or Somali. The category also includes groups such as Ghanaian, South African, Barbadian, Kenyan, Liberian, Bahamian, etc.
- C. **American Indian and Alaska Native** A person having origins in any of the original peoples of North and South America (including Central America) and who maintains tribal affiliation or community attachment. This category includes people who indicate their race as "American Indian or Alaska Native" or report entries such as Navajo Nation, Blackfeet Tribe, Mayan, Aztec, Native Village of Barrow Inupiat Traditional Government, or Nome Eskimo Community.
- D. **D. Asian.** A person having origins in any of the original peoples of the Far East, Southeast Asia, or the Indian subcontinent including, for example, India, China, the Philippine Islands, Japan, Korea, or Vietnam. It includes people who indicate their race as "Asian Indian," "Chinese," "Filipino," "Korean," "Japanese," "Vietnamese," and "Other Asian" or provide other detailed Asian responses such as Pakistani, Cambodian, Hmong, Thai, Bengali, Mien, etc.
- E. **Native Hawaiian and Other Pacific Islander.** A person having origins in any of the original peoples of Hawaii, Guam, Samoa, or other Pacific Islands. It includes people who indicate their race as "Native Hawaiian," "Chamorro," "Samoan," and "Other Pacific Islander" or provide other detailed Pacific Islander responses such as Palauan, Tahitian, Chuukese, Pohnpeian, Saipanese, Yapese, etc.

⁵ Acknowledgement is owed to DEI Practitioners Rob Hadley and Aparna Rae (2023 Northwest Public Employees' Diversity Conference – "*The Dos and Don'ts of DEI Data, Metrics and Reporting*") who encourage practitioners to report demographic data in a manner that allows readers/users to draw cohesive inferences and conclusions.

- F. Two or more races.** People may choose to provide two or more races either by checking two or more race response check boxes, by providing multiple responses, or by some combination of check boxes and other responses. The race response categories shown on the questionnaire are collapsed into the five minimum race groups identified by OMB, and the Census Bureau's "Some Other Race" category. For data product purposes, "Two or More Races" refers to combinations of two or more of the following race categories: White, Black or African American, American Indian or Alaska Native, Asian, Native Hawaiian or Other Pacific Islander, or Some Other Race.
- G. Hispanic / Latino / Spanish:** The terms "Hispanic," "Latino," and "Spanish" are used interchangeably. Some respondents identify with all three terms while others may identify with only one of these three specific terms. People who identify with the terms "Hispanic," "Latino," or "Spanish" are those who classify themselves in one of the specific Hispanic, Latino, or Spanish categories listed on the questionnaire ("Mexican, Mexican Am., or Chicano," "Puerto Rican," or "Cuban") as well as those who indicate that they are "another Hispanic, Latino, or Spanish origin." People who do not identify with one of the specific origins listed on the questionnaire but indicate that they are "another Hispanic, Latino, or Spanish origin" are those whose origins are from Spain, the Spanish-speaking countries of Central or South America, or another Spanish culture or origin. Origin can be viewed as the heritage, nationality group, lineage, or country of birth of the person or the person's parents or ancestors before their arrival in the United States. People who identify their origin as Hispanic, Latino, or Spanish may be of any race.

Not included within 2020 Census but included in the City's eProsecutor system:

- H. No race / ethnicity information available.** While law enforcement reports are formatted to allow for tracking of race and ethnicity, it is foreseeable that some reports may not include all desired information. Therefore, for purposes of the City Attorney's Office eProsecutor tracking effort, the City Attorney's Office has asked to add a column to accommodate cases that lack race and ethnicity information.
- I. Not applicable.** Recognizing that not all crimes have an identifiable victim (e.g., DUI), and not all victims have demographic data (e.g., theft from a corporation), the City Attorney's Office has asked to add a column to accommodate cases in which race and ethnicity of the victim is not applicable.
- * **What data does the City plan to share with the community?** The City Attorney's Office intends to begin sharing the demographic data contained in Table A (below) with City Council and the community. The City's goal is to have a sample of one month's data prepared by May 2024.

