



Transportation and Mobility Commission Meeting Agenda

April 7, 2026
4:00 PM

City Hall Aspen Room

415 W. 6th Street, Vancouver, WA

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Dial: +1 347-941-5324

Meeting ID: 294 332 749 305 67

1. Call to Order and Roll Call

2. Approval of Minutes

Adoption of Minutes – March 3, 2026

3. Workshop

2025 Complete Streets Project Design Alternatives 72nd Ave, 86th/ 87th, 97th/ 98th Ave Projects | Emily Benoit, Senior Transportation Planner | Adam Argo, Principal Transportation Planner | Maggie Derk, Senior Transportation Planner | Matt Hinshaw, Senior Civil Engineer

4. Break 6:00 – 6:30 pm

5. Community Forum

To provide public testimony, please see instructions below.

6. Public Hearing

192nd Ave Complete Streets Public Hearing | Ivar Christensen, Senior Civil Engineer | Bruce Haunreiter, Consultant PM | Lauren Garetto, Public Engagement PointNorth

Members

Jeananne Edwards, *Chair*
Ken Williams, *Vice Chair*

Thinh Phan

Mario Raia

Devan Williams

Isaac Hamann

Melanie Katz

Russell Malburg

Michelle Holder

Jay Housgard

Community Development Department

415 W. 6th Street
P.O. Box 1995 Vancouver, WA
98668 360-487-7800
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7. Staff and Commissioner Communications

Adjournment

Community Forum Instructions

The public is invited to speak regarding any issue. Members of the public testifying are asked to limit testimony to three minutes. There are three ways to provide comments:

1. In Writing: Public comments can be submitted in writing (name, address, contact information and comments) via email to TMC@cityofvancouver.us by noon on the day of the meeting.
2. Remotely: Complete the [online form](#) before noon the day of the meeting and join via phone or Teams (details on each agenda). Staff will call on you to speak when it's your turn.
3. In Person: Complete the [online form](#) before noon the day of the meeting or a speaker request form in person prior to the start of the Community Forum portion of the meeting.

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To request accommodation or other formats, please contact:

Community Development Department | 360-487-7813 | TTY: 711 | TMC@cityofvancouver.us

Meeting Minutes

Tuesday, March 3, 2026

4:00 p.m.

City Hall Aspen Room

The meeting was called to order at 4:05 p.m.

Commission Members Present: Jeananne Edwards, Ken Williams, Tinh Phan, Mario Raia, Devan Williams, Isaac Hamann, Melanie Katz (arrived 4:54pm), Russell Malburg, Michelle Holder, Jay Housgard

Staff Present: Kate Drennan, Transportation Planning Manager; Philip Gigler, Assistant City Attorney and Transportation and Mobility Commission staff attorney, Maricsa Acosta, Support Staff.

Motion by Vice Chair Ken Williams, seconded by Commissioner D. Williams to approve February 3, 2026, meeting minutes. Motion was carried unanimously with one abstention from Commissioner Holder, who was absent on February 3rd.

Before the workshop, Commissioner Hamann raised concerns regarding an email received on February 16 from a member of the public. The email criticized the Commission’s work and included a statement suggesting commissioners had “blood on their hands.” Commissioner Hamann noted that the message was alarming, made him feel uneasy, and asked how such situations should be handled.

Staff explained that the email had been shared with the City’s risk manager, who has previously presented to the Commission on safety protocols. Staff emphasized that messages of this nature are routinely reported to risk and safety staff so they can be documented and addressed if necessary. In this case, the message was shared for awareness with department leadership, and no further action was requested.

Workshop: Main Street Promise

Presenters: Ryan Lopossa, Transportation Manager | Julie Aarons, Business Retention Program Manager

Staff provided a comprehensive update on the Main Street Promise project, highlighting the project’s background, design development, construction progress, and business support strategy. The project aims to reconstruct a deteriorating section of Main Street into a safer, pedestrian-focused corridor while maintaining multimodal access. Funding for the \$20+ million project comes from the American Rescue Plan Act (ARPA), transportation, utility, and other City funds.

Members

Jeananne Edwards
Chair

Ken Williams
Vice Chair

Tinh Phan

Mario Raia

Devan Williams

Isaac Hamann

Melanie Katz

Russell Malburg

Michelle Holder

Jay Housgard

The project is guided by goals to improve safety, accessibility, and multimodal connectivity, support downtown businesses and strengthen connections between key destinations. Planning and design began in 2022, with construction starting in 2025. Phase 1, which included major underground utility work, was completed in 2025. Phase 2 focuses on surface improvements such as paving, sidewalks, lighting, and streetscape elements, with substantial completion anticipated by the end of 2026.

Key Themes & Highlights

- **Pedestrian Experience & Safety:** A curbless street design and enhanced streetscape elements prioritize pedestrians while maintaining multimodal access.
- **Infrastructure Renewal:** The project balances urban design improvements with critical infrastructure upgrades, including sidewalks, lighting, water, and sewer systems.
- **Flexible Public Space:** Improvements designed to accommodate events & evolving uses, creating adaptable and inviting public space.
- **Community Engagement:** Extensive input shaped the project through open houses, advisory groups, boards and commissions, and collaboration with the Vancouver Downtown Association.
- **Business Retention & Support:** Ongoing efforts include communication, outreach, marketing support, grants, mentorship programs, and tools such as a block captain program, “Coffee Corner” meetings, and an online resource map. A contractor liaison helps coordinate and resolve issues.
- **Economic Recovery:** Efforts aim to sustain businesses during construction and support long-term downtown success.

Next Steps

- Complete Phase 2 surface and streetscape improvements through 2026.
- Continue engagement and support for businesses throughout construction.
- Monitor project impacts and gather feedback from public & stakeholders.
- Leverage completed improvements to enhance downtown connectivity, safety, & economic vitality.

Commission Questions & Staff Responses

Commissioner D. Williams provided positive feedback on the Main Street Promise project, noting that completed blocks feel brighter, more open, and create a different energy along the corridor. He acknowledged concerns raised by some business owners regarding construction impacts and expressed appreciation for staff efforts to support businesses during the project.

Q: How are planned utility disruptions, such as water shutoffs, communicated to businesses, and has communication improved over time? Staff explained that planned utility disruptions are scheduled in advance with businesses typically notified several days prior, and work is coordinated block-by-block with adjustments made as needed. While unplanned disruptions can occur due to aging infrastructure, staff work quickly to notify affected businesses and restore service. Ongoing communication has improved through targeted updates based on weekly contractor schedules, with more frequent outreach to actively impacted areas, though some independent utility work may not always be known in advance.

Commissioner D. Williams emphasized the importance of continued education for business owners on the long-term benefits of a pedestrian-oriented corridor, including increased foot traffic. He noted considerations for the use of speed humps, the importance of programming and events after construction, and strategies to activate the corridor and strengthen connections between Main Street, Esther Short Park, and the waterfront.

Commissioner Raia

Q: What efforts are being made to encourage existing businesses and property owners to improve their storefronts to match the upgraded streetscape? Staff explained that while façade improvements are ultimately the responsibility of property owners, the City and the Vancouver Downtown Association offer programs and grants, such as façade improvement and “Clicks and Bricks” grants, to encourage upgrades. Staff also noted that the project has already encouraged some businesses to make improvements as streetscape enhancements become visible.

Q: How might the Main Street improvements affect activity at the waterfront and the relationship between the two areas? Staff noted that one of the project’s primary goals is to strengthen connections between the waterfront, downtown, Uptown Village, and other nearby destinations. Staff expressed hope that the improvements will help draw more visitors to Main Street and complement activity already occurring at the waterfront.

Q: What marketing or promotion efforts are planned after construction is completed? Staff explained that post-construction promotion will likely include marketing coordinated with the Vancouver Downtown Association, along with potential events such as a ribbon cutting, community celebrations, and other programming to activate the corridor. Staff also noted that future programming, events, and improved wayfinding signage are expected to help attract visitors and guide people to Main Street.

Commissioner Phan thanked staff for the presentation and explained that he had requested an update after reading a critical article about the project. He noted that while the article highlighted several challenges experienced during construction, the presentation provided reassurance that issues had been addressed and that the project is moving forward. He acknowledged that challenges are common when working with older infrastructure and expressed appreciation for the work being done to complete the project.

Q: Will the contractor receive any financial incentive for completing the project early and whether early completion would result in cost savings? Staff explained that the contract does not include an early completion incentive, and the contractor does not receive additional compensation for finishing ahead of schedule. Staff noted that many of the earlier challenges were related to underground work in an area with very old infrastructure. With the utility work now largely completed, the remaining surface improvements are expected to be more predictable.

Commissioner Phan also referenced concerns raised in public comments that a business owner was unaware of their block captain. Staff acknowledged that construction impacts have been difficult for some businesses, particularly during a period in late October when multiple blocks were under construction. Staff explained that additional outreach was conducted with affected businesses and that a large marketing campaign was launched during the holiday season including advertisements, social media promotion, and other outreach to encourage people to visit downtown businesses. Staff reported that many retail businesses have since indicated that activity has stabilized following the holiday season.

Commissioner Holder expressed appreciation for the project and noted that as a newer commissioner she is still becoming familiar with its history. She also noted that the project website URL shown on the presentation slide did not appear to redirect properly. Staff acknowledged that the website had recently been updated.

Q: What alternatives were considered instead of the speed tables installed on Main Street? Staff explained that because the street design includes shared travel between vehicles and bicycles using sharrows, it was important to keep vehicle speeds at or below 20 miles per hour. Staff noted that traffic calming was necessary to achieve this and that speed tables were determined to be the most feasible option. Staff added that this feature was incorporated later in the design process, with one speed table placed on each block.

Q: At this stage of construction, what type of engagement or feedback are staff looking for from businesses? Staff explained that feedback from businesses is helpful in identifying day-to-day access needs during construction. Staff noted that when concerns are raised, such as access to transit stops or mobility accommodation staff and the contractor work quickly to respond and implement solutions.

Vice Chair Williams

Q: What will happen with C-TRAN service when Turtle Place is closed with bollards? Staff explained that the City has coordinated closely with C-TRAN throughout the project. During temporary closures of Turtle Place transit routes have been shifted to nearby streets, such as 8th Street, or adjusted to use alternate routes. Staff noted that C-TRAN has several contingency options and the agencies will continue coordinating if future closures occur.

Commissioner Katz

Q: Is the plan to keep only one electric scooter and bicycle charging station, or could additional stations be added in the future? Staff explained that the project currently includes one charging station for bicycles and micromobility devices. Additional electrical connections were built into the corridor so that more stations could be added later if demand increases.

Q: What metric will be used to determine whether additional micromobility charging stations are needed? Staff noted that future expansion would likely be based on community feedback and observed demand, similar to how additional bike parking could be added if usage increases.

Commissioner D. Williams

Q: Is the City tracking business sales data during construction in order to measure economic impacts block-by-block and after project completion? Staff explained that many businesses are not comfortable sharing detailed sales data, so participation is voluntary. Instead, staff gather anecdotal feedback from businesses about how they are performing. Staff added that visitor activity in the area is also being tracked through anonymized mobile device data in partnership with Visit Vancouver USA to help understand changes in visitation over time.

Commissioner Malburg

Q: Of the 23 new businesses reported on Main Street since construction began, how many businesses have closed or relocated? Staff reported that three businesses in the corridor have closed and several others have relocated nearby within the downtown area.

Q: When businesses close or relocate, does the City provide support or resources and attempt to understand the reasons behind those decisions? Staff explained that staff and the Vancouver Downtown Association typically maintain ongoing relationships with business owners and often work with them for extended periods when they are struggling, including connecting them with loans or other assistance. Staff noted that in the cases where businesses closed, they had already been facing challenges prior to construction and staff had attempted to provide support.

Chair Edwards provided several comments, noting that signage indicating businesses remain open has been effective and that parking signage near venues such as Kiggins Theatre has been helpful. She also highlighted the success of marketing programs encouraging residents to support local businesses and suggested reviewing temporary asphalt conditions on sidewalks to ensure better accessibility for people using mobility devices during construction.

Workshop: 2027 – 2032 Transportation Improvement Program Workshop #2

Presenters: Kate Drennan, Transportation Planning Manager | Ryan Lopossa, Transportation Manager

Staff provided an overview of the Transportation Improvement Program (TIP), the City’s annual, legally required planning document that functions as a six-year work plan for transportation projects and programs. Staff explained how projects are identified, prioritized, and funded through the program, and reviewed updates to this year’s draft TIP. The presentation also outlined the role of long-term planning documents, public engagement, and funding opportunities in shaping the project list.

Key Points of Discussion

- The Transportation Improvement Program (TIP) is an annual, legally required six-year work plan that includes capital projects, ongoing programs like pavement maintenance, and associated funding sources. Projects are updated each year as they are constructed, amended, or added.
- Projects enter the TIP through the Transportation System Plan, subarea and corridor studies, strategic initiatives, climate action planning, and community engagement. Funding opportunities from grants, capital programs, or annual allocations determines when projects advance.
- Project scoring and prioritization consider community goals, operational factors, cost, and anticipated benefits. The framework was refined to balance high-cost, high-benefit projects with near-term priorities, ensuring key investments remain in the six-year plan.
- Changes to the current TIP were limited, including the addition of three projects and adjustments to roadway functional classifications to emphasize access and multimodal use over high-speed vehicle throughput. Long-term projects outside the six-year horizon will move to the Capital Facilities Plan with adoption of the updated Comprehensive Plan.
- Public feedback focused on speeding on arterials and collectors, pedestrian safety and crossings, and maintenance issues such as potholes.
- Next steps include online publication of the draft TIP, review of comments, a May public hearing for commissioner recommendation, and City Council consideration for adoption.

Commission Questions & Staff Responses

Commissioner D. Williams asked about public engagement for the TIP and whether outreach had occurred at public events to gather broader community input. He observed that prior engagement often results in similar feedback, so the community may tune out during work plan phases.

Q: *Have you used public venues like the Farmers Market or First Fridays to gather input on the TIP?* Staff explained that most projects on the TIP are derived from a planning process that has multiple engagement phases where community members provide input on the projects. Previous outreach for the TIP has found that the input

typically reinforces prior priorities, and the annual listing of projects is less of a high-priority touchpoint for them. Community engagement is most often focused where feedback can influence design, such as corridor plans, and is scaled to avoid repeatedly asking for the same input.

Chair Edwards raised concern about recent pedestrian incidents at McGillivray and 136th Avenue.

Q: *Can TIP funding be used now to expedite the McGillivray Project, or implement safety improvements like larger stop signs or lane changes before the full construction?* Staff reported that McGillivray is being treated as a complete corridor project and is scheduled for construction this year. Safety improvements include lane reductions, mobility lanes for bikes and scooters, enhanced crossings, improved lighting, and upgraded signage. The project is currently fully funded in the TIP. Existing programs in the

TIP do allow near-term safety measures when projects are not currently planned. On McGillivray, intersection signals are not being added because the data doesn't point to it being warranted, but the planned changes will simplify the intersection and address other issues such as long crossing distances, double threats for pedestrians, and speeding.

Kate added that pedestrian crossing distances will be significantly reduced, and sightlines for drivers will be improved. Temporary reflective materials for students were provided through the Safe Routes to Schools program. A post-project evaluation will track crashes, speeds, and user behavior to measure the effectiveness of these improvements.

Commissioner Katz highlighted repeated near-miss incidents at high-risk intersections as the most urgent safety concern.

Q: Could semi-permanent lane reductions, such as cones, to force a single-lane merge be implemented at these high-risk intersections until permanent improvements are completed? Staff noted that temporary measures may be considered to enhance safety while permanent project improvements are underway.

Chair Edwards emphasized the severity of pedestrian safety concerns and sought clarity on providing TIP feedback.

Q: How can Commissioners and the public provide input or request adjustments on the draft TIP before adoption? Staff shared that feedback can be provided after reviewing the posted TIP. The public hearing will also be an opportunity for formal recommendations. Updated photos and project summaries are included to ensure clarity.

Chair Edwards appreciated the TIP synopsis and comprehensive overview of funded projects and grant sources, highlighted the value of reviewing current funded projects rather than a 20-year wish list. She noted that the materials provide clarity for Commissioners who want to look at specific projects.

Community Forum Testimony

Speaker: Mary Keltz, longtime Vancouver resident - emphasized the importance of preserving “breathing space” in denser neighborhoods, advocating for linear parks and creative use of narrow corridors as pedestrian-focused spaces. She encouraged prioritizing people over vehicles and urged the City to pursue multiple funding sources, noting strong community support for these efforts.

No other community members signed up to speak.

Workshop: 192nd Ave Complete Streets Design Recommendation

Presenters: Ivar Christensen, Senior Civil Engineer | Bruce Haunreiter, Consultant PM | Lauren Garetto, Public Engagement PointNorth | Dana Beckwith, Global Transeng

Staff presented a recap of existing corridor conditions, a summary of outreach conducted over the past six months, and an overview of the recommended design approach. The team highlighted anticipated growth along the corridor, existing safety and mobility challenges, and the need for improvements to support all modes of travel. Staff noted that the recommendation presented would serve as a preview of the proposal anticipated for Commission consideration at the upcoming public hearing in April.

Key Themes and Highlights

- **Refined Design Based on Feedback:** The recommendation reflects prior Commission input, including requests for clearer multimodal concepts, a defined intersection strategy, and incorporation of community feedback.
- **Strong Emphasis on Safety and Multimodal Access:** The project prioritizes improved conditions for walking, biking, and rolling, addressing current gaps in safe and continuous facilities along the corridor.
- **Roundabouts as the Preferred Intersection Strategy:** Roundabouts were identified as the preferred option due to safety benefits, ability to accommodate current and future traffic volumes, reduced footprint, and improved traffic flow and connectivity.
- **Preferred Multimodal Design Option Selected:** The recommended cross-section includes directional cycle tracks on both sides, a shared-use path on the west side, and a sidewalk on the east side. This option was supported through community and stakeholder feedback as balancing safety, comfort, and usability for different types of users.
- **Corridor Growth and Future Demand:** Significant anticipated growth, including new residential development and increased traffic volumes, reinforces the need for a design that is flexible and can accommodate long-term demand.
- **Ongoing Public Engagement:** Staff conducted targeted outreach, including stakeholder interviews, advisory group meetings, and community engagement, which directly informed the recommended design. Additional opportunities for public input will occur prior to final design.
- **Next Steps Toward Public Hearing:** Feedback from this workshop will help refine the recommendation ahead of the upcoming public hearing, with further community engagement and design refinement planned later in the year.

Commissioner Discussion and Staff Responses

Commissioner Raia - sought clarification on the proposed design along NE 192nd Avenue, including roadway configuration, access to Harmony Sports Complex, and how the roundabout will function under higher traffic volumes. He expressed particular concern about traffic flow and user experience during peak activity times, especially for vehicles exiting the complex and making westbound movements.

Q: At NE 192nd Ave. & NE 18th St., the graphic appears to show a northbound road connection, but no such connection currently exists. Is a new roadway proposed at that location? Staff clarified that there is no northbound roadway proposed; the graphic referenced a driveway connection, and the map orientation may have caused confusion.

Q: How will access to the Harmony Sports Complex function under the proposed design, particularly at the existing connection near NE 18th St.? Staff explained that the existing access point would be modified to right-in only. Vehicles exiting the complex would be directed to the NE 13th Street roundabout to circulate and access desired directions.

Q: How will the design accommodate high traffic volumes associated with events at the Harmony Sports Complex, and will the NE 13th Street roundabout function as a multi-lane facility? Staff confirmed that the NE 13th Street roundabout will include capacity features such as dedicated right-turn movements and lane configurations designed to accommodate higher traffic volumes and maintain flow.

Q: How will vehicles exiting the complex travel westbound on NE 192nd Avenue, given potential conflicts with eastbound traffic at the roundabout? Staff acknowledged that traffic volumes will be high but explained that roundabouts allow vehicles to enter by accepting gaps in traffic, which helps maintain

continuous flow. Staff noted that a signalized intersection would require timed phases that could delay traffic along the corridor.

Q: Will the existing signal at NE 13th Street remain? Staff clarified the current signal is located at 13th Street and confirmed its presence as part of the existing system.

Q: Will the proposed roundabout design function similarly to multi-lane roundabouts used in other areas, such as along SR-14 in Camas and Washougal? Staff confirmed that the proposed design would operate in a similar manner.

Vice Chair Williams asked clarifying questions about the extent of existing corridor improvements, multimodal design details, and lane configurations, while emphasizing the importance of flexibility for users of varying speeds and ensuring future growth is accounted for in the design.

Q: How far does the shared-use path extend south along NE 192nd Avenue, and is that existing or planned? Staff explained that the shared-use path currently extends south to near Brady Road and toward Highway 14. This segment represents a continuation of prior phases developed along the corridor.

Q: With the cycle track and multi-use path design, can users easily move between them without physical barriers? Staff noted the design includes differentiation between facilities, and feedback regarding minimizing physical separation and maintaining flexibility for users will be considered.

Q: Why are there two northbound vehicle lanes approaching 13th Street, but not two southbound lanes? Staff reported that traffic volumes are unbalanced, and the PM peak justify two northbound lanes, including significant turning movements. Southbound volumes in the AM peak do not warrant the same configuration.

Q: Were future development impacts from the City of Camas considered in the traffic analysis?

Staff reported that coordination occurred with both the City of Camas and City of Vancouver, incorporating available traffic studies and anticipated development, including future volume projections into the analysis.

Vice Chair Williams expressed support for the project and noted it will be a significant improvement over existing condition. Chair Edwards added that even basic improvements, such as clearing blackberry brambles along the path, would significantly improve usability, reinforcing that current conditions are a low baseline.

Commissioner Katz expressed support for the proposed cycle track and overall design approach, noting the benefit of separating bicycle and vehicle traffic. She raised questions about how crossings and user interactions would function, particularly at roundabouts, and emphasized the importance of visibility and safety for pedestrians and cyclists, as well as driver awareness. She also expressed appreciation for the project and acknowledged the complexity of safely integrating different travel modes.

Q: Will pedestrian and bicycle crossings be separated at the roundabouts, and how will each be identified? Staff explained that crossings will be separated, with bicycle crossings located on the inside and pedestrian crossings on the outside and will be distinguished with green pavement markings for bikes and white markings for pedestrians to improve visibility and clarity between modes.

Q: How is the project addressing driver awareness and safety for pedestrians and cyclists, and are there any planned educational efforts? Staff reported that safety measures such as rectangular rapid flashing beacons (RRFBs) will be used to alert drivers at crossings. Staff also shared that public education is an ongoing effort and will be included in outreach, including upcoming open houses, to help users better understand how to navigate the corridor and roundabouts.

Commissioner D. Williams echoed that he observed driver confusion with roundabouts and emphasized the importance of intuitive design, particularly for younger or less experienced drivers along the corridor. He raised concerns about driver attentiveness and increasing traffic volumes, particularly near busy intersections.

Q: What design approaches are being used to ensure roundabouts are intuitive and easy to navigate? Staff explained that design will focus on clear geometry, medians, and lane alignment to guide drivers into the correct path, along with consistent layouts and appropriate signage to reduce confusion and conflict points.

Q: What measures are being considered to improve driver awareness and overall safety along the corridor? Staff reported that features such as medians, frequent roundabouts, lane channelization, pavement markings, and RRFBs are intended to slow traffic and increase driver focus. Staff added that the spacing of roundabouts is expected to naturally reduce speeds and improve corridor safety.

Commissioner Malburg noted questions about the data informing the project, specifically regarding bicycle usage, and expressed difficulty visualizing how cyclists will navigate multiple roundabouts along the corridor. He recommended more detailed information be provided at the next meeting to clarify expected bicycle operations.

Q: Is there specific bicycle travel data available for this corridor, similar to the vehicle traffic data collected? Staff explained that limited bicycle data was available at the time of counts, noting that while some activity was observed, volumes were relatively low likely due to existing conditions that do not currently support safe bicycle travel.

Q: Can additional details be provided on how bicyclists will move through a series of roundabouts? Staff acknowledged the request and indicated that more detailed design information will be provided at a future meeting.

Commissioner Housgard expressed support for roundabouts but shared concerns from a cyclist and pedestrian perspective, particularly regarding safety and driver behavior at crossings. He emphasized the importance of clear education and signage to ensure drivers yield appropriately. He asked about expectations for cyclist use of the different facilities shown in the design and shared personal experience regarding safety concerns with dogs and interactions on shared-use paths, noting a preference for more separated bicycle facilities.

Q: Will cyclists be expected to use the cycle track rather than the shared-use path? Staff explained that while both facilities are available, more experienced or commuting cyclists typically use the cycle track, while the shared-use path is more commonly used by families, children, and less confident riders who may be moving at a slower speed.

Q: What measures are being considered to ensure driver awareness and yielding behavior at roundabout crossings for pedestrians and cyclists? Staff explained that design elements such as signage, markings, and crossing treatments will be used to improve visibility and reinforce expected driver behavior, along with ongoing public education efforts.

Commissioner Raia commented on concerns for bicyclists navigating the corridor, noting that changing direction between roundabouts could be treacherous. He also raised questions about safe ingress and egress at the Harmony Sports Complex and preventing vehicles from exiting where they shouldn't.

Q: How will a bicyclist traveling eastbound on 192nd, who wants to go north or south onto a cross street like 11th St., navigate the roundabouts? Staff explained that bicyclists will operate similarly to cars but remain in the designated bike lanes. To change direction across the street, a bicyclist would proceed to

the next roundabout, turn around, and backtrack if needed. While some may not follow this exactly, it's the recommended safe approach and cyclists should not ride against traffic in a roundabout.

Q: At the Harmony Sports Complex west entryway, there will be ingress but no exit. How will you prevent vehicles from attempting to turn right or left out of that entry? Staff noted the design will clearly indicate that exiting there is not allowed. Options may include a dedicated right-turn lane in a one-way configuration and physical barriers to prevent unauthorized exits. Staff note that attempting to exit there provides no advantage, as vehicles would still reach the roundabout.

Chair Edwards commended the significant progress made since the previous advisory discussion and emphasized the need for additional visual details, particularly at key locations such as the Harmony Sports Complex and roundabouts. She highlighted the importance of continued public education through partnerships and hands-on outreach opportunities to help the community better understand how to navigate roundabouts. Noting that consistent messaging is crucial due to design variations. She also recommended including lighting and other design elements in further discussions as the project advances.

Next Steps – Upcoming Milestones & Community Input.

- The project team will return in April for an official vote on the designs presented during this workshop.
- A community open house is planned for late April, inviting Commissioners and residents to review updates and provide feedback, and encouraging broader participation.
- Feedback collected at the open house will continue to inform the project and be discussed at a final project advisory group meeting.
- The project team will summarize all community input to help finalize the design.
- A final open house will be held in the fall to present the finalized design.
- Construction is anticipated to begin once funding is secured, potentially as early as 2028.

Staff & Commissioner Communications

Rebecca Kennedy, Deputy Director, Community Development provided a high-level update on the Vancouver Comprehensive Plan, emphasizing key milestones, transportation goals, and the integration of land use, mobility, and climate policies.

Highlights:

- The plan covers 20 years, planning for 38,000 housing units, 81,000 new residents, and economic targets.
- The Draft Plan and accompanying code have been released, with public input ongoing. Planning Commission review is scheduled for April; with Council adaptation anticipated in May.
- **Transportation & Mobility Chapter Goals:**
 1. Develop an integrated transportation system with accessible mobility, safe routes, and asset management.
 2. Expand low-carbon mobility options, including multimodal level of service measures and transit-supportive infrastructure.
 3. Ensure efficient freight access to support economic vitality and job growth.
 4. Eliminate traffic fatalities through safe streets and low-stress networks.
- **Preferred Land Use Alternative:** Applies base zoning citywide, preserves industrial lands, increases intensity near transit, schools, and parks.

- **Draft Zoning Code:** Removes most parking minimums, integrates required bike parking for most developments, and aligns transportation with land use and housing goals.
- Public engagement continues via story maps, feedback forms, and community presentations.

Rebecca emphasized that Commissioners and community members can reach out for additional presentations or clarification, and that the transportation chapter reflects work previously done on the Transportation System Plan. She thanked Commissioners for their participation and input throughout the workshop.

Additional Updates & Discussion

Staff reminded Commissioners about the upcoming boards and commissions open house on Wednesday, March 18th from 4:30 to 6:30 PM at Cascade Park Community Library and encouraged them to share the information with friends. She also noted the Mayor’s State of the City address will be available online Monday at 6:00 PM via Facebook or CCTV.

Staff also reminded Commissioners that the next meeting would start at 4:00 PM, with a full workshop planned from 4:00 to 6:00 PM, and urged everyone to review all materials ahead of the vote on projects.

Chair Edwards expressed appreciation for Rebecca Kennedy’s update on the Comprehensive Plan, noting it was exciting to hear from her again. She encouraged Commissioners to review the materials and provide feedback, emphasizing how important their input is for shaping the city’s future.

Commissioner D. Williams asked why the address would also not be available on YouTube, and staff responded that they would follow up to find out. He also commented on an earlier public comment that had caused concern, suggesting that clearer messaging could help the public better understand the Commission’s role as a volunteer citizen board and the nature of their engagement and authority.

Vice Chair Williams asked whether staff would respond to the individual who submitted the earlier comment, noting that it seemed they were unaware of ongoing projects. Staff confirmed they would respond and share links to the recorded TMC meeting so the community member could also see their concerns addressed in the conversation.

Chair Edwards also commented on 137th Street and recent roundabout projects, emphasizing the need for better block-by-block review on major projects. She highlighted issues with road openings, manhole clearance, and repeated construction that disrupted traffic patterns, and encouraged future projects to avoid similar challenges.

Adjournment with no further business, the March 3, 2026, meeting of the Vancouver Transportation and Mobility Commission was adjourned at 7:55 pm

Jeananne Edwards, Chair

Date



MEMORANDUM

DATE: April 7, 2025

TO: Chair Edwards and Transportation and Mobility Commission members

FROM: Adam Argo, Principal Transportation Planner; Emily Benoit, Senior Transportation Planner; Maggie Derk, Senior Transportation Planner, Community Development; Matt Hinshaw, Senior Civil Engineer, Public Works Transportation Team

RE: 2025-2026 Corridor Projects, Safety and Mobility Planning Phase, Preliminary Design Concepts Workshop

CC: Rebecca Kennedy, Deputy Director; Kate Drennan, Transportation Planning Manager, Community Development; Ryan Lopossa, Transportation Manager, Public Works

Meeting Purpose

To review and discuss the 2025-2026 Corridor Projects with the Transportation and Mobility Commission (TMC) regarding:

- Initial design concepts for the corridors.
- Activities and outcomes from Phase 1 of community engagement.
- Activities and tactics for Phase 2 of community engagement.

Project Overview

The Corridor Projects comprise the following three corridor segments (see Figure 1):

- Northeast 72nd Avenue from Northeast 40th Street to Northeast 78th Street
- Northeast 86th/87th Avenue from East Mill Plain Boulevard to Northeast Fourth Plain Boulevard
- 97th/98th Avenue from Southeast 10th Street to Northeast 39th Street



Figure 1: Project Area Map

Design Concepts

The three corridor projects are approximately at the 10% stage of preliminary design. The project team will be making design recommendations for near-term improvements as part of the pavement preservation project, and longer-term improvements to become future projects as funding allows. All of the improvements support implementation of the Transportation System Plan.

Within the near-term improvements timeline, there are varying existing roadway cross-sections that limit the full build-out of bicycle and small mobility facilities. Additionally, some turn lanes and parking would need to be repurposed for full build-out of bicycle and small mobility facilities.

The following summarizes improvement opportunities for each of the three corridors.

NE 72nd Avenue

- **Considerations for Crossings:** The pedestrian crossing policy calls for spacing of approximately 800 feet on Pedestrian Corridors and 530 feet in Pedestrian Centers.
- **Traffic Control Changes to Analyze:** Curb turn radius reduction to slow vehicle turning speeds, review and analyze crash rates and contributing factors, opportunities to enhance safety and traffic calming, operations at some intersections with bike boxes and/or turning lane removals.
- **Parking Reallocation:** Parking is proposed to be reallocated to become bike and small mobility lanes in alignment with the Transportation System Plan and to enhance active transportation connectivity.
- **Bike and Small Mobility (BSM) Lane Implementation:** Near-term improvements include lane narrowing and reconfiguration of existing pavement markings to install enhanced BSM facilities where feasible in the pavement preservation project. Some segments will require longer-term projects to construct these facilities.

97th/98th Avenue

- **Considerations for Crossings:** The pedestrian crossing policy calls for spacing of approximately 800 feet on Pedestrian Corridors.
- **Traffic Control Changes to Analyze:** Curb turn radius reduction to slow vehicle turning speeds, review and analyze crash rates and contributing factors, opportunities to enhance safety and traffic calming, operations at some intersections with bike boxes and/or turning lane removals.
- **School Considerations** near NE 9th St and NE 14th St: Evaluate additional safety enhancements, stop compliance and sight distances, and pedestrian improvements such as refuge islands in the near term and sidewalk infill in the long-term.
- **Parking Reallocation:** Parking is proposed to be reallocated to become bike and small mobility lanes in alignment with the Transportation System Plan and to enhance active transportation connectivity.
- **Bike and Small Mobility Lane Implementation:** Near-term improvements include lane narrowing and reconfiguration of existing pavement markings to install enhanced BSM facilities where feasible in the pavement preservation project. Some segments will require longer-term projects to construct these facilities.

NE 86th/87th Avenue

- **Considerations for Crossings:** The pedestrian crossing policy calls for spacing of approximately 800 feet on Pedestrian Corridors and 530 feet in Pedestrian Centers.
- **Traffic Control Changes to Analyze:** Curb turn radius reduction to slow vehicle turning speeds, review and analyze crash rates and contributing factors,

opportunities to enhance safety and traffic calming, operations at some intersections with bike boxes and/or turning lane removals.

- **School Considerations** near NE 33rd St: Evaluate pedestrian refuge islands in addition to the rectangular rapid flashing beacon in the near term.
- **Parking Reallocation:** Parking is proposed to be reallocated to become bike and small mobility lanes in alignment with the Transportation System Plan and to enhance active transportation connectivity in the southern part of the corridor (south of NE 15th St) and partially reallocated to allow for visibility at crossings in the northern part of the corridor (north of NE Burton Rd).
- **Bike and Small Mobility Lane Implementation:** Near-term improvements include lane narrowing and reconfiguration of existing pavement markings to install enhanced BSM facilities where feasible in the pavement preservation project. Some segments may require longer-term projects to construct these facilities.

Community Engagement

What we did

Engagement activities included:

- 176 survey respondents and 285 comments on an interactive map
- 11 in-person presentations/meetings
- 2 TMC meetings
- 4 in-person tabling and neighborhood canvassing events
- 2 email/phone correspondence with school bus drivers

Communication tactics included:

- Project webpage serving as a 24/7 public information hub
- 6 email newsletters
- Social media posts on Facebook and Instagram
- 4,800+ mailer sent to property owners and occupants within the project area
- 50 yard signs placed throughout project area
- Flyer with survey information sent to three Vancouver Public Schools via PeachJar

What we heard

Speeding – Traffic speeding creates challenges for people walking, rolling and biking. Traffic calming, such as speed tables and speed cushions and narrowing travel lanes were suggested to slow speeds.

Active transportation connectivity and improvements – Sidewalk gaps and the lack of consistent bike and small mobility lanes make it challenging for people walking, rolling and biking along the corridors. Suggestions for improvement included filling sidewalk gaps, adding more crossings, improving existing crossings and adding protected or buffered bike and small mobility lanes.

Lighting and landscaping – Suggestions for more streetlighting along the corridors, particularly around the Burnt Bridge Creek trail connection and at crossings. Comments also addressed maintenance of landscaping to provide better sight lines.

Driver behavior – It’s difficult for people walking, rolling and biking along the corridor due to drivers not obeying school bus stop paddles, not stopping for pedestrians in marked crossings and not obeying parking regulations. People specifically pointed to parking in the bike and small mobility lanes and on sidewalks as a challenge to their travel.

Next Steps

Based on the existing conditions and technical analysis, feedback from the Transportation and Mobility Commission and community input gathered during this first phase of engagement, the project team will continue developing design concepts for each corridor. The project team will share more about the design concepts during the second phase of engagement, which will run from April to September 2026. The next TMC workshop will be in later summer or early fall on proposed design recommendations and community engagement Phase 2.

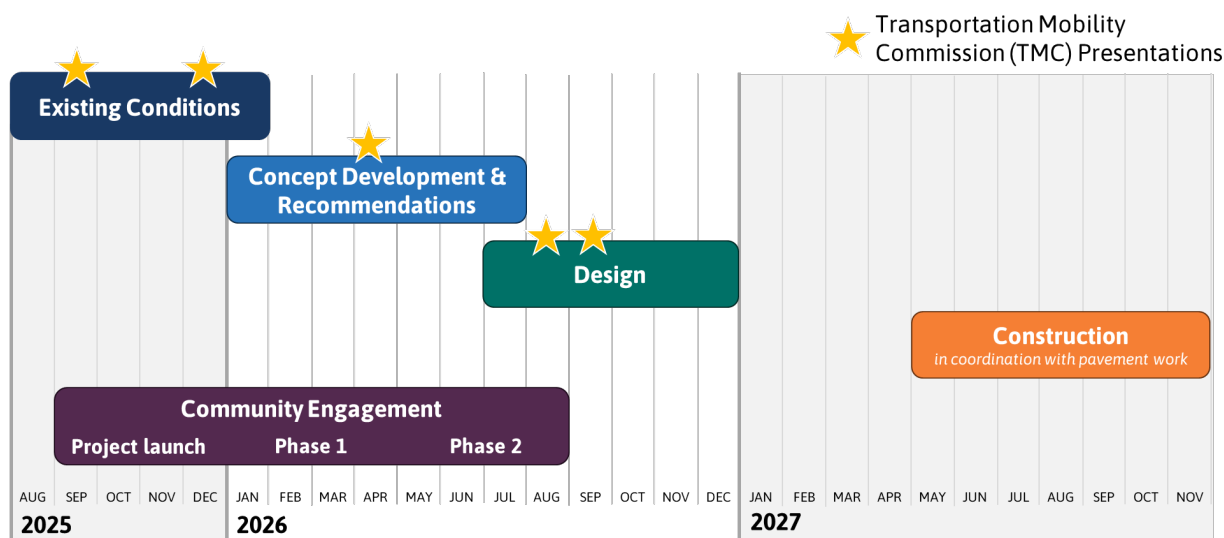


Figure 2: Project Timeline

Staff contact info

Corridor Planning Projects email contact: vancouvermoves@cityofvancouver.us

Corridor leads:

- NE 72nd Avenue: Emily Benoit, Senior Transportation Planner, Community Development
- NE 86/87th Avenue: Adam Argo, Principal Transportation Planner, Community Development

- 97/98th Avenue: Maggie Derk, Senior Transportation Planner, Brett Setterfield, Associate Transportation Planner, Community Development
- Matt Hinshaw, Senior Civil Engineer, Public Works Transportation Team

Attachment(s):

- Phase 1 Engagement Summary
- Community Engagement Plan (revised)
- Presentation Slides with Additional Long Term Improvements



Phase 1 Engagement Summary

Corridor Projects
Safety and Mobility Planning Phase
March 2026



CITY OF
Vancouver
WASHINGTON



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Introduction

The 2025-2026 Corridor Projects will study opportunities to make travel safer and more comfortable for all road users along the following three corridors (Figure 1):

- Northeast 72nd Avenue from Northeast 40th Street to Northeast 78th Street
- Northeast 86/87th Avenue from East Mill Plain Boulevard to Northeast Fourth Plain Boulevard
- 97th/98th Avenue from Southeast 10th Street to Northeast 39th Street



Community engagement for these projects will occur in two phases:

- **Phase 1 (September 2025–March 2026):** Learn how the community currently uses the corridors within the project area, set expectations and share preliminary design considerations.
- **Phase 2 (April–September 2026):** Share design recommendations and priorities informed by the existing conditions analysis, community input from phase 1, and feedback from the Transportation and Mobility Commission.

This summary details engagement activities, communication tactics and key findings for the first phase of engagement, which occurred in September 2025 through March 2026.

Phase 1 Overview

During the first phase of engagement, the project team generated project awareness, listened to current uses and concerns from the community and shared findings from the existing conditions analysis. Community engagement during this phase focused on two levels of participation:

- **Inform** – Share balanced and objective information with the community to help them understand project goals, scope, timeline and recommendations. Generate awareness of how the community can share feedback and engage with the team directly.¹
- **Consult** – Solicit and acknowledge community feedback on transportation needs, desires and concerns for the project area. Set expectations for how community input influences design recommendations.²

Key messages during this phase of engagement included:

- Share your feedback on:
 - Current travel experience along the corridor
 - Access to destinations on/near the corridor
 - Locations with safety issues
- Your input will supplement our technical analysis and help inform the proposed recommendations.
- Tell us the best way to reach you going forward.
- Join our email list to stay up to date on the latest project updates.

All outreach materials were available in English, Spanish, Russian and other languages via request. These languages are spoken by more than 5% of the population within the project areas.

¹ International Association for Public Participation. Spectrum of Public Participation.
https://cdn.ymaws.com/www.iap2.org/resource/resmgr/pillars/iap2_spectrum_2024.pdf

² International Association for Public Participation. Spectrum of Public Participation.
https://cdn.ymaws.com/www.iap2.org/resource/resmgr/pillars/iap2_spectrum_2024.pdf

Engagement by the numbers

The following engagement activities (Table 1) and communication tactics (Table 2) were used during Phase 1.

Table 1: Phase 1 Engagement Activities

Engagement Activity	Date	Details
Survey & interactive map	January 6, 2026 – February 28, 2026	176 survey respondents, 285 map comments
In-Person Presentations/ meetings	September 2, 2025	Transportation & Mobility Commission Workshop #1
	December 2, 2025	Transportation & Mobility Commission Workshop #2
	December 12, 2025	Walnut Grove Neighborhood Association
	January 9, 2026	Multifamily housing development on 72nd
	January 9, 2026	Walnut Grove Elementary School
	January 16, 2026	Fort Vancouver High School
	February 10, 2026	Ogden Elementary School
	February 25, 2026	Marrion Neighborhood Association
	February 26, 2026	Ellsworth Springs Neighborhood Association
	February 26, 2026	Vancouver Heights Neighborhood Association
	March 12, 2026	Marrion Elementary School PTA
	March 12, 2026	Forest Ridge Neighborhood Association
	March 18, 2026	Parks & Recreation Advisory Commission
In-Person Tabling & Canvassing	September 20, 2025	Oakbrook Park Reopening
	October 29, 2025	Jaggy Road Park Playground Open House
	January 28, 2026	Canvassed businesses/churches around 97th and Mill Plain intersection
	March 7, 2026	Downtown Farmers Market
Email/phone correspondence	March 2, 2026	Input from Evergreen Public Schools bus drivers
	March 12, 2026	Input from Vancouver Public Schools bus drivers

Table 2: Phase 1 Communication Tactics

Communication Tactic	Date	Details
BeHeard Project Webpage	November 13, 2025 (Content launch)	24/7 public information hub with 1,527 views through March 19, 2026
Email Newsletters	June 13, 2024	Survey announcement sent to project email list with 72 subscribers
	January 9, 2026	Information about the survey included in the Vancouver Connects newsletter with 13,908 subscribers, 5,932 opens and 196 clicks on the Project Corridors article
	January 16, 2026	Information about the survey included in the Office of Neighborhoods newsletter with 1,860 subscribers and 596 opens
	February 4, 2026	Information about the survey included in the Parks, Recreation and Cultural Services newsletter with 32,484 subscribers and 12,019 opens
	February 12, 2026	Survey reminder sent to project email list with 127 subscribers and 93 opens
Social Media	January 14, 2026	Project information shared on City of Vancouver Facebook (9,538 views and 80 interactions) and Instagram (2,491 views and 89 interactions)
	January 16, 2026	Shared social media with C-TRAN to repost
Mailer	January 7, 2026	4,800+ mailers sent to property owners and occupants within 0.1 mile of the project corridors
Yard Signs	January 13, 2026	50 yard signs placed throughout project area
PeachJar	January 22, 2026	Flyer with survey information sent to three Vancouver Public Schools (Ogden Elementary School, Walnut Grove Elementary School and Fort Vancouver High School) resulting in 2,100+ impressions

Key Themes

The following summarizes the key themes of what we heard from the engagement activities, including the survey and interactive map, presentations and meetings, tabling and canvassing, and email and phone correspondence.

Northeast 72nd Avenue

- **Speeding** – Traffic speeding along the corridor creates challenges for people walking, rolling and biking. Traffic calming, such as speed tables and speed cushions and narrowing travel lanes were suggested to slow speeds.
- **Active transportation connectivity** – Sidewalk gaps and the lack of consistent bike and small mobility lanes make it challenging for people walking, rolling and biking along the corridor. Suggestions for improvement included filling sidewalk gaps, adding protected or buffered bike and small mobility lanes and adding more crossings at locations such as Northeast 78th Street near the Wildlife Habitat.
- **Lighting** – Suggestions for more streetlighting along the corridor.

- **Driver behavior** – People parking in the bike and small mobility lanes and on sidewalks make it difficult for people walking, rolling and biking along the corridor.

Northeast 86th/87th Avenue

- **Speeding** – Traffic speeding along the corridor, particularly along the hill between Northeast 20th Street and Northeast 15th Street near the Burnt Bridge Creek Trail as well as near Ogden Elementary School, creates challenges for people walking, rolling and biking. Traffic calming, such as speed cushions, were suggested to slow speeds.
- **Bike and small mobility lane improvements** – Adding protection or a buffer to the existing bike and small mobility facilities was suggested to improve biking along the corridor.
- **Lighting and landscaping** – Suggestions for more streetlighting along the corridor, particularly around the Burnt Bridge Creek trail connection and at crossings. People also suggested more maintenance of the landscaped medians near the Burnt Bridge Creek and tree trimming at Northeast 15th Street to provide better sight lines of the traffic signal.
- **Driver behavior** – Near Ogden Elementary people expressed concerns about drivers not obeying the stop paddles on school buses, not stopping for students crossing the street and parking in the bike and small mobility lanes near make it difficult for people walking, rolling and biking near the school. Additionally, the two lane to one lane merge at Mill Plain Boulevard was mentioned as being difficult for drivers to navigate. People also mentioned drivers turn onto Northeast 20th Street to avoid the intersection of Northeast 86th Avenue and Northeast Burton Road.
- **Crossing improvements** – Crossing improvements with better lighting were suggested at Northeast 11th Street and Northeast 15th Street. The crossing at Ogden Elementary School was also identified as needing improvements, specifically to address technical issues with the rectangular rapid flashing beacon (RRFB).

97th/98th Avenue

- **Speeding** – Traffic speeding along the corridor creates challenges for people walking, rolling and biking, particularly in areas where there are no sidewalks or bike and small mobility lanes. Consider traffic calming and narrowing wide travel lanes.
- **Active transportation connectivity** – Sidewalk gaps and the lack of continuous bike and small mobility lanes, particularly between Northeast 10th Street and Southeast 10th Street, make it challenging for people walking, rolling and biking along the corridor. Suggestions for improvement included filling sidewalk gaps, adding more crossings, and adding protected or buffered bike and small mobility lanes.
- **Lighting** – Suggestions for more streetlighting is needed along the corridor. People described it being particularly dark at night around curves between Northeast 18th Street and Burton Road.
- **Intersection improvements** – Northeast 14th Street, Northeast 9th Street and St Helens Avenue were common locations identified for improvements. Concerns include pedestrian crossing safety, a lack of stop sign compliance and sight line visibility.

Next Steps

Based on the technical analysis, feedback from the Transportation and Mobility Commission and community input gathered during this first phase of engagement, the project team will develop design concepts for each corridor. The project team will share these proposed recommendations with the public during the second phase of engagement, which will run from April through September 2026.





2025-2026 Corridor Projects: Community Engagement Plan

Last Updated: March 24, 2026

Introduction

The 2025-2026 Corridor Projects will study opportunities to make travel safer and more comfortable for all road users along the following three corridors (Figure 1):

- Northeast 72nd Avenue from Northeast 40th Street to Northeast 78th Street
- Northeast 86/87th Avenue from East Mill Plain Boulevard to Northeast Fourth Plain Boulevard
- 97th/98th Avenue from Southeast 10th Street to Northeast 39th Street

This Community Engagement Plan describes the City's approach to providing community engagement that best meets the needs of the projects. The Plan may be updated as engagement opportunities arise or no longer become feasible.

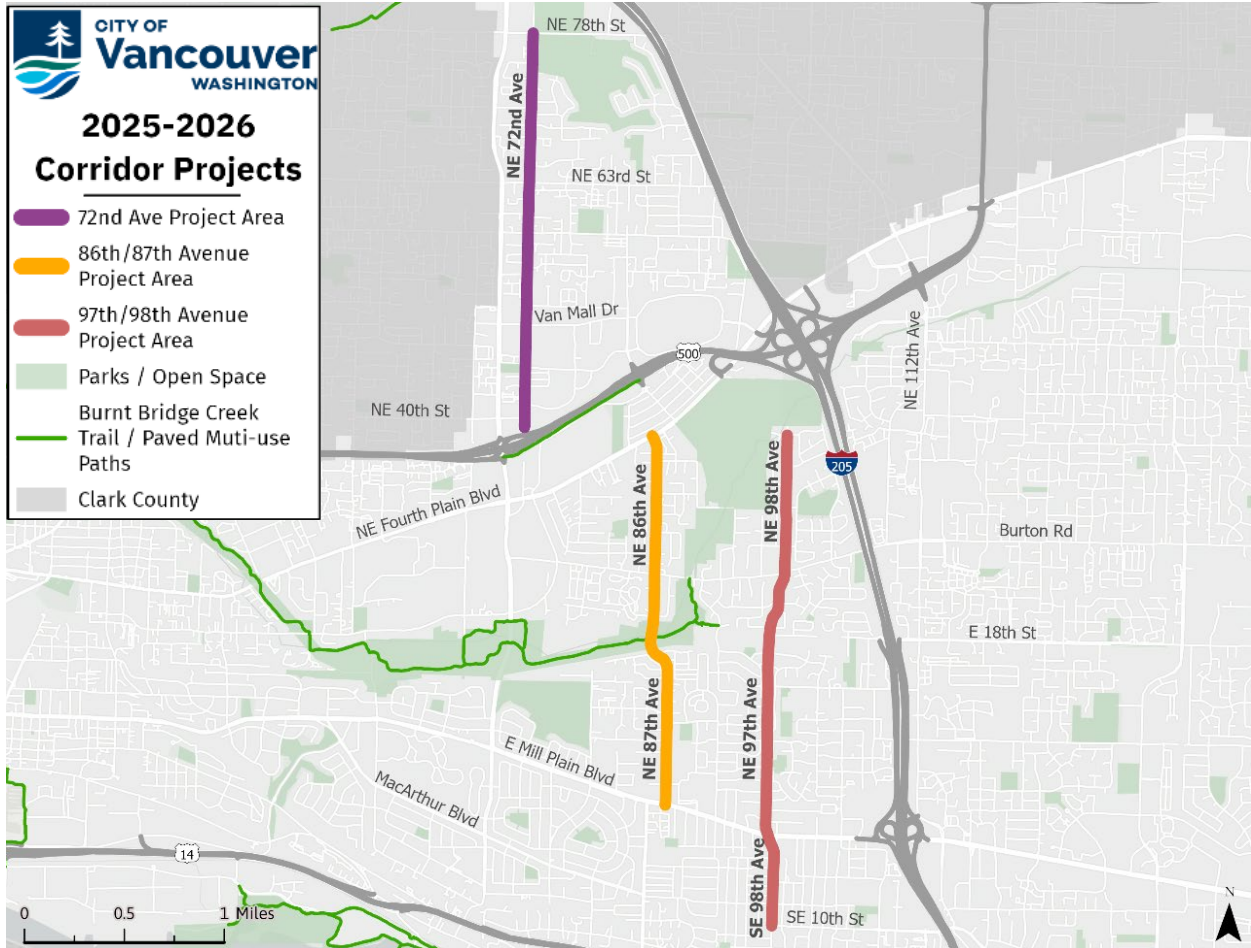


Figure 1: Project Area Map

Project Area Profile

The City of Vancouver’s Equity Index Map is a tool used to guide policy, program, and public investment priorities. It utilizes U.S. Census demographic markers to identify equity-priority populations using the following variables:

- People of color (non-white and/or Hispanic/Latinx)
- Median Family Income
- Renters
- Adults without a 4-year college degree
- Households with limited English proficiency
- Persons with disabilities
- Households with children (below 18 years of age)
- People aged 65 and over

As shown in Figure 2, neighborhoods with higher Equity Index scores around the project corridors include Ellsworth Springs, North Garrison Heights, Oakbrook, Ogden and Van Mall.

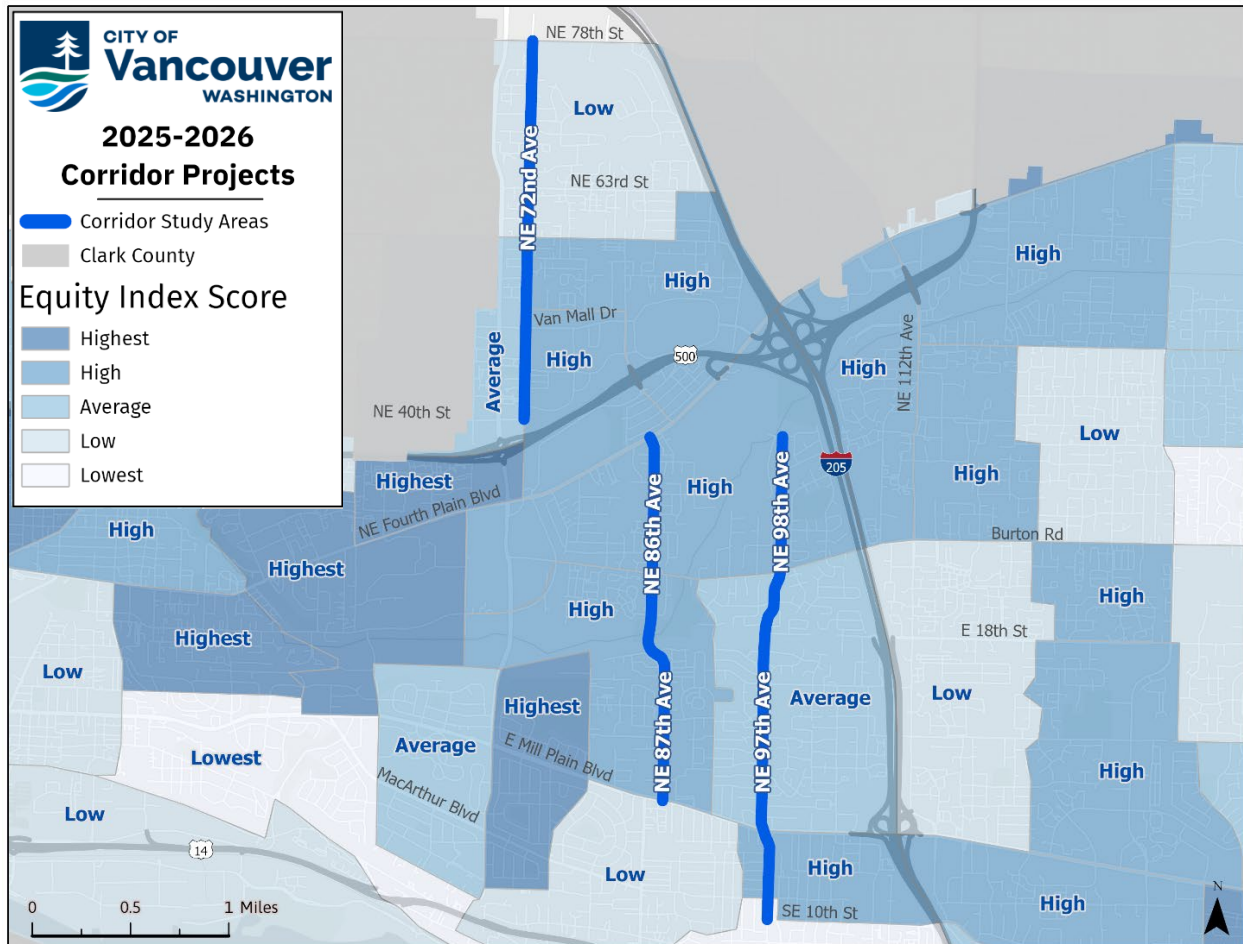


Figure 2: Equity Index Map

An additional review of U.S. Census data was conducted to better understand the racial composition, languages, housing status, and accessibility needs within the project area (see Appendix A of the Existing Conditions Reports). Notable findings include:

- Spanish and Russian are the only languages other than English spoken by more than 5% of the population within the project areas.
- The greatest concentration of renters within the project areas live in census tracts along Northeast 72nd Avenue (between Northeast 40th and Northeast 58th Streets) and Northeast 86th/87th Avenue (between Mill Plain Boulevard and Burton Road).
- Census tracts along Northeast 72nd Avenue (between Northeast 51st and Northeast 58th Streets), Northeast 86th (between Burton Road and Fourth Plain Boulevard) and Northeast 98th (between Burton Road and Northeast 39th Street) have the greatest concentration of residents experiencing disabilities.

These findings will be used to inform equitable community engagement approaches, including language translation and interpretation needs, and location of in-person engagement activities.

Engagement Approach

Community engagement for this project will occur in two phases:

- **Phase 1 (September 2025–March 2026):** Learn how the community currently uses the corridors within the project area, set expectations and share preliminary design considerations.
- **Phase 2 (April–September 2026):** Share design recommendations and priorities informed by the existing conditions analysis, community input from phase 1, and feedback from the Transportation and Mobility Commission.

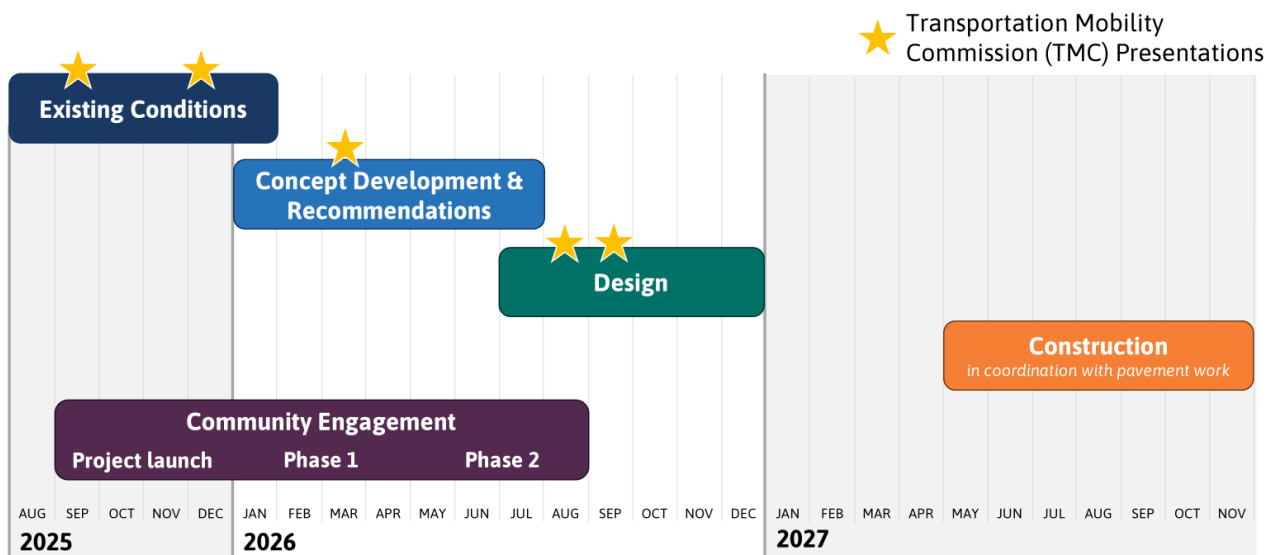


Figure 3: Project Timeline

Community engagement for this project will focus on two levels of participation:

- **Inform** – Share balanced and objective information with the community to help them understand project goals, scope, timeline and recommendations. Generate awareness of how the community can share feedback and engage with the team directly.¹

¹ International Association for Public Participation. Spectrum of Public Participation. https://cdn.ymaws.com/www.iap2.org/resource/resmgr/pillars/iap2_spectrum_2024.pdf

- **Consult** – Solicit and acknowledge community feedback on transportation needs, desires and concerns for the project area. Set expectations for how community input influences design recommendations.²

The project team will incorporate equitable, inclusive and accessible community outreach and engagement through the following practices:

- All outreach materials will be available in English, Spanish, Russian and other languages via request or based on targeted outreach need. These languages are spoken by more than 5% of the population within the project areas.
- Prioritize in-person engagement activities (i.e., canvassing, one-on-one meetings and small group briefings) in neighborhoods with a high percentage of renters, non-English speakers, people living with a disability and communities of color.
- In-person engagement activities can be staffed to provide Spanish or Russian interpretation, and other language support based on targeted outreach need.

Goals, Objectives & Metrics

Goal 1: Community members are aware of the project and how to participate.

- Objectives:
 - Raise awareness and generate interest in the project through strategic outreach and communications.
 - Conduct more direct outreach to parties that are most impacted by proposed changes.
 - Provide community members a clear understanding of the project’s purpose, scope, timeline and potential impacts.
 - Set clear expectations about how community members can get involved and how their input will influence decision making.
- Performance metrics:
 - Approximate number of people reached through each outreach method (e.g., project webpage visitors, sign-ups for project email list, social media engagement, people spoken with at tabling events, number of door-to-door visits, emails/calls received, etc.)
 - Clear identification in presentations and plan documents on how feedback received was considered and/or integrated into the project recommendations.

² International Association for Public Participation. Spectrum of Public Participation. https://cdn.ymaws.com/www.iap2.org/resource/resmgr/pillars/iap2_spectrum_2024.pdf

Goal 2: Equity-priority populations within the project area experience inclusive, accessible engagement with the project team.

- Objectives:
 - Publish all public outreach materials in any languages that 5% or more of the population speak at home. Translation will also be available upon request.
 - Utilize bilingual outreach staff during in-person engagement activities.
 - Prioritize outreach at existing multicultural events and meet community members in spaces where they already gather for events, meetings or services.
- Performance metrics:
 - Documentation of where, when and how information was shared within areas that have a higher score on the City's Equity Index.
 - Documentation of 1:1 conversations, meetings or briefings with equity-priority individuals or groups (e.g., non-English speakers, people with disabilities or renters).
 - Demographic information linked to documented community feedback where feasible.

Goal 3: Gather and use public input to help City staff, the Transportation and Mobility Commission (TMC) and the Vancouver City Council make informed choices, maintaining transparency at each step.

- Objectives:
 - Involve stakeholders in the development and execution of this CEP through various engagement tools.
 - Clearly state project decision process to stakeholders.
- Performance metrics:
 - Quantitative and qualitative analysis of project feedback from engagement activities.
 - Clear identification in presentations and plan documents on how feedback received was considered and/or integrated into the project recommendations.

Potentially Affected & Interested Parties

Category	72nd	86th/87th	97th/98th
Neighborhoods	<ul style="list-style-type: none"> • Green Meadows • Van Mall • Walnut Grove 	<ul style="list-style-type: none"> • North Garrison Heights • Oakbrook • Ogden 	<ul style="list-style-type: none"> • Burton Ridge • Ellsworth Springs • Forest Ridge • Marrion • Oakbrook • Ogden • Vancouver Heights
Schools	<ul style="list-style-type: none"> • Walnut Grove Elementary School 	<ul style="list-style-type: none"> • Henrietta Lacks High School • Ogden Elementary School 	<ul style="list-style-type: none"> • Ellsworth Elementary • Marrion Elementary School
Services	<ul style="list-style-type: none"> • Fire Station 5 (VFD) • C-TRAN • Vancouver Parks 	<ul style="list-style-type: none"> • PeaceHealth SW Medical Center • Vancouver Clinic • C-TRAN • Vancouver Parks 	<ul style="list-style-type: none"> • C-TRAN • Vancouver Parks
Faith communities	<ul style="list-style-type: none"> • Church of Truth • Calvary Slavic Christian Church • Church at the Grove • Crossroads Community Church 		<ul style="list-style-type: none"> • Evergreen Bible Church
Apartment complexes	<ul style="list-style-type: none"> • Norwood Villa Apartments • Andresen Park Apartments • Walnut Grove Landing Apartments • Carriage House Apartments 	<ul style="list-style-type: none"> • Royal Crest Townhomes • Royal View Townhomes 	<ul style="list-style-type: none"> • None

Category	72nd	86th/87th	97th/98th
	<ul style="list-style-type: none"> • Carriage Park Apartments • The Grove at 72nd Apartments • 51st Street Apartments • The Ava Apartments • Sunlight Meadows • The Woodlands 		
Businesses	<ul style="list-style-type: none"> • Club Green Meadows • Taylor Family Farm 	<ul style="list-style-type: none"> • Harbor Audiology & Hearing Services • Lee Family Dental • Quickpick Market • Quest Diagnostics • See Mar Vancouver Heights Behavioral Health Clinic • Vancouver Sleep Disorders Center 	<ul style="list-style-type: none"> • Willamette Dental Group • Fine Flowers • Sonesta ES Suites • AILPNW • 7 Eleven • Walgreens

Engagement Activities & Communication Tactics

Background

- Transportation improvements for all travelers are being studied to improve safety, climate and connectivity. These projects will identify recommendations for both near-term and long-term improvements. Near-term improvements will be

coordinated with planned pavement work and could start as early as summer 2027.

- Near-term improvements typically include low-cost changes such as revised striping (also known as pavement markings), signage, bicycle and small mobility facility enhancements, turn lane changes, and traffic signal adjustments. These changes are usually within the existing roadway, between the curbs or edges of shoulder.
- Long-term improvements may include higher-cost changes such as constructing sidewalks, enhanced pedestrian crossings, and lighting improvements. These project elements often require additional City funding or grant programs and may require additional right-of-way to be acquired. These projects can take longer to plan, design and construct. City staff use continual planning and community engagement efforts to identify and prioritize long-term improvements.
- Road design and striping recommendations will be implemented based on:
 - Vancouver’s Complete Streets Policy and Transportation System Plan modal networks
 - City of Vancouver standard plans
 - Design criteria and guidance from organization such as National Association of City Transportation Officials (NACTO), Washington State Department of Transportation, and other industry best practices
 - Data such as traffic volumes, on-street parking utilization, Bicycle and Pedestrian Level of Traffic Stress, crash history and contributing factors, and other existing transportation infrastructure

Phase 1 (September 2025 – March 2026)

During the first phase of engagement, the project team will generate project awareness, listen to current uses and concerns from the community and share findings from the existing conditions analysis.

Level of participation: Inform and consult

Key messages

- Share your feedback on:
 - Current travel experience along the corridor
 - Access to destinations on/near the corridor
 - Locations with safety issues
- Your input will supplement our technical analysis and help inform the proposed recommendations.
- Tell us the best way to reach you going forward.
- Join our email list to stay up to date on the latest project updates.

The following engagement activities and communication tactics may be utilized to meet the goals and objectives of community engagement. These are subject to change as other opportunities arise or no longer become feasible. The project team will continually assess the level of engagement being provided.

Engagement Activities

Activity	Target audience	Timing
<p>Interactive map & comment form or survey</p> <ul style="list-style-type: none"> • Gather input on transportation challenges people experience along the corridors 	All	January/February 2026
<p>Neighborhood canvassing</p> <ul style="list-style-type: none"> • Visit businesses and any other relevant stakeholders in-person 	Project area residents, business owners, organizations	January/February 2026
<p>1:1 or small group briefings</p> <ul style="list-style-type: none"> • In-person or virtual briefings with relevant stakeholder groups 	Equity priority residents, neighborhood associations, schools, community organizations, apartments and multifamily residences	January/February 2026
<p>Tabling sessions</p> <ul style="list-style-type: none"> • Tabling at relevant community events <ul style="list-style-type: none"> ○ Oakbrook Park Reopening, 9/20/25 ○ Jaggy Road Park Playground Open House, 10/29/2025 	All	September 2025 – March 2026
<p>Transportation & Mobility Commission</p> <ul style="list-style-type: none"> • Workshop #1: September 2025 • Workshop #2: December 2025 • Workshop #3: April 2026 	TMC, All	September 2025 – March 2026

Communications Tactics

Tactic	Target audience	Timing	Metric
Project BeHeard webpage launch	All	November 2025	# engagements/views
Project fact sheet / flyer <ul style="list-style-type: none"> For distribution at tabling sessions, neighborhood canvassing, etc. 	All	September 2025	None
Social media <ul style="list-style-type: none"> City Channels: Facebook and Instagram Share links with other stakeholders to share on their social media channels 	All	January/February 2026	# engagements
E-Newsletter <ul style="list-style-type: none"> Project email list, Email project list ahead of TMC Workshops, when survey launches and survey reminders 	All	October 2025, January/February 2026, March 2026	# subscribers and # opens
Direct Emails <ul style="list-style-type: none"> Send direct emails to stakeholders 	Neighborhood associations, schools, community organizations, listserv	January/February 2026	# of small group briefings
Owned media <ul style="list-style-type: none"> Vancouver Connects and Office of Neighborhoods Newsletters 	All	October 2025, January/February 2026	# subscribers and # opens

Tactic	Target audience	Timing	Metric
Mailer <ul style="list-style-type: none"> Send mailer to property owners and occupants within 0.1 mile of project area 	Property owners (businesses) and occupants (residents)	January/February 2026	# of mailers sent
Yard Signs <ul style="list-style-type: none"> Post yard signs within the public right-of-way along project corridor 	Project area residents/visitors	January/February 2026	# of yard signs posted

Additionally, the project team will develop a phase 1 engagement summary in March 2026 documenting engagement goals, activities and results, including specific efforts to reach and engage equity-priority communities.

Phase 2 (April – September 2026)

During the second phase of engagement, the project team will share design recommendations and priorities informed by the existing conditions analysis, community input from phase 1, and feedback from the Transportation and Mobility Commission.

Level of participation: Inform

Key messages

- Based on technical analysis, community input and feedback/guidance from the Transportation and Mobility Commission, these are the proposed recommendations.
- These recommendations will be implemented in phases. Near-term projects will be implemented in coordination with planned pavement work and could start as early as summer 2027. Long-term projects will be implemented in the future as funding becomes available.

The following engagement activities and communication tactics may be utilized to meet the goals and objectives of the projects. These are subject to change as other opportunities arise or no longer become feasible. The project team will continually assess the level of engagement being provided.

Engagement Activities

Activity	Target audience	Timing
<p>Story map & comment form</p> <ul style="list-style-type: none"> Share proposed recommendations, including clear linkage back to phase 1. Include open ended question at the end where people can provide comments. 	All	May/June 2026
<p>1:1 or small group briefings</p> <ul style="list-style-type: none"> In-person or virtual briefings with relevant stakeholder groups 	Equity priority residents, neighborhood associations, schools, community organizations, apartments and multifamily residences	May/June 2026
<p>Tabling sessions</p> <ul style="list-style-type: none"> Tabling at relevant community events <ul style="list-style-type: none"> 	All	May/June 2026
<p>Transportation & Mobility Commission</p> <ul style="list-style-type: none"> Workshop #4: September 2026 Public Hearing: October 2026 	TMC, All	September/ October 2026

Communications Tactics

Tactics	Target audience	Timing	Metric
<p>Project BeHeard webpage update</p>	All	April 2026	# engagements/views
<p>Project fact sheet / flyer update</p> <ul style="list-style-type: none"> For distribution at tabling sessions, neighborhood canvassing, etc. 	All	April 2026	None

Tactics	Target audience	Timing	Metric
<p>Social media</p> <ul style="list-style-type: none"> City Channels: Facebook and Instagram Share links with other stakeholders to share on their social media channels 	All	May/June 2026	# engagements
<p>E-Newsletter</p> <ul style="list-style-type: none"> Project email list, Email project list ahead of TMC Workshops, when survey launches and survey reminders 	All	May/June 2026, September 2026, October 2026	# subscribers and # opens
<p>Direct emails</p> <ul style="list-style-type: none"> Send direct emails to relevant stakeholders 	Neighborhood associations, schools, community organizations	May/June 2026	# subscribers and # opens
<p>Owned media</p> <ul style="list-style-type: none"> Vancouver Connects and Office of Neighborhoods Newsletters 	All	May/June 2026, August 2026, September 2026	# subscribers and # opens
<p>Mailer (dependent on budget)</p> <ul style="list-style-type: none"> Send mailer to property owners and occupants within ¼ mile of project area 	Property owners and occupants	May/June 2026	# of mailers sent

Tactics	Target audience	Timing	Metric
<p>Yard signs</p> <ul style="list-style-type: none"> Maintain yard signs from phase 1 within the public right-of-way along project corridor 	<p>Project area residents/visitors</p>	<p>May/June 2026</p>	<p>None</p>

Additionally, the project team will develop a phase 2 engagement summary in August/September 2026, documenting engagement goals, activities and results, including specific efforts to reach and engage equity-priority communities.

2025-2026 Corridor Projects RACI Matrix

The following chart identifies who is responsible, accountable, consulted and informed across major project deliverables.

Task or Activity	Public Works Project Manager Matt Hinshaw	Transportation Planning – Lead Planners & Project Managers Emily Benoit, Maggie Derk, Adam Argo	Community Engagement William Cooley	Citywide Communications Nicole Walters	Department Directors Steve Wall, Chad Eiken	City Manager/City Council Lon Pluckhahn
Outreach to neighbors	A	R	C	I	I	I
Questions from the community	R/A	R/A	C/I	I	I	I
PowerPoint slides, print materials or press releases	R/A	R/A	I	C	I	I
Web content	R/A	R/A	I	C	I	I
Media contact	R/A	R/A	C	C	C	I
Transportation Mobility Commission	R/A	R/A	I	I	I	I

2025-2026 Corridor Projects

Safety and Mobility Planning Phase, Initial Design Concepts Transportation and Mobility Commission Workshop

Adam Argo, Emily Benoit, Maggie Derk,
Transportation Planning
Community Development Department

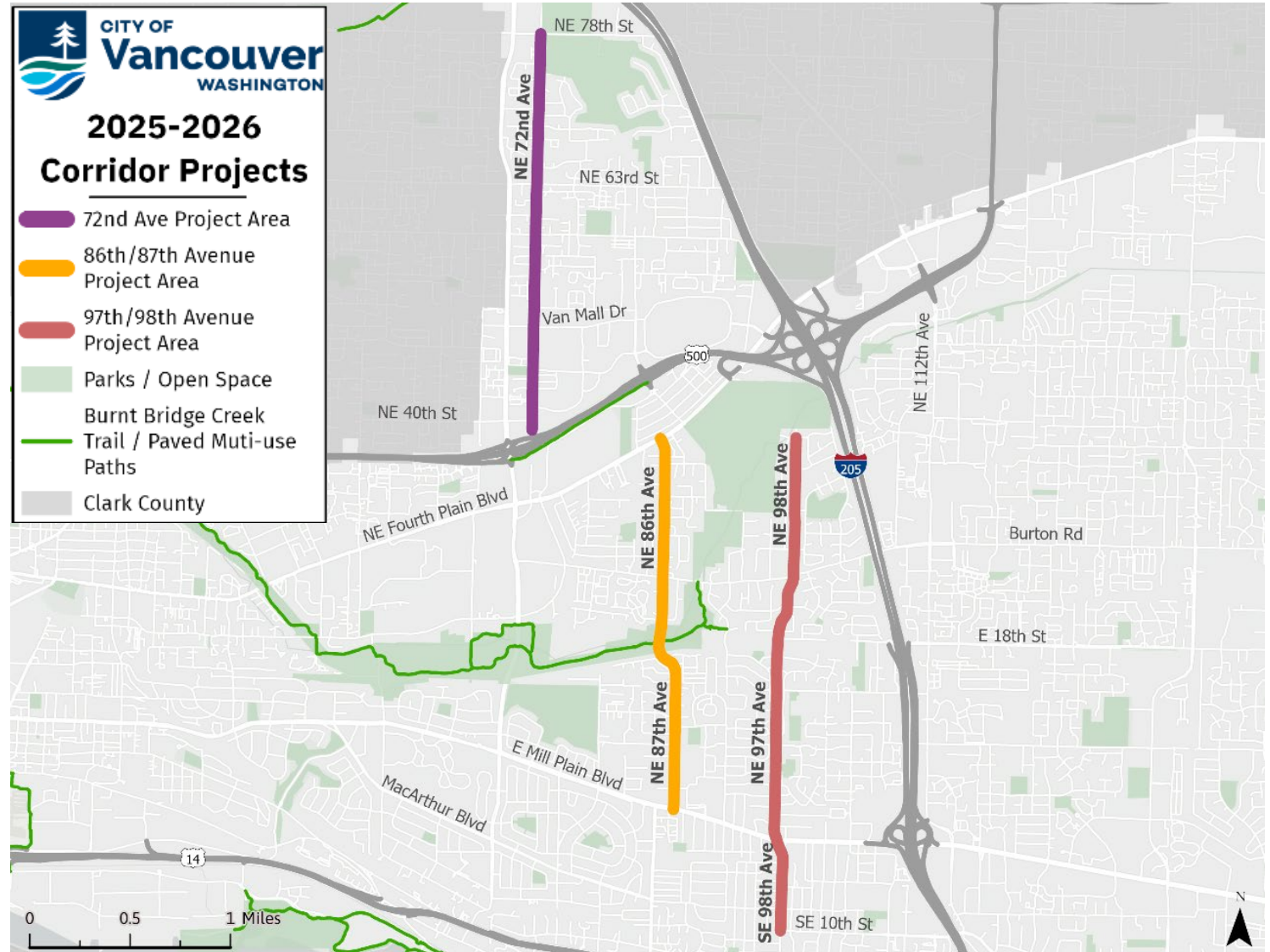
Matt Hinshaw, Lesley Nebeker
Transportation Engineering Division
Public Works Department

April 7, 2026

Project Goals

All Three Corridor Projects

- Safety
- Equity
- Climate
- Connectivity



Project Scope

All Three Corridor Projects

- Varying existing roadway cross-sections limit full build-out of bicycle and small mobility facilities in near-term.
- Some turn lanes and parking would need to be repurposed for full build-out of bicycle and small mobility facilities.
- These three projects will determine recommendations for:
 - Near-term improvements as part of pavement preservation project.
 - Longer-term improvements as future projects as funding allows.



Inform and Consult

All Three Corridor Projects – Why Are We Here?

- Inform the Transportation and Mobility Commission (TMC) about the initial design concepts.
 - Show how the near-term and long-term concepts meet the Transportation System Plan (TSP).
- Consult with TMC to collect feedback.
- Inform the TMC about community engagement in Phase I and upcoming Phase II.



Design Concepts

All Three Corridor Projects are Approximately at the 10% Stage

- **All graphics, dimensions, concepts and ideas presented are subject to change.**



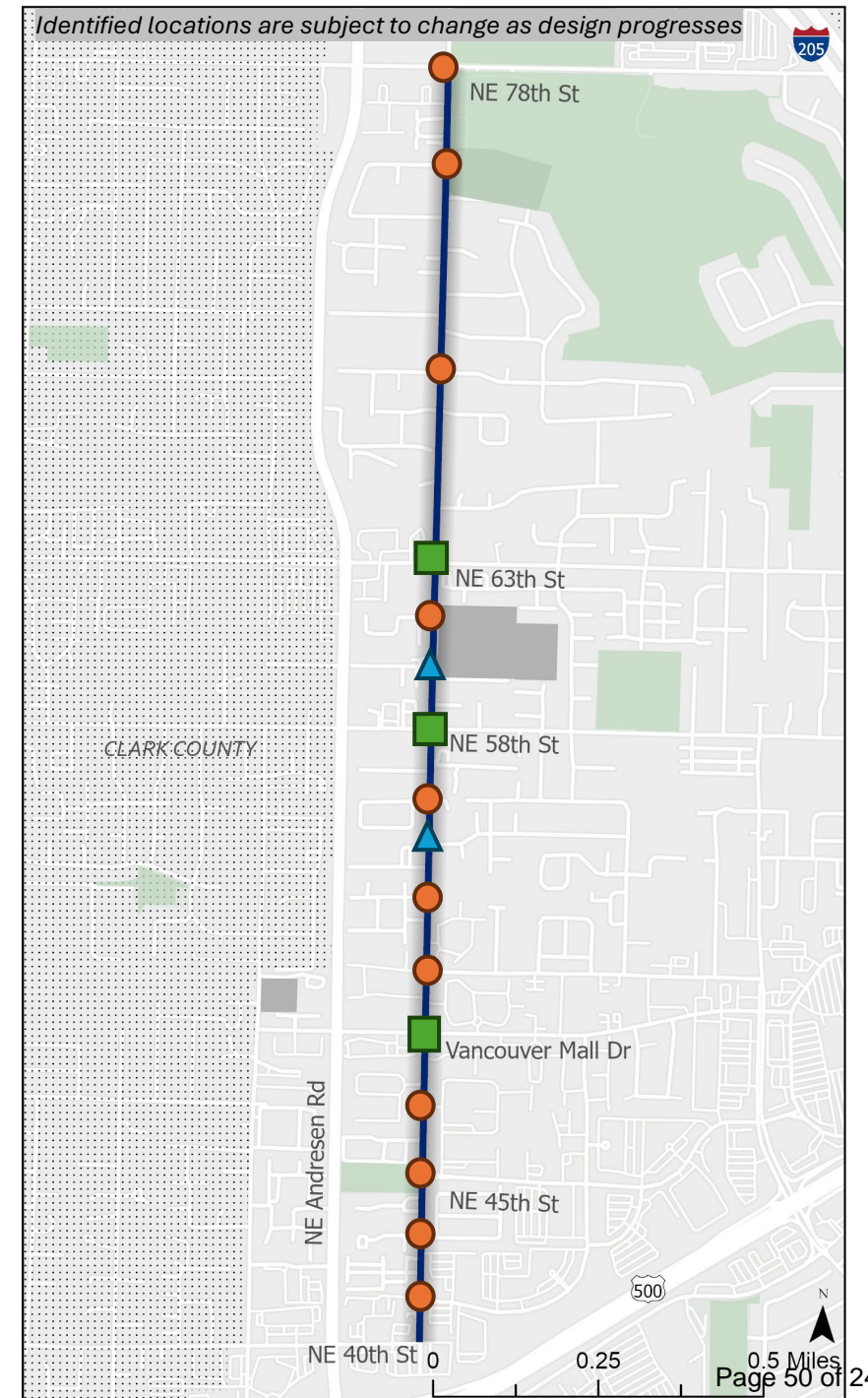
NE 72nd Avenue

Corridor Crossings

- Proposed crossings will be constructed either:
 - *Near-term* during Pavement Preservation Project
 - *Long-term* when funding has been identified
- Corridor-Wide Pedestrian Crossings
 - Spacing = 800' on Pedestrian Corridors, 530' in Pedestrian Centers
 - All will be evaluated using the Pedestrian Crossing Policy for near-term and long-term enhancements.

Corridor Crossings

- Proposed Crossing
- ▲ Funded Crossing/Enhancement
- Existing Crossing
- Corridor Study Extents



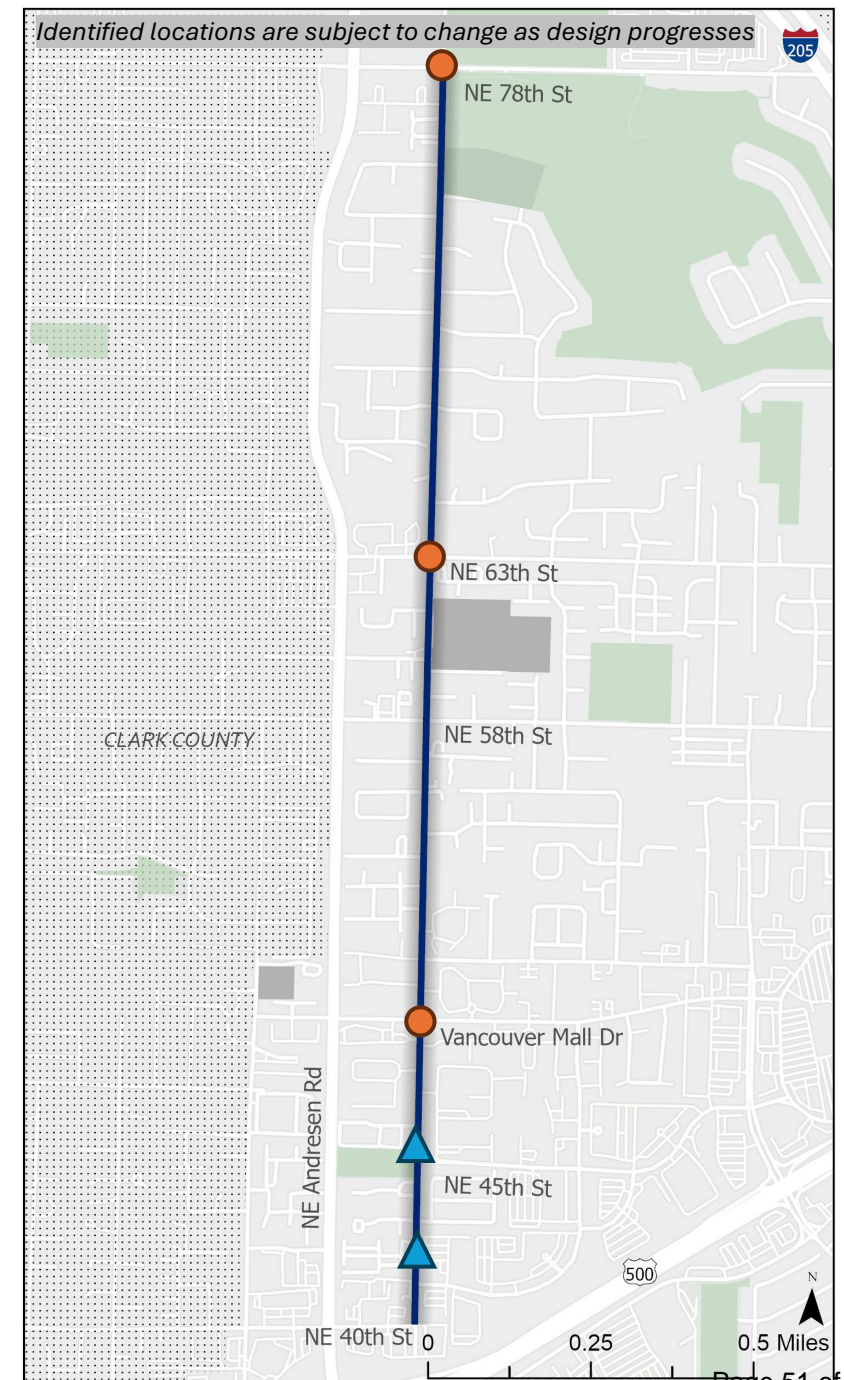
NE 72nd Avenue

Traffic Control Changes

Upcoming:

- Analysis of intersections for:
 - Curb return radius reduction to slow turning vehicles
 - Review of crash rates and factors
 - Safety enhancement opportunities
- Traffic calming opportunities
- Operational Analysis at higher volume intersections
 - Bike box implementation
 - Possibility of turn lane removals

- ▲ Two Way Left Turn Lane or Left Turn Lane Removal Proposed
- Operational Analysis
- Corridor Study Extents

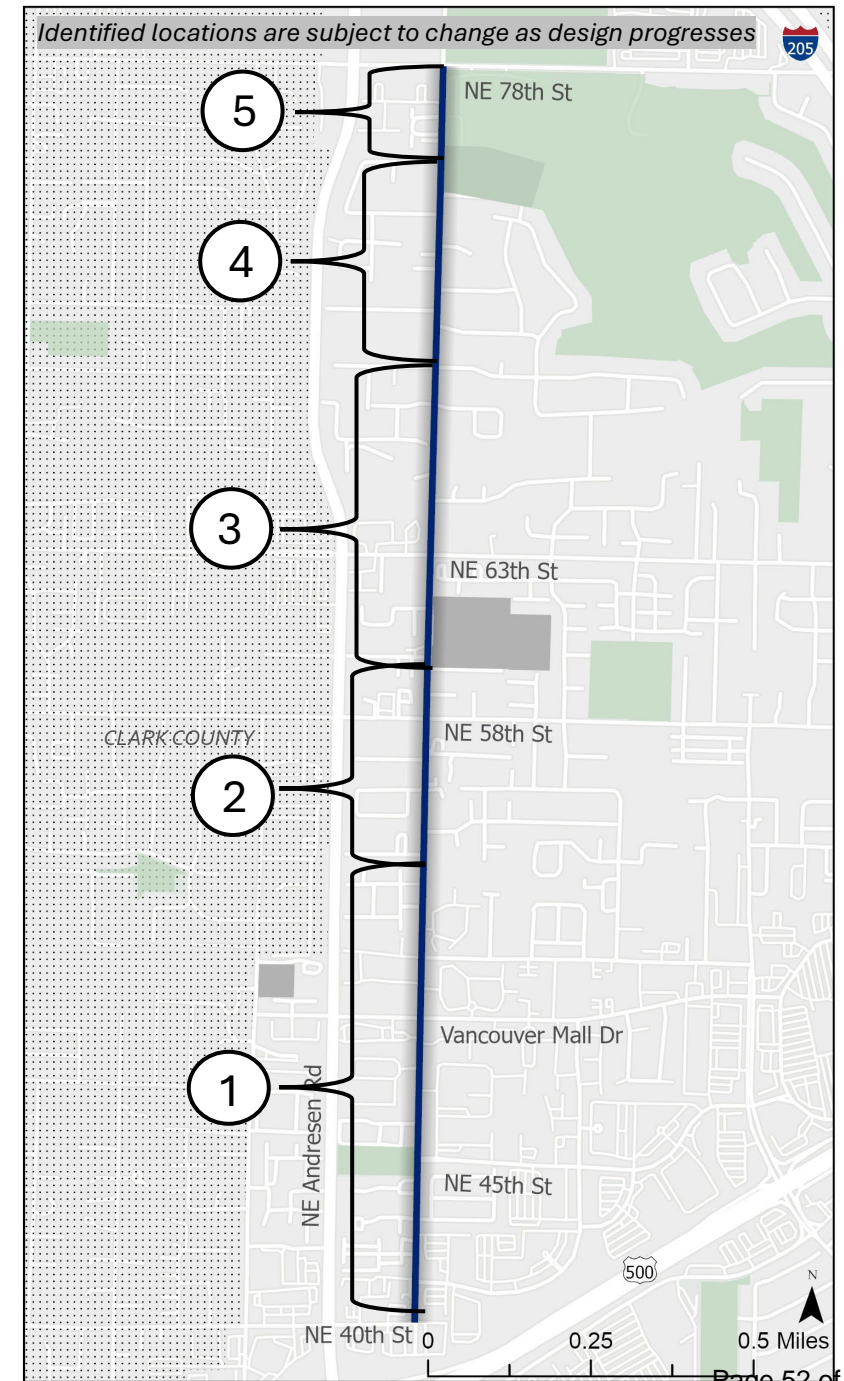
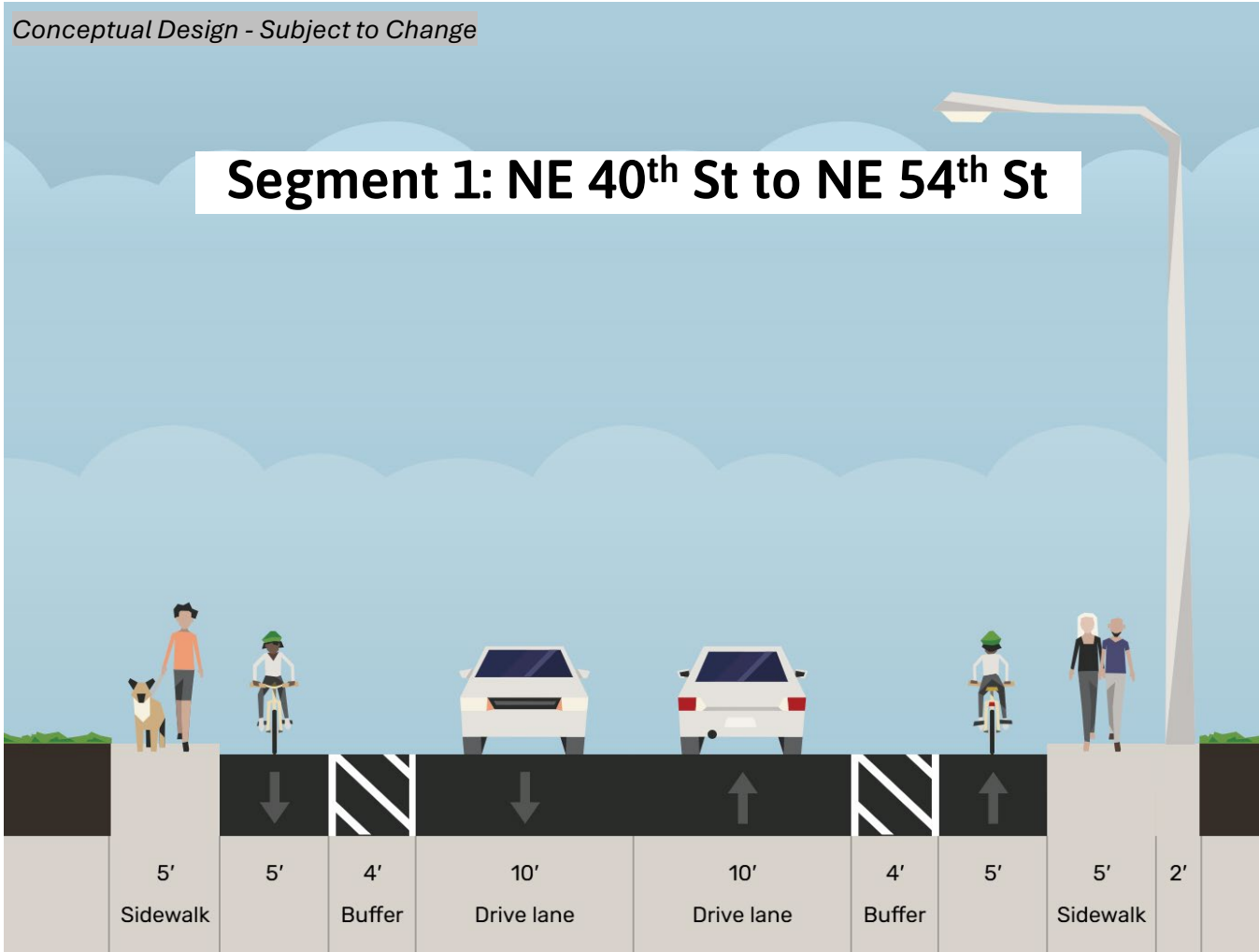


NE 72nd Ave

Segment 1 Near-Term Approximate Cross Sections

Conceptual Design - Subject to Change

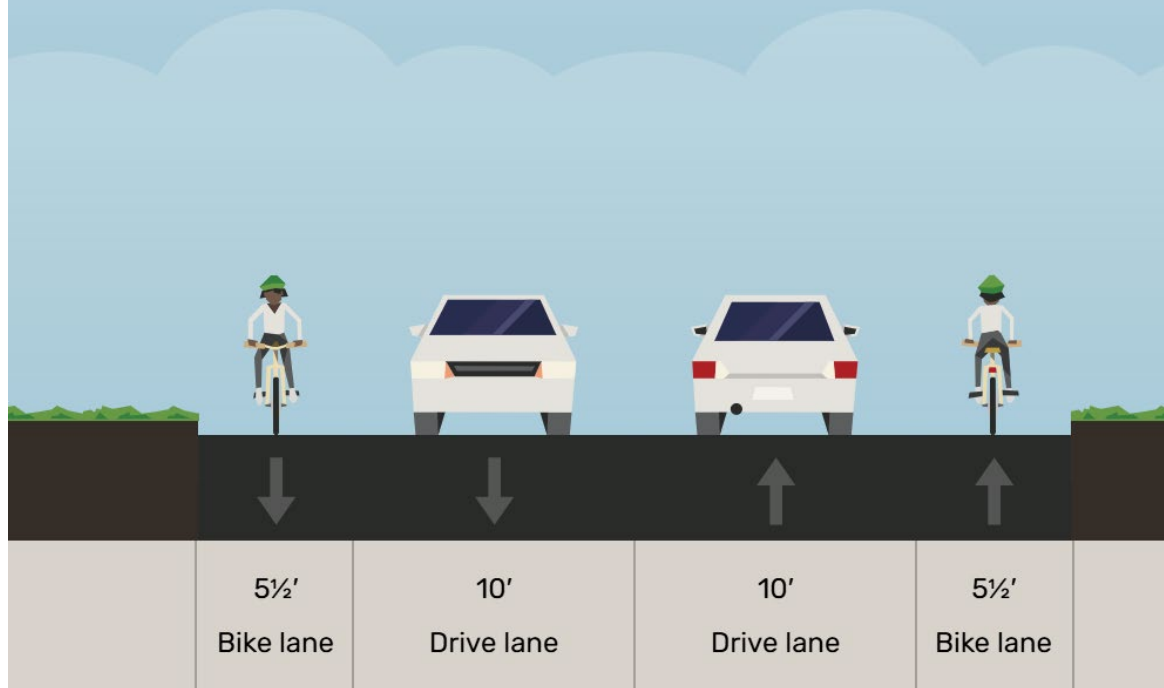
Segment 1: NE 40th St to NE 54th St



NE 72nd Ave Segment 2 Near-Term Approximate Cross Section

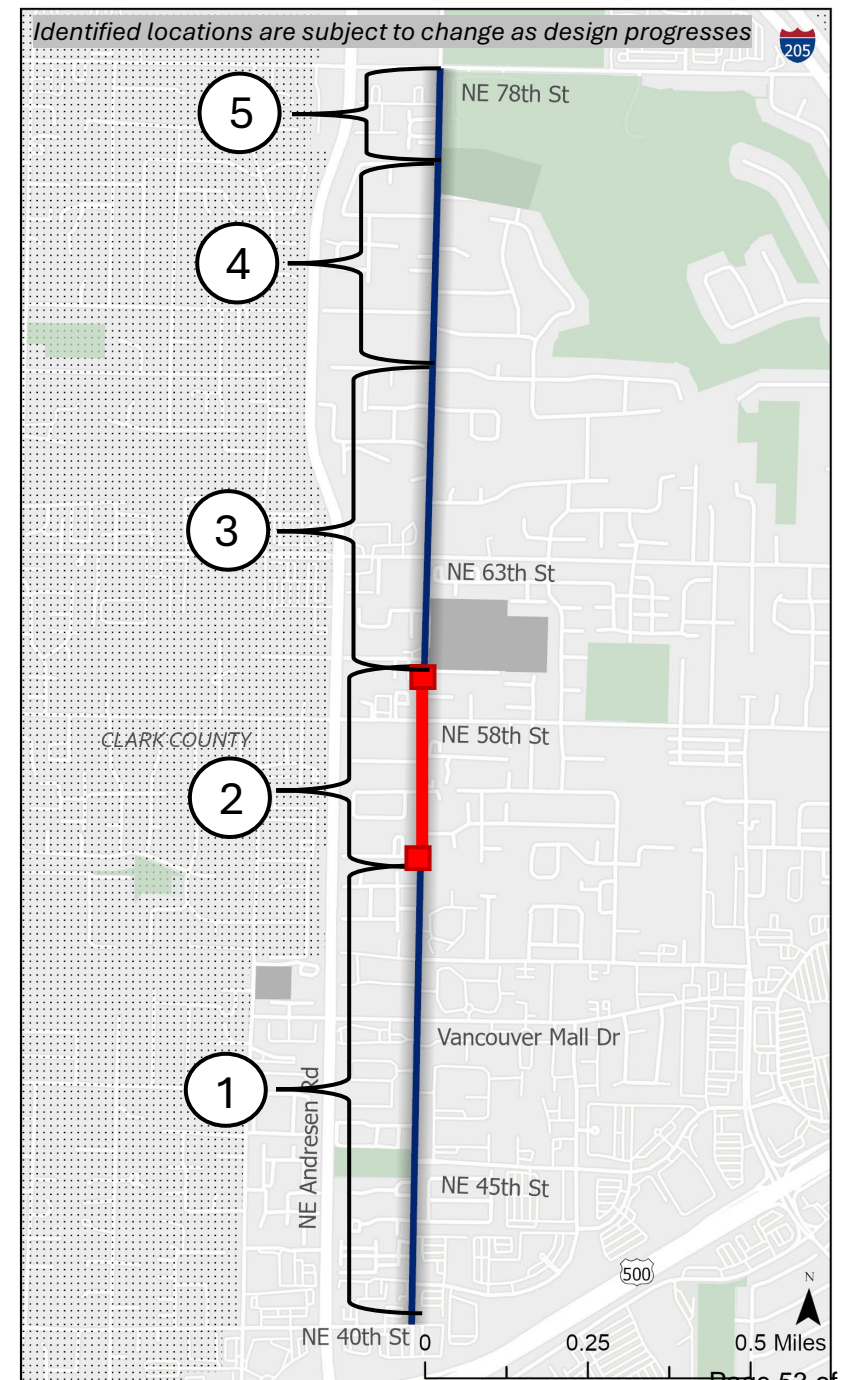
Conceptual Design - Subject to Change

Segment 2 : NE 54th St to NE 60th St



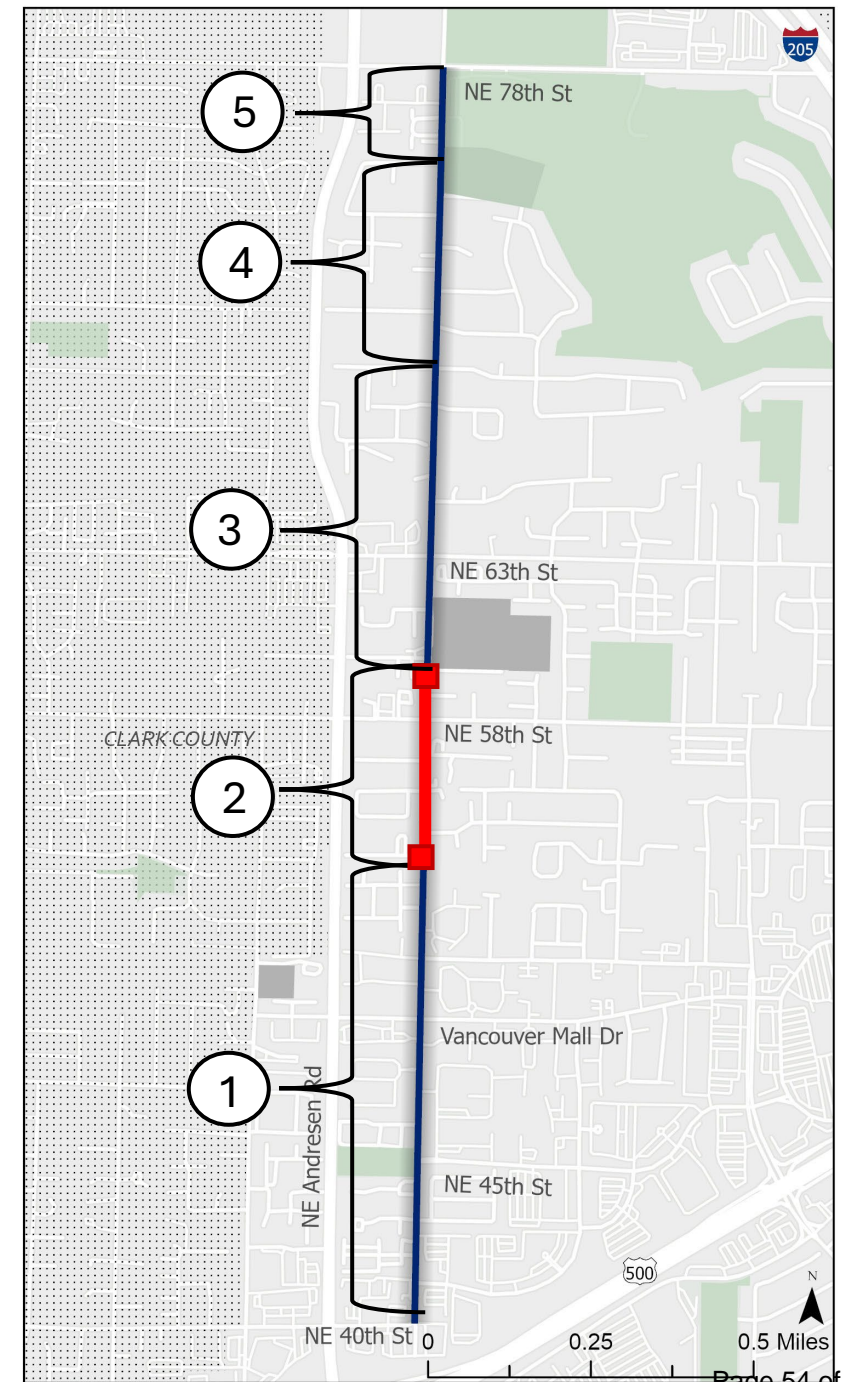
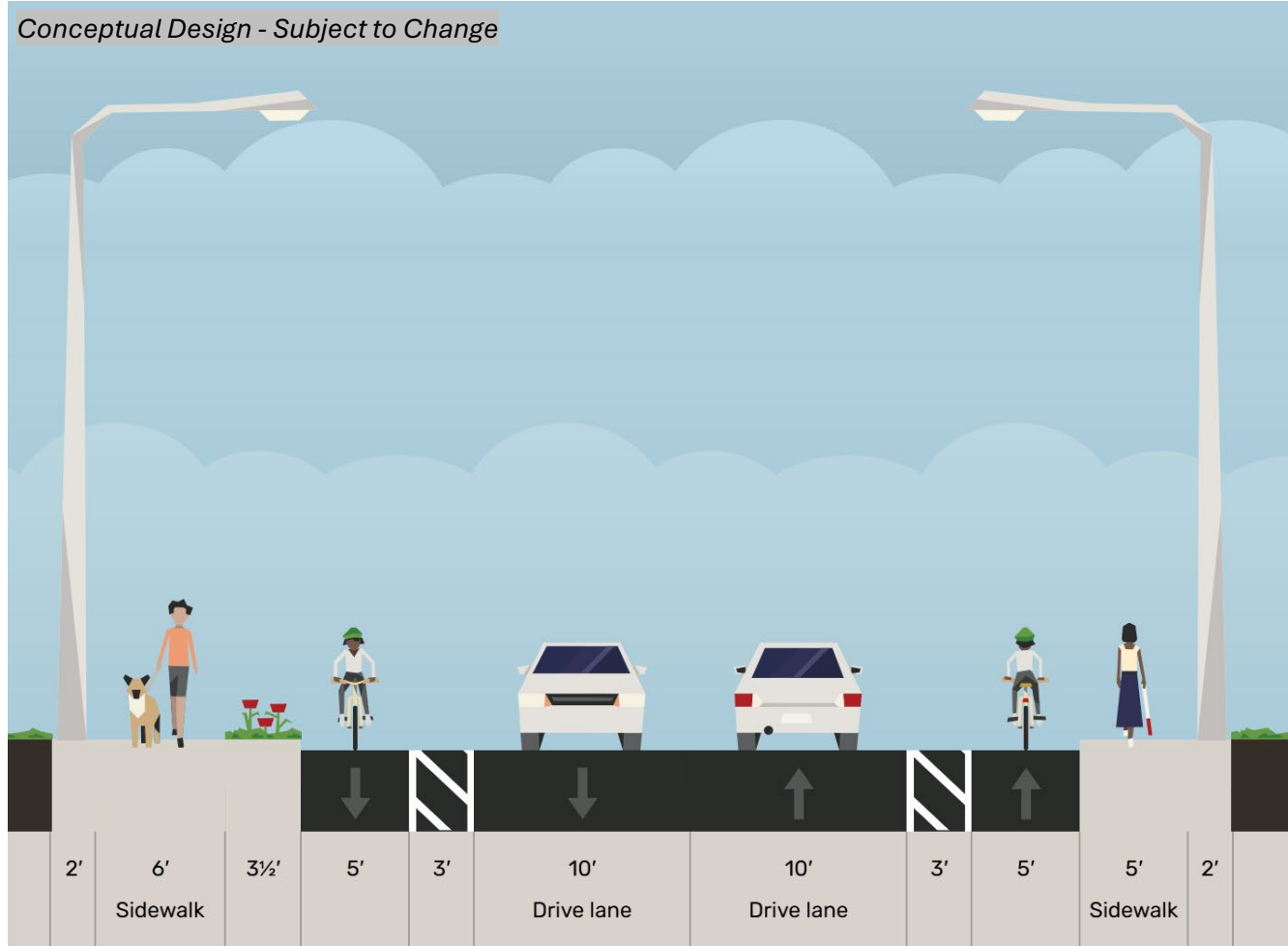
- Upcoming project funded by Safe Routes to School and Fourth Plain for All

 Narrow Segment



NE 72nd Ave Segment 2 Near- Term Funded Cross Section

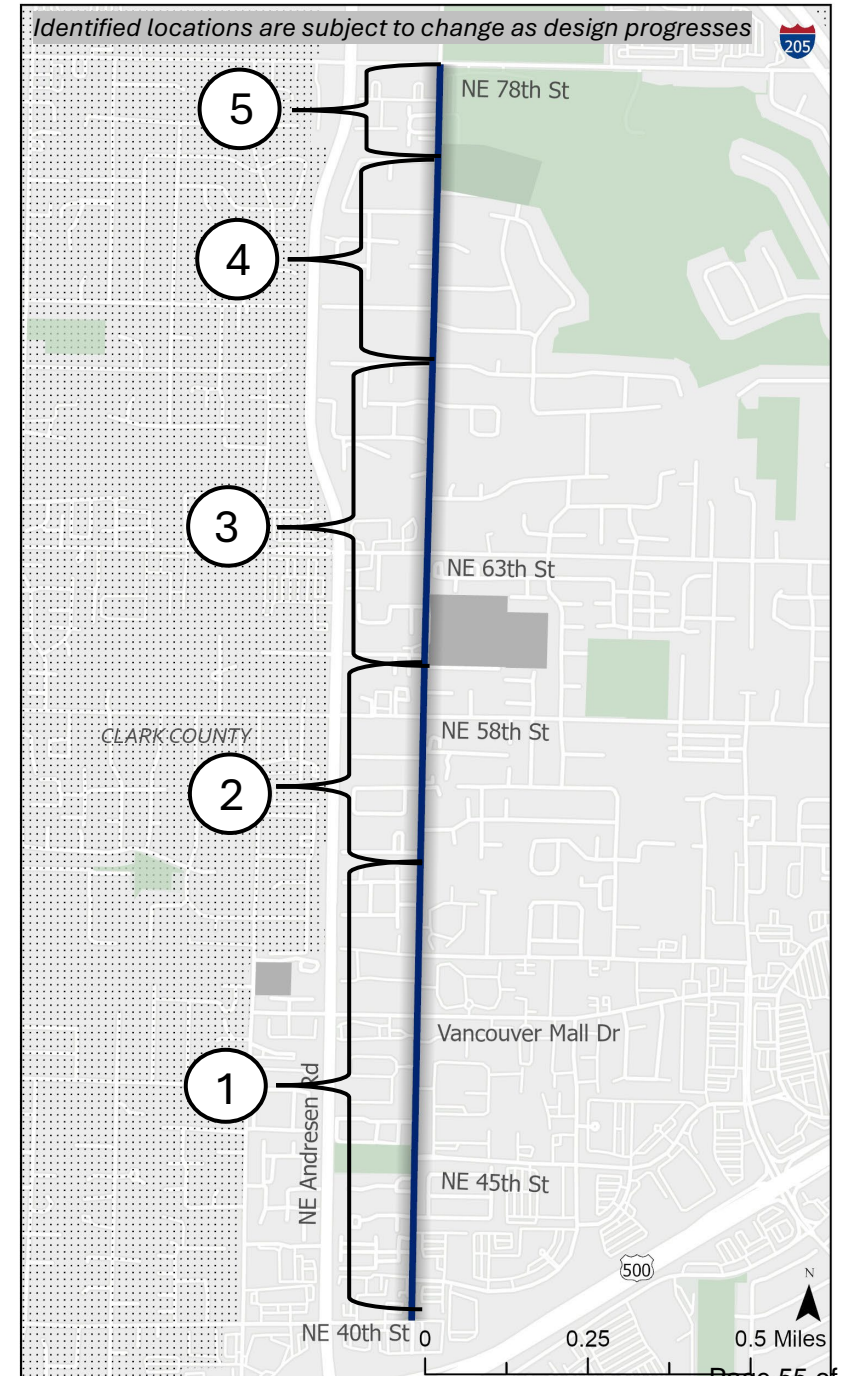
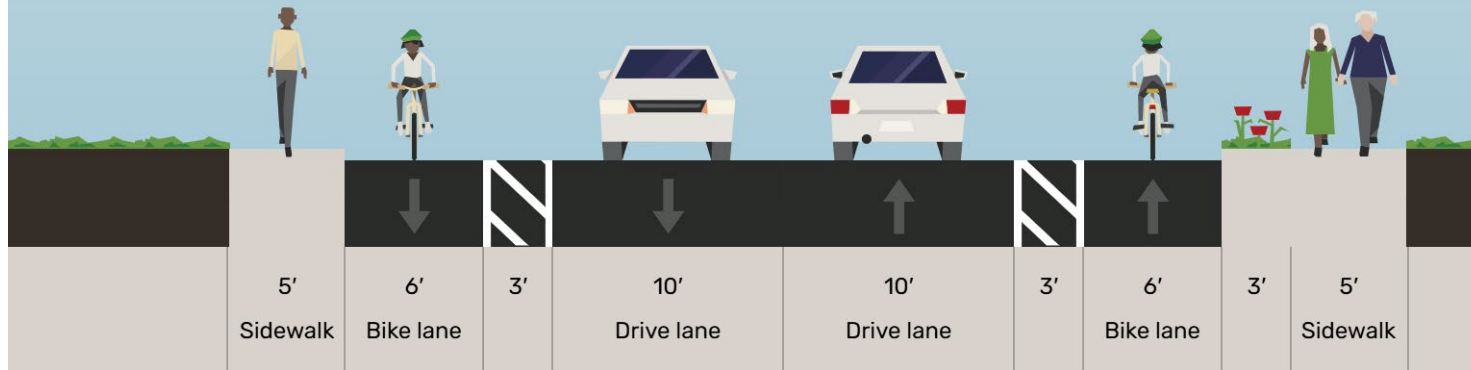
Conceptual Design - Subject to Change



NE 72nd Avenue Segment 3 Near-Term Approximate Cross Section

Conceptual Design - Subject to Change

Segment 3: NE 60th St to NE 69th St

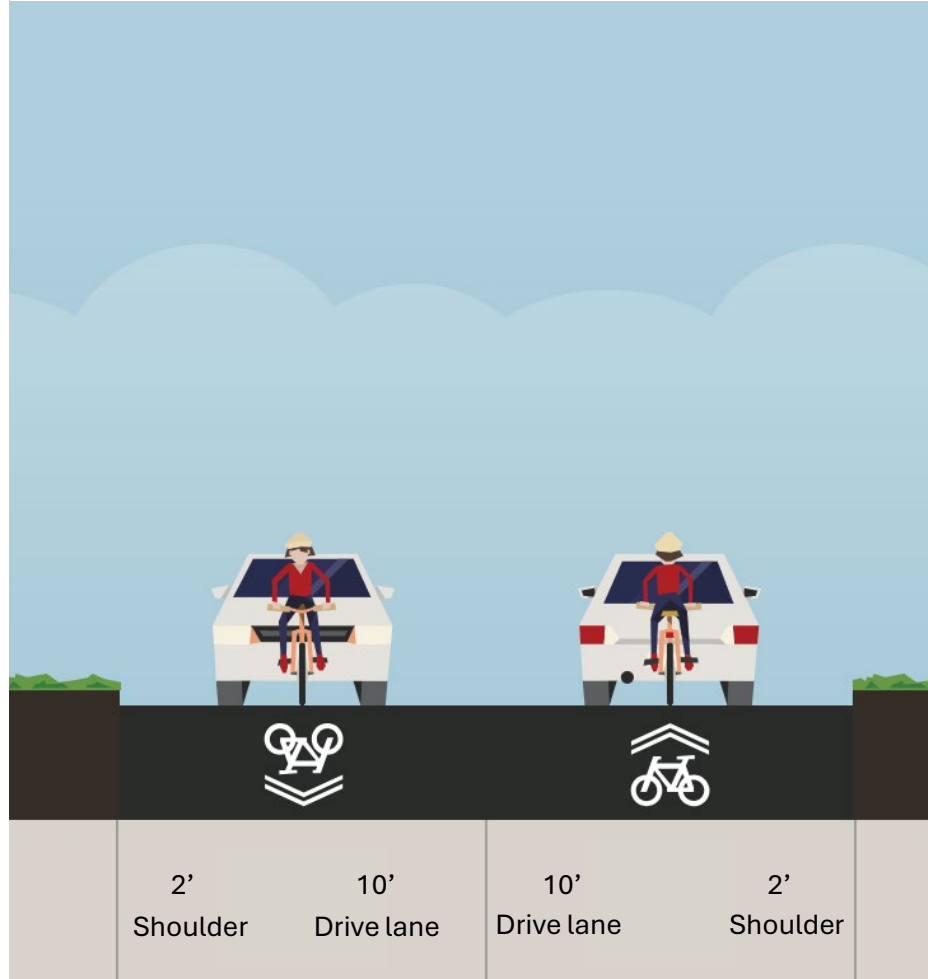


NE 72nd Ave

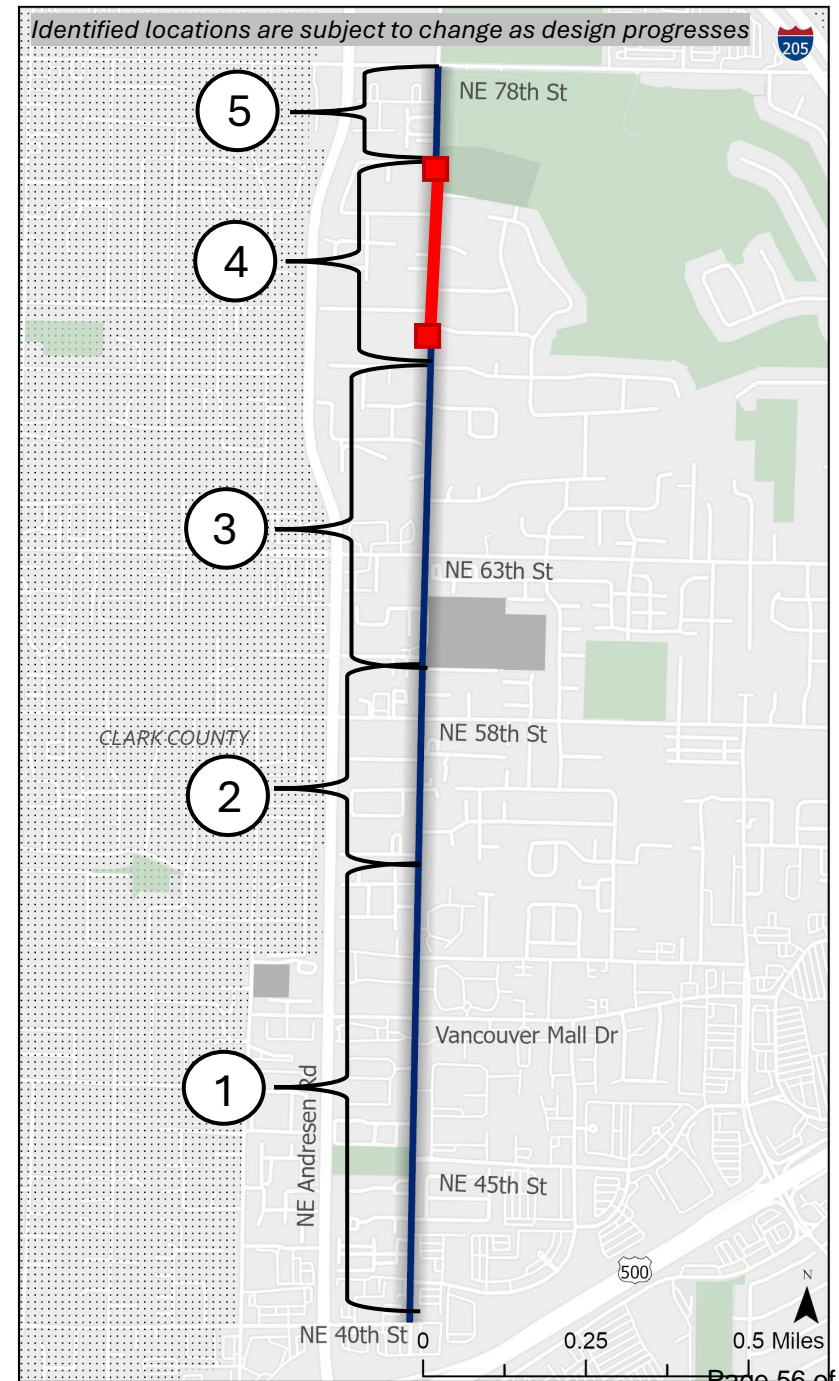
Segment 4 Near-Term Approximate Cross Section

Conceptual Design - Subject to Change

Segment 4: NE 69th St to NE 75th St

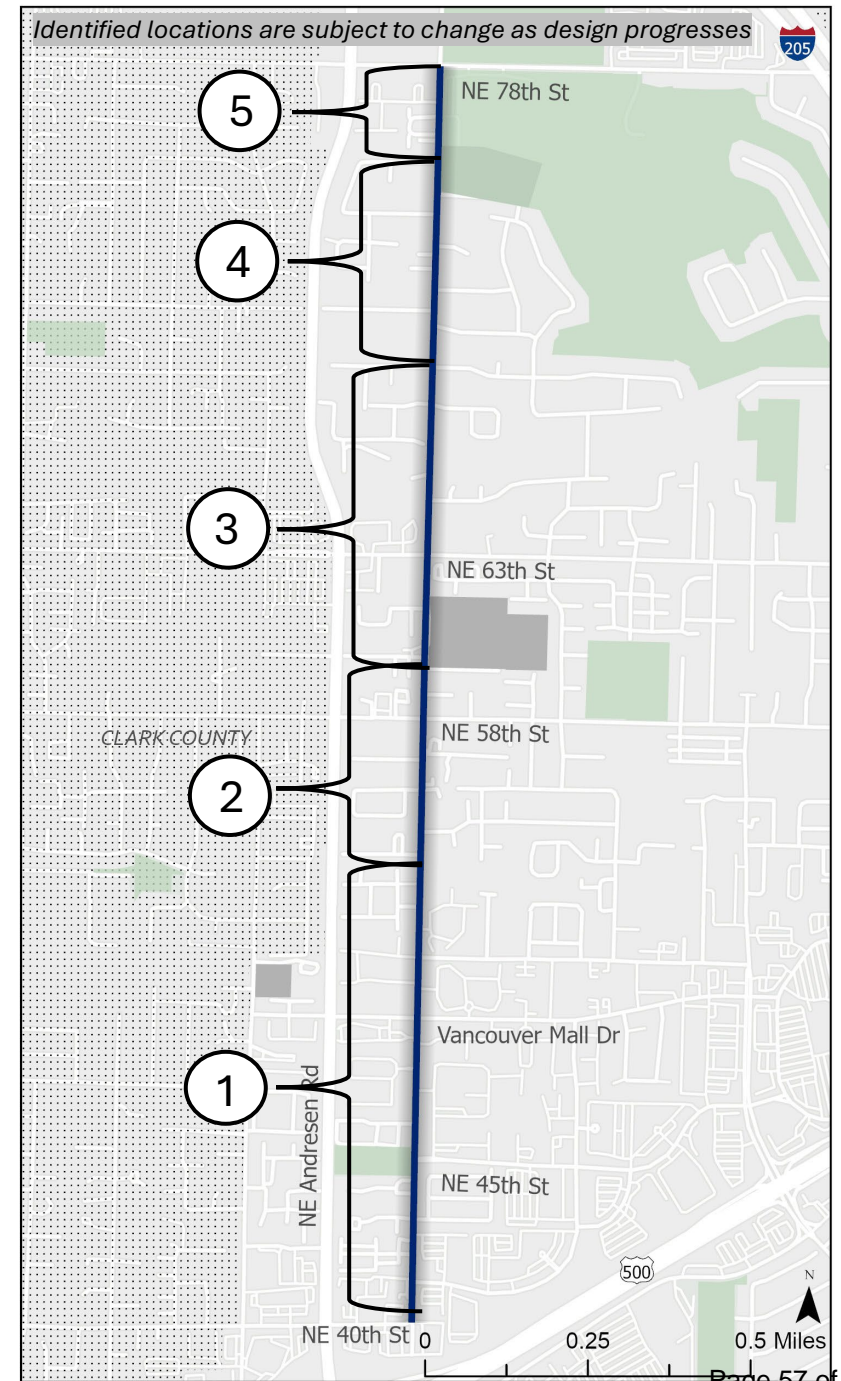
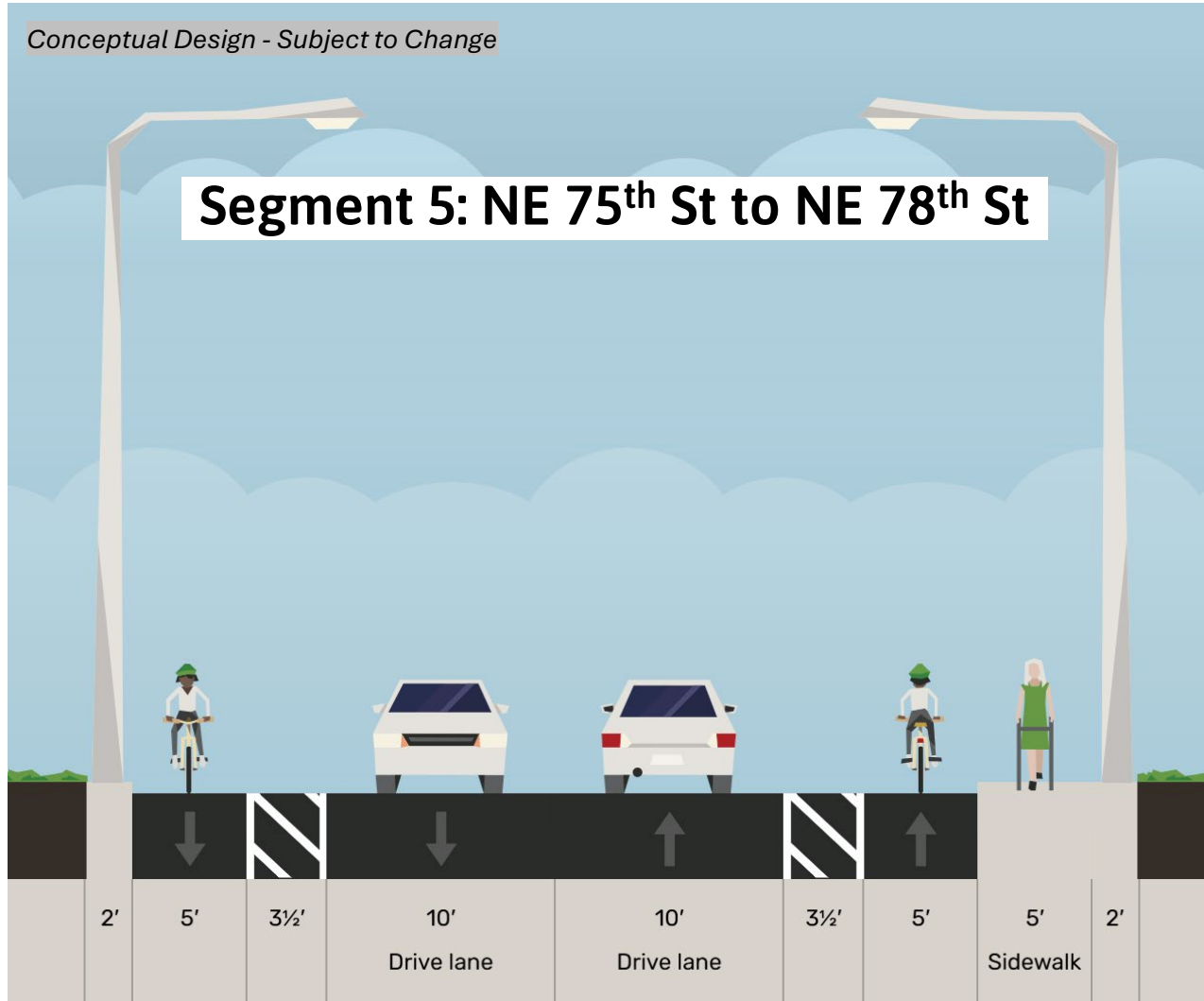


 Narrow Segment



NE 72nd Ave Segment 5 Near-Term Approximate Cross Section

Conceptual Design - Subject to Change

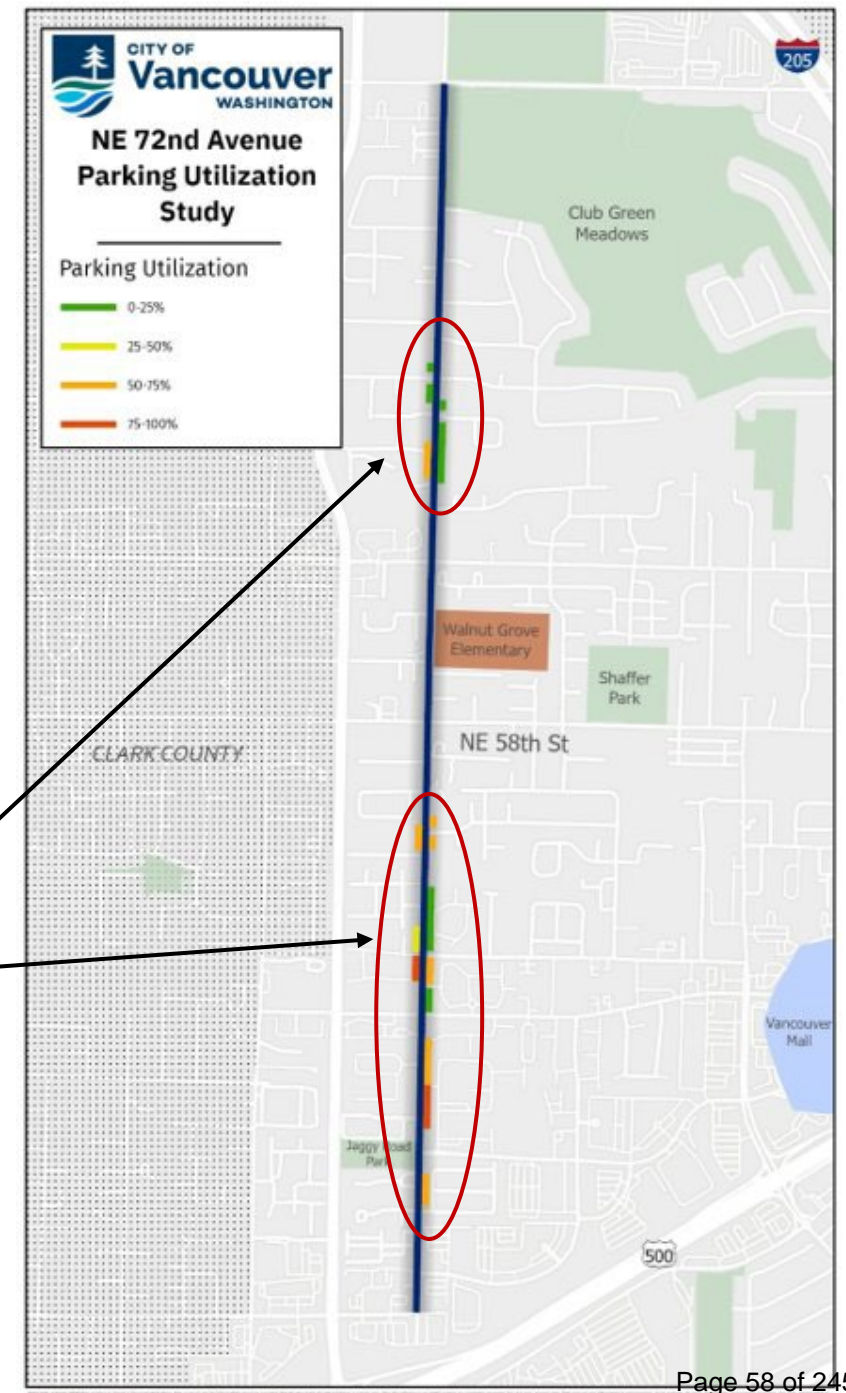


NE 72nd Avenue

Parking Reallocation

- Parking is proposed to be reallocated to become bike and small mobility lanes
- Implement active transportation connections in alignment with the Transportation System Plan Modal Networks.

Proposed Parking Reallocation



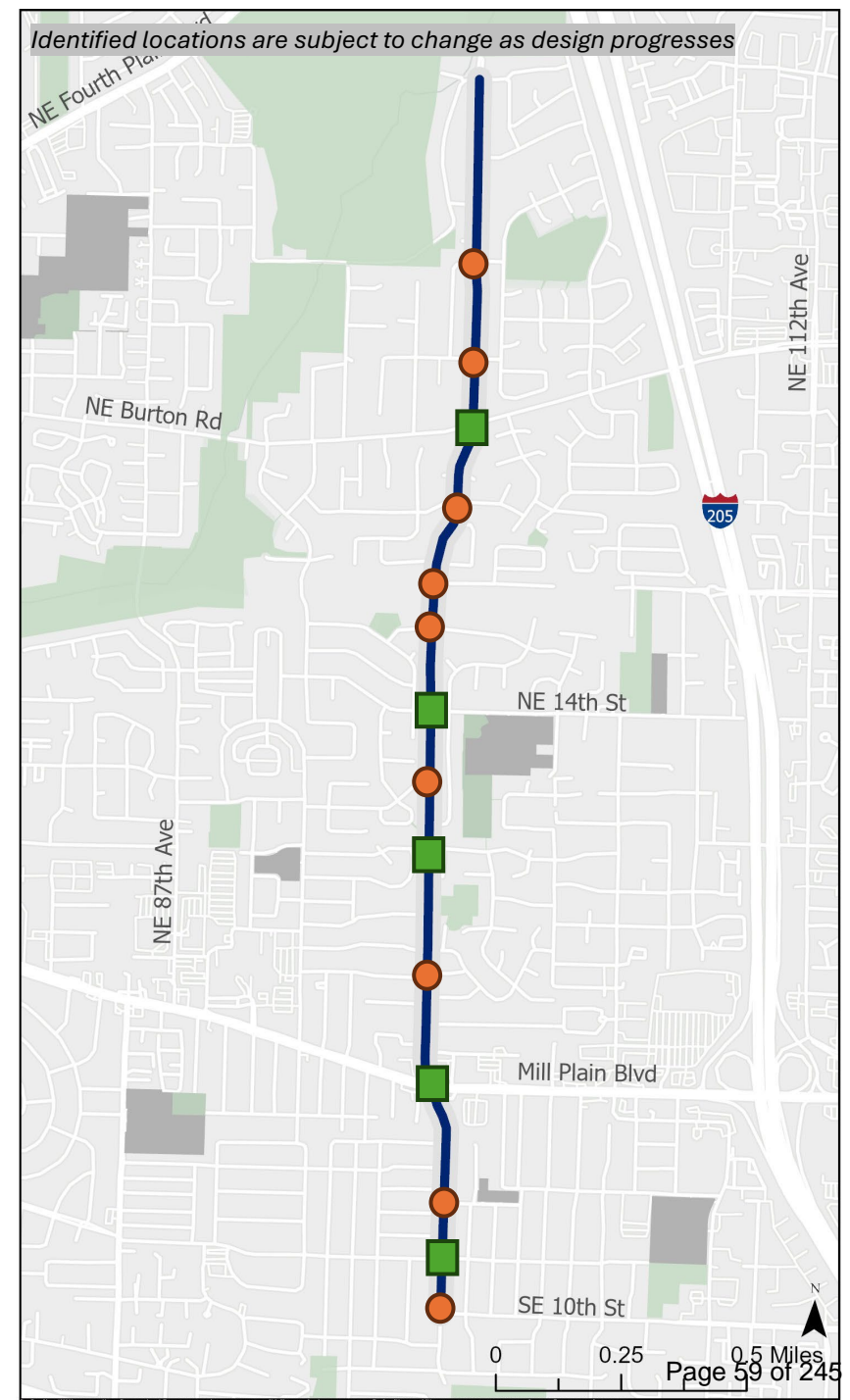
97th/98th Avenue

Corridor Crossings

- Proposed crossings will be constructed either:
 - *Near-term* during Pavement Preservation Project
 - *Long-term* when funding has been identified
- Corridor-Wide pedestrian crossings
 - Spacing = 830' on Pedestrian Corridors
 - All will be evaluated using the Pedestrian Crossing Policy for near-term and long-term enhancements.

Corridor Crossings

- Proposed Crossing
- Existing Crossing
- Corridor Study Extents



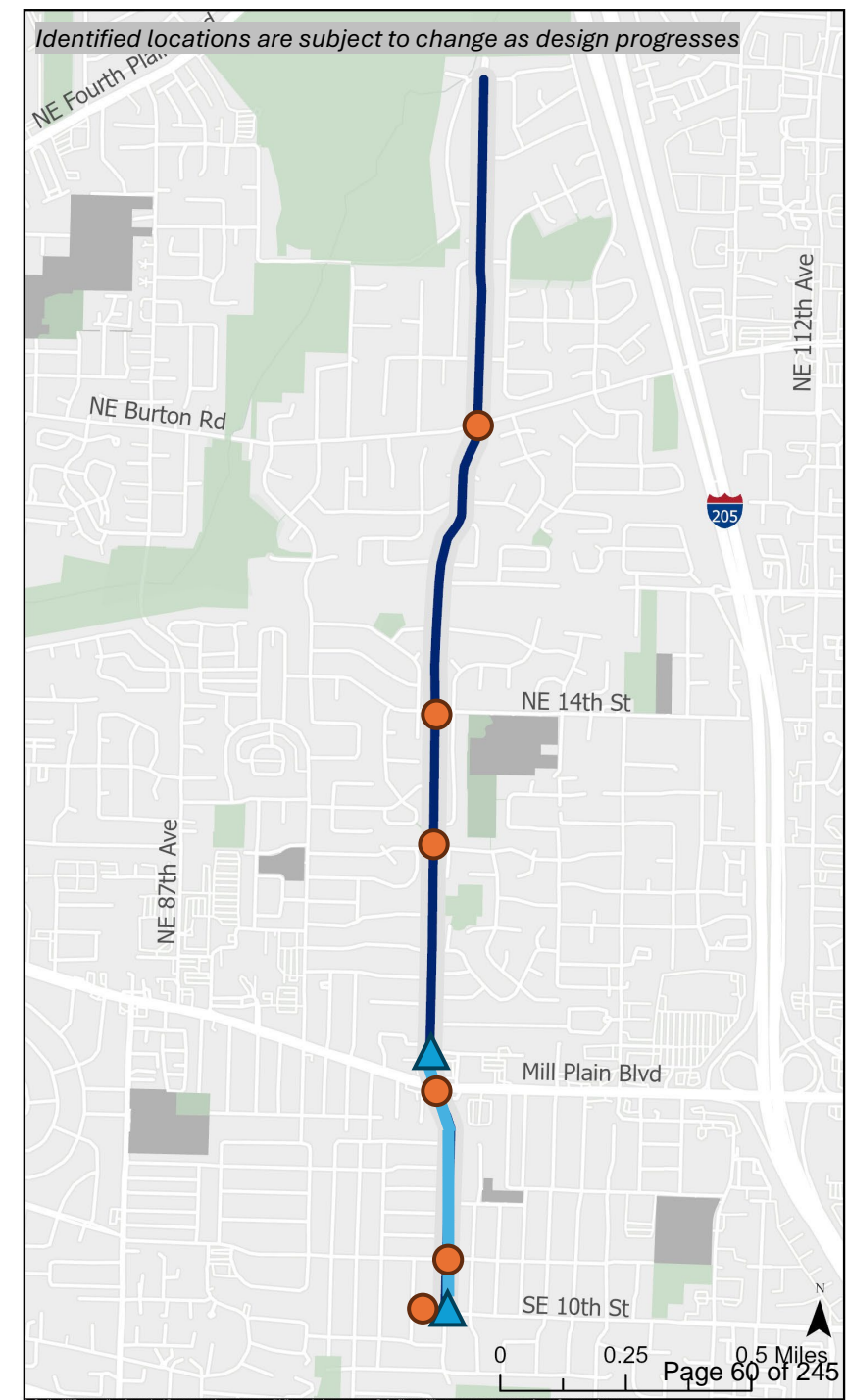
97th/98th Avenue

Traffic Control Changes

Upcoming:

- Analysis of intersections for:
 - Curb return radius reduction to slow turning vehicles
 - Review of crash rates and factors
 - Safety enhancement opportunities
- Traffic calming opportunities
- Operational Analysis at higher volume intersections
 - Bike box implementation
 - Possibility of turn lane removals

- ▲▲ Two Way Left Turn Lane or Turn Lane Removal Proposed
- Operational Analysis
- Corridor Study Extents



97th/98th Avenue

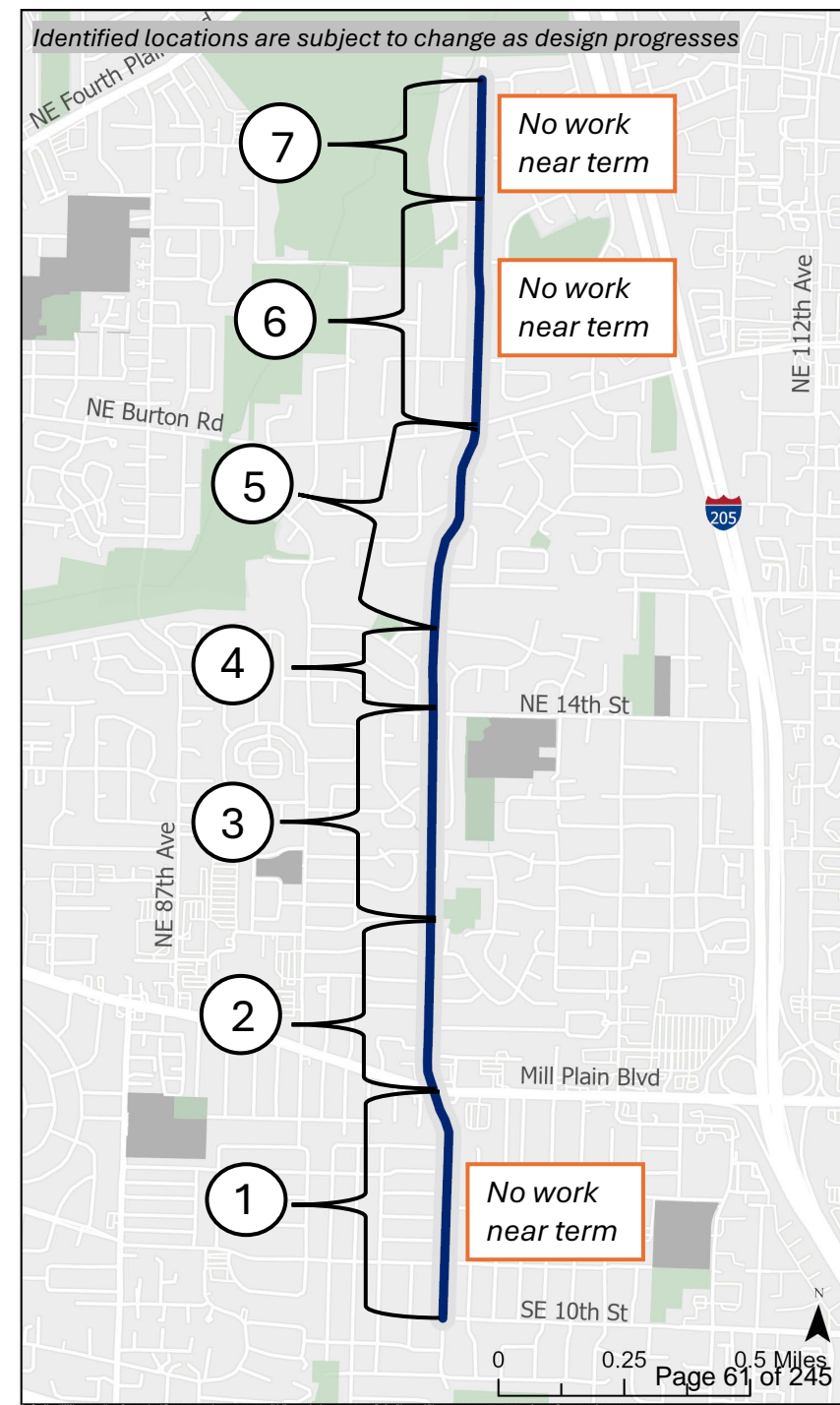
Corridor Segments

No Near-Term Work

Segment 1: SE 10th St to Mill Plain Blvd

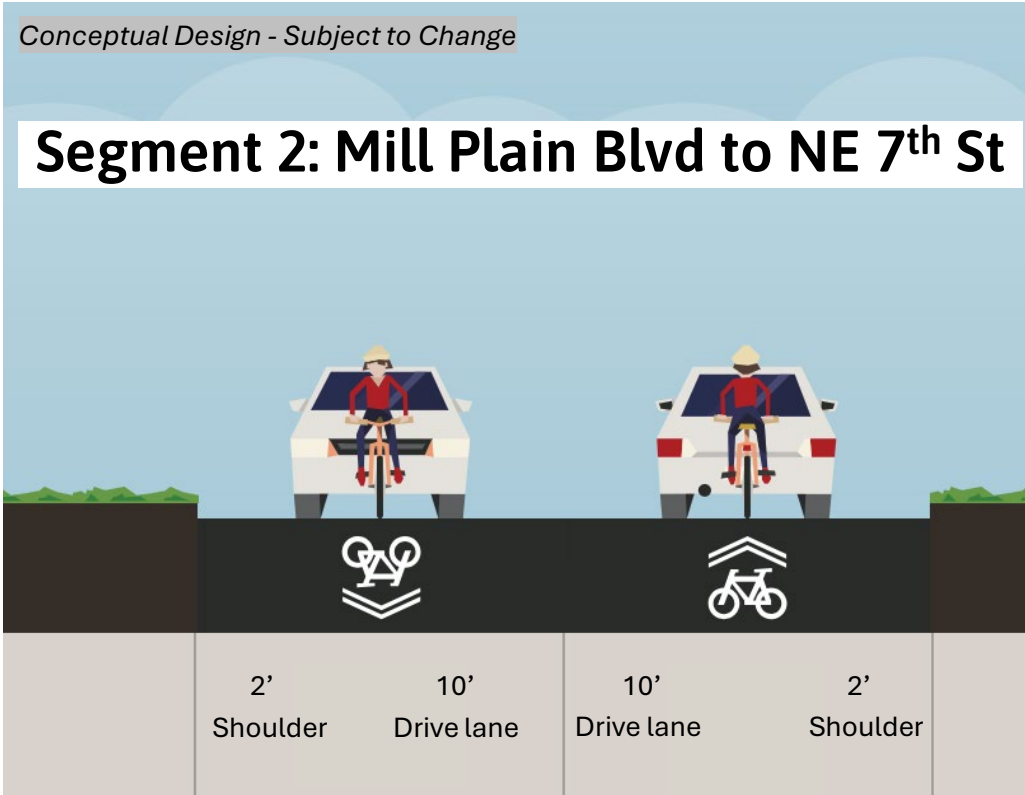
Segment 6: NE Burton Rd to NE 34th St

Segment 7: NE 34th St to End

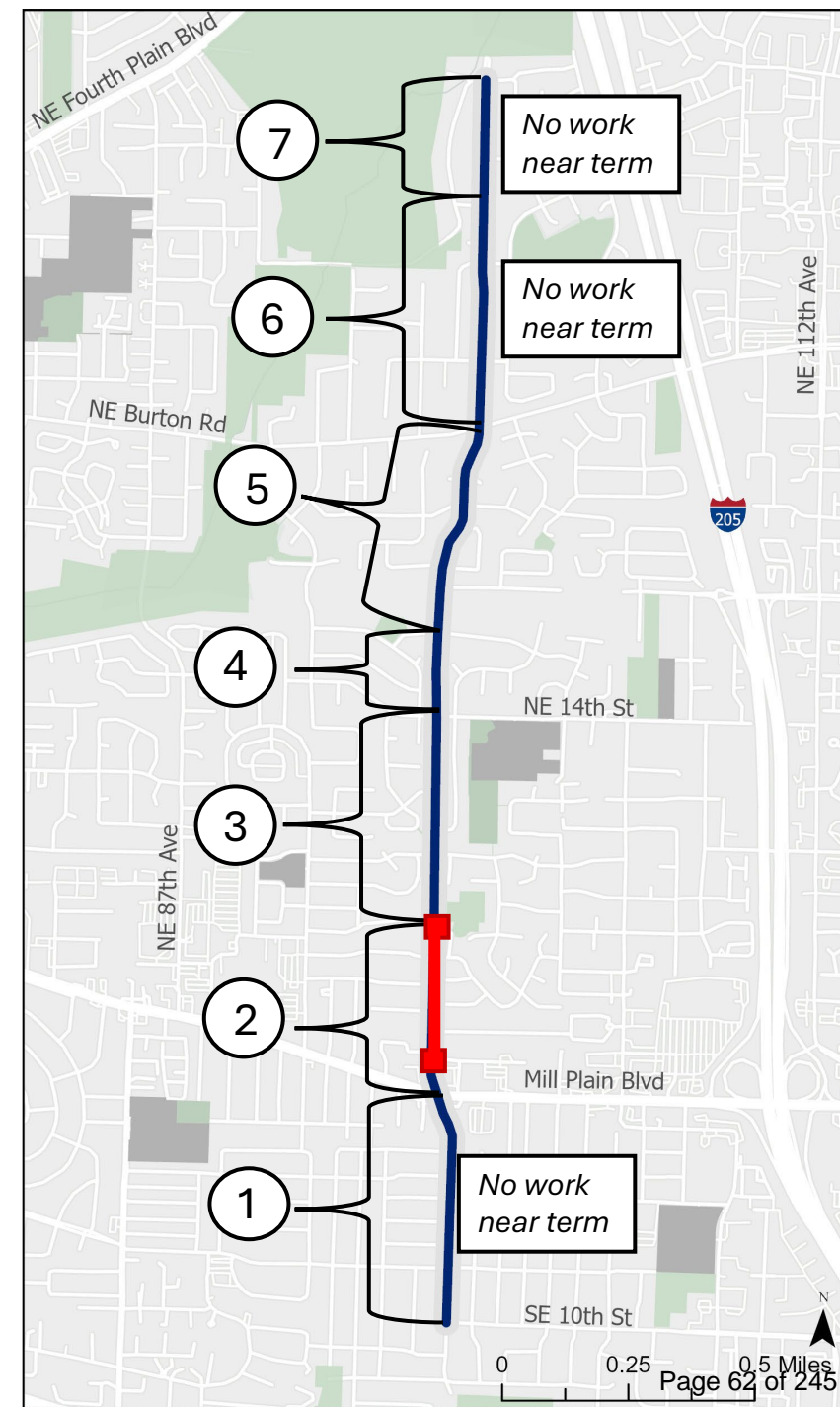


97th/98th Avenue

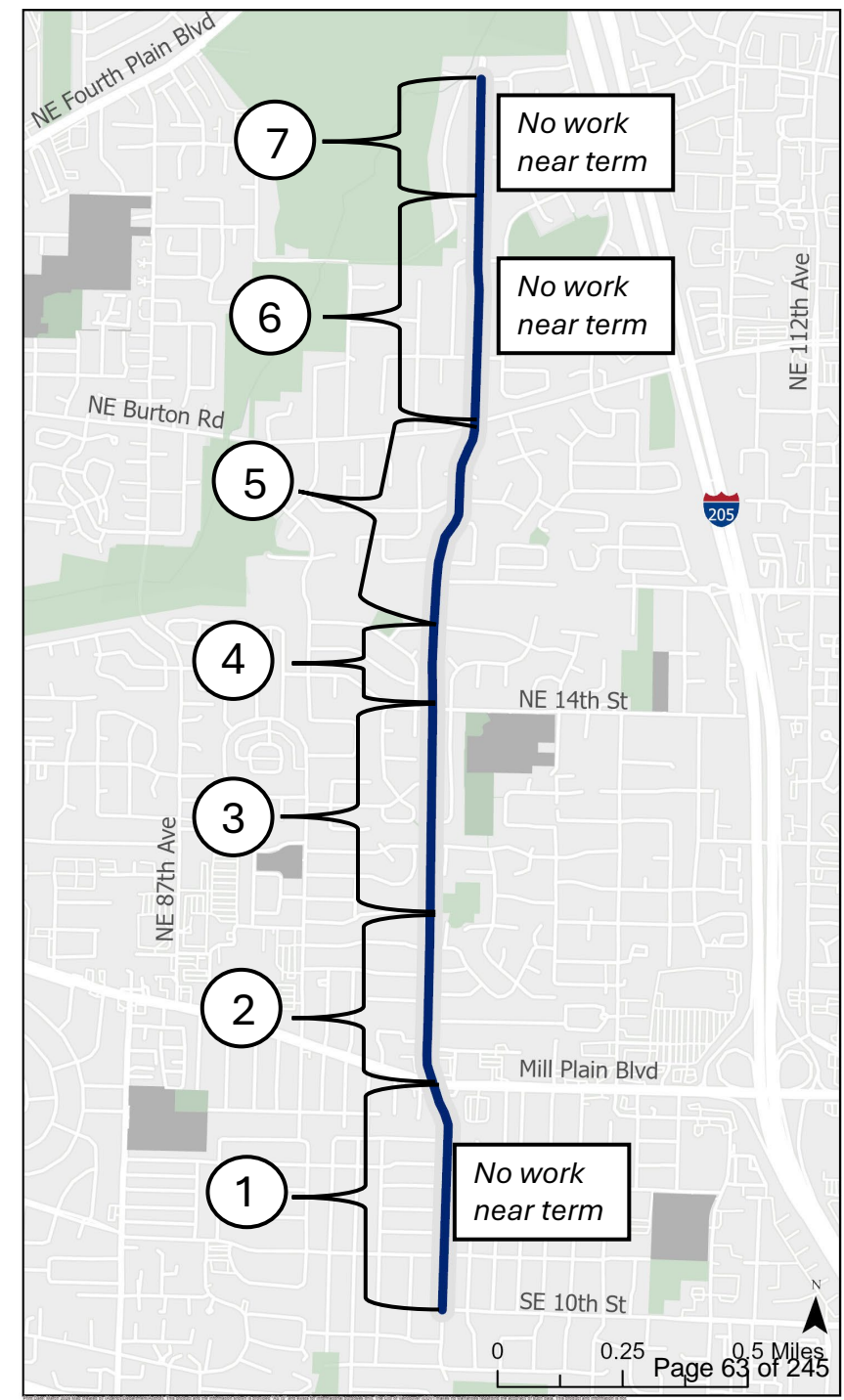
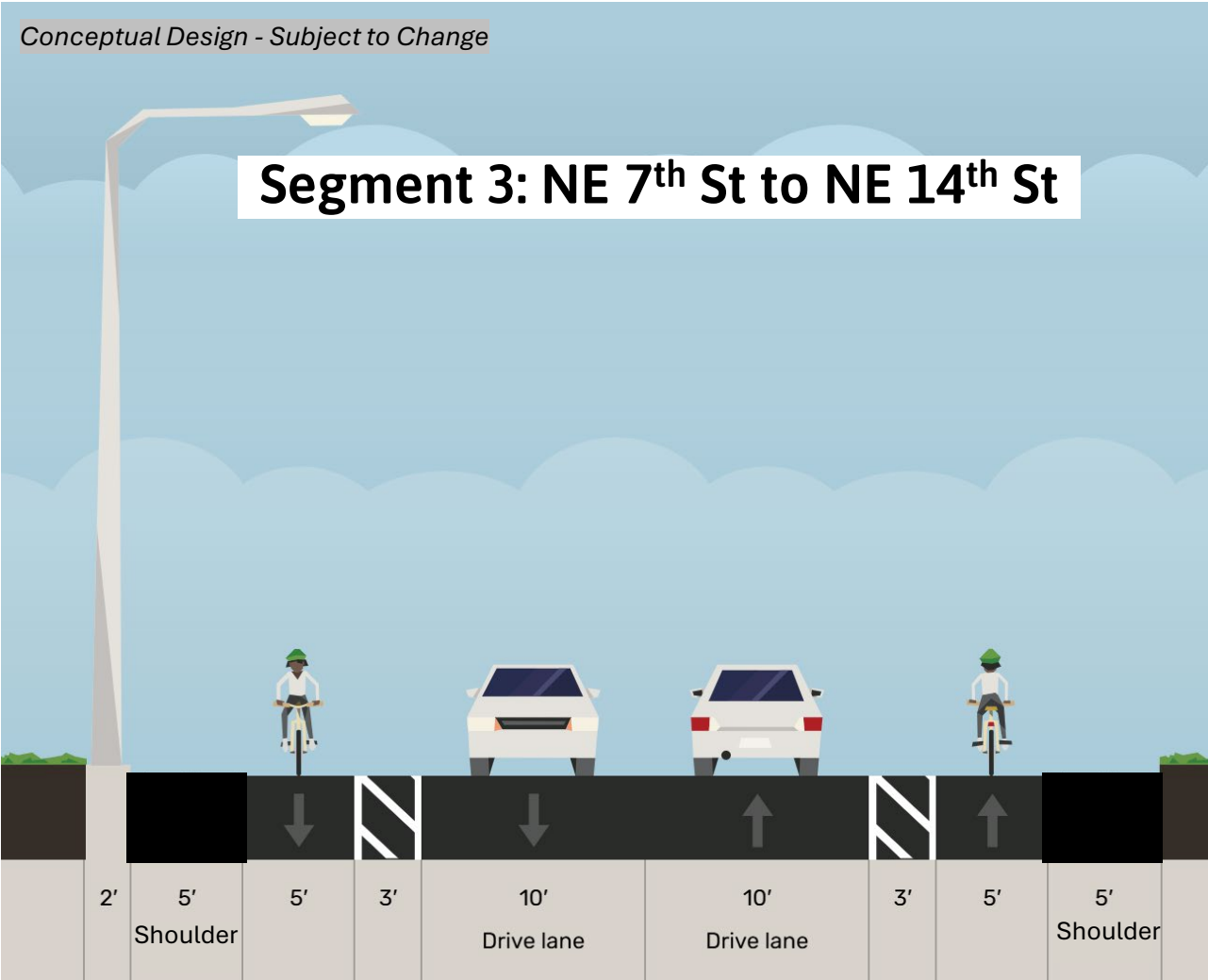
Segment 2 Near-Term Approximate Cross Section



 Narrow Segment



97th/98th Avenue Segment 3 Near-Term Approximate Cross Section



97th/98th Avenue

School Considerations Near NE 9th St & NE 14th St

NE 9th Street

- Near-Term:
 - Evaluate additional safety enhancements (ex: signage)
 - Evaluate stop sign compliance and sight distance
 - Evaluate addition of pedestrian refuge island
- Long-term
 - Create Safe Routes to School Project for adding sidewalk

NE 14th Street

- Near-Term:
 - Evaluate reconstruction of islands to be more of a standard pedestrian refuge island (remove concrete structures)
 - Retain all-way stop
 - Evaluate additional safety enhancements (ex: signage)
- Long-term:
 - Create Safe Routes to School Project for adding sidewalk to north

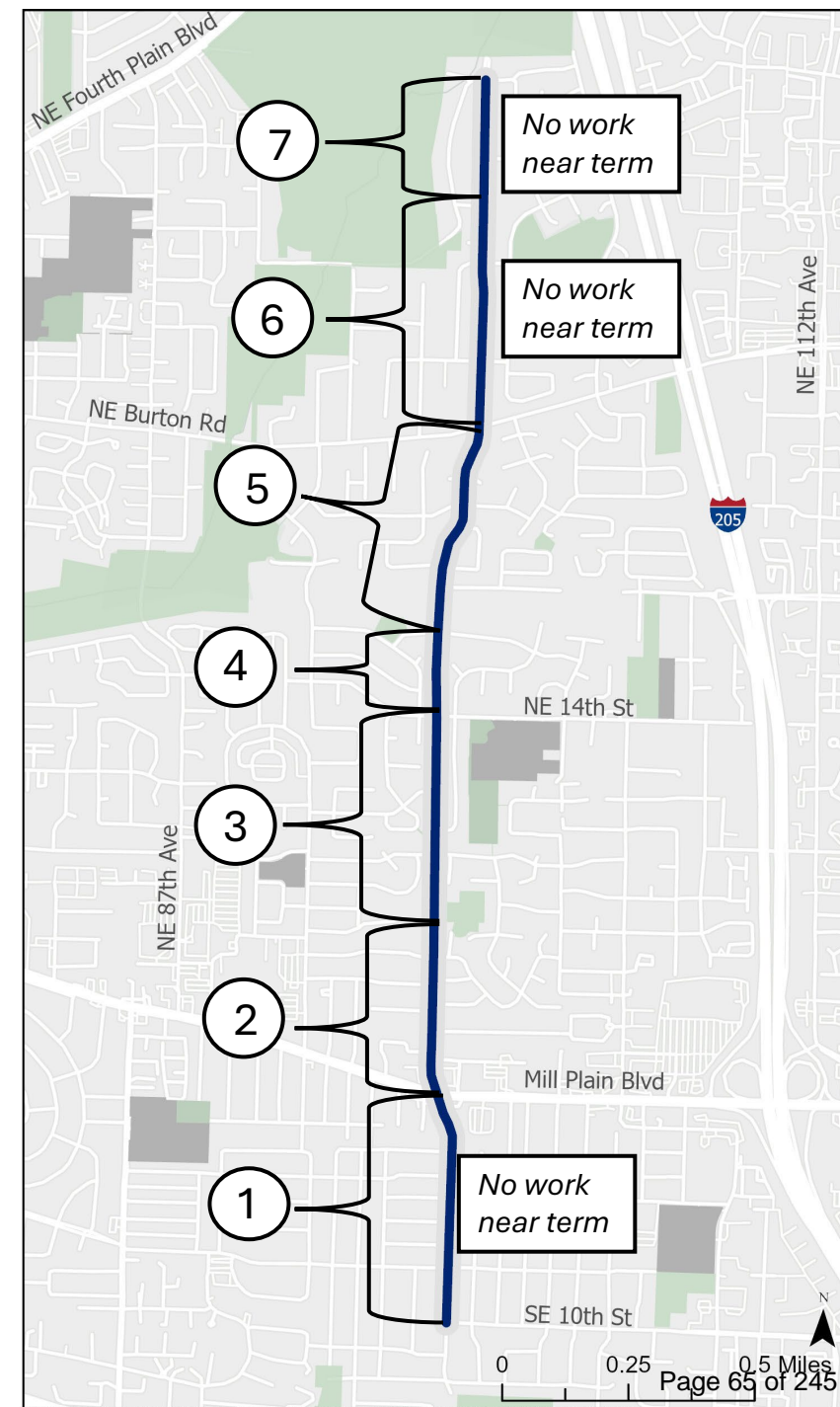
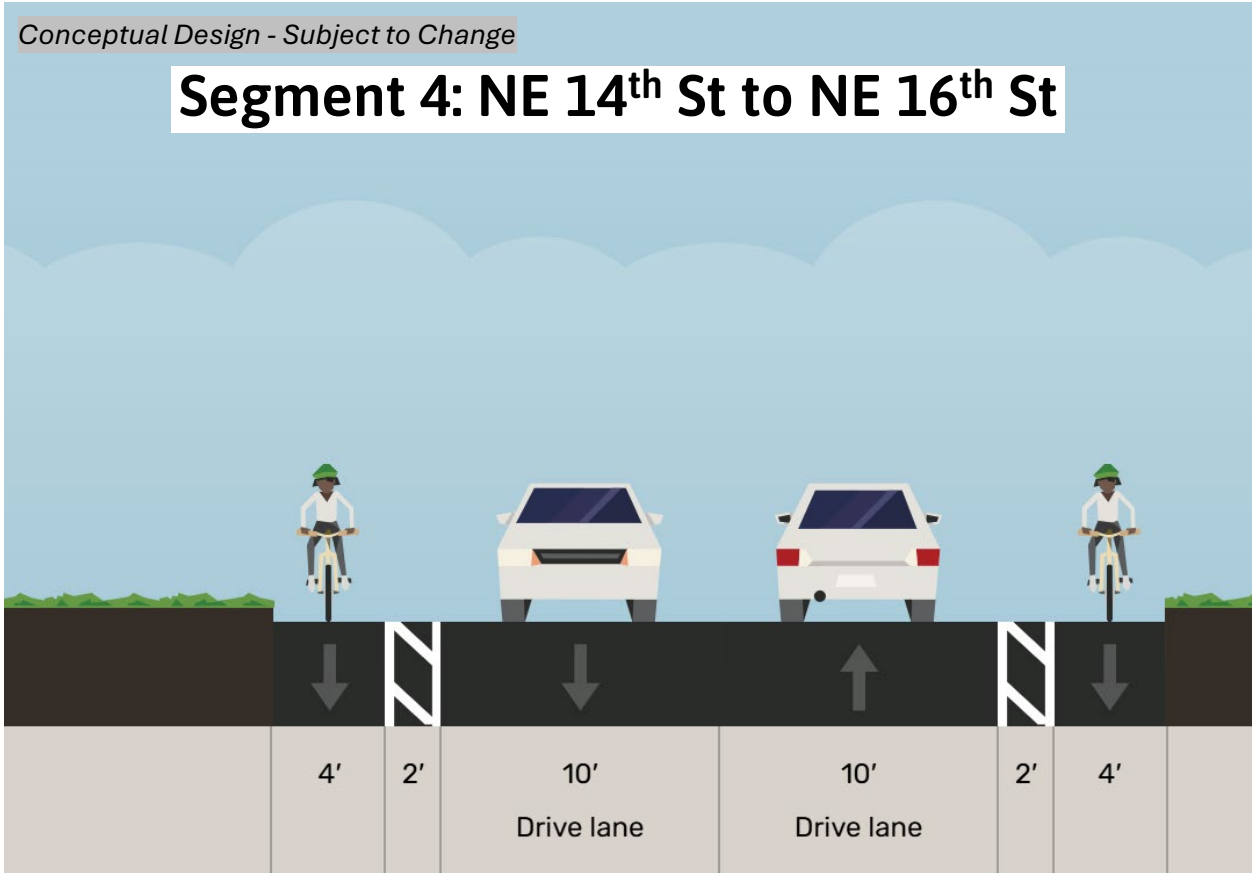


97th/98th Avenue

Segment 4 Near-Term Approximate Cross Section

Conceptual Design - Subject to Change

Segment 4: NE 14th St to NE 16th St

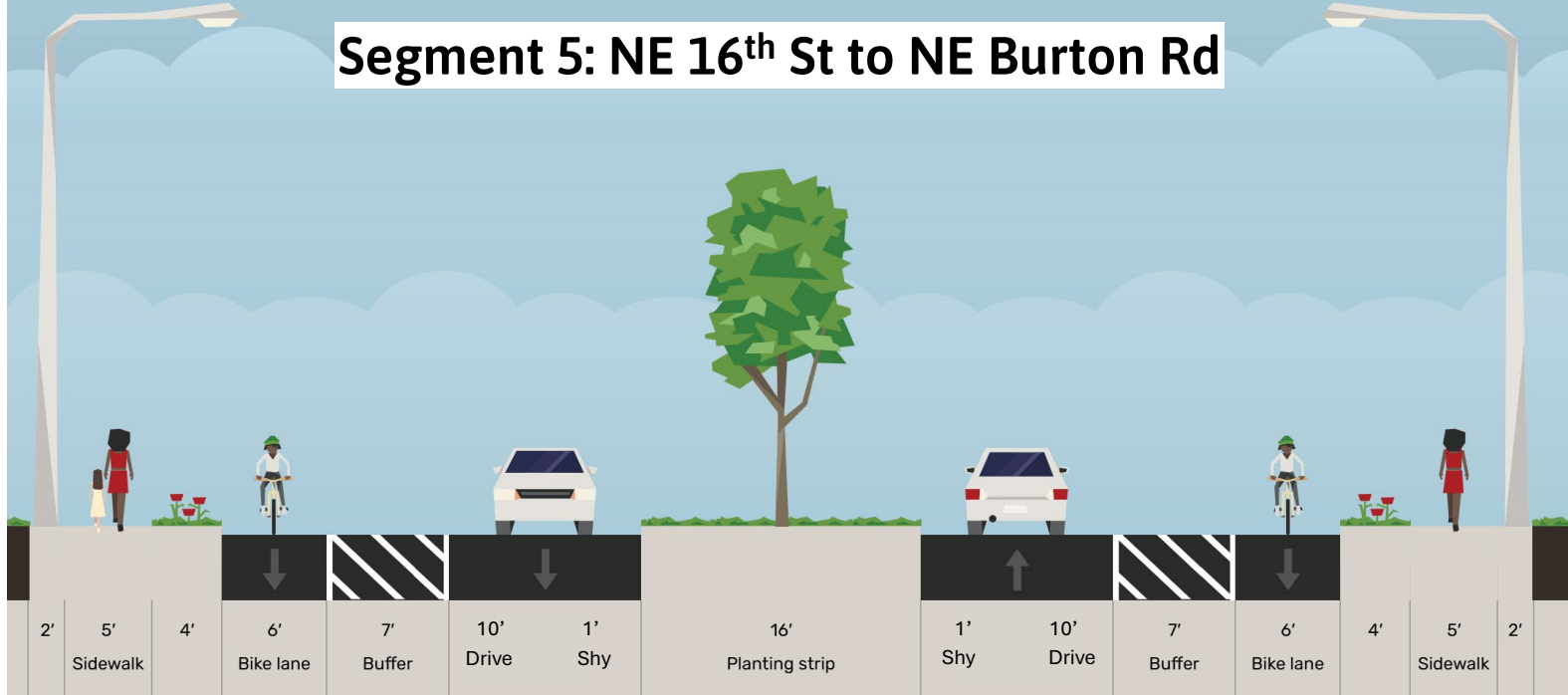


97th/98th Avenue

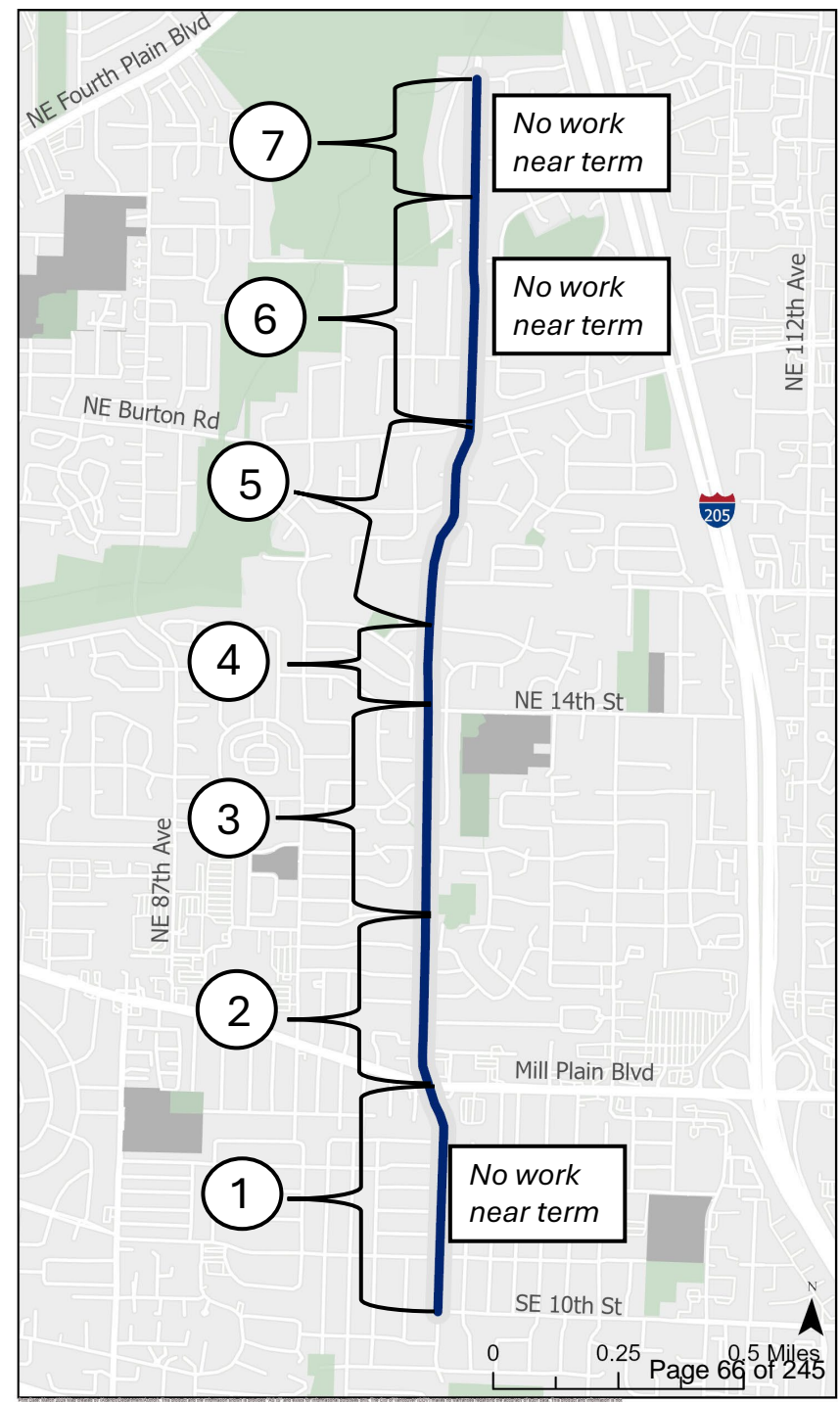
Segment 5 Near-Term Approximate Cross Section

Conceptual Design - Subject to Change

Segment 5: NE 16th St to NE Burton Rd



*Sidewalk does not currently exist between NE 16th St and NE 18th St

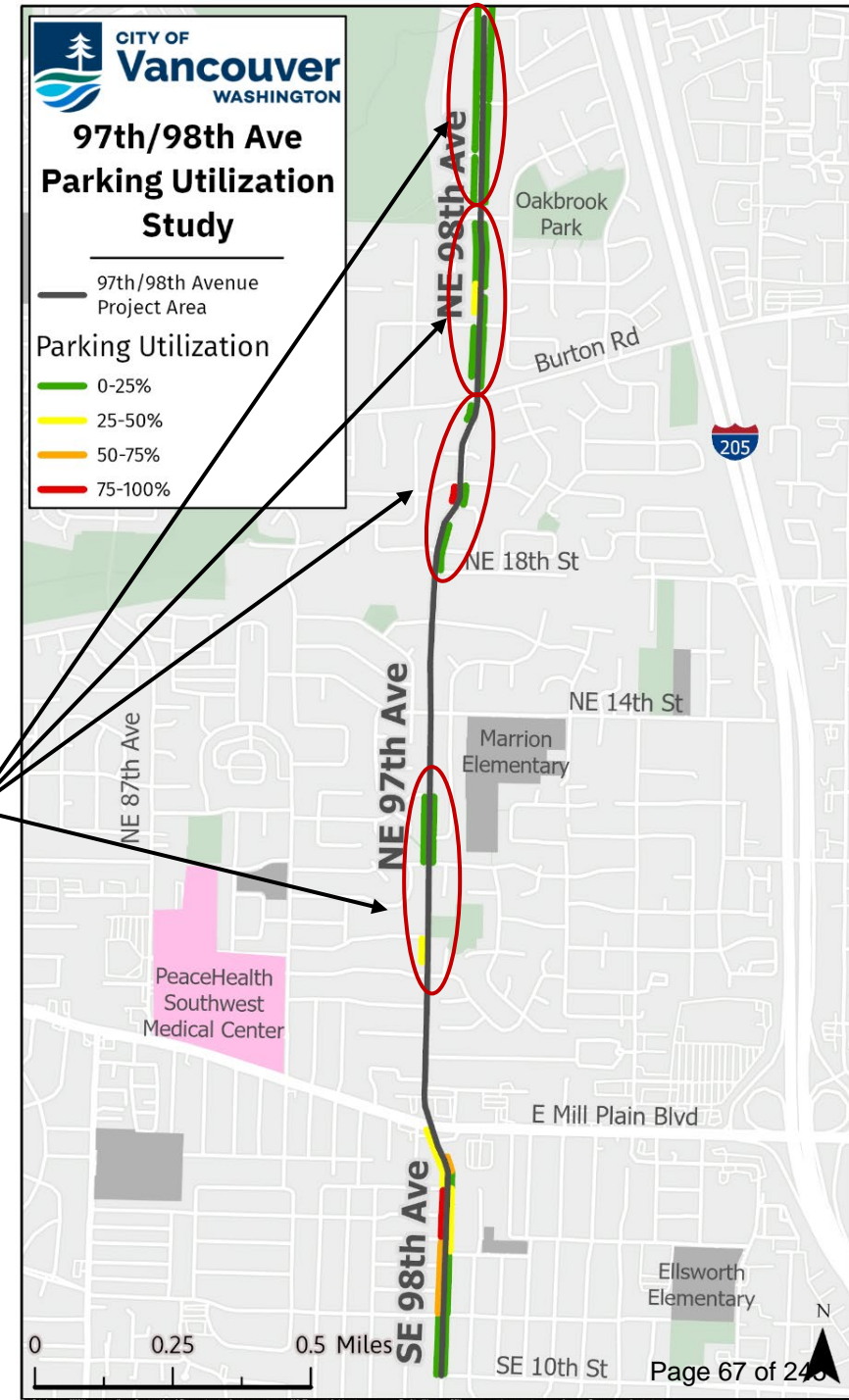


97th/98th Avenue

Parking Reallocation

- Parking is proposed to be reallocated to become bike and small mobility lanes and sidewalk
- Implement active transportation connections in alignment with the Transportation System Plan Modal Networks

Proposed Parking Reallocation



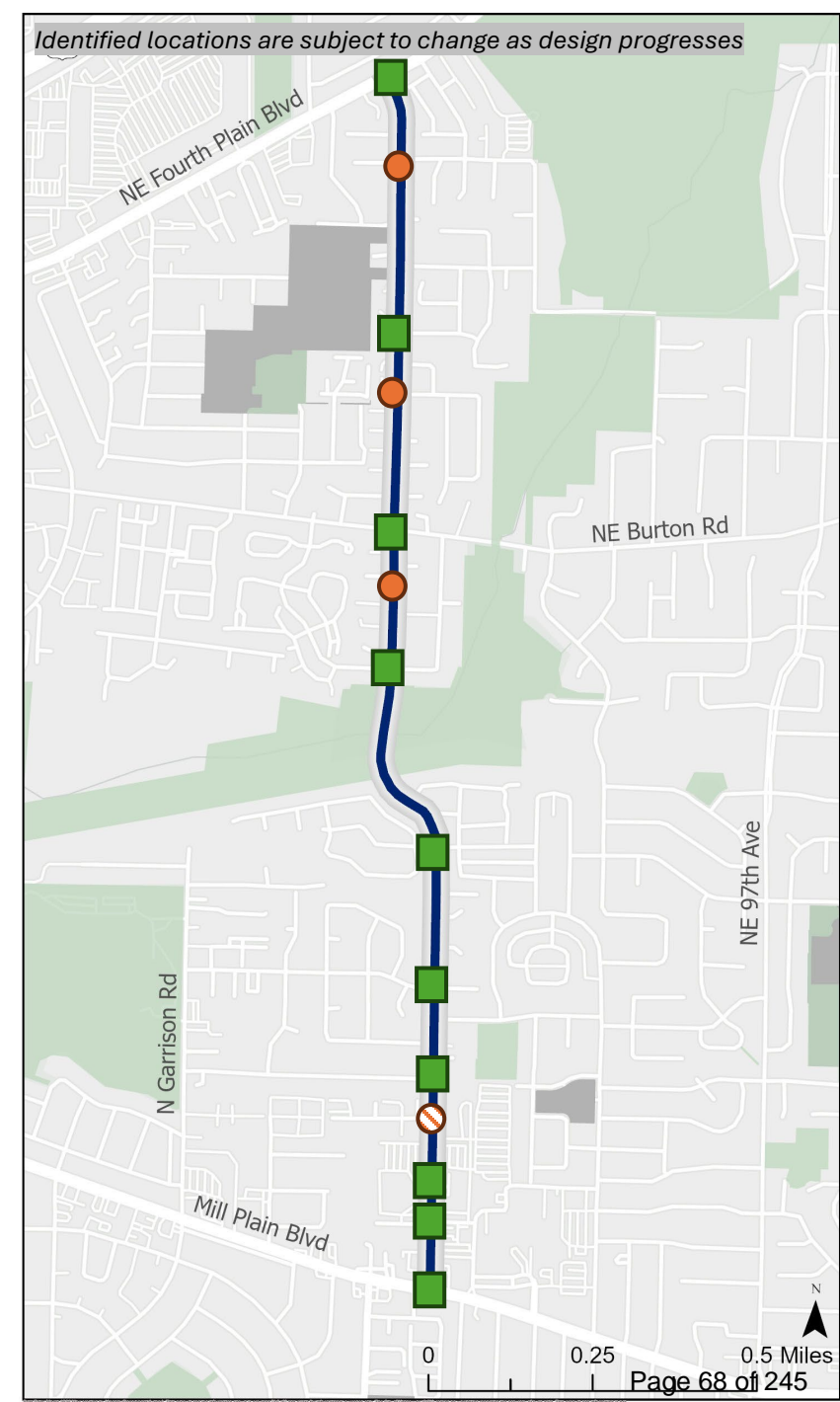
NE 86th/87th Avenue

Corridor Crossings

- Proposed crosswalks will be constructed either
 - *Near-term* during Pavement Preservation Project
 - *Long-term* when funding has been identified
- Corridor-Wide Pedestrian Crossings
 - Spacing = 830' (Crossing Policy)
 - All will be evaluated using the Pedestrian Crossing Policy for near-term and long-term enhancements.

Corridor Crossings

- Proposed Crossing
- Potential Crossing Relocation
- Existing Crossing
- Corridor Study Extents



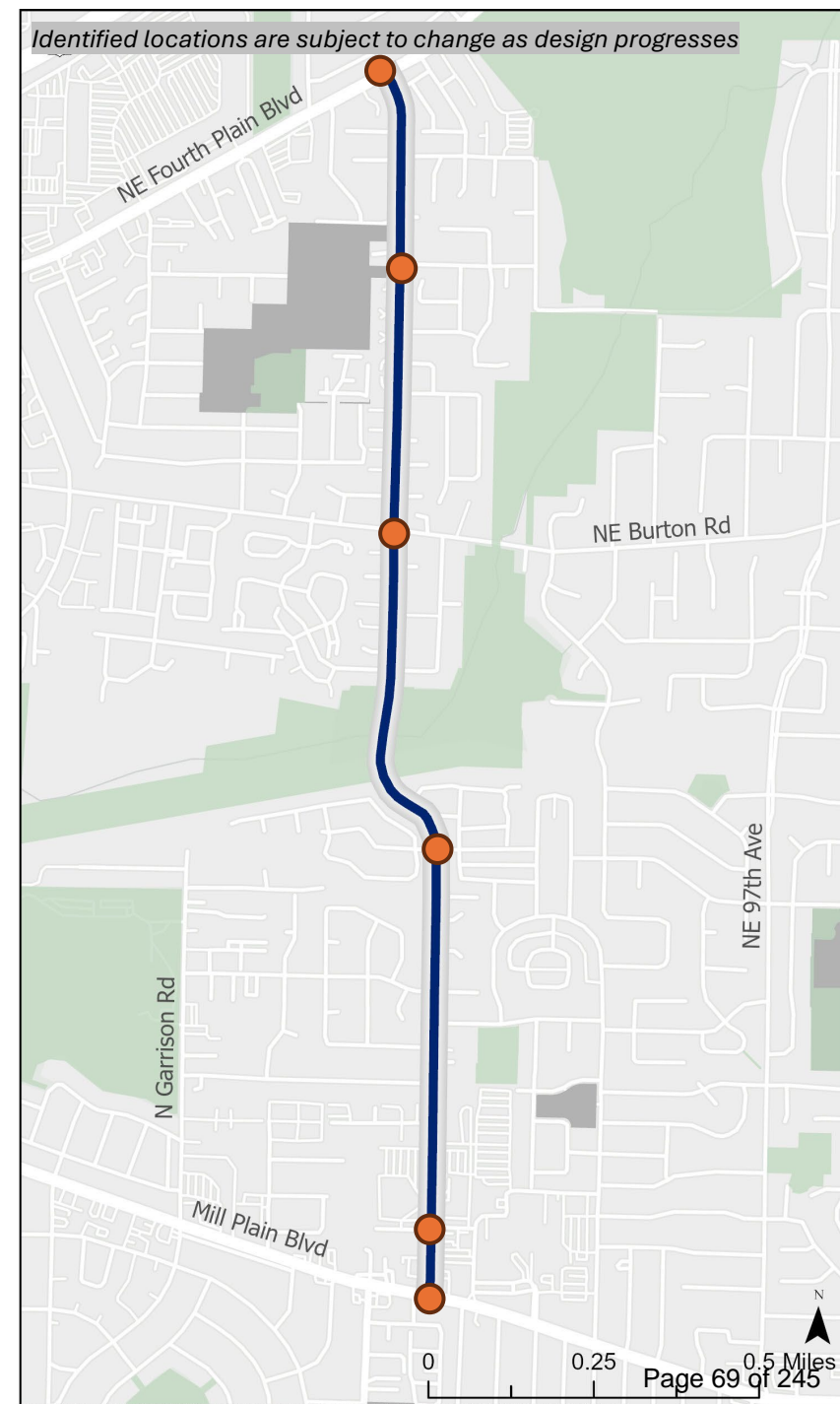
NE 86th/87th Avenue

Traffic Control Changes

Upcoming:

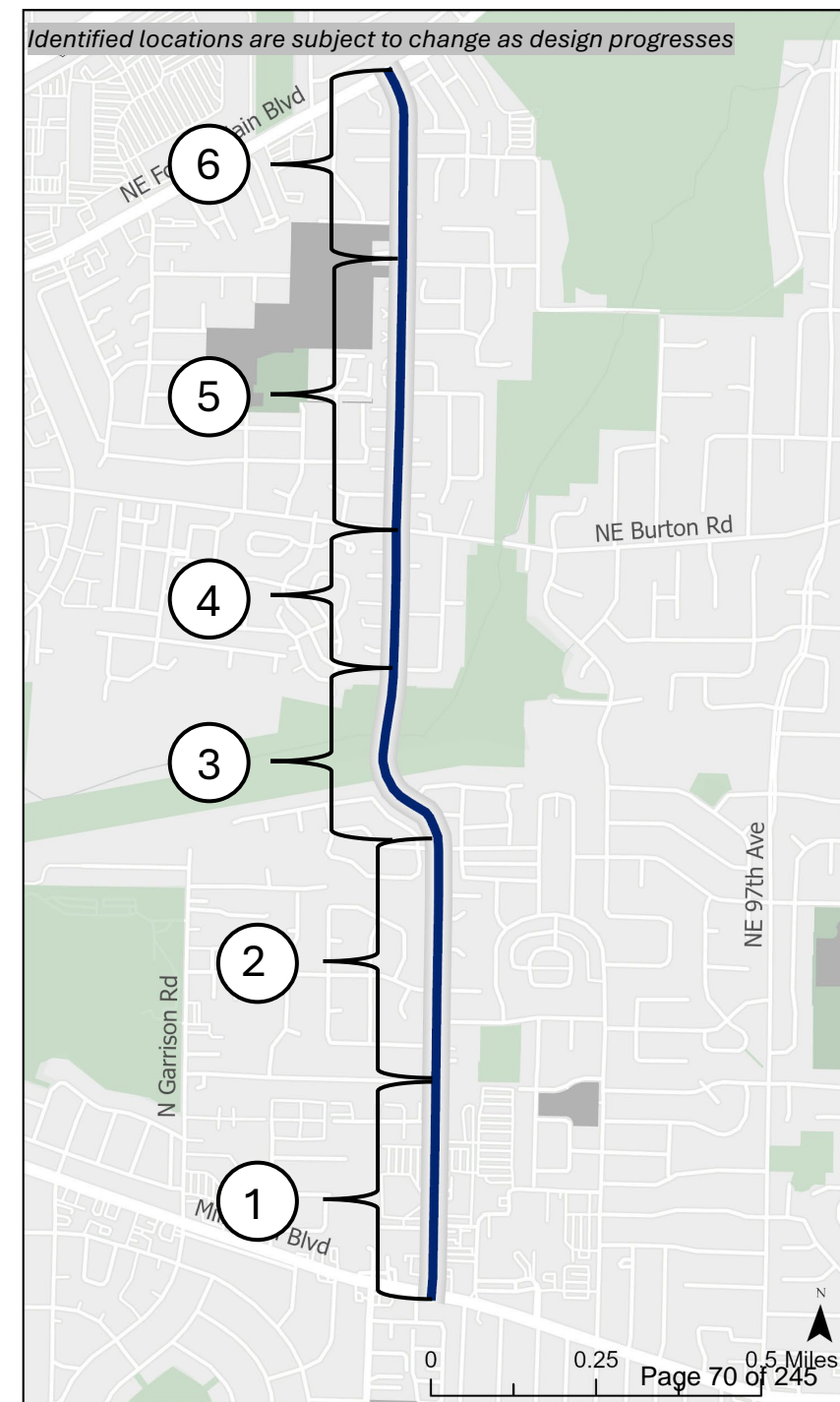
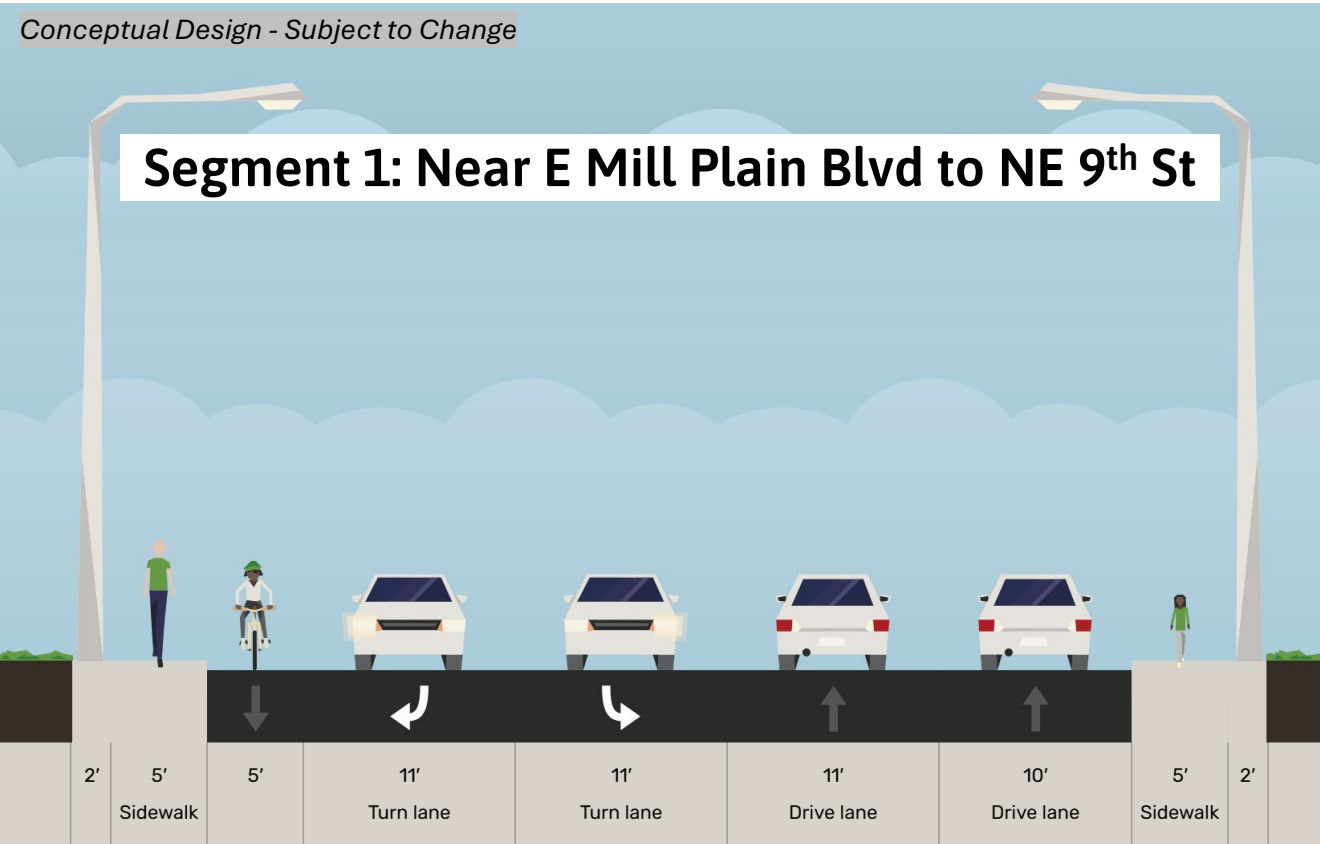
- Analysis of intersections for:
 - Curb return radius reduction to slow turning vehicles
 - Review of crash rates and factors
 - Safety enhancement opportunities
- Traffic calming opportunities
- Operational Analysis at higher volume intersections
 - Bike box implementation

- Operational Analysis
- Corridor Study Extents

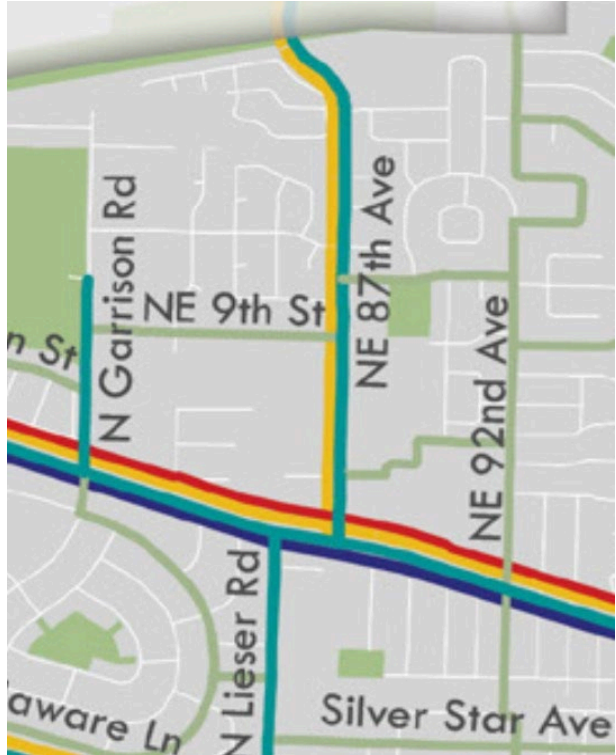


NE 86th/87th Avenue

Segment 1 Near-Term Approximate Cross Section



NE 86th/87th Avenue Greenway Network in Segment 1 and Segment 2 Area



- | | |
|-----------------------------------|---|
| Primary Pedestrian Network | Primary Bicycle and Small Mobility Network |
| Pedestrian Centers | Protected / Buffered Mobility Lanes |
| Pedestrian Corridors (Primary) | Mobility Lanes |
| Enhanced Transit Corridors | Neighborhood Greenways |
| Freight Corridors | |

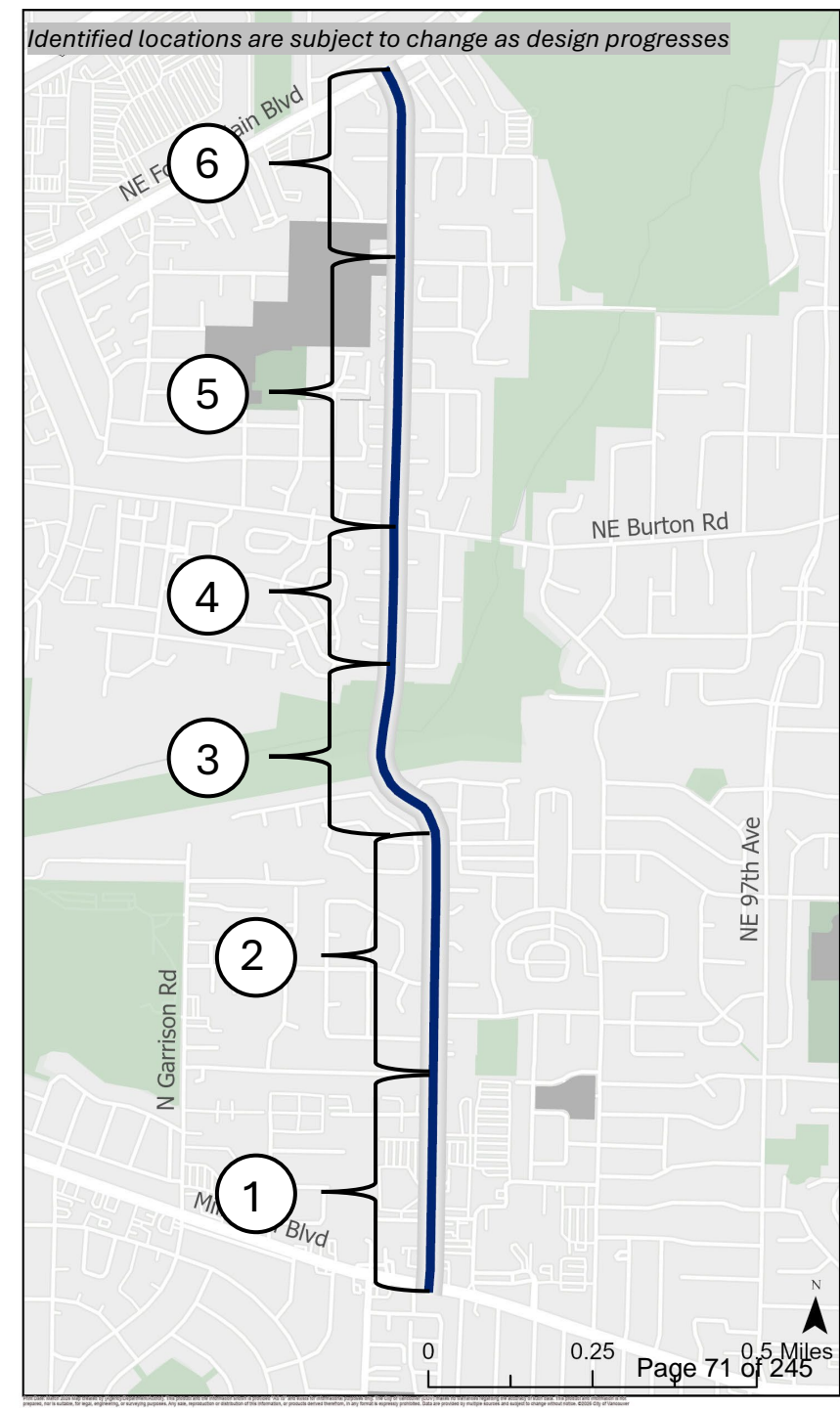
Project Opportunities:

Short Term

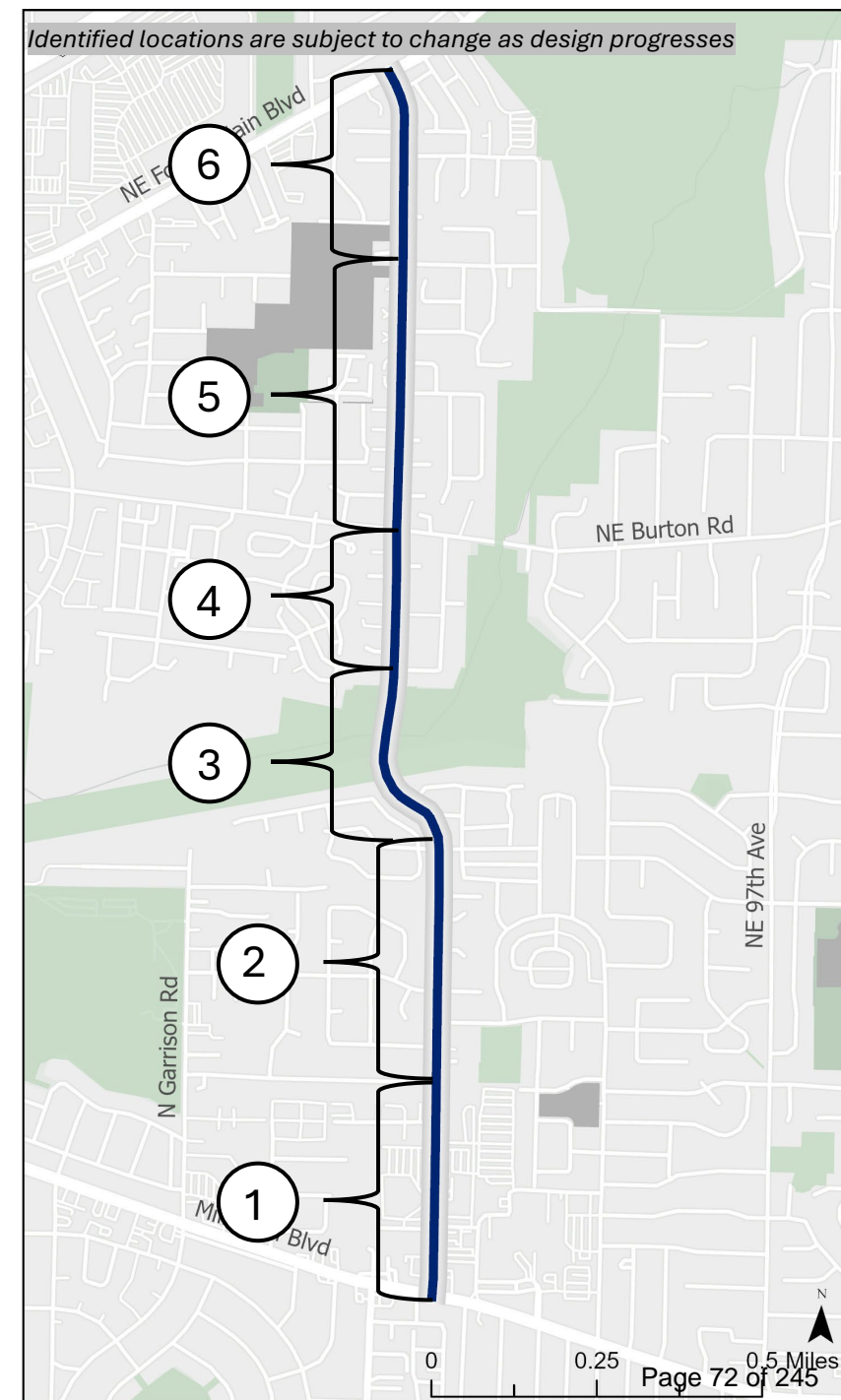
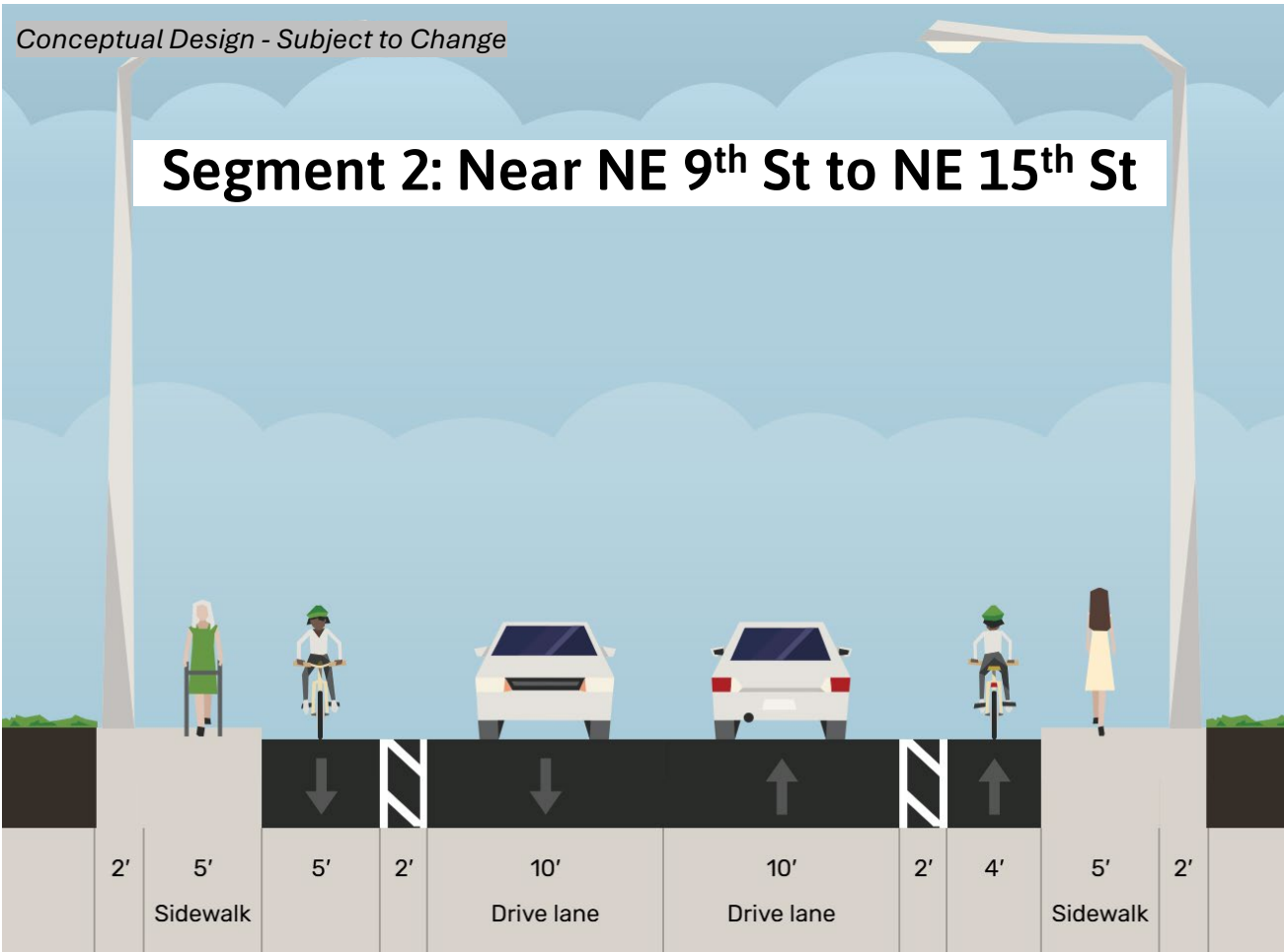
- Wayfinding signage to direct bicyclists onto NE 9th Street and NE 11th Street from NE 87th Avenue

Long Term

- Complete Bicycle & Small Mobility Network connections
- NE 87th Avenue → Mill Plain Boulevard → N Lieser Road



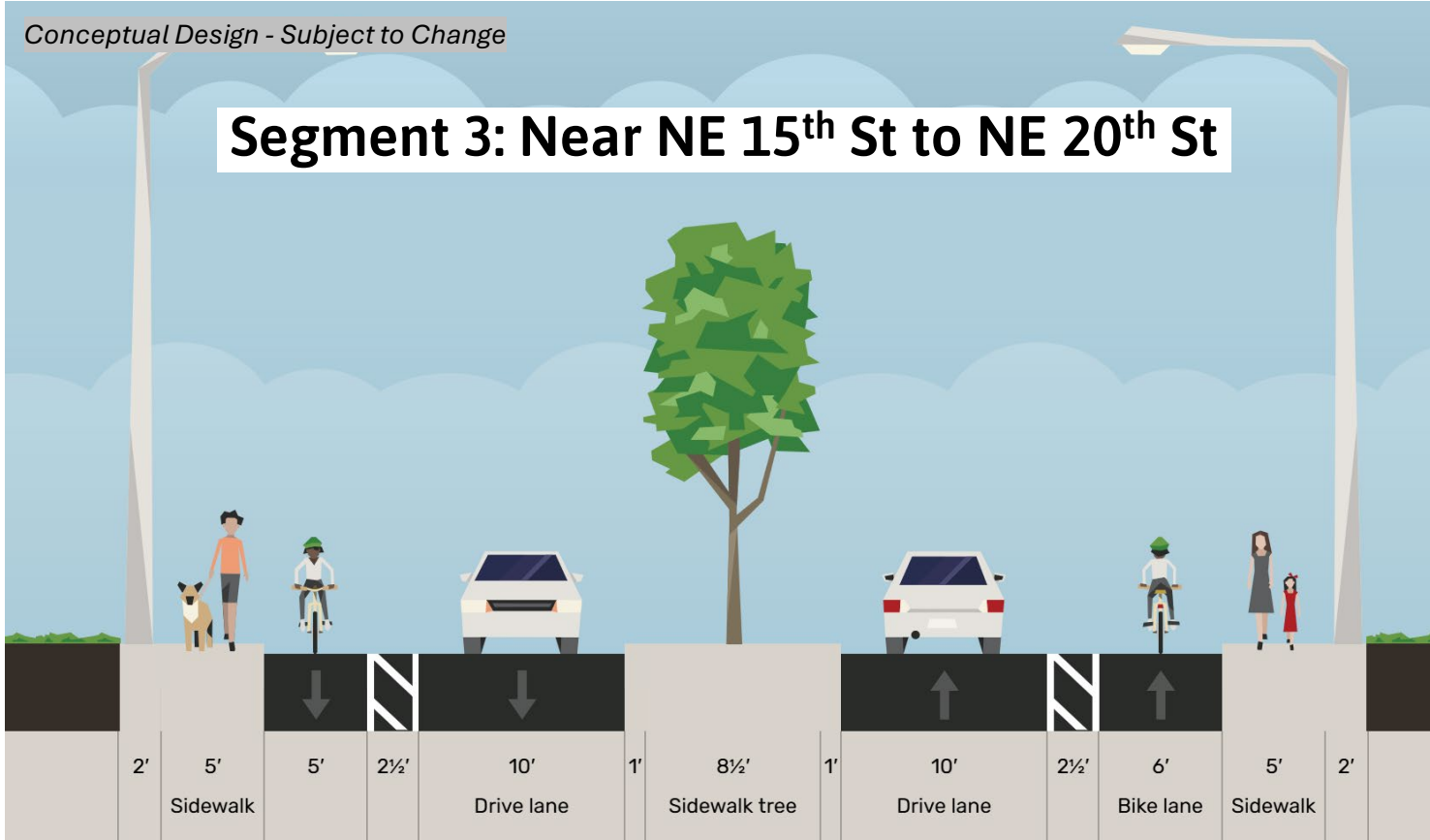
NE 86th/87th Avenue Segment 2 Near-Term Approximate Cross Section



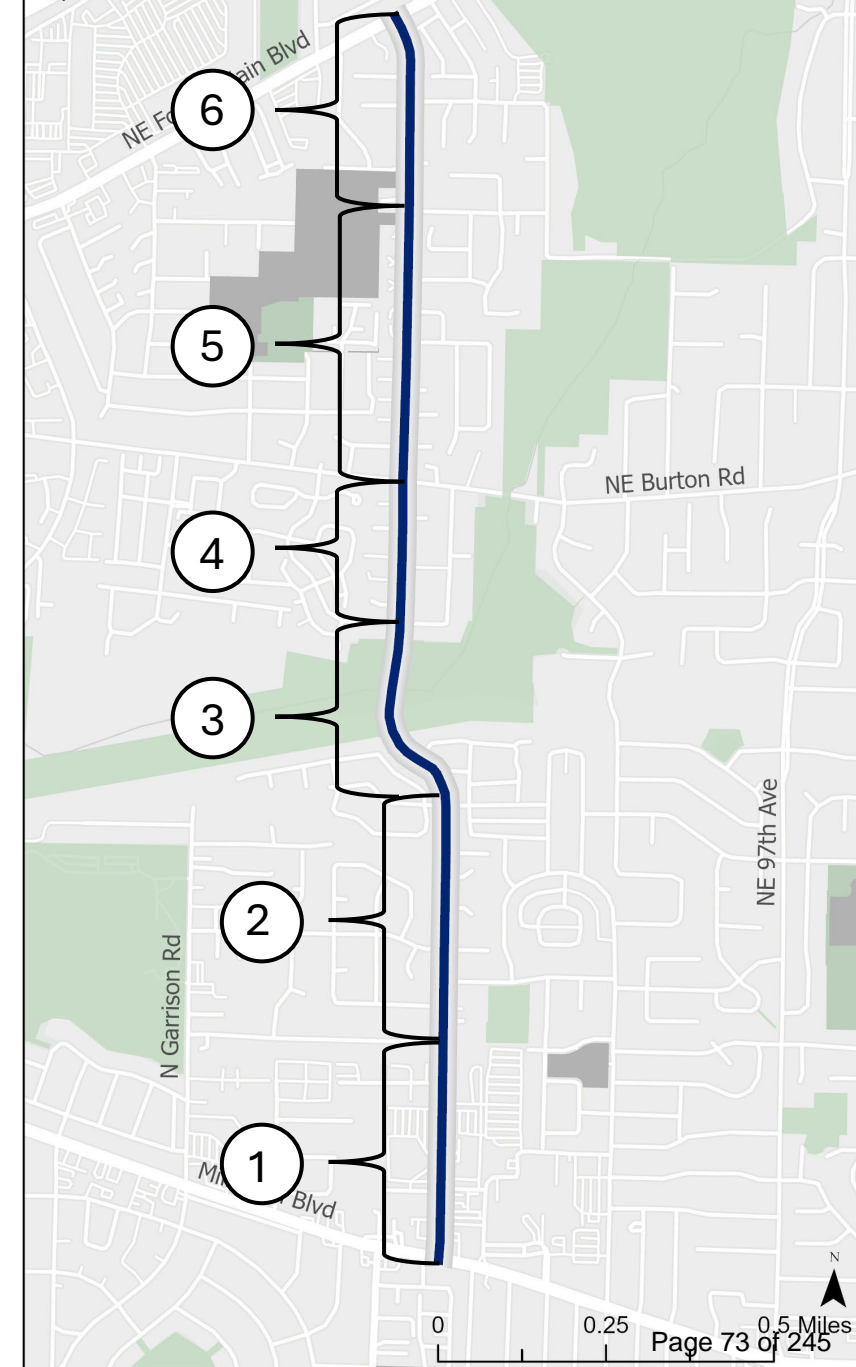
NE 86th/87th Avenue Segment 3 Near-Term Approximate Cross Section

Conceptual Design - Subject to Change

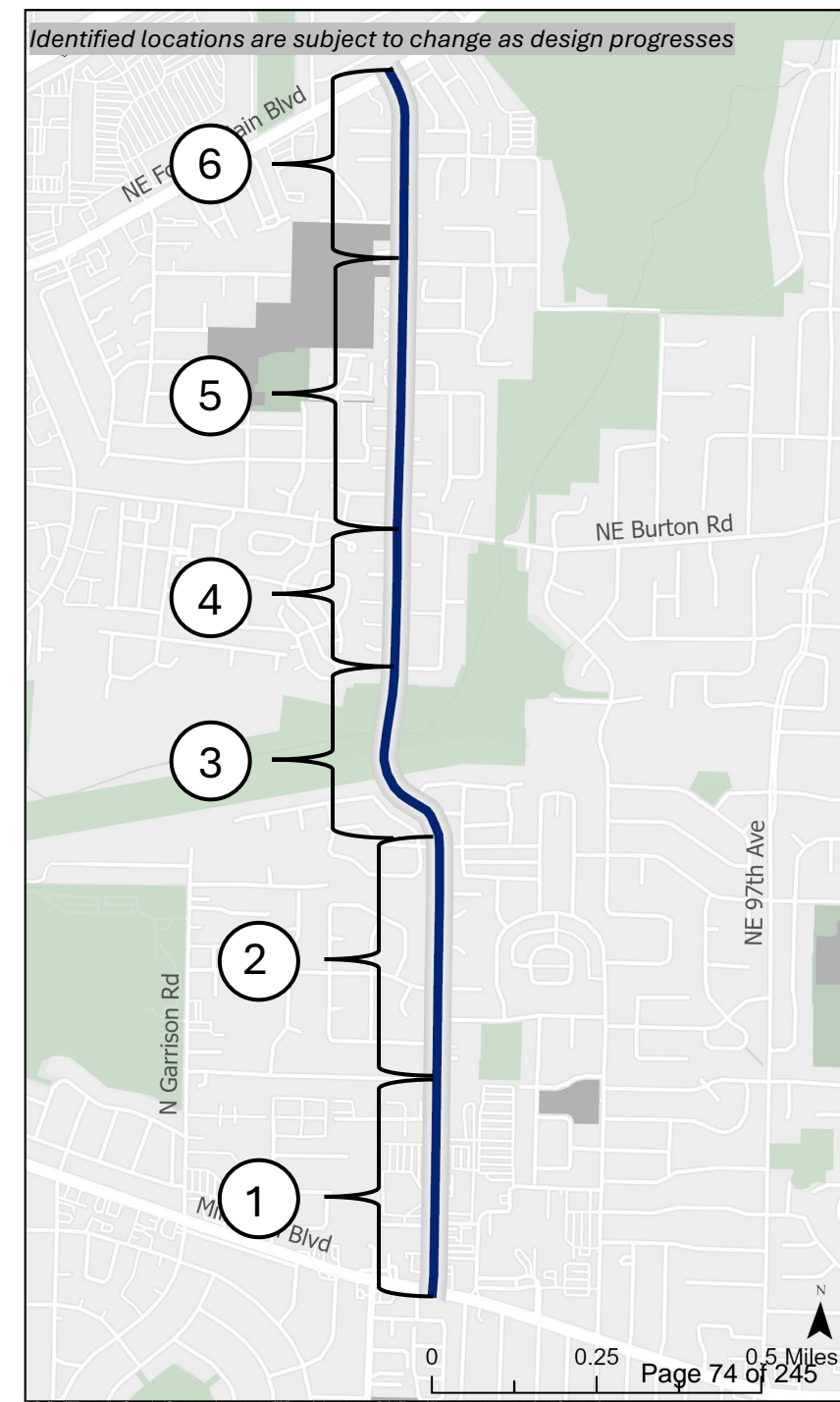
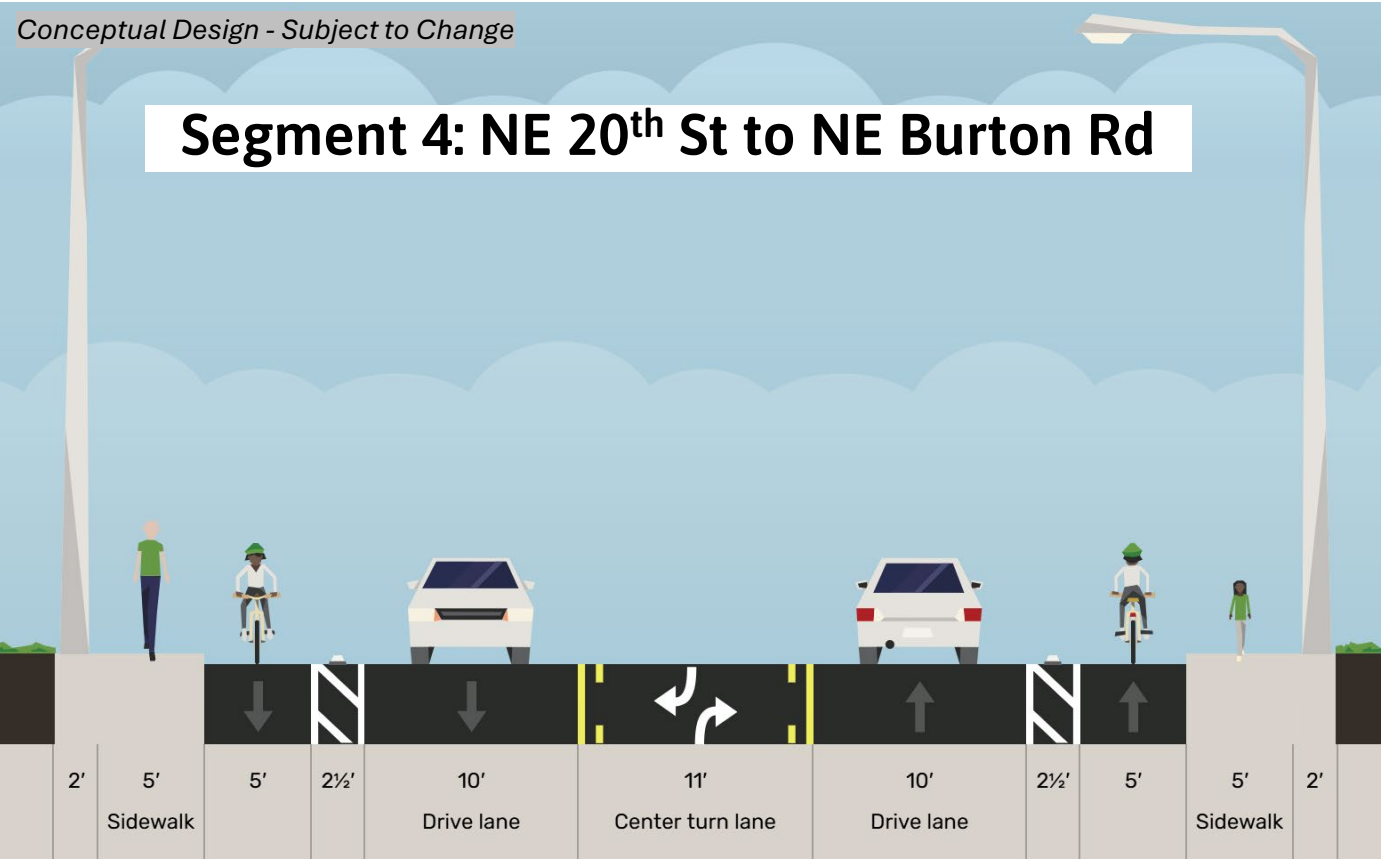
Segment 3: Near NE 15th St to NE 20th St



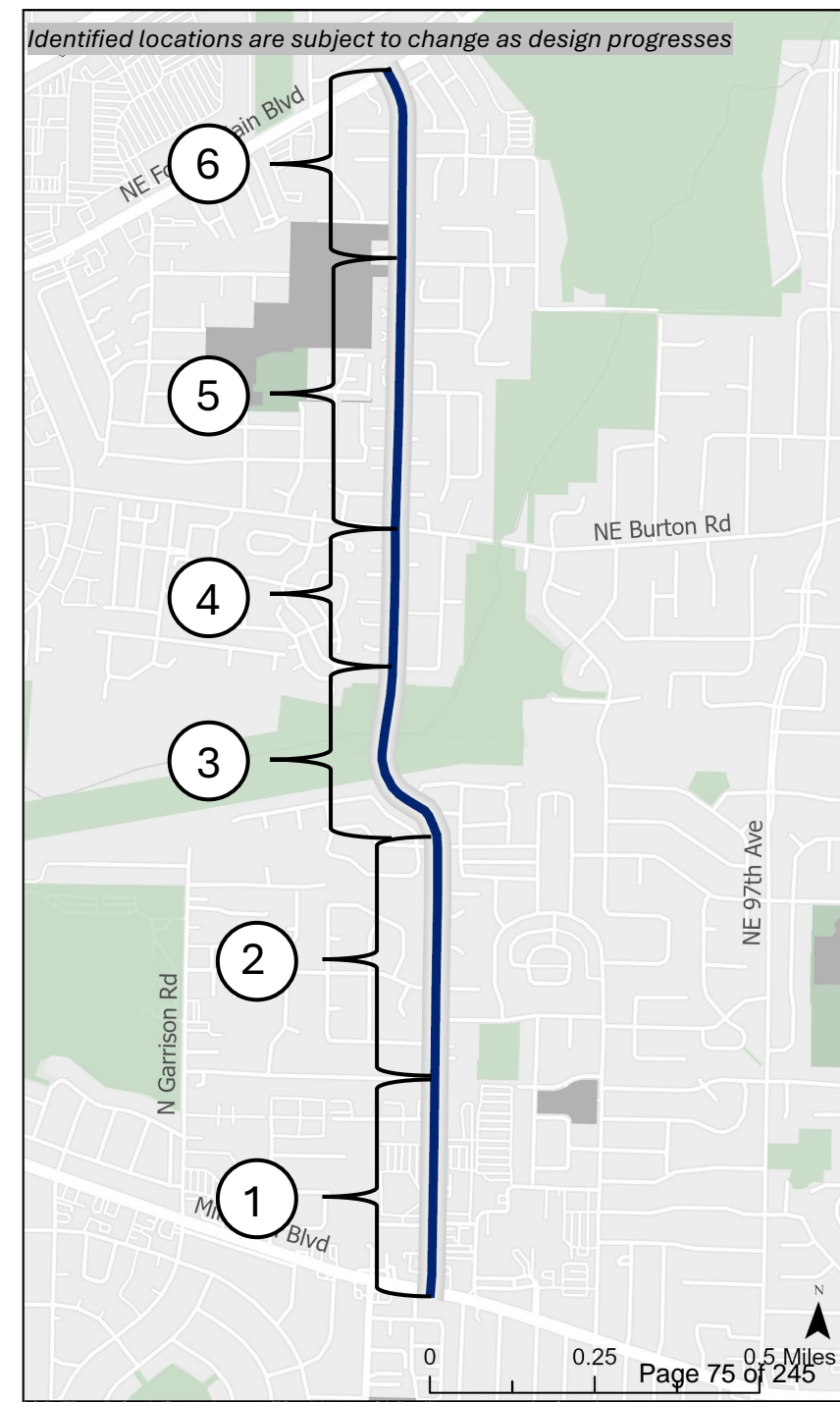
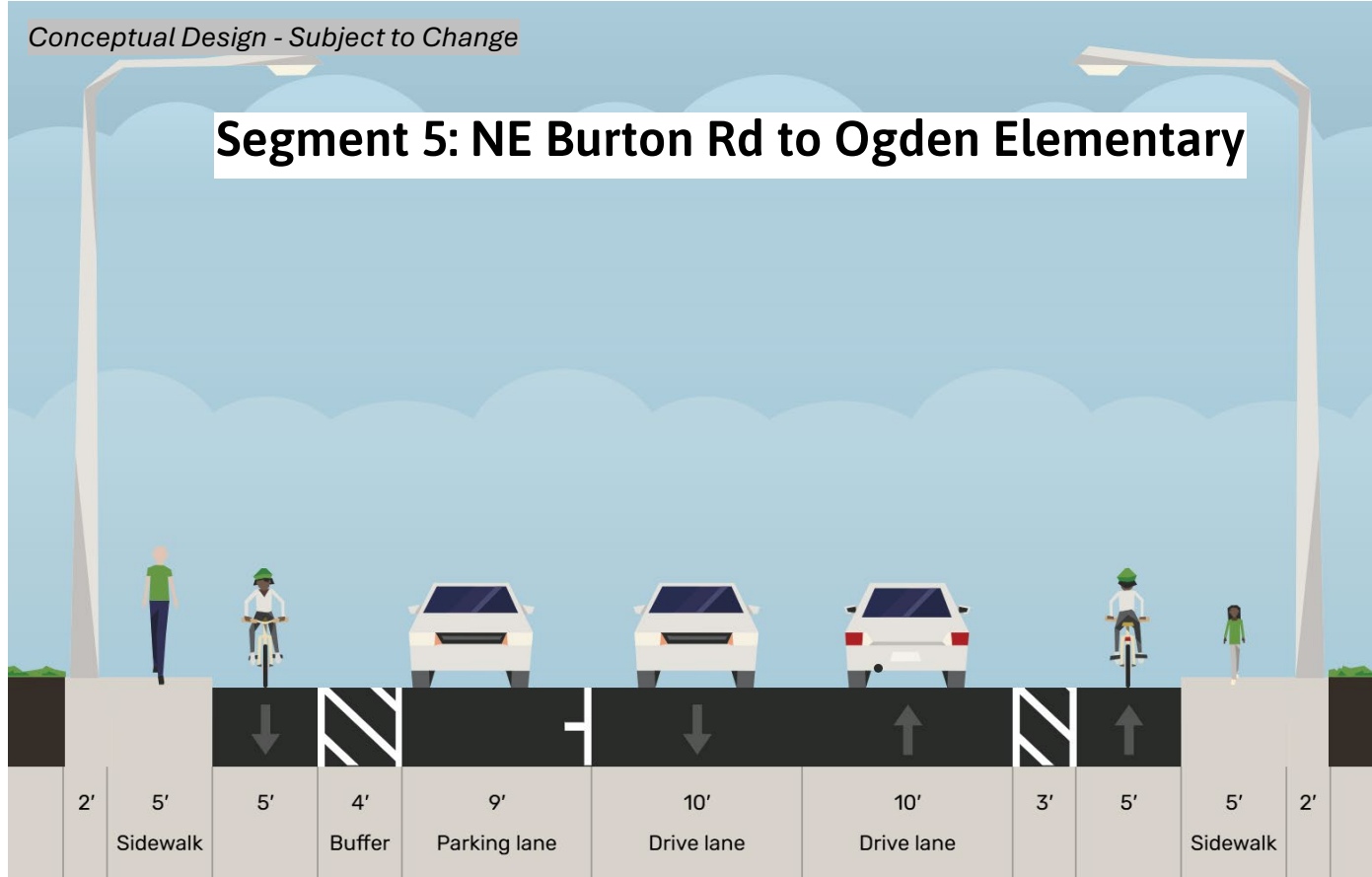
Identified locations are subject to change as design progresses



NE 86th/87th Avenue Segment 4 Near-Term Approximate Cross Section

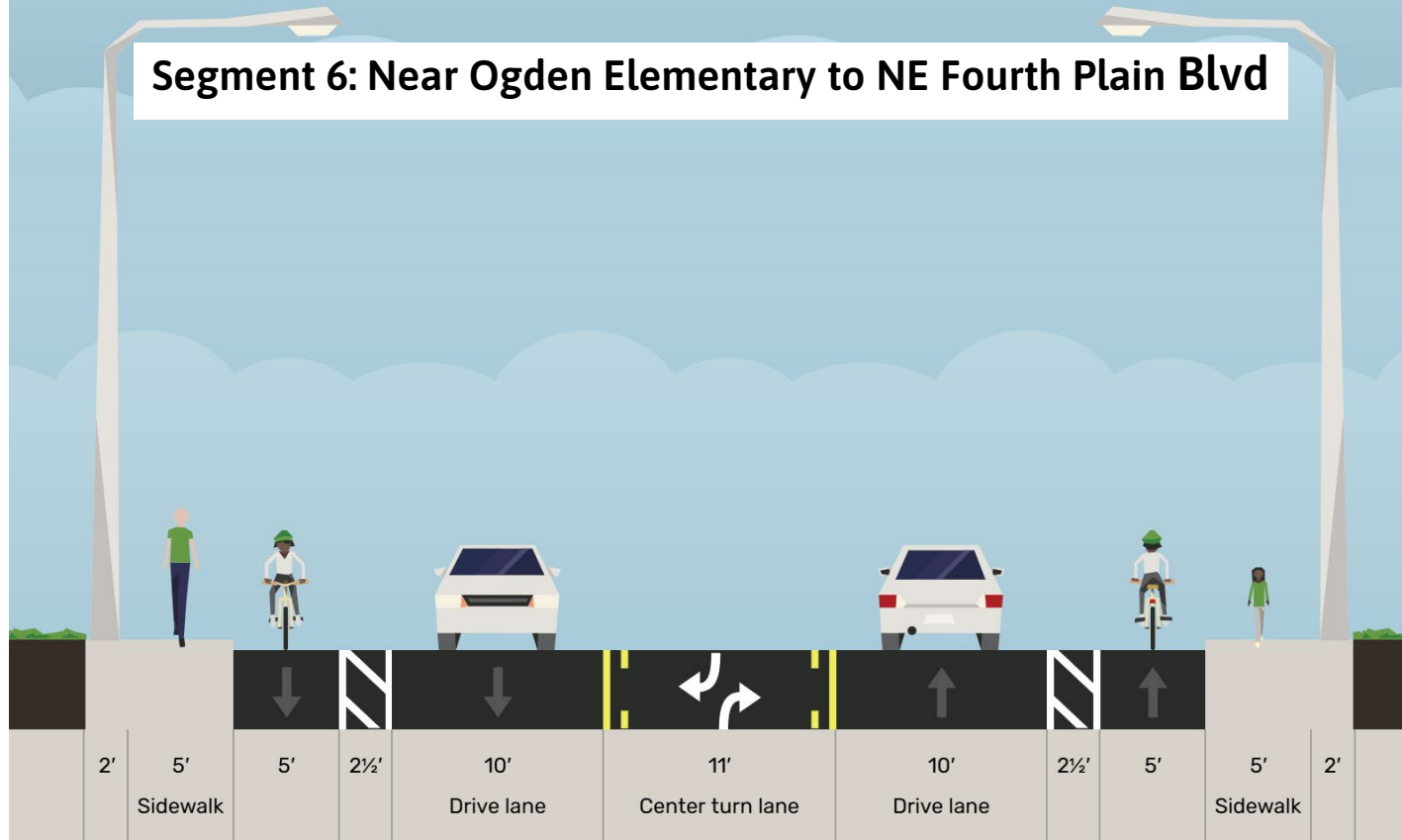


NE 86th/87th Avenue Segment 5 Near-Term Approximate Cross Section

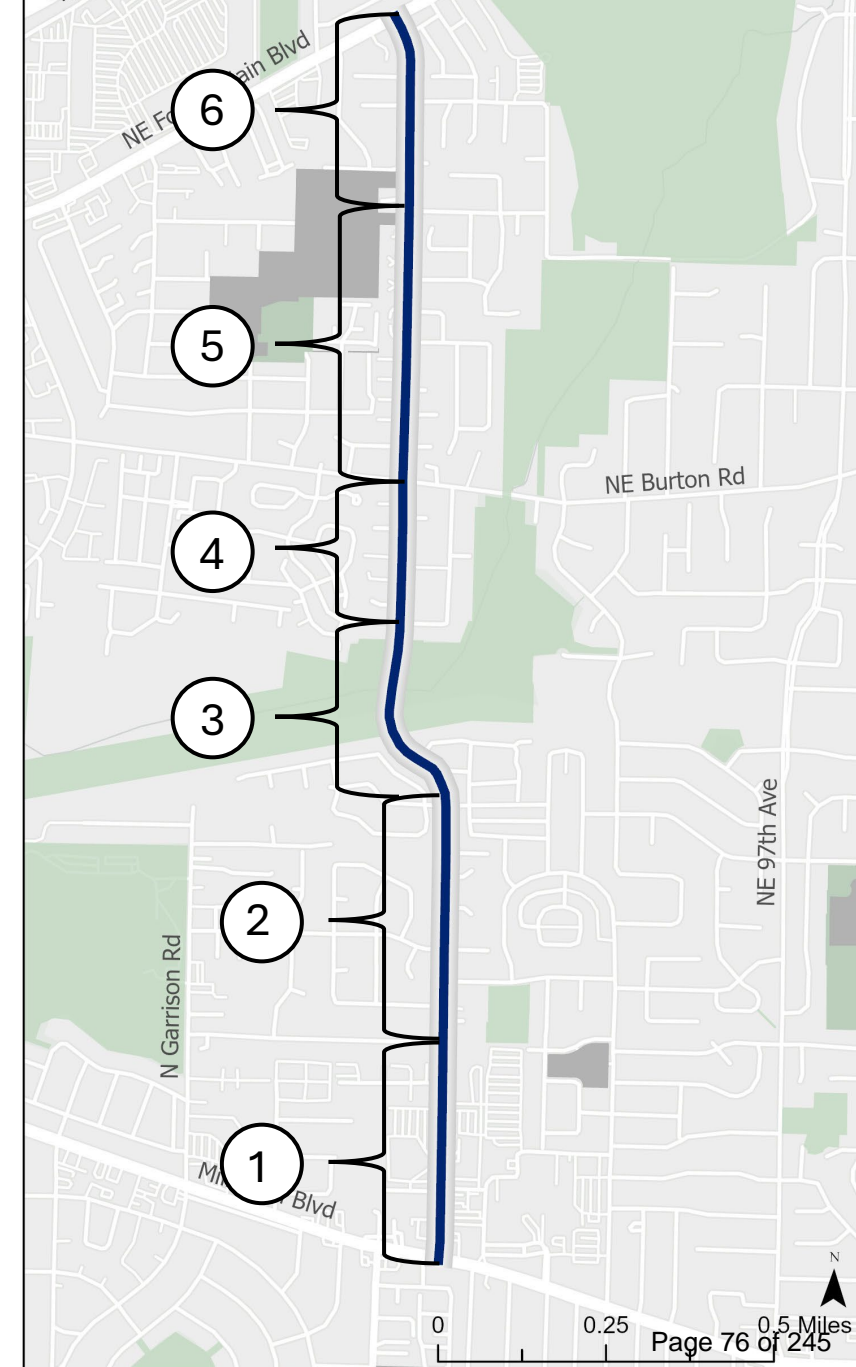


NE 86th/87th Avenue Segment 6 Near-Term Approximate Cross Section

Conceptual Design - Subject to Change



Identified locations are subject to change as design progresses



NE 86th/87th Avenue

School Considerations near NE 33rd St

Ogden Elementary

- Near-Term:
 - Evaluate refuge island addition to existing Rectangular Rapid Flashing Beacon.
 - Maintain existing turn lanes.
 - Evaluate addition of buffered bike and small mobility lanes and narrowing travel lanes.

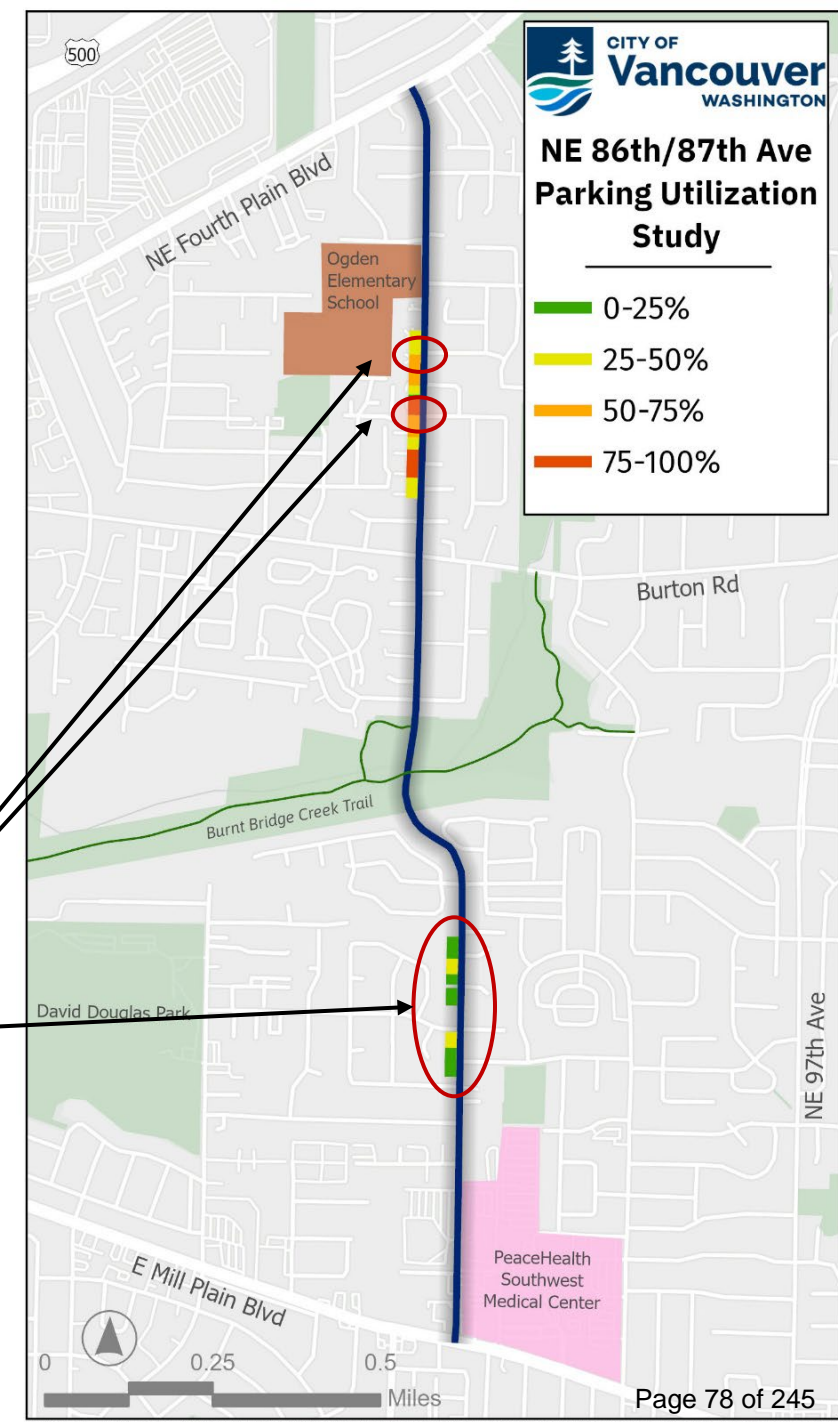


NE 86th/87th Avenue

Parking Reallocation

- Southern parking is proposed to be reallocated to become bike and small mobility lanes.
- Northern parking is proposed to be partially reallocated to allow for visibility at crossings.
- Implement active transportation connections in alignment with the Transportation System Plan Modal Networks.

Proposed Parking Reallocation



All Corridors

Sidewalk & Crossing Prioritization Metrics

Sidewalks

- Transportation System Plan Policy Support?
- Infill or new?
- Access to schools, parks, community services (within 0.5 miles)?
- Right-of-way needed?
- Stormwater impacts?
- Cost?

Crossings

- Transportation System Plan Policy Support?
- Connecting to existing sidewalks or new sidewalks needed?
- Access to schools, parks, community services (within 0.5 miles)?
- Lighting needs?
- Cost?



Design Concepts – What’s Next

Upcoming

- Traffic Calming Analysis
- Operational Analysis
- 30% Design



Community Engagement – What We Did

Phase 1 Overview

Activities

- Interactive map and survey
- Neighborhood canvassing
- Small group and one-on-one meetings
- Tabling sessions
- Transportation and Mobility Commission meetings

Tactics

- BeHeard Webpage
- Direct Mailer
- Project Flyer
- Yard Signs
- Social Media Posts
- E-Newsletters to mailing lists
- Direct emails to stakeholders



Community Engagement – What We Heard

Phase 1 Overview

Challenges We Heard

- Speeding
- Lack of continuous sidewalk and mobility lanes
- Lack of crossings and street lighting
- Drivers not obeying school bus stop paddles, crossings or parking regulations

Opportunities To Consider

- Add more traffic calming
- Add consistent, separated and protected mobility lanes
- Add crossings and street lighting
- Increase sight distance at intersections
- Education and signage



Community Engagement – What’s Next

Phase 2 Overview

Planned Activities and Tactics

- BeHeard Webpage Update with Story Map and comment form
- Small group, neighborhood, one-on-one and Transportation and Mobility Commission meetings
- Direct Mailer and Yard Signs
- Social Media Posts, E-Newsletters, Stakeholder Emails

What to Expect

- April to September timeframe
- Inform people of proposed recommendations based on technical analysis, TMC feedback and community input
- Share what could be implemented in the near versus longer term



Discussion Questions Post-Presentation

- Anything from the Design Concepts that stood out?
- Upcoming community events you'd recommend we table at this summer?
- What questions do you have today?





STAFF REPORT

DATE: April 7, 2026

TO: Chair Edwards and Transportation and Mobility Commission members

FROM: Ivar Christensen, Senior Civil Engineer and Laurel Priest Associate Transportation Planner, City of Vancouver; Bruce Haunreiter – Principal, Consulting Project Manager, HHPR

RE: **192nd Avenue Project (NE 18th Street to SE 1st Street)**

CC: Rebecca Kennedy, Deputy Director, Community Development Department; Kate Drennan, Transportation Planning Manager; Ryan Lopossa, Transportation Engineering Manager

Introduction

The NE 192nd Avenue project team will review findings from community engagement, provide an overview of the corridor design concepts, and will ask the Transportation and Mobility Commission to make a recommendation to the City Manager as authorized under VMC 11.75.030. This is the final presentation to the TMC; previous presentations were on April 1, 2025; November 4, 2025; and March 3, 2026.

Background/Overview

The 192nd Avenue Project is in its design phase. The project team is evaluating ways to enhance safety, mobility and comfort on the approximately one-mile stretch of Northeast 192nd Avenue between Northeast 18th Street to Southeast 1st Street. Moreover, this project will improve the roadway to meet current urban multi-modal standards and accommodate the anticipated growth of the surrounding area. Currently, this section of the corridor is a two-lane road that is missing center turn lanes, medians, bike lanes and continuous sidewalks.



Figure 1: Project Area Map

The corridor concepts have been developed with the following project goals in mind:

- Improve safety and traffic capacity for all modes at key intersections:
 - NE 6th Street
 - NE 9th Street
 - NE 13th Street
 - NE 18th Street
- Implement the City of Vancouver’s Complete Streets Policy
- Expand access to future transit investments
- Improve corridor transportation safety and emergency access
- Provide stormwater management

The Project Team has presented four workshops with the TMC:

1. April 1, 2025: Introduce the project, provide an overview of the need for the project, outline project goals, and preview the public engagement plan.
2. November 4, 2025: Provide an update on public engagement, discuss alternatives analysis, review multimodal design options.
3. March 3, 2026: Provide an update on continued public engagement efforts, discuss roundabout treatments for the corridor, review design concepts and cross sections for segments of the roadway.
4. April 7, 2026: Discuss navigating roundabouts, provide more detailed views of design concepts, and discuss opportunities for education on new facilities.

TMC meeting 3 – Key Feedback

The TMC provided the following feedback to the project team:

- Showcase how bikes and pedestrians will travel through the roundabout and highlight how the design will help protect them from cars.
 - Overall people seem happy with the roundabout design and its benefits for vehicle traffic but still have some outstanding questions and concerns about how bicycles and pedestrians will safely travel through the intersections.
- Still some concerns about how a roundabout will be able to handle the traffic volumes at the 13th street intersection.
- Provide education for all travelers (especially cars) for how to properly navigate the new improvements.

The project team identified recommended improvements based on previous feedback from the community and the TMC, City guidance and technical analysis.

Summary of Proposal

The plan for the intersection of NE 192nd Avenue / NE 13th Street is depicted in Figure 2, this is similar to the layout of the other three proposed roundabouts.

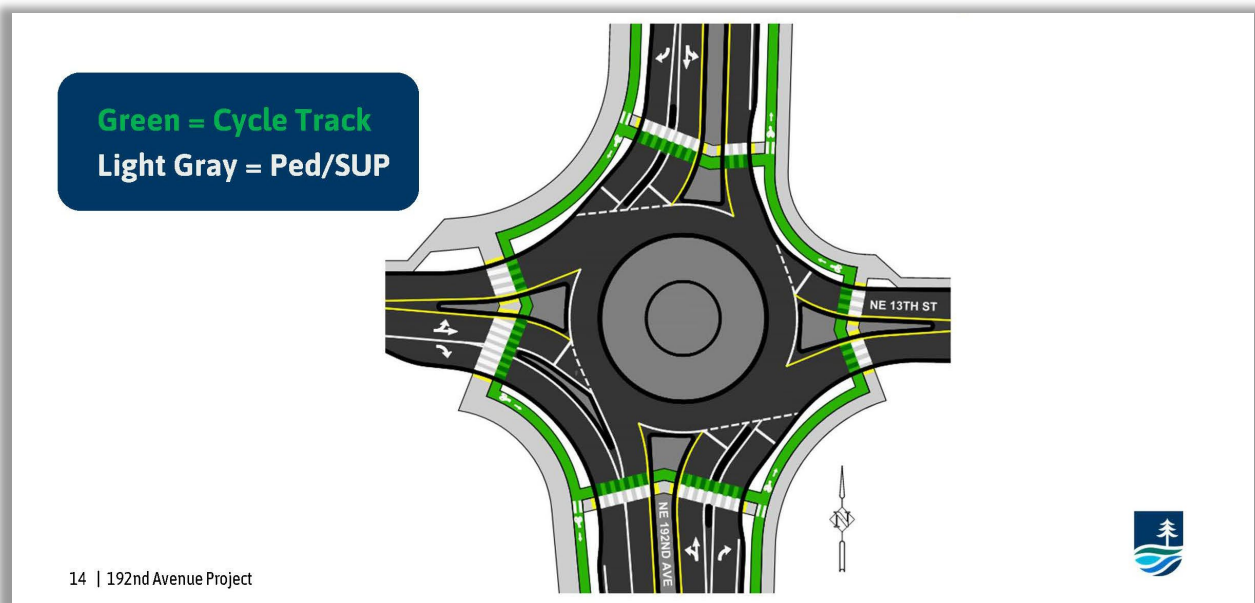


Figure 2: NE 192nd Avenue and NE 13th Street Roundabout

Proposed improvements include:

- Roundabouts at key intersections
- Buffered on-street, and grade-separated bike and small mobility lanes
- Shared use path
- Sidewalks

Review Criteria and Findings

Key findings from the existing conditions analysis include:

- Mitigation is recommended at the intersection of NE 192nd Avenue / NE 18th Street to reduce driver errors;
- Pedestrian and bicycle infrastructure is incomplete; and
- Transit facilities are nonexistent.

See the *Existing Conditions Report* (attached) for more details.

Key themes from community engagement include:

Safety: As traffic volumes increase due to growth and development, improvements are needed for all modes of transportation. Making the road narrower will result in shorter crossings for pedestrians, cyclists and disabled users.

Accessibility: Keeping pedestrians and wheelchair users farther from vehicle traffic is strongly preferred.

Biking: Cycle tracks are preferred over shared use paths.

Transit: CTRAN would like to have a bus route on this corridor and there is frequent community interest.

Roundabouts: There is strong support for roundabouts (vs. traffic signals).

See the *summaries from the Project Advisory Group, One-on-One Stakeholder Interviews, and Open House 1* (attached) for more details.

Recommended Action

The project team is seeking the Transportation and Mobility Commission's endorsement of the proposed project designs and investments for NE 192nd Avenue, be implemented through the capital project and the transportation improvement program as funding becomes available.

Staff Contact

Ivar Christensen, Senior Civil Engineer, Transportation / Public Works
Ivar.Christensen@cityofvancouver.us

Attachment(s):

Design Summary Report
Existing Conditions Report
PAG Meetings 1-3 Summaries
One-on-One Stakeholder Interview Summaries
Open House 1 Summary

NE 192nd Avenue Alternatives Analysis – Design Summary

Table of Contents

Background	1
Existing Conditions	1
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Important Project Issues	2
Conclusion	4

Background

The NE 192nd Avenue Corridor Improvement Project will reconstruct 192nd Avenue from NE 18th Street to SE 1st Street to meet future traffic demands and add facilities for bicycles and pedestrians. The HHPR design team reviewed current traffic conditions and compared two alternative intersection styles for 192nd Avenue:

- 1) Traffic Signals
- 2) Roundabouts

The comparison evaluated the pros and cons of each intersection style and recommended the preferred approach for the project.

Existing Conditions

Currently, 192nd Avenue is a two-lane roadway (one lane in each direction) from 1st Street to 18th Street, with a short section of four lanes (two lanes in each direction) between 1st and 3rd Streets. Bike and pedestrian facilities vary, with bike lanes in the roadway between 1st and 3rd Streets, a combined sidewalk/bike lane on the east side of the roadway between 1st and 5th Streets, and some small sections of sidewalk scattered throughout the corridor.

The corridor has a mix of residential neighborhoods, rural lands and businesses including: Harmony Sports Complex, Humane Society for Southwest Washington, and a variety of businesses off SE 1st Street. East of the corridor is the Section 30 Development which is expected to continue to grow in the coming years. Bonneville Power Administration (BPA) power lines cross the roadway just south of 18th Street.

The corridor currently lacks adequate pedestrian and bike infrastructure, experiences heavy traffic congestion and experiences higher than average intersection crash rates. The corridor also has outdated or inadequate utilities and stormwater collection facilities that will not meet future demand.

Roadway Alternatives

Currently 192nd carries 14,000 vehicles per day and this is expected to increase to 22,000 vehicles by 2045. To meet this demand, two main alternatives were studied for 192nd Avenue, including the use of either traffic signals or roundabouts at key intersections. The impacts of major events at the Harmony Sports Complex were also studied, as well as options for bike, pedestrian, and small mobility device facilities. These options were presented at a public open house, and preferences were discussed with a project advisory group. Recommendations were also included for these facilities, regardless of which alternative was chosen.

Alternative 1 – Signalized Intersection Approach (Traffic Signals)

The signalized intersection roadway alternative includes two travel lanes in each direction. A center median will separate the north and southbound travel lanes, and either provide left turn lanes or prevent left turns. Right turn lanes are provided as needed.

Alternative 2 – Roundabout Approach

The roundabout roadway alternative includes fewer travel lanes, where possible, with one or two lanes in each direction, a center median, and turn lanes, as needed.

Important Project Issues

Each of the issues described below were selected by the design team and the Project Advisory Group (PAG), with feedback from the public open house, as the most important project components.

Traffic Safety

The potential for improved safety, including fewer and less severe collisions, was evaluated. In general, traffic signals are preferred for queueing and emergency response, while roundabouts are preferred for reductions in speed, crash severity, and conflict points. Roundabouts create one-way traffic flow, virtually eliminating the possibility of head-on collisions. Traffic signals, however, can create an incentive to speed in order to “beat the light” which can result in severe collisions.

Transportation Connectivity

Roundabouts typically provide better traffic flow than signalized intersections. For most of the intersections evaluated along 192nd Avenue, roundabouts provided an improvement in traffic flow, compared to signals.

A major event analysis was also performed at the intersection of NE 13th Street to compare current traffic flow conditions at Harmony Sports Complex. In this analysis, a traffic signal performed better than the roundabout, by allowing more space for vehicles to line up. However, the roundabout’s performance could be improved by restricting the number of vehicles entering the roundabout.

Cost of Construction and Operation

The overall size of the signalized intersection option is 12.8 acres, while the size of the roundabout option is only 11.5 acres, which reduces the amount of pavement and real estate to purchase. The signalized intersections are also more expensive to construct due to the purchase, installation, operation and maintenance of signal equipment.

Preliminary Construction Cost Estimates:

Signalized Intersection – 192 nd Avenue Corridor:	\$49,050,080
Roundabout – 192 nd Avenue Corridor:	\$41,520,450

Right-of-Way and Private Property Impacts

Private property impacts were evaluated for both alternatives. The roundabout option would require real estate to be purchased from 10 private properties, while the signalized intersection option will require real estate from 26 properties. Overall, the roundabout option will require less property to be purchased.

For both options, most of private property impacts are in the northern part of the project, where single family homes and the Harmony Sports Complex line the roadway. Impacts will also occur at each intersection, especially the intersections of 18th, 13th and 6th Streets.

The signalized intersection option will extend further into the Harmony Sports Complex than the roundabout option. On the east side of 192nd Avenue, the signalized intersection option will extend into private property, while the roundabout option would not. At the intersections, the signalized intersection option has fewer impacts to property corners than the roundabout option.

Life, Safety and Fire Access

The alternatives were evaluated on their impacts to community safety and emergency access along the corridor, including Fire Department access to properties, total travel time, traffic flow while travel lanes are partially blocked, sound, and air quality. Vehicles idling, starting, and stopping can contribute to emissions, and sound quality is affected by increased vehicle speed.

BPA Impacts

The design alternatives must also account for impacts on BPA property at the northern end of the project. BPA oversees critical energy infrastructure in the Pacific Northwest, and any interactions with its property can be complex and time-consuming. A smaller project area would reduce the likelihood of BPA impacts and would simplify BPA coordination.

Multimodal Transportation

For this project, particular attention will be given to public transportation, bicycle lanes, and pedestrian pathways, and the preferred design should be safe and accessible for all users. Alternatives will be rated based on ease of travel, crossing distances, and pedestrian stress level, which relates to vehicle speed and separation from the roadway.

Access Management

Access management addresses entrances and exits along roadways, such as driveways and intersections, to reduce conflicts between vehicles, pedestrians, and cyclists, and improve safety, mobility, and efficient traffic flow. Effectively managing access reduces traffic congestion and collisions, especially in high-traffic urban areas.

Stakeholder Input

Stakeholder input was collected from community members who live, work, attend school, own a business, own property, or regularly travel along 192nd Avenue, to ensure that the design reflects community values, needs, and priorities. One-on-one meetings were also held with C-TRAN, BPA, Evergreen Public Schools, Clark County, Wheelchair User / Visually Impaired, Vancouver Fire Department & Fire Marshal's Office, Vancouver Bicycle Club, Community in Motion, Rotschy Inc. and English Pit Shooting Range.

Impacts to Existing Improvements

The project's effect was measured on the existing features along the roadway, including driveways, utilities, sidewalks, and landscaping. The signalized intersection option requires a wider roadway than the roundabout option, which has more flexibility to avoid impacts.

Environmental Impacts

Environmental factors were considered, such as treatment of stormwater runoff and protection of wetlands, in order to protect sensitive ecosystems.

Traffic noise will vary depending on the roadway design. Wider, high-speed roadways tend to have more traffic noise, while narrower or lower-speed roadways have reduced noise levels. Installing sound barriers or aligning the roadway further from sensitive receptors can reduce these impacts.

Impacts to air quality, such as construction emissions and long-term operations, require measures such as using cleaner equipment and minimizing vehicle idling, to comply with environmental regulations and protect local ecosystems.

Conclusion

While the signalized four-lane roadway alternative matches the current character of 192nd Avenue, there are advantages to the roundabout alternative that are worth considering, including operational performance, overall cost, safety, and impacts to private property. The results of the alternatives analysis indicate that roundabouts are the preferred intersection alternative.

MEMORANDUM

DATE: September 8, 2025

TO: City of Vancouver

FROM: Dana Beckwith, PE, PTOE
Richard Martin, EIT

SUBJECT: Vancouver 192nd Ave Improvements TIA – Existing Conditions Memo P23-055

This memorandum summarizes the traffic impact analysis prepared for the 192nd Avenue Improvements project that proposes corridor upgrades for NE 192nd Avenue in Vancouver, Washington. The traffic impact analysis for the proposed development was prepared in accordance with City of Vancouver standards. This memorandum includes the following:

- Project Description
- Existing Transportation Facilities
- Existing Conditions Analysis
 - Crash Data Analysis
 - 2024 Existing Traffic Volumes
 - 2024 Intersection Performance Analysis
 - Queueing Analysis
 - Warrant Analyses
- Conclusions and Recommendations

The study area for the analysis includes the following intersections along NE 192nd Avenue:

- NE 18th Street
- NE 13th Street
- NE 11th Street
- NE 9th Street
- NE 6th Street
- NE 3rd Street
- SE 1st Street

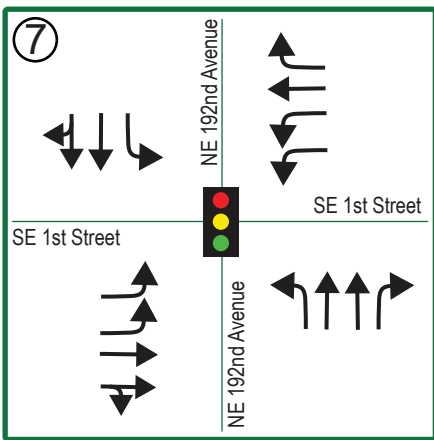
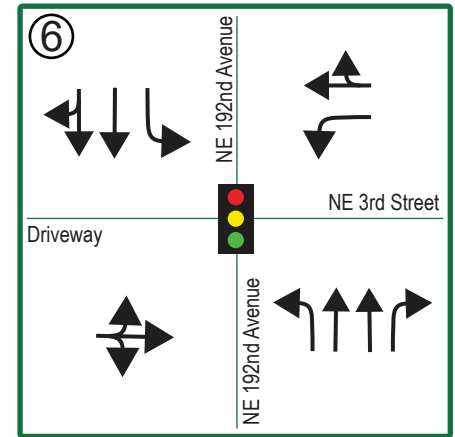
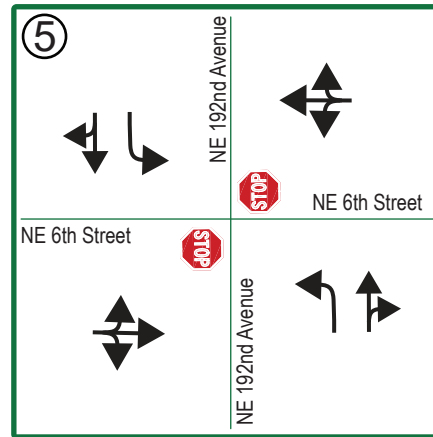
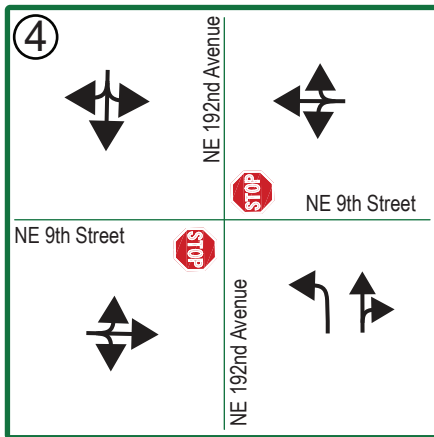
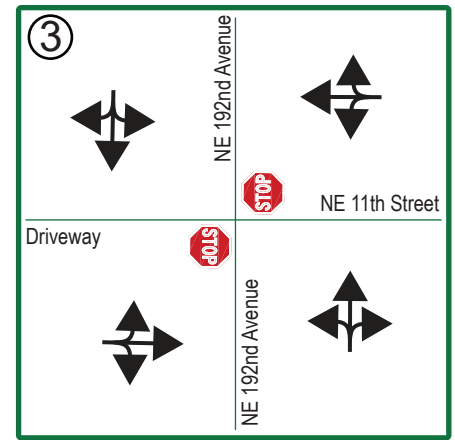
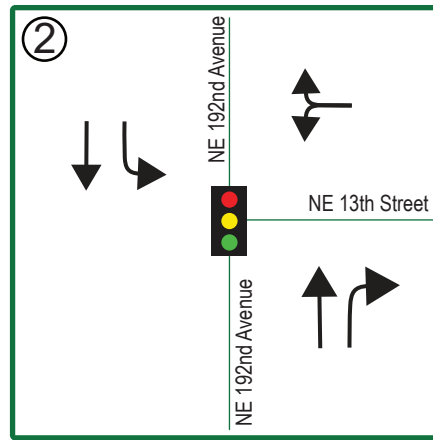
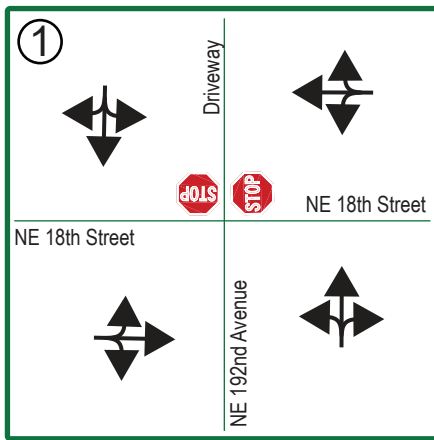
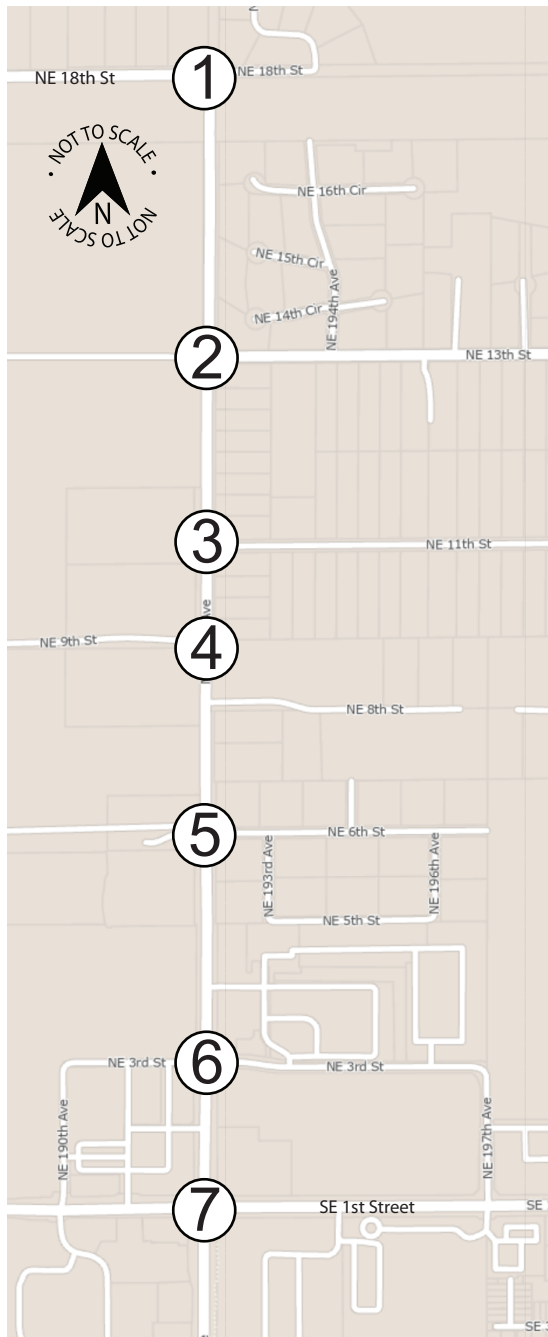
A vicinity map for the study area is provided in Figure 1.

PROJECT DESCRIPTION

The corridor of NE 192nd Avenue between NE 18th Street and SE 1st Street currently offers one lane in each direction with minimal additional infrastructure regarding shoulders, turn lanes, medians, bike lanes, and continuous sidewalks. The corridor is proposed for improvements consistent with the City of Vancouver standards for urban arterial roadways. These standards include widening the roadway to either a 3-lane or 5-lane cross section and geometric and control upgrades at the study intersections.

Control upgrades explored in this study for the study intersections are as follows:

- NE 18th Street – Roundabout upgrade options
- NE 13th Street (Harmony Sports Complex access) - Traffic signal and roundabout options
- NE 11th Street – Traffic signal and roundabout upgrade options
- NE 9th Street – Traffic signal and roundabout upgrade options
- NE 6th Street – Traffic signal and roundabout upgrade options
- NE 3rd Street – Upgrades to the existing traffic signal
- SE 1st Street – Upgrades to the existing traffic signal







 = Traffic Signal
  = Study Intersection
  = Stop Sign
 = Existing Lane Configuration

Figure 1: Vicinity Map

EXISTING TRANSPORTATION FACILITIES

Existing transportation conditions were evaluated along NE 192nd Avenue and along the relevant intersecting roadways. All modes of travel were evaluated, including pedestrians, bicycles, transit, and motor vehicles. The existing transportation conditions are summarized in Table 1.

Table 1: Existing Conditions Within Study Area

Roadway	Functional Classification ¹	Posted Speed Limit	Sidewalks	Transit	Bike Lanes	Lane Geometry	On-Street Parking
NE 192 nd Avenue	Principal Arterial	40 mph	East side only from SE 1 st St to just north of NE 6 th St and NE 13 th St and just south of NE 18 th St. West side only at Humane Society.	None	Both sides from SE 1 st St to just north of NE 3 rd St. East side only from just north of NE 3 rd St to NE 6 th St.	-Two 11' lanes in each direction from SE 1 st St to Union Station. -One 11' lane in each direction from Union Station to NE 18 th St. -TWLTL from Union Station to NE 6 th St. -Left turn Lanes: Single north and southbound at NE 1 st St; single on all approaches at NE 3 rd St. Single SB left at NE 6 th St; single southbound at NE 13 th St.	None
NE 18 th Street	Principal Arterial	40 mph	None	None	None	One 11' lane in each direction	None
NE 13 th Street	Collector Arterial	35 mph	None	None	None	One 11' lane in each direction	None
NE 11 th Street	Local Road	25 mph	None	None	None	36' roadway for two-way traffic	Both sides
NE 9 th Street	Collector Arterial	25 mph	None	None	None	Unmarked 34' paved roadway for two-way traffic	None
NE 6 th Street	Collector Arterial	25 mph	Both sides from SE 192 nd Ave to Union High School.	None	None	36' roadway for two-way traffic	Both sides
NE 3 rd Street	Local Road	25 mph	Both sides from SE 192 nd Ave to NE 197 th Ave.	None	Both sides	One 11' lane in each direction and left turn lanes at intersections	None
SE 1 st Street	Principal Arterial	40 mph	Both sides from SE 192 nd Ave to NE 197 th Ave. South side only from NE 190 th Ave to NE 192 nd Ave.	None	Both sides	Two 11' lanes in each direction, dual eastbound and westbound lefts, single westbound right at intersection	None

¹ Based on the City of Vancouver Transportation Arterial Street System and Classification Map June 17, 2024.

Crash Analysis

Crash data for a five-year period from January 2019 through December 2023 was obtained from the Washington Department of Transportation and was reviewed to identify traffic safety concerns at the study intersections. The crash rates presented in Table 2 are based on the number of crashes per million entering vehicles (MEV). Typically, an intersection does not require further scrutiny for crash patterns unless its crash rate exceeds the threshold of 1.0 crashes per MEV. Table 3 shows the intersection crashes by year and by crash type.

Table 2: Crash Analysis Summary

Intersection	Crash History (Years)	Number of Crashes	Crashes per year	Annual Traffic Entering (veh/yr) ^a	Crash rate per M.E.V.
NE 18 th Street	5	10	2.0	5,111,095	0.391
NE 13 th Street		7	1.4	5,832,700	0.240
NE 11 th Street		4	0.8	4,507,750	0.177
NE 6 th Street		2	0.4	4,588,050	0.087
NE 3 rd Street		5	1.0	5,168,400	0.193
SE 1 st Street		10	2.0	10,811,300	0.185

Notes: ^a Annual traffic estimated using daily and peak hour traffic data collected on May 16, 2024.

None of the crash rates exceed the threshold for further analysis of 1.0 crashes per MEV. No crashes resulted in fatalities. No crashes involved bicycles. One crash involved a pedestrian. Table 3 shows a breakdown of crash types by year at each intersection.

Table 3: Crash Types

Crash Type	Intersection					
	NE 192 nd Avenue at NE 18 th Street					
YEAR	2019	2020	2021	2022	2023	Subtotal
Fixed Object	3	0	0	2	2	6
Angle Type	0	1	0	0	0	4
Vehicle Overturned	0	0	0	1	0	1
Pedestrian	0	0	0	0	1	1
Subtotal:	3	1	0	3	3	-
NE 192 nd Avenue at NE 13 th Street						
YEAR	2019	2020	2021	2022	2023	Subtotal
Angle Type	1	0	1	1	1	2
Rear End	0	0	0	2	1	5
Subtotal:	1	0	1	3	2	-
NE 192 nd Avenue at NE 11 th Street						
YEAR	2019	2020	2021	2022	2023	Subtotal
Fixed Object	0	0	1	0	0	1
Rear End	2	0	0	0	0	2
Angle Type	1	0	0	0	0	1
Subtotal:	3	0	1	0	0	-
NE 192 nd Avenue at NE 9 th Street						
YEAR	2019	2020	2021	2022	2023	Subtotal
Turning Movement	0	0	0	1	0	1
Fixed Object	0	0	0	1	0	1
Subtotal:	0	0	0	2	0	-
NE 192 nd Avenue at NE 6 th Street						
YEAR	2019	2020	2021	2022	2023	Subtotal
Fixed Object	0	0	0	1	0	1
Rear End	0	0	0	0	1	1
Subtotal:	0	0	0	1	1	-
NE 192 nd Avenue at NE 3 rd Street						
YEAR	2019	2020	2021	2022	2023	Subtotal
Rear End	0	0	1	0	0	1
Sideswipe	0	1	0	0	0	1
Angle Type	0	1	0	0	1	2

Backing	1	0	0	0	0	1
Subtotal:	1	2	1	0	1	-
NE 192nd Avenue at SE 1st Street						
YEAR	2019	2020	2021	2022	2023	Subtotal
Angle Type	2	0	1	1	1	5
Rear End	0	0	1	3	1	5
Subtotal:	2	0	2	4	2	-

The analysis showed no significant patterns regarding direction, time-of-day, or roadway conditions for most intersections. For the intersection of NE 192nd Avenue at NE 18th Street, many of the crashes were single vehicles striking signs, tree stumps, or other objects on the side of the road as they fail to negotiate the roadway curve. Mitigation is recommended to reduce driver errors at the intersection.

Additional crash analysis was conducted using the Highway Safety Manual (HSM) predictive method to determine the expected average crash frequency under 2024 existing conditions. The expected average crash frequency is calculated using a combination of existing crash data and predicted crash frequency using Safety Performance Functions (SPF), crash prediction models based on site characteristics. Table 4 shows the crash types as they relate to the HSM analysis. Table 5 shows the HSM crash analysis summary.

Table 4: HSM Crash Types

Crash Type	Intersection					
NE 192nd Avenue at NE 18th Street						
YEAR	2019	2020	2021	2022	2023	Subtotal
Injury	3	1	0	0	2	6
Property Damage Only	0	0	0	3	1	4
Subtotal:	3	1	0	3	3	-
NE 192nd Avenue at NE 13th Street						
YEAR	2019	2020	2021	2022	2023	Subtotal
Injury	0	0	0	1	1	2
Property Damage Only	1	0	1	2	1	5
Subtotal:	1	0	1	3	2	-
NE 192nd Avenue at NE 11th Street						
YEAR	2019	2020	2021	2022	2023	Subtotal
Injury	0	0	1	0	0	1
Property Damage Only	3	0	0	0	0	3
Subtotal:	3	0	1	0	0	-
NE 192nd Avenue at NE 9th Street						
YEAR	2019	2020	2021	2022	2023	Subtotal
Injury	0	0	0	0	0	0
Property Damage Only	0	0	0	2	0	2
Subtotal:	0	0	0	2	0	-
NE 192nd Avenue at NE 6th Street						
YEAR	2019	2020	2021	2022	2023	Subtotal
Injury	0	0	0	0	0	0
Property Damage Only	0	0	0	1	1	2
Subtotal:	0	0	0	1	1	-
NE 192nd Avenue at NE 3rd Street						
YEAR	2019	2020	2021	2022	2023	Subtotal
Injury	0	1	1	0	0	2
Property Damage Only	1	1	0	0	1	3
Subtotal:	1	2	1	0	1	-
NE 192nd Avenue at SE 1st Street						
YEAR	2019	2020	2021	2022	2023	Subtotal
Injury	1	0	1	1	2	5
Property Damage Only	1	0	1	3	0	5
Subtotal:	2	0	2	4	2	-

Table 5: Expected Crash Frequency

Intersection	Crash Severity	Observed	2024 Existing Expected Average Crashes
NE 18 th Street	Fatal and Injury (FI)	1.2	0.4
	Property Damage Only (PDO)	0.8	0.7
	Total	2.0	1.1
NE 13 th Street	FI	0.4	0.8
	PDO	1.0	1.5
	Total	1.4	2.3
NE 11 th Street	FI	0.2	0.6
	PDO	0.6	1.0
	Total	0.8	1.6
NE 9 th Street	FI	0.0	0.4
	PDO	0.4	0.7
	Total	0.4	1.2
NE 6 th Street	FI	0.0	0.4
	PDO	0.4	0.7
	Total	0.4	1.1
NE 3 rd Street	FI	0.4	0.6
	PDO	0.6	1.2
	Total	1.0	1.8
SE 1 st Street	FI	1.0	1.3
	PDO	1.0	2.5
	Total	2.0	3.8

Note: All data is presented as average crashes per year.

Bold = Observed crash frequency exceeds expected crash frequency

As shown in Table 5, most intersections show lower observed crash rates than expected average crash rates. The intersection of NE 192nd Avenue at NE 18th Street shows higher observed crash rates for both injury and property damage only crashes.

Based on the results of the crash history analysis and the HSM analysis, mitigation at the intersection of NE 192nd Avenue at NE 18th Street is recommended to reduce crashes. Detailed crash analysis data is provided in Appendix A.

Pedestrian and Bicycle Facilities

Currently the pedestrian and bicycle infrastructure along the study corridor is incomplete. The 192nd Ave Corridor Improvements Project will include roadway improvements in line with the City of Vancouver standards for Arterial roadways, which will include bike lane and sidewalk improvements along the corridor and analysis of multi-use path options.

Transit Facilities

There are no existing transit facilities along the corridor within the project limits. Review of the *C-TRAN 20 Year Transit Development Plan*, no future transit routes or facilities are currently identified within the project limits.

EXISTING CONDITIONS ANALYSIS

Traffic Count Data

Intersection turning movement count data was collected on Thursday May 16th, 2024 between 7:00 AM to 9:00 AM and 4:00 PM to 6:00 PM, and on Saturday May 18th, 2024 between 12:00 PM and 2:00 PM at the study intersections. Traffic volumes at the intersection of NE 192nd Avenue at NE 9th Street were

estimated based on volumes collected at adjacent intersections. Figure 2 shows the existing traffic count data. Detailed count data is included in Appendix B.

Existing Intersection Performance

An intersection performance analysis was conducted to document the existing operations for the study intersections and to develop a baseline for analyzing future intersection operational needs associated with the proposed project. The peak periods analyzed for this evaluation are the weekday AM and PM peak periods of 7:00 AM to 9:00 AM and 4:00 PM to 6:00 PM.

The level of service analyses presented in this report has been completed using the Synchro (Version 11) analysis software. Synchro is based on the Highway Capacity Manual 6th Edition (HCM 6) methodology. Traffic signal timing data for use in the Synchro models was provided by the City of Vancouver¹, and is included in Appendix B.

The intersection of NE 192nd Avenue at NE 18th Street was modeled as a three-leg intersection. The existing north leg is a driveway with only 1 to 2 peak hour vehicles, that do not impact intersection operations. In addition, under improved conditions, it is not currently planned to be formalized as a fourth leg access to the intersection with intersection upgrades.

The following City of Vancouver performance standards² apply:

- For signalized intersections: LOS E and a v/c (volume to capacity) ratio less than 0.95.
- For unsignalized intersections, a v/c ratio for any lane on any approach of 0.95 or less.

Table 6 summarizes the existing traffic operations for the project’s study intersections. For unsignalized intersections, the worst performing lane is reported. The detailed analysis results have been included in Appendix C.

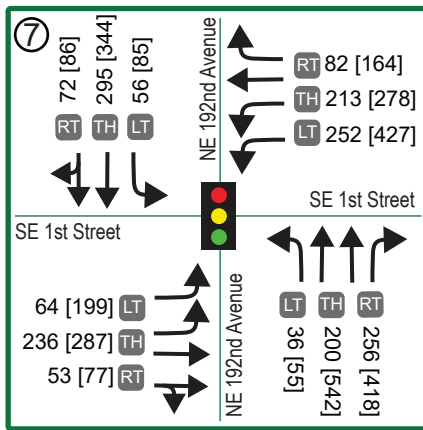
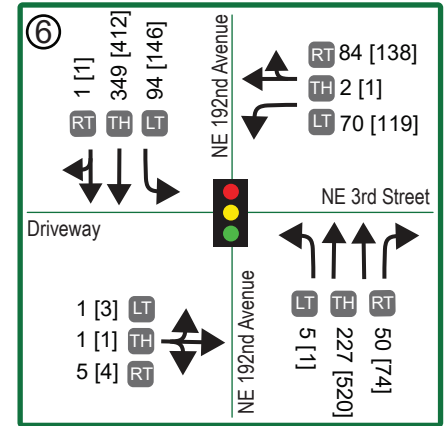
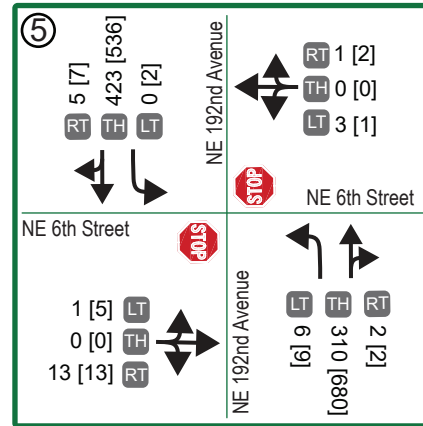
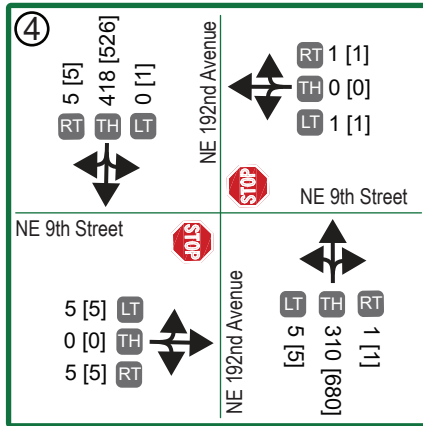
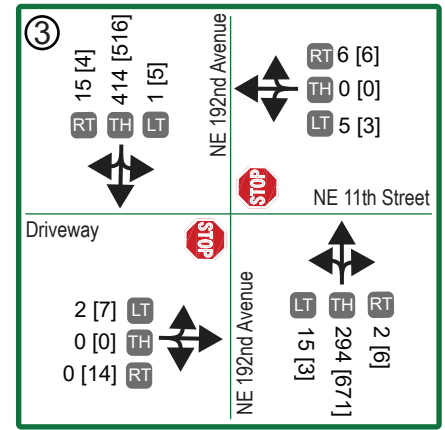
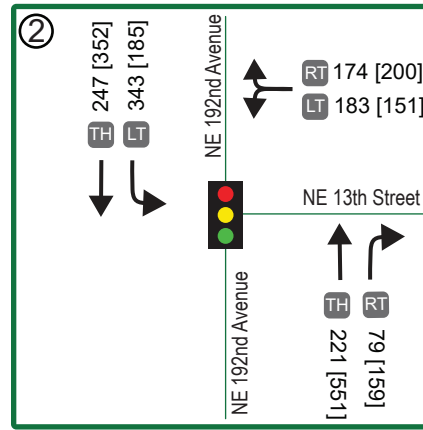
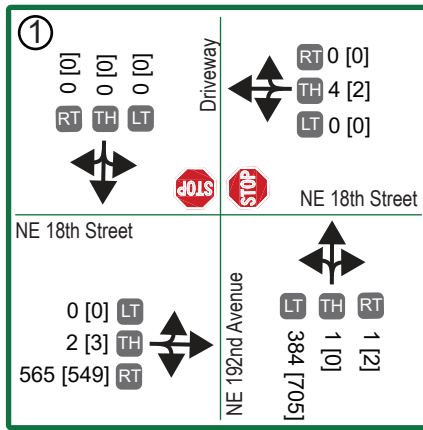
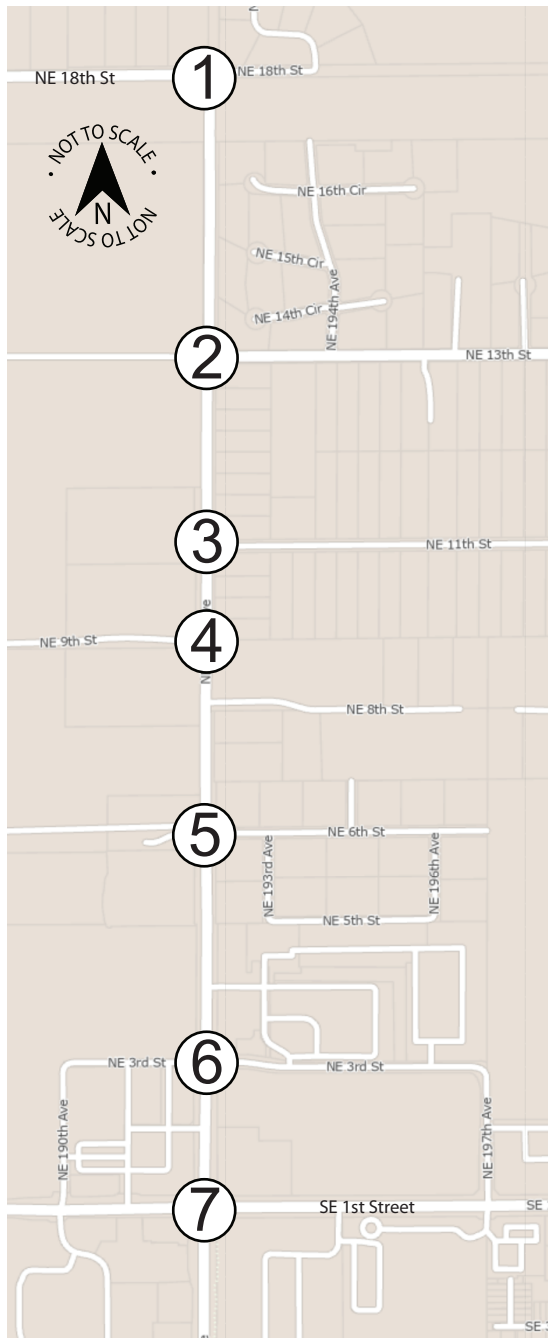
Table 6: 2024 Existing Conditions Intersection Performance Summary

Intersection #	Intersection	Control Type	Peak Hour	LOS	V/C
1	NE 192 nd Avenue At NE 18 th Street	Unsignalized	AM	-	0.01 (WBT)
			PM	-	0.01 (WBT)
2	NE 192 nd Avenue At NE 13 th Street	Signalized	AM	C	0.88
			PM	B	0.84
3	NE 192 nd Avenue At NE 11 th Street	Unsignalized	AM	-	0.04 (WBR)
			PM	-	0.09 (EBR)
4	NE 192 nd Avenue At NE 9 th Street	Unsignalized	AM	-	0.04 (EB)
			PM	-	0.06 (EB)
5	NE 192 nd Avenue At NE 6 th Street	Unsignalized	AM	-	0.05 (EBR)
			PM	-	0.08 (EBR)
6	NE 192 nd Avenue At NE 3 rd Street	Signalized	AM	B	0.60
			PM	B	0.65
7	NE 192 nd Avenue At SE 1 st Street	Signalized	AM	D	0.77
			PM	D	0.75

Under the existing intersection performance analysis, all study intersections operate at acceptable levels of service.

¹ Email coordination with City of Vancouver dated June 11, 2024.

² VMC Section 11.80.130.B, signalized v/c ratio reported as the “Maximum v/c ratio” on the Timings page in Appendix B.



= Traffic Signal
 = Study Intersection
 = Stop Sign
 = Existing Lane Configuration
 LT TH RT = Left / Through / Right Turn
 AM [PM] = Weekday Peak Hour Volumes

Figure 2: Traffic Volumes 2024 Existing Conditions Weekday AM and PM Peak Hours

QUEUEING ANALYSIS

A queueing analysis was conducted to determine if turn lane storage pockets meet existing needs at study intersections. The analysis was conducted using SimTraffic. Queueing reports were developed for the 2024 existing conditions. All study intersections showed low queueing under existing conditions except for NE 192nd Avenue at NE 13th Street. Table 7 shows the results of the analysis for NE 192nd Avenue at NE 13th Street. All other study intersection queueing results are provided in Appendix D.

Table 7: NE 192nd Avenue at NE 13th Street Queueing Analysis

AM Peak Hour					
Movement	WB	NB	NB	SB	SB
Directions Served	LR	T	R	L	T
2024 Existing Average	175	150	75	125	125
2024 Existing 95 th Percentile	400	300	150	200	400
PM Peak Hour					
Movement	WB	NB	NB	SB	SB
Directions Served	LR	T	R	L	T
2024 Existing Average	150	225	100	75	100
2024 Existing 95 th Percentile	225	450	200	150	175
Turn Lane Storage Bays and Link Lengths					
Existing Storage	2,000	800	150	150	1,300
Recommended	-	-	150	200	-

Notes: **Bold** = Queue exceeds available storage/link distance

As shown in Table 7, 95th percentile queues can reach up to 400 feet for the westbound approach, 450 feet for the northbound approach, and 400 feet for the southbound approach. No queues exceed storage distance between intersections, but 95th percentile northbound right-turning queues exceed the available turn-lane storage by approximately two vehicles during the PM peak hour. Average queues are accommodated. No queueing mitigations are recommended for immediate demand based on the existing conditions analysis.

WARRANTS ANALYSES

An analysis was conducted to determine if a traffic signal or turn lanes are warranted at the unsignalized study intersections. Detailed warrants analysis sheets are provided in Appendix E.

Traffic Signal Warrants

A traffic signal warrant analysis was conducted for the intersections of NE 192nd Avenue at NE 18th Street, NE 11th Street, and NE 6th Street. The analysis is based on the 2009 *Manual for Uniform Traffic Control Devices (MUTCD)* Section 4C.04 Warrant 3, Peak Hour. Table 8 summarizes the results of the warrant analysis for each peak hour scenario.

Table 8: Peak Hour Traffic Signal Warrant 3 Analysis

NE 192 nd Avenue Intersection	Peak Hour	Major Street Speed (mph)	Major Street		Minor Street High Volume Approach		Signal Warranted?
			Volume (VPH)	Lanes (#)	Volume (VPH)	Lanes (#)	
NE 18 th Street	AM	40	953	1	4	1	No
	PM		1259		2		No
NE 11 th Street	AM		741		11		No
	PM		1205		21		No
NE 9 th Street	AM		739		10		No
	PM		1218		10		No
NE 6 th Street	AM		746		14		No
	PM		1236		18		No

As shown in Table 8, no traffic signals are warranted under any existing condition scenario. The minimum minor street high-volume approach volume necessary to consider a traffic signal under this warrant is 100 vehicles. No minor street high-volume approach volume exceeds 21 vehicles under existing conditions.

Left-Turn Lane Warrants

Left-turn lane warrants were reviewed for the unsignalized study intersections using the Highway Research Board *Report 211*³. Left turn warrants were evaluated for each study scenario. Based on the analysis, no left-turn lanes are warranted at the study intersection under any analysis scenario. Full analysis results are available in Appendix E.

Right-Turn Lane Warrants

Right-turn lane warrants were reviewed for the unsignalized study intersections using the National Cooperative Highway Research Program (NCHRP) *Report 279*. Right turn warrants were evaluated for each study scenario. Based on the warrant analysis, no right turn lanes are warranted under existing conditions. Full analysis results are available in Appendix E.

RESULTS AND RECOMMENDATIONS

The NE 192nd Avenue corridor between NE 18th Street and NE 3rd Street currently offers one lane in each direction with minimal additional infrastructure regarding shoulders, turn lanes, medians, bike lanes, and continuous sidewalks. The corridor is proposed for improvements consistent with the City of Vancouver standards for urban arterial roadways. These standards include widening the roadway to either a 3-lane or 5-lane cross section, dedicated bike and pedestrian facilities including a multi-use path, upgrades to intersection geometry and controls at the study area intersections.

The study area for the analysis included the following intersections along the 192nd Avenue corridor:

- NE 18th Street
- NE 13th Street
- NE 11th Street
- NE 9th Street
- NE 6th Street
- NE 3rd Street
- SE 1st Street

A crash analysis was conducted at the study intersections that analyzed the last five years of crash data. The analysis showed no significant patterns regarding direction, time-of-day, or roadway conditions. The exception to this is NE 18th Street where there is a distinct pattern of drivers failing to navigate the roadway curve and crashing into fixed objects on the side of the road. One such crash involved a pedestrian. An HSM analysis shows that this intersection has a higher crash rate than the expected average crash rate for the intersection type. This indicates that some form of mitigation should be considered to reduce the crash potential.

The existing conditions analysis shows that all study intersections meet City of Vancouver and WSDOT performance standards. No capacity mitigations are necessary under existing conditions.

A queueing analysis was conducted to determine if any queueing concerns exist at study intersections. The queueing analysis showed some high 95th percentile queues for the intersection of NE 192nd Avenue at NE 13th Street for all approaches. No other intersections showed significant queueing. For the existing conditions, no queueing mitigations are recommended.

Traffic signal, left-turn lane, and right-turn lane warrant analyses were conducted for the unsignalized study intersections. The analysis showed that no traffic signals or turn lanes are warranted under existing conditions.

³ Highway Research Board, Volume Warrants for Left-Turn Storage Lanes at Unsignalized Grade Intersection, Report 211.

Appendix

Appendix A: Crash Data

OFFICER REPORTED CRASHES THAT OCCURRED ON THE FOLLOWING ROAD SEGMENT IN THE CITY OF VANCOUVER

192nd Ave from 18th St to 1st St

01/01/2019 - 12/31/2023

Under 23 U.S. Code § 148 and 23 U.S. Code § 407, safety 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 railway-highway crossings are not subject to discovery or admitted into evidence in a Federal or State court proceeding or considered for other purposes in any action for damages arising from any occurrence at a location mentioned or addressed in such reports, surveys, schedules, lists, or data.

JURISDICTION	COUNTY	CITY	PRIMARY TRAFFICWAY	BLOCK NUMBER	INTERSECTING TRAFFICWAY	DIST FROM REF POINT	MI or FT	COMP DIR FROM REF POINT	REFERENCE POINT NAME	MILEPOST	SR ONLY HISTORY / SUSPENSE IND	REPORT NUMBER	DATE	TIME	MOST SEVERE INJURY TYPE	# I N J U R I E S	# F A T A L I T I E S	# P E D E S T R I A N S	VEHICLE 1 TYPE	VEHICLE 2 TYPE	JUNCTION RELATIONSHIP	WEATHER	
City Street	Clark	Vancouver	NE 18TH ST	0	NE 192ND AVE				NE 18TH ST		No	E978398	11/02/2019	02:18	Possible Injury	1	0	1	0	Pickup,Panel Truck or Vanette under 10,000 lb		At Intersection and Not Related	Clear
City Street	Clark	Vancouver	NE 18TH ST	19123	NE 192ND AVE				NE 18TH ST		No	EC87317	09/22/2022	21:38	No Apparent Injury	0	0	1	0	Passenger Car		At Intersection and Related	Clear
City Street	Clark	Vancouver	NE 18TH ST	0	NE 192ND AVE				NE 18TH ST		No	E907367	03/31/2019	23:08	Possible Injury	1	0	1	0	Passenger Car		At Intersection and Not Related	Clear or Partly Cloudy
City Street	Clark	Vancouver	NE 18TH ST	19100	NE 18TH ST	49	F	NW	NE 192ND AVE		No	EE12018	10/21/2023	20:35	Suspected Minor Injury	1	0	1	1	Pickup,Panel Truck or Vanette under 10,000 lb		Not at Intersection and Not Related	Overcast
City Street	Clark	Vancouver	NE 18TH ST	19000	NE 18TH ST	105	F	W	NE 192ND AVE		No	E952432	08/21/2019	17:14	Possible Injury	1	0	1	0	Pickup,Panel Truck or Vanette under 10,000 lb		Not at Intersection and Not Related	Raining
City Street	Clark	Vancouver	NE 192ND AVE		NE 18TH ST						No	EE21664	11/19/2023	02:33	No Apparent Injury	0	0	1	0	Passenger Car		At Intersection and Not Related	Raining
City Street	Clark	Vancouver	NE 192ND AVE		NE 18TH ST						No	EA78924	11/07/2020	15:59	Suspected Minor Injury	1	0	2	0	Pickup,Panel Truck or Vanette under 10,000 lb	Pickup,Panel Truck or Vanette under 10,000 lb	At Intersection and Related	Raining
City Street	Clark	Vancouver	NE 192ND AVE		NE 18TH ST						No	EC52797	05/26/2022	20:42	No Apparent Injury	0	0	1	0	Passenger Car		At Intersection and Related	Raining
City Street	Clark	Vancouver	NE 192ND AVE		NE 18TH ST	100	F	SE	NE 18TH ST		No	EC57436	06/18/2022	02:45	No Apparent Injury	0	0	1	0	Passenger Car		Not at Intersection and Not Related	Raining
City Street	Clark	Vancouver	NE 192ND AVE	1500	NE 18TH ST	358	F	S	NE 18TH ST		No	ED84964	07/29/2023	17:45	Suspected Minor Injury	1	0	1	0	Truck (Flatbad, Van, etc)		Not at Intersection and Not Related	Clear
City Street	Clark	Vancouver	NE 192ND AVE	1190	NE 13TH ST						No	EE11989	10/06/2023	16:10	Possible Injury	2	0	2	0	Passenger Car	Pickup,Panel Truck or Vanette under 10,000 lb	At Intersection and Related	Clear
City Street	Clark	Vancouver	NE 192ND AVE	1190	NE 13TH ST						No	EC64739	07/14/2022	12:34	No Apparent Injury	0	0	2	0	Truck & Trailer	Pickup,Panel Truck or Vanette under 10,000 lb	At Intersection and Related	Clear
City Street	Clark	Vancouver	NE 192ND AVE	0	NE 13TH ST						No	E974878	10/18/2019	07:19	No Apparent Injury	0	0	2	0	Pickup,Panel Truck or Vanette under 10,000 lb	Pickup,Panel Truck or Vanette under 10,000 lb	At Intersection and Related	Raining
City Street	Clark	Vancouver	NE 192ND AVE	1168	NE 13TH ST						No	EB73778	09/24/2021	21:54	No Apparent Injury	0	0	2	0	Pickup,Panel Truck or Vanette under 10,000 lb	Passenger Car	At Intersection and Related	Clear
City Street	Clark	Vancouver	NE 192ND AVE	1200	NE 13TH ST	300	F	S	NE 13TH ST		No	ED50309	03/11/2023	11:11	No Apparent Injury	0	0	2	0	Passenger Car	Passenger Car	Intersection Related but Not at Intersection	Clear
City Street	Clark	Vancouver	NE 192ND AVE	1200	NE 13TH ST	181	F	S	NE 13TH ST		No	EC53185	06/06/2022	17:24	Possible Injury	1	0	3	0	Pickup,Panel Truck or Vanette under 10,000 lb	Pickup,Panel Truck or Vanette under 10,000 lb	Intersection Related but Not at Intersection	Overcast
City Street	Clark	Vancouver	NE 192ND AVE	1200	NE 13TH ST	50	F	S	NE 13TH ST		No	EC31583	03/24/2022	13:06	No Apparent Injury	0	0	3	0	Pickup,Panel Truck or Vanette under 10,000 lb	Passenger Car	Intersection Related but Not at Intersection	Clear
City Street	Clark	Vancouver	NE 192ND AVE	0	NE 11TH ST				NE 11TH ST		No	E983017	11/15/2019	15:45	No Apparent Injury	0	0	2	0	Pickup,Panel Truck or Vanette under 10,000 lb	Pickup,Panel Truck or Vanette under 10,000 lb	At Intersection and Not Related	Overcast
City Street	Clark	Vancouver	NE 192ND AVE	900	NE 11TH ST				NE 11TH ST		No	EB85594	11/01/2021	10:12	No Apparent Injury	0	0	1	0	Pickup,Panel Truck or Vanette under 10,000 lb		At Intersection and Not Related	Raining
City Street	Clark	Vancouver	NE 192ND AVE	0	NE 11TH ST				NE 11TH ST		No	EB79160	01/03/2019	18:10	No Apparent Injury	0	0	2	0	Passenger Car	Passenger Car	At Intersection and Related	Clear or Partly Cloudy
City Street	Clark	Vancouver	NE 192ND AVE	800	NE 11TH ST	50	F	S	NE 11TH ST		No	E931017	06/15/2019	17:03	No Apparent Injury	0	0	3	0	Passenger Car	Pickup,Panel Truck or Vanette under 10,000 lb	Driveway Related but Not at Driveway	Clear or Partly Cloudy
City Street	Clark	Vancouver	NE 192ND AVE	600	NE 6TH ST	69	F	N	NE 6TH ST		No	ED80750	07/17/2023	19:36	No Apparent Injury	0	0	2	0	Passenger Car	Pickup,Panel Truck or Vanette under 10,000 lb	Not at Intersection and Not Related	Clear or Partly Cloudy
City Street	Clark	Vancouver	NE 192ND AVE	600	NE 6TH ST	199	F	N	NE 6TH ST		No	EC72740	07/27/2022	01:06	No Apparent Injury	0	0	1	0	Pickup,Panel Truck or Vanette under 10,000 lb		Not at Intersection and Not Related	Overcast
City Street	Clark	Vancouver	NE 192ND AVE	19200	NE 3RD ST						No	E919644	05/11/2019	13:02	No Apparent Injury	0	0	2	0	Passenger Car	Pickup,Panel Truck or Vanette under 10,000 lb	At Intersection and Related	Clear or Partly Cloudy
City Street	Clark	Vancouver	NE 192ND AVE		NE 3RD ST						No	ED63654	05/21/2023	11:38	No Apparent Injury	0	0	2	0	Pickup,Panel Truck or Vanette under 10,000 lb	Passenger Car	At Intersection and Related	Clear
City Street	Clark	Vancouver	NE 192ND AVE	214	NE 3RD ST						No	EB56935	08/09/2021	19:20	Suspected Minor Injury	2	0	2	0	Pickup,Panel Truck or Vanette under 10,000 lb	Motorcycle	At Intersection and Related	Clear
City Street	Clark	Vancouver	NE 192ND AVE	214	NE 3RD ST						No	EA85757	12/06/2020	19:23	Possible Injury	1	0	2	0	Passenger Car	Pickup,Panel Truck or Vanette under 10,000 lb	At Intersection and Related	Clear or Partly Cloudy
City Street	Clark	Vancouver	NE 192ND AVE	300	NE 3RD ST	200	F	N	NE 3RD ST		No	EA03613	01/06/2020	11:55	No Apparent Injury	0	0	2	0	Passenger Car	Passenger Car	Not at Intersection and Not Related	Overcast
City Street	Clark	Vancouver	NE 192ND AVE		SE 1ST ST						No	EC51208	05/27/2022	09:29	No Apparent Injury	0	0	2	0	Passenger Car	Passenger Car	At Intersection and Related	Overcast
City Street	Clark	Vancouver	NE 192ND AVE		SE 1ST ST						No	ED96575	08/30/2023	21:14	Possible Injury	2	0	2	0	Passenger Car	Pickup,Panel Truck or Vanette under 10,000 lb	At Intersection and Related	Clear or Partly Cloudy
City Street	Clark	Vancouver	NE 192ND AVE	200	SE 1ST ST	78	F	N	SE 1ST ST		No	EE05256	09/22/2023	12:02	Possible Injury	1	0	4	0	Passenger Car	Pickup,Panel Truck or Vanette under 10,000 lb	Not at Intersection and Not Related	Clear
City Street	Clark	Vancouver	SE 192ND AVE	0	SE 1ST ST						No	E974882	10/18/2019	10:31	Suspected Minor Injury	2	0	2	0	Pickup,Panel Truck or Vanette under 10,000 lb	Passenger Car	At Intersection and Related	Clear or Partly Cloudy
City Street	Clark	Vancouver	SE 192ND AVE	101	SE 1ST ST						No	EC49857	05/23/2022	15:59	No Apparent Injury	0	0	2	0	Passenger Car	Passenger Car	At Intersection and Related	Clear or Partly Cloudy
City Street	Clark	Vancouver	SE 192ND AVE	101	SE 1ST ST						No	EB22833	04/16/2021	14:23	Possible Injury	1	0	2	0	Pickup,Panel Truck or Vanette under 10,000 lb	Pickup,Panel Truck or Vanette under 10,000 lb	At Intersection and Related	Clear or Partly Cloudy
City Street	Clark	Vancouver	SE 192ND AVE	0	SE 1ST ST						No	E884545	01/19/2019	08:25	No Apparent Injury	0	0	2	0	Pickup,Panel Truck or Vanette under 10,000 lb	Passenger Car	At Intersection and Related	Overcast
City Street	Clark	Vancouver	SE 192ND AVE	101	SE 1ST ST						No	EC05641	12/07/2021	19:26	No Apparent Injury	0	0	2	0	Passenger Car	Pickup,Panel Truck or Vanette under 10,000 lb	At Intersection and Related	Raining
City Street	Clark	Vancouver	SE 192ND AVE	100	SE 1ST ST	125	F	S	SE 1ST ST		No	EC47423	05/13/2022	10:20	No Apparent Injury	0	0	2	0	Pickup,Panel Truck or Vanette under 10,000 lb	Truck (Flatbad, Van, etc)	Intersection Related but Not at Intersection	Clear or Partly Cloudy
City Street	Clark	Vancouver	SE 192ND AVE	100	SE 1ST ST	104	F	S	SE 1ST ST		No	EC78618	08/22/2022	11:38	Possible Injury	1	0	2	0	Pickup,Panel Truck or Vanette under 10,000 lb	Passenger Car	Not at Intersection and Not Related	Clear
City Street	Clark	Vancouver	NE 192ND AVE	800	NE 9TH ST						No	EC22875	02/23/2022	15:15	No Apparent Injury	0	0	2	0	Passenger Car	Passenger Car	At Intersection and Related	Clear or Partly Cloudy
City Street	Clark	Vancouver	NE 192ND AVE	686	NE 9TH ST				NE 8TH ST		No	EB35898	06/03/2021	16:42	No Apparent Injury	0	0	2	0	Passenger Car	Passenger Car	At Driveway	Clear or Partly Cloudy
City Street	Clark	Vancouver	NE 192ND AVE	800	NE 9TH ST	50	F	N	NE 8TH ST		No	E904585	03/15/2019	15:52	No Apparent Injury	0	0	2	0	Passenger Car	Pickup,Panel Truck or Vanette under 10,000 lb	Not at Intersection and Not Related	Clear or Partly Cloudy
City Street	Clark	Vancouver	NE 192ND AVE	900	NE 9TH ST	47	F	N	NE 9TH ST		No	EC84256	09/12/2022	13:13	No Apparent Injury	0	0	1	0	Pickup,Panel Truck or Vanette under 10,000 lb		Not at Intersection and Not Related	Overcast

ROADWAY SURFACE CONDITION	LIGHTING CONDITION	FIRST COLLISION TYPE / OBJECT STRUCK	VEHICLE 1 ACTION	VEHICLE 2 ACTION	VEHICLE 1 COMPASS DIRECTION FROM	VEHICLE 1 COMPASS DIRECTION TO	VEHICLE 2 COMPASS DIRECTION FROM	VEHICLE 2 COMPASS DIRECTION TO	MV DRIVER CONTRIBUTING CIRCUMSTANCE 1 (UNIT 1)	MV DRIVER CONTRIBUTING CIRCUMSTANCE 2 (UNIT 1)	MV DRIVER CONTRIBUTING CIRCUMSTANCE 3 (UNIT 1)
Dry	Dark-No Street Lights	Metal Sign Post	Going Straight Ahead		West	East			Apparently Asleep or Fatigued		
Dry	Dark-No Street Lights	Vehicle overturned	Making Right Turn		Northwest	South			Exceeding Stated Speed Limit		
Dry	Dark-Street Lights On	Metal Sign Post	Making Right Turn		West	South			Under Influence of Alcohol	Other Contributing Circ Not Listed	
Wet	Dark-No Street Lights	Vehicle going straight hits pedestrian	Negotiating a Curve		South	West			Other Contributing Circ Not Listed		
Wet	Daylight	Tree or Stump (stationary)	Going Straight Ahead		East	West			Exceeding Reas. Safe Speed		
Wet	Dark-No Street Lights	Mailbox	Negotiating a Curve		North	West			Under Influence of Alcohol	Improper Turn/Merge	Exceeding Stated Speed Limit
Wet	Dusk	Entering at angle	Making Right Turn	Making Left Turn	West	South	South	West	None		
Wet	Dark-Street Lights On	Metal Sign Post	Negotiating a Curve		South	West			Unknown Distraction		
Wet	Dark-Street Lights On	Fence	Going Straight Ahead		North	South			None		
Dry	Daylight	Tree or Stump (stationary)	Going Straight Ahead		South	North			Follow Too Closely		
Dry	Daylight	From opposite direction - one left turn - one straight	Making Left Turn	Going Straight Ahead	North	East	South	North	Did Not Grant RW to Vehicle		
Dry	Daylight	Entering at angle	Making Left Turn	Stopped at Signal or Stop Sign	North	East	Vehicle Stopped	Vehicle Stopped	None		
Wet	Daylight	Entering at angle	Making Right Turn	Going Straight Ahead	East	North	South	North	Inattention		
Dry	Dark-Street Lights On	From opposite direction - one left turn - one straight	Making Left Turn	Going Straight Ahead	North	East	South	North	Improper Turn/Merge		
Dry	Daylight	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped for Traffic	South	North	Vehicle Stopped	Vehicle Stopped	Other Contributing Circ Not Listed		
Dry	Daylight	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped for Traffic	South	North	Vehicle Stopped	Vehicle Stopped	Follow Too Closely		
Dry	Daylight	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped at Signal or Stop Sign	South	North	Vehicle Stopped	Vehicle Stopped	Lost in Thought / Day Dreaming		
Dry	Daylight	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped for Traffic	South	North	Vehicle Stopped	Vehicle Stopped	Inattention		
Wet	Daylight	Fence	Going Straight Ahead		North	South			Other Contributing Circ Not Listed		
Dry	Dark-Street Lights On	Entering at angle	Going Straight Ahead	Making Left Turn	South	North	East	South	None		
Dry	Daylight	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped for Traffic	South	North	Vehicle Stopped	Vehicle Stopped	Inattention		
Dry	Daylight	From same direction - both going straight - both moving - rear-end	Going Straight Ahead	Slowing	North	South	North	South	Follow Too Closely		
Dry	Dark-No Street Lights	Utility Pole	Going Straight Ahead		South	North			Light Violation: No Lights/Fail to Dim		
Dry	Daylight	From same direction - all others	Backing	Stopped at Signal or Stop Sign	Vehicle Backing	Vehicle Backing	Vehicle Stopped	Vehicle Stopped	Improper Backing		
Dry	Daylight	From opposite direction - one left turn - one straight	Going Straight Ahead	Making Left Turn	South	North	South	East	Did Not Grant R/W to Non Motorist	Exceeding Stated Speed Limit	Operating Recklessly or Aggressively
Dry	Daylight	From same direction - both going straight - one stopped - rear-end	Slowing	Stopped at Signal or Stop Sign	North	South	Vehicle Stopped	Vehicle Stopped	None		
Dry	Dark-Street Lights On	Entering at angle	Going Straight Ahead	Making Left Turn	South	North	East	South	Other Distractions		
Wet	Daylight	From same direction - both going straight - both moving - sideswipe	Changing Lanes	Going Straight Ahead	South	North	South	North	Did Not Grant RW to Vehicle		
Wet	Daylight	Entering at angle	Going Straight Ahead	Going Straight Ahead	East	West	North	South	Disregard Traffic Sign and Signals		
Dry	Dark-Street Lights On	Entering at angle	Going Straight Ahead	Going Straight Ahead	North	South	East	West	Disregard Traffic Sign and Signals		
Dry	Daylight	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped for Traffic	South	North	South	North	Follow Too Closely		
Wet	Daylight	Entering at angle	Going Straight Ahead	Going Straight Ahead	South	North	West	East	Disregard Stop and Go Light		
Dry	Daylight	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped at Signal or Stop Sign	North	South	Vehicle Stopped	Vehicle Stopped	Follow Too Closely		
Dry	Daylight	Entering at angle	Going Straight Ahead	Going Straight Ahead	North	South	East	West	Unknown Distraction		
Wet	Daylight	Entering at angle	Going Straight Ahead	Going Straight Ahead	North	South	East	West	Disregard Stop and Go Light	Inattention	Did Not Grant RW to Vehicle
Wet	Dark-Street Lights On	From same direction - both going straight - one stopped - rear-end	Starting in Traffic Lane	Stopped for Traffic	South	North	Vehicle Stopped	Vehicle Stopped	Unknown Distraction		
Dry	Daylight	From same direction - both going straight - both moving - rear-end	Going Straight Ahead	Slowing	South	North	South	North	Follow Too Closely		
Dry	Daylight	From same direction - both going straight - both moving - rear-end	Going Straight Ahead	Going Straight Ahead	South	North	South	North	Follow Too Closely		
Dry	Daylight	From opposite direction - one left turn - one straight	Making Left Turn	Going Straight Ahead	South	West	North	South	Did Not Grant RW to Vehicle		
Dry	Daylight	Entering at angle	Making Left Turn	Going Straight Ahead	East	South	North	South	Did Not Grant RW to Vehicle		
Dry	Daylight	From same direction - both going straight - both moving - rear-end	Going Straight Ahead	Going Straight Ahead	South	North	South	North	Inattention		
Dry	Daylight	Utility Pole	Making U-Turn		South	South			None		

MV DRIVER CONTRIBUTING CIRCUMSTANCE 1 (UNIT 2)	MV DRIVER CONTRIBUTING CIRCUMSTANCE 2 (UNIT 2)	MV DRIVER CONTRIBUTING CIRCUMSTANCE 3 (UNIT 2)	BICYCLIST CONTRIBUTING CIRCUMSTANCE 1 (UNIT 1)	BICYCLIST CONTRIBUTING CIRCUMSTANCE 2 (UNIT 1)	BICYCLIST CONTRIBUTING CIRCUMSTANCE 3 (UNIT 1)	BICYCLIST CONTRIBUTING CIRCUMSTANCE 1 (UNIT 2)	BICYCLIST CONTRIBUTING CIRCUMSTANCE 2 (UNIT 2)	BICYCLIST CONTRIBUTING CIRCUMSTANCE 3 (UNIT 2)	PEDESTRIAN CONTRIBUTING CIRCUMSTANCE 1 (UNIT 2)	PEDESTRIAN CONTRIBUTING CIRCUMSTANCE 2 (UNIT 2)	PEDESTRIAN CONTRIBUTING CIRCUMSTANCE 3 (UNIT 2)	FIRST IMPACT LOCATION (City, County & Misc Trafficways - 2010 forward)	WA STATE PLANE SOUTH - X 2010 - FORWARD	WA STATE PLANE SOUTH - Y 2010 - FORWARD
												Past the Outside Shoulder of Primary Trafficway	1134958.5	116635.76
												Intersecting Trafficway	1134958.85	116634.65
												Past the Outside Shoulder of Primary Trafficway	1134958.5	116635.77
									Other Contributing Circ Not Listed			Outside Shoulder of Primary Trafficway	1134915.95	116658.4
												Past the Outside Shoulder of Primary Trafficway	1134856.27	116661.9
												Past the Outside Shoulder of Primary Trafficway	1134958.85	116634.65
None												Lane of Primary Trafficway	1134958.85	116634.65
												Past the Outside Shoulder of Primary Trafficway	1134958.85	116634.65
												Past the Outside Shoulder of Primary Trafficway	1135003.86	116548.76
												Past the Outside Shoulder of Primary Trafficway	1134998.77	116278.47
None												Lane of Primary Trafficway	1134965.35	115331.14
None												Intersecting Trafficway	1134965.35	115331.14
None												Lane of Primary Trafficway	1134965.01	115332.26
None												Lane of Primary Trafficway	1134965.35	115331.14
None												Lane of Primary Trafficway	1134957.98	115031.22
None												Lane of Primary Trafficway	1134960.1	115150.11
Other Contributing Circ Not Listed												Lane of Primary Trafficway	1134963.53	115281.16
None												Lane of Primary Trafficway	1134945.83	114444.12
												Past the Outside Shoulder of Primary Trafficway	1134945.45	114445.22
Inattention	Did Not Grant RW to Vehicle											Lane of Primary Trafficway	1134945.83	114444.13
None												Lane of Primary Trafficway	1134944.27	114394.14
None												Lane of Primary Trafficway	1134904.57	113169.35
												Past the Outside Shoulder of Primary Trafficway	1134907.65	113298.7
None												Lane of Primary Trafficway	1134953.11	112030.73
None												Lane of Primary Trafficway	1134850.5	112034.59
None												Lane of Primary Trafficway	1134850.5	112034.59
None												Lane of Primary Trafficway	1134850.5	112034.59
None												Lane of Primary Trafficway	1134875.48	112230.39
None												Lane of Primary Trafficway	1134837.43	111375.03
None												Lane of Primary Trafficway	1134836.22	111347.34
None												Lane of Primary Trafficway	1134875.24	111454.72
None												Lane of Primary Trafficway	1134871.38	111324.95
None												Lane of Primary Trafficway	1134834.96	111322.57
None												Lane of Primary Trafficway	1134834.96	111322.57
None												Lane of Primary Trafficway	1134835.25	111323.34
None												Lane of Primary Trafficway	1134834.96	111322.57
None												Lane of Primary Trafficway	1134830.84	111197.44
None												Lane of Primary Trafficway	1134831.48	111218.67
None												Lane of Primary Trafficway	1134931.89	113995.79
None												Lane of Primary Trafficway	1134917.91	113713.8
None												Lane of Primary Trafficway	1134920.06	113762.64
												Past the Outside Shoulder of Primary Trafficway	1134933.44	114042.29

Worksheet 2A -- General Information and Input Data for Urban and Suburban Arterial Intersections			
General Information		Location Information	
Analyst	Richard Martin	Roadway	NE 192nd Avenue
Agency or Company	Global Transportation Engineering	Intersection	SE 1st Street
Date Performed	06/04/24	Jurisdiction	Vancouver
		Analysis Year	2024
Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 3SG, 4ST, 4SG)		--	4SG
AADT _{major} (veh/day)	AADT _{MAX} = 67,700 (veh/day)	--	23,970
AADT _{minor} (veh/day)	AADT _{MAX} = 33,400 (veh/day)	--	20,760
Intersection lighting (present/not present)		Not Present	Present
Calibration factor, C _i		1.00	1.00
Data for unsignalized intersections only:		--	--
Number of major-road approaches with left-turn lanes (0,1,2)		0	0
Number of major-road approaches with right-turn lanes (0,1,2)		0	0
Data for signalized intersections only:		--	--
Number of approaches with left-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	4
Number of approaches with right-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	2
Number of approaches with left-turn signal phasing [for 3SG, use maximum value of 3]		--	4
Type of left-turn signal phasing for Leg #1		Permissive	Protected
Type of left-turn signal phasing for Leg #2		--	Protected
Type of left-turn signal phasing for Leg #3		--	Protected
Type of left-turn signal phasing for Leg #4 (if applicable)		--	Protected
Number of approaches with right-turn-on-red prohibited [for 3SG, use maximum value of 3]		0	0
Intersection red light cameras (present/not present)		Not Present	Not Present
Sum of all pedestrian crossing volumes (PedVol) -- Signalized intersections only			6
Maximum number of lanes crossed by a pedestrian (n _{lanesx})		--	6
Number of bus stops within 300 m (1,000 ft) of the intersection		0	0
Schools within 300 m (1,000 ft) of the intersection (present/not present)		Not Present	Not Present
Number of alcohol sales establishments within 300 m (1,000 ft) of the intersection		0	0

Worksheet 2B -- Crash Modification Factors for Urban and Suburban Arterial Intersections						
(1)	(2)	(3)	(4)	(5)	(6)	(7)
CMF for Left-Turn Lanes	CMF for Left-Turn Signal Phasing	CMF for Right-Turn Lanes	CMF for Right Turn on Red	CMF for Lighting	CMF for Red Light Cameras	Combined CMF
CMF _{1i}	CMF _{2i}	CMF _{3i}	CMF _{4i}	CMF _{5i}	CMF _{6i}	CMF _{COMB}
from Table 12-24	from Table 12-25	from Table 12-26	from Equation 12-35	from Equation 12-36	from Equation 12-37	(1)*(2)*(3)*(4)*(5)*(6)
0.66	0.78	0.92	1.00	0.91	1.00	0.43

Worksheet 2C -- Multiple-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections										
(1) Crash Severity Level	(2) SPF Coefficients			(3) Overdispersion Parameter, k	(4) Initial N_{bimv}	(5) Proportion of Total Crashes	(6) Adjusted N_{bimv}	(7) Combined CMFs	(8) Calibration Factor, C_i	(9) Predicted N_{bimv}
	from Table 12-10			from Table 12-10	from Equation 12-21		(4) _{TOTAL} *(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.99	1.07	0.23	0.39	8.060	1.000	8.060	0.43	1.00	3.486
Fatal and Injury (FI)	-13.14	1.18	0.22	0.33	2.577	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ 0.331	2.665	0.43	1.00	1.152
Property Damage Only (PDO)	-11.02	1.02	0.24	0.44	5.218	$(5)_{TOTAL}-(5)_{FI}$ 0.669	5.395	0.43	1.00	2.333

Worksheet 2D -- Multiple-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections					
(1) Collision Type	(2) Proportion of Collision Type _(FI)	(3) Predicted N_{bimv} (FI) (crashes/year)	(4) Proportion of Collision Type (PDO)	(5) Predicted N_{bimv} (PDO) (crashes/year)	(6) Predicted N_{bimv} (TOTAL) (crashes/year)
	from Table 12-11	(9) _{FI} from Worksheet 2C	from Table 12-11	(9) _{PDO} from Worksheet 2C	(9) _{PDO} from Worksheet 2C
Total	1.000	1.152	1.000	2.333	3.486
		$(2)*(3)_{FI}$		$(4)*(5)_{PDO}$	$(3)+(5)$
Rear-end collision	0.450	0.519	0.483	1.127	1.646
Head-on collision	0.049	0.056	0.030	0.070	0.126
Angle collision	0.347	0.400	0.244	0.569	0.969
Sideswipe	0.099	0.114	0.032	0.075	0.189
Other multiple-vehicle collision	0.055	0.063	0.211	0.492	0.556

Worksheet 2E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections										
(1) Crash Severity Level	(2) SPF Coefficients			(3) Overdispersion Parameter, k	(4) Initial N_{bisv}	(5) Proportion of Total Crashes	(6) Adjusted N_{bisv}	(7) Combined CMFs	(8) Calibration Factor, C_i	(9) Predicted N_{bisv}
	from Table 12-12			from Table 12-12	from Eqn. 12-24, (FI) from Eqn. 12-24 or 12-27		(4) _{TOTAL} *(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.21	0.68	0.27	0.36	0.512	1.000	0.512	0.43	1.00	0.222
Fatal and Injury (FI)	-9.25	0.43	0.29	0.09	0.131	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ 0.261	0.134	0.43	1.00	0.058
Property Damage Only (PDO)	-11.34	0.78	0.25	0.44	0.372	$(5)_{TOTAL}-(5)_{FI}$ 0.739	0.379	0.43	1.00	0.164

Worksheet 2F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections					
(1) Collision Type	(2) Proportion of Collision Type _(FI)	(3) Predicted N _{bisv (FI)} (crashes/year)	(4) Proportion of Collision Type (PDO)	(5) Predicted N _{bisv (PDO)} (crashes/year)	(6) Predicted N _{bisv (TOTAL)} (crashes/year)
	from Table 12-13	(9) _{FI} from Worksheet 2E	from Table 12-13	(9) _{PDO} from Worksheet 2E	(9) _{PDO} from Worksheet 2E
Total	1.000	0.058 (2)*(3) _{FI}	1.000	0.164 (4)*(5) _{PDO}	0.222 (3)+(5)
Collision with parked vehicle	0.001	0.000	0.001	0.000	0.000
Collision with animal	0.002	0.000	0.002	0.000	0.000
Collision with fixed object	0.744	0.043	0.870	0.143	0.186
Collision with other object	0.072	0.004	0.070	0.011	0.016
Other single-vehicle collision	0.040	0.002	0.023	0.004	0.006
Single-vehicle noncollision	0.141	0.008	0.034	0.006	0.014

Worksheet 2G -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Stop-Controlled Intersections					
(1) Crash Severity Level	(2) Predicted N _{bimv}	(3) Predicted N _{bisv}	(4) Predicted N _{bi}	(5) f _{pedi}	(7)* Predicted N _{pedi}
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-16	(4)*(5)
Total	--	--	--	--	--
Fatal and injury (FI)	--	--	--	--	--

* Column 6 has been removed due to redundant application of calibration factors and inconsistency with HSM Equation 12-30

Worksheet 2H -- Crash Modification Factors for Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections			
(1)	(2)	(3)	(4)
CMF for Bus Stops	CMF for Schools	CMF for Alcohol Sales Establishments	Combined CMF
CMF _{1p}	CMF _{2p}	CMF _{3p}	
from Table 12-28	from Table 12-29	from Table 12-30	
1.00	1.00	1.00	(1)*(2)*(3) 1.00

Worksheet 2I -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections										
(1) Crash Severity Level	(2) SPF Coefficients					(3) Overdispersion Parameter, k	(4) N _{pedbase}	(5) Combined CMF	(6) Calibration factor, C _i	(7) Predicted N _{pedi}
	from Table 12-14					from Equation 12-29	from Equation 12-29	(4) from Worksheet 2H	1.00	(4)*(5)*(6)
	a	b	c	d	e					
Total	-9.53	0.40	0.26	0.45	0.04	0.24	0.014	1.00	1.00	0.014
Fatal and Injury (FI)	--	--	--	--	--	--	--	--	1.00	0.014

Worksheet 2J -- Vehicle-Bicycle Collisions for Urban and Suburban Arterial Intersections					
(1)	(2)	(3)	(4)	(5)	(7)*
Crash Severity Level	Predicted N_{bimv}	Predicted N_{bisv}	Predicted N_{bi}	f_{bikei}	Predicted N_{bikei}
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-17	(4)*(5)
Total	3.486	0.222	3.707	0.015	0.056
Fatal and injury (FI)	--	--	--	--	0.056

* Column 6 has been removed due to redundant application of calibration factors and inconsistency with HSM Equation 12-31

Worksheet 2K -- Crash Severity Distribution for Urban and Suburban Arterial Intersections			
(1)	(2)	(3)	(4)
Collision type	Fatal and injury (FI)	Property damage only (PDO)	Total
	(3) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J	(5) from Worksheet 2D and 2F	(6) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 2D)	0.519	1.127	1.646
Head-on collisions (from Worksheet 2D)	0.056	0.070	0.126
Angle collisions (from Worksheet 2D)	0.400	0.569	0.969
Sideswipe (from Worksheet 2D)	0.114	0.075	0.189
Other multiple-vehicle collision (from Worksheet 2D)	0.063	0.492	0.556
Subtotal	1.152	2.333	3.486
SINGLE-VEHICLE			
Collision with parked vehicle (from Worksheet 2F)	0.000	0.000	0.000
Collision with animal (from Worksheet 2F)	0.000	0.000	0.000
Collision with fixed object (from Worksheet 2F)	0.043	0.143	0.186
Collision with other object (from Worksheet 2F)	0.004	0.011	0.016
Other single-vehicle collision (from Worksheet 2F)	0.002	0.004	0.006
Single-vehicle noncollision (from Worksheet 2F)	0.008	0.006	0.014
Collision with pedestrian (from Worksheet 2G or 2I)	0.014	0.000	0.014
Collision with bicycle (from Worksheet 2J)	0.056	0.000	0.056
Subtotal	0.128	0.164	0.292
Total	1.280	2.497	3.777

Worksheet 2L -- Summary Results for Urban and Suburban Arterial Intersections	
(1)	(2)
Crash severity level	Predicted average crash frequency, $N_{predicted int}$ (crashes/year)
	(Total) from Worksheet 2K
Total	3.8
Fatal and injury (FI)	1.3
Property damage only (PDO)	2.5

Worksheet 2A -- General Information and Input Data for Urban and Suburban Arterial Intersections			
General Information		Location Information	
Analyst	Richard Martin	Roadway	NE 192nd Avenue
Agency or Company	Global Transportation Engineering	Intersection	NE 3rd Street
Date Performed	06/04/24	Jurisdiction	Vancouver
		Analysis Year	2024
Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 3SG, 4ST, 4SG)		--	4SG
AADT _{major} (veh/day)	AADT _{MAX} = 67,700 (veh/day)	--	14,180
AADT _{minor} (veh/day)	AADT _{MAX} = 33,400 (veh/day)	--	4,880
Intersection lighting (present/not present)		Not Present	Present
Calibration factor, C _i		1.00	1.00
Data for unsignalized intersections only:		--	--
Number of major-road approaches with left-turn lanes (0,1,2)		0	0
Number of major-road approaches with right-turn lanes (0,1,2)		0	0
Data for signalized intersections only:		--	--
Number of approaches with left-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	4
Number of approaches with right-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	1
Number of approaches with left-turn signal phasing [for 3SG, use maximum value of 3]		--	4
Type of left-turn signal phasing for Leg #1		Permissive	Protected
Type of left-turn signal phasing for Leg #2		--	Protected
Type of left-turn signal phasing for Leg #3		--	Protected / Permissive
Type of left-turn signal phasing for Leg #4 (if applicable)		--	Protected / Permissive
Number of approaches with right-turn-on-red prohibited [for 3SG, use maximum value of 3]		0	0
Intersection red light cameras (present/not present)		Not Present	Not Present
Sum of all pedestrian crossing volumes (PedVol) -- Signalized intersections only			2
Maximum number of lanes crossed by a pedestrian (n _{lanesx})		--	5
Number of bus stops within 300 m (1,000 ft) of the intersection		0	0
Schools within 300 m (1,000 ft) of the intersection (present/not present)		Not Present	Not Present
Number of alcohol sales establishments within 300 m (1,000 ft) of the intersection		0	0

Worksheet 2B -- Crash Modification Factors for Urban and Suburban Arterial Intersections						
(1)	(2)	(3)	(4)	(5)	(6)	(7)
CMF for Left-Turn Lanes	CMF for Left-Turn Signal Phasing	CMF for Right-Turn Lanes	CMF for Right Turn on Red	CMF for Lighting	CMF for Red Light Cameras	Combined CMF
CMF _{1i}	CMF _{2i}	CMF _{3i}	CMF _{4i}	CMF _{5i}	CMF _{6i}	CMF _{COMB}
from Table 12-24	from Table 12-25	from Table 12-26	from Equation 12-35	from Equation 12-36	from Equation 12-37	(1)*(2)*(3)*(4)*(5)*(6)
0.66	0.87	0.96	1.00	0.91	1.00	0.50

Worksheet 2C -- Multiple-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections										
(1) Crash Severity Level	(2) SPF Coefficients			(3) Overdispersion Parameter, k	(4) Initial N_{bimv}	(5) Proportion of Total Crashes	(6) Adjusted N_{bimv}	(7) Combined CMFs	(8) Calibration Factor, C_i	(9) Predicted N_{bimv}
	from Table 12-10			from Table 12-10	from Equation 12-21		$(4)_{TOTAL} * (5)$	(7) from Worksheet 2B		$(6) * (7) * (8)$
	a	b	c							
Total	-10.99	1.07	0.23	0.39	3.294	1.000	3.294	0.50	1.00	1.646
Fatal and Injury (FI)	-13.14	1.18	0.22	0.33	1.009	$(4)_{FI} / ((4)_{FI} + (4)_{PDO})$ 0.319	1.049	0.50	1.00	0.524
Property Damage Only (PDO)	-11.02	1.02	0.24	0.44	2.158	$(5)_{TOTAL} - (5)_{FI}$ 0.681	2.245	0.50	1.00	1.122

Worksheet 2D -- Multiple-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections					
(1) Collision Type	(2) Proportion of Collision Type _(FI)	(3) Predicted N_{bimv} (FI) (crashes/year)	(4) Proportion of Collision Type (PDO)	(5) Predicted N_{bimv} (PDO) (crashes/year)	(6) Predicted N_{bimv} (TOTAL) (crashes/year)
	from Table 12-11	$(9)_{FI}$ from Worksheet 2C	from Table 12-11	$(9)_{PDO}$ from Worksheet 2C	$(9)_{PDO}$ from Worksheet 2C
Total	1.000	0.524	1.000	1.122	1.646
		$(2) * (3)_{FI}$		$(4) * (5)_{PDO}$	$(3) + (5)$
Rear-end collision	0.450	0.236	0.483	0.542	0.778
Head-on collision	0.049	0.026	0.030	0.034	0.059
Angle collision	0.347	0.182	0.244	0.274	0.456
Sideswipe	0.099	0.052	0.032	0.036	0.088
Other multiple-vehicle collision	0.055	0.029	0.211	0.237	0.266

Worksheet 2E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections										
(1) Crash Severity Level	(2) SPF Coefficients			(3) Overdispersion Parameter, k	(4) Initial N_{bisv}	(5) Proportion of Total Crashes	(6) Adjusted N_{bisv}	(7) Combined CMFs	(8) Calibration Factor, C_i	(9) Predicted N_{bisv}
	from Table 12-12			from Table 12-12	from Eqn. 12-24, (FI) from Eqn. 12-24 or 12-27		$(4)_{TOTAL} * (5)$	(7) from Worksheet 2B		$(6) * (7) * (8)$
	a	b	c							
Total	-10.21	0.68	0.27	0.36	0.243	1.000	0.243	0.50	1.00	0.121
Fatal and Injury (FI)	-9.25	0.43	0.29	0.09	0.069	$(4)_{FI} / ((4)_{FI} + (4)_{PDO})$ 0.286	0.069	0.50	1.00	0.035
Property Damage Only (PDO)	-11.34	0.78	0.25	0.44	0.172	$(5)_{TOTAL} - (5)_{FI}$ 0.714	0.173	0.50	1.00	0.087

Worksheet 2F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections					
(1) Collision Type	(2) Proportion of Collision Type ^(FI)	(3) Predicted N _{bisv (FI)} (crashes/year)	(4) Proportion of Collision Type (PDO)	(5) Predicted N _{bisv (PDO)} (crashes/year)	(6) Predicted N _{bisv (TOTAL)} (crashes/year)
	from Table 12-13	(9) _{FI} from Worksheet 2E	from Table 12-13	(9) _{PDO} from Worksheet 2E	(9) _{PDO} from Worksheet 2E
Total	1.000	0.035	1.000	0.087	0.121
		(2)*(3) _{FI}		(4)*(5) _{PDO}	(3)+(5)
Collision with parked vehicle	0.001	0.000	0.001	0.000	0.000
Collision with animal	0.002	0.000	0.002	0.000	0.000
Collision with fixed object	0.744	0.026	0.870	0.075	0.101
Collision with other object	0.072	0.002	0.070	0.006	0.009
Other single-vehicle collision	0.040	0.001	0.023	0.002	0.003
Single-vehicle noncollision	0.141	0.005	0.034	0.003	0.008

Worksheet 2G -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Stop-Controlled Intersections					
(1) Crash Severity Level	(2) Predicted N _{bimv}	(3) Predicted N _{bisv}	(4) Predicted N _{bi}	(5) f _{pedi}	(7)* Predicted N _{pedi}
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-16	(4)*(5)
Total	--	--	--	--	--
Fatal and injury (FI)	--	--	--	--	--

* Column 6 has been removed due to redundant application of calibration factors and inconsistency with HSM Equation 12-30

Worksheet 2H -- Crash Modification Factors for Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections			
(1)	(2)	(3)	(4)
CMF for Bus Stops	CMF for Schools	CMF for Alcohol Sales Establishments	Combined CMF
CMF _{1p}	CMF _{2p}	CMF _{3p}	
from Table 12-28	from Table 12-29	from Table 12-30	(1)*(2)*(3)
1.00	1.00	1.00	1.00

Worksheet 2I -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections										
(1) Crash Severity Level	(2) SPF Coefficients					(3) Overdispersion Parameter, k	(4) N _{pedbase}	(5) Combined CMF	(6) Calibration factor, C _i	(7) Predicted N _{pedi}
	from Table 12-14					from Equation 12-29	from Equation 12-29	(4) from Worksheet 2H	1.00	(4)*(5)*(6)
	a	b	c	d	e					
Total	-9.53	0.40	0.26	0.45	0.04	0.24	0.005	1.00	1.00	0.005
Fatal and Injury (FI)	--	--	--	--	--	--	--	--	1.00	0.005

Worksheet 2J -- Vehicle-Bicycle Collisions for Urban and Suburban Arterial Intersections					
(1)	(2)	(3)	(4)	(5)	(7)*
Crash Severity Level	Predicted N_{bimv}	Predicted N_{bisv}	Predicted N_{bi}	f_{bikei}	Predicted N_{bikei}
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-17	(4)*(5)
Total	1.646	0.121	1.767	0.015	0.027
Fatal and injury (FI)	--	--	--	--	0.027

* Column 6 has been removed due to redundant application of calibration factors and inconsistency with HSM Equation 12-31

Worksheet 2K -- Crash Severity Distribution for Urban and Suburban Arterial Intersections			
(1)	(2)	(3)	(4)
Collision type	Fatal and injury (FI)	Property damage only (PDO)	Total
	(3) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J	(5) from Worksheet 2D and 2F	(6) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 2D)	0.236	0.542	0.778
Head-on collisions (from Worksheet 2D)	0.026	0.034	0.059
Angle collisions (from Worksheet 2D)	0.182	0.274	0.456
Sideswipe (from Worksheet 2D)	0.052	0.036	0.088
Other multiple-vehicle collision (from Worksheet 2D)	0.029	0.237	0.266
Subtotal	0.524	1.122	1.646
SINGLE-VEHICLE			
Collision with parked vehicle (from Worksheet 2F)	0.000	0.000	0.000
Collision with animal (from Worksheet 2F)	0.000	0.000	0.000
Collision with fixed object (from Worksheet 2F)	0.026	0.075	0.101
Collision with other object (from Worksheet 2F)	0.002	0.006	0.009
Other single-vehicle collision (from Worksheet 2F)	0.001	0.002	0.003
Single-vehicle noncollision (from Worksheet 2F)	0.005	0.003	0.008
Collision with pedestrian (from Worksheet 2G or 2I)	0.005	0.000	0.005
Collision with bicycle (from Worksheet 2J)	0.027	0.000	0.027
Subtotal	0.066	0.087	0.152
Total	0.590	1.208	1.799

Worksheet 2L -- Summary Results for Urban and Suburban Arterial Intersections	
(1)	(2)
Crash severity level	Predicted average crash frequency, $N_{predicted int}$ (crashes/year)
	(Total) from Worksheet 2K
Total	1.8
Fatal and injury (FI)	0.6
Property damage only (PDO)	1.2

Worksheet 2A -- General Information and Input Data for Urban and Suburban Arterial Intersections			
General Information		Location Information	
Analyst	Richard Martin	Roadway	NE 192nd Avenue
Agency or Company	Global Transportation Engineering	Intersection	NE 6th Street
Date Performed	06/04/24	Jurisdiction	Vancouver
		Analysis Year	2024
Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 3SG, 4ST, 4SG)		--	4ST
AADT _{major} (veh/day)	AADT _{MAX} = 46,800 (veh/day)	--	12,570
AADT _{minor} (veh/day)	AADT _{MAX} = 5,900 (veh/day)	--	410
Intersection lighting (present/not present)		Not Present	Present
Calibration factor, C _i		1.00	1.00
Data for unsignalized intersections only:		--	--
Number of major-road approaches with left-turn lanes (0,1,2)		0	1
Number of major-road approaches with right-turn lanes (0,1,2)		0	0
Data for signalized intersections only:		--	--
Number of approaches with left-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	0
Number of approaches with right-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	0
Number of approaches with left-turn signal phasing [for 3SG, use maximum value of 3]		--	0
Type of left-turn signal phasing for Leg #1		Permissive	Not Applicable
Type of left-turn signal phasing for Leg #2		--	Not Applicable
Type of left-turn signal phasing for Leg #3		--	Not Applicable
Type of left-turn signal phasing for Leg #4 (if applicable)		--	Not Applicable
Number of approaches with right-turn-on-red prohibited [for 3SG, use maximum value of 3]		0	0
Intersection red light cameras (present/not present)		Not Present	Not Present
Sum of all pedestrian crossing volumes (PedVol) -- Signalized intersections only			
Maximum number of lanes crossed by a pedestrian (n _{lanesx})		--	3
Number of bus stops within 300 m (1,000 ft) of the intersection		0	0
Schools within 300 m (1,000 ft) of the intersection (present/not present)		Not Present	Not Present
Number of alcohol sales establishments within 300 m (1,000 ft) of the intersection		0	0

Worksheet 2B -- Crash Modification Factors for Urban and Suburban Arterial Intersections						
(1)	(2)	(3)	(4)	(5)	(6)	(7)
CMF for Left-Turn Lanes	CMF for Left-Turn Signal Phasing	CMF for Right-Turn Lanes	CMF for Right Turn on Red	CMF for Lighting	CMF for Red Light Cameras	Combined CMF
CMF _{1i}	CMF _{2i}	CMF _{3i}	CMF _{4i}	CMF _{5i}	CMF _{6i}	CMF _{COMB}
from Table 12-24	from Table 12-25	from Table 12-26	from Equation 12-35	from Equation 12-36	from Equation 12-37	(1)*(2)*(3)*(4)*(5)*(6)
0.73	1.00	1.00	1.00	0.91	1.00	0.67

Worksheet 2C -- Multiple-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections										
(1) Crash Severity Level	(2) SPF Coefficients			(3) Overdispersion Parameter, k	(4) Initial N_{bimv}	(5) Proportion of Total Crashes	(6) Adjusted N_{bimv}	(7) Combined CMFs	(8) Calibration Factor, C_i	(9) Predicted N_{bimv}
	from Table 12-10			from Table 12-10	from Equation 12-21		(4) _{TOTAL} *(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-8.90	0.82	0.25	0.40	1.411	1.000	1.411	0.67	1.00	0.940
Fatal and Injury (FI)	-11.13	0.93	0.28	0.48	0.513	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ 0.359	0.507	0.67	1.00	0.338
Property Damage Only (PDO)	-8.74	0.77	0.23	0.40	0.916	$(5)_{TOTAL}-(5)_{FI}$ 0.641	0.904	0.67	1.00	0.602

Worksheet 2D -- Multiple-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections					
(1) Collision Type	(2) Proportion of Collision Type _(FI)	(3) Predicted N_{bimv} (FI) (crashes/year)	(4) Proportion of Collision Type (PDO)	(5) Predicted N_{bimv} (PDO) (crashes/year)	(6) Predicted N_{bimv} (TOTAL) (crashes/year)
	from Table 12-11	$(9)_{FI}$ from Worksheet 2C	from Table 12-11	$(9)_{PDO}$ from Worksheet 2C	$(9)_{PDO}$ from Worksheet 2C
Total	1.000	0.338	1.000	0.602	0.940
		$(2)*(3)_{FI}$		$(4)*(5)_{PDO}$	$(3)+(5)$
Rear-end collision	0.338	0.114	0.374	0.225	0.339
Head-on collision	0.041	0.014	0.030	0.018	0.032
Angle collision	0.440	0.149	0.335	0.202	0.350
Sideswipe	0.121	0.041	0.044	0.027	0.067
Other multiple-vehicle collision	0.060	0.020	0.217	0.131	0.151

Worksheet 2E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections										
(1) Crash Severity Level	(2) SPF Coefficients			(3) Overdispersion Parameter, k	(4) Initial N_{bisv}	(5) Proportion of Total Crashes	(6) Adjusted N_{bisv}	(7) Combined CMFs	(8) Calibration Factor, C_i	(9) Predicted N_{bisv}
	from Table 12-12			from Table 12-12	from Eqn. 12-24, (FI) from Eqn. 12-24 or 12-27		(4) _{TOTAL} *(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-5.33	0.33	0.12	0.65	0.225	1.000	0.225	0.67	1.00	0.150
Fatal and Injury (FI)	--	--	--	--	0.063	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ 0.348	0.078	0.67	1.00	0.052
Property Damage Only (PDO)	-7.04	0.36	0.25	0.54	0.118	$(5)_{TOTAL}-(5)_{FI}$ 0.652	0.146	0.67	1.00	0.098

Worksheet 2F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections					
(1) Collision Type	(2) Proportion of Collision Type _(FI)	(3) Predicted N _{bisv (FI)} (crashes/year)	(4) Proportion of Collision Type (PDO)	(5) Predicted N _{bisv (PDO)} (crashes/year)	(6) Predicted N _{bisv (TOTAL)} (crashes/year)
	from Table 12-13	(9) _{FI} from Worksheet 2E	from Table 12-13	(9) _{PDO} from Worksheet 2E	(9) _{PDO} from Worksheet 2E
Total	1.000	0.052 (2)*(3) _{FI}	1.000	0.098 (4)*(5) _{PDO}	0.150 (3)+(5)
Collision with parked vehicle	0.001	0.000	0.001	0.000	0.000
Collision with animal	0.001	0.000	0.026	0.003	0.003
Collision with fixed object	0.679	0.035	0.847	0.083	0.118
Collision with other object	0.089	0.005	0.070	0.007	0.011
Other single-vehicle collision	0.051	0.003	0.007	0.001	0.003
Single-vehicle noncollision	0.179	0.009	0.049	0.005	0.014

Worksheet 2G -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Stop-Controlled Intersections					
(1) Crash Severity Level	(2) Predicted N _{bimv}	(3) Predicted N _{bisv}	(4) Predicted N _{bi}	(5) f _{pedi}	(7)* Predicted N _{pedi}
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-16	(4)*(5)
Total	0.940	0.150	1.090	0.022	0.024
Fatal and injury (FI)	--	--	--	--	0.024

* Column 6 has been removed due to redundant application of calibration factors and inconsistency with HSM Equation 12-30

Worksheet 2H -- Crash Modification Factors for Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections			
(1)	(2)	(3)	(4)
CMF for Bus Stops	CMF for Schools	CMF for Alcohol Sales Establishments	Combined CMF
CMF _{1p}	CMF _{2p}	CMF _{3p}	
from Table 12-28	from Table 12-29	from Table 12-30	(1)*(2)*(3)
--	--	--	--

Worksheet 2I -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections										
(1) Crash Severity Level	(2) SPF Coefficients					(3) Overdispersion Parameter, k	(4) N _{pedbase}	(5) Combined CMF	(6) Calibration factor, C _i	(7) Predicted N _{pedi}
	from Table 12-14						from Equation 12-29	(4) from Worksheet 2H		(4)*(5)*(6)
	a	b	c	d	e					
Total	--	--	--	--	--	--	--	--	1.00	--
Fatal and Injury (FI)	--	--	--	--	--	--	--	--	1.00	--

Worksheet 2J -- Vehicle-Bicycle Collisions for Urban and Suburban Arterial Intersections					
(1)	(2)	(3)	(4)	(5)	(7)*
Crash Severity Level	Predicted N_{bimv}	Predicted N_{bisv}	Predicted N_{bi}	f_{bikei}	Predicted N_{bikei}
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-17	(4)*(5)
Total	0.940	0.150	1.090	0.018	0.020
Fatal and injury (FI)	--	--	--	--	0.020

* Column 6 has been removed due to redundant application of calibration factors and inconsistency with HSM Equation 12-31

Worksheet 2K -- Crash Severity Distribution for Urban and Suburban Arterial Intersections			
(1)	(2)	(3)	(4)
Collision type	Fatal and injury (FI)	Property damage only (PDO)	Total
	(3) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J	(5) from Worksheet 2D and 2F	(6) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 2D)	0.114	0.225	0.339
Head-on collisions (from Worksheet 2D)	0.014	0.018	0.032
Angle collisions (from Worksheet 2D)	0.149	0.202	0.350
Sideswipe (from Worksheet 2D)	0.041	0.027	0.067
Other multiple-vehicle collision (from Worksheet 2D)	0.020	0.131	0.151
Subtotal	0.338	0.602	0.940
SINGLE-VEHICLE			
Collision with parked vehicle (from Worksheet 2F)	0.000	0.000	0.000
Collision with animal (from Worksheet 2F)	0.000	0.003	0.003
Collision with fixed object (from Worksheet 2F)	0.035	0.083	0.118
Collision with other object (from Worksheet 2F)	0.005	0.007	0.011
Other single-vehicle collision (from Worksheet 2F)	0.003	0.001	0.003
Single-vehicle noncollision (from Worksheet 2F)	0.009	0.005	0.014
Collision with pedestrian (from Worksheet 2G or 2I)	0.024	0.000	0.024
Collision with bicycle (from Worksheet 2J)	0.020	0.000	0.020
Subtotal	0.096	0.098	0.193
Total	0.433	0.700	1.134

Worksheet 2L -- Summary Results for Urban and Suburban Arterial Intersections	
(1)	(2)
Crash severity level	Predicted average crash frequency, $N_{predicted int}$ (crashes/year)
	(Total) from Worksheet 2K
Total	1.1
Fatal and injury (FI)	0.4
Property damage only (PDO)	0.7

Worksheet 2A -- General Information and Input Data for Urban and Suburban Arterial Intersections			
General Information		Location Information	
Analyst	Richard Martin	Roadway	NE 192nd Avenue
Agency or Company	Global Transportation Engineering	Intersection	NE 9th Street
Date Performed	07/04/24	Jurisdiction	Vancouver
		Analysis Year	2024
Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 3SG, 4ST, 4SG)		--	4ST
AADT _{major} (veh/day)	AADT _{MAX} = 46,800 (veh/day)	--	12,300
AADT _{minor} (veh/day)	AADT _{MAX} = 5,900 (veh/day)	--	120
Intersection lighting (present/not present)		Not Present	Present
Calibration factor, C _i		1.00	1.00
Data for unsignalized intersections only:		--	--
Number of major-road approaches with left-turn lanes (0,1,2)		0	0
Number of major-road approaches with right-turn lanes (0,1,2)		0	0
Data for signalized intersections only:		--	--
Number of approaches with left-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	0
Number of approaches with right-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	0
Number of approaches with left-turn signal phasing [for 3SG, use maximum value of 3]		--	0
Type of left-turn signal phasing for Leg #1		Permissive	Not Applicable
Type of left-turn signal phasing for Leg #2		--	Not Applicable
Type of left-turn signal phasing for Leg #3		--	Not Applicable
Type of left-turn signal phasing for Leg #4 (if applicable)		--	Not Applicable
Number of approaches with right-turn-on-red prohibited [for 3SG, use maximum value of 3]		0	0
Intersection red light cameras (present/not present)		Not Present	Not Present
Sum of all pedestrian crossing volumes (PedVol) -- Signalized intersections only			
Maximum number of lanes crossed by a pedestrian (n _{lanesx})		--	2
Number of bus stops within 300 m (1,000 ft) of the intersection		0	0
Schools within 300 m (1,000 ft) of the intersection (present/not present)		Not Present	Not Present
Number of alcohol sales establishments within 300 m (1,000 ft) of the intersection		0	0

Worksheet 2B -- Crash Modification Factors for Urban and Suburban Arterial Intersections						
(1)	(2)	(3)	(4)	(5)	(6)	(7)
CMF for Left-Turn Lanes	CMF for Left-Turn Signal Phasing	CMF for Right-Turn Lanes	CMF for Right Turn on Red	CMF for Lighting	CMF for Red Light Cameras	Combined CMF
CMF _{1i}	CMF _{2i}	CMF _{3i}	CMF _{4i}	CMF _{5i}	CMF _{6i}	CMF _{COMB}
from Table 12-24	from Table 12-25	from Table 12-26	from Equation 12-35	from Equation 12-36	from Equation 12-37	(1)*(2)*(3)*(4)*(5)*(6)
1.00	1.00	1.00	1.00	0.91	1.00	0.91

Worksheet 2C -- Multiple-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	SPF Coefficients			Overdispersion Parameter, k	Initial N_{bimv}	Proportion of Total Crashes	Adjusted N_{bimv}	Combined CMFs (7) from Worksheet 2B	Calibration Factor, C_i	Predicted N_{bimv}
	from Table 12-10			from Table 12-10	from Equation 12-21		(4) _{TOTAL} *(5)			(6)*(7)*(8)
	a	b	c							
Total	-8.90	0.82	0.25	0.40	1.019	1.000	1.019	0.91	1.00	0.931
Fatal and Injury (FI)	-11.13	0.93	0.28	0.48	0.357	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ 0.344	0.351	0.91	1.00	0.320
Property Damage Only (PDO)	-8.74	0.77	0.23	0.40	0.679	$(5)_{TOTAL}-(5)_{FI}$ 0.656	0.668	0.91	1.00	0.610

Worksheet 2D -- Multiple-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	Proportion of Collision Type _(FI)	Predicted $N_{bimv (FI)}$ (crashes/year)	Proportion of Collision Type (PDO)	Predicted $N_{bimv (PDO)}$ (crashes/year)	Predicted $N_{bimv (TOTAL)}$ (crashes/year)
	from Table 12-11	$(9)_{FI}$ from Worksheet 2C	from Table 12-11	$(9)_{PDO}$ from Worksheet 2C	$(9)_{PDO}$ from Worksheet 2C
Total	1.000	0.320	1.000	0.610	0.931
		$(2)*(3)_{FI}$		$(4)*(5)_{PDO}$	$(3)+(5)$
Rear-end collision	0.338	0.108	0.374	0.228	0.337
Head-on collision	0.041	0.013	0.030	0.018	0.031
Angle collision	0.440	0.141	0.335	0.204	0.345
Sideswipe	0.121	0.039	0.044	0.027	0.066
Other multiple-vehicle collision	0.060	0.019	0.217	0.132	0.152

Worksheet 2E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	SPF Coefficients			Overdispersion Parameter, k	Initial N_{bisv}	Proportion of Total Crashes	Adjusted N_{bisv}	Combined CMFs (7) from Worksheet 2B	Calibration Factor, C_i	Predicted N_{bisv}
	from Table 12-12			from Table 12-12	from Eqn. 12-24; (FI) from Eqn. 12-24 or 12-27		(4) _{TOTAL} *(5)			(6)*(7)*(8)
	a	b	c							
Total	-5.33	0.33	0.12	0.65	0.192	1.000	0.192	0.91	1.00	0.176
Fatal and Injury (FI)	--	--	--	--	0.054	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ 0.385	0.074	0.91	1.00	0.068
Property Damage Only (PDO)	-7.04	0.36	0.25	0.54	0.086	$(5)_{TOTAL}-(5)_{FI}$ 0.615	0.118	0.91	1.00	0.108

Worksheet 2F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections					
(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	Proportion of Collision Type _(FI)	Predicted N _{bisv (FI)} (crashes/year)	Proportion of Collision Type _(PDO)	Predicted N _{bisv (PDO)} (crashes/year)	Predicted N _{bisv (TOTAL)} (crashes/year)
	from Table 12-13	(9) _{FI} from Worksheet 2E	from Table 12-13	(9) _{PDO} from Worksheet 2E	(9) _{PDO} from Worksheet 2E
Total	1.000	0.068	1.000	0.108	0.176
		(2)*(3) _{FI}		(4)*(5) _{PDO}	(3)+(5)
Collision with parked vehicle	0.001	0.000	0.001	0.000	0.000
Collision with animal	0.001	0.000	0.026	0.003	0.003
Collision with fixed object	0.679	0.046	0.847	0.092	0.137
Collision with other object	0.089	0.006	0.070	0.008	0.014
Other single-vehicle collision	0.051	0.003	0.007	0.001	0.004
Single-vehicle noncollision	0.179	0.012	0.049	0.005	0.017

Worksheet 2G -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Stop-Controlled Intersections					
(1)	(2)	(3)	(4)	(5)	(7)*
Crash Severity Level	Predicted N _{bimv}	Predicted N _{bisv}	Predicted N _{bi}	f _{pedi}	Predicted N _{pedi}
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-16	(4)*(5)
Total	0.931	0.176	1.106	0.022	0.024
Fatal and injury (FI)	--	--	--	--	0.024

* Column 6 has been removed due to redundant application of calibration factors and inconsistency with HSM Equation 12-30

Worksheet 2H -- Crash Modification Factors for Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections			
(1)	(2)	(3)	(4)
CMF for Bus Stops	CMF for Schools	CMF for Alcohol Sales Establishments	Combined CMF
CMF _{1p}	CMF _{2p}	CMF _{3p}	
from Table 12-28	from Table 12-29	from Table 12-30	(1)*(2)*(3)
--	--	--	--

Worksheet 2I -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections										
(1)	(2)					(3)	(4)	(5)	(6)	(7)
Crash Severity Level	SPF Coefficients					Overdispersion Parameter, k	N _{pedbase}	Combined CMF	Calibration factor, C _i	Predicted N _{pedi}
	from Table 12-14									
	a	b	c	d	e					
Total	--	--	--	--	--	--	--	--	1.00	--
Fatal and Injury (FI)	--	--	--	--	--	--	--	--	1.00	--

Worksheet 2J -- Vehicle-Bicycle Collisions for Urban and Suburban Arterial Intersections					
(1)	(2)	(3)	(4)	(5)	(7)*
Crash Severity Level	Predicted N_{bimv}	Predicted N_{bisv}	Predicted N_{bi}	f_{bikei}	Predicted N_{bikei}
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-17	(4)*(5)
Total	0.931	0.176	1.106	0.018	0.020
Fatal and injury (FI)	--	--	--	--	0.020

* Column 6 has been removed due to redundant application of calibration factors and inconsistency with HSM Equation 12-31

Worksheet 2K -- Crash Severity Distribution for Urban and Suburban Arterial Intersections			
(1)	(2)	(3)	(4)
Collision type	Fatal and injury (FI)	Property damage only (PDO)	Total
	(3) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J	(5) from Worksheet 2D and 2F	(6) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 2D)	0.108	0.228	0.337
Head-on collisions (from Worksheet 2D)	0.013	0.018	0.031
Angle collisions (from Worksheet 2D)	0.141	0.204	0.345
Sideswipe (from Worksheet 2D)	0.039	0.027	0.066
Other multiple-vehicle collision (from Worksheet 2D)	0.019	0.132	0.152
Subtotal	0.320	0.610	0.931
SINGLE-VEHICLE			
Collision with parked vehicle (from Worksheet 2F)	0.000	0.000	0.000
Collision with animal (from Worksheet 2F)	0.000	0.003	0.003
Collision with fixed object (from Worksheet 2F)	0.046	0.092	0.137
Collision with other object (from Worksheet 2F)	0.006	0.008	0.014
Other single-vehicle collision (from Worksheet 2F)	0.003	0.001	0.004
Single-vehicle noncollision (from Worksheet 2F)	0.012	0.005	0.017
Collision with pedestrian (from Worksheet 2G or 2I)	0.024	0.000	0.024
Collision with bicycle (from Worksheet 2J)	0.020	0.000	0.020
Subtotal	0.112	0.108	0.220
Total	0.432	0.718	1.151

Worksheet 2L -- Summary Results for Urban and Suburban Arterial Intersections	
(1)	(2)
Crash severity level	Predicted average crash frequency, $N_{predicted\ int}$ (crashes/year)
	(Total) from Worksheet 2K
Total	1.15
Fatal and injury (FI)	0.43
Property damage only (PDO)	0.72

Worksheet 2A -- General Information and Input Data for Urban and Suburban Arterial Intersections			
General Information		Location Information	
Analyst	Richard Martin	Roadway	NE 192nd Avenue
Agency or Company	Global Transportation Engineering	Intersection	NE 11th Street
Date Performed	06/04/24	Jurisdiction	Vancouver
		Analysis Year	2024
Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 3SG, 4ST, 4SG)		--	4ST
AADT _{major} (veh/day)	AADT _{MAX} = 46,800 (veh/day)	--	12,350
AADT _{minor} (veh/day)	AADT _{MAX} = 5,900 (veh/day)	--	480
Intersection lighting (present/not present)		Not Present	Present
Calibration factor, C _i		1.00	1.00
Data for unsignalized intersections only:		--	--
Number of major-road approaches with left-turn lanes (0,1,2)		0	0
Number of major-road approaches with right-turn lanes (0,1,2)		0	0
Data for signalized intersections only:		--	--
Number of approaches with left-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	0
Number of approaches with right-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	0
Number of approaches with left-turn signal phasing [for 3SG, use maximum value of 3]		--	0
Type of left-turn signal phasing for Leg #1		Permissive	Not Applicable
Type of left-turn signal phasing for Leg #2		--	Not Applicable
Type of left-turn signal phasing for Leg #3		--	Not Applicable
Type of left-turn signal phasing for Leg #4 (if applicable)		--	Not Applicable
Number of approaches with right-turn-on-red prohibited [for 3SG, use maximum value of 3]		0	0
Intersection red light cameras (present/not present)		Not Present	Not Present
Sum of all pedestrian crossing volumes (PedVol) -- Signalized intersections only			
Maximum number of lanes crossed by a pedestrian (n _{lanesx})		--	2
Number of bus stops within 300 m (1,000 ft) of the intersection		0	0
Schools within 300 m (1,000 ft) of the intersection (present/not present)		Not Present	Not Present
Number of alcohol sales establishments within 300 m (1,000 ft) of the intersection		0	0

Worksheet 2B -- Crash Modification Factors for Urban and Suburban Arterial Intersections						
(1)	(2)	(3)	(4)	(5)	(6)	(7)
CMF for Left-Turn Lanes	CMF for Left-Turn Signal Phasing	CMF for Right-Turn Lanes	CMF for Right Turn on Red	CMF for Lighting	CMF for Red Light Cameras	Combined CMF
CMF _{1i}	CMF _{2i}	CMF _{3i}	CMF _{4i}	CMF _{5i}	CMF _{6i}	CMF _{COMB}
from Table 12-24	from Table 12-25	from Table 12-26	from Equation 12-35	from Equation 12-36	from Equation 12-37	(1)*(2)*(3)*(4)*(5)*(6)
1.00	1.00	1.00	1.00	0.91	1.00	0.91

Worksheet 2C -- Multiple-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1) Crash Severity Level	(2) SPF Coefficients			(3) Overdispersion Parameter, k	(4) Initial N_{bimv}	(5) Proportion of Total Crashes	(6) Adjusted N_{bimv}	(7) Combined CMFs	(8) Calibration Factor, C_i	(9) Predicted N_{bimv}
	from Table 12-10			from Table 12-10	from Equation 12-21		$(4)_{TOTAL} * (5)$	(7) from Worksheet 2B	1.00	$(6) * (7) * (8)$
	a	b	c							
Total	-8.90	0.82	0.25	0.40	1.446	1.000	1.446	0.91	1.00	1.320
Fatal and Injury (FI)	-11.13	0.93	0.28	0.48	0.528	$(4)_{FI} / ((4)_{FI} + (4)_{PDO})$ 0.360	0.521	0.91	1.00	0.476
Property Damage Only (PDO)	-8.74	0.77	0.23	0.40	0.937	$(5)_{TOTAL} - (5)_{FI}$ 0.640	0.925	0.91	1.00	0.845

Worksheet 2D -- Multiple-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1) Collision Type	(2) Proportion of Collision Type $_{(FI)}$	(3) Predicted $N_{bimv (FI)}$ (crashes/year)	(4) Proportion of Collision Type $_{(PDO)}$	(5) Predicted $N_{bimv (PDO)}$ (crashes/year)	(6) Predicted $N_{bimv (TOTAL)}$ (crashes/year)
	from Table 12-11	$(9)_{FI}$ from Worksheet 2C	from Table 12-11	$(9)_{PDO}$ from Worksheet 2C	$(9)_{PDO}$ from Worksheet 2C
Total	1.000	0.476	1.000	0.845	1.320
		$(2) * (3)_{FI}$		$(4) * (5)_{PDO}$	$(3) + (5)$
Rear-end collision	0.338	0.161	0.374	0.316	0.477
Head-on collision	0.041	0.020	0.030	0.025	0.045
Angle collision	0.440	0.209	0.335	0.283	0.492
Sideswipe	0.121	0.058	0.044	0.037	0.095
Other multiple-vehicle collision	0.060	0.029	0.217	0.183	0.212

Worksheet 2E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1) Crash Severity Level	(2) SPF Coefficients			(3) Overdispersion Parameter, k	(4) Initial N_{bisv}	(5) Proportion of Total Crashes	(6) Adjusted N_{bisv}	(7) Combined CMFs	(8) Calibration Factor, C_i	(9) Predicted N_{bisv}
	from Table 12-12			from Table 12-12	from Eqn. 12-24, (FI) from Eqn. 12-24 or 12-27		$(4)_{TOTAL} * (5)$	(7) from Worksheet 2B	1.00	$(6) * (7) * (8)$
	a	b	c							
Total	-5.33	0.33	0.12	0.65	0.228	1.000	0.228	0.91	1.00	0.208
Fatal and Injury (FI)	--	--	--	--	0.064	$(4)_{FI} / ((4)_{FI} + (4)_{PDO})$ 0.343	0.078	0.91	1.00	0.071
Property Damage Only (PDO)	-7.04	0.36	0.25	0.54	0.122	$(5)_{TOTAL} - (5)_{FI}$ 0.657	0.149	0.91	1.00	0.136

Worksheet 2F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections					
(1) Collision Type	(2) Proportion of Collision Type ^(FI)	(3) Predicted N _{bisv (FI)} (crashes/year)	(4) Proportion of Collision Type (PDO)	(5) Predicted N _{bisv (PDO)} (crashes/year)	(6) Predicted N _{bisv (TOTAL)} (crashes/year)
	from Table 12-13	(9) _{FI} from Worksheet 2E	from Table 12-13	(9) _{PDO} from Worksheet 2E	(9) _{PDO} from Worksheet 2E
Total	1.000	0.071	1.000	0.136	0.208
		(2)*(3) _{FI}		(4)*(5) _{PDO}	(3)+(5)
Collision with parked vehicle	0.001	0.000	0.001	0.000	0.000
Collision with animal	0.001	0.000	0.026	0.004	0.004
Collision with fixed object	0.679	0.048	0.847	0.116	0.164
Collision with other object	0.089	0.006	0.070	0.010	0.016
Other single-vehicle collision	0.051	0.004	0.007	0.001	0.005
Single-vehicle noncollision	0.179	0.013	0.049	0.007	0.019

Worksheet 2G -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Stop-Controlled Intersections					
(1) Crash Severity Level	(2) Predicted N _{bimv}	(3) Predicted N _{bisv}	(4) Predicted N _{bi}	(5) f _{pedi}	(7)* Predicted N _{pedi}
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-16	(4)*(5)
Total	1.320	0.208	1.528	0.022	0.034
Fatal and injury (FI)	--	--	--	--	0.034

* Column 6 has been removed due to redundant application of calibration factors and inconsistency with HSM Equation 12-30

Worksheet 2H -- Crash Modification Factors for Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections			
(1)	(2)	(3)	(4)
CMF for Bus Stops	CMF for Schools	CMF for Alcohol Sales Establishments	Combined CMF
CMF _{1p}	CMF _{2p}	CMF _{3p}	
from Table 12-28	from Table 12-29	from Table 12-30	(1)*(2)*(3)
--	--	--	--

Worksheet 2I -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections										
(1) Crash Severity Level	(2) SPF Coefficients					(3) Overdispersion Parameter, k	(4) N _{pedbase}	(5) Combined CMF	(6) Calibration factor, C _i	(7) Predicted N _{pedi}
	from Table 12-14						from Equation 12-29	(4) from Worksheet 2H		(4)*(5)*(6)
	a	b	c	d	e					
Total	--	--	--	--	--	--	--	--	1.00	--
Fatal and Injury (FI)	--	--	--	--	--	--	--	--	1.00	--

Worksheet 2J -- Vehicle-Bicycle Collisions for Urban and Suburban Arterial Intersections					
(1)	(2)	(3)	(4)	(5)	(7)*
Crash Severity Level	Predicted N_{bimv}	Predicted N_{bisv}	Predicted N_{bi}	f_{bikei}	Predicted N_{bikei}
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-17	(4)*(5)
Total	1.320	0.208	1.528	0.018	0.028
Fatal and injury (FI)	--	--	--	--	0.028

* Column 6 has been removed due to redundant application of calibration factors and inconsistency with HSM Equation 12-31

Worksheet 2K -- Crash Severity Distribution for Urban and Suburban Arterial Intersections			
(1)	(2)	(3)	(4)
Collision type	Fatal and injury (FI)	Property damage only (PDO)	Total
	(3) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J	(5) from Worksheet 2D and 2F	(6) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 2D)	0.161	0.316	0.477
Head-on collisions (from Worksheet 2D)	0.020	0.025	0.045
Angle collisions (from Worksheet 2D)	0.209	0.283	0.492
Sideswipe (from Worksheet 2D)	0.058	0.037	0.095
Other multiple-vehicle collision (from Worksheet 2D)	0.029	0.183	0.212
Subtotal	0.476	0.845	1.320
SINGLE-VEHICLE			
Collision with parked vehicle (from Worksheet 2F)	0.000	0.000	0.000
Collision with animal (from Worksheet 2F)	0.000	0.004	0.004
Collision with fixed object (from Worksheet 2F)	0.048	0.116	0.164
Collision with other object (from Worksheet 2F)	0.006	0.010	0.016
Other single-vehicle collision (from Worksheet 2F)	0.004	0.001	0.005
Single-vehicle noncollision (from Worksheet 2F)	0.013	0.007	0.019
Collision with pedestrian (from Worksheet 2G or 2I)	0.034	0.000	0.034
Collision with bicycle (from Worksheet 2J)	0.028	0.000	0.028
Subtotal	0.132	0.136	0.269
Total	0.608	0.981	1.589

Worksheet 2L -- Summary Results for Urban and Suburban Arterial Intersections	
(1)	(2)
Crash severity level	Predicted average crash frequency, $N_{predicted int}$ (crashes/year)
	(Total) from Worksheet 2K
Total	1.6
Fatal and injury (FI)	0.6
Property damage only (PDO)	1.0

Worksheet 2A -- General Information and Input Data for Urban and Suburban Arterial Intersections			
General Information		Location Information	
Analyst	Richard Martin	Roadway	NE 192nd Avenue
Agency or Company	Global Transportation Engineering	Intersection	NE 13th Street
Date Performed	06/04/24	Jurisdiction	Vancouver
		Analysis Year	2024
Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 3SG, 4ST, 4SG)		--	3SG
AADT _{major} (veh/day)	AADT _{MAX} = 58,100 (veh/day)	--	15,980
AADT _{minor} (veh/day)	AADT _{MAX} = 16,400 (veh/day)	--	6,950
Intersection lighting (present/not present)		Not Present	Present
Calibration factor, C _i		1.00	1.00
Data for unsignalized intersections only:		--	--
Number of major-road approaches with left-turn lanes (0,1,2)		0	0
Number of major-road approaches with right-turn lanes (0,1,2)		0	0
Data for signalized intersections only:		--	--
Number of approaches with left-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	1
Number of approaches with right-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	0
Number of approaches with left-turn signal phasing [for 3SG, use maximum value of 3]		--	1
Type of left-turn signal phasing for Leg #1		Permissive	Protected / Permissive
Type of left-turn signal phasing for Leg #2		--	Not Applicable
Type of left-turn signal phasing for Leg #3		--	Not Applicable
Type of left-turn signal phasing for Leg #4 (if applicable)		--	Not Applicable
Number of approaches with right-turn-on-red prohibited [for 3SG, use maximum value of 3]		0	0
Intersection red light cameras (present/not present)		Not Present	Not Present
Sum of all pedestrian crossing volumes (PedVol) -- Signalized intersections only			1
Maximum number of lanes crossed by a pedestrian (n _{lanesx})		--	3
Number of bus stops within 300 m (1,000 ft) of the intersection		0	0
Schools within 300 m (1,000 ft) of the intersection (present/not present)		Not Present	Not Present
Number of alcohol sales establishments within 300 m (1,000 ft) of the intersection		0	0

Worksheet 2B -- Crash Modification Factors for Urban and Suburban Arterial Intersections						
(1)	(2)	(3)	(4)	(5)	(6)	(7)
CMF for Left-Turn Lanes	CMF for Left-Turn Signal Phasing	CMF for Right-Turn Lanes	CMF for Right Turn on Red	CMF for Lighting	CMF for Red Light Cameras	Combined CMF
CMF _{1i}	CMF _{2i}	CMF _{3i}	CMF _{4i}	CMF _{5i}	CMF _{6i}	CMF _{COMB}
from Table 12-24	from Table 12-25	from Table 12-26	from Equation 12-35	from Equation 12-36	from Equation 12-37	(1)*(2)*(3)*(4)*(5)*(6)
0.93	0.99	1.00	1.00	0.91	1.00	0.84

Worksheet 2C -- Multiple-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections										
(1) Crash Severity Level	(2) SPF Coefficients			(3) Overdispersion Parameter, k	(4) Initial N_{bimv}	(5) Proportion of Total Crashes	(6) Adjusted N_{bimv}	(7) Combined CMFs	(8) Calibration Factor, C_i	(9) Predicted N_{bimv}
	from Table 12-10			from Table 12-10	from Equation 12-21		(4) _{TOTAL} *(5)	(7) from Worksheet 2B	1.00	(6)*(7)*(8)
	a	b	c							
Total	-12.13	1.11	0.26	0.33	2.494	1.000	2.494	0.84	1.00	2.091
Fatal and Injury (FI)	-11.58	1.02	0.17	0.30	0.816	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ 0.343	0.855	0.84	1.00	0.717
Property Damage Only (PDO)	-13.24	1.14	0.30	0.36	1.565	$(5)_{TOTAL}-(5)_{FI}$ 0.657	1.639	0.84	1.00	1.375

Worksheet 2D -- Multiple-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections					
(1) Collision Type	(2) Proportion of Collision Type _(FI)	(3) Predicted N_{bimv} (FI) (crashes/year)	(4) Proportion of Collision Type (PDO)	(5) Predicted N_{bimv} (PDO) (crashes/year)	(6) Predicted N_{bimv} (TOTAL) (crashes/year)
	from Table 12-11	(9) _{FI} from Worksheet 2C	from Table 12-11	(9) _{PDO} from Worksheet 2C	(9) _{PDO} from Worksheet 2C
Total	1.000	0.717	1.000	1.375	2.091
		$(2)*(3)_{FI}$		$(4)*(5)_{PDO}$	$(3)+(5)$
Rear-end collision	0.549	0.393	0.546	0.751	1.144
Head-on collision	0.038	0.027	0.020	0.027	0.055
Angle collision	0.280	0.201	0.204	0.280	0.481
Sideswipe	0.076	0.054	0.032	0.044	0.098
Other multiple-vehicle collision	0.057	0.041	0.198	0.272	0.313

Worksheet 2E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections										
(1) Crash Severity Level	(2) SPF Coefficients			(3) Overdispersion Parameter, k	(4) Initial N_{bisv}	(5) Proportion of Total Crashes	(6) Adjusted N_{bisv}	(7) Combined CMFs	(8) Calibration Factor, C_i	(9) Predicted N_{bisv}
	from Table 12-12			from Table 12-12	from Eqn. 12-24, (FI) from Eqn. 12-24 or 12-27		(4) _{TOTAL} *(5)	(7) from Worksheet 2B	1.00	(6)*(7)*(8)
	a	b	c							
Total	-9.02	0.42	0.40	0.36	0.243	1.000	0.243	0.84	1.00	0.203
Fatal and Injury (FI)	-9.75	0.27	0.51	0.24	0.072	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ 0.306	0.074	0.84	1.00	0.062
Property Damage Only (PDO)	-9.08	0.45	0.33	0.53	0.164	$(5)_{TOTAL}-(5)_{FI}$ 0.694	0.168	0.84	1.00	0.141

Worksheet 2F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections					
(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	Proportion of Collision Type _(FI)	Predicted N _{bisv (FI)} (crashes/year)	Proportion of Collision Type _(PDO)	Predicted N _{bisv (PDO)} (crashes/year)	Predicted N _{bisv (TOTAL)} (crashes/year)
	from Table 12-13	(9) _{FI} from Worksheet 2E	from Table 12-13	(9) _{PDO} from Worksheet 2E	(9) _{PDO} from Worksheet 2E
Total	1.000	0.062	1.000	0.141	0.203
		(2)*(3) _{FI}		(4)*(5) _{PDO}	(3)+(5)
Collision with parked vehicle	0.001	0.000	0.001	0.000	0.000
Collision with animal	0.001	0.000	0.003	0.000	0.000
Collision with fixed object	0.653	0.041	0.895	0.126	0.167
Collision with other object	0.091	0.006	0.069	0.010	0.015
Other single-vehicle collision	0.045	0.003	0.018	0.003	0.005
Single-vehicle noncollision	0.209	0.013	0.014	0.002	0.015

Worksheet 2G -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Stop-Controlled Intersections					
(1)	(2)	(3)	(4)	(5)	(7)*
Crash Severity Level	Predicted N _{bimv}	Predicted N _{bisv}	Predicted N _{bi}	f _{pedi}	Predicted N _{pedi}
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-16	(4)*(5)
Total	--	--	--	--	--
Fatal and injury (FI)	--	--	--	--	--

* Column 6 has been removed due to redundant application of calibration factors and inconsistency with HSM Equation 12-30

Worksheet 2H -- Crash Modification Factors for Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections			
(1)	(2)	(3)	(4)
CMF for Bus Stops	CMF for Schools	CMF for Alcohol Sales Establishments	Combined CMF
CMF _{1p}	CMF _{2p}	CMF _{3p}	
from Table 12-28	from Table 12-29	from Table 12-30	(1)*(2)*(3)
1.00	1.00	1.00	1.00

Worksheet 2I -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections										
(1)	(2)					(3)	(4)	(5)	(6)	(7)
Crash Severity Level	SPF Coefficients					Overdispersion Parameter, k	N _{pedbase}	Combined CMF	Calibration factor, C _i	Predicted N _{pedi}
	from Table 12-14									from Equation 12-29
	a	b	c	d	e					
Total	-6.60	0.05	0.24	0.41	0.09	0.52	0.002	1.00	1.00	0.002
Fatal and Injury (FI)	--	--	--	--	--	--	--	--	1.00	0.002

Worksheet 2J -- Vehicle-Bicycle Collisions for Urban and Suburban Arterial Intersections					
(1)	(2)	(3)	(4)	(5)	(7)*
Crash Severity Level	Predicted N_{bimv}	Predicted N_{bisv}	Predicted N_{bi}	f_{bikei}	Predicted N_{bikei}
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-17	(4)*(5)
Total	2.091	0.203	2.295	0.011	0.025
Fatal and injury (FI)	--	--	--	--	0.025

* Column 6 has been removed due to redundant application of calibration factors and inconsistency with HSM Equation 12-31

Worksheet 2K -- Crash Severity Distribution for Urban and Suburban Arterial Intersections			
(1)	(2)	(3)	(4)
Collision type	Fatal and injury (FI)	Property damage only (PDO)	Total
	(3) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J	(5) from Worksheet 2D and 2F	(6) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 2D)	0.393	0.751	1.144
Head-on collisions (from Worksheet 2D)	0.027	0.027	0.055
Angle collisions (from Worksheet 2D)	0.201	0.280	0.481
Sideswipe (from Worksheet 2D)	0.054	0.044	0.098
Other multiple-vehicle collision (from Worksheet 2D)	0.041	0.272	0.313
Subtotal	0.717	1.375	2.091
SINGLE-VEHICLE			
Collision with parked vehicle (from Worksheet 2F)	0.000	0.000	0.000
Collision with animal (from Worksheet 2F)	0.000	0.000	0.000
Collision with fixed object (from Worksheet 2F)	0.041	0.126	0.167
Collision with other object (from Worksheet 2F)	0.006	0.010	0.015
Other single-vehicle collision (from Worksheet 2F)	0.003	0.003	0.005
Single-vehicle noncollision (from Worksheet 2F)	0.013	0.002	0.015
Collision with pedestrian (from Worksheet 2G or 2I)	0.002	0.000	0.002
Collision with bicycle (from Worksheet 2J)	0.025	0.000	0.025
Subtotal	0.090	0.141	0.231
Total	0.806	1.516	2.322

Worksheet 2L -- Summary Results for Urban and Suburban Arterial Intersections	
(1)	(2)
Crash severity level	Predicted average crash frequency, $N_{predicted int}$ (crashes/year)
	(Total) from Worksheet 2K
Total	2.3
Fatal and injury (FI)	0.8
Property damage only (PDO)	1.5

Worksheet 2A -- General Information and Input Data for Urban and Suburban Arterial Intersections			
General Information		Location Information	
Analyst	Richard Martin	Roadway	NE 192nd Avenue
Agency or Company	Global Transportation Engineering	Intersection	NE 18th Street
Date Performed	06/14/24	Jurisdiction	Vancouver
		Analysis Year	2024
Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 3SG, 4ST, 4SG)		--	4ST
AADT _{major} (veh/day)	AADT _{MAX} = 46,800 (veh/day)	--	12,610
AADT _{minor} (veh/day)	AADT _{MAX} = 5,900 (veh/day)	--	70
Intersection lighting (present/not present)		Not Present	Not Present
Calibration factor, C _i		1.00	1.00
Data for unsignalized intersections only:		--	--
Number of major-road approaches with left-turn lanes (0,1,2)		0	0
Number of major-road approaches with right-turn lanes (0,1,2)		0	0
Data for signalized intersections only:		--	--
Number of approaches with left-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	0
Number of approaches with right-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	0
Number of approaches with left-turn signal phasing [for 3SG, use maximum value of 3]		--	0
Type of left-turn signal phasing for Leg #1		Permissive	Not Applicable
Type of left-turn signal phasing for Leg #2		--	Not Applicable
Type of left-turn signal phasing for Leg #3		--	Not Applicable
Type of left-turn signal phasing for Leg #4 (if applicable)		--	Not Applicable
Number of approaches with right-turn-on-red prohibited [for 3SG, use maximum value of 3]		0	0
Intersection red light cameras (present/not present)		Not Present	Not Present
Sum of all pedestrian crossing volumes (PedVol) -- Signalized intersections only			
Maximum number of lanes crossed by a pedestrian (n _{lanesx})		--	2
Number of bus stops within 300 m (1,000 ft) of the intersection		0	0
Schools within 300 m (1,000 ft) of the intersection (present/not present)		Not Present	Not Present
Number of alcohol sales establishments within 300 m (1,000 ft) of the intersection		0	0

Worksheet 2B -- Crash Modification Factors for Urban and Suburban Arterial Intersections						
(1)	(2)	(3)	(4)	(5)	(6)	(7)
CMF for Left-Turn Lanes	CMF for Left-Turn Signal Phasing	CMF for Right-Turn Lanes	CMF for Right Turn on Red	CMF for Lighting	CMF for Red Light Cameras	Combined CMF
CMF _{1i}	CMF _{2i}	CMF _{3i}	CMF _{4i}	CMF _{5i}	CMF _{6i}	CMF _{COMB}
from Table 12-24	from Table 12-25	from Table 12-26	from Equation 12-35	from Equation 12-36	from Equation 12-37	(1)*(2)*(3)*(4)*(5)*(6)
1.00	1.00	1.00	1.00	1.00	1.00	1.00

Worksheet 2C -- Multiple-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections										
(1) Crash Severity Level	(2) SPF Coefficients			(3) Overdispersion Parameter, k	(4) Initial N_{bimv}	(5) Proportion of Total Crashes	(6) Adjusted N_{bimv}	(7) Combined CMFs	(8) Calibration Factor, C_i	(9) Predicted N_{bimv}
	from Table 12-10			from Table 12-10	from Equation 12-21		(4) _{TOTAL} *(5)	(7) from Worksheet 2B	1.00	(6)*(7)*(8)
	a	b	c							
Total	-8.90	0.82	0.25	0.40	0.909	1.000	0.909	1.00	1.00	0.909
Fatal and Injury (FI)	-11.13	0.93	0.28	0.48	0.314	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ 0.339	0.308	1.00	1.00	0.308
Property Damage Only (PDO)	-8.74	0.77	0.23	0.40	0.611	$(5)_{TOTAL}-(5)_{FI}$ 0.661	0.601	1.00	1.00	0.601

Worksheet 2D -- Multiple-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections					
(1) Collision Type	(2) Proportion of Collision Type _(FI)	(3) Predicted N_{bimv} (FI) (crashes/year)	(4) Proportion of Collision Type (PDO)	(5) Predicted N_{bimv} (PDO) (crashes/year)	(6) Predicted N_{bimv} (TOTAL) (crashes/year)
	from Table 12-11	$(9)_{FI}$ from Worksheet 2C	from Table 12-11	$(9)_{PDO}$ from Worksheet 2C	$(9)_{PDO}$ from Worksheet 2C
Total	1.000	0.308	1.000	0.601	0.909
		$(2)*(3)_{FI}$		$(4)*(5)_{PDO}$	$(3)+(5)$
Rear-end collision	0.338	0.104	0.374	0.225	0.329
Head-on collision	0.041	0.013	0.030	0.018	0.031
Angle collision	0.440	0.136	0.335	0.201	0.337
Sideswipe	0.121	0.037	0.044	0.026	0.064
Other multiple-vehicle collision	0.060	0.019	0.217	0.130	0.149

Worksheet 2E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections										
(1) Crash Severity Level	(2) SPF Coefficients			(3) Overdispersion Parameter, k	(4) Initial N_{bisv}	(5) Proportion of Total Crashes	(6) Adjusted N_{bisv}	(7) Combined CMFs	(8) Calibration Factor, C_i	(9) Predicted N_{bisv}
	from Table 12-12			from Table 12-12	from Eqn. 12-24, (FI) from Eqn. 12-24 or 12-27		(4) _{TOTAL} *(5)	(7) from Worksheet 2B	1.00	(6)*(7)*(8)
	a	b	c							
Total	-5.33	0.33	0.12	0.65	0.182	1.000	0.182	1.00	1.00	0.182
Fatal and Injury (FI)	--	--	--	--	0.051	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ 0.402	0.073	1.00	1.00	0.073
Property Damage Only (PDO)	-7.04	0.36	0.25	0.54	0.076	$(5)_{TOTAL}-(5)_{FI}$ 0.598	0.109	1.00	1.00	0.109

Worksheet 2F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections					
(1) Collision Type	(2) Proportion of Collision Type ^(FI)	(3) Predicted N _{bisv (FI)} (crashes/year)	(4) Proportion of Collision Type (PDO)	(5) Predicted N _{bisv (PDO)} (crashes/year)	(6) Predicted N _{bisv (TOTAL)} (crashes/year)
	from Table 12-13	(9) _{FI} from Worksheet 2E	from Table 12-13	(9) _{PDO} from Worksheet 2E	(9) _{PDO} from Worksheet 2E
Total	1.000	0.073	1.000	0.109	0.182
		(2)* ⁽³⁾ _{FI}		(4)* ⁽⁵⁾ _{PDO}	(3)+ ⁽⁵⁾
Collision with parked vehicle	0.001	0.000	0.001	0.000	0.000
Collision with animal	0.001	0.000	0.026	0.003	0.003
Collision with fixed object	0.679	0.050	0.847	0.092	0.142
Collision with other object	0.089	0.007	0.070	0.008	0.014
Other single-vehicle collision	0.051	0.004	0.007	0.001	0.004
Single-vehicle noncollision	0.179	0.013	0.049	0.005	0.018

Worksheet 2G -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Stop-Controlled Intersections					
(1) Crash Severity Level	(2) Predicted N _{bimv}	(3) Predicted N _{bisv}	(4) Predicted N _{bi}	(5) f _{pedi}	(7)* Predicted N _{pedi}
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-16	(4)* ⁽⁵⁾
Total	0.909	0.182	1.091	0.022	0.024
Fatal and injury (FI)	--	--	--	--	0.024

* Column 6 has been removed due to redundant application of calibration factors and inconsistency with HSM Equation 12-30

Worksheet 2H -- Crash Modification Factors for Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections			
(1)	(2)	(3)	(4)
CMF for Bus Stops	CMF for Schools	CMF for Alcohol Sales Establishments	Combined CMF
CMF _{1p}	CMF _{2p}	CMF _{3p}	
from Table 12-28	from Table 12-29	from Table 12-30	(1)* ⁽²⁾ * ⁽³⁾
--	--	--	--

Worksheet 2I -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections										
(1) Crash Severity Level	(2) SPF Coefficients					(3) Overdispersion Parameter, k	(4) N _{pedbase}	(5) Combined CMF	(6) Calibration factor, C _i	(7) Predicted N _{pedi}
	from Table 12-14						from Equation 12-29	(4) from Worksheet 2H		(4)* ⁽⁵⁾ * ⁽⁶⁾
	a	b	c	d	e					
Total	--	--	--	--	--	--	--	--	1.00	--
Fatal and Injury (FI)	--	--	--	--	--	--	--	--	1.00	--

Worksheet 2J -- Vehicle-Bicycle Collisions for Urban and Suburban Arterial Intersections					
(1)	(2)	(3)	(4)	(5)	(7)*
Crash Severity Level	Predicted N_{bimv}	Predicted N_{bisv}	Predicted N_{bi}	f_{bikei}	Predicted N_{bikei}
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-17	(4)*(5)
Total	0.909	0.182	1.091	0.018	0.020
Fatal and injury (FI)	--	--	--	--	0.020

* Column 6 has been removed due to redundant application of calibration factors and inconsistency with HSM Equation 12-31

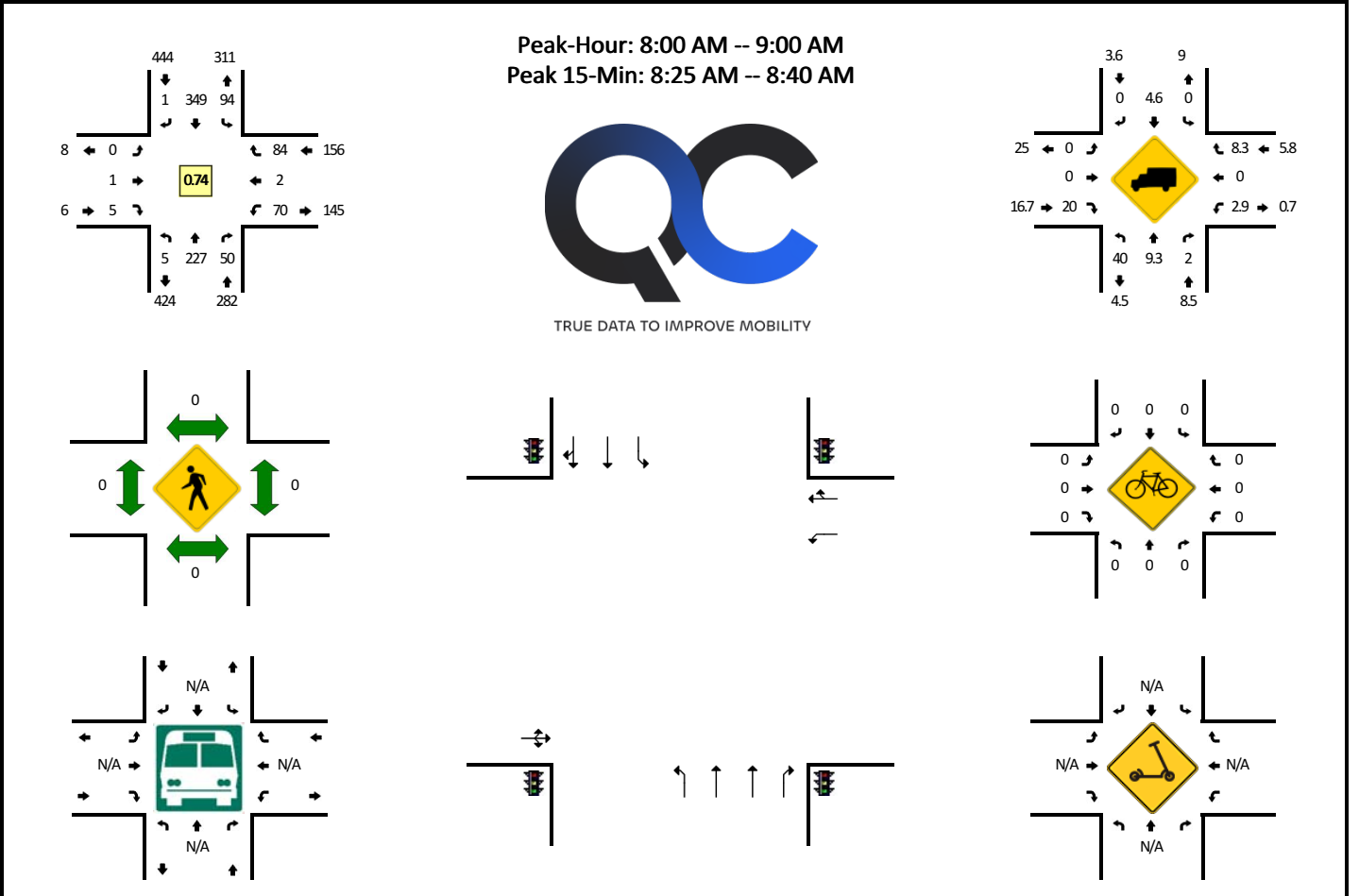
Worksheet 2K -- Crash Severity Distribution for Urban and Suburban Arterial Intersections			
(1)	(2)	(3)	(4)
Collision type	Fatal and injury (FI)	Property damage only (PDO)	Total
	(3) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J	(5) from Worksheet 2D and 2F	(6) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 2D)	0.104	0.225	0.329
Head-on collisions (from Worksheet 2D)	0.013	0.018	0.031
Angle collisions (from Worksheet 2D)	0.136	0.201	0.337
Sideswipe (from Worksheet 2D)	0.037	0.026	0.064
Other multiple-vehicle collision (from Worksheet 2D)	0.019	0.130	0.149
Subtotal	0.308	0.601	0.909
SINGLE-VEHICLE			
Collision with parked vehicle (from Worksheet 2F)	0.000	0.000	0.000
Collision with animal (from Worksheet 2F)	0.000	0.003	0.003
Collision with fixed object (from Worksheet 2F)	0.050	0.092	0.142
Collision with other object (from Worksheet 2F)	0.007	0.008	0.014
Other single-vehicle collision (from Worksheet 2F)	0.004	0.001	0.004
Single-vehicle noncollision (from Worksheet 2F)	0.013	0.005	0.018
Collision with pedestrian (from Worksheet 2G or 2I)	0.024	0.000	0.024
Collision with bicycle (from Worksheet 2J)	0.020	0.000	0.020
Subtotal	0.117	0.109	0.226
Total	0.425	0.710	1.135

Worksheet 2L -- Summary Results for Urban and Suburban Arterial Intersections	
(1)	(2)
Crash severity level	Predicted average crash frequency, $N_{predicted\ int}$ (crashes/year)
	(Total) from Worksheet 2K
Total	1.1
Fatal and injury (FI)	0.4
Property damage only (PDO)	0.7

Appendix B: Traffic Count Data

LOCATION: NE 192nd Ave -- NE 3rd St
CITY/STATE: Vancouver, WA

QC JOB #: 16429704
DATE: Thu, May 16 2024

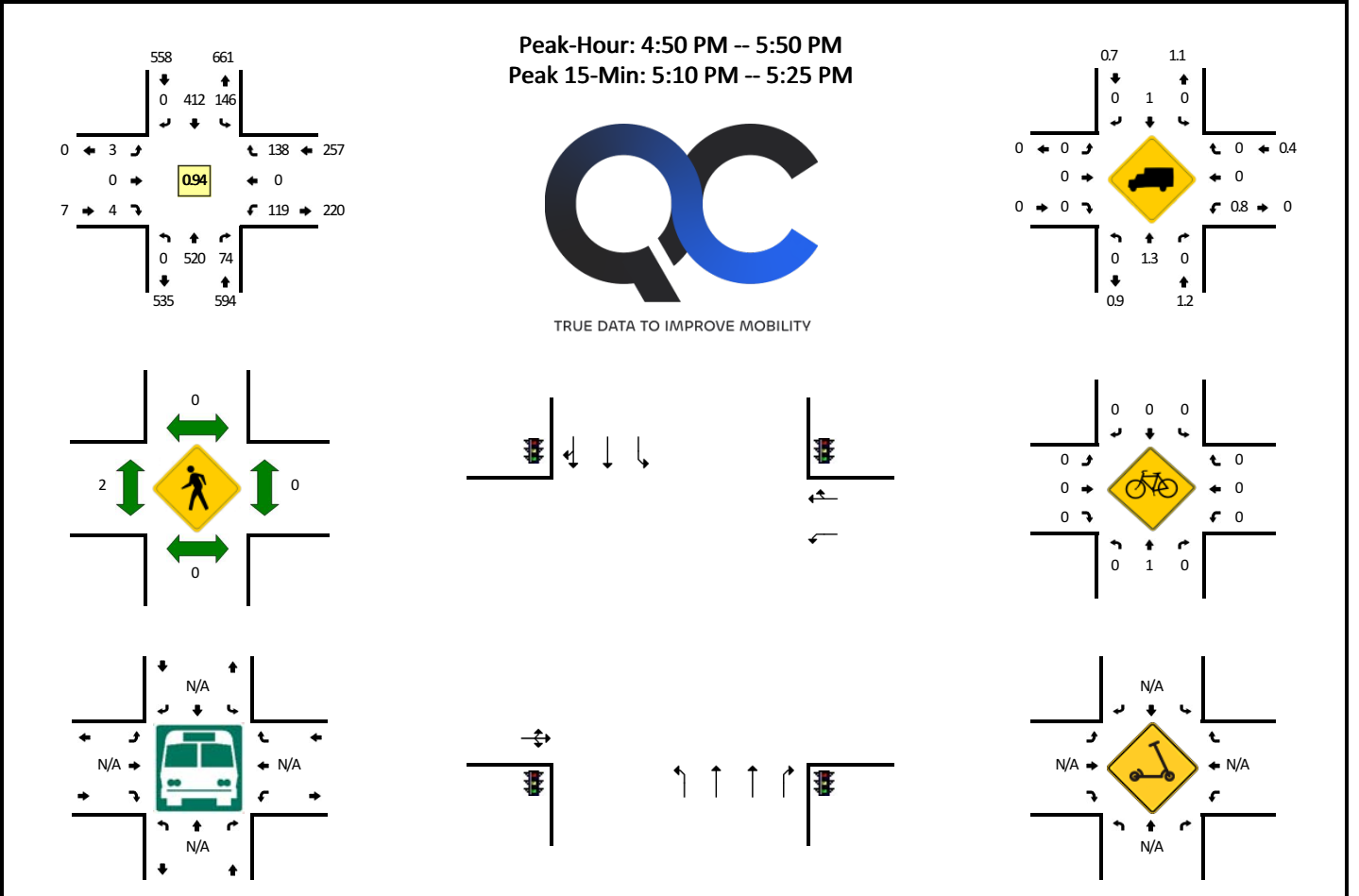


5-Min Count Period Beginning At	NE 192nd Ave (Northbound)				NE 192nd Ave (Southbound)				NE 3rd St (Eastbound)				NE 3rd St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	1	15	1	0	4	13	0	0	0	0	0	0	1	0	3	0	38	
7:05 AM	1	12	2	0	4	25	0	0	0	0	0	0	1	0	3	0	48	
7:10 AM	3	12	3	0	8	17	0	0	0	0	0	0	5	0	3	0	51	
7:15 AM	1	18	0	0	1	31	0	0	0	0	0	0	4	0	1	0	56	
7:20 AM	2	17	3	0	2	23	0	0	0	0	1	0	2	0	1	0	51	
7:25 AM	0	21	2	0	5	21	0	0	0	0	0	0	3	0	4	0	56	
7:30 AM	1	11	1	0	3	27	0	0	0	0	1	0	4	0	7	0	55	
7:35 AM	0	12	1	0	6	31	0	0	0	0	0	0	13	0	3	0	66	
7:40 AM	2	12	0	0	2	34	0	0	0	0	0	0	7	0	4	0	61	
7:45 AM	1	22	2	0	6	24	1	0	0	0	0	0	2	0	5	0	63	
7:50 AM	0	19	1	0	4	34	0	0	1	1	0	0	4	0	7	0	71	
7:55 AM	0	14	3	0	1	24	0	0	0	0	0	0	3	0	2	0	47	663
8:00 AM	1	16	2	0	5	18	0	0	0	0	0	0	5	0	3	0	50	675
8:05 AM	1	21	3	0	7	13	0	0	0	0	0	0	6	0	5	0	56	683
8:10 AM	1	16	3	0	6	25	0	0	0	0	0	0	4	1	4	0	60	692
8:15 AM	0	9	1	0	12	26	0	0	0	1	0	0	5	0	2	0	56	692
8:20 AM	1	19	9	0	9	22	1	0	0	0	2	0	7	0	5	0	75	716
8:25 AM	0	20	10	0	17	31	0	0	0	0	0	0	7	0	11	0	96	756
8:30 AM	0	25	5	0	9	37	0	0	0	0	0	0	5	0	18	0	99	800
8:35 AM	0	24	3	0	6	49	0	0	0	0	0	0	7	0	16	0	105	839
8:40 AM	0	21	4	0	4	37	0	0	0	0	1	0	7	0	8	0	82	860
8:45 AM	1	25	3	0	5	32	0	0	0	0	0	0	6	0	5	0	77	874
8:50 AM	0	15	3	0	8	36	0	0	0	0	0	0	4	1	4	0	71	874
8:55 AM	0	16	4	0	6	23	0	0	0	0	2	0	7	0	3	0	61	888
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	276	72	0	128	468	0	0	0	0	0	0	76	0	180	0	1200	
Heavy Trucks	0	16	0		0	20	0		0	0	0		0	0	24		60	
Buses																		
Pedestrians	0	0			0	0			0	0			0	0			0	
Bicycles	0	0			0	0			0	0			0	0			0	
Scoters																		

Comments:

LOCATION: NE 192nd Ave -- NE 3rd St
CITY/STATE: Vancouver, WA

QC JOB #: 16429705
DATE: Thu, May 16 2024

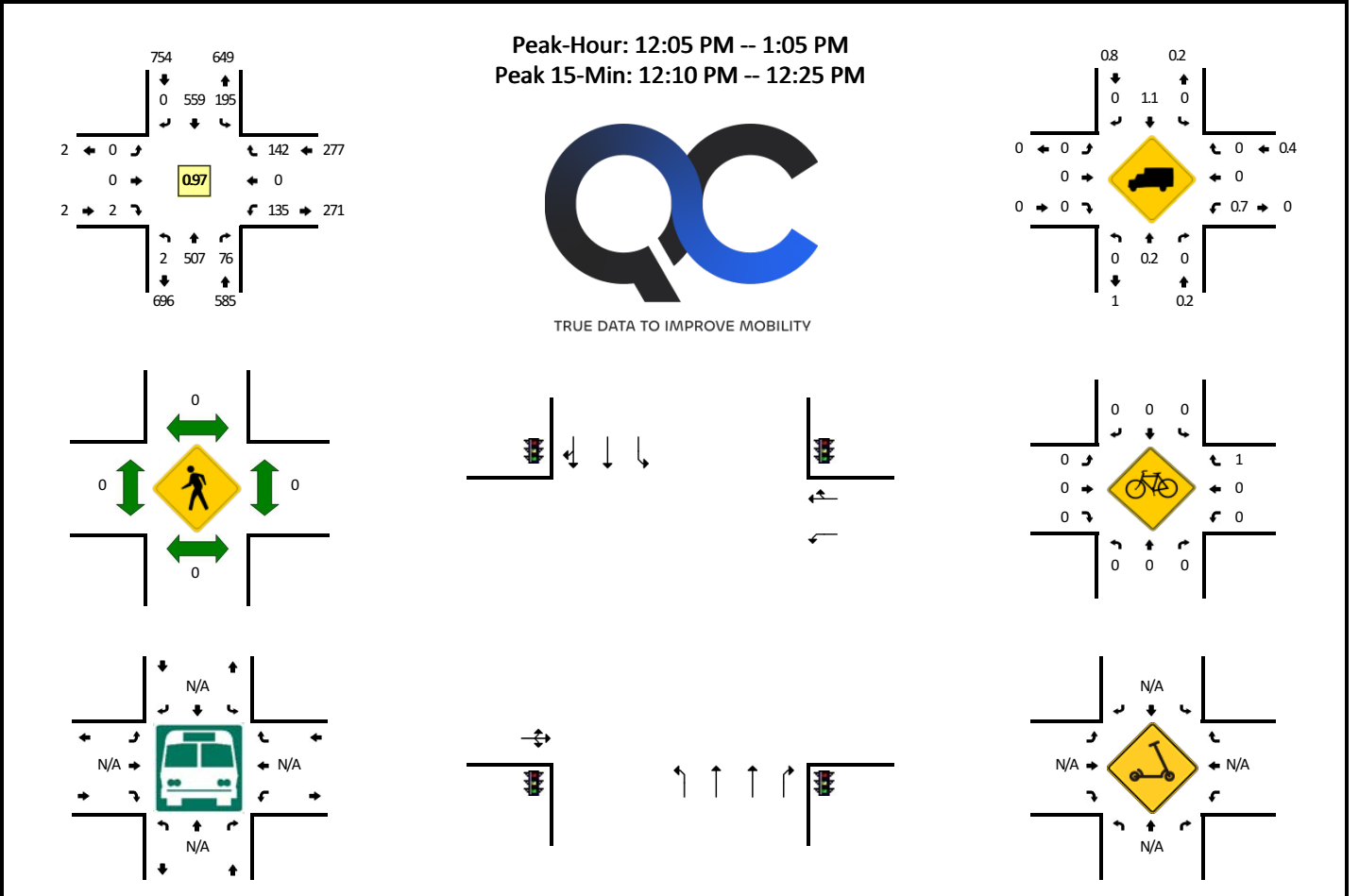


5-Min Count Period Beginning At	NE 192nd Ave (Northbound)				NE 192nd Ave (Southbound)				NE 3rd St (Eastbound)				NE 3rd St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	42	4	0	7	27	0	0	2	2	1	0	6	0	12	0	103	
4:05 PM	1	50	4	0	9	35	0	0	0	0	1	0	14	0	8	0	122	
4:10 PM	0	40	9	0	16	29	0	0	0	0	0	0	7	0	8	0	109	
4:15 PM	0	34	6	0	9	36	0	0	0	0	0	0	9	0	11	0	105	
4:20 PM	1	49	5	0	11	29	0	0	0	0	1	0	7	0	15	0	118	
4:25 PM	0	38	11	0	12	30	0	0	0	0	1	0	7	0	19	0	118	
4:30 PM	0	49	6	0	15	26	0	0	0	0	0	0	5	0	17	0	118	
4:35 PM	0	39	3	0	14	29	0	0	0	0	0	0	16	0	7	0	108	
4:40 PM	0	40	3	0	11	33	0	0	0	0	0	0	7	0	11	0	105	
4:45 PM	1	49	0	0	11	31	0	0	0	0	1	0	8	0	15	0	116	
4:50 PM	0	52	10	0	10	22	0	0	0	0	0	0	10	0	9	0	113	
4:55 PM	0	40	4	0	14	44	0	0	0	0	0	0	12	0	11	0	125	1360
5:00 PM	0	44	5	0	9	29	0	0	0	0	1	0	8	0	10	0	106	1363
5:05 PM	0	49	6	0	13	26	0	0	2	0	0	0	7	0	11	0	114	1355
5:10 PM	0	46	7	0	12	35	0	0	0	0	0	0	14	0	17	0	131	1377
5:15 PM	0	48	9	0	12	37	0	0	0	0	0	0	13	0	12	0	131	1403
5:20 PM	0	33	7	0	16	38	0	0	1	0	0	0	8	0	13	0	116	1401
5:25 PM	0	38	6	0	10	31	0	0	0	0	0	0	7	0	10	0	102	1385
5:30 PM	0	43	5	0	20	39	0	0	0	0	0	0	13	0	7	0	127	1394
5:35 PM	0	37	5	0	6	31	0	0	0	0	1	0	7	0	11	0	98	1384
5:40 PM	0	45	5	0	14	40	0	0	0	0	2	0	10	0	19	0	135	1414
5:45 PM	0	45	5	0	10	40	0	0	0	0	0	0	10	0	8	0	118	1416
5:50 PM	0	38	2	0	12	40	0	0	0	0	0	0	7	0	14	0	113	1416
5:55 PM	0	47	5	0	21	29	0	0	0	0	0	0	5	0	10	0	117	1408
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	508	92	0	160	440	0	0	4	0	0	0	140	0	168	0	1512	
Heavy Trucks	0	8	0	0	0	4	0	0	0	0	0	0	0	0	0	0	12	
Buses	0	0	0	0	0	0	0	0	0	8	0	0	0	0	0	0	8	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Scoters	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Comments:

LOCATION: NE 192nd Ave -- NE 3rd St
CITY/STATE: Vancouver, WA

QC JOB #: 16429706
DATE: Sat, May 18 2024

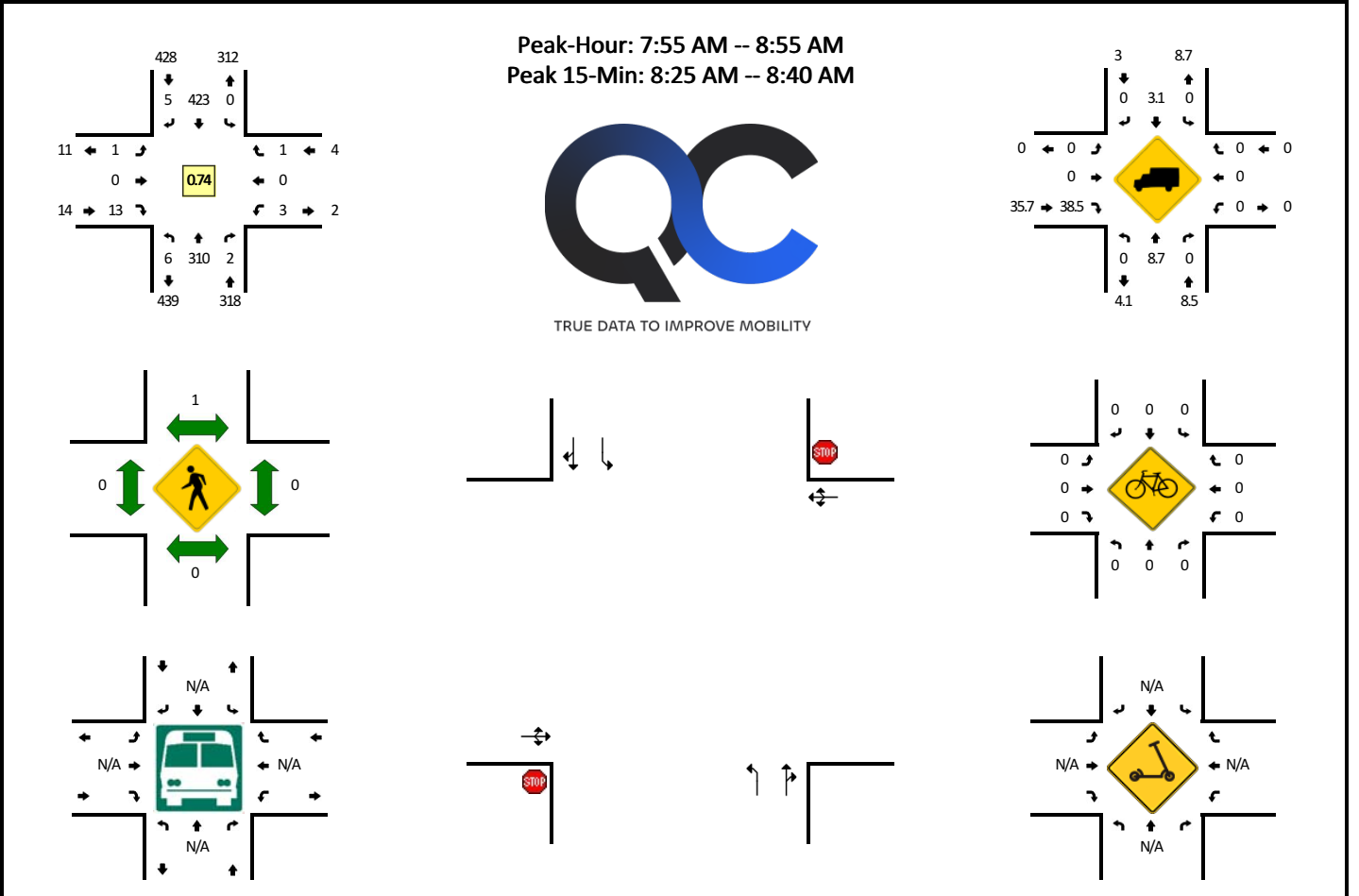


5-Min Count Period Beginning At	NE 192nd Ave (Northbound)				NE 192nd Ave (Southbound)				NE 3rd St (Eastbound)				NE 3rd St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
12:00 PM	0	46	2	0	22	35	0	0	0	0	0	0	11	0	9	0	125	
12:05 PM	0	49	6	0	17	38	0	0	0	0	0	0	13	0	11	0	134	
12:10 PM	0	53	10	0	11	55	0	0	0	0	0	0	10	0	4	0	143	
12:15 PM	0	44	5	0	17	42	0	0	0	0	0	0	18	0	10	0	136	
12:20 PM	0	39	6	0	25	48	0	0	0	0	0	0	9	0	9	0	136	
12:25 PM	0	45	8	0	14	39	0	0	0	0	0	0	11	0	20	0	137	
12:30 PM	0	36	4	0	13	58	0	0	0	0	0	0	13	0	8	0	132	
12:35 PM	0	44	12	0	13	40	0	0	0	0	0	0	10	0	13	0	132	
12:40 PM	0	43	3	0	15	39	0	0	0	0	0	0	11	0	13	0	124	
12:45 PM	0	41	5	0	16	54	0	0	0	0	0	0	5	0	19	0	140	
12:50 PM	2	30	2	0	16	51	0	0	0	0	0	0	17	0	11	0	129	
12:55 PM	0	39	8	0	19	44	0	0	0	0	2	0	11	0	9	0	132	1600
1:00 PM	0	44	7	0	19	51	0	0	0	0	0	0	7	0	15	0	143	1618
1:05 PM	0	38	4	0	10	45	0	0	0	0	1	0	12	0	16	0	126	1610
1:10 PM	0	43	4	0	17	43	0	0	0	0	0	0	10	0	6	0	123	1590
1:15 PM	0	39	3	0	20	48	0	0	0	0	0	0	16	0	18	0	144	1598
1:20 PM	0	33	9	0	15	55	0	0	0	0	0	0	19	0	6	0	137	1599
1:25 PM	0	41	9	0	16	62	0	0	0	0	0	0	5	0	14	0	147	1609
1:30 PM	0	33	13	0	11	40	0	0	0	0	0	0	7	0	8	0	112	1589
1:35 PM	0	34	8	0	20	37	0	0	0	0	0	0	15	0	8	0	122	1579
1:40 PM	0	36	6	0	19	26	0	0	0	0	0	0	9	0	13	0	109	1564
1:45 PM	0	44	3	0	9	35	0	0	0	0	0	0	9	0	7	0	107	1531
1:50 PM	0	42	6	0	11	27	0	0	0	0	0	0	17	0	9	0	112	1514
1:55 PM	0	41	3	0	18	39	0	0	0	0	0	0	5	0	8	0	114	1496
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	544	84	0	212	580	0	0	0	0	0	0	148	0	92	0	1660	
Heavy Trucks	0	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	8	
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	
Scoters	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Comments:

LOCATION: NE 192nd Ave -- NE 6th St
CITY/STATE: Vancouver, WA

QC JOB #: 16429707
DATE: Thu, May 16 2024

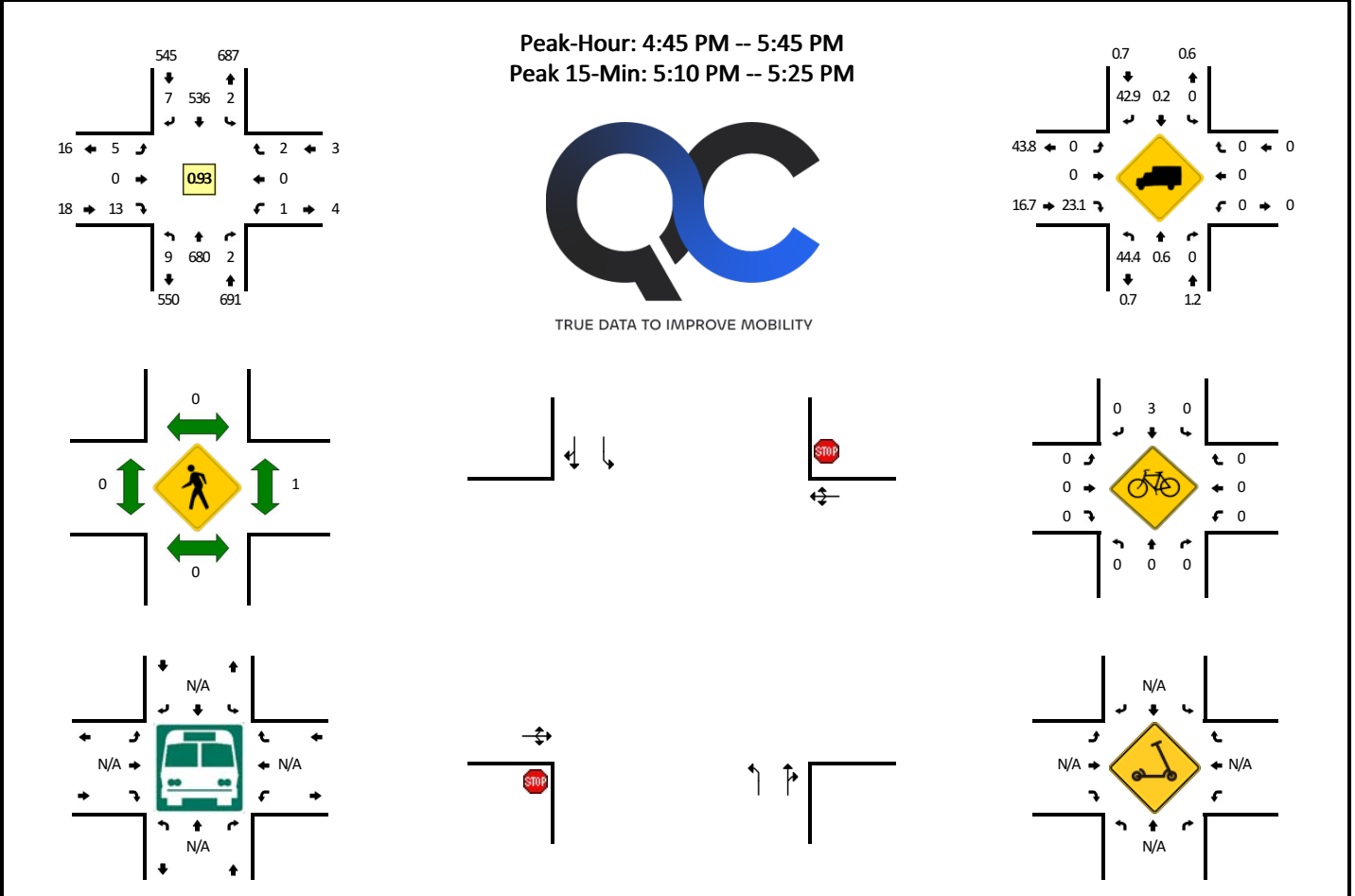


5-Min Count Period Beginning At	NE 192nd Ave (Northbound)				NE 192nd Ave (Southbound)				NE 6th St (Eastbound)				NE 6th St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	19	0	0	0	16	2	0	0	0	0	0	1	0	0	0	38	
7:05 AM	0	15	0	0	0	31	1	0	0	1	0	0	0	0	0	0	48	
7:10 AM	0	14	0	0	0	25	1	0	0	0	0	1	0	0	0	0	41	
7:15 AM	1	22	0	0	0	33	0	0	0	0	0	1	0	0	0	0	57	
7:20 AM	2	15	0	0	0	22	1	0	0	0	0	0	0	0	0	0	40	
7:25 AM	7	18	0	0	0	30	2	0	0	0	0	0	0	0	0	0	57	
7:30 AM	0	22	0	0	0	24	1	0	0	0	0	2	0	1	0	0	50	
7:35 AM	1	14	0	0	0	34	0	0	0	0	0	4	0	0	0	1	54	
7:40 AM	0	18	0	0	0	35	1	0	0	0	0	1	0	0	0	0	55	
7:45 AM	0	24	1	0	0	31	2	0	0	0	0	1	0	0	0	0	59	
7:50 AM	0	28	0	0	0	33	0	0	0	0	0	3	0	0	0	0	64	
7:55 AM	1	19	0	0	0	27	1	0	0	1	0	1	0	0	0	0	50	613
8:00 AM	0	20	0	0	0	21	0	0	0	0	0	1	0	0	0	0	42	617
8:05 AM	0	17	0	0	0	22	0	0	0	0	0	1	0	0	0	0	40	609
8:10 AM	0	26	0	0	0	26	0	0	0	0	0	1	0	0	1	0	54	622
8:15 AM	2	11	0	0	0	39	0	0	0	0	0	0	0	0	0	0	52	617
8:20 AM	0	18	0	0	0	32	1	0	0	0	0	0	0	1	0	0	52	629
8:25 AM	0	35	0	0	0	47	0	0	0	0	0	0	0	1	0	0	83	655
8:30 AM	0	42	0	0	0	42	0	0	0	0	0	1	0	1	0	0	86	691
8:35 AM	0	36	0	0	0	47	1	0	0	0	0	6	0	0	0	0	90	727
8:40 AM	0	32	1	0	0	40	1	0	0	0	0	2	0	0	0	0	76	748
8:45 AM	2	26	1	0	0	37	0	0	0	0	0	0	0	0	0	0	66	755
8:50 AM	1	28	0	0	0	43	1	0	0	0	0	0	0	0	0	0	73	764
8:55 AM	0	15	0	0	0	28	1	0	0	0	0	1	0	0	0	0	45	759
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	452	0	0	0	544	4	0	0	0	28	0	8	0	0	0	1036	
Heavy Trucks	0	40	0	0	0	16	0	0	0	0	12	0	0	0	0	0	68	
Buses																		
Pedestrians	0	0			0	0			0	0			0	0			0	
Bicycles	0	0			0	0			0	0			0	0			0	
Scoters																		

Comments:

LOCATION: NE 192nd Ave -- NE 6th St
CITY/STATE: Vancouver, WA

QC JOB #: 16429708
DATE: Thu, May 16 2024

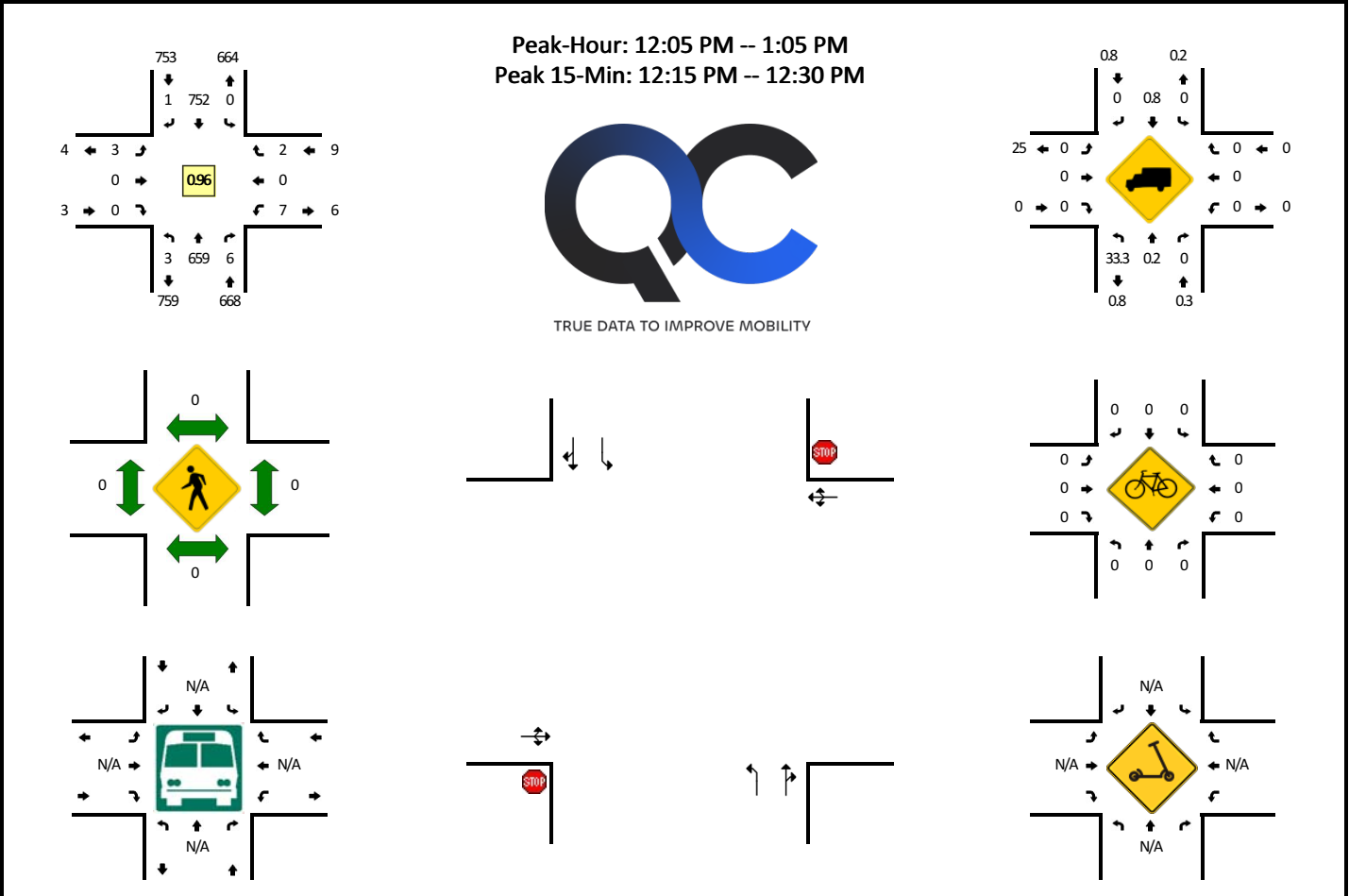


5-Min Count Period Beginning At	NE 192nd Ave (Northbound)				NE 192nd Ave (Southbound)				NE 6th St (Eastbound)				NE 6th St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	58	1	0	0	38	0	0	0	0	0	1	0	0	0	0	98	
4:05 PM	2	54	0	0	0	40	0	0	0	0	0	2	0	2	0	0	100	
4:10 PM	0	57	1	0	0	38	0	0	0	0	0	0	0	0	0	0	96	
4:15 PM	0	45	0	0	0	45	1	0	0	1	0	3	0	0	0	1	96	
4:20 PM	0	66	1	0	0	44	0	0	0	0	0	1	0	0	0	1	113	
4:25 PM	2	54	0	0	1	38	0	0	0	0	0	0	0	0	0	1	96	
4:30 PM	4	65	0	0	0	45	2	0	0	0	0	0	0	0	0	0	116	
4:35 PM	0	42	0	0	0	34	0	0	0	1	0	3	0	0	0	0	80	
4:40 PM	1	46	0	0	0	40	0	0	0	1	0	1	0	0	0	0	89	
4:45 PM	0	72	0	0	0	41	1	0	0	2	0	0	0	0	0	0	116	
4:50 PM	1	65	0	0	1	33	1	0	0	1	0	0	0	0	0	0	102	
4:55 PM	0	44	1	0	1	59	0	0	0	0	0	1	0	0	0	1	107	1209
5:00 PM	0	63	0	0	0	35	0	0	0	0	0	2	0	0	0	0	100	1211
5:05 PM	0	54	1	0	0	34	1	0	0	0	0	0	0	0	0	0	90	1201
5:10 PM	2	61	0	0	0	50	1	0	0	0	0	0	0	0	0	0	114	1219
5:15 PM	2	58	0	0	0	48	1	0	0	0	0	2	0	0	0	1	112	1235
5:20 PM	1	55	0	0	0	54	0	0	0	0	0	0	0	1	0	0	111	1233
5:25 PM	0	49	0	0	0	45	1	0	0	0	0	0	0	0	0	0	95	1232
5:30 PM	0	53	0	0	0	49	0	0	0	0	0	4	0	0	0	0	106	1222
5:35 PM	2	51	0	0	0	33	1	0	0	1	0	0	0	0	0	0	88	1230
5:40 PM	1	55	0	0	0	55	0	0	0	1	0	4	0	0	0	0	116	1257
5:45 PM	0	54	1	0	0	42	0	0	0	0	0	3	0	0	0	0	100	1241
5:50 PM	0	52	0	0	0	61	0	0	0	2	0	0	0	0	0	0	115	1254
5:55 PM	5	45	0	0	0	41	1	0	0	1	0	0	0	0	0	0	93	1240
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	20	696	0	0	0	608	8	0	0	0	8	0	4	0	4	0	1348	
Heavy Trucks	8	0	0	0	0	0	4	0	0	0	4	0	0	0	0	0	16	
Buses																		
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles																		
Scoters																		

Comments:

LOCATION: NE 192nd Ave -- NE 6th St
CITY/STATE: Vancouver, WA

QC JOB #: 16429709
DATE: Sat, May 18 2024



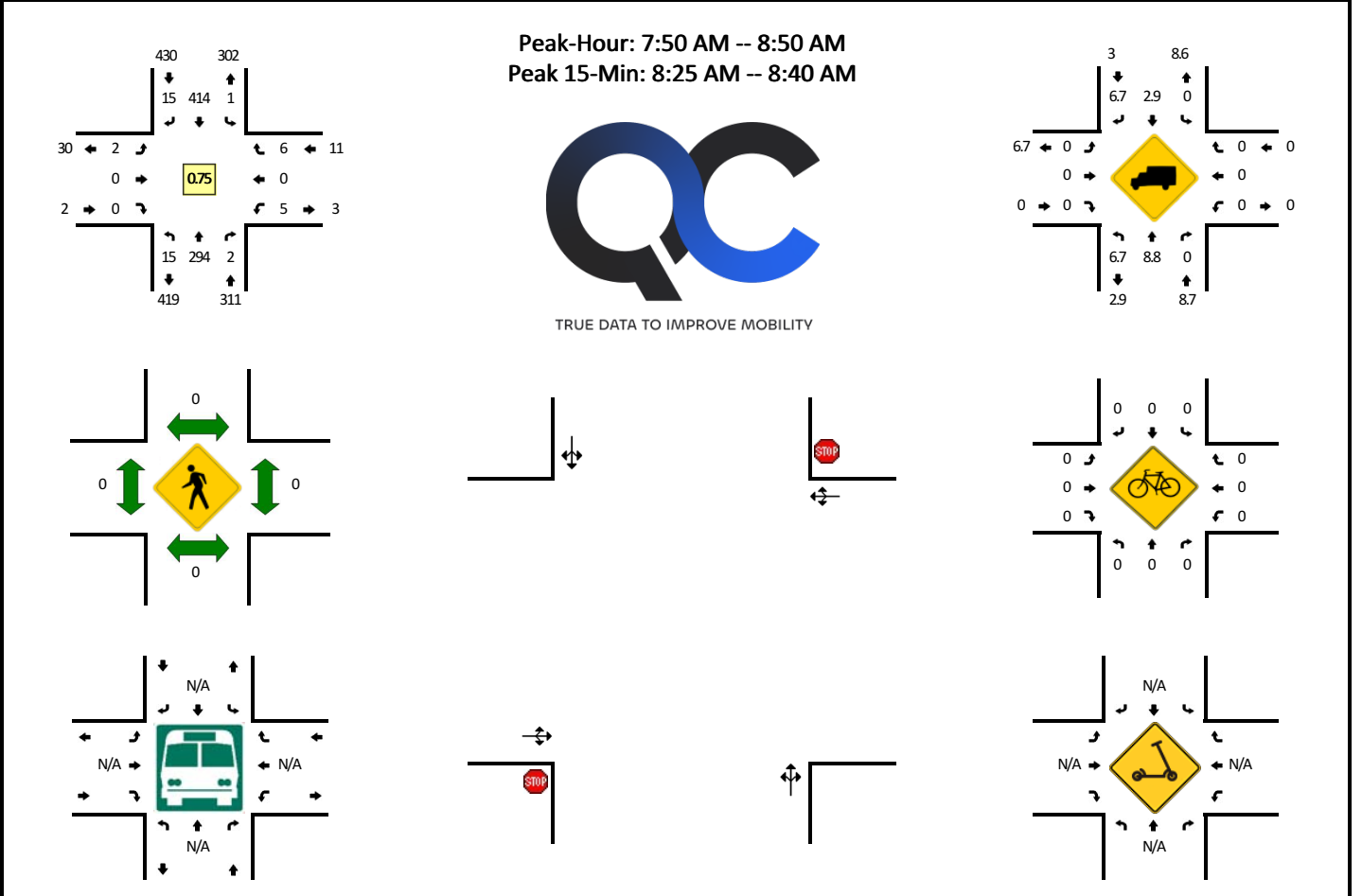
5-Min Count Period Beginning At	NE 192nd Ave (Northbound)				NE 192nd Ave (Southbound)				NE 6th St (Eastbound)				NE 6th St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
12:00 PM	0	62	0	0	0	57	0	0	0	0	0	0	1	0	0	0	120	
12:05 PM	0	67	1	0	0	55	0	0	0	0	0	0	0	0	0	0	123	
12:10 PM	0	44	0	0	0	64	0	0	0	0	0	0	0	0	0	0	108	
12:15 PM	0	63	1	0	0	60	0	0	0	0	0	0	3	0	0	0	127	
12:20 PM	0	54	0	0	0	71	0	0	0	0	0	0	1	0	0	0	126	
12:25 PM	2	63	0	0	0	57	0	0	0	0	0	0	0	0	0	0	122	
12:30 PM	1	47	1	0	0	72	1	0	0	0	0	0	0	0	1	0	123	
12:35 PM	0	59	0	0	0	47	0	0	0	0	0	0	0	0	0	0	106	
12:40 PM	0	43	0	0	0	54	0	0	0	1	0	0	0	0	0	0	98	
12:45 PM	0	66	1	0	0	75	0	0	0	1	0	0	0	0	0	0	143	
12:50 PM	0	48	1	0	0	68	0	0	0	1	0	0	0	1	0	0	119	
12:55 PM	0	44	0	0	0	56	0	0	0	0	0	0	0	0	1	0	101	1416
1:00 PM	0	61	1	0	0	73	0	0	0	0	0	0	2	0	0	0	137	1433
1:05 PM	1	58	0	0	0	49	1	0	0	0	0	1	0	0	0	0	110	1420
1:10 PM	1	38	1	0	0	61	1	0	0	0	0	0	0	0	0	0	102	1414
1:15 PM	1	58	0	0	0	67	0	0	0	0	0	0	1	0	0	0	127	1414
1:20 PM	0	45	1	0	0	69	0	0	0	0	0	0	0	0	0	0	115	1403
1:25 PM	1	55	1	0	0	79	1	0	0	0	0	0	0	0	0	0	137	1418
1:30 PM	0	43	0	0	0	49	0	0	0	0	0	4	1	0	0	0	97	1392
1:35 PM	1	41	0	0	1	51	0	0	0	0	0	0	0	0	0	0	94	1380
1:40 PM	1	40	0	0	0	44	1	0	0	0	0	0	0	0	0	0	86	1368
1:45 PM	4	53	0	0	0	51	0	0	0	0	0	0	0	0	0	0	108	1333
1:50 PM	1	57	0	0	0	36	0	0	0	1	0	0	1	0	0	0	96	1310
1:55 PM	0	46	0	0	0	56	0	0	0	0	0	0	0	0	0	0	102	1311

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	720	4	0	0	752	0	0	0	0	0	0	16	0	0	0	1500
Heavy Trucks	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8
Buses																	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scoters																	

Comments:

LOCATION: NE 192nd Ave -- NE 11th St
CITY/STATE: Vancouver, WA

QC JOB #: 16429710
DATE: Thu, May 16 2024

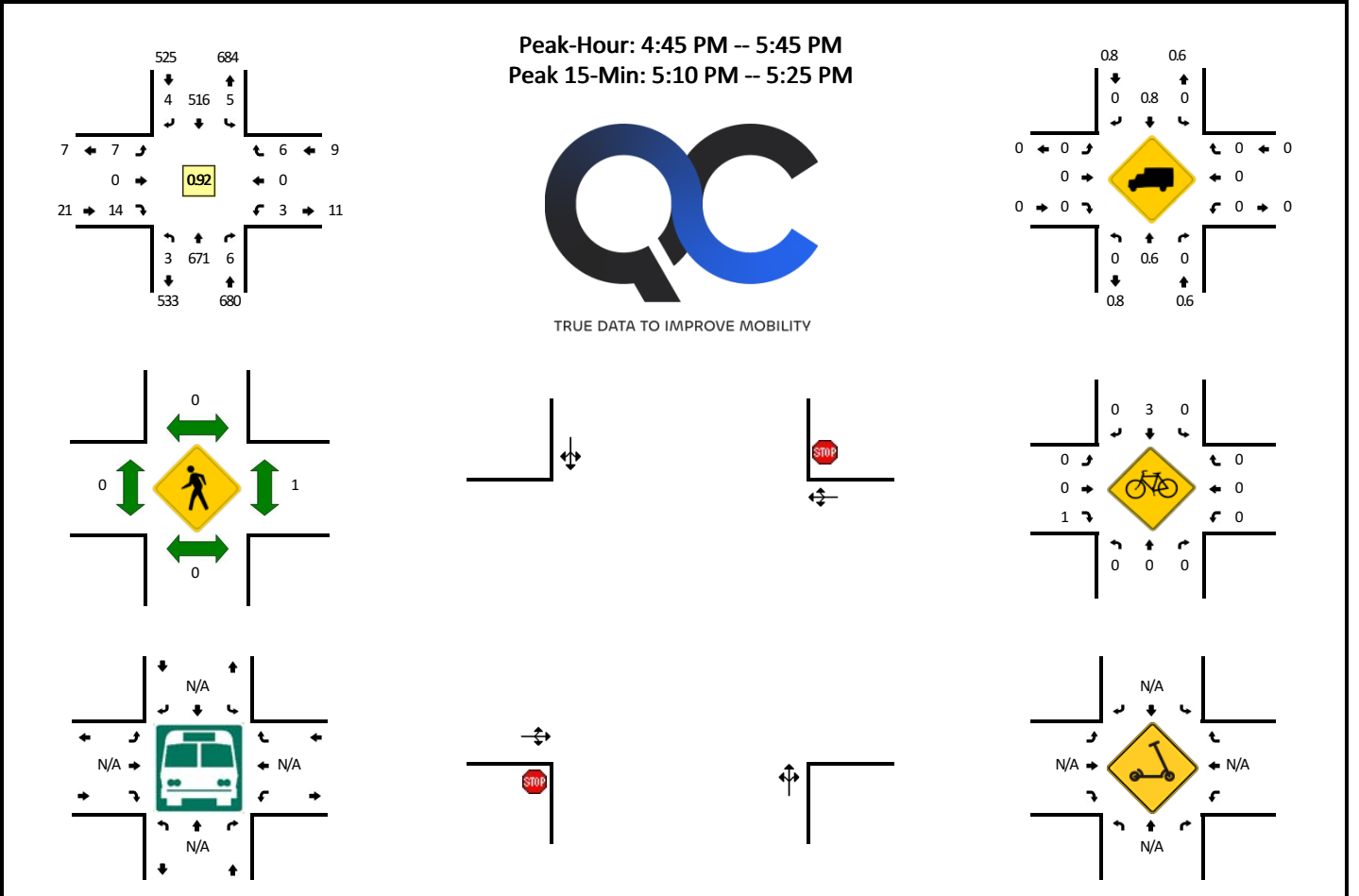


5-Min Count Period Beginning At	NE 192nd Ave (Northbound)				NE 192nd Ave (Southbound)				NE 11th St (Eastbound)				NE 11th St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	1	19	0	0	0	18	2	0	0	0	0	0	1	0	1	0	42	
7:05 AM	0	14	0	0	0	29	1	0	0	0	0	1	0	0	0	0	45	
7:10 AM	0	16	0	0	0	28	0	0	0	0	0	0	0	0	0	0	44	
7:15 AM	2	17	0	0	0	30	1	0	0	0	0	0	0	0	0	0	50	
7:20 AM	1	18	0	0	0	19	2	0	0	0	0	1	0	0	0	0	41	
7:25 AM	2	18	1	0	0	31	2	0	1	0	0	0	1	0	1	0	57	
7:30 AM	1	19	0	0	0	22	2	0	1	0	1	0	2	0	1	0	49	
7:35 AM	1	17	0	0	0	33	1	0	0	0	0	0	0	0	0	0	52	
7:40 AM	2	15	1	0	0	33	2	0	0	0	0	0	0	0	1	0	54	
7:45 AM	2	19	1	0	0	31	0	0	0	0	0	0	0	0	0	0	53	
7:50 AM	1	26	1	0	0	35	2	0	0	0	0	0	0	0	0	0	65	
7:55 AM	2	14	0	0	0	25	1	0	0	0	0	0	0	0	1	0	43	595
8:00 AM	2	20	0	0	0	22	0	0	0	0	0	0	0	0	1	0	45	598
8:05 AM	0	13	0	0	0	21	2	0	1	0	0	0	0	0	0	0	37	590
8:10 AM	1	32	0	0	1	31	1	0	0	0	0	0	1	0	2	0	69	615
8:15 AM	1	8	0	0	0	37	1	0	0	0	0	0	0	0	0	0	47	612
8:20 AM	0	18	0	0	0	31	1	0	0	0	0	0	2	0	1	0	53	624
8:25 AM	0	33	1	0	0	41	2	0	0	0	0	0	0	0	0	0	77	644
8:30 AM	2	35	0	0	0	40	1	0	1	0	0	0	2	0	1	0	82	677
8:35 AM	2	33	0	0	0	55	2	0	0	0	0	0	0	0	0	0	92	717
8:40 AM	1	35	0	0	0	36	2	0	0	0	0	0	0	0	0	0	74	737
8:45 AM	3	27	0	0	0	40	0	0	0	0	0	0	0	0	0	0	70	754
8:50 AM	1	24	1	0	0	37	1	0	0	0	0	0	0	0	0	0	64	753
8:55 AM	1	14	0	0	0	28	0	0	0	0	0	0	0	0	0	0	43	753
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	16	404	4	0	0	544	20	0	4	0	0	0	8	0	4	0	1004	
Heavy Trucks	4	36	0	0	0	12	0	0	0	0	0	0	0	0	0	0	52	
Buses																		
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Scoters																		

Comments:

LOCATION: NE 192nd Ave -- NE 11th St
CITY/STATE: Vancouver, WA

QC JOB #: 16429711
DATE: Thu, May 16 2024

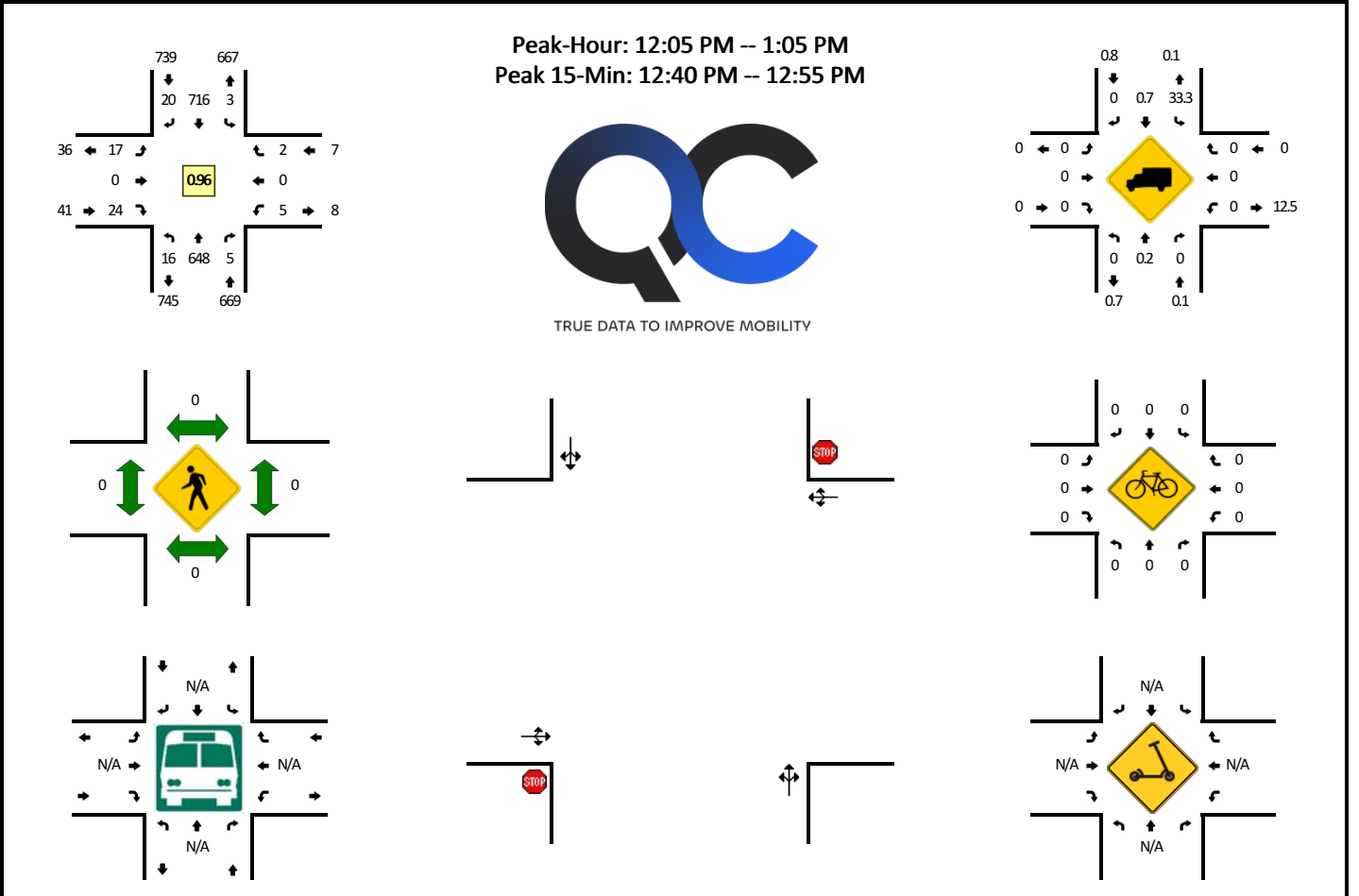


5-Min Count Period Beginning At	NE 192nd Ave (Northbound)				NE 192nd Ave (Southbound)				NE 11th St (Eastbound)				NE 11th St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	3	46	2	0	0	38	1	0	1	0	2	0	0	0	0	0	93	
4:05 PM	2	53	1	0	0	39	0	0	2	0	1	0	0	0	0	0	98	
4:10 PM	1	57	1	0	0	35	1	0	3	0	2	0	0	0	1	0	101	
4:15 PM	1	43	1	0	2	46	1	0	0	0	0	0	1	0	0	0	95	
4:20 PM	1	67	0	0	1	40	1	0	2	0	0	0	0	0	0	0	112	
4:25 PM	0	56	0	0	0	40	1	0	0	0	1	0	0	0	0	0	98	
4:30 PM	0	60	1	0	0	37	0	0	1	0	2	0	0	0	1	0	102	
4:35 PM	0	48	1	0	1	36	2	0	0	0	1	0	0	0	0	0	89	
4:40 PM	0	47	1	0	1	39	0	0	3	0	0	0	0	0	0	0	91	
4:45 PM	0	74	2	0	0	36	0	0	1	0	2	0	0	0	1	0	116	
4:50 PM	2	58	0	0	1	39	0	0	0	0	0	0	1	0	1	0	102	
4:55 PM	0	44	1	0	1	52	0	0	0	0	1	0	0	0	0	0	99	1196
5:00 PM	0	62	1	0	1	36	0	0	0	0	0	0	0	0	1	0	101	1204
5:05 PM	0	56	1	0	0	28	2	0	1	0	2	0	0	0	2	0	92	1198
5:10 PM	0	56	1	0	0	51	0	0	1	0	2	0	0	0	0	0	111	1208
5:15 PM	0	61	0	0	1	50	0	0	1	0	1	0	0	0	0	0	114	1227
5:20 PM	0	55	0	0	0	50	1	0	1	0	2	0	0	0	0	0	109	1224
5:25 PM	0	49	0	0	0	42	0	0	0	0	0	0	1	0	0	0	92	1218
5:30 PM	0	50	0	0	0	45	1	0	0	0	1	0	0	0	1	0	98	1214
5:35 PM	1	52	0	0	0	37	0	0	0	0	1	0	1	0	0	0	92	1217
5:40 PM	0	54	0	0	1	50	0	0	2	0	2	0	0	0	0	0	109	1235
5:45 PM	1	51	1	0	0	42	1	0	0	0	1	0	0	0	1	0	98	1217
5:50 PM	0	57	0	0	0	57	1	0	0	0	1	0	0	0	0	0	116	1231
5:55 PM	0	45	0	0	0	40	0	0	4	0	1	0	1	0	0	0	91	1223
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	688	4	0	4	604	4	0	12	0	20	0	0	0	0	0	1336	
Heavy Trucks	0	0	0		0	4	0		0	0	0		0	0	0		4	
Buses																		
Pedestrians	0	0			0	0			0	0			0	0			0	
Bicycles	0	0			0	0			0	0			0	0			0	
Scooters																		

Comments:

LOCATION: NE 192nd Ave -- NE 11th St
CITY/STATE: Vancouver, WA

QC JOB #: 16429712
DATE: Sat, May 18 2024

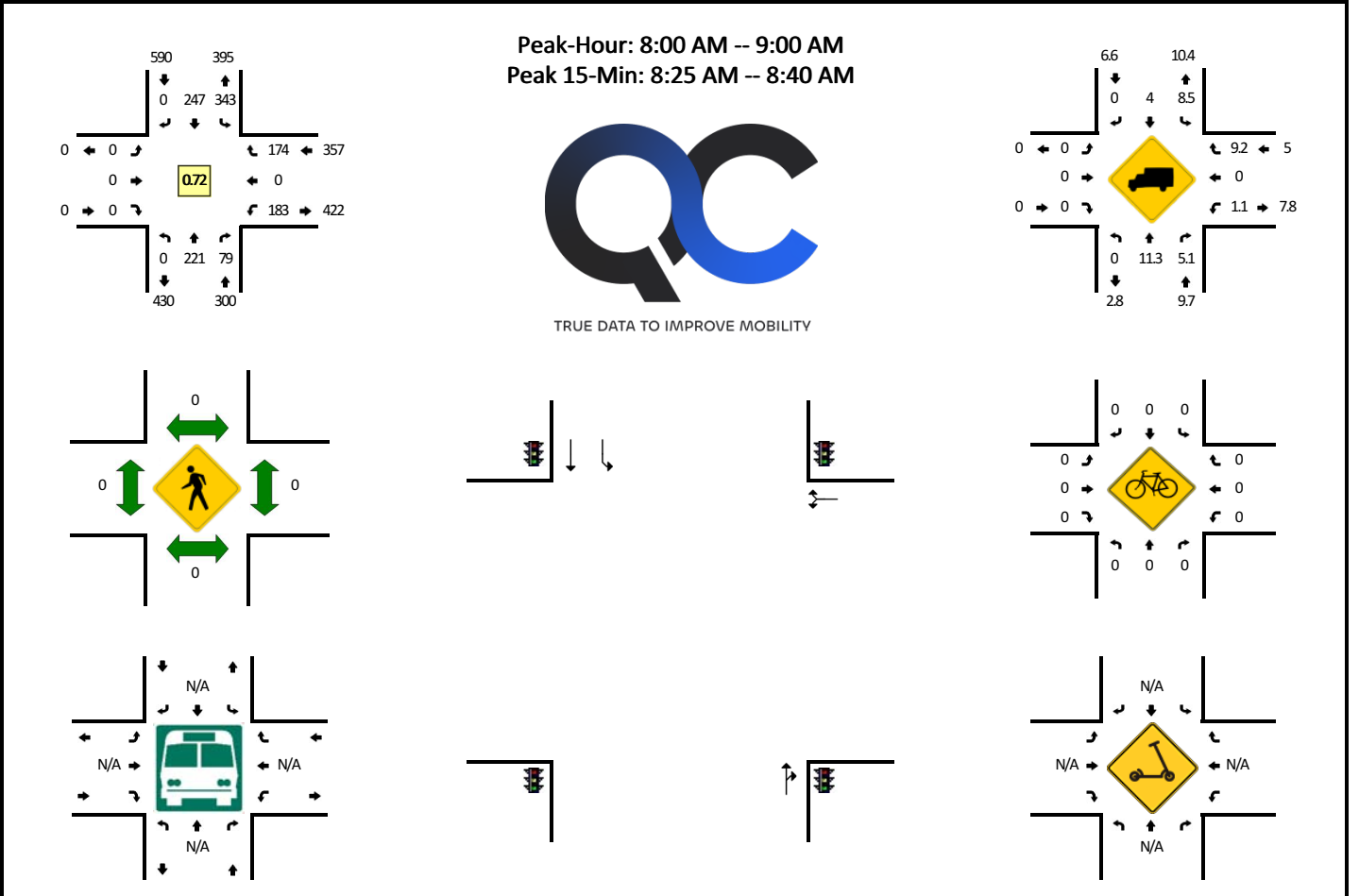


5-Min Count Period Beginning At	NE 192nd Ave (Northbound)				NE 192nd Ave (Southbound)				NE 11th St (Eastbound)				NE 11th St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
12:00 PM	2	54	1	0	0	52	0	0	0	0	0	0	0	0	0	0	109	
12:05 PM	3	65	0	0	0	56	0	0	0	0	0	0	0	0	0	0	124	
12:10 PM	2	50	0	0	0	64	2	0	3	0	5	0	1	0	0	0	127	
12:15 PM	1	57	0	0	0	52	2	0	4	0	5	0	0	0	0	0	121	
12:20 PM	0	57	0	0	0	59	3	0	0	0	4	0	2	0	0	0	125	
12:25 PM	1	49	1	0	0	54	0	0	1	0	1	0	0	0	0	0	107	
12:30 PM	1	53	1	0	0	70	2	0	2	0	1	0	1	0	0	0	131	
12:35 PM	3	60	0	0	0	39	1	0	1	0	2	0	1	0	0	0	107	
12:40 PM	2	44	0	0	1	61	1	0	0	0	2	0	0	0	1	0	112	
12:45 PM	1	64	1	0	0	72	3	0	2	0	2	0	0	0	0	0	145	
12:50 PM	0	52	1	0	1	65	2	0	0	0	1	0	0	0	0	0	122	
12:55 PM	1	45	1	0	1	58	0	0	3	0	1	0	0	0	0	0	110	1440
1:00 PM	1	52	0	0	0	66	4	0	1	0	0	0	0	0	1	0	125	1456
1:05 PM	1	62	1	0	0	51	1	0	2	0	1	0	0	0	0	0	119	1451
1:10 PM	0	38	1	0	0	62	1	0	1	0	0	0	0	0	0	0	103	1427
1:15 PM	0	49	1	0	0	67	2	0	0	0	1	0	0	0	1	0	121	1427
1:20 PM	0	53	0	0	0	66	1	0	1	0	1	0	0	0	1	0	123	1425
1:25 PM	0	54	0	0	0	72	0	0	1	0	3	0	0	0	0	0	130	1448
1:30 PM	1	45	0	0	1	51	1	0	2	0	0	0	0	0	1	0	102	1419
1:35 PM	2	38	1	0	0	45	2	0	0	0	2	0	0	0	0	0	90	1402
1:40 PM	0	41	0	0	1	40	0	0	2	0	1	0	1	0	1	0	87	1377
1:45 PM	0	52	0	0	0	52	1	0	0	0	1	0	0	0	0	0	106	1338
1:50 PM	0	55	0	0	0	32	3	0	0	0	0	0	0	0	0	0	90	1306
1:55 PM	0	42	0	0	0	59	2	0	2	0	1	0	1	0	0	0	107	1303
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	640	8	0	8	792	24	0	8	0	20	0	0	0	4	0	1516	
Heavy Trucks	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	4	
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Scoters	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Comments:

LOCATION: NE 192nd Ave -- NE 13th St
CITY/STATE: Vancouver, WA

QC JOB #: 16429713
DATE: Thu, May 16 2024

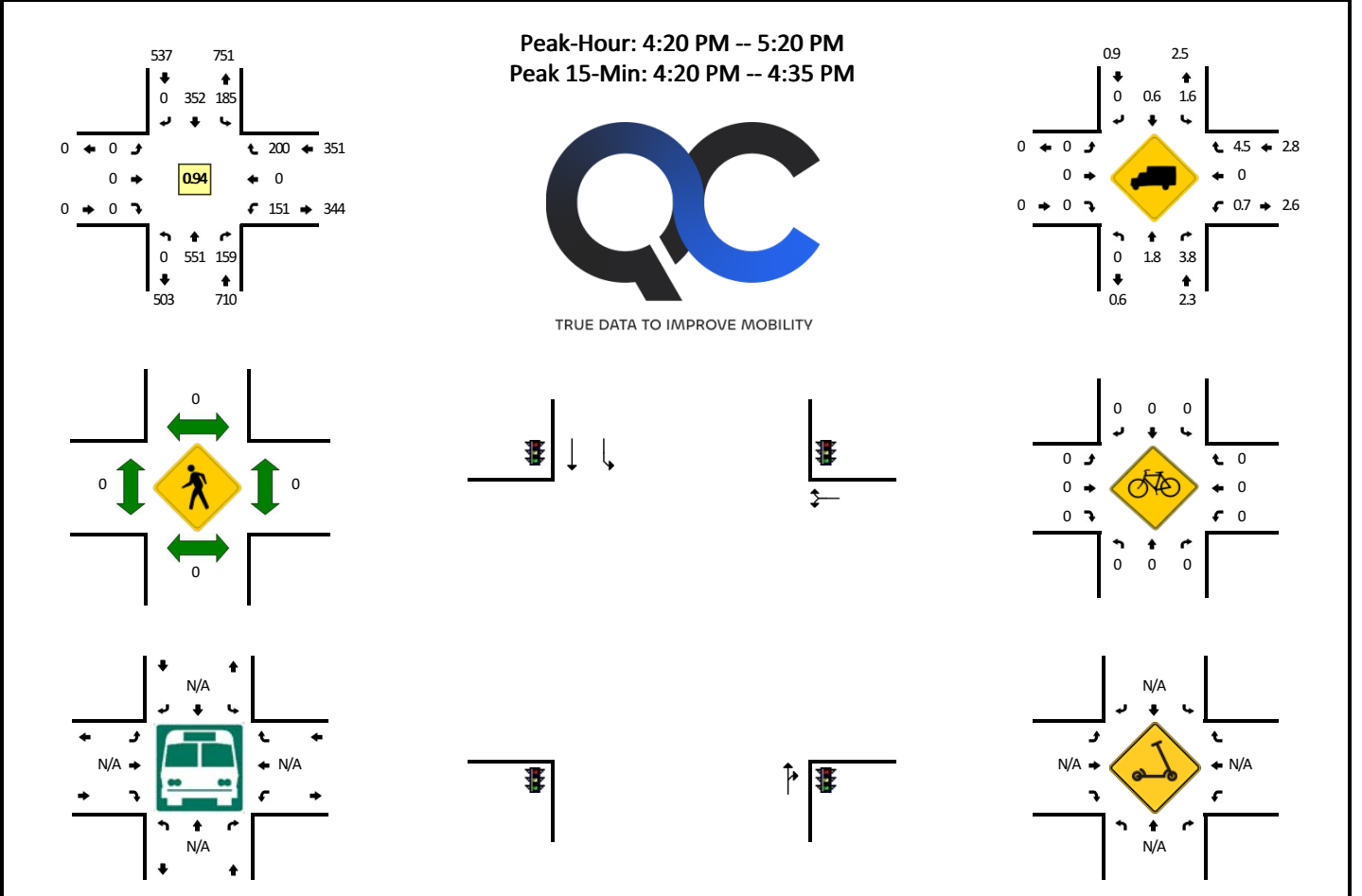


5-Min Count Period Beginning At	NE 192nd Ave (Northbound)				NE 192nd Ave (Southbound)				NE 13th St (Eastbound)				NE 13th St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	12	7	0	14	9	0	0	0	0	0	0	9	0	12	0	63	
7:05 AM	0	9	6	0	15	16	0	0	0	0	0	0	14	0	13	0	73	
7:10 AM	0	6	5	0	15	21	0	0	0	0	0	0	8	0	13	0	68	
7:15 AM	0	18	5	0	8	18	0	0	0	0	0	0	13	0	16	0	78	
7:20 AM	0	12	5	0	18	12	0	0	0	0	0	0	9	0	13	0	69	
7:25 AM	0	15	3	0	23	22	0	0	0	0	0	0	12	0	17	0	92	
7:30 AM	0	15	5	0	6	12	0	0	0	0	0	0	14	0	18	0	70	
7:35 AM	0	14	3	0	12	21	0	0	0	0	0	0	14	0	13	0	77	
7:40 AM	0	13	2	0	17	20	0	0	0	0	0	0	14	0	15	0	81	
7:45 AM	0	14	7	0	20	20	0	0	0	0	0	0	12	0	19	0	92	
7:50 AM	0	17	10	0	19	23	0	0	0	0	0	0	16	0	12	0	97	
7:55 AM	0	10	5	0	16	12	0	0	0	0	0	0	10	0	9	0	62	922
8:00 AM	0	15	5	0	24	11	0	0	0	0	0	0	11	0	9	0	75	934
8:05 AM	0	8	5	0	13	14	0	0	0	0	0	0	9	0	14	0	63	924
8:10 AM	0	20	8	0	33	17	0	0	0	0	0	0	12	0	16	0	106	962
8:15 AM	0	11	4	0	31	27	0	0	0	0	0	0	9	0	6	0	88	972
8:20 AM	0	13	5	0	31	19	0	0	0	0	0	0	14	0	15	0	97	1000
8:25 AM	0	23	8	0	49	25	0	0	0	0	0	0	17	0	16	0	138	1046
8:30 AM	0	28	6	0	55	22	0	0	0	0	0	0	23	0	13	0	147	1123
8:35 AM	0	27	10	0	38	32	0	0	0	0	0	0	26	0	17	0	150	1196
8:40 AM	0	25	12	0	24	22	0	0	0	0	0	0	16	0	18	0	117	1232
8:45 AM	0	15	9	0	15	20	0	0	0	0	0	0	16	0	22	0	97	1237
8:50 AM	0	23	6	0	20	20	0	0	0	0	0	0	17	0	16	0	102	1242
8:55 AM	0	13	1	0	10	18	0	0	0	0	0	0	13	0	12	0	67	1247
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
All Vehicles	0	312	96	0	568	316	0	0	0	0	0	0	264	0	184	0	1740	
Heavy Trucks	0	36	4		24	8	0		0	0	0		4	0	16		92	
Buses																	0	
Pedestrians	0	0	0		0	0	0		0	0	0		0	0	0		0	
Bicycles																	0	
Scoters																	0	

Comments:

LOCATION: NE 192nd Ave -- NE 13th St
CITY/STATE: Vancouver, WA

QC JOB #: 16429714
DATE: Thu, May 16 2024

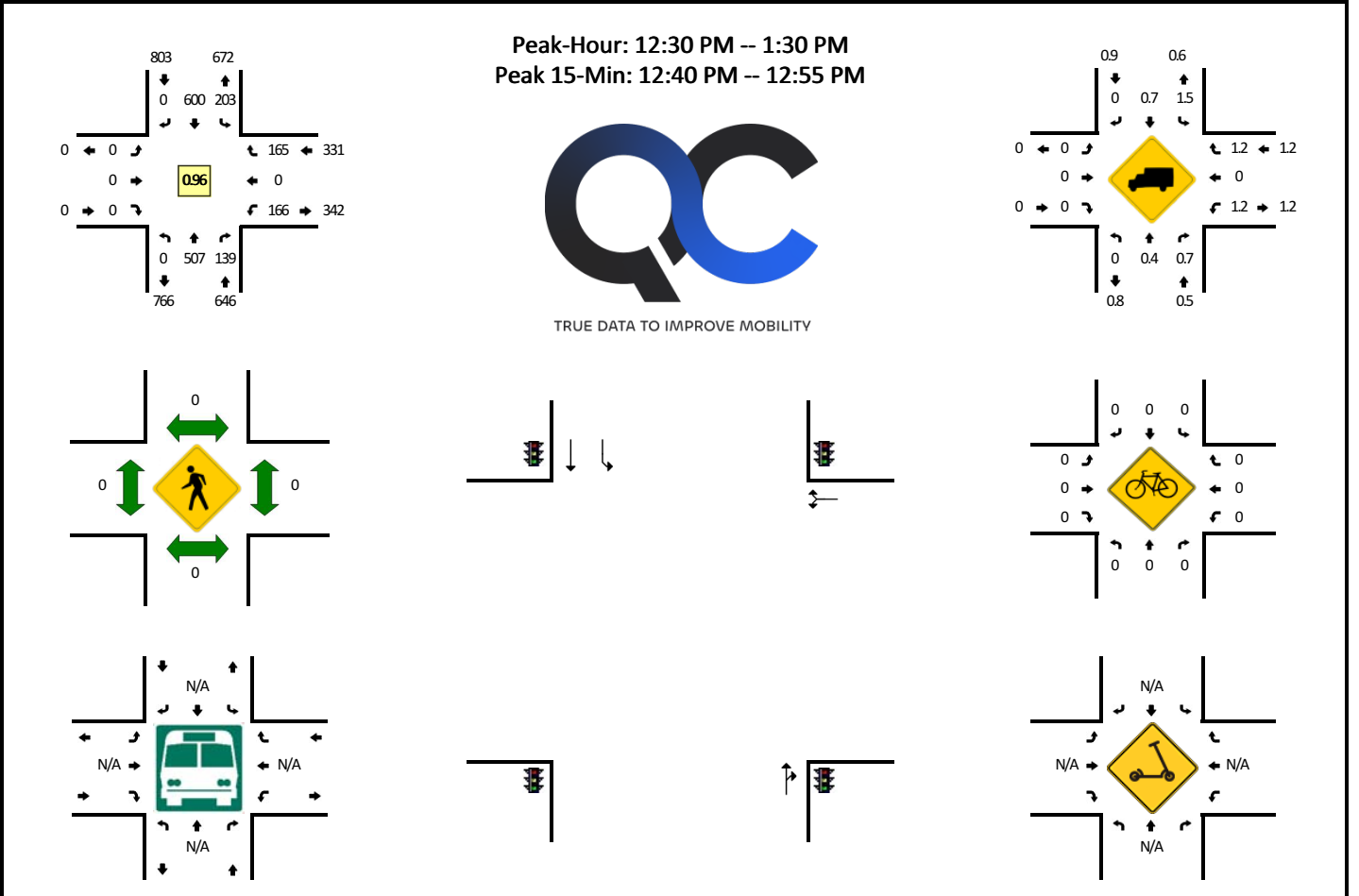


5-Min Count Period Beginning At	NE 192nd Ave (Northbound)				NE 192nd Ave (Southbound)				NE 13th St (Eastbound)				NE 13th St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	32	16	0	15	30	0	0	0	0	0	0	11	0	17	0	121	
4:05 PM	0	44	10	0	15	23	0	0	0	0	0	0	13	0	18	0	123	
4:10 PM	0	29	20	0	24	31	0	0	0	0	0	0	5	0	23	0	132	
4:15 PM	0	42	13	0	10	25	0	0	0	0	0	0	22	0	26	0	138	
4:20 PM	0	54	17	0	25	27	0	0	0	0	0	0	15	0	13	0	151	
4:25 PM	0	44	13	0	18	26	0	0	0	0	0	0	19	0	18	0	138	
4:30 PM	0	49	14	0	13	30	0	0	0	0	0	0	7	0	21	0	134	
4:35 PM	0	41	11	0	15	24	0	0	0	0	0	0	14	0	17	0	122	
4:40 PM	0	41	9	0	12	31	0	0	0	0	0	0	11	0	14	0	118	
4:45 PM	0	54	17	0	15	23	0	0	0	0	0	0	11	0	20	0	140	
4:50 PM	0	41	15	0	16	28	0	0	0	0	0	0	13	0	21	0	134	
4:55 PM	0	44	8	0	17	45	0	0	0	0	0	0	8	0	14	0	136	1587
5:00 PM	0	44	13	0	9	23	0	0	0	0	0	0	17	0	14	0	120	1586
5:05 PM	0	42	19	0	15	21	0	0	0	0	0	0	9	0	11	0	117	1580
5:10 PM	0	35	13	0	20	35	0	0	0	0	0	0	16	0	22	0	141	1589
5:15 PM	0	62	10	0	10	39	0	0	0	0	0	0	11	0	15	0	147	1598
5:20 PM	0	32	18	0	11	30	0	0	0	0	0	0	19	0	25	0	135	1582
5:25 PM	0	33	15	0	10	32	0	0	0	0	0	0	10	0	18	0	118	1562
5:30 PM	0	34	17	0	13	34	0	0	0	0	0	0	14	0	7	0	119	1547
5:35 PM	0	41	15	0	17	27	0	0	0	0	0	0	9	0	16	0	125	1550
5:40 PM	0	45	8	0	18	32	0	0	0	0	0	0	19	0	12	0	134	1566
5:45 PM	0	40	15	0	14	26	0	0	0	0	0	0	17	0	14	0	126	1552
5:50 PM	0	39	12	0	21	39	0	0	0	0	0	0	20	0	20	0	151	1569
5:55 PM	0	48	9	0	13	33	0	0	0	0	0	0	8	0	8	0	119	1552
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	588	176	0	224	332	0	0	0	0	0	0	164	0	208	0	1692	
Heavy Trucks	0	12	16		8	0	0		0	0	0		0	0	8		44	
Buses																		
Pedestrians	0	0			0	0			0	0			0	0			0	
Bicycles	0	0			0	0			0	0			0	0			0	
Scoters																		

Comments:

LOCATION: NE 192nd Ave -- NE 13th St
CITY/STATE: Vancouver, WA

QC JOB #: 16429715
DATE: Sat, May 18 2024

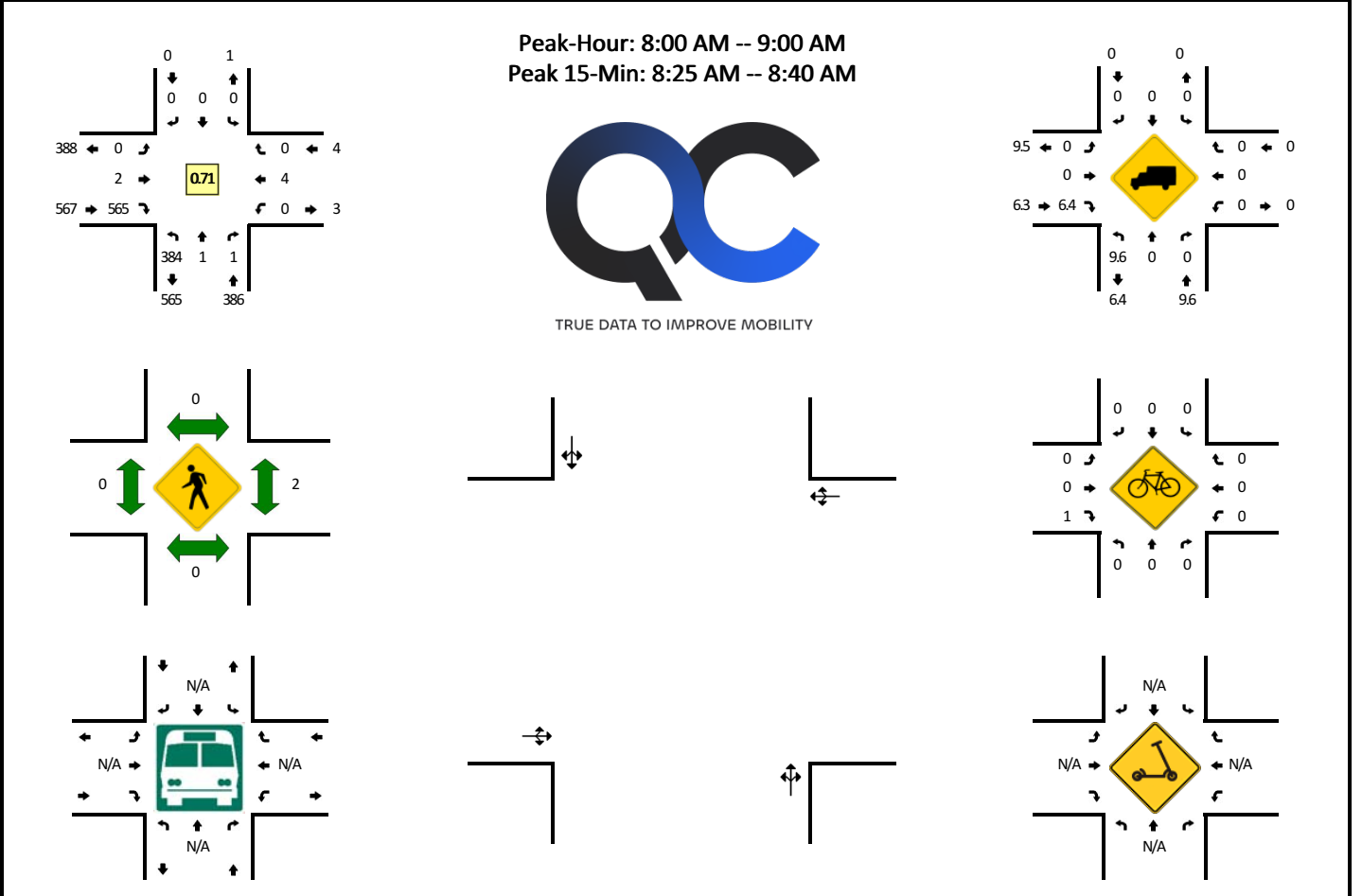


5-Min Count Period Beginning At	NE 192nd Ave (Northbound)				NE 192nd Ave (Southbound)				NE 13th St (Eastbound)				NE 13th St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
12:00 PM	0	47	12	0	16	36	0	0	0	0	0	0	14	0	12	0	137	
12:05 PM	0	41	10	0	17	39	0	0	0	0	0	0	20	0	12	0	139	
12:10 PM	0	56	14	0	18	50	0	0	0	0	0	0	16	0	13	0	167	
12:15 PM	0	47	10	0	13	43	0	0	0	0	0	0	11	0	13	0	137	
12:20 PM	0	47	6	0	6	35	0	0	0	0	0	0	28	0	12	0	134	
12:25 PM	0	41	10	0	22	40	0	0	0	0	0	0	15	0	16	0	144	
12:30 PM	0	43	15	0	23	53	0	0	0	0	0	0	14	0	12	0	160	
12:35 PM	0	46	11	0	19	28	0	0	0	0	0	0	10	0	9	0	123	
12:40 PM	0	39	14	0	17	55	0	0	0	0	0	0	14	0	26	0	165	
12:45 PM	0	50	13	0	15	61	0	0	0	0	0	0	14	0	9	0	162	
12:50 PM	0	39	8	0	13	43	0	0	0	0	0	0	20	0	14	0	137	
12:55 PM	0	38	11	0	19	43	0	0	0	0	0	0	19	0	15	0	145	1750
1:00 PM	0	42	14	0	19	59	0	0	0	0	0	0	9	0	7	0	150	1763
1:05 PM	0	48	12	0	20	40	0	0	0	0	0	0	12	0	21	0	153	1777
1:10 PM	0	31	15	0	14	58	0	0	0	0	0	0	8	0	11	0	137	1747
1:15 PM	0	45	6	0	16	54	0	0	0	0	0	0	17	0	11	0	149	1759
1:20 PM	0	42	8	0	15	54	0	0	0	0	0	0	11	0	21	0	151	1776
1:25 PM	0	44	12	0	13	52	0	0	0	0	0	0	18	0	9	0	148	1780
1:30 PM	0	33	11	0	13	37	0	0	0	0	0	0	13	0	10	0	117	1737
1:35 PM	0	28	10	0	13	34	0	0	0	0	0	0	15	0	7	0	107	1721
1:40 PM	0	36	11	0	13	31	0	0	0	0	0	0	12	0	9	0	112	1668
1:45 PM	0	40	10	0	19	30	0	0	0	0	0	0	17	0	13	0	129	1635
1:50 PM	0	37	12	0	11	23	0	0	0	0	0	0	18	0	14	0	115	1613
1:55 PM	0	35	4	0	12	40	0	0	0	0	0	0	14	0	14	0	119	1587
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	512	140	0	180	636	0	0	0	0	0	0	192	0	196	0	1856	
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	4	
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Scooters	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Comments:

LOCATION: NE 192nd Ave -- NE 18th St
CITY/STATE: Vancouver, WA

QC JOB #: 16429716
DATE: Thu, May 16 2024

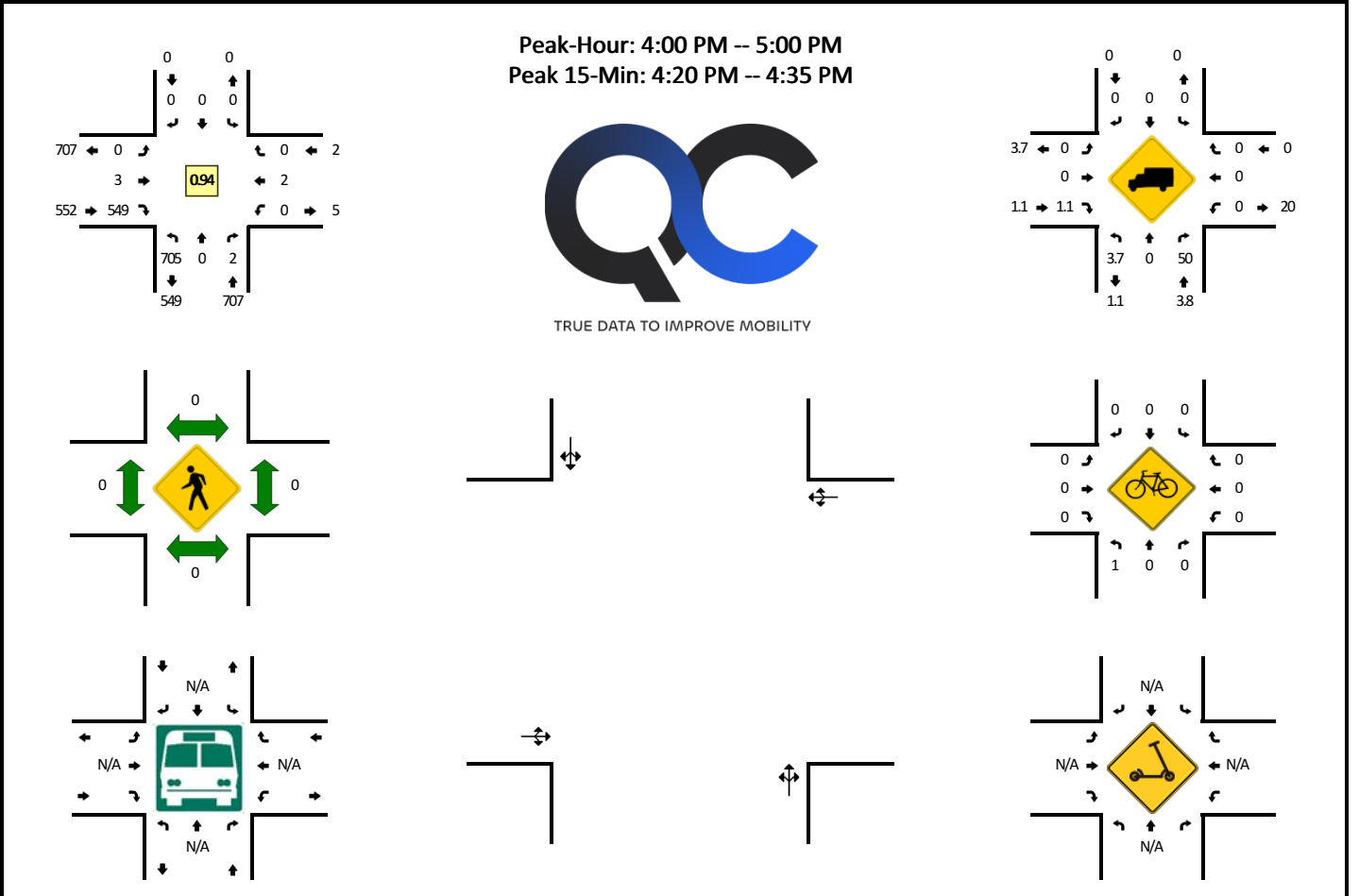


5-Min Count Period Beginning At	NE 192nd Ave (Northbound)				NE 192nd Ave (Southbound)				NE 18th St (Eastbound)				NE 18th St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	25	0	0	0	0	0	0	0	1	0	26	0	0	1	0	0	53	
7:05 AM	22	0	0	0	0	1	0	0	0	0	27	0	0	0	0	0	50	
7:10 AM	19	0	0	0	0	0	0	0	0	0	36	0	0	0	0	0	55	
7:15 AM	33	0	0	0	0	0	0	0	0	0	27	0	0	0	0	0	60	
7:20 AM	26	0	0	0	0	0	0	0	0	0	36	0	0	0	0	0	62	
7:25 AM	30	0	0	0	0	0	0	0	0	0	38	0	0	1	0	0	69	
7:30 AM	33	0	0	0	0	0	0	0	0	0	16	0	0	0	0	0	49	
7:35 AM	31	0	0	0	0	0	0	0	0	0	35	0	0	0	0	0	66	
7:40 AM	28	0	0	0	0	0	0	0	0	0	38	0	0	1	0	0	67	
7:45 AM	31	0	0	0	0	0	0	0	0	1	41	0	0	0	0	0	73	
7:50 AM	30	0	0	0	0	0	0	0	0	0	41	0	0	0	0	0	71	
7:55 AM	19	0	0	0	0	0	0	0	0	0	25	0	0	0	0	0	44	719
8:00 AM	25	0	0	0	0	0	0	0	0	0	33	0	0	0	0	0	58	724
8:05 AM	15	0	0	0	0	0	0	0	0	0	30	0	0	1	0	0	46	720
8:10 AM	32	0	0	0	0	0	0	0	0	0	45	0	0	0	0	0	77	742
8:15 AM	25	0	0	0	0	0	0	0	0	0	54	0	0	0	0	0	79	761
8:20 AM	27	0	0	0	0	0	0	0	0	0	53	0	0	1	0	0	81	780
8:25 AM	33	0	0	0	0	0	0	0	0	0	72	0	0	0	0	0	105	816
8:30 AM	51	0	0	0	0	0	0	0	0	1	80	0	0	0	0	0	132	899
8:35 AM	40	0	0	0	0	0	0	0	0	0	58	0	0	0	0	0	98	931
8:40 AM	41	0	0	0	0	0	0	0	0	0	44	0	0	1	0	0	86	950
8:45 AM	37	0	0	0	0	0	0	0	0	1	31	0	0	0	0	0	69	946
8:50 AM	31	1	0	0	0	0	0	0	0	0	38	0	0	0	0	0	70	945
8:55 AM	27	0	1	0	0	0	0	0	0	0	27	0	0	1	0	0	56	957
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	496	0	0	0	0	0	0	0	0	4	840	0	0	0	0	0	1340	
Heavy Trucks	52	0	0	0	0	0	0	0	0	0	16	0	0	0	0	0	68	
Buses																		
Pedestrians		0				0				0				0			0	
Bicycles		0				0				0	0			0			0	
Scooters																	0	

Comments:

LOCATION: NE 192nd Ave -- NE 18th St
CITY/STATE: Vancouver, WA

QC JOB #: 16429717
DATE: Thu, May 16 2024



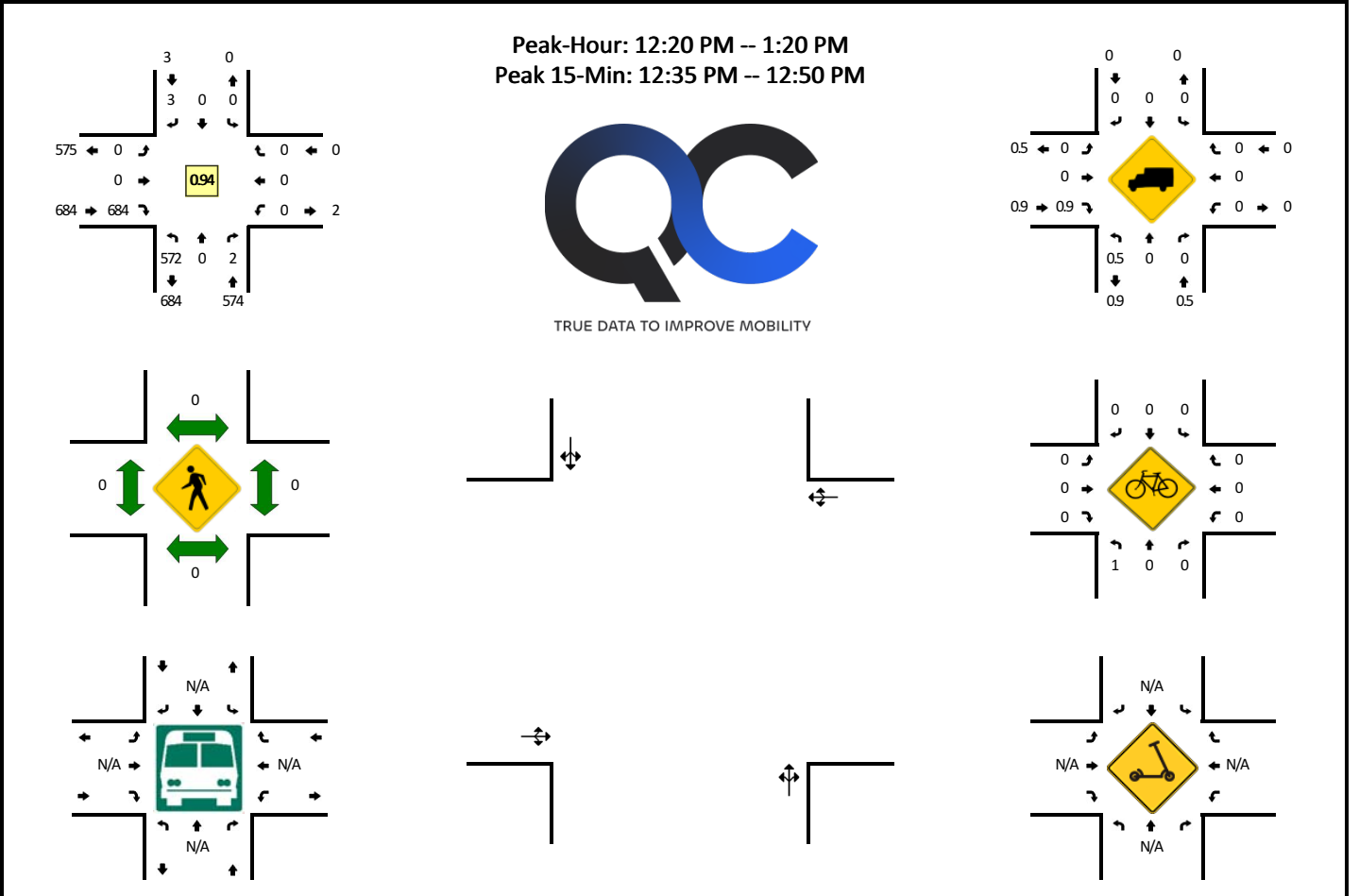
5-Min Count Period Beginning At	NE 192nd Ave (Northbound)				NE 192nd Ave (Southbound)				NE 18th St (Eastbound)				NE 18th St (Westbound)				Total	Hourly Totals	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U			
4:00 PM	56	0	0	0	0	0	0	0	0	0	0	40	0	0	0	0	0	96	
4:05 PM	57	0	0	0	0	0	0	0	0	0	0	35	0	0	1	0	0	93	
4:10 PM	57	0	0	0	0	0	0	0	0	0	2	55	0	0	0	0	0	114	
4:15 PM	59	0	0	0	0	0	0	0	0	0	0	40	0	0	1	0	0	100	
4:20 PM	66	0	0	0	0	0	0	0	0	0	1	51	0	0	0	0	0	118	
4:25 PM	64	0	0	0	0	0	0	0	0	0	0	46	0	0	0	0	0	110	
4:30 PM	70	0	0	0	0	0	0	0	0	0	0	39	0	0	0	0	0	109	
4:35 PM	54	0	1	0	0	0	0	0	0	0	0	43	0	0	0	0	0	98	
4:40 PM	49	0	0	0	0	0	0	0	0	0	0	46	0	0	0	0	0	95	
4:45 PM	62	0	0	0	0	0	0	0	0	0	0	45	0	0	0	0	0	107	
4:50 PM	61	0	1	0	0	0	0	0	0	0	0	52	0	0	0	0	0	114	
4:55 PM	50	0	0	0	0	0	0	0	0	0	0	57	0	0	0	0	0	107	1261
5:00 PM	45	0	0	0	0	0	0	0	0	0	0	37	0	0	0	0	0	82	1247
5:05 PM	56	0	0	0	0	0	0	0	0	0	0	36	0	0	1	0	0	93	1247
5:10 PM	57	0	0	0	0	0	0	1	0	0	0	45	0	1	0	0	0	104	1237
5:15 PM	72	0	0	0	0	0	0	1	0	0	0	49	0	0	0	0	0	122	1259
5:20 PM	61	0	1	0	0	0	0	0	0	0	0	44	0	0	1	0	0	107	1248
5:25 PM	45	0	0	0	0	0	0	0	0	0	0	40	0	1	0	0	0	86	1224
5:30 PM	39	0	0	0	0	0	0	0	0	0	0	44	0	0	0	0	0	83	1198
5:35 PM	61	0	0	0	0	0	0	0	0	1	0	55	0	0	0	0	0	117	1217
5:40 PM	55	0	0	0	0	0	0	0	0	0	0	49	0	0	0	0	0	104	1226
5:45 PM	56	0	0	0	0	0	0	0	0	0	0	47	0	0	0	0	0	103	1222
5:50 PM	62	0	0	0	0	0	0	0	0	0	0	52	0	1	2	0	0	117	1225
5:55 PM	50	0	0	0	0	0	0	0	0	0	1	44	0	0	0	0	0	95	1213

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	800	0	0	0	0	0	0	0	0	4	544	0	0	0	0	0	0	1348
Heavy Trucks	28	0	0	0	0	0	0	0	0	0	12	0	0	0	0	0	0	40
Buses																		0
Pedestrians		0				0					0				0			0
Bicycles		0				0					0				0			0
Scoters																		0

Comments:

LOCATION: NE 192nd Ave -- NE 18th St
CITY/STATE: Vancouver, WA

QC JOB #: 16429718
DATE: Sat, May 18 2024

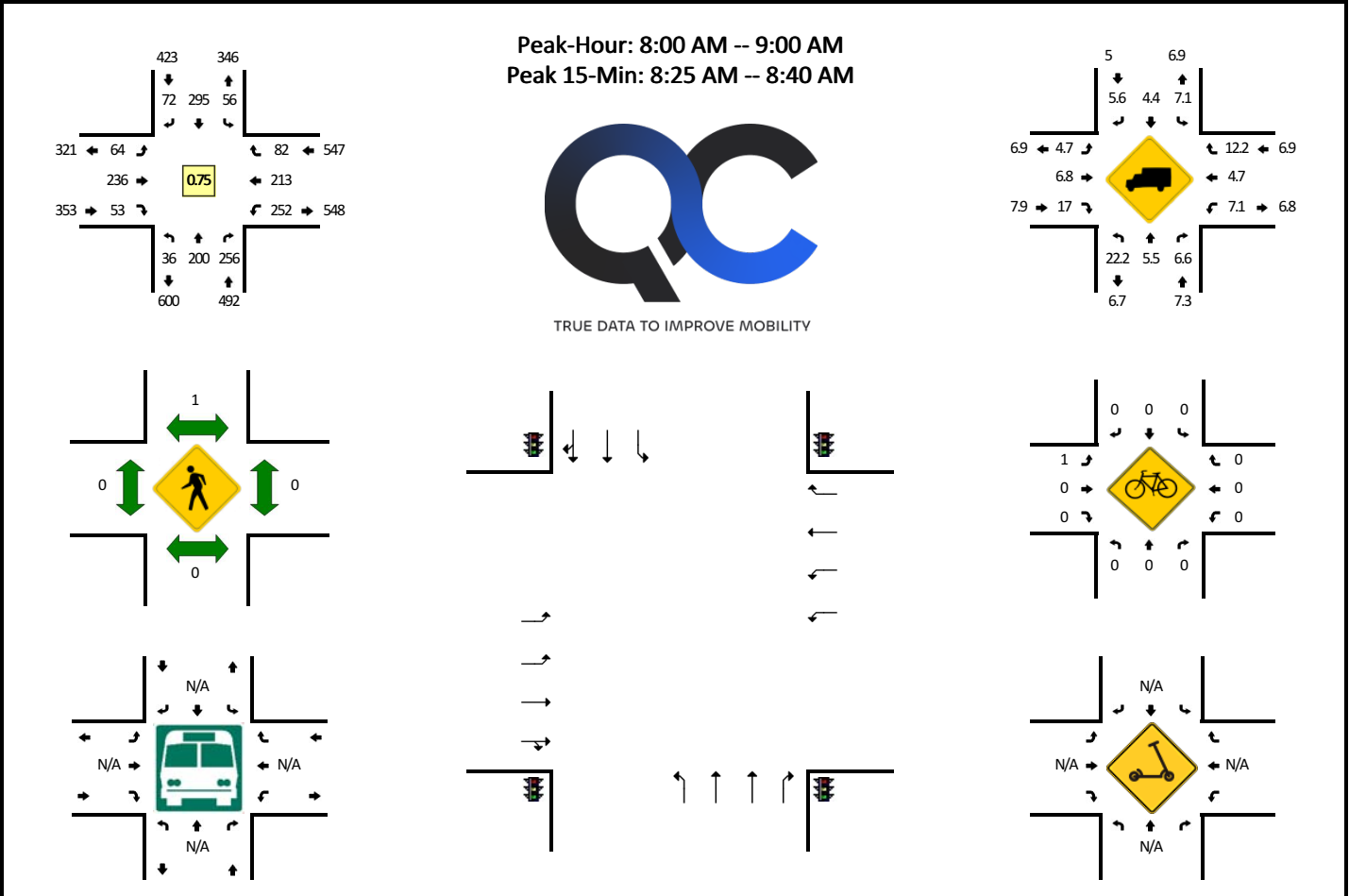


5-Min Count Period Beginning At	NE 192nd Ave (Northbound)				NE 192nd Ave (Southbound)				NE 18th St (Eastbound)				NE 18th St (Westbound)				Total	Hourly Totals	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U			
12:00 PM	40	0	1	0	0	0	0	0	0	0	0	45	0	0	0	0	0	86	
12:05 PM	59	0	0	0	0	0	0	0	0	0	0	44	0	1	0	0	0	104	
12:10 PM	55	0	0	0	0	0	0	0	0	1	1	50	0	0	0	0	0	107	
12:15 PM	39	0	0	0	0	0	0	0	0	0	0	49	0	0	0	0	0	88	
12:20 PM	51	0	1	0	0	0	0	0	0	0	0	46	0	0	0	0	0	98	
12:25 PM	50	0	0	0	0	0	1	0	0	0	0	64	0	0	0	0	0	115	
12:30 PM	46	0	0	0	0	0	0	0	0	0	0	58	0	0	0	0	0	104	
12:35 PM	48	0	0	0	0	0	0	0	0	0	0	62	0	0	0	0	0	110	
12:40 PM	45	0	0	0	0	0	1	0	0	0	0	64	0	0	0	0	0	110	
12:45 PM	54	0	1	0	0	0	0	0	0	0	0	62	0	0	0	0	0	117	
12:50 PM	44	0	0	0	0	0	0	0	0	0	0	46	0	0	0	0	0	90	
12:55 PM	39	0	0	0	0	0	0	0	0	0	0	67	0	0	0	0	0	106	1235
1:00 PM	46	0	0	0	0	0	0	0	0	0	0	57	0	0	0	0	0	103	1252
1:05 PM	62	0	0	0	0	0	0	0	0	0	0	49	0	0	0	0	0	111	1259
1:10 PM	39	0	0	0	0	0	0	0	0	0	0	60	0	0	0	0	0	99	1251
1:15 PM	48	0	0	0	0	0	0	1	0	0	0	49	0	0	0	0	0	98	1261
1:20 PM	60	0	0	0	0	0	0	0	0	0	0	35	0	0	1	0	0	96	1259
1:25 PM	46	0	0	0	0	0	0	0	0	0	0	48	0	0	0	0	0	94	1238
1:30 PM	37	0	0	0	0	0	1	0	0	0	0	50	0	0	0	0	0	88	1222
1:35 PM	33	0	0	0	0	0	0	0	0	0	0	51	0	0	0	0	0	84	1196
1:40 PM	45	0	1	0	0	0	0	0	0	0	1	52	0	0	0	0	0	99	1185
1:45 PM	41	0	0	0	0	0	0	0	0	0	0	60	0	0	0	0	0	101	1169
1:50 PM	51	0	0	0	0	0	0	0	0	0	0	52	0	0	0	0	0	103	1182
1:55 PM	48	0	0	0	0	0	0	0	0	0	0	44	0	0	0	0	0	92	1168
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	588	0	4	0	0	0	4	0	0	0	752	0	0	0	0	0	0	1348	
Heavy Trucks	0	0	0		0	0	0		0	0	4		0	0	0		0	4	
Buses																			
Pedestrians	0	0			0	0			0	0			0	0				0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0			0	
Scoters																		0	

Comments:

LOCATION: NE 192nd Ave -- SE 1st St
CITY/STATE: Vancouver, WA

QC JOB #: 16429701
DATE: Thu, May 16 2024

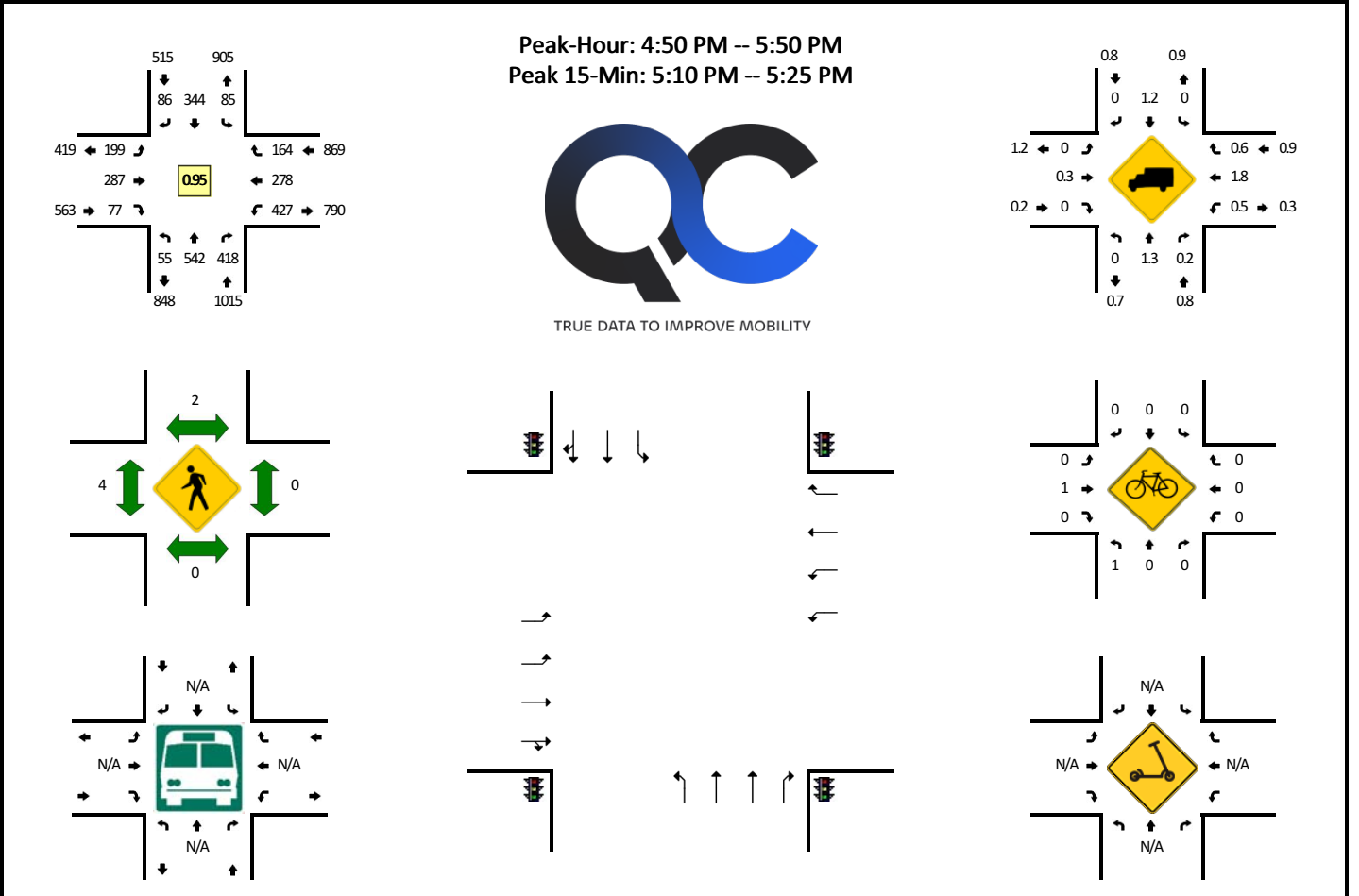


5-Min Count Period Beginning At	NE 192nd Ave (Northbound)				NE 192nd Ave (Southbound)				SE 1st St (Eastbound)				SE 1st St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	13	5	0	2	10	2	0	3	7	3	0	9	10	4	0	68	
7:05 AM	1	14	6	0	0	21	4	0	1	5	4	0	11	8	0	0	75	
7:10 AM	2	13	5	0	4	17	0	0	5	6	2	0	18	14	1	0	87	
7:15 AM	2	15	7	0	6	27	5	0	1	9	1	0	10	13	6	0	102	
7:20 AM	1	17	12	0	2	18	5	0	6	8	7	0	12	10	4	0	102	
7:25 AM	2	18	12	0	3	14	5	0	2	4	5	0	6	11	6	0	88	
7:30 AM	2	14	6	0	1	24	6	0	3	3	2	0	13	5	1	0	80	
7:35 AM	3	9	12	0	5	32	5	0	3	14	3	0	14	7	5	0	112	
7:40 AM	3	9	11	0	3	29	5	0	4	19	6	0	11	9	2	0	111	
7:45 AM	2	14	14	0	5	22	6	0	10	14	6	0	11	18	5	0	127	
7:50 AM	2	17	18	0	5	31	1	0	2	16	3	0	12	10	5	0	122	
7:55 AM	4	20	10	0	4	23	3	0	5	14	6	0	14	13	0	0	116	1190
8:00 AM	4	11	12	0	3	16	3	0	5	22	6	0	13	20	8	0	123	1245
8:05 AM	2	15	19	0	2	13	2	0	5	13	5	0	9	14	5	0	104	1274
8:10 AM	2	18	27	0	6	17	7	0	3	13	3	0	10	9	5	0	120	1307
8:15 AM	1	10	27	0	3	19	3	0	6	15	6	0	18	13	0	0	121	1326
8:20 AM	3	25	22	0	2	24	7	0	7	29	2	0	14	13	5	0	153	1377
8:25 AM	2	19	30	0	6	23	3	0	8	32	7	0	22	21	5	0	178	1467
8:30 AM	6	17	32	0	10	36	6	0	6	37	6	0	25	21	10	0	212	1599
8:35 AM	5	17	33	0	8	41	8	0	6	28	5	0	31	21	11	0	214	1701
8:40 AM	3	16	13	0	4	33	6	0	9	14	2	0	40	27	7	0	174	1764
8:45 AM	2	21	15	0	5	25	10	0	2	10	2	0	19	19	8	0	138	1775
8:50 AM	3	14	8	0	2	25	8	0	4	13	7	0	29	23	6	0	142	1795
8:55 AM	3	17	18	0	5	23	9	0	3	10	2	0	22	12	12	0	136	1815
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	52	212	380	0	96	400	68	0	80	388	72	0	312	252	104	0	2416	
Heavy Trucks	4	8	24		4	24	0		0	28	4		48	20	8		172	
Buses																		
Pedestrians	0	0	0		0	0	0		0	0	0		0	0	0		0	
Bicycles	0	0	0		0	0	0		4	0	0		0	0	0		4	
Scoters																		

Comments:

LOCATION: NE 192nd Ave -- SE 1st St
CITY/STATE: Vancouver, WA

QC JOB #: 16429702
DATE: Thu, May 16 2024

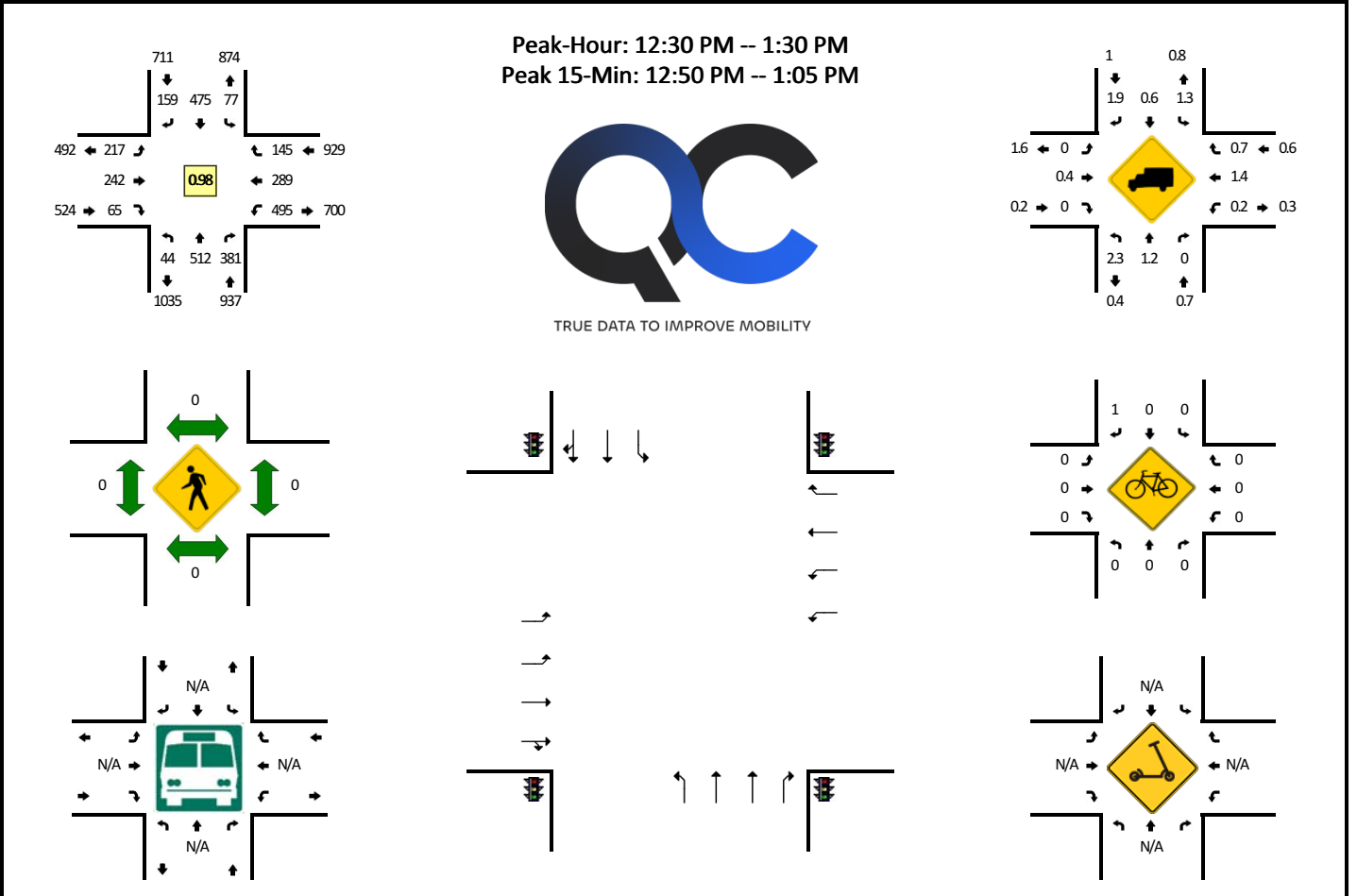


5-Min Count Period Beginning At	NE 192nd Ave (Northbound)				NE 192nd Ave (Southbound)				SE 1st St (Eastbound)				SE 1st St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	1	39	36	0	8	31	5	0	21	15	8	0	29	11	10	0	214	
4:05 PM	4	44	43	0	3	34	11	0	11	14	5	0	39	15	20	0	243	
4:10 PM	5	47	44	0	3	19	6	0	17	29	8	0	43	23	16	0	260	
4:15 PM	10	40	21	0	6	39	6	0	15	28	5	0	28	25	11	0	234	
4:20 PM	7	51	23	0	2	18	4	0	16	24	6	0	54	31	9	0	245	
4:25 PM	2	41	28	0	5	30	11	0	18	22	5	0	27	25	6	0	220	
4:30 PM	9	63	32	0	3	28	5	0	13	28	6	0	37	24	14	0	262	
4:35 PM	3	45	32	0	2	32	11	0	16	23	4	0	36	16	12	0	232	
4:40 PM	3	48	36	0	6	31	4	0	11	14	3	0	37	26	11	0	230	
4:45 PM	5	46	38	0	4	26	6	0	18	22	6	0	30	21	20	0	242	
4:50 PM	5	45	35	0	10	21	4	0	23	19	8	0	28	30	15	0	243	
4:55 PM	4	46	39	0	10	36	10	0	12	13	6	0	30	28	15	0	249	2874
5:00 PM	5	44	29	0	6	20	1	0	21	27	6	0	42	34	7	0	242	2902
5:05 PM	5	54	24	0	3	25	4	0	16	21	9	0	30	15	11	0	217	2876
5:10 PM	5	49	36	0	8	34	13	0	18	30	5	0	36	20	15	0	269	2885
5:15 PM	2	55	43	0	6	32	6	0	11	31	9	0	32	14	18	0	259	2910
5:20 PM	4	27	42	0	5	19	10	0	21	26	6	0	49	31	12	0	252	2917
5:25 PM	5	40	32	0	6	32	7	0	16	33	8	0	29	17	14	0	239	2936
5:30 PM	3	52	34	0	12	38	9	0	8	15	5	0	36	19	5	0	236	2910
5:35 PM	1	35	41	0	8	22	0	0	24	22	1	0	39	22	11	0	226	2904
5:40 PM	7	46	32	0	9	30	12	0	17	28	6	0	29	20	19	0	255	2929
5:45 PM	9	49	31	0	2	35	10	0	12	22	8	0	47	28	22	0	275	2962
5:50 PM	7	26	29	0	3	34	7	0	17	19	10	0	38	18	18	0	226	2945
5:55 PM	7	50	22	0	9	26	6	0	14	23	7	0	22	29	11	0	226	2922
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	44	524	484	0	76	340	116	0	200	348	80	0	468	260	180	0	3120	
Heavy Trucks	0	8	0		0	4	0		0	4	0		0	4	4		24	
Buses																		
Pedestrians		0				4				8				0			12	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scoters																		

Comments:

LOCATION: NE 192nd Ave -- SE 1st St
CITY/STATE: Vancouver, WA

QC JOB #: 16429703
DATE: Sat, May 18 2024



5-Min Count Period Beginning At	NE 192nd Ave (Northbound)				NE 192nd Ave (Southbound)				SE 1st St (Eastbound)				SE 1st St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
12:00 PM	4	41	40	0	5	40	14	0	11	13	4	0	47	23	25	0	267	
12:05 PM	6	44	28	0	4	24	9	0	16	19	5	0	29	31	19	0	234	
12:10 PM	5	49	29	0	2	54	14	0	21	20	3	0	29	23	18	0	267	
12:15 PM	7	45	29	0	5	45	13	0	11	16	3	0	41	23	17	0	255	
12:20 PM	6	37	29	0	6	39	11	0	21	20	4	0	43	28	13	0	257	
12:25 PM	5	45	24	0	3	35	10	0	22	17	4	0	37	12	18	0	232	
12:30 PM	5	53	18	0	9	46	7	0	20	23	2	0	42	36	14	0	275	
12:35 PM	1	45	31	0	4	35	18	0	19	25	5	0	44	20	12	0	259	
12:40 PM	2	42	39	0	3	33	12	0	21	17	7	0	37	22	18	0	253	
12:45 PM	5	51	26	0	6	48	14	0	11	13	2	0	49	21	6	0	252	
12:50 PM	1	38	31	0	5	32	20	0	24	22	6	0	43	20	8	0	250	
12:55 PM	6	50	39	0	6	40	15	0	22	28	8	0	29	19	11	0	273	3074
1:00 PM	5	41	60	0	4	39	17	0	10	9	7	0	38	21	16	0	267	3074
1:05 PM	3	31	25	0	8	31	15	0	20	23	4	0	41	30	14	0	245	3085
1:10 PM	4	50	22	0	11	41	9	0	16	21	6	0	34	25	11	0	250	3068
1:15 PM	7	35	33	0	6	36	8	0	22	24	7	0	42	20	13	0	253	3066
1:20 PM	1	40	29	0	7	57	14	0	18	19	4	0	39	22	11	0	261	3070
1:25 PM	4	36	28	0	8	37	10	0	14	18	7	0	57	33	11	0	263	3101
1:30 PM	4	50	34	0	1	48	12	0	15	21	4	0	41	23	15	0	268	3094
1:35 PM	4	47	49	0	4	28	6	0	17	17	2	0	56	19	17	0	266	3101
1:40 PM	3	40	14	0	9	29	11	0	21	22	5	0	47	22	7	0	230	3078
1:45 PM	9	54	39	0	1	30	5	0	9	20	1	0	49	18	13	0	248	3074
1:50 PM	6	37	40	0	3	27	12	0	12	28	6	0	44	20	22	0	257	3081
1:55 PM	0	47	29	0	2	34	11	0	17	25	6	0	27	19	11	0	228	3036
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	48	516	520	0	60	444	208	0	224	236	84	0	440	240	140	0	3160	
Heavy Trucks	0	8	0		0	0	4		0	4	0		0	0	4		20	
Buses																		
Pedestrians	0	0	0		0	0	0		0	0	0		0	0	0		0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scoters																		

Comments:

Appendix C: Existing HCM Results

HCM 6th TWSC
1: NE 192nd Avenue & NE 18th Street

07/24/2024

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		T			T
Traffic Vol, veh/h	0	4	384	2	2	565
Future Vol, veh/h	0	4	384	2	2	565
Conflicting Peds, #/hr	0	0	0	2	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	71	71	71	71	71	71
Heavy Vehicles, %	0	0	10	0	0	6
Mvmt Flow	0	6	541	3	3	796

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1347	545	0	0	546
Stage 1	545	-	-	-	-
Stage 2	802	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	168	542	-	-	1033
Stage 1	585	-	-	-	-
Stage 2	445	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	167	541	-	-	1031
Mov Cap-2 Maneuver	167	-	-	-	-
Stage 1	584	-	-	-	-
Stage 2	443	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.7	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	541	1031
HCM Lane V/C Ratio	-	-	0.01	0.003
HCM Control Delay (s)	-	-	11.7	8.5
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0	0

Timings

2: NE 192nd Avenue & NE 13th Street

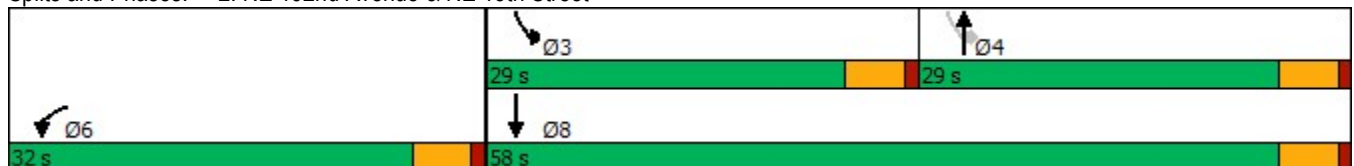
07/24/2024

	↙	↑	↘	↙	↓
Lane Group	WBL	NBT	NBR	SBL	SBT
Lane Configurations	↘	↑	↘	↘	↑
Traffic Volume (vph)	183	221	79	343	247
Future Volume (vph)	183	221	79	343	247
Turn Type	Prot	NA	Perm	D,P+P	NA
Protected Phases	6	4		3	8
Permitted Phases			4	4	
Detector Phase	6	4	4	3	8
Switch Phase					
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	23.0	26.0	26.0	10.0	15.0
Total Split (s)	32.0	29.0	29.0	29.0	58.0
Total Split (%)	35.6%	32.2%	32.2%	32.2%	64.4%
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		Lag	Lag	Lead	
Lead-Lag Optimize?		Yes	Yes	Yes	
Recall Mode	None	Min	Min	None	Min
Act Effct Green (s)	24.3	17.1	17.1	36.0	41.2
Actuated g/C Ratio	0.32	0.23	0.23	0.47	0.54
v/c Ratio	0.88	0.80	0.25	0.87	0.35
Control Delay	42.9	45.0	7.3	31.9	10.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	42.9	45.0	7.3	31.9	10.9
LOS	D	D	A	C	B
Approach Delay	42.9	35.1			23.1
Approach LOS	D	D			C

Intersection Summary

Cycle Length: 90	
Actuated Cycle Length: 75.9	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay: 31.7	Intersection LOS: C
Intersection Capacity Utilization 63.9%	ICU Level of Service B
Analysis Period (min) 15	












Splits and Phases: 2: NE 192nd Avenue & NE 13th Street



HCM 6th Signalized Intersection Summary

2: NE 192nd Avenue & NE 13th Street

07/24/2024

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	183	174	221	79	343	247
Future Volume (veh/h)	183	174	221	79	343	247
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	1885	1767	1737	1826	1767	1841
Adj Flow Rate, veh/h	254	242	307	110	476	343
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72
Percent Heavy Veh, %	1	9	11	5	9	4
Cap, veh/h	274	261	360	321	565	982
Arrive On Green	0.32	0.32	0.21	0.21	0.25	0.53
Sat Flow, veh/h	865	825	1737	1547	1682	1841
Grp Volume(v), veh/h	497	0	307	110	476	343
Grp Sat Flow(s),veh/h/ln	1693	0	1737	1547	1682	1841
Q Serve(g_s), s	19.0	0.0	11.4	4.1	14.3	7.1
Cycle Q Clear(g_c), s	19.0	0.0	11.4	4.1	14.3	7.1
Prop In Lane	0.51	0.49		1.00	1.00	
Lane Grp Cap(c), veh/h	536	0	360	321	565	982
V/C Ratio(X)	0.93	0.00	0.85	0.34	0.84	0.35
Avail Cap(c_a), veh/h	685	0	624	556	746	1461
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.1	0.0	25.5	22.6	15.0	8.9
Incr Delay (d2), s/veh	14.6	0.0	2.2	0.2	5.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.1	0.0	4.5	1.4	5.3	2.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	36.6	0.0	27.7	22.8	20.3	9.0
LnGrp LOS	D	A	C	C	C	A
Approach Vol, veh/h	497		417			819
Approach Delay, s/veh	36.6		26.4			15.6
Approach LOS	D		C			B
Timer - Assigned Phs			3	4		6
Phs Duration (G+Y+Rc), s			21.8	18.9		26.2
Change Period (Y+Rc), s			5.0	5.0		5.0
Max Green Setting (Gmax), s			24.0	24.0		27.0
Max Q Clear Time (g_c+I1), s			16.3	13.4		21.0
Green Ext Time (p_c), s			0.5	0.5		0.2
Intersection Summary						
HCM 6th Ctrl Delay			24.2			
HCM 6th LOS			C			

HCM 6th TWSC
 3: NE 192nd Avenue & Driveway/NE 11th Street

07/24/2024

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	0	0	5	0	6	15	294	2	1	414	15
Future Vol, veh/h	2	0	0	5	0	6	15	294	2	1	414	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	75	75	75	75	75	75	75	75	75	75	75
Heavy Vehicles, %	0	0	0	0	0	0	7	9	0	0	3	7
Mvmt Flow	3	0	0	7	0	8	20	392	3	1	552	20

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1002	999	562	998	1008	394	572	0	0	395	0	0
Stage 1	564	564	-	434	434	-	-	-	-	-	-	-
Stage 2	438	435	-	564	574	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.17	-	-	4.1	-	-
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	3.5	4	3.3	3.5	4	3.3	2.263	-	-	2.2	-	-
Pot Cap-1 Maneuver	223	245	530	224	242	659	976	-	-	1175	-	-
Stage 1	514	512	-	604	585	-	-	-	-	-	-	-
Stage 2	601	584	-	514	506	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	216	238	530	219	235	659	976	-	-	1175	-	-
Mov Cap-2 Maneuver	216	238	-	219	235	-	-	-	-	-	-	-
Stage 1	501	511	-	588	570	-	-	-	-	-	-	-
Stage 2	578	569	-	513	505	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	21.9		15.9		0.4		0	
HCM LOS	C		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	976	-	-	216	344	1175	-	-
HCM Lane V/C Ratio	0.02	-	-	0.012	0.043	0.001	-	-
HCM Control Delay (s)	8.8	0	-	21.9	15.9	8.1	0	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	0.1	0	-	-

HCM 6th TWSC
4: NE 192nd Avenue & NE 9th Street

07/24/2024

Intersection												
Int Delay, s/veh	0.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	0	5	1	0	1	5	310	1	0	418	5
Future Vol, veh/h	5	0	5	1	0	1	5	310	1	0	418	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	75	75	75	75	75	75	75	75	75	75	75
Heavy Vehicles, %	0	0	40	0	0	0	40	9	0	0	3	40
Mvmt Flow	7	0	7	1	0	1	7	413	1	0	557	7

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	989	989	561	992	992	414	564	0	0	414	0	0
Stage 1	561	561	-	428	428	-	-	-	-	-	-	-
Stage 2	428	428	-	564	564	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.6	7.1	6.5	6.2	4.5	-	-	4.1	-	-
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	3.5	4	3.66	3.5	4	3.3	2.56	-	-	2.2	-	-
Pot Cap-1 Maneuver	228	249	461	227	248	643	843	-	-	1156	-	-
Stage 1	516	513	-	609	588	-	-	-	-	-	-	-
Stage 2	609	588	-	514	512	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	226	246	461	222	245	643	843	-	-	1156	-	-
Mov Cap-2 Maneuver	226	246	-	222	245	-	-	-	-	-	-	-
Stage 1	510	513	-	602	582	-	-	-	-	-	-	-
Stage 2	601	582	-	507	512	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	17.4		16		0.1		0	
HCM LOS	C		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	843	-	-	303	330	1156	-	-
HCM Lane V/C Ratio	0.008	-	-	0.044	0.008	-	-	-
HCM Control Delay (s)	9.3	0	-	17.4	16	0	-	-
HCM Lane LOS	A	A	-	C	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-

HCM 6th TWSC
5: NE 192nd Avenue & NE 6th Street

07/24/2024

Intersection												
Int Delay, s/veh	0.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	1	0	13	3	0	1	6	310	2	0	423	5
Future Vol, veh/h	1	0	13	3	0	1	6	310	2	0	423	5
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	74	74	74	74	74	74	74	74	74	74	74	74
Heavy Vehicles, %	0	0	39	0	0	0	0	9	0	0	3	0
Mvmt Flow	1	0	18	4	0	1	8	419	3	0	572	7

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1014	1014	576	1022	1016	422	579	0	0	422	0	0
Stage 1	576	576	-	437	437	-	-	-	-	-	-	-
Stage 2	438	438	-	585	579	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.59	7.1	6.5	6.2	4.1	-	-	4.1	-	-
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	3.5	4	3.651	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	219	240	454	216	240	636	1005	-	-	1148	-	-
Stage 1	506	505	-	602	583	-	-	-	-	-	-	-
Stage 2	601	582	-	501	504	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	217	238	454	206	238	635	1005	-	-	1148	-	-
Mov Cap-2 Maneuver	217	238	-	206	238	-	-	-	-	-	-	-
Stage 1	501	505	-	596	577	-	-	-	-	-	-	-
Stage 2	593	576	-	482	504	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14	19.8	0.2	0
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1005	-	-	421	248	1148	-
HCM Lane V/C Ratio	0.008	-	-	0.045	0.022	-	-
HCM Control Delay (s)	8.6	0	-	14	19.8	0	-
HCM Lane LOS	A	A	-	B	C	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	-

Timings

6: NE 192nd Avenue & NE 3rd Street

07/24/2024

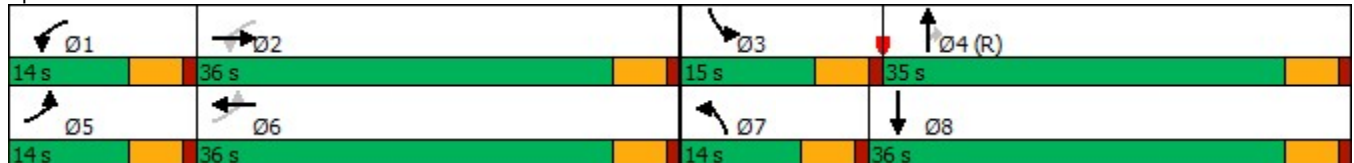


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations	↖	↗	↖	↗	↖	↕	↗	↖	↕
Traffic Volume (vph)	1	1	70	2	5	227	50	94	349
Future Volume (vph)	1	1	70	2	5	227	50	94	349
Turn Type	D.P+P	NA	D.P+P	NA	Prot	NA	Perm	Prot	NA
Protected Phases	5	2	1	6	7	4		3	8
Permitted Phases	6		2				4		
Detector Phase	5	2	1	6	7	4	4	3	8
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	15.0	15.0	5.0	15.0
Minimum Split (s)	10.0	34.0	10.0	34.0	10.0	28.0	28.0	10.0	28.0
Total Split (s)	14.0	36.0	14.0	36.0	14.0	35.0	35.0	15.0	36.0
Total Split (%)	14.0%	36.0%	14.0%	36.0%	14.0%	35.0%	35.0%	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	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Min	C-Min	None	Min
Act Effct Green (s)	10.7	5.3	10.8	9.7	5.4	61.6	61.6	11.7	76.0
Actuated g/C Ratio	0.11	0.05	0.11	0.10	0.05	0.62	0.62	0.12	0.76
v/c Ratio	0.01	0.10	0.50	0.47	0.10	0.15	0.07	0.60	0.18
Control Delay	33.0	30.3	48.2	15.0	45.4	6.4	1.4	53.4	5.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.0	30.3	48.2	15.0	45.4	6.4	1.4	53.4	5.1
LOS	C	C	D	B	D	A	A	D	A
Approach Delay		30.6		29.9		6.2			15.3
Approach LOS		C		C		A			B

Intersection Summary























Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 95 (95%), Referenced to phase 4:NBT, Start of Green
 Natural Cycle: 85
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.60
 Intersection Signal Delay: 15.1
 Intersection LOS: B
 Intersection Capacity Utilization 40.8%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 6: NE 192nd Avenue & NE 3rd Street



HCM 6th Signalized Intersection Summary
6: NE 192nd Avenue & NE 3rd Street

07/24/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	1	5	70	2	84	5	227	50	94	349	1
Future Volume (veh/h)	1	1	5	70	2	84	5	227	50	94	349	1
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	1604	1856	1900	1767	1307	1767	1870	1900	1826	1900
Adj Flow Rate, veh/h	1	1	7	95	3	114	7	307	68	127	472	1
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Percent Heavy Veh, %	0	0	20	3	0	9	40	9	2	0	5	0
Cap, veh/h	105	6	42	224	4	149	11	2073	979	157	2469	5
Arrive On Green	0.00	0.03	0.03	0.07	0.09	0.09	0.02	1.00	1.00	0.09	0.70	0.70
Sat Flow, veh/h	1810	205	1436	1767	41	1575	1245	3357	1585	1810	3552	8
Grp Volume(v), veh/h	1	0	8	95	0	117	7	307	68	127	231	242
Grp Sat Flow(s),veh/h/ln	1810	0	1641	1767	0	1616	1245	1678	1585	1810	1735	1825
Q Serve(g_s), s	0.0	0.0	0.5	5.1	0.0	7.1	0.6	0.0	0.0	6.9	4.7	4.7
Cycle Q Clear(g_c), s	0.0	0.0	0.5	5.1	0.0	7.1	0.6	0.0	0.0	6.9	4.7	4.7
Prop In Lane	1.00		0.88	1.00		0.97	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	105	0	48	224	0	153	11	2073	979	157	1206	1269
V/C Ratio(X)	0.01	0.00	0.17	0.42	0.00	0.77	0.64	0.15	0.07	0.81	0.19	0.19
Avail Cap(c_a), veh/h	266	0	509	266	0	501	112	2073	979	181	1206	1269
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(l)	1.00	0.00	1.00	1.00	0.00	1.00	0.98	0.98	0.98	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.1	0.0	47.3	43.2	0.0	44.2	49.0	0.0	0.0	44.9	5.4	5.4
Incr Delay (d2), s/veh	0.0	0.0	0.6	0.5	0.0	3.0	20.1	0.1	0.1	18.4	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(50%),veh/ln	0.0	0.0	0.2	2.3	0.0	2.9	0.2	0.0	0.0	3.9	1.5	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.2	0.0	47.9	43.7	0.0	47.2	69.0	0.1	0.1	63.2	5.4	5.4
LnGrp LOS	D	A	D	D	A	D	E	A	A	E	A	A
Approach Vol, veh/h		9			212			382			600	
Approach Delay, s/veh		47.2			45.6			1.4			17.6	
Approach LOS		D			D			A			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.6	7.9	13.7	66.8	5.1	14.5	5.9	74.5				
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	9.0	31.0	10.0	30.0	9.0	31.0	9.0	31.0				
Max Q Clear Time (g_c+I1), s	7.1	2.5	8.9	2.0	2.0	9.1	2.6	6.7				
Green Ext Time (p_c), s	0.0	0.0	0.0	1.3	0.0	0.4	0.0	1.8				
Intersection Summary												
HCM 6th Ctrl Delay				17.6								
HCM 6th LOS				B								

Timings

7: NE 192nd Avenue & SE 1st Street

07/24/2024

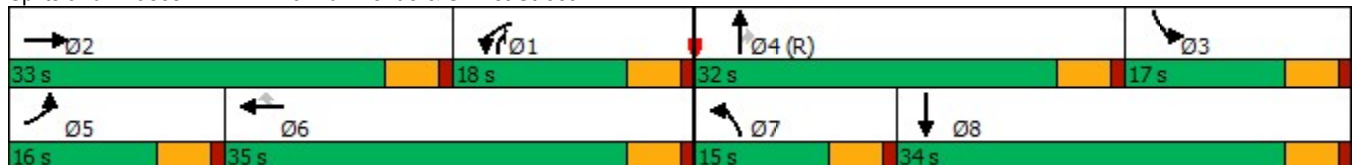


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations	↔↔	↕↕	↔↔	↕	↕	↔	↕↕	↕	↔	↕↕
Traffic Volume (vph)	64	236	252	213	82	36	200	256	56	295
Future Volume (vph)	64	236	252	213	82	36	200	256	56	295
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA
Protected Phases	5	2	1	6		7	4	1	3	8
Permitted Phases					6			4		
Detector Phase	5	2	1	6	6	7	4	1	3	8
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	5.0	5.0	5.0	15.0	5.0	5.0	15.0
Minimum Split (s)	10.0	33.0	10.0	30.0	30.0	10.0	32.0	10.0	10.0	32.0
Total Split (s)	16.0	33.0	18.0	35.0	35.0	15.0	32.0	18.0	17.0	34.0
Total Split (%)	16.0%	33.0%	18.0%	35.0%	35.0%	15.0%	32.0%	18.0%	17.0%	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	Lead	Lag	Lag	Lag	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Min	None	None	Min
Act Effct Green (s)	6.2	14.8	13.9	24.5	24.5	7.0	43.4	62.3	9.9	48.3
Actuated g/C Ratio	0.06	0.15	0.14	0.24	0.24	0.07	0.43	0.62	0.10	0.48
v/c Ratio	0.41	0.77	0.74	0.64	0.22	0.46	0.18	0.32	0.45	0.30
Control Delay	50.9	48.6	51.3	40.8	1.2	58.3	21.0	2.4	51.6	19.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.9	48.6	51.3	40.8	1.2	58.3	21.0	2.4	51.6	19.0
LOS	D	D	D	D	A	E	C	A	D	B
Approach Delay		49.0		39.7			14.1			23.4
Approach LOS		D		D			B			C

Intersection Summary




























Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 86 (86%), Referenced to phase 4:NBT, Start of Green
 Natural Cycle: 85
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.77
 Intersection Signal Delay: 30.8
 Intersection LOS: C
 Intersection Capacity Utilization 49.0%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 7: NE 192nd Avenue & SE 1st Street



HCM 6th Signalized Intersection Summary
 7: NE 192nd Avenue & SE 1st Street

07/24/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 				 			 	
Traffic Volume (veh/h)	64	236	53	252	213	82	36	200	256	56	295	72
Future Volume (veh/h)	64	236	53	252	213	82	36	200	256	56	295	72
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	1826	1796	1648	1796	1826	1722	1574	1811	1796	1796	1841	1811
Adj Flow Rate, veh/h	85	315	71	336	284	109	48	267	341	75	393	96
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Percent Heavy Veh, %	5	7	17	7	5	12	22	6	7	7	4	6
Cap, veh/h	153	392	87	397	393	314	57	516	410	666	1399	338
Arrive On Green	0.05	0.14	0.14	0.12	0.22	0.22	0.04	0.15	0.15	0.39	0.50	0.50
Sat Flow, veh/h	3374	2775	617	3319	1826	1457	1499	3441	1522	1711	2793	675
Grp Volume(v), veh/h	85	192	194	336	284	109	48	267	341	75	245	244
Grp Sat Flow(s),veh/h/ln	1687	1706	1685	1659	1826	1457	1499	1721	1522	1711	1749	1719
Q Serve(g_s), s	2.5	10.9	11.2	9.9	14.5	2.4	3.2	7.2	9.1	2.8	8.1	8.3
Cycle Q Clear(g_c), s	2.5	10.9	11.2	9.9	14.5	2.4	3.2	7.2	9.1	2.8	8.1	8.3
Prop In Lane	1.00		0.37	1.00		1.00	1.00		1.00	1.00		0.39
Lane Grp Cap(c), veh/h	153	241	238	397	393	314	57	516	410	666	876	861
V/C Ratio(X)	0.56	0.80	0.82	0.85	0.72	0.35	0.84	0.52	0.83	0.11	0.28	0.28
Avail Cap(c_a), veh/h	371	478	472	431	548	437	150	929	593	666	876	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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.98	0.98	0.98
Uniform Delay (d), s/veh	46.8	41.6	41.7	43.1	36.4	4.7	47.8	39.2	34.4	19.5	14.5	14.5
Incr Delay (d2), s/veh	1.2	2.3	2.6	12.5	1.3	0.2	11.3	3.7	17.5	0.0	0.1	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(50%),veh/ln	1.1	4.7	4.8	4.7	6.5	2.1	1.3	3.2	9.4	1.1	3.0	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.9	43.9	44.3	55.7	37.8	5.0	59.1	42.8	51.9	19.5	14.5	14.6
LnGrp LOS	D	D	D	E	D	A	E	D	D	B	B	B
Approach Vol, veh/h		471			729			656			564	
Approach Delay, s/veh		44.8			41.1			48.7			15.2	
Approach LOS		D			D			D			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.0	19.1	43.9	20.0	9.5	26.5	8.8	55.1				
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	13.0	28.0	12.0	27.0	11.0	30.0	10.0	29.0				
Max Q Clear Time (g_c+I1), s	11.9	13.2	4.8	11.1	4.5	16.5	5.2	10.3				
Green Ext Time (p_c), s	0.0	0.7	0.0	0.7	0.0	0.6	0.0	0.9				
Intersection Summary												
HCM 6th Ctrl Delay				37.9								
HCM 6th LOS				D								

HCM 6th TWSC
1: NE 192nd Avenue & NE 18th Street

07/24/2024

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	TT		T			T
Traffic Vol, veh/h	0	2	705	2	3	549
Future Vol, veh/h	0	2	705	2	3	549
Conflicting Peds, #/hr	0	0	0	2	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	0	4	50	0	1
Mvmt Flow	0	2	750	2	3	584

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1343	753	0	0	754
Stage 1	753	-	-	-	-
Stage 2	590	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	169	413	-	-	865
Stage 1	469	-	-	-	-
Stage 2	558	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	168	412	-	-	863
Mov Cap-2 Maneuver	168	-	-	-	-
Stage 1	468	-	-	-	-
Stage 2	555	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.8	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	412	863
HCM Lane V/C Ratio	-	-	0.005	0.004
HCM Control Delay (s)	-	-	13.8	9.2
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0	0

Timings

2: NE 192nd Avenue & NE 13th Street

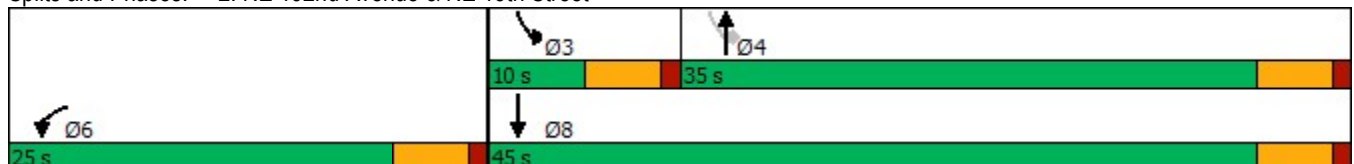
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	↙	↑	↘	↙	↓
Lane Group	WBL	NBT	NBR	SBL	SBT
Lane Configurations	↘	↑	↘	↘	↑
Traffic Volume (vph)	151	551	159	185	352
Future Volume (vph)	151	551	159	185	352
Turn Type	Prot	NA	Perm	D,P+P	NA
Protected Phases	6	4		3	8
Permitted Phases			4	4	
Detector Phase	6	4	4	3	8
Switch Phase					
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	23.0	26.0	26.0	10.0	15.0
Total Split (s)	25.0	35.0	35.0	10.0	45.0
Total Split (%)	35.7%	50.0%	50.0%	14.3%	64.3%
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		Lag	Lag	Lead	
Lead-Lag Optimize?		Yes	Yes	Yes	
Recall Mode	None	Min	Min	None	Min
Act Effct Green (s)	13.0	20.4	20.4	25.6	30.9
Actuated g/C Ratio	0.24	0.37	0.37	0.47	0.57
v/c Ratio	0.80	0.84	0.25	0.63	0.35
Control Delay	29.0	28.3	3.5	18.8	8.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	29.0	28.3	3.5	18.8	8.1
LOS	C	C	A	B	A
Approach Delay	29.0	22.8			11.8
Approach LOS	C	C			B

Intersection Summary












Cycle Length: 70
 Actuated Cycle Length: 54.5
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.84
 Intersection Signal Delay: 20.5
 Intersection LOS: C
 Intersection Capacity Utilization 72.4%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 2: NE 192nd Avenue & NE 13th Street



HCM 6th Signalized Intersection Summary
 2: NE 192nd Avenue & NE 13th Street

07/24/2024

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	151	200	551	159	185	352
Future Volume (veh/h)	151	200	551	159	185	352
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	1885	1826	1870	1841	1870	1885
Adj Flow Rate, veh/h	161	213	586	169	197	374
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	5	2	4	2	1
Cap, veh/h	184	243	663	553	357	1036
Arrive On Green	0.26	0.26	0.35	0.35	0.10	0.55
Sat Flow, veh/h	720	953	1870	1560	1781	1885
Grp Volume(v), veh/h	375	0	586	169	197	374
Grp Sat Flow(s),veh/h/ln	1678	0	1870	1560	1781	1885
Q Serve(g_s), s	11.0	0.0	15.1	4.0	3.5	5.7
Cycle Q Clear(g_c), s	11.0	0.0	15.1	4.0	3.5	5.7
Prop In Lane	0.43	0.57		1.00	1.00	
Lane Grp Cap(c), veh/h	428	0	663	553	357	1036
V/C Ratio(X)	0.88	0.00	0.88	0.31	0.55	0.36
Avail Cap(c_a), veh/h	655	0	1095	913	357	1471
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.3	0.0	15.5	12.0	11.5	6.5
Incr Delay (d2), s/veh	5.8	0.0	2.8	0.1	1.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	0.0	5.5	1.1	1.1	1.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	24.1	0.0	18.4	12.1	12.6	6.6
LnGrp LOS	C	A	B	B	B	A
Approach Vol, veh/h	375		755			571
Approach Delay, s/veh	24.1		17.0			8.7
Approach LOS	C		B			A
Timer - Assigned Phs			3	4		6
Phs Duration (G+Y+Rc), s			10.0	23.2		18.1
Change Period (Y+Rc), s			5.0	5.0		5.0
Max Green Setting (Gmax), s			5.0	30.0		20.0
Max Q Clear Time (g_c+I1), s			5.5	17.1		13.0
Green Ext Time (p_c), s			0.0	1.1		0.2
Intersection Summary						
HCM 6th Ctrl Delay			15.7			
HCM 6th LOS			B			

HCM 6th TWSC
 3: NE 192nd Avenue & Driveway/NE 11th Street

07/24/2024

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	7	0	14	3	0	6	3	671	6	5	516	4
Future Vol, veh/h	7	0	14	3	0	6	3	671	6	5	516	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	1	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	1	0	0	1	0
Mvmt Flow	8	0	15	3	0	7	3	729	7	5	561	4

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1315	1316	563	1321	1315	734	565	0	0	737	0	0
Stage 1	573	573	-	740	740	-	-	-	-	-	-	-
Stage 2	742	743	-	581	575	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
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	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	136	159	530	135	159	423	1017	-	-	878	-	-
Stage 1	508	507	-	412	426	-	-	-	-	-	-	-
Stage 2	411	425	-	503	506	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	133	157	530	130	157	423	1017	-	-	877	-	-
Mov Cap-2 Maneuver	133	157	-	130	157	-	-	-	-	-	-	-
Stage 1	505	503	-	410	423	-	-	-	-	-	-	-
Stage 2	403	422	-	485	502	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	19.8	20.5	0	0.1
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1017	-	-	266	242	877	-
HCM Lane V/C Ratio	0.003	-	-	0.086	0.04	0.006	-
HCM Control Delay (s)	8.6	0	-	19.8	20.5	9.1	0
HCM Lane LOS	A	A	-	C	C	A	A
HCM 95th %tile Q(veh)	0	-	-	0.3	0.1	0	-

HCM 6th TWSC
4: NE 192nd Avenue & NE 9th Street

07/24/2024

Intersection												
Int Delay, s/veh	0.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	5	0	5	1	0	1	5	680	1	1	526	5
Future Vol, veh/h	5	0	5	1	0	1	5	680	1	1	526	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	40	0	40	0	0	0	40	3	0	0	3	40
Mvmt Flow	5	0	5	1	0	1	5	739	1	1	572	5

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1327	1327	575	1329	1329	740	577	0	0	740	0	0
Stage 1	577	577	-	750	750	-	-	-	-	-	-	-
Stage 2	750	750	-	579	579	-	-	-	-	-	-	-
Critical Hdwy	7.5	6.5	6.6	7.1	6.5	6.2	4.5	-	-	4.1	-	-
Critical Hdwy Stg 1	6.5	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.5	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.86	4	3.66	3.5	4	3.3	2.56	-	-	2.2	-	-
Pot Cap-1 Maneuver	110	157	453	133	156	420	833	-	-	876	-	-
Stage 1	441	505	-	407	422	-	-	-	-	-	-	-
Stage 2	350	422	-	504	504	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	109	155	453	130	154	420	833	-	-	876	-	-
Mov Cap-2 Maneuver	109	155	-	130	154	-	-	-	-	-	-	-
Stage 1	437	504	-	403	418	-	-	-	-	-	-	-
Stage 2	346	418	-	497	503	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	26.8		23.3		0.1		0	
HCM LOS	D		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	833	-	-	176	199	876	-	-
HCM Lane V/C Ratio	0.007	-	-	0.062	0.011	0.001	-	-
HCM Control Delay (s)	9.3	0	-	26.8	23.3	9.1	0	-
HCM Lane LOS	A	A	-	D	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0	0	-	-

HCM 6th TWSC
5: NE 192nd Avenue & NE 6th Street

07/24/2024

Intersection												
Int Delay, s/veh	0.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	0	13	1	0	2	9	680	2	2	536	7
Future Vol, veh/h	5	0	13	1	0	2	9	680	2	2	536	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	1	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	0	23	0	0	0	44	1	0	0	1	43
Mvmt Flow	5	0	14	1	0	2	10	731	2	2	576	8

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1337	1338	580	1344	1341	733	584	0	0	734	0	0
Stage 1	584	584	-	753	753	-	-	-	-	-	-	-
Stage 2	753	754	-	591	588	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.43	7.1	6.5	6.2	4.54	-	-	4.1	-	-
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	3.5	4	3.507	3.5	4	3.3	2.596	-	-	2.2	-	-
Pot Cap-1 Maneuver	132	154	477	130	154	424	814	-	-	880	-	-
Stage 1	501	501	-	405	420	-	-	-	-	-	-	-
Stage 2	405	420	-	497	499	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	129	150	477	124	150	424	814	-	-	879	-	-
Mov Cap-2 Maneuver	129	150	-	124	150	-	-	-	-	-	-	-
Stage 1	490	499	-	396	411	-	-	-	-	-	-	-
Stage 2	394	411	-	481	498	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB			
HCM Control Delay, s	19.2		20.5		0.1		0			
HCM LOS	C		C							

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	814	-	-	273	235	879	-	-
HCM Lane V/C Ratio	0.012	-	-	0.071	0.014	0.002	-	-
HCM Control Delay (s)	9.5	0	-	19.2	20.5	9.1	0	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0	0	-	-

Timings

6: NE 192nd Avenue & NE 3rd Street

07/24/2024

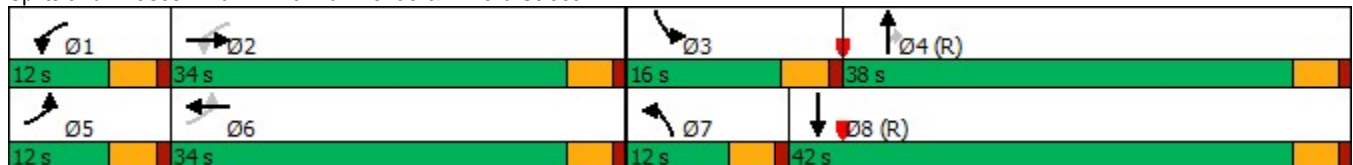


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations	↖	↗	↖	↗	↖	↑↑	↗	↖	↑↑
Traffic Volume (vph)	3	1	119	1	1	520	74	146	412
Future Volume (vph)	3	1	119	1	1	520	74	146	412
Turn Type	D.P+P	NA	D.P+P	NA	Prot	NA	Perm	Prot	NA
Protected Phases	5	2	1	6	7	4		3	8
Permitted Phases	6		2				4		
Detector Phase	5	2	1	6	7	4	4	3	8
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	15.0	15.0	5.0	15.0
Minimum Split (s)	9.5	33.5	9.5	33.5	9.5	27.5	27.5	9.5	27.5
Total Split (s)	12.0	34.0	12.0	34.0	12.0	38.0	38.0	16.0	42.0
Total Split (%)	12.0%	34.0%	12.0%	34.0%	12.0%	38.0%	38.0%	16.0%	42.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
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)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Min	C-Min	None	C-Min
Act Effct Green (s)	12.4	5.1	12.4	11.4	5.0	59.8	59.8	13.3	75.8
Actuated g/C Ratio	0.12	0.05	0.12	0.11	0.05	0.60	0.60	0.13	0.76
v/c Ratio	0.02	0.06	0.57	0.47	0.01	0.26	0.08	0.65	0.16
Control Delay	32.7	32.4	48.9	12.0	46.0	7.2	2.2	53.1	4.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.7	32.4	48.9	12.0	46.0	7.2	2.2	53.1	4.9
LOS	C	C	D	B	D	A	A	D	A
Approach Delay		32.5		29.0		6.7			17.5
Approach LOS		C		C		A			B

Intersection Summary























Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 87 (87%), Referenced to phase 4:NBT and 8:SBT, Start of Green
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.65
 Intersection Signal Delay: 15.1
 Intersection Capacity Utilization 47.8%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service A

Splits and Phases: 6: NE 192nd Avenue & NE 3rd Street



HCM 6th Signalized Intersection Summary
6: NE 192nd Avenue & NE 3rd Street

07/24/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	1	4	119	1	138	1	520	74	146	412	1
Future Volume (veh/h)	3	1	4	119	1	138	1	520	74	146	412	1
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	1900	1900	1900	1885	1900	1900	1900	1885	1900	1900	1885	1900
Adj Flow Rate, veh/h	3	1	4	127	1	147	1	553	79	155	438	1
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	0	0	1	0	0	0	1	0	0	1	0
Cap, veh/h	111	14	58	265	1	183	2	2144	964	186	2566	6
Arrive On Green	0.00	0.04	0.04	0.08	0.11	0.11	0.00	1.00	1.00	0.10	0.70	0.70
Sat Flow, veh/h	1810	332	1329	1795	11	1601	1810	3582	1610	1810	3666	8
Grp Volume(v), veh/h	3	0	5	127	0	148	1	553	79	155	214	225
Grp Sat Flow(s),veh/h/ln	1810	0	1661	1795	0	1612	1810	1791	1610	1810	1791	1883
Q Serve(g_s), s	0.1	0.0	0.3	6.7	0.0	9.0	0.1	0.0	0.0	8.4	4.1	4.1
Cycle Q Clear(g_c), s	0.1	0.0	0.3	6.7	0.0	9.0	0.1	0.0	0.0	8.4	4.1	4.1
Prop In Lane	1.00		0.80	1.00		0.99	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	111	0	72	265	0	185	2	2144	964	186	1254	1318
V/C Ratio(X)	0.03	0.00	0.07	0.48	0.00	0.80	0.40	0.26	0.08	0.83	0.17	0.17
Avail Cap(c_a), veh/h	239	0	490	265	0	475	136	2144	964	208	1254	1318
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(l)	1.00	0.00	1.00	1.00	0.00	1.00	0.90	0.90	0.90	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.3	0.0	45.9	41.8	0.0	43.2	49.8	0.0	0.0	44.0	5.1	5.1
Incr Delay (d2), s/veh	0.0	0.0	0.1	0.5	0.0	3.0	31.7	0.3	0.2	20.1	0.3	0.3
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(50%),veh/ln	0.1	0.0	0.1	3.0	0.0	3.7	0.0	0.1	0.0	4.8	1.4	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.3	0.0	46.0	42.3	0.0	46.2	81.5	0.3	0.2	64.2	5.4	5.4
LnGrp LOS	D	A	D	D	A	D	F	A	A	E	A	A
Approach Vol, veh/h		8			275			633				594
Approach Delay, s/veh		43.5			44.4			0.4				20.7
Approach LOS		D			D			A				C
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.0	8.9	14.8	64.4	4.9	16.0	4.6	74.5				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	7.5	29.5	11.5	33.5	7.5	29.5	7.5	37.5				
Max Q Clear Time (g_c+I1), s	8.7	2.3	10.4	2.0	2.1	11.0	2.1	6.1				
Green Ext Time (p_c), s	0.0	0.0	0.0	2.5	0.0	0.5	0.0	1.7				
Intersection Summary												
HCM 6th Ctrl Delay				16.6								
HCM 6th LOS				B								

Timings

7: NE 192nd Avenue & SE 1st Street

07/24/2024

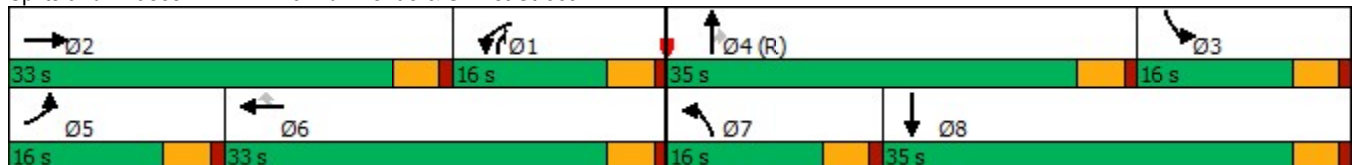


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations	↔↔	↕↕	↔↔	↕	↕	↔	↕↕	↕	↔	↕↕
Traffic Volume (vph)	199	284	427	278	164	55	542	418	85	344
Future Volume (vph)	199	284	427	278	164	55	542	418	85	344
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA
Protected Phases	5	2	1	6		7	4	1	3	8
Permitted Phases					6			4		
Detector Phase	5	2	1	6	6	7	4	1	3	8
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	5.0	5.0	5.0	15.0	5.0	5.0	15.0
Minimum Split (s)	9.5	32.5	9.5	29.5	29.5	9.5	31.5	9.5	9.5	31.5
Total Split (s)	16.0	33.0	16.0	33.0	33.0	16.0	35.0	16.0	16.0	35.0
Total Split (%)	16.0%	33.0%	16.0%	33.0%	33.0%	16.0%	35.0%	16.0%	16.0%	35.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
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	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lead	Lag	Lag	Lag	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Min	None	None	Min
Act Effct Green (s)	9.4	13.8	20.2	24.7	24.7	7.0	39.9	64.6	10.0	42.9
Actuated g/C Ratio	0.09	0.14	0.20	0.25	0.25	0.07	0.40	0.65	0.10	0.43
v/c Ratio	0.64	0.75	0.64	0.64	0.33	0.46	0.40	0.38	0.49	0.30
Control Delay	52.4	47.1	41.5	41.0	6.6	56.1	24.2	3.9	55.7	23.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.4	47.1	41.5	41.0	6.6	56.1	24.2	3.9	55.7	23.0
LOS	D	D	D	D	A	E	C	A	E	C
Approach Delay		49.0		34.7			17.6			28.4
Approach LOS		D		C			B			C

Intersection Summary

Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 77 (77%), Referenced to phase 4:NBT, Start of Green
 Natural Cycle: 85
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.75
 Intersection Signal Delay: 30.4
 Intersection LOS: C
 Intersection Capacity Utilization 57.2%
 ICU Level of Service B
 Analysis Period (min) 15





























Splits and Phases: 7: NE 192nd Avenue & SE 1st Street



HCM 6th Signalized Intersection Summary

7: NE 192nd Avenue & SE 1st Street

07/24/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 				 			 	
Traffic Volume (veh/h)	199	284	77	427	278	164	55	542	418	85	344	86
Future Volume (veh/h)	199	284	77	427	278	164	55	542	418	85	344	86
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		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	1885	1900	1885	1870	1885	1900	1885	1900	1900	1885	1900
Adj Flow Rate, veh/h	209	299	81	449	293	173	58	571	440	89	362	91
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	1	0	1	2	1	0	1	0	0	1	0
Cap, veh/h	276	383	102	423	337	287	75	672	498	676	1477	367
Arrive On Green	0.08	0.14	0.14	0.12	0.18	0.18	0.04	0.19	0.19	0.75	1.00	1.00
Sat Flow, veh/h	3510	2789	742	3483	1870	1592	1810	3582	1610	1810	2842	706
Grp Volume(v), veh/h	209	190	190	449	293	173	58	571	440	89	226	227
Grp Sat Flow(s),veh/h/ln	1755	1791	1740	1742	1870	1592	1810	1791	1610	1810	1791	1756
Q Serve(g_s), s	5.8	10.2	10.6	12.2	15.2	4.3	3.2	15.4	13.8	1.4	0.0	0.0
Cycle Q Clear(g_c), s	5.8	10.2	10.6	12.2	15.2	4.3	3.2	15.4	13.8	1.4	0.0	0.0
Prop In Lane	1.00		0.43	1.00		1.00	1.00		1.00	1.00		0.40
Lane Grp Cap(c), veh/h	276	246	239	423	337	287	75	672	498	676	931	913
V/C Ratio(X)	0.76	0.77	0.80	1.06	0.87	0.60	0.77	0.85	0.88	0.13	0.24	0.25
Avail Cap(c_a), veh/h	404	510	496	423	533	454	208	1092	687	676	931	913
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	0.98	0.98	0.98
Uniform Delay (d), s/veh	45.1	41.6	41.8	43.9	39.9	7.1	47.5	39.3	32.8	8.1	0.0	0.0
Incr Delay (d2), s/veh	2.2	2.0	2.3	60.8	5.6	0.8	6.2	12.7	19.9	0.0	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(50%),veh/ln	2.6	4.6	4.6	8.8	7.4	3.6	1.5	7.7	6.9	0.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.4	43.6	44.1	104.7	45.4	7.9	53.6	52.0	52.8	8.1	0.0	0.1
LnGrp LOS	D	D	D	F	D	A	D	D	D	A	A	A
Approach Vol, veh/h		589			915			1069			542	
Approach Delay, s/veh		45.1			67.4			52.4			1.4	
Approach LOS		D			E			D			A	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.7	18.2	41.9	23.3	12.4	22.5	8.6	56.5				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	11.5	28.5	11.5	30.5	11.5	28.5	11.5	30.5				
Max Q Clear Time (g_c+I1), s	14.2	12.6	3.4	17.4	7.8	17.2	5.2	2.0				
Green Ext Time (p_c), s	0.0	0.7	0.0	1.4	0.1	0.6	0.0	0.8				
Intersection Summary												
HCM 6th Ctrl Delay			46.6									
HCM 6th LOS			D									

Appendix D: Queueing Analysis

Intersection: 1: NE 192nd Avenue & NE 18th Street

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	32	5
Average Queue (ft)	4	0
95th Queue (ft)	22	7
Link Distance (ft)	999	1284
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 2: NE 192nd Avenue & NE 13th Street

Movement	WB	NB	NB	SB	SB
Directions Served	LR	T	R	L	T
Maximum Queue (ft)	485	362	175	174	525
Average Queue (ft)	175	127	55	111	123
95th Queue (ft)	395	295	142	187	384
Link Distance (ft)	1924	799			1292
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			150	150	
Storage Blk Time (%)		9	0	8	1
Queuing Penalty (veh)		9	0	27	4

Intersection: 3: NE 192nd Avenue & Driveway/NE 11th Street

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	30	37	91	12
Average Queue (ft)	2	11	7	0
95th Queue (ft)	15	37	40	5
Link Distance (ft)	1173	1699	1298	799
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: NE 192nd Avenue & NE 6th Street

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	71	35	48	3
Average Queue (ft)	16	5	3	0
95th Queue (ft)	51	25	23	3
Link Distance (ft)	970	1236	626	1298
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: NE 192nd Avenue & NE 3rd Street

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	R	L	T	TR
Maximum Queue (ft)	10	45	101	76	53	159	82	58	100	72	95
Average Queue (ft)	0	7	41	32	6	56	5	16	52	26	32
95th Queue (ft)	6	30	82	62	30	125	35	46	89	62	79
Link Distance (ft)		952		1103		556	556			355	355
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	100		250		175			100	175		
Storage Blk Time (%)						0	0				
Queuing Penalty (veh)						0	0				

Queuing and Blocking Report
2024 Existing Conditions

06/25/2024

Intersection: 6: NE 192nd Avenue & SE 1st Street

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	L	T	TR	L	L	T	R	L	T	T	R
Maximum Queue (ft)	76	61	146	192	136	173	220	78	93	143	108	151
Average Queue (ft)	33	22	70	83	57	85	98	28	34	64	32	58
95th Queue (ft)	65	56	118	147	114	142	179	60	77	119	79	110
Link Distance (ft)			2431	2431			2569	2569		2589	2589	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	250	250			250	250			175			175
Storage Blk Time (%)							0			0		0
Queuing Penalty (veh)							0			0		0

Intersection: 6: NE 192nd Avenue & SE 1st Street

Movement	SB	SB	SB
Directions Served	L	T	TR
Maximum Queue (ft)	96	136	150
Average Queue (ft)	37	54	69
95th Queue (ft)	79	104	125
Link Distance (ft)		556	556
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	250		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 40

Intersection: 1: NE 192nd Avenue & NE 18th Street

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	26	64
Average Queue (ft)	1	3
95th Queue (ft)	11	28
Link Distance (ft)	999	1284
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 2: NE 192nd Avenue & NE 13th Street

Movement	WB	NB	NB	SB	SB
Directions Served	LR	T	R	L	T
Maximum Queue (ft)	273	526	175	166	195
Average Queue (ft)	133	226	91	75	80
95th Queue (ft)	224	432	197	130	154
Link Distance (ft)	1924	799			1292
Upstream Blk Time (%)		0			
Queuing Penalty (veh)		1			
Storage Bay Dist (ft)			150	150	
Storage Blk Time (%)		15	0	0	1
Queuing Penalty (veh)		24	1	1	1

Intersection: 3: NE 192nd Avenue & Driveway/NE 11th Street

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	46	35	102	92
Average Queue (ft)	20	9	6	5
95th Queue (ft)	48	34	65	42
Link Distance (ft)	1173	1699	1298	799
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Queuing and Blocking Report
 2024 Existing Conditions

06/25/2024

Intersection: 4: NE 192nd Avenue & NE 6th Street

Movement	EB	WB	NB	B20	B20	SB
Directions Served	LTR	LTR	LTR	T		LTR
Maximum Queue (ft)	60	35	94	16	12	24
Average Queue (ft)	19	4	10	1	0	1
95th Queue (ft)	51	21	55	12	11	12
Link Distance (ft)	970	1236	626	355	355	1298
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 5: NE 192nd Avenue & NE 3rd Street

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	R	L	T	TR
Maximum Queue (ft)	31	38	193	76	16	249	174	100	193	176	101
Average Queue (ft)	2	8	92	37	1	119	26	18	118	36	37
95th Queue (ft)	17	31	163	66	9	223	105	60	188	117	87
Link Distance (ft)		952		1103		556	556			355	355
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	100		250		175			100	175		
Storage Blk Time (%)						2	0	0	3	0	
Queuing Penalty (veh)						0	0	0	6	0	

Queuing and Blocking Report
2024 Existing Conditions

06/25/2024

Intersection: 6: NE 192nd Avenue & SE 1st Street

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	L	T	TR	L	L	T	R	L	T	T	R
Maximum Queue (ft)	131	132	157	179	175	230	330	117	181	255	256	193
Average Queue (ft)	64	61	81	99	93	121	130	45	55	142	115	90
95th Queue (ft)	111	109	129	160	155	188	249	87	126	213	202	169
Link Distance (ft)			2431	2431			2569	2569		2589	2589	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	250	250			250	250			175			175
Storage Blk Time (%)						0	1		0	3	1	0
Queuing Penalty (veh)						0	2		0	1	3	1

Intersection: 6: NE 192nd Avenue & SE 1st Street

Movement	SB	SB	SB
Directions Served	L	T	TR
Maximum Queue (ft)	140	160	191
Average Queue (ft)	63	76	96
95th Queue (ft)	115	135	165
Link Distance (ft)		556	556
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	250		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 42

Appendix E: Warrants Analyses

LEFT TURN WARRANT ANALYSIS
Vancouver 192nd Avenue Improvements TIA
Scenario: 2024 Existing Conditions
DATE: June 19, 2024

AM Peak Hour

No.	Intersection	Movement	Speed	PHF	Advancing Volume	Left Turn Volume	Opposing Volume	Calculations				HRB Warrant Met?
								LT %	Warrant Factor	5% Warrant Va	Va Warrant Threshold	
1	NE 192nd Avenue at NE 18th Street	SBL	40	1.00	0	0	953	0.0%	N/A	294	N/A	N/A
		EBL	40	1.00	567	2	386	0.4%	3.68	516	1899	No
		WBL	40	1.00	5	4	953	80.0%	0.54	294	160	No
3	NE 192nd Avenue at NE 11th Street	NBL	40	1.00	311	15	430	4.8%	1.02	491	499	No
		SBL	40	1.00	430	1	311	0.2%	4.52	562	2543	No
		EBL	40	1.00	3	2	741	66.7%	0.46	352	163	No
4	NE 192nd Avenue at NE 6th Street	WBL	40	1.00	11	5	741	45.5%	0.44	352	154	No
		EBL	40	1.00	14	1	746	7.1%	0.85	350	296	No
		WBL	40	1.00	4	3	746	75.0%	0.50	350	176	No

PM Peak Hour

No.	Intersection	Movement	Speed	PHF	Advancing Volume	Left Turn Volume	Opposing Volume	Calculations				HRB Warrant Met?
								LT %	Warrant Factor	5% Warrant Va	Va Warrant Threshold	
1	NE 192nd Avenue at NE 18th Street	SBL	40	1.00	0	0	1259	0.0%	N/A	262	N/A	N/A
		EBL	40	1.00	552	3	707	0.5%	2.96	364	1079	No
		WBL	40	1.00	3	2	1259	66.7%	0.46	262	121	No
3	NE 192nd Avenue at NE 11th Street	NBL	40	1.00	680	3	525	0.4%	3.29	441	1452	No
		SBL	40	1.00	525	5	680	1.0%	2.24	374	838	No
		EBL	40	1.00	21	7	1205	33.3%	0.46	263	121	No
4	NE 192nd Avenue at NE 6th Street	WBL	40	1.00	9	3	1205	33.3%	0.46	263	121	No
		EBL	40	1.00	18	5	1236	27.8%	0.49	262	127	No
		WBL	40	1.00	3	1	1236	33.3%	0.46	262	121	No

Right TURN WARRANT ANALYSIS
Vancouver 192nd Ave Improvements TIA
Scenario: 2024 Existing
DATE: 6/18/2024

AM Peak Hour

No.	Intersection	Movement	2-lane (1), Multi-lane (2)	Posted Speed	Advancing Volume	Right Turn Volume	Calculations				
							NCHRP RT Volume	Taper Warrant	RT Lane Warrant	Meets NCHRP Taper	Meets NCHRP RT Lane
1	NE 192nd Avenue at NE 18th Street	NBR	1	40	386	1	1	32	69	No	No
		SBR	1	40	0	0	0	#N/A	#N/A	#N/A	#N/A
		EBR	1	40	567	565	565	20	45	Yes	Yes
		WBR	1	40	4	0	0	#N/A	#N/A	#N/A	#N/A
3	NE 192nd Avenue at NE 11th Street	NBR	1	40	311	2	2	39	79	No	No
		SBR	1	40	430	15	15	27	63	No	No
		EBR	1	40	2	0	0	#N/A	#N/A	#N/A	#N/A
		WBR	1	40	11	6	6	69	119	No	No
4	NE 192nd Avenue at NE 6th Street	NBR	1	40	318	2	2	39	79	No	No
		SBR	1	40	428	5	5	28	64	No	No
		EBR	1	40	14	13	13	69	119	No	No
		WBR	1	40	4	1	1	#N/A	#N/A	#N/A	#N/A

PM Peak Hour

No.	Intersection	Movement	2-lane (1), Multi-lane (2)	Posted Speed	Advancing Volume	Right Turn Volume	Calculations				
							NCHRP RT Volume	Taper Warrant	RT Lane Warrant	Meets NCHRP Taper	Meets NCHRP RT Lane
1	NE 192nd Avenue at NE 18th Street	NBR	1	40	707	2	2	20	40	No	No
		SBR	1	40	0	0	0	#N/A	#N/A	#N/A	#N/A
		EBR	1	40	552	549	549	20	47	Yes	Yes
		WBR	1	40	2	0	0	#N/A	#N/A	#N/A	#N/A
3	NE 192nd Avenue at NE 11th Street	NBR	1	40	680	6	6	20	40	No	No
		SBR	1	40	525	4	4	20	51	No	No
		EBR	1	40	21	14	14	68	117	No	No
		WBR	1	40	9	6	6	#N/A	#N/A	#N/A	#N/A
4	NE 192nd Avenue at NE 6th Street	NBR	1	40	691	2	2	20	40	No	No
		SBR	1	40	545	7	7	20	48	No	No
		EBR	1	40	18	13	13	69	119	No	No
		WBR	1	40	3	2	2	#N/A	#N/A	#N/A	#N/A

192nd Project Advisory Group Meeting Summary

Project Advisory Group Meeting #1

- In-person: Thursday, February 27, 2025, 6 to 8 p.m. at Humane Society for Southwest Washington
- Virtual: Wednesday, March 12, 2025, 11 a.m. to 12 p.m. via Microsoft Teams

Overview

The 192nd Avenue project team hosted its first Project Advisory Group (PAG) meetings in-person Thursday, February 27 at the Humane Society for Southwest Washington and virtually Wednesday, March 12 via Microsoft Teams. The goal of this meeting was to introduce the project, review PAG roles, share existing conditions analysis and get feedback on early design concepts. **In total, 10 PAG members attended (6 in-person, 4 virtual).** Nicole Walters, City of Vancouver led the in-person meeting and William Cooley, City of Vancouver led the virtual meeting.

Attendees

1. Billie Woodman, Bonneville Power (virtual)
2. Curleigh (Jim) Caruthers, City of Camas
3. Lindahl Grant, Evergreen Public Schools (virtual)
4. Jenn Rylander, Humane Society for Southwest Washington
5. Kirk VanGelder, Proebstel Neighborhood Association (county)
6. Allen Thomas, Proebstel Neighborhood Association (county)
7. Caiden Mizrahi-Boyarsky, Student from Union High School
8. Sean Janson, Harmony Sports Complex and Washington Timbers Football Club (virtual)
9. Paige Curl, Washington Timbers Football Club
10. Michelle Smith, HSP Properties (virtual)

Project Team Attendees

- City of Vancouver: Nicole Walters, William Cooley (virtual)
- Consultants: Bruce Haunreiter, HHPR; Monica Santos-Pinacho, PointNorth; Lauren Garetto, PointNorth; Stephanie Snyder, PointNorth

Community Feedback Highlights

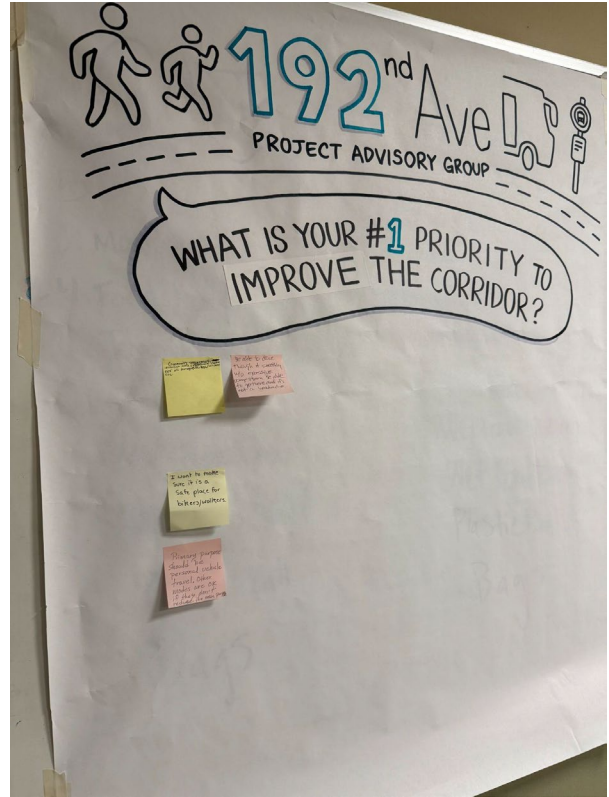
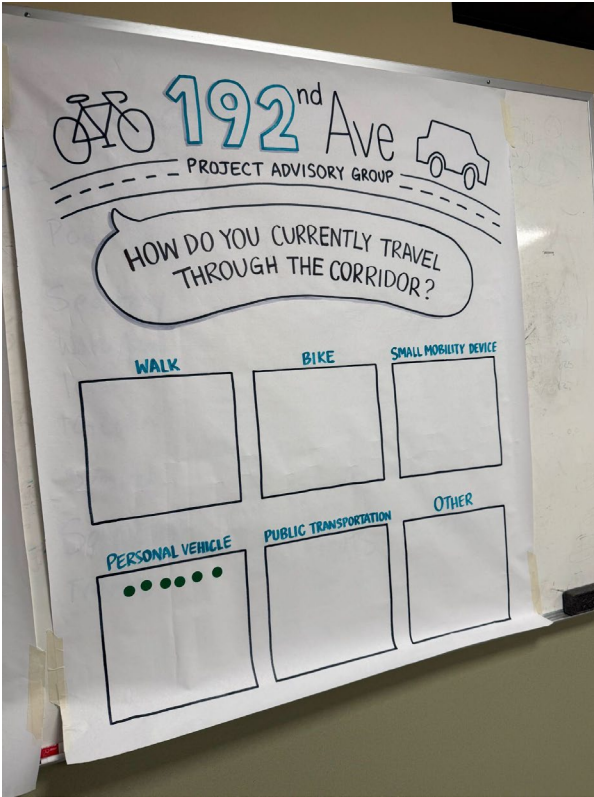
PAG member feedback highlighted several concerns and priorities, but key concerns focused on **traffic congestion and roadway improvements, pedestrian and cyclist safety** and **public transportation and alternative transportation options.**

1. **Traffic Congestion and Roadway Improvements** - Traffic congestion was a major issue, particularly at NE 13th Street, SE 1st Street, and NE 18th Street, where heavy backups occur during school and peak commute times. NE 13th Street is the most critical intersection because it sees the highest volume of traffic. The transition from two lanes to one near NE 6th Street was identified as a bottleneck. Left turns along the corridor were noted as difficult and sometimes dangerous, especially near NE 13th Street turning out of Harmony Sports Complex and near NE 11th Street turning into and out of the Humane Society for Southwest Washington. Many participants suggested extending or widening sections of the road, including near NE 18th Street, to improve traffic flow and safety. Roundabouts were mentioned as a positive option to consider for improving traffic flow and that they have been successful in nearby neighborhoods.
2. **Pedestrian and Cyclist Safety** - Pedestrian and cyclist safety was another major concern. Many areas, including NE 3rd Street to NE 18th Street, lack sidewalks, making walking unsafe. Locations with high foot traffic, such as near Harmony Sports Complex and the Humane Society for Southwest Washington, do not have adequate pedestrian infrastructure, leading to dangerous situations. Some community members prioritized making the corridor safer for walkers and bikers, while others emphasized the need for smoother traffic flow for personal vehicles.
3. **Public and Alternative Transportation** - Public and alternative transportation access was also discussed. The corridor currently lacks adequate C-TRAN bus service, especially near the Humane Society. While some residents supported adding more public transit options, others felt that personal vehicles should remain the primary focus of roadway improvements. The Humane Society has offered to give up some of their land to add a C-TRAN stop and make it easier to turn in and out of the facility.

Meeting Highlights

Activity: Interactive Posters

Upon arriving, Project Advisory Group (PAG) members were asked to share initial input via interactive posters (in-person). During the virtual meeting, PAG members shared their feedback via the chat box.



How do you Currently Travel Through the Corridor?

- Personal Vehicle: 10 votes
- Walk, Bike, Small Mobility Device, Public Transportation, Other: 0 vote

What is your #1 Priority to Improve the Corridor?

- Community engagement, inclusion and recreational activities for all demographics, age, race, etc.
- Be able to drive through it smoothly without excessive congestion. Be able to go there and it's not a headache.
- I want to make sure it is a safe place for bikers/walkers.
- The primary purpose should be personal vehicle travel. Other modes are OK if they don't reduce the main purpose.
- A design that allows all people to easily travel through the corridor, especially those who are impacted by Harmony Sports Complex traffic.
- Safe traffic flow
- Improve traffic flow
- Safe walk routes for students

Activity: Technical Map Improvements



The group was asked to review the project area and make note of areas for improvement. Notes included:

- SE 1st Street: Terrible potholes along with after-school congestion
- NE 3rd Street to NE 18th Street: Little to no sidewalks
- Approaching NE 6th Street: Goes from 2 to 1 lane - having two lanes would be nice
- Going north on 192nd Avenue: Ignore this road on my commute to soccer, always congested
- Area South of NE 9th Street: No sidewalks
- Between NE 9th Street and NE 11th Street: Consider frontage road for residents on the east side
- NE 11th Street: Left turns are difficult on the entire corridor
- NE 11th Street at Humane Society of Southwest Washington: Needs C-TRAN access, driveway access, left turn lanes
- North of NE 11th Street: No one ever walking - no sidewalks, dangerous
- NE 13th Street: Super backed up here - light is short and only one lane; Vehicles create their own right turn lane, dangerous; after school congestion, 30-45 traffic; Southbound left AM, improve 13th Street a few hundred feet to east
- North of NE 13th Street turning into Harmony Sports Complex: Dangerous here, people turn left, backs up traffic, can't see people coming

- NE 18th Street: Need slightly widened/extended road for safety and security.

Comment Card Feedback

During each meeting, members were encouraged to share verbal feedback or share feedback via comment cards.

Comment Cards: Please share any thoughts about the 192nd Avenue Project that you would like the project team to consider.

- Accessibility for all, as well as, inclusion, especially during the planning process. Youth accessibility due to the school density
- Fixing the confusion on the main road on my commute to practice would be nice. Sidewalks to people can get outside.
- Personal vehicles are the primary mode of transportation for rural citizens. Autonomous vehicles will likely overtake current modes of mass transit in the next 10-20 years. Thank you for soliciting community engagement! :) Life time Clark County resident
- East legs of 18th and 13th are important considerations in design. Consider which corridor should be the main arterial. Happy to discuss with Vancouver staff.

192nd Project Advisory Group Meeting Summary

Project Advisory Group Meeting #2 - Thursday, May 1, 2025, 6 to 8 p.m. at Humane Society for Southwest Washington

Overview

The 192nd Avenue project team hosted its second Project Advisory Group (PAG) meeting in a hybrid format on Thursday, May 1 at the Humane Society for Southwest Washington. The goal of this meeting was to understand preferences for **multimodal design possibilities, intersection design approaches** and **pedestrian crossings** and **transit locations**. **In total, 9 PAG members attended (8 in-person, 1 virtual)**. Nicole Walters, City of Vancouver led the in-person meeting and Laurel Priest, City of Vancouver led the virtual meeting.

Attendees

1. Curleigh (Jim) Caruthers, City of Camas
2. Jeananne Edwards, Community In Motion
3. Sean Janson, Harmony Sports Complex and Washington Timbers Football Club
4. Andrea Bruno, Humane Society for Southwest Washington
5. George Myer, Neighbor (NE 193rd Ct.)
6. Steve Downing, New Heights Church (Virtual)
7. Kirk VanGelder, Proebstel Neighborhood Association (county)
8. Gregg Brown, Union High School
9. Paige Curl, Washington Timbers Football Club

Project Team Attendees

- City of Vancouver: Nicole Walters, Ivar Christensen, Laurel Priest (virtual)
- Consultants: Bruce Haunreiter, HHP; Dana Beckwith, Global Transportation Engineering; Lauren Garetto, PointNorth

Multimodal Design Possibilities

This portion of the meeting reviewed potential designs for multimodal lanes, including options such as buffered bike lanes, cycle tracks, shared-use paths and sidewalks.

Attendees were asked to consider two key questions:

Q: How much roadway should be prioritized for pedestrians vs. bikes vs. cars vs. small mobility devices? What type of multimodal facilities would you like to see in this corridor?

Overall, participants were supportive of all options that prioritized minimizing traffic congestion while also creating safe spaces for walkers, bikers and small mobility devices.

The area includes key destinations for youth — such as Harmony Sports Complex, Union High School and Shahala Middle School — and the group expressed a strong interest in improving transportation options, safety and access for younger travelers.

Intersection Design Approaches

The following section reviewed intersection design options — roundabouts versus signalized intersections — noting benefits, trade-offs and approximate costs for each option. After reviewing the different concepts, participants were asked to rank improvement criteria by priority (see figure 5).

Q: Rank the following 192nd Improvement criteria from 1-7 in order of priority, with 1 being the most important. (Safety, Transportation Connectivity, Construction and Operational Cost, Right of Way and Private Property Impacts, Multi-Modal Transportation, Access Management, Environmental Impacts)

Overall, the **top priorities of the group were safety, transportation connectivity and access management.** Criteria considered less important (none ranked them among their top three) were construction and operational costs, as well as environmental impacts. Participants were then asked:

Q: Based on what you now know about these two concepts (roundabouts or signalized Intersections) and keeping in mind the priorities we discussed at the beginning, which concept do you prefer and why?"

Eight attendees chose roundabouts and 1 did not have a preference.

Key Feedback included:

- **No preference** – No defined preference, but do wonder how larger vehicles like buses and transport trucks would interact with roundabouts during high volume times – i.e. 8:15–8:45 a.m.
- **Roundabouts** – My sense is the plan will include access management limiting access to HSSW from the south, so will need an easy way to get into work/do business if [we] can't turn left. And people who live to the north out and redirected easily.
- **Roundabouts**
 - 18th/192 – Roundabout – main flow is around turn 18/192.
 - 13th/192 – signalized – need RH lane for Harmony to keep traffic flowing – it backs up 1/2 mile on 18th road during events.
 - 6th – Roundabout.
 - 9th – Roundabout.
- **Roundabouts** – Safety, flow, can use 'on demand' vs. nobody going through the intersection (dead time). Fewer conflict points. However, must ensure safe pedestrian crossings.

- **Roundabouts** – Concerned about queue back up w/ left turn lanes. Believe it will help the Humane Society, fewer conflicts.
- **Roundabouts** – Initial preference. But need more specifics i.e. we still need enough lanes to handle the expected traffic flow. I prefer the Roundabout map, but I think it needs 2 lanes each direction, at least from 12th St to 13th St.
- **Roundabouts** – Because it keeps the flow of traffic rolling. It's low cost and it doesn't leave cars stopped leading to a backup in traffic. For example, the one in Camas by Lacamas Lake has worked efficiently and I could see it working here getting people from place to place quickly and efficiently.
- **Roundabouts** – Steady & slow, less right-of-way impact.

Pedestrian Crossings and Transit Locations

In the final segment of the meeting, participants identified specific locations along the corridor where they would like to see improved pedestrian crossings and additional transit stops.

Overall, Participants targeted areas near places of interest such as the Humane Society, Costco and Harmony Sports Complex.

Crossings:

- 3rd (2 votes) - Priority to keep and/or improve this existing crossing.
- 6th (2 votes) - Homes on the east side need access to the shooting range and Humane Society.
- 9th (3 votes) - If only one crossing was available between 6th and 9th, would want to prioritize 9th.
- 11th (2 votes) - Emphasized need to access the Humane Society.
- 13th (5 votes) - Harmony access for all homes on the east side of the road.
- North of 13th, road leading into Harmony (3 votes)

New Transit Stop:

- 3rd (2 votes) - Need access to Costco. Community in Motion pays a vendor to take neighbors to this Costco location because of the lack of public transportation.
- 9th (1 vote) - Need for a bus stop between the Humane Society and the shooting range.
- 11th (3 votes) - Emphasized need to access the Humane Society for staff, volunteers and customers.
- North of 13th, road leading into Harmony (2 votes) - Transit stops need to be away from intersections and roads.

Appendix



Figure 1: Bruce Haunreiter, HPR and Ivar Christensen, City of Vancouver present intersection design concepts.



Figure 2: Whiteboard shows the group's top criteria ranking and votes for roundabout or signalized intersection.



Figure 3: Project team members explain pedestrian crossings and transit location mapping activity.



Figure 4: PAG participants note where along the corridor they would like to see pedestrian crossings and transit locations.

192nd Avenue Project

Project Advisory Group Meeting #2



Name: _____

Phone Number: _____

Email: _____

Check to get the latest project updates directly to your email.

Rank the following 192nd Improvement criteria from 1-7 in order of priority, with 1 being the most important.

<input type="text"/> Safety	<input type="text"/> Multi-Modal Transportation
<input type="text"/> Transportation Connectivity	<input type="text"/> Access Management
<input type="text"/> Construction and Operational Cost	<input type="text"/> Environmental Impacts
<input type="text"/> Right of Way and Private Property Impacts	

Based on what you now know about these two concepts (roundabouts or signalized Intersections) and keeping in mind the priorities we discussed at the beginning, which concept do you prefer and why?

Roundabouts Signalized Intersections

Why: _____

Flip page over to share any additional comments with the project team.

Figure 5: Project Advisory Group Meeting #2 Comment Sheet

192nd Project Advisory Group Meeting Summary

Project Advisory Group Meeting #3 - Tuesday, February 17, 2026, 6 to 8 p.m. at Humane Society for Southwest Washington

Overview

The 192nd Avenue project team hosted its third Project Advisory Group (PAG) meeting in-person on Tuesday, February 17 at the Humane Society for Southwest Washington. The meeting focused on gathering **preferences for three multimodal design options** and collecting feedback on **safety and access for four proposed roundabouts at NE 6th, 9th, 13th and 18th avenues**. Participants also shared ideas for improving community education about roundabout navigation, enhancing the Open House #2 experience, and identifying additional community voices for the project team to engage. **In total, 12 PAG members attended.**

Attendees

**Notes new PAG attendee*

- | | |
|--|--|
| 1. Andrea Bruno, Humane Society for Southwest Washington | 2. *Joel Christiansen, Vancouver Bicycle Club |
| 3. *Cornell Rotschy, Grey Rock / Rotschy Inc. | 4. Kirk VanGelder, Proebstel Neighborhood Association (county) |
| 5. Curleigh (Jim) Caruthers, City of Camas | 6. *Page Rotschy, Grey Rock / Rotschy Inc. |
| 7. George Myers, Neighbor (NE 193rd Ct.) | 8. *Scott Sloan, Clark County Bicycle Club |
| 9. *Jan Verrinder, Bike Clark County | 10. *Scott Storkel, Vancouver Bicycle Club |
| 11. Jeananne Edwards, Community In Motion | 12. Steve Downing, New Heights Church |

Project Team Attendees

- City of Vancouver: Ivar Christensen
- Consultants: Bruce Haunreiter, HHPR; Lauren Garetto, PointNorth; Lisa Keohokalole Schauer, PointNorth

Multimodal Design Possibilities

The project team presented three different intersection design options and asked attendees to rank the options 1-3 (1=most preferred, 3=least preferred).

- A - Shared Use Path Both Sides
- B - Shared Use Path One Side with Cycle Tracks on Both Sides
- C - Shared Use Path and 2-way Cycle Track One Side

Options B and C were tied as the preferred designs with five votes each, while Option A received two votes.

Preference and Key feedback included:

- Option A - Concerned about high traffic in and out of HSSW crossing bike/pedestrians in option C.
- Option A - Likes A as it is the smallest option. Noted that C is better for bikes, but doesn't foresee a lot of bikes in the area in the next 10 years.
- Option C - TMC should consider 18th Street Active Transportation configuration before determining where the northbound cycle track is located for 192nd.
- Option B - What is the anticipated user stress level difference between A,B,C? I know it will be low with the separation from cars. For 'cycle tracks' what is the proposed buffer? Paint is not enough to reduce conflict with kids, dogs, etc. Crossing between lanes, raised differences causes stress on cyclists, so just curious about thoughts.
- Option C - C on the west side.
- Option B - With cycle tracks and ped paths together, I'd prefer a painted separation; no raised divider; different materials are preferred.
- Option C - If going with 2 way bike lanes (option C), keep them on the west side; which will dovetail well with improvements to 18th (keep bike lanes on south side, lots of new housing).

Intersection Design Approaches

An approximately 15% design concept was shown to the PAG highlighting roundabouts at key intersections (NE 6th, NE 9th, NE 13th and NE 18th avenues). The group was asked, 'what feedback regarding safety and/or access do you have with this proposed approach?' Key feedback included:

Congestion and Future Growth

- Ensure the design can handle the amount of current and future traffic on 13th — this is a congestion point right now.
- 13th/192nd - Design looks like you need more lanes. Traffic will back up with this design.
 - PM - Most traffic goes north on 192nd. People on 13th going west will have a very hard time getting on 192nd.
 - AM - Most traffic goes south on 192nd to turn left onto 13th to UHS. Traffic going north on 192nd will have a hard time getting into the circle with AM traffic.
- Did you do traffic flow analysis? I think traffic will back up greatly depending on the time of day. You need more lanes.
- Hundreds of new homes are going in behind this intersection [NE 9th]. Concerns if the intersection will be able to accommodate future capacity.

Guidance for Roundabout Navigation

- Requests for driver and cyclist education.
- Car drivers don't know how to use roundabouts, at least initially. This makes cycling more dangerous.
- Arrows should be painted on the street to help people understand how to drive through the roundabout.
- Updated Clark County Bicycle maps could include information on how to navigate roundabouts.

Freight Mobility and Truck Access

- It's imperative to design roundabouts to accommodate truck traffic. NE 192nd is a major route for truck traffic.
- How will large trucks/semis flow with roundabouts?
- Please keep roadways through roundabouts as wide as possible for truck traffic (deliveries and others).
- Can WB-67s get through [NE 13th intersection?]

Safety Considerations

- Well-lit (high visibility) speed limit signs throughout the roundabout.
- If the diameter of roundabouts is too narrow, it makes it difficult for cyclists to anticipate what car drivers will do.
- Multi-lane roundabouts are especially difficult for drivers to navigate. People always end up in the wrong lane. Lack of predictability is a problem for cyclists.
- In favor if roundabouts are large enough and well-lit, clearly signed.
- 13th will need flashing light crossing; hopefully the 3 crossings will all have them.

Next Steps

Utilizing PAG feedback, the project team will incorporate preferences into design concepts that will be presented to the Transportation and Mobility Commission (TMC) on Tuesday, March 3.

Appendix

192nd Avenue Project

Project Advisory Group Meeting #3



Name: _____

Phone Number: _____

Email: _____

Check to get the latest project updates directly to your email.

Please rank the multimodal options 1-3 (1 = most preferred, 3 = least preferred).

Shared Use Path Both Sides

Shared Use Path One Side with Cycle Tracks on Both Sides

Shared Use Path and 2-way Cycle Track One Side

Given community feedback from the first phase of the project and technical data gathered by the project team, **we are recommending that we move forward with roundabouts at key intersections.** What feedback regarding safety and/or access do you have with this proposed approach?

Flip page over - additional questions on the back.

Figure 1: Project Advisory Group Meeting #3 Comment Sheet (front)

Do you have suggestions for how we can help people understand why roundabouts are valuable and how to navigate them confidently?

If you attended the first open house, what do you think went well and what can be improved on in our next open house?

Whose voice is missing? What groups, organizations or individuals has the project team not worked with and should prioritize outreach early in the design process?

Are there any other comments you would like to share with the project team?

Visit the project webpage to see full details of the proposed improvements, future engagement opportunities, and more information on next steps:
beheardvancouver.org/192nd



Figure 2: Project Advisory Group Meeting #3 Comment Sheet (back)



Figure 3: Members of the project team present to the PAG.



Figure 4: Display boards show different multimodal options with details for each design.



Figure 5: Project team members and PAG members discuss multimodal design options.



Figure 6: Project team members and PAG members discuss intersection safety and access.

MEMORANDUM

DATE: August 6, 2025
TO: Nicole Walters and Ivar Christensen, City of Vancouver
FROM: Monica Schmidt-Pinacho and Lauren Garetto, PointNorth
Bruce Haunreiter, Harper Houf Peterson Righellis
SUBJECT: One-On-One Meetings Summary (Milestone 1)
PROJECT: 192nd Avenue Project

In June 2025, ahead of the first public Open House, the project team conducted a round of interviews with 10 strategic partners and potentially impacted parties from C-TRAN, Bonneville Power Administration, Evergreen Public Schools and Clark County to help inform key design considerations and set accurate expectations with the public. During the interviews, the project team gathered valuable input around access, right-of-way as well as future plans for the corridor and anticipated needs. Below is a summary of information shared, notable questions and feedback heard during the interviews.

C-TRAN - June 3, 2025

Taylor Eidt, Deputy Director of Capital Projects & Planning

C-TRAN was engaged to better understand their near- and long-term plans for 192nd Avenue and if expanding public transportation options on the corridor is feasible. The project team also discussed the design elements that are being considered.

Ability to Add Transit Stops

- Eidt confirmed that this corridor is one C-TRAN would like to have transit on.
 - *“We have had a lot of interest in 192nd, but we can’t build ADA-compliant and accessible stops because of the current design of the roadway, lack of marked crossings and curbs.”*
- C-TRAN receives frequent community interest for public transportation on 192nd Avenue through its website, comments during its long-range planning process, City of Vancouver board representatives and more. Community members often reference Harmony Sports Complex and the Humane Society for Southwest Washington as places they would like public transportation to take them to.

Design Preferences

- Prefer protected bike lanes as they eliminate conflict between people and buses.
- C-TRAN prefers stops about every quarter of a mile, and wants them to be near intersections or crossings to help people get to their next destination safely.
- Confirmed buses can navigate both single and multi-lane roundabouts.

- Per ADA guidelines, boarding areas must be at least five feet parallel and 8 feet perpendicular to the curb with a solid, stable and flat surface. Further in the design process, the project team will need to ensure all sidewalks and other public rights-of-way will meet ADA regulations. Full technical guidance is available via the [Washington State Department of Transportation](#).
 - “Outside of providing ADA-compliant stops, this early in the design process, there are few ‘hard and fast rules’ the project team needs to consider.”

Next Steps:

- The project team will show C-TRAN a corridor map that has intersections, control types of each intersection and number of lanes at 30% design. From there C-TRAN can share recommended potential alternate stop locations.
 - After the first open house, the project team will share community feedback with C-TRAN to inform possible stop locations.
- Keep C-TRAN informed during the funding submission process.

BPA - June 4, 2025

Billie Woodman, Real Estate Specialist; Laura Master, Ruth Roberts, Thanh Ngo
 Conversations with BPA focused on technical design elements and the National Environmental Policy Act (NEPA) review process, design layout and utility planning, ARPA permitting, land use and right of way access.

NEPA Process and ARPA Permitting

- Emphasized that any use of BPA fee-owned property requires an environmental review under NEPA, which could take up to a year or more.
- Categorical exclusions are common outcomes but only apply under specific conditions.
- Work within the existing 40-foot right-of-way typically avoids NEPA, while anything outside triggers it.
- Applicants must submit only the portions of the plans that involve BPA’s corridor.
- Significant design changes (e.g., adding material yards) after submittal can restart the review process.
- ARPA permits now allow applicants to conduct their own archaeological/cultural surveys.
- ARPA and project applications can be submitted simultaneously to speed up the timeline.

Design Constraints

- BPA discourages the use of trees and street lighting under conductors due to safety risks.
- Overhead street lighting must be placed away from conductors (ideally outside the ROW).
- Permanent structures and vegetation are not allowed under BPA transmission lines.
- Barriers may be required near towers to protect infrastructure from vehicles.

Right-of-Way (ROW) and Property Ownership

- BPA owns land in “fee” outside the 40-foot ROW, which changes review requirements.
- Agriculture rights exist with Harmony Sports Complex and private landowners — another layer in ROW discussions.
- Future expansion (e.g., for widening 18th or 192nd) may involve ROW acquisition and appraisals.
- The City must provide its own legal descriptions and mapping exhibits for BPA review.

Next Steps

- Start NEPA and ARPA permitting process.
- Keep BPA updated at 30% and 50% design.

Evergreen School District (EDS) Transportation Department - June 4, 2025

Lindahl Grant, Director of Transportation

The project team met with the Director of Transportation to discuss the compatibility of roundabouts with school bus operations as well as general safety and access considerations for its students, faculty and staff.

Intersections

- Confirmed buses can navigate roundabouts, but ESD prefers single-lane designs.
 - *“Overall single-lane roundabouts work pretty good for the buses... We have a lot of people that try to pass buses in double lane roundabouts because they think that’s a passing zone and our buses typically take up two lanes.”*
- Stop locations may shift depending on future traffic design (e.g., median placement, turn lanes, etc.).

Safety

- The district does not ask students to cross 192nd Avenue due to safety concerns.
- Busing is provided as a safety measure; walking/biking is at parent discretion.
- Future development (e.g., multi-family housing) could increase pedestrian and student activity in the area.
- Stops are usually placed outside of curves and at intersections.

Next Steps

- Evergreen School District is adaptable to different design options, but appreciates early coordination to ensure safe and efficient bus routes.
- The project team will re-engage with the District as 30% design gets underway.

Clark County - June 5, 2025

Bryan Mattson, Land Use Planner; Craig Kathol, Transportation Concurrency Engineer

Michelle Dawson, Environmental Engineer; Paul Morin, Capital Project Manager

Staff from the county’s Planning and Parks departments provided input on both short- and long-term development plans in the area, with a focus on improvements to Harmony Sports Complex.

Harmony Sports Complex

- The county is constructing a new entrance and multi-lane signalized exit at NE 13th Street.
- The existing entrance will be converted to right-in, right-out only.
- Internal improvements are phased with no firm timeline.
- Coordination is required with the County and Harmony Sports Complex, the property lessee.

18th Street and Other Area Developments

- Community members have raised concerns about safety and congestion at 18th and 192nd Avenue, especially during peak commuting hours and times when Harmony Sports Complex hosts events. Concerns have amplified with new developments in the area, adding to future traffic.
- County and city jurisdictions create coordination challenges on improvements and authority.
- A future right-of-way for 18th Street has been acquired but no road construction is planned. There's no current plan to connect 18th Street eastward to Goodwin Rd, though it's been discussed.

Next Steps

- Clark County staff expressed willingness to support and share information when asked. The project team will keep the county informed as plans move to 30% design.
- Clark County will inform the project team of any new projects not discussed during the meeting that could impact traffic counts.

MEMORANDUM

DATE: February 26, 2026
TO: Ivar Christensen, City of Vancouver
FROM: Lauren Garetto, PointNorth
Bruce Haunreiter, Harper Houf Peterson Righellis
SUBJECT: One-On-One Meetings Summary (Milestone 2)
PROJECT: 192nd Avenue Project

As the 192nd Avenue Project entered into its second phase of engagement, the project team met with six new groups to share early design recommendations and gather feedback to inform 15% design. One organization from the first phase — Clark County — was consulted for a second time. In total, **the project team met with 14 individuals representing seven different groups.**

Conversations focused on collecting feedback on **preferred multimodal design options** and understanding any **safety or access concerns with proposed roundabouts** at NE 6th, NE 9th, NE 13th and NE 18th avenues.

Feedback gathered from these conversations is being used to inform 15% design and will continue to be considered as the project moves forward.

Wheelchair User / Visually Impaired - December 16, 2025

Lilly Longshore, Wheeling the World

Lilly was consulted to provide feedback from the perspective of a wheelchair user and person with impaired vision. The project team shared multimodal design options and an early roundabout design concept at the intersection of 13th and 192nd to understand which design elements would best fit the needs for those using a wheelchair and/or those who have limited vision.

Multimodal Design

- Preferred options that separate pedestrians and bicyclists, especially keeping in mind future growth and the likelihood of increased bicycle traffic.

Intersection Design

- From a pedestrian and wheelchair-user perspective, signalized intersections feel safer and easier to navigate.
- Wheelchair users and people with vision impairments move more slowly and benefit from clear, full stops in vehicle traffic.
- Lilly expressed concern that roundabouts rely more on driver judgment unless signals are very clear.

- However, she noted that shorter crossings (fewer lanes) — which roundabouts can provide — are a meaningful safety benefit.
- Lilly stressed that people must clearly understand when to stop for pedestrians. If roundabouts are used, strong communication to drivers is critical, including:
 - Clear pedestrian signals - Audible signals are important, especially for blind users.
 - High driver compliance

Generic Safety / Access Feedback

- Design choices should not rely on ideal behavior; clear separation and strong visual/tactile cues reduce conflict and risk.
 - Color contrast is important, yellow on black provides much better contrast than red on black.
- Keeping pedestrians and wheelchair users farther from vehicle traffic is strongly preferred.
- At-grade crossings are preferred over ramps, when possible, though ramps are workable if designed well.

Next Steps

- Lilly noted she will share additional information/insights, as appropriate.
- Lilly recommended the project team present at the Clark County Developmental Disabilities Advisory Board.
- Project team to share open house information with Lilly, as available.

Fire & Life Safety - December 17, 2025

Cale Baker, Lead Deputy Fire Marshal, Vancouver Fire Department and Joshua Miller, Fire Protection Engineer, Vancouver Fire Marshal's Office

City of Vancouver fire and life safety staff were engaged to share their perspective on the proposed intersection concepts, including the use of roundabouts and center medians. The conversation focused on ensuring emergency vehicles can move through the corridor safely and efficiently. City fire and safety professionals will continue to be consulted as the design progresses.

Intersection Design

- Both Joshua and Cale shared that roundabouts have become more common locally and are generally familiar to fire crews.
- Cale noted that newer roundabouts built to current standards have not been an issue for fire operations, provided the turning radius can accommodate large emergency vehicles.

Generic Safety / Access Feedback

- The most frequent concerns raised by fire crews are narrow roadway sections and vertical traffic calming (e.g., speed bumps).
 - Cale stated that speed bumps and speed cushions are problematic for emergency response and should be avoided where possible.

- A 20-foot clear width is generally preferred to allow fire apparatus to pass one another or move around a stopped or staged vehicle.
- An 18-foot lane may function if a mountable median can be used as effective clear width, but this depends on:
 - Median construction.
 - Absence of vertical obstructions (trees, landscaping, signage).
 - Ability of the median to support the weight of large emergency vehicles.
- Narrow streets increase the importance of:
 - Fire lane signage.
 - Parking restrictions to prevent blocked access during emergencies.
- Joshua raised the need to consider outlier scenarios, such as stalled vehicles, and how responders would navigate the situation.

Next Steps

- Share an early design package with key questions and areas for feedback with Cale and Josh. The two will work with the assistant fire marshal to provide more direct input.
- Later in the process, address detailed fire access and aerial access needs, particularly as private development sites and building footprints advance.

Vancouver Bicycle Club - December 18, 2025

Charla Burke, Member; Joel Christiansen, Incoming Advocacy; Scott Sloan, Member; Scott Storkel, Board Member; Jan Verrinder, Member

Local cyclists were primarily engaged to understand multimodal travel preferences. In addition to a broad overview of early designs, the project team showed example photos of other local multimodal facilities and collected feedback on specific design elements. There were brief discussions around intersection safety and access, but this was not the primary focus of the conversation.

Strong Preference for Cycle Tracks Over Shared Use Paths

- Scott Storkel highlighted frequent “close calls” on shared use paths due to varied travelers — such as cyclists, pedestrians, people walking dogs, children, people using headphones — all moving at a different speed.
- Jan Verrinder shared that she pushes her husband in a wheelchair and shared use paths are “very scary to have anyone go by you because they see you from behind and you don't see them.”
- Scott Storkel noted unpredictable pedestrian behavior as a safety concern. “Pedestrians are far more unpredictable and dangerous than vehicles are [...] Cars are a lot more predictable.”

General Support for Separated, Protected Cycle Tracks

- The group strongly favored protected and separated biking facilities.
 - Scott Storkel shared that “any sort of marking that indicated where people walk and where cyclists ride is preferred.”

- Various members expressed a desire to stay away from vehicles as much as possible.
- Jan Verrinder supported cycle tracks but cautioned the transition from protected bike lanes to cycle tracks.
- Visual separation (color/material) is preferred over vertical separation.
 - Scott Sloan – “I don't believe I would ever put a two-inch curb anywhere near a bicycle. I think that's the way for an accident to happen.”
 - Joel Christiansen – “I've also seen people like sitting on the curb... it seems to invite people in a certain way.”
 - Charla Burke recommended “the more color the better” so people pay attention to different uses and directions.
 - The group showed preference for using green color to show separation. A few noted that they have seen it used in the community and it is an effective tool to separate pedestrians from bicyclists.
 - Charla Burke shared that she likes the delineation of pedestrians and cyclists using bricks between the lanes. “It acts like a rumble strip.”

Next Steps

- Project team to share open house information, as available.

Community in Motion - December 19, 2025

Jeananne Edwards, Executive Director, Community in Motion

Community in Motion supports seniors, people with disabilities, youth, and other at-risk populations in Southwest Washington. The organization was consulted to understand unique travel and safety needs that the project team should consider early in the design process.

Generic Safety / Access Feedback

- Jeananne shared specific feedback for elderly travelers and wheelchair users. Key themes included:
 - The design should take into account longer crossing times for both groups. She suggested making the road narrower to reduce crossing time.
 - Both groups are often traveling with a companion. Because of this, it's important that stopping points in the middle of a crossing are large enough to accommodate more than one person.
- Jeananne noted that reflective paint does not work when it rains, and that yellow-colored paint is better. Yellow helps people see boundaries better, especially for low vision travelers.

Next Steps

- Jeananne recommended the project team connect with groups that support those with developmental disabilities and elderly populations.

Rotschy Inc. - December 19, 2025

Page Rotschy, Owner, Grey Rock / Vice President, Rotschy Inc.

The project team consulted with Page Rotschy on early designs and how it might impact businesses in the area as well as future development plans. Rotschy is currently leading Section 30 development.

Intersection Design

- Page was supportive of the design, and roundabouts, as long as it accommodates truck traffic.
 - “Overall, we are in favor of roundabouts. We know they take up a little more real estate overall, but they work well and they are less maintenance.”
- Page emphasized that the 6th and 9th intersections directly impact their properties, particularly future development:

Future Developments

- Page did not have final timelines for developments near NE 6th Avenue and noted that he would like the 192nd Avenue Project to connect with this development.
- He noted that development of Section 30 will bring a couple thousand new housing units.
 - In favor of pedestrian and biking facilities that will benefit new neighbors moving into the area.

Generic Safety / Access Feedback

- Overall happy with the design and sees it as mutually beneficial to Rotschy’s developments in the area.

Next Steps

- The project team will engage Rotschy on ROW acquisition, as needed

English Pit Shooting Range - December 19, 2025

Randy Winkle, Leaseholder, English Pit Shooting Range

The project team met with Randy Winkle, leaseholder of the English Pit shooting range, to discuss safety and access considerations related to the 192nd Avenue corridor. Randy has operated the facility for nearly 20 years and focused his feedback primarily on conditions near the NE 9th Street intersection and the shooting range entrance.

Multimodal Design

- Randy supported new bicycle and pedestrian facilities. He acknowledged that the area is changing rapidly and supported improvements that enhance safety and accessibility.

Intersection Design

- Randy expressed openness to roundabouts, noting that while they are newer to many American drivers, familiarity and training improve driver comfort and operations over time.
- Primary concern is traffic congestion near 9th Street, particularly in the late afternoon. Randy noted that congestion has steadily worsened as the area has developed.

- Beginning around 4 p.m., traffic regularly backs up for several blocks, creating a bottleneck that affects access to and from the range.
- “Anything we can do to make the traffic flow better is going to be a great relief.”
- He emphasized the importance of ensuring intersections can accommodate larger vehicles.
 - The range periodically receives heavy equipment, including excavators, and truck maneuverability is an important consideration.
- Randy noted he could envision relocating the facility’s gate farther west if needed to accommodate a roundabout footprint, acknowledging that roundabouts require additional right-of-way.

Generic Safety / Access Feedback

- Maintaining access during construction is critical. Randy expressed concern about how construction could impact customer access and requested clarity on how ingress and egress would be preserved.
- Randy shared that vehicle size and maneuverability must be considered in design. Larger trucks and occasional heavy equipment need reliable access.
- Drainage is a seasonal issue. Portions of the property sit below street level and can become saturated in the spring.

Next Steps

- The project team will continue coordination regarding potential right-of-way needs near 9th Street.

Clark County - January 28, 2026

Bryan Mattson, Planner III / Community Development / Land Use; David Jardin, Traffic Engineering Section Manager; Michelle Dawson, Engineer III / Development Engineering

Team members from Clark County Public Works were consulted for a second time to continue conversations surrounding how the 192nd Avenue Project might impact Clark County project plans at Harmony Sports Complex or other long-term projects. This group was first consulted in May 2025 as early designs began to take place.

Intersection Improvements (Focused on NE 13th and 18th Avenues)

- County staff responded positively to the proposed roundabouts at NE 13th and NE 18th avenues.
- Bryan noted that at NE 18th, the current issue involves vehicles “trying to shoot the gap” to turn southbound. He described roundabouts as “a great solution” and highlighted the operational and maintenance advantages compared to signals.
- David discussed high traffic volumes at NE 13th, especially during event times at Harmony Sports Complex, and the importance of the design supporting those high traffic volumes.
- David asked about plans for mid-block crossings, which are still being considered.

Multimodal Design

- County staff responded positively to the proposed multimodal designs and responded favorably to the use of a shared use path that would eventually connect to the Burnt Bridge Creek Trail.

Next Steps

- The project team will continue to keep Clark County informed on the design process and next steps.
- Share Open House #2 details for County distribution.

MEMORANDUM

DATE: August 6, 2025
TO: Nicole Walters and Ivar Christensen, City of Vancouver
FROM: Monica Schmidt-Pinacho and Lauren Garetto, PointNorth
Bruce Haunreiter, Harper Houf Peterson Righellis
SUBJECT: Open House 1 Event Summary
PROJECT: 192nd Avenue Project

Overview

The first open house for the 192nd Avenue Project was held in person at Union High School on Wednesday, June 18, 2025, from 4 to 6 p.m. The event showcased early design concepts for improving 192nd Avenue between NE 18th Street and SE 1st Street. The goal of the open house was to raise public awareness, share information about engagement opportunities, and gather community input on key design elements, including multimodal options, intersection improvements and travel priorities. Additionally, the community was able to continue sharing feedback online via the project website through July 18, 2025.

A mix of digital and in-person engagement strategies were used to promote Open House 1 to reach neighbors who live, work, learn, recreate and travel through the project area.

1:1 Meetings

In preparation for the open house, the project team held one-on-one meetings with four key organizations — C-TRAN, Bonneville Power Administration (BPA), Evergreen School District Transportation and Clark County — to gather feedback on specific design elements and align on future plans for the corridor. These conversations helped ensure the project team shared accurate, current information with the public. Below are highlights of each conversation and a full summary is available [here](#).

- **C-TRAN** - C-TRAN was engaged to better understand their near- and long-term plans for 192nd Avenue and if expanding public transportation options on the corridor is feasible. The project team also discussed the design elements that are being and need to be considered.
- **BPA** - Conversations with BPA focused on technical design elements and the National Environmental Policy Act (NEPA) review process, design layout and utility planning, ARPA permitting, land use and right of way access.
- **Evergreen School District Transportation** - The project team met with the Director of Transportation to discuss the compatibility of roundabouts with school bus operations as well as general safety and access considerations for its students, faculty and staff.

- **Clark County** - Staff from the county’s Planning and Parks departments provided input on both short- and long-term development plans in the area, with a focus on improvements to Harmony Sports Complex.

Engagement By the Numbers - Promotion

See Appendix A for visuals of the promotional materials.

Activity	Date	Details	Reach
BeHeard Project Webpage	May 12	The project website was updated to include open house information. Other promotional materials such as social media, event flyer and mailer, all pointed community members to this website for additional information.	1,010 total visits (May 29 - July 21, 2025)
Press Release	May 21	Shared on the City of Vancouver website and picked up by The Post Record	1 placement
Project Mailer Distribution	May 21	Postcards mailed to homes and businesses along and near the project area.	343 postcards distributed
In-Person Promotion	May 28	Two members of the project team canvassed businesses from SE 1st Street to NE 11th Street, informing them about the project, promoting the open house and asking owners to share information with their staff and customers.	32 businesses
	May 28	City of Vancouver Staff attended the East Neighborhood Association Meeting and handed out open house flyers.	~30 community members
	May 31	A member of the project team attended the City of Vancouver Multicultural Resource Fair to connect with community members and share event details for the upcoming open house.	~40 community members
	June 7	Harmony Sports Complex was given flyers to distribute during its weekend Spring Recreational tournament .	75 flyers distributed
	June 14	A member of the project team attended the City of Vancouver’s Juneteenth Freedom Celebration to connect with community members and share event details for the upcoming open house.	35 community members

Email Newsletters	June 6	Email promoting the open house, sent via Vancouver Connects.	~14,000 subscribers
City of Vancouver Public Works Social Media	<p>May 29 - Event announcement</p> <p>June 9 - One week out reminder</p> <p>June 12 - Event reminder</p> <p>June 18 - Day-of event reminder</p> <p>July 3 - Online comment card promotion and call-to-action</p>	The City of Vancouver Public Works shared four posts about the open house and one post promoting the online comment card across Facebook, Nextdoor, and Instagram. Several posts were boosted by the City's main social media account.	<p>37,396+ impressions</p> <p><i>(total across all platforms from May 29 - July 18)</i></p>
PAG / Partner Promotional Media Kit	June 2025	The project team shared a media kit containing social media captions, email copy and graphics with the Project Advisory Group and community partners to encourage promotion with audiences outside of the City's immediate network. This helped secure promotion from C-TRAN and Columbia Premier Soccer Club .	<p>7,500 estimated impressions</p> <p><i>(total across all platforms)</i></p>

Open House Event Logistics



The project team kicked off the event with a brief presentation sharing project details.

As attendees entered the open house, they were greeted by a member of the project team who helped sign them in, gave them a brief overview of the event and directed them to the presentation. To ensure community feedback was collected in a way that would help move the design forward, attendees were given a comment sheet to provide feedback on specific design elements and considerations.

The event began with a presentation from members of the project team, informing attendees about the project's background, purpose, timeline, design considerations and format of the open house. Following the presentation, attendees were invited to rotate between five stations — all staffed by members of the project team — to dive deeper into the potential improvements, ask questions and share feedback. Stations included:

- **About the Project:** Project staff provided an overview of the project goals, history of the corridor and timeline. The team also shared information about the Project Advisory Group (PAG), their involvement in the project and feedback thus far as well as the importance of the PAG for consistent community involvement.
- **Multimodal Design Concepts:** Attendees connected with members of the project team to learn more and share feedback related to multimodal transportation, with a particular

focus on those who chose to travel via public transportation, walking, biking or small mobility devices. This included:

- One display board showcasing existing multimodal treatments on the corridor and the need for improved pedestrian and bike-friendly travel options.
 - Three display boards showing three different multimodal concepts, their benefits and tradeoffs.
 - One large table map of the corridor where people could note areas where they would like public transportation to take them in the project area and areas where they would like to see new or improved pedestrian crossings.
 - One large activity poster where attendees could share their comments, thoughts or ideas on multimodal transportation and the early concept ideas discussed.
- **Intersection Improvements:** This station shared information about the benefits and tradeoffs of two intersection designs — roundabouts and signalized intersections — and informed attendees of the design considerations and constraints in the decision-making process. This included:
 - One display board detailing what a roundabout is, what its benefits and tradeoffs are.
 - One display board with intersection improvements ranking criteria, highlighting how the project team is evaluating the two approaches to improve safety, traffic flow, access and support the expected growth in the area over the next 20 years.
 - One large table map of the project area for attendees to see where intersection improvements would take place. The map showed the project corridor with key intersections using each of the two treatments for community members to visualize the treatments.
 - One large activity poster where attendees could share their feedback on intersection safety, access and mobility.
 - **Roundabout Demonstration:** To help bring the design concepts to life for community members, the project team created a roundabout mockup on the floor showing how traffic flows in a roundabout. Community members were able to move through the roundabout to experience how drivers, pedestrians and people using a small mobility device move through the intersection with a roundabout treatment.
 - **Feedback:** After rotating through the stations and asking questions, attendees were invited to fill out a comment sheet to share their feedback. The comment sheet asked attendees to provide answers to demographic questions and share their feedback on key design elements. Attendees were encouraged to submit written feedback via comment sheets and return them to project staff before leaving the event.

Lastly, to accommodate families and provide a space for youth engagement, the event featured a dedicated **Kids Zone** with hands-on activities. The area included transportation-themed coloring sheets, Play-Doh and building blocks. This allowed parents and guardians to more fully participate in the event, ask questions and provide feedback at the other stations.



A community member enters the open house and signs-in at the check-in table.



Community members share written feedback regarding intersection improvements.



A project team member explains multimodal transportation options to the community.



Community members share intersection improvement feedback on a large table map.

Engagement By the Numbers - Event

See Appendix B for visuals of the promotional materials.

Activity	Date	Details	Engagement
Event Attendance	June 18	An in-person open house event with interactive stations where community members could connect with the project team, ask questions and share their comments, ideas or concerns was held on June 18, 2025 at Union High School.	88 attendees
Completed Comment Sheets	June 18	Comment sheets were made available to in-person attendees to share feedback on key design elements and considerations. An online version of the comment sheet was available June 20 through July 18 on the project website for those who could not attend in-person, or prefer to share comments at a later date.	40 responses

What We Heard

The project team collected community feedback through in-person comment sheets, conversations with the project team, activity posters and an online comment sheet made available after the open house. Questions on the comment cards and activity posters focused on key elements to move the project forward to 30% design. These included:

- **What are your top three (3) priorities to improve travel** on NE 192nd Avenue between NE 18th Street to SE 1st Street?
- The project team is looking at three design ideas to improve safety, accessibility and comfort for people who walk, bike, roll or use a small mobility device. Some areas might look a little different because of space, but most of the project area will use the same design. **After looking at the benefits and tradeoffs, please share any comments you'd like the team to keep in mind as they work on these ideas.**
- The project team is looking at two options - signalized intersections (traffic lights) or roundabouts - to improve safety, traffic flow, access and support the expected growth in the area over the next 20 years. After reviewing technical data and getting feedback from the Project Advisory Group, the project team is leaning toward building roundabouts at four intersections: 18th Street, 13th Street, 9th Street, and 6th Street. **Do you have any safety, access or mobility comments to share with the project team as they finish their analysis?**

Respondent demographics were also collected to get an understanding of who participated. **Of the 40 in-person and digital comment cards that were received:**

- **85%** identified as living in the project area
- **63%** identified as visitors of places of interest along or near the project area
- **20%** identified that they work or own a business along or near the project area
- **93%** of commenters drive the corridor alone every day, almost every day or several times a week
- **23%** of commenters carpool the corridor every day, almost every day or several times a week
- **0** commenters noted they ride a bike, take public transportation or use a small mobility device every day, almost every day or several times a week

When asked what their **top three priorities to improve travel on the corridor** were, the vast majority of responders (90%) noted addressing congestion as one of their top priorities.

Responses to this question included:

- **90%** said address congestion
- **30%** said make it safer to walk or use a wheelchair
- **30%** said repair potholes and the pavement surface
- **28%** said make it safer for drivers



A large station sign shows where attendees can learn more about multimodal design concepts.

Multimodal Design Concepts - People were invited to provide feedback on multimodal design concepts to improve safety, accessibility and comfort for those who walk, bike, roll or use small mobility devices. Input was gathered through in-person comment sheets, conversations with the project team, interactive posters and the online comment form. Many participants shared concerns about current **pedestrian safety issues** and emphasized the need for infrastructure that supports walking, biking, and rolling. Others observed a noticeable **lack of existing bicycle and pedestrian traffic** in the area.

- "I live in the project area. I would like to walk and bike but it is currently too dangerous."
- "Young, new families move into our area and try to go for a family bike ride on our streets - they soon discover that is very dangerous. If we had designated lanes for bikes more people elderly, like me, would be out riding our bikes."
- "Challenging to walk or bike in the current state. Do not feel comfortable having kids walk/bike."
- "As it stands right now, I would never consider riding my bike along 192nd. If the dedicated bike lane was available, I could."
- "No need for buses on 192nd. Never see anyone on bikes. Traffic is horrible, cannot get out of our neighborhood between 3:30-6:00. Need more streetlights."
- "The concepts appear to allocate at least 50% of the right of way to modes comprising 5% of the travel volume. There is no realistic scenario calling for that much non-vehicular capacity within the lifecycle of the improvements..."

- “Except for the increased safety of the very few bicycles and pedestrians, this just looks like a colossal waste of money.”

Some people noted support for having a barrier between car and bike traffic to improve safety.

- “I like the landscaping and trees in-between the road and the sidewalk and bike lanes.”
- “I prefer option B. Designated bike lane behind the tree lane.”
- “Separating cars from other modes does worlds for usability, as long as traffic flow is not intersected. Bikes being with pedestrians on a side path rather than the road is safer and less frustrating for bikes and cars.”
- “Keep bike lanes separated by trees or some barrier to assure safety.”
- “I like the idea of having a median between the lanes of traffic and bike/pedestrian traffic being separated from vehicles.”



A large station sign shows where attendees can learn more about intersection improvements.

Intersections Improvements - People were invited to provide feedback on intersection design options — signalized intersections (traffic lights) or roundabouts — via in-person comment sheets, conversations with the project team, interactive posters and the online comment form. Feedback included mixed reactions to both options. For those who did share a specific intersection preference via in-person and online comment cards, more people expressed support for roundabouts.

Those who showed a preference for roundabouts, noted the **benefits of slowing traffic, improved safety and cost**. Specific calls for a roundabout at 192nd Avenue and NE 18th Street were also shared.

- “Traffic circles provide the most safety and should adequately handle all but the heaviest traffic periods.”
- “After listening to one of the project managers tonight, I can see how roundabouts are beneficial. Because if you need to turn left, you can instead go to the next roundabout and come back to your turn and turn right — safe and efficient!”
- “I prefer roundabouts because they permit the continuous flow of traffic.”
- “Love the roundabouts. Cheaper, safer, smaller footprint. You should start building the roundabout on 18th tomorrow!”
- “So happy to see plans to add a roundabout at 192nd ave and 18th st. Please do this!!”
- “Do the roundabout at 18th and 192nd first and SOON!”

Some respondents were supportive of roundabouts, but with a few key questions/concerns surrounding the **effectiveness of roundabouts for large commercial vehicles** — especially with new developments around the project area — their **ability to accommodate future traffic volume growth**, and their **usability for younger drivers**.

- “I like the idea of roundabouts, but I question their use on a road that has so much truck traffic. With the logistics center going in there will be lots of trucks.”
- “While I am inclined to like the roundabout option, I am extremely concerned about the Amazon facility and the likelihood of those trucks to slow traffic even more.”
- “I support roundabouts as long as they are tested to sustain more vehicle traffic, not less. It will take entirely too long for transit to eliminate car traffic.”
- “Roundabouts keep traffic moving, but an increase to 22,00 [cars]/day would be overwhelming to that area.”
- “I believe roundabouts are superior, though I admit I worry a bit about volume if there is only one lane of traffic in each direction. As far as safety is concerned, I believe roundabouts are safer in that there is much less potential for head on crashes or t-bone crashes.”
- “While I am all for having sidewalks along 192nd Ave for convenience and safety, I am dismayed that you are not considering increasing the vehicle carrying capacity. I have lived near the intersection of 13th St & 192nd Ave for 35 years and the amount of traffic on both of these roads has increased tremendously. The large battery semi-trucks and the ever-increasing housing (and its construction) by green mountain is having a big impact that these roads were not made to handle. How can it be that there is continuing growth, yet there is no plan to increase the traffic carrying capacity?”
- “Roundabouts might be challenging for student drivers... Work with local driving schools to teach younger drivers how to use them.”

Those who showed a preference for signalized intersections cited their ability to **manage higher traffic volumes** and **reduced user confusion** compared to roundabouts.

- “Signalized intersections with more lanes seem to better address the need to alleviate traffic congestion as well as creating safer accessibility. Roundabouts will not adequately address the primary issue of traffic congestion.”
- “I travel hwy 14 often through Camas/Washougal. The roundabouts do not handle commuter traffic. Nor does the roundabout at Lake Rd./ Everett. I see far more people freeze at a roundabout (causing road rage from others) than a signal light. It's hard to believe the statistics claim roundabouts are safer based on all I see of them. Including semi trucks squishing cars on roundabouts when side by side. Signal lights for arterial intersections (and if 8th or 9th or 11th go through sect. 30) and roundabouts for small neighborhood intersections only for purposes of residents there being able to get in and out.”
- “Please do signalized 4 lane road to reduce congestion.14,000 vehicles going to 22,000 will require 4 lane roadway and 10 years beyond will be even work for traffic circles.”
- “I would prefer traffic lights. Roundabouts are causing too much confusion for drivers and when commercial vehicles go through them they are often their trailer is in an area it should not be. “
- SE 192nd Ave has 4 lanes, sidewalks, bike lane, and has the same traffic is traveling up to NE 192nd Ave. 4 lanes is a must. Growth is happening. I live on NE 11th St. across from the Humane Society, and we need a center turn lane to allow us to safely exit our neighborhood. Sometimes it's impossible.



Community members share feedback with a member of the project team.

Additional Feedback - Beyond multimodal and intersection feedback, additional input gathered through in-person comment sheets, conversations with the project team, interactive posters and the online comment form included:

- Requests to add a **sound barrier**.
 - “Please provide a wall barrier for the homes that back up to 192nd across from Harmony Sports Complex.”
 - “Sound walls/barriers wherever possible, especially on 192nd east side from 13th north.”
 - “...Add a wall barrier from 13th to 11th on the east side of the street. “
 - “Sound barriers for as many residents along 192nd as possible, especially from 13th St. north.”
- **Improve access to businesses and amenities** such as the Humane Society for Southwest Washington and Harmony Sports Complex.
 - “Be sure that your solution provides great access to the Humane Society's animal shelter.”
 - “I like having roundabouts because we can more easily go south onto 192nd in a closer distance to 8th street. Also would like to make sure there is easy access to get to HSSW.”
 - “For me, any of these options would be an improvement! We have two children who play sports at Harmony so we are there 5x a week. We currently drive / bike depending on the weather, and getting there by foot/bike is a harrowing experience. I'd also love to see a C-Tran bus stop at Harmony.”
 - "I want people to remember the businesses in the area."
- Need to improve **safety for youth**.
 - “Our children cannot bike between Harmony Sports Complex, Harmony Elementary, Pacific Middle School and the surrounding neighborhoods. Please make these improvements for safety as soon as possible.”
 - “Can't wait for sidewalks so the kids can walk to school safely!”
 - “We just want our kids to be able to walk home.”
 - “There are a lot of kids... People don't walk or ride their bikes because it's not safe... I want to be able to walk from 13th to 18th.”

Next Steps

Feedback from the in-person open house and online comment sheet will help the project team further shape the next steps of the design process (15-30% design). Updated design concepts and ideas are expected to be presented to the Transportation and Mobility Commission (TMC) and the 192nd Avenue Project Advisory Group in November and December 2025 respectively.

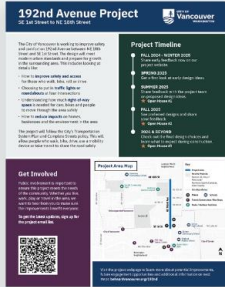
A second open house, anticipated to take place in the first quarter of 2026, will give community members another opportunity to weigh in on the project's design. While construction funding has not yet been secured, the construction phase could begin as early as 2028. Community members are encouraged to visit the project website at beheardvancouver.org/192nd to stay up to date on the latest project information and ways to connect with the project team.

Appendix – Communications & Engagement Collateral

Appendix B: Day-Of Materials

Day-of materials to improve attendee experience and understanding of key project elements.

Day-Of Materials



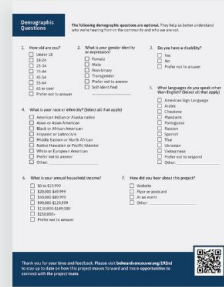
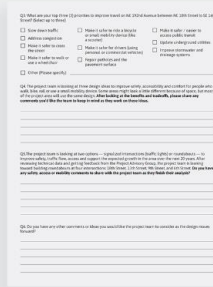
Fact Sheet

Day-of: Fact sheet highlighting key project information.



Comment Sheet

Day-of: Attendees received a comment sheet to provide feedback that will help the project team make key design decisions.



Display Boards

Day-of: Printed display boards were designed and set up at open house stations to improve attendee experience and understanding of key project elements.

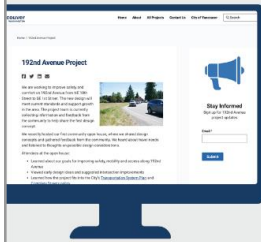
Appendix C: Event Highlights

192nd Avenue Project NE 18th Street to SE 1st Street



Open House 1 Engagement Highlights

Promotion Highlights



1,010
Project Web Page Views

70+
In-Person
Conversations



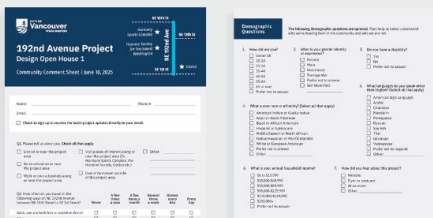
44,000+
Estimated Social Media Impressions



343
Postcard
Invites Sent

Event Highlights

40 Comment Card
Submissions



88
Community
Attendees





CITY OF
Vancouver
WASHINGTON

192nd Avenue Project

NE 18th Street to SE 1st Street

Transportation and Mobility Commission
Public Hearing

Ivar Christensen

Senior Civil Engineer
Public Works
City of Vancouver

Bruce Haunreiter, PE

Principal / Civil Engineer
HHRP

Lauren Garetto

Public Engagement
PointNorth

April 7, 2026



Agenda

Project Overview

About 192nd Ave from NE 18th to SE 1st

Design Overview

Follow up from the March 3 TMC Meeting

Staff Recommendation

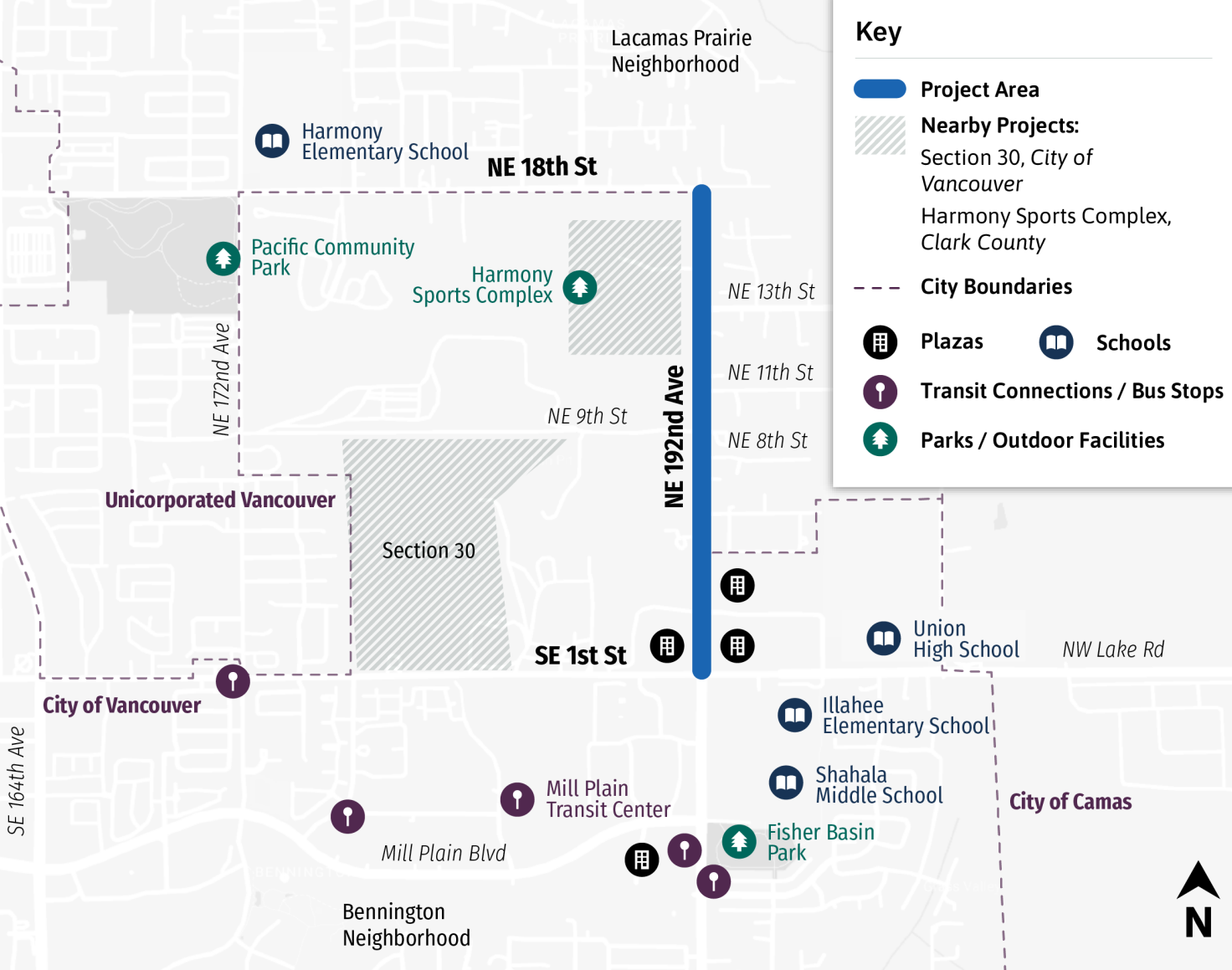
Where we go from here



Project Overview

192nd Ave from NE 18th to SE 1st





Key

- Project Area**
- Nearby Projects:**
Section 30, City of Vancouver
Harmony Sports Complex, Clark County
- City Boundaries**
- ⌘ **Plazas**
- 📖 **Schools**
- 📍 **Transit Connections / Bus Stops**
- 🌲 **Parks / Outdoor Facilities**

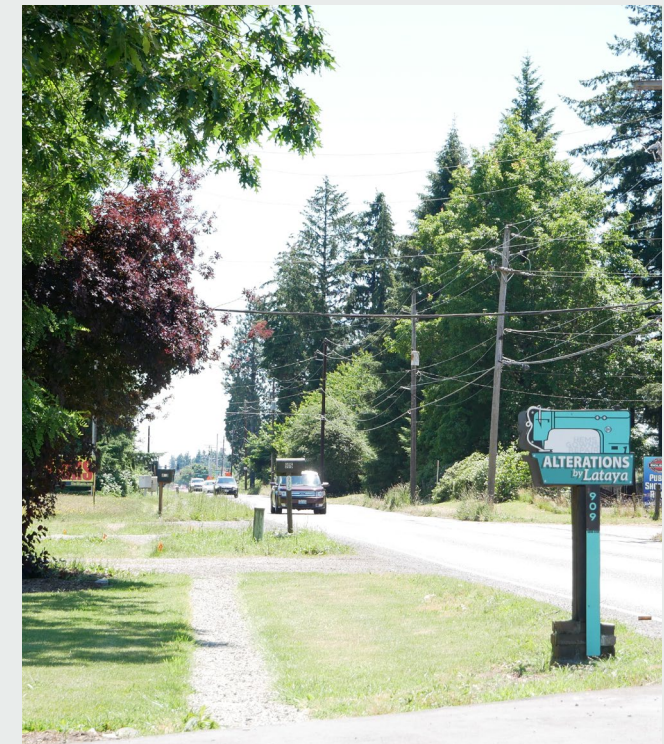
Project Area

- A mix of **residential neighborhoods, rural lands and businesses** including: Harmony Sports Complex, Humane Society for Southwest Washington, and a variety of businesses off SE 1st Street
- Is **near other improvement projects** such as Section 30
- Has an average of **14,000 cars travel the corridor a day**, with this number expected **to increase to 22,000 by 2045**
- Is a **Complete Street project**



NE 192nd Avenue is an important community connector

- Lacks consistent, safe **pedestrian and bicycle infrastructure**
- Experiences **heavy traffic congestion**, especially during peak commuting hours and during nearby community events
- **Unsafe intersections** create higher-than-average crash rates
- Has **outdated water, sewer and storm drainage** systems



NE 192nd Avenue Project Timeline

2025	Winter 2026	Spring 2026	Summer 2026	Fall 2026 + Beyond
<p>Early design + Feedback</p> <ul style="list-style-type: none"> • February - Project Advisory Group (PAG) Meeting #1 • Spring - Small Group Briefings • May - PAG Meeting #2 • June - Open House #1 	<p>Preferred design options + feedback</p> <ul style="list-style-type: none"> • Winter - Small Group Briefings • February 17 - Project Advisory Group (PAG) Meeting #3 • March 3 - TMC Meeting #3 	<p>Preferred design options + feedback</p> <ul style="list-style-type: none"> ★ April 7 - TMC Meeting #4 • May 12 - Open House #2 - Present 30% Design 	<p>Refine designs</p> <ul style="list-style-type: none"> • TBC - PAG Meeting #4 	<p>Design choices + construction expectations</p> <ul style="list-style-type: none"> • TBC - Open House #3 - Design Showcase

**Schedule is subject to change. More details will be provided as the project moves forward.*



Design Recommendation

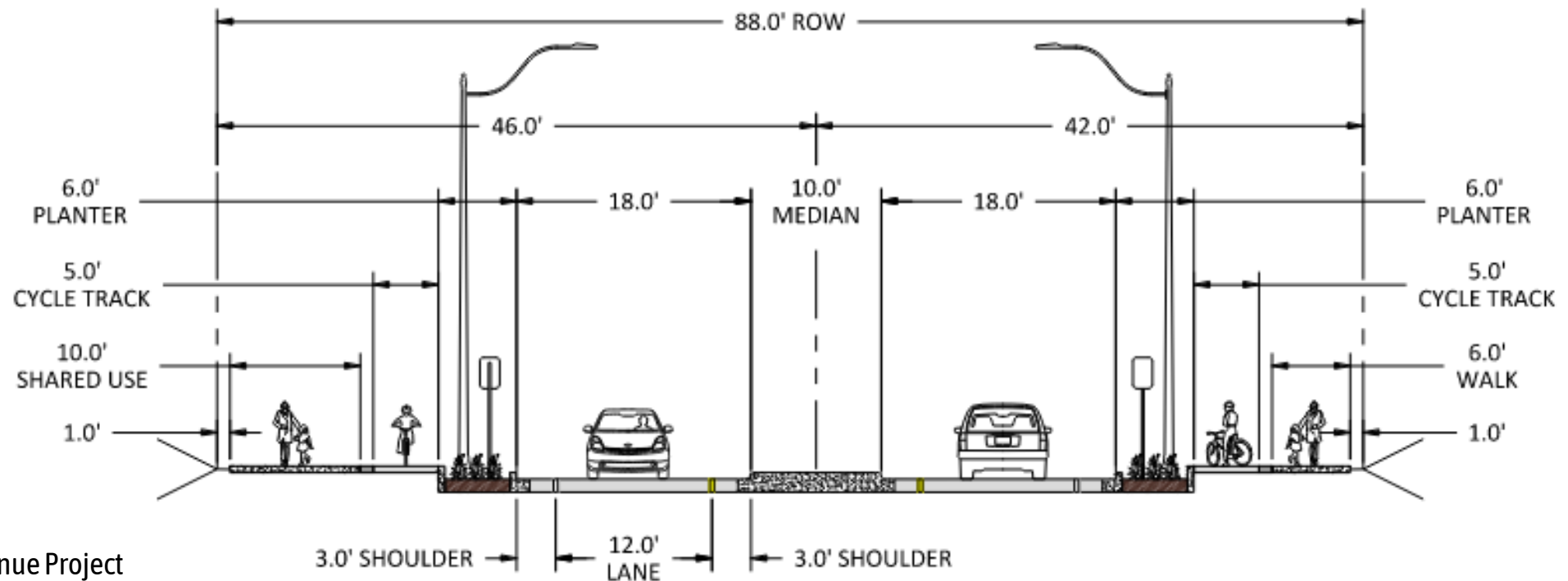
Intersection, Corridor and Multimodal designs



192nd Typical Section

One Lane Each Direction

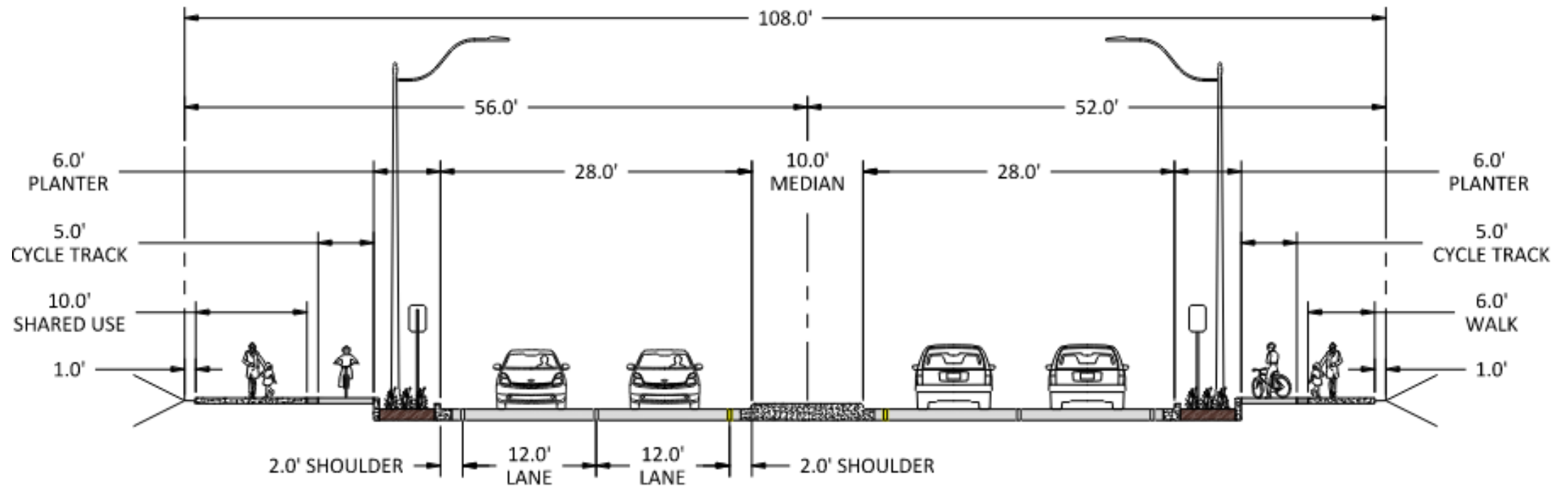
- Mountable median for emergency vehicles
- Shoulder space for disabled vehicles
- Landscaped Planters with Street Trees



192nd Typical Section

Two Lanes Each Direction

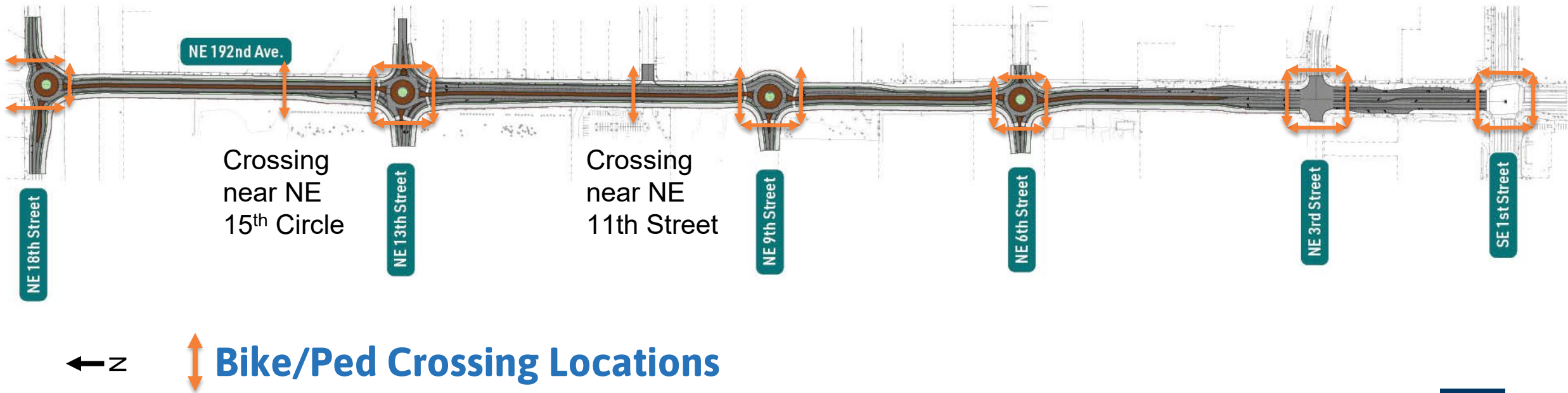
- Mountable median for emergency vehicles
- Landscaped Planters with Street Trees



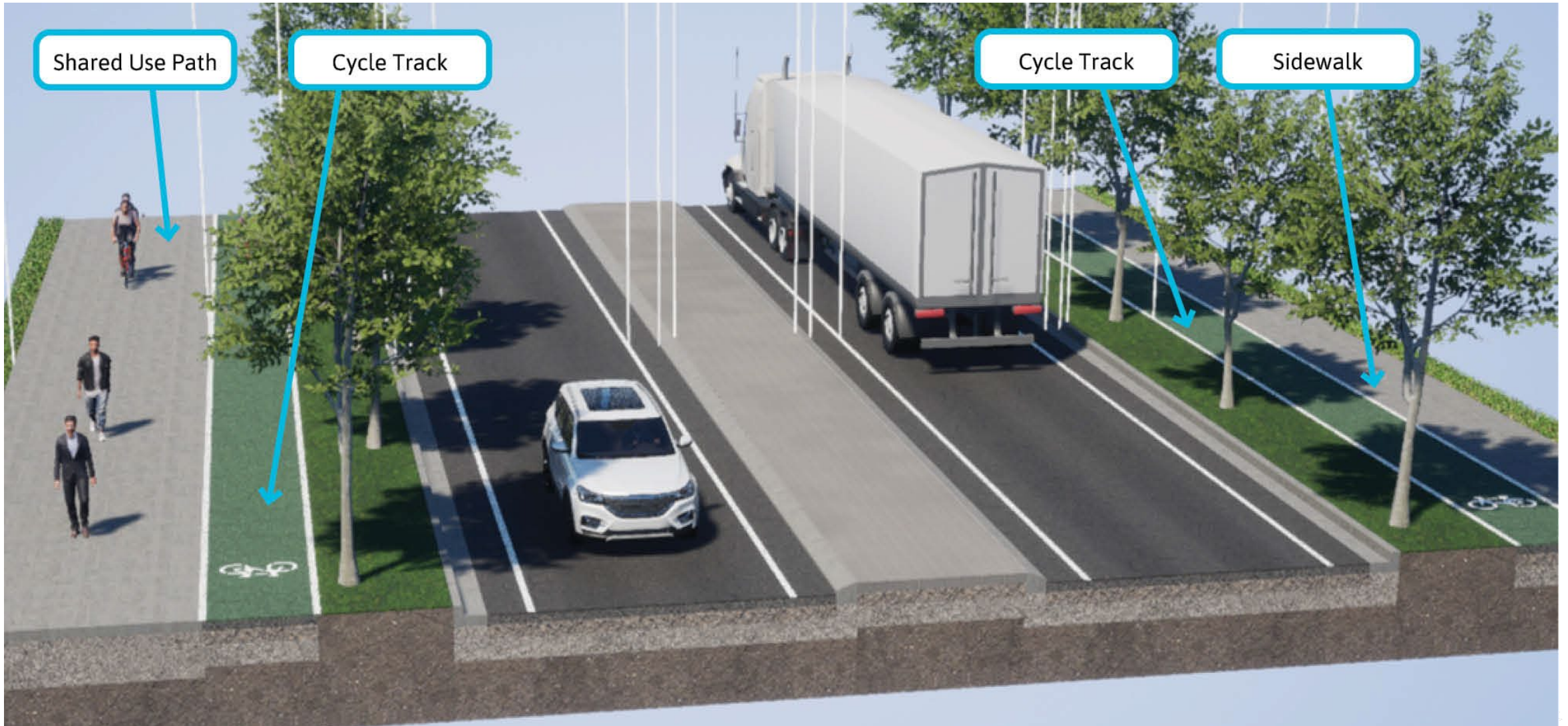
192nd Corridor Multimodal Design

Recommended design elements include:

- roundabouts at key intersections
- additional travel lanes to meet future capacity needs
- multimodal facilities
- mid-block crossings



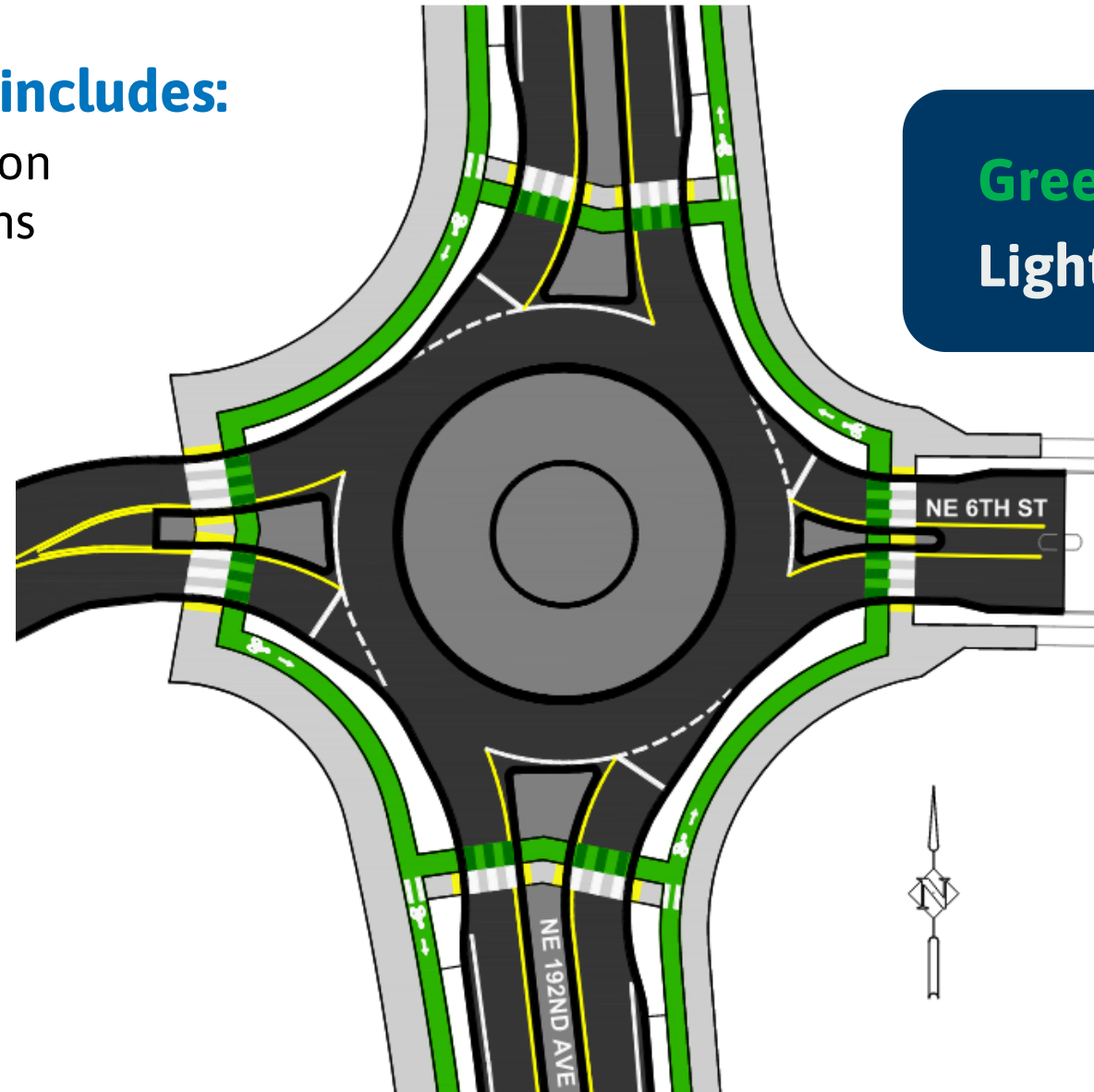
Multimodal Cross-section



192nd & 6th Street Intersection Layout

Recommended design includes:

- One lane in each direction
- Separation of pedestrians and bikes from vehicles



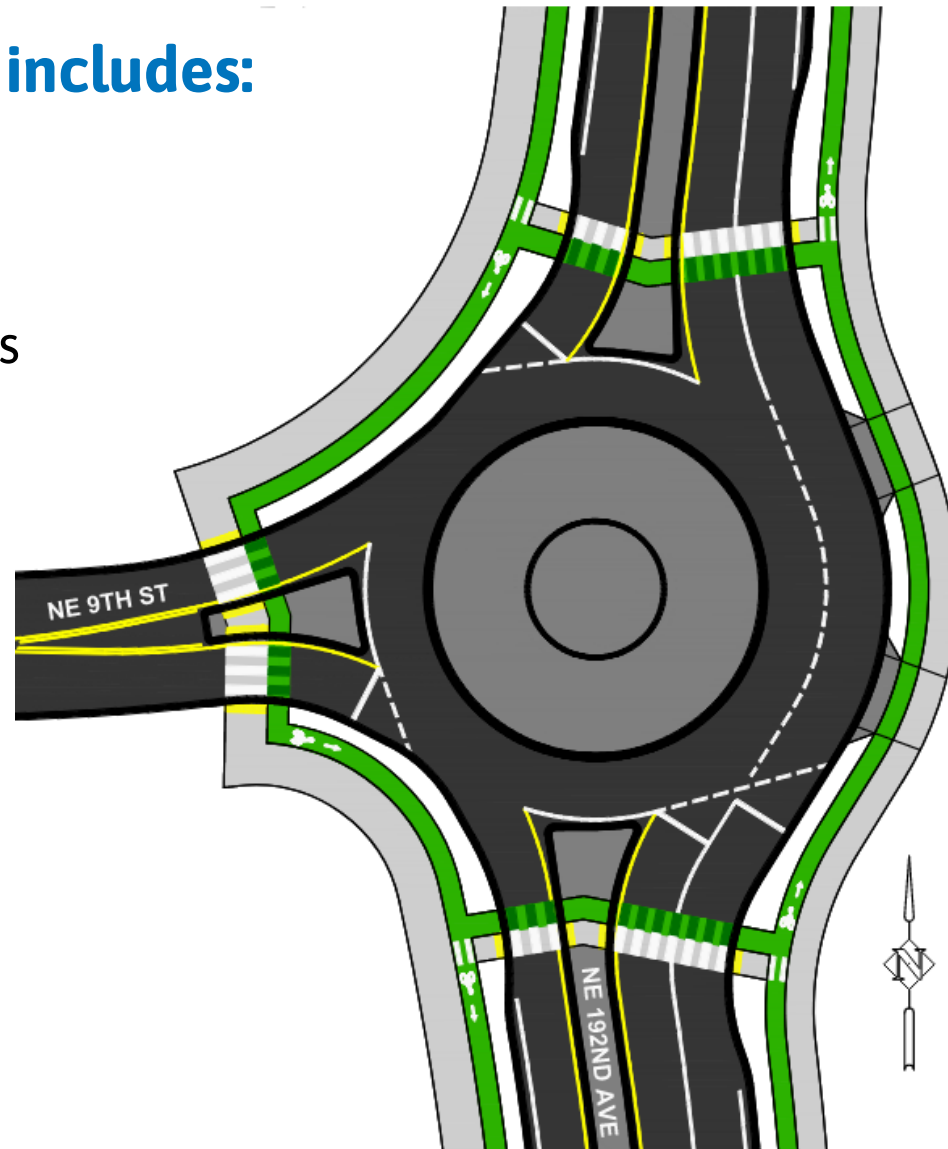
Green = Cycle Track
Light Gray = Ped/SUP



192nd & 9th Street Intersection Layout

Recommended design includes:

- Two lanes northbound provides local access to driveways
- Separation of pedestrians and bikes from vehicles



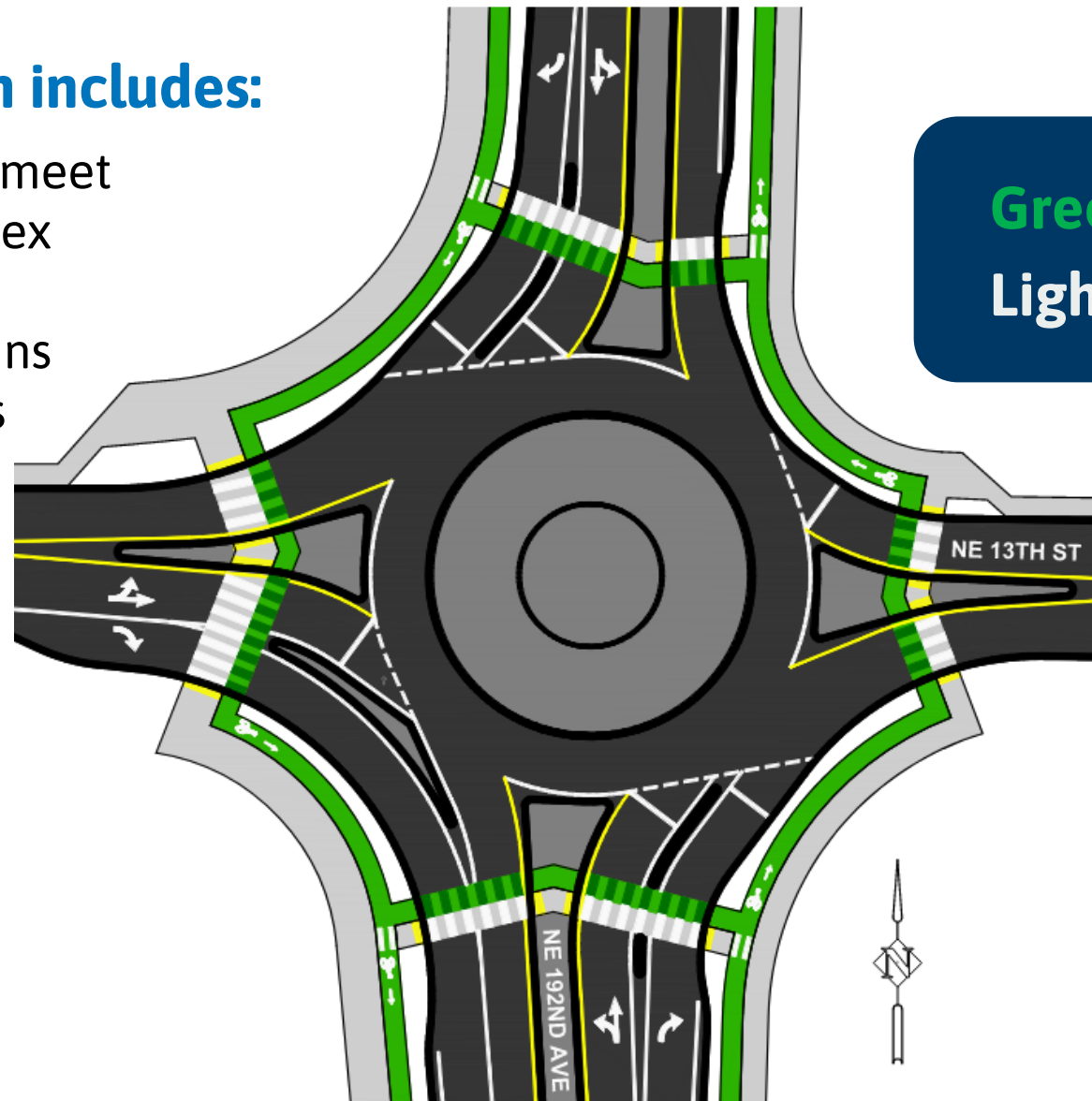
Green = Cycle Track
Light Gray = Ped/SUP



192nd & 13th Street Intersection Layout

Recommended design includes:

- Additional travel lanes meet Harmony Sports Complex capacity needs
- Separation of pedestrians and bikes from vehicles

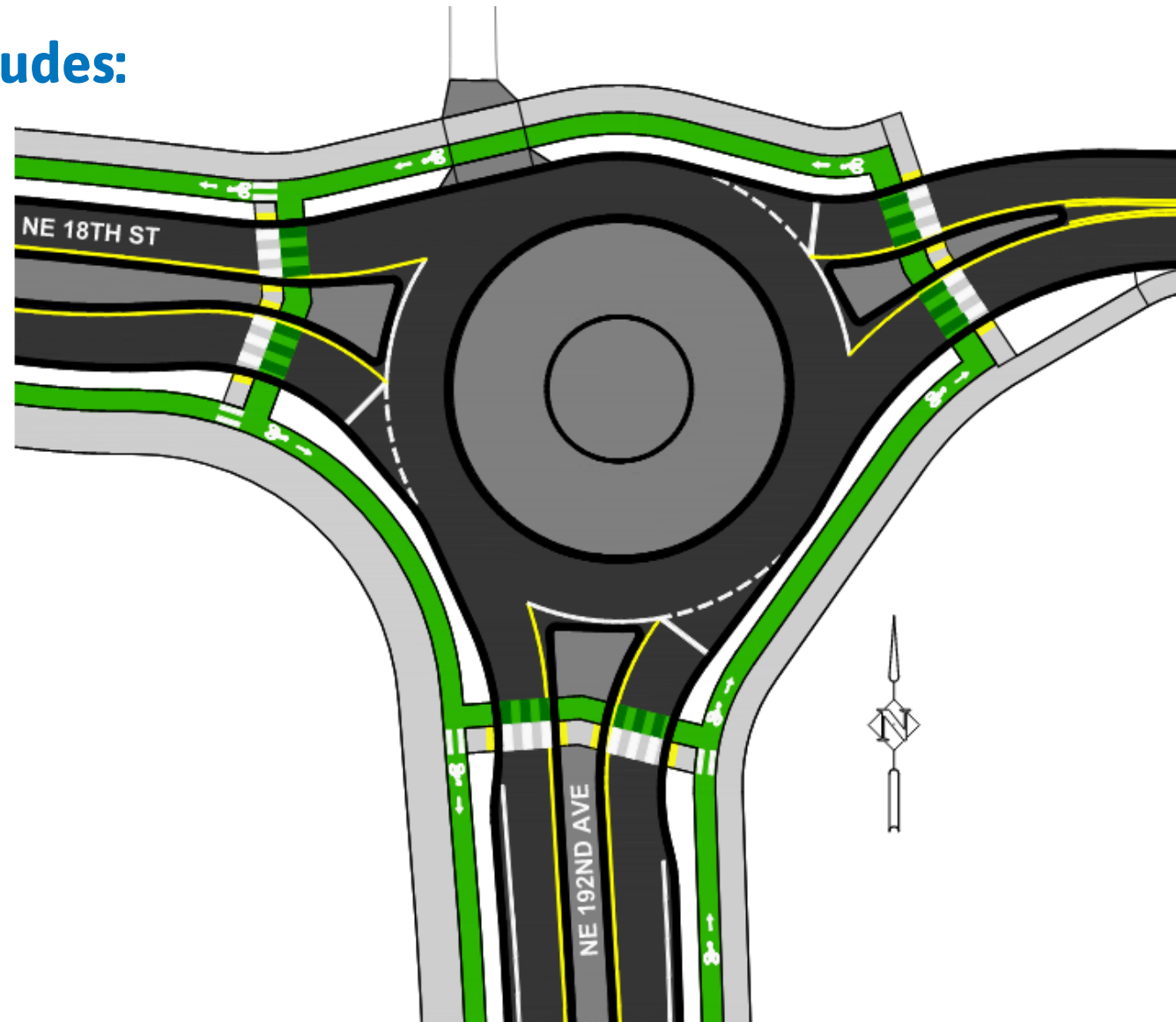


Green = Cycle Track
Light Gray = Ped/SUP

192nd & 18th Street Intersection Layout

Recommended design includes:

- One lane in each direction
- Retains local access
- Separation of pedestrians and bikes from vehicles



Green = Cycle Track
Light Gray = Ped/SUP



Staff Recommendation

The project team is seeking the Transportation and Mobility Commission's endorsement of the proposed project designs and investments for NE 192nd Avenue, to be implemented through the capital project and the transportation improvement program as funding becomes available.



Thank You



192nd Avenue Project | NE 18th Street to SE 1st Street
beheardvancouver.org/192nd

