

Tuesday, May 13th, 2025

4:30 p.m.

City Hall

Council Chambers

415 W. 6th Street

Vancouver, WA

<https://us02web.zoom.us/j/81073456128>

+1 (253) 205-0468, Meeting ID: 810 7345 6128

AGENDA

1. Call to order and roll call
2. Adoption of Minutes – April 8, 2025
3. Workshop: Comprehensive Plan Update - Plan Element Goals and Policies Pt. 2 – Rebecca Kennedy, Deputy Director, Domenique Martinelli, Senior Planner, Community Development Department
4. Workshop: Eliminate Parking Minimums for Affordable Housing – Chim Chune Ko, Real Estate Project Manager, Economic Prosperity & Housing Department; Bryan Snodgrass, Principal Planner, Community Development Department

Break 6:00 – 6:30 pm

5. Community Forum – see below
6. Public Hearing: 2025 Stand Alone Rezones to Facilitate Housing – Bryan Snodgrass, Principal Planner, Community Development Department
7. Staff and Chair Communications

Adjournment approx. 8:00 pm

Members

Patrick Adigweme
Chair

Zach Pyle
Vice Chair

Marjorie Ledell
Nena Cavel
Sandra Beck
Allyssa Wheeler
John Jay

Community Development Department

415 W. 6th Street
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To request accommodation or other formats, please contact:

Community Development Department | 360-487-7813 | Relay: 711 | PlanningCommission@cityofvancouver.us

Community Forum

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 PlanningCommission@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 Zoom (details on each agenda). Staff will call on you to speak when it's your turn. If dialing into Zoom by phone, use *6 - Toggle mute/unmute and *9 - Raise/lower hand
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.

Meeting Minutes

Tuesday, April 8, 2025

5 p.m.

City Hall

Council Chambers

415 W 6th Street

Vancouver, WA

The meeting was called to order at 5pm.

Commission Members Present:

Patrick Adigweme, Sandra Beck, Marjorie Ledell, Zach Pyle, Nena Cavel, John Jay

Commission Members Absent: Alyssa Wheeler

Motion by Commissioner Jay, second by Commissioner Pyle to approve the absence of Commissioner Wheeler.

Motion passes unanimously.

Staff Present: Bryan Snodgrass, staff liaison; Kail Hibbs, support staff; Becky Rude, staff attorney

Adoption of the minutes: March 11th, 2025

Motion by Commissioner Cavel, seconded by Commissioner Jay, carried with one abstention from Commissioner Beck who was absent on March 11th, 2025.

Workshop: Comprehensive Plan Update: Plan Element Goals and Policies

Domenique Martinelli, Senior Long-Range Planner, Community Development Department; Chim Chune Ko, Real Estate Project Manager, Economic Prosperity & Housing Department

Staff presented a high-level overview of the vision, draft goals and the policy development process for the 2045 Comprehensive plan. They delved into policies related to land use & development, climate, housing, and economic opportunity.

Members

Patrick Adigweme

Chair

Zach Pyle

Vice Chair

Nena Cavel

Sandra Beck

Marjorie Ledell

Alyssa Wheeler

John Jay

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Commission discussion and staff responses:

- **How would these high-level policies be implemented and lead to action to meet the goals? For example, “expand workforce development” or “increase housing access.”** Staff responded that these policies and goals are aspirational and provide details on where the City wants to go in the future. They also inform staff work programs in a variety of departments. With housing production, we need to identify more affordable housing funds, and city actions such as zoning changes on the planning and policy side to meet goals according to policy framework. Economic infrastructure can help with supply which can lower prices to develop by investing in smaller businesses within our local community.
- **Would it be fair to say this is a menu of goals that the City is planning to pick and choose from?** Staff responded that any one project will not meet all of these goals but is meant more to find projects that align with the framework of these goals. A goal is to increase learning and training for community members and business owners. For example, #31 in the attachment leading to streamlined permitting processes to address housing goals.
- **At what level in the Comprehensive Plan is there a cost vs. value analysis? For example, mandate recycling and organic composting throughout the City. Is cost analyzed at the policy level or the implementation level?** High level consideration of cost implications can be considered in drafting the Comprehensive Plan, but with the exception of capital facilities costs to serve the next six years of growth, the Plan is primarily an aspirational document.
- **How do you weigh at the policy level, which policies will be too expensive to be fiscally responsible or to have fiscally sustainable growth? With some of these drafted policies, there are possible conflicts, i.e. annexation and complete streets.** Staff responded that is a good reminder to go back and weigh these priorities and evaluate.
- **In the Regional Planning #91 policy about partnering with Clark County for transit development, it looks to increase transit following increased density. Can the City gain more proactive control over transit development in the City and annexation areas?** Staff responded we are more on the egg vs chicken approach of that, increasing density and the transit will follow.
- **Can you clarify affordable vs. accessible housing. Is accessible regarding universal design or accessible in price?** Staff responded that affordable housing is diverse housing types readily affordable to diverse income groups.
- **How would the City promote childcare?** Staff responded the biggest thing is current provisions in existing code that make childcare facility creation very difficult. As a City we do play a part in making that process simpler and more accessible and increase workforce productivity by increasing childcare access.
- **Do you work with school districts to determine population investments?** Staff responded that historically enrollment projections are generally in alignment with general City population, but staff will work with school districts to analyze this.
- **What are policies #1 and 2 because on our materials it begins at #3?** Staff responded that there is a long document with 120 policies and staff just pulled out policies related to land use.
- **Next steps talk about the draft comprehensive plan being published in July.** Staff responded that will likely be later due to the parallel process with the Draft Environmental Impact Statement (DEIS) and the Draft publication.
- **Will the DEIS be published before the draft comprehensive plan?** Staff responded the DEIS is aiming to be released as a 45-day public comment period in June or July. This is a tangential process to the draft.
- **How do we go from aspirational to practical?** Staff responded that the Comprehensive Plan is to direct programs to be developed because of the codes being put into the Comprehensive Plan. The code will be developed in accordance with the Comprehensive Plan whereas the programs will follow in response to the Comprehensive Plan.
- **If I was a developer, I would think that these goals touch every aspect of housing, so how does the developer know what is of priority to the City in order to go through development process?** Additional filters are needed to prioritize and weigh these policies for the external viewer. Staff

responded that they may be going too broad, but they want to allow for more actions to take place following the development of the Plan. You will be able to view the “actions” before they are published in the draft Comprehensive Plan. Policy #42 is a statement that speaks to the subarea planning process for those developers.

- **The plan feels more subjective than objective. How does the public know what is a priority?** Staff responded one of the future actions is to implement prioritizing asks for those developments of DA and Master Plan developments adding another layer to that conversation.
- **If we are analyzing priorities, there should be a requirement for transit to be included.** Staff responded that there is no one single priority among the many policies within the Plan
- **How do we address when these policy areas might conflict with each other? i.e. streamlining the house building process going in conflict with environmental restoration and protection.** Staff responded that allowing for more broad policies allows for variability within the different City areas. Staff responded some goals may not always align with every policy. On development projects, the code is what speaks to what developers must do. Guidance for that is typically provided through the pre-application and application process.
- **Are there policies on senior care, if not they should be viewed as an equally high priority as childcare?** Staff responded there are policies and goals related to identity-based housing, as well as ADA housing, and policies related to aging in place.
- **How do we define identity-based housing?** Staff responded it is intentionally left open-ended to allow for the community to create more types of housing per goals expressed by the community. When thinking about community, there are many identity-based housing projects in the state of Washington that have implemented models and been effective. We have included identity-based housing policies in this framework.
- **How is the City preventing displacement and gentrification?** Staff responded it is more focused on combatting gentrification or its potential impacts. There are concerns that as a community gains wealth and prosperity, then the people who are not able to benefit from that are the community members who are at most risk of displacement. Within this framework, there are provided opportunities for people to remain in place as a community gains wealth.
- **Is there a balance between the needs of the landlords and the tenants? Just to note, landlord stipulations and pressures lead to less ‘mom and pop’ landlords and more corporations.** Staff responded that in the case of supporting landlords vs. equity priorities in the society we live in, you are going to see disadvantaged groups become more disadvantaged. There are goals to add more policies to prevent displacement in alignment with our equity index. Rather than putting policies in place that prevent revenue streams for landlords which may lead to maintenance and supply costs increasing and lead to undesirable housing situations. We want to support landlords and their ability to provide affordable housing to avoid any increased rates or pressure.
- **Can we get a flow chart to see how all of these policies relate? How does this relate to the code? To subarea planning? How do these goals support the rest of the plan? (Graphic: bridges)**
- **Have there been changes to priorities in the past two years of outreach?** Staff responded the methods that people are calling for have changed but the foundational pieces of the plan are still present. At a very basic level, people are worried about the affordability of housing, affordability in general, climate, equitable and inclusive community, safety.
- **Is there a way to see how these goals are related to the other goals and the intent of the relationship between goal and policy, possibly a ranking or a classification prioritizing policies vs. goals?** Staff responded that will likely be demonstrated further down the line in the Draft Comprehensive Plan.

Community Forum

- Rich Baranzano, owner of Kauffman Center, objected to potential zoning for his property in Land Use Possibilities shown on the project website . With a possible Regional Activity Center rezoning as well as some business offers to speak to the desirability of the property such as Birdie Time Pub, Planet Fitness, food truck pods, and offices.

- Jason Cromer commented on parking limitations, minimums, and parking lot land use around Vancouver. Jason advocated for increased walkable areas over parking lots being rezoned as well as praised the Comprehensive Plan for its goals of bikeable and transit-oriented development.

Workshop: 2025 Stand Alone Rezones to Facilitate Housing

Bryan Snodgrass, Principal Planner, Community Development Department

Staff presented designation changes in advance of updated Comprehensive Plan and Zoning Code. Citywide updates anticipated December 2025 and Draft Environmental Impact Statement to come later this Spring as well as next steps including Planning Commission Public Hearing on May 13th, 2025 and City Council dates to be determined. These two applications included an R18 - R-30 Bella Grove zoning change which would apply for site plan approval of 164-unit apartment complex and an R22 – R50 zoning change on 58th St which would apply for a 77-unit apartment complex.

Commission discussion and staff responses:

Bella Grove Zoning Change

- **Can you explain how this proposal meets short-term housing, council priorities, and addressing process issues?** Staff responded it doesn't meet all of them, it meets housing priorities
- **When we look at other housing policies and priorities, what other goals would this project meet? In regard to site layout and density how might this meet or not meet the goals of the Comprehensive Plan, especially in regard to parking?** Staff responded it will meet the zoning code evaluated at the time of development review. Currently there is not a parking maximum. In the anticipated new parking codes, we will have smaller numbers of minimum parking limits but there is some flexibility of when developers choose to provide over the amount of parking minimums.
- **Is there any discussion between increased housing density and decreased parking?** Staff responded they do wish to provide a strategy to reduce parking minimums.
- **If R18 - R30 moves forward before the zoning is finalized, could they increase density with the current anticipated parking?** Staff responded there is likely positive response to this development because it meets higher density goals. While there are not yet positive parking goals. If they are able to submit their site plan before the end of the year, the current rezone will be approved according to current zoning requirements. Staff support the project because it is compliant with the council's policy of increased housing goals.
- **Are we updating the infrastructure on the roads near the projects to allow for more access to businesses or development in the future to increase commercial areas in residential zones nearby?** Staff responded that new zoning envisioned in the updated Comprehensive Plan will allow for more commercial development.
- **We'll be interested in hearing more about the traffic study.**
- **Are there any design standards that will apply?** Staff responded there won't be extensive aesthetic design standards given the location. The code does address design related issues such as height and setbacks.

58th Street Zoning Change

- **Would the site plan include pedestrian cut-through to the City parks next to the property?** Staff responded that the property to the south is zoned Park but is in fact a City stormwater facility.
- **Is this a repeat applicant? It would be helpful to see current properties from repeat applicants and what they have done with the place.**
- **Have you gotten any feedback from the neighborhood?** Staff responded that they typically don't at this stage. We will do all the typical requirements of publishing notice and mailing paper notices to all properties within 500 feet. There is an active neighborhood association so we will reach out to them to remind them.
- **Is the area to the south of the development zoned "park" actually a storm water basin?** Staff responded that they will confirm the status of the facility.

- **It is difficult to envision the applicant's goals and understand motivation based off these conceptual site plans. In future, we would appreciate further details.** Staff responded that generally the applicant will give a presentation and there will be further detail provided at the hearing.

Communication from the Chair

- None

Communication from Staff

- None

The meeting adjourned at 7:02 pm

Patrick Adigweme, Chair

MEMORANDUM

DATE: May 13, 2025

TO: Chair Adigweme and Planning Commissioners

FROM: Dominique Martinelli, Senior Long-Range Planner; Rebecca Kennedy, Deputy Director; Community Development Department

RE: **OUR VANCOUVER – Draft Goals and Policies – Part 2**

Intent

Provide Planning Commission with an update on the following:

- Progress on overall development of Goals and Policies for the Draft Comprehensive Plan
- Review draft goals and policies for the Community Feel, Equity, Parks and Transportation chapters.
- Gather Planning Commission input and direction on the initial set of goals and policies for further refinement.
- Outline next steps in drafting the remaining plan, refining the content, and preparing to release a public comment draft of the Plan document this fall.

Background:

The City of Vancouver's Comprehensive Plan provides the overall long-term vision and policy direction to manage the built and natural environment in Vancouver and provide necessary public facilities to achieve that vision. The City adopted its first comprehensive plan under Washington's Growth Management Act in 1994 (Chapter 36.70A RCW), with a major re-write occurring in 2004, and a less substantive update occurring most recently in 2011. The new plan – called Our Vancouver- includes the below vision for the future of the City, which was crafted through an 18-month engagement process and that involved more 1,000 community members.

"Vancouver is an equitable and prosperous community, which ensures that all residents, businesses and organizations benefit from the growth and advancement we make together. Vancouver will be recognized for our quality of life, as evidenced by affordable housing in vibrant, safe and walkable neighborhoods, access to jobs and economic opportunity for all, and resilience to the impacts of climate change."

Over the past two years, staff have worked with community members, advisory and working groups, and technical experts to shape the framework for the updated plan. Working with these partners, the team established chapter-specific vision statements and an overarching framework and structure for the plan document. This is the second in a series of two policy focused workshops with Planning Commission (the first one was on April 8) and focuses on plan goals and policies for four chapters-

Comprehensive Plan Update – Goals and Policies

Community Feel, Equity, Parks, and Transportation. Goals and policies define the outcomes we aim to achieve, and the principles that will guide future decision making. In addition, they are aligned with existing Council policy direction, are informed by extensive community engagement, and incorporate relevant state requirements.

Plan Structure:

The Comprehensive Plan is organized to support a clear policy framework that connects the community's vision with actionable implementation tools.

Each element of the plan contains the following components:

- **Chapter Vision Statement** – Each topic area begins with a forward-looking statement that describes the desired future conditions for that element of the plan. These vision statements were shaped through extensive community engagement and were endorsed by City Council in late 2023.
- **Goals** – Each chapter includes a set of goals that articulate measurable outcomes the City aims to achieve by 2045. These goals reflect the community's values and the long-term results that policy and investment decisions are intended to deliver.
- **Policies** – Policies are high-level principles and guidance that direct future decision-making, investments, and implementation actions. They provide the policy “backbone” for how the City addresses land use, housing, economic development, climate resilience, and other key areas. The policies reflect and reinforce other strategic policy direction from the City in other planning efforts, such as:
 - The Strategic Plan
 - 2024-2044 Transportation System Plan
 - Housing Action Plan
 - Economic Development Strategy
 - Climate Action Framework
 - Reside Vancouver Anti-Displacement Strategy
 - Parks and Recreation Comprehensive Plan
 - Urban Forestry Management Plan
- **Actions and Metrics** – These will be developed in a future phase. Actions will define the specific directives, strategies, programs, and tools needed to implement each policy. Metrics will provide a means of tracking progress over time and holding the City accountable for delivering on its commitments.

Community Input

The draft goals and policies presented for the Planning Commission's review are the direct result of a comprehensive, equity-centered, and ongoing engagement effort that took place from Spring 2023 through early 2025. This engagement was designed to ensure the Comprehensive Plan is grounded in community priorities and reflects the lived experiences of Vancouver's diverse residents.

Engagement Highlights:

- Over 850 direct conversations at 19 community events.
- 1,000+ survey responses from residents across a broad spectrum of neighborhoods, income levels, and age groups.

Comprehensive Plan Update – Goals and Policies

- An interactive digital pin map with geographically specific input on housing, parks, mobility, and more.
- The Community Partners, representing organizations that serve BIPOC, LGBTQIA+, latine, youth, low-income, and disabled communities, meet regularly to co-create policy elements and inform direction.
- Six Community Working Groups (CWGs) focused on housing, climate, transportation, economic opportunity, equity, and the building industry contributed technical and lived-experience-informed guidance to refine draft content.

Key Contributions to Policy Development:

- **Community Feel and Vision:** Community members emphasized the importance of vibrant public spaces that reflect Vancouver’s diverse histories, foster belonging, and promote safety. Participants specifically called for more spaces like Esther Short Park, culturally reflective public art, and affordable spaces for artists.
 - Policies such as 1 (Trauma-Informed Services) and 48 (Crime Prevention Through Environmental Design) respond to feedback calling for safe, inclusive environments and city programs that build community trust.
 - 69 (Increase Access to Community Spaces) and 70 (Increase Access to Space for Artists and Creatives) were shaped by requests for expanded gathering spaces and hubs for artists and other creative pursuits.
 - 71 (Expand Representation in Public Art) and 72 (Culturally Responsive Design) advance the community’s desire to see BIPOC, immigrant, and Indigenous cultures visibly represented across Vancouver’s public realm.
 - 73 (Center Impacted Voices in the Development of Community Spaces) reflects input urging the City to engage directly with impacted communities during the design of parks, plazas, and cultural spaces.
- **Equity and Inclusion:** Community members consistently stressed embedding equity into all City processes, expanding universal access, and centering marginalized voices in governance and investment decisions. Residents highlighted the importance of using data tools to direct resources and removing linguistic and cultural barriers to participation.
 - Policies like 50 (Utilize Data Sources to Guide Investment) and 109 (Inclusive Engagement) directly reflect community priorities around targeting investments to underserved neighborhoods and ensuring more inclusive decision-making.
 - 74 (Multilingual and Culturally Competent Services) and 104 (Ethical and Fair City Processes) respond to feedback calling for services and communications accessible to residents of all language and cultural backgrounds.
 - 51 (Universal Design), 55 (Aging Populations), and 68 (Accessible Mobility for All) focus on accessibility, reflecting feedback that emphasized the needs of seniors, people with disabilities, and multigenerational households.
- **Parks and Recreation:** Residents highlighted the need for more connected parks, greenways, and natural spaces that are accessible to everyone, and for parks to reflect cultural diversity and promote public health. Participants also prioritized the role of parks and open space in building resilience to climate change.
 - Policies such as 26 (Conserve Land for Open Space and Preservation), 76 (Broaden Access to Natural Spaces and Parks), and 79 (Improve Connectivity Between Parks and

Comprehensive Plan Update – Goals and Policies

Open Spaces) reflect the call to protect, expand, and better connect green spaces across the city, especially in underserved areas.

- 77 (Community Centers) and 80 (Community Gardens) were informed by requests for new gathering spaces, opportunities for intergenerational activities, and improved food security initiatives.
- 81 (Increase Food Access) promotes expanded grocery store development and access to fresh food options, responding to survey and engagement feedback identifying food deserts as a key equity concern.
- **Transportation and Mobility:** Community feedback emphasized the importance of accessible, multimodal, and safe transportation options for all residents, and shifting toward a sustainable, low-carbon transportation system. Participants especially highlighted the need for safer sidewalks, better bike networks, and transit that connects people to essential services.
 - Policies like 62 (Support Active Transportation Investments), 63 (Street Standards), and 65 (Low-Stress Bicycle and Small Mobility Network) promote safer, more comfortable walking, biking, and rolling infrastructure in line with this input.
 - 60 (Equitable Transit-Oriented Development) and 67 (Locate Resources Near Transit Access) respond to calls for locating affordable housing, childcare, healthcare, and education resources close to reliable transit.
 - 120 (Community Safe Routes) and 64 (Multimodal Access Through Street Connectivity) reflect Vision Zero principles voiced by the community, calling for safer crossings, better street lighting, and traffic calming measures to protect vulnerable users.

Next Steps

- Following this workshop, staff will incorporate Planning Commission feedback, continue refining the policy content, and begin developing actions and metrics that support implementation and accountability.
- Development of policies for capital facilities and public services and annexation are underway and will be brought to Planning Commission for review in the next two months.
- Release of the Draft Environmental Impact Statement (DEIS) analyzing impacts of the two land use possibilities is now expected in early July.
- Release of public comment drafts of the preferred land use possibility, draft Comprehensive Plan, and draft Title 20 development code are anticipated in early fall.

Attachments:

1. Table of all Goals and Policies related to the Community Feel, Equity, Parks and Transportation elements.
2. Interactive Policy Workbook

Staff Contact

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Vision Statement and Goals

Community Feel and Vision (CF)

- **Vision Statement:** *Vancouver is a city that is affordable, safe, accessible, vibrant and prosperous, where all community members feel valued, included, and honored. Our City is made up of authentic places that reflect our different histories and lived experiences and help strengthen social bonds and connections to each other. We recognize that our histories include big accomplishments and important milestones, as well as individual and collective trauma and systemic injustice, and we will work to intentionally repair past harms, and limit future ones. We uplift individuals and communities to collectively build a future where we not only survive but thrive, so that every person can lead a fulfilling life and truly belong.*
- **Goals:**
 - **CF-1: Social Infrastructure:** Vancouver community members live in vibrant, active and engaged neighborhoods, where they feel a sense of belonging and have strong, supportive social ties.
 - **CF-2: Inclusive and Affirming Environments:** Vancouver's public spaces and neighborhoods are inclusive and affirming for all community members, creating a sense of belonging and safety, and freedom from discrimination.
 - **CF-3: Community Preparedness:** Vancouver is a community where safety is prioritized, and a robust emergency management strategy and strong social ties ensure all residents are well-prepared for natural disasters and disruptive events.
 - **CF-4: Innovation:** Vancouver is a regional hub for creative solutions, innovative methods, entrepreneurship, calculated risk-taking, and bold solutions that drive progress and address systemic inequities.

Equity and Inclusion (EI)

- **Vision Statement:** *Vancouver is an equitable and inclusive community that recognizes and respects intersecting identities. We do this through intentional action that seeks to repair injustices of the past and chart a new course, centering voices that were excluded and, in many instances, continue to be excluded from decision-making processes. We follow the guidance and expertise of those who have been directly impacted by exclusionary practices and oppressive systems, in order to design a more equitable future for our community. We examine the intended and unintended consequences of past, current and proposed policies with an equity lens, and work towards increasing pathways to access and participation. Reparative actions, universal access, and physical and mental health are critical priorities in creating inclusive environments.*
- **Goals:**
 - **EI-1: Equitable Community:** All community members have equitable and inclusive access to opportunities and resources, including communities most impacted by past and present exclusionary practices.
 - **EI-2: Universal Design and Access:** Public spaces, public infrastructure, and public and private buildings are universally designed and meet best practices for accessibility and inclusion.
 - **EI-3: Youth and Aging Population Focus:** The built environment supports community members from childhood through later life, with families and caretakers benefitting from robust youth programs and accessible childcare, enabling children to excel and parents to actively participate in the workforce. Aging populations benefit from accessible infrastructure, inclusive urban design, accessible housing, and opportunities for social connection.

- **EI-4: Transparent and Inclusive Governance:** Community members have trust in City government, built and sustained through equitable and inclusive community engagement, an emphasis on building trust-based relationships with partners and community members, regular reporting of progress and outcomes, and co-creative and transparent decision-making processes.
- **EI-5: Inclusive Use of Technology:** The City utilizes an equity lens to evaluate, assess, develop, and implement any use of smart technology to reduce embedded biases, and ensure that residents are not discriminated against or systemically or interpersonally harmed.

Parks and Recreation (PR)

- **Vision Statement:** *In Vancouver, all people enjoy increased access to cultural events, public art, natural areas, parks, community and green spaces, and an expansive network of trails and greenways. We recognize that art, culture and open spaces are critical elements of community health, wellness and quality of life. We commit to building inclusive and safe public spaces that reflect the diversity of our community without cost barriers, while conserving and preserving natural areas and adapting to climate change. Embracing native plants and species, we aim to create biodiverse havens that enhance ecological resilience. With a focus on health and well-being, our parks will offer diverse recreational opportunities and engaging programming, ensuring a thriving and interconnected community for generations to come.*
- **Goals:**
 - **PR-1: Increase Health Through Recreation:** Vancouver has a diverse range of amenities, services and public facilities that promote health and wellness, cater to the varied interests and needs of community members, and contribute to a vibrant and active community.
 - **PR-2: Parks, Trails, and Natural Spaces:** Vancouver's residents have access to a well-connected and expanded network of developed parks, trails, and natural spaces that support outdoor recreation, biodiversity, and climate resilience, that serve as vital community hubs for gatherings, cultural events and a shared sense of place.
 - **PR-3: Community Health and Wellness:** Vancouver community members have access to high-quality healthcare, mental health services, spaces that support physical and mental wellbeing, and fresh, healthy food options through integrated neighborhood clinics, community hubs, and sustainable food systems.
 - **PR-4: Thriving Cultural Ecosystem:** Vancouver supports a thriving cultural ecosystem by investing in public art, cultural centers and facilities, historic preservation, and supporting community centered initiatives and opportunities for creative expression that reflect the city's diverse identities and historic roots.

Transportation and Mobility (TM)

- **Vision Statement:** *In Vancouver, transportation is safe and accessible for everyone, regardless of where they live or their socioeconomic status. We commit to building an equitable and connected network of streets, paths and trails that are safe and comfortable for people walking, driving, rolling, using small mobility devices and taking transit. By prioritizing reliability and frequency, our public transportation system allows people to move around the community easily and safely. We embrace multi-modal options such as bicycles and small mobility devices like scooters and commit to breaking down barriers and removing financial obstacles to using these travel options. Through strategic partnerships, we will establish integrated transportation hubs, fostering safe, climate-friendly, and accessible pathways to essential resources and opportunities in Vancouver and across the region.*

- **Goals**

- **TM-1: Integrated Transportation and Connectivity:** Vancouver is served by a reliable, frequent, and accessible transportation system that seamlessly connects residents to key areas of the city and the region.
- **TM-2: Change Travel Behavior:** Community members can access a suite of low carbon travel options that connect important destinations, including walking, cycling, small mobility, and transit, while reducing reliance on single occupancy vehicles.
- **TM-3: Efficient Freight Access:** Efficient and resilient port and freight infrastructure safely and efficiently move goods, support economic growth and minimizes negative environmental impacts.
- **TM-4: Eliminate Traffic Fatalities (Vision Zero):** Eliminate traffic-related fatalities and serious injuries occurring in the transportation network and create a safe and comfortable travel environment for all users, regardless of age, ability or mode of travel.

Policies:

No	Policy Name	Description	Associated Goal(s)
1	Trauma-informed Services	Ensure City programs and policies are designed and delivered using trauma-informed care principles.	CF-2, CF-3
2	Welcoming and Supportive Community	Build a community that welcomes new residents, provides support for at risk individuals, welcomes historically excluded community members to the table, and treats all people with dignity and respect.	CF-2, EI-1
3	Disaster Recovery and Emergency Response	Develop plans and resources to ensure effective emergency response and equal access to emergency services and recovery resources mitigating risks from extreme weather and climate-related hazards.	CF-3, EI-1, CL-1
21	Mitigate Noise Pollution	Reduce and mitigate noise pollution from major stationary and mobile sources (air travel, vehicles, freight, and railroads, high intensity industrial uses), prioritizing vulnerable populations and reducing the impact in residential, commercial, and natural areas.	EI-1, CL-4
22	Reduce Environmental Health Disparities from Pollution	Mitigate the impacts of air, water, heat, noise, and light pollution, with a focus on areas with high environmental health disparities.	EI-1, CL-4
25	Support Decentralized Infrastructure Systems	Support on site decentralized systems that reduce reliance on centralized infrastructure. Support local energy and water solutions while strengthening community adaptability to environmental, social, and economic changes.	IF-1, CF-4
26	Conserve Land For Open Space and Preservation	Acquire environmentally sensitive land with ecological benefits for the purpose of conservation.	PR-2, CL-2

27	Support Transit with Resilient Infrastructure Improvements	Invest in transit-supportive infrastructure that responds to localized impacts of a changing climate to ensure reliable, frequent, and accessible future transit service, prioritizing underserved areas and those with high climate vulnerability.	TM-2, EO-1, EI-1, IF-1
29	Access to Education and Employment	Reduce barriers to accessing education and employment opportunities, so all community members can reach their full potential.	EI-1, EO-1, EI-5
30	Support Access to Childcare	Support the development of new childcare facilities in the City and eliminate regulatory barriers preventing their creation.	EI-3, EO-1
31	Support Small Businesses	Foster inclusive economic growth through education and resources that support small business owners, entrepreneurs and members of historically excluded and underserved communities.	EO-4, EO-1, EI-1
33	Vancouver as an Innovation Hub	Position Vancouver as a center for innovation, technology, and entrepreneurship through public investment and attracting entrepreneurial talent.	CF-4
34	Leverage City-Owned Assets for Affordable Commercial Space	Utilize City-controlled real estate to provide affordable commercial leasing opportunities for small and emerging businesses.	EO-4, EI-1, EO-2
35	Expand Workforce Development and Career Pathways	Ensure all residents have access to career pathways, workforce training, and entrepreneurship opportunities that lead to living-wage jobs and wealth creation, with a focus on underrepresented communities.	EO-1, EI-1, CF-4
36	Facilitate Job-Creating Business Growth and Investment	Support businesses that create high-quality jobs by reducing barriers to growth, streamlining development processes, and ensuring access to necessary resources and infrastructure.	EO-2, EO-4, CF-4
40	Access to Services and Amenities	Expand access to municipal and community-based services and amenities by prioritizing investment in underserved areas.	IF-1, C-4, EI-1, LU-1
47	Maximize the utilization of existing on street parking	Implement strategic pricing mechanisms to regulate the availability of on-street parking in mixed use and regional activity centers.	TM-2, LU-4
48	Crime Prevention Through Environmental Design	Foster a safe community by encouraging street level activity and thoughtful building and infrastructure design that enhance public safety and community well-being.	CF-3
49	Health Access	Broaden access to essential healthcare and services in underserved populations and address built environment causes of health disparities.	EI-1, CL-4

50	Utilize Data Sources to Guide Investment	Utilize the City's Equity Index and Displacement Risk Assessment tool to guide public investments and infrastructure improvements.	EI-1, IF-1
51	Universal Design	Incentivize universal design principles in private development. Support accessibility retrofits for existing homes and prioritize affordable housing options tailored to multi-generational living, aging in place, and a wide range of abilities.	EI-2, PR-1, H-2
52	Incorporate Community Outcomes into Development	Develop mechanisms to integrate community benefits into private development that requires discretionary land use review and City-led redevelopment projects.	H-4, EI-4
53	Invest in Underserved Areas	Prioritize infrastructure, housing, and public service investments in underserved neighborhoods and areas of the City that have not benefitted from past investments.	IF-1, EI-1
54	Support Mental Health Access	Partner with nonprofits to help expand access to culturally inclusive mental health, behavioral health, and physical health resources.	PR-3
55	Aging Populations	Ensure that residents have support for aging in place or downsizing through diverse housing options, accessible services, and reliable transit, ensuring long-term livability and independence	EI-3
56	Multigenerational Households	Incentivize development of housing types suitable for multigenerational living.	EI-3
58	Reduce Vehicle Miles Traveled Per Capita	Implement land use patterns that reduce vehicle miles traveled, traffic congestion, and greenhouse gas emissions, and improve safety and air quality.	CL-3, CF-3, TM-2
60	Equitable Transit Oriented Development	Tailor regulations, incentives and investments to facilitate development near current and future transit stations, ensuring new development is accessible to historically excluded and underserved communities and those most reliant on public transit.	LU-1, LU-2, TM-2
61	Emerging Mobility	Prepare for emerging technologies by updating City policies and operational requirements for shared mobility and emerging mobility vendors, including Autonomous Vehicles. Create data standards, data sharing agreements, and vendor requirements.	TM-2, CF-4
62	Support Active Transportation Investments	Improve active transportation infrastructure in mixed use and regional activity centers coordinated with new development, and areas with underserved pedestrian and micromobility infrastructure to increase the share of trips made by foot, bike, or other small mobility devices.	TM-1, IF-1
63	Street Standards	Adopt street standards that create comfortable, inviting multimodal streets.	TM-1, TM-2, TM-4

64	Multimodal Access Through Street Connectivity	Adopt connectivity standards to improve pedestrian and small mobility safety and accessibility. Apply standards to development, capital, maintenance, and planning projects including maximum block length, unconnected streets, cul-de-sac connections, linkages between land uses, and multiple access points.	TM-1, TM-2, TM-4, LU-3
65	Low-Stress Bicycle and Small Mobility Network	Implement the city-wide low-stress bicycle and small mobility network that prioritizes safety and comfort for people of all ages and abilities.	TM-1, TM-2, TM-4
66	Community Streets	Develop guidance and encouragement for community use of the right-of-way, including plazas, parklets, “streateries,” open streets events, public art, and demonstration projects.	TM-1, TM-4, PR-2
67	Locate Resources Near Transit Access	Locate community resources near current and future high-capacity transit stations to ensure access for those most reliant on public transit.	LU-1, TM-2
68	Accessible Mobility for All	Ensure transportation systems meet universal design standards, prioritizing mobility solutions for disabled, senior, youth, and low-income residents across all modes.	EI-2, EI-3, TM-1,
69	Increase Access to Community Spaces	Facilitate and provide accessible and inclusive community gathering spaces, with a focus on populations vulnerable to social isolation.	CF-1
70	Increase Access to Space for Artists and Creatives	Establish partnerships that increase access to shared, affordable spaces serving artists and arts and cultural organizations.	CF-1, PR-4
71	Expand Representation in Public Art	Ensure publicly funded art projects and installations reflect and incorporate the experiences of historically excluded and underrepresented voices in the physical and cultural landscape of the City.	CF-1, CF-2, PR-4
72	Culturally Responsive Design	Develop standards for public spaces and buildings that incorporate culturally-specific design principles and art installations and reflect the diverse history and heritage of Vancouver communities.	CF-1, CF-2, PR-4
73	Center Impacted Voices in the Development of Community Spaces	Engage community organizations and individuals representing diverse lived and cultural experiences in the planning, design and programming of community spaces.	CF-1, EI-1, PR-4
74	Multilingual and Culturally Competent Services	Ensure all city services are accessible in multiple languages and delivered with cultural competency.	CF-2, EI-1, H-3
75	Climate Resilient Spaces	Incorporate elements of climate resiliency into new privately and publicly developed public spaces.	CL-1, CF-1, PR-1

76	Broaden Equitable Access to Natural Spaces and Parks	Site new accessible and attainable housing close to existing and future parks, ensuring equitable access to existing facilities, and investing in new and improved facilities in underserved neighborhoods.	CL-4, PR-3, H-1
77	Community Centers	Establish multipurpose community centers offering social, recreational, educational, and cultural programming, especially in underserved areas.	CL-4, PR-3, IF-1
78	Resources for Youth and Aging Populations	Prioritize programs and infrastructure that support youth and aging populations, including safe play areas, accessible housing, robust childcare, public facilities and community programs that foster multigenerational interaction.	EI-3, IF-1
79	Improve Connectivity Between Parks and Open Spaces	Create an expansive network of linear parks that encourage active transportation, improve community health and wellbeing, enhance tree canopy and stormwater management, and link parks and open space with housing.	PR-2, IF-1, CL-2
80	Community Gardens	Expand access to community gardens and incentivize urban agriculture to improve food security and increase healthy food options .	PR-3
81	Increase Food Access	Incentivize and remove regulatory barriers to locating grocery stores and neighborhood markets near housing and in underserved neighborhoods.	PR-3, LU-1
82	Regional Trail and Open Space Networks	Work with nonprofit and private partners, Clark County and adjacent cities to build out the regional trail network for recreation and active transportation purposes.	TM-1, PR-2
84	Income Based Housing in Connected and Accessible Neighborhoods	Facilitate development of income-based housing in connected and accessible neighborhoods, and in areas with access to resources and services.	H-2, EI-1
89	Regional Planning	Coordinate closely with Clark County, other cities, and other government entities such as C-TRAN, the Regional Transportation Council (RTC), and school districts to sustainably manage urban growth areas, efficiently deliver urban services, expand regional transit and multimodal connectivity, and coordinate on shared goals and responsibilities, in accordance with adopted countywide planning policies.	LU-4, CL-3, TM-2, TM-1
90	Optimize Freight Corridors	Designate and enhance freight corridors to facilitate efficient movement of goods and reduce congestion.	TM-3, EO-2
91	Enhance Port Access and multimodal freight solutions	Improve infrastructure and connectivity to and from the Port of Vancouver to streamline freight operations.	TM-3, EO-2

94	Emergency Rental Assistance	Provide financial support to help at-risk households remain in their homes, preventing eviction and displacement.	H-4, EI-1
96	Reduce displacement in the face of new growth	Implement anti-displacement strategies and actions that protect residents and businesses in advance of public investment so communities can remain in place and benefit from improvements.	H-4, EI-1
97	Access to Non-Traditional Homeownership Methods	Broaden access to homeownership in the community for first time owners, low-income residents, and other groups frequently priced out of through alternative ownership methods.	CF-1, H-4, H-5, H-6,
98	Housing Innovation	Promote and remove regulatory barriers to new and innovative construction methods such as modular, panelized, 3d printing, or other methods.	H-1, CF-4
100	Culturally Specific and Identity-Based Housing	Work with partners to facilitate and fund housing that reflects the cultures, identities and needs of Vancouver's unique population groups.	H-2, CF-2, EI-1
101	Engage with Tribal Community Members	Foster meaningful partnerships with tribal communities and land stewards, integrating their knowledge, priorities, and cultural perspectives into local decision-making processes.	EI-1, EI-4, CL-2
102	Tracking Progress and Reporting Back	Build transparency and accountability with the community through regular tracking of plan implementation and consistently reporting out on progress in an accessible manner.	EI-4
103	Boards and Commissions	Ensure boards and commissions reflect community demographics and provide diverse voices a meaningful role in decision-making and policy development.	EI-4
104	Ethical and Fair City Processes	Promote ethical and fair governance by embedding accountability in City processes, ensuring access for historically excluded communities, mitigating bias, and fostering ethical use of technology and digital practices.	EI-5, EI-1, CF-4
107	Historic and Culturally Significant Resources	Protect and preserve significant cultural, historic, archeologic, and ecologic community resources. Promote preservation, restoration, and rehabilitation of historic and architecturally significant structures.	CF-2, CL-1, CL-2, PR-4
109	Inclusive Engagement	Foster inclusive, community-led engagement rooted in inclusion, trust, and long-term relationship-building, and centering the voices of those who are most directly impacted by outcomes of City processes.	EI-4, CF-1

110	Future Updates	Continue to update the Comprehensive Plan and implementing regulations in response to the annual review process, state mandated 5-year Implementation Progress Report, and 10-Year periodic review requirement that includes updates to long-term growth forecasts and regional land capacity analysis.	EI-4
111	Monitoring Progress	Regularly review progress towards implementation of the Vancouver Comprehensive Plan goals and policies using the metrics identified for each policy.	EI-4
112	Multimodal Level of Service	Update regulations and design guidance to reflect multimodal level of service standards that require private development and capital projects to advance multimodal safety and support shifts to non-drive-alone modes.	TM-2
115	Sustainable Parks Funding	Identify and implement new funding strategies to support robust parks and natural area investments, ongoing maintenance and operation costs, and provide equitable access and level of service to all community members.	PR-2
116	Public Safety	Support public safety through investment in emergency services, facilities, and coordinated preparedness efforts that strengthen community resilience and response.	CF-3
117	Access to Arts and Cultural Programs	Improve access to arts, cultural, and heritage programs by reducing barriers to participation, prioritizing underserved and historically marginalized communities, and investing in related programs.	EI-1, PR-4
118	Increase Cultural Capacity	Strengthen Vancouver's cultural sector by investing in capacity building across arts, culture and heritage organizations as an economic and cultural driver of the community.	PR-4
119	Acquire Land for Public Parks	Acquire and reserve land for the development of parks for public use and recreation in areas experiencing growth, prioritizing underserved neighborhoods and areas currently not meeting parks service standards.	PR-2
120	Community Safe Routes	Create safe walking connections through programs that identify and invest in Safe Routes to Schools and Community Safe Routes that link people to transit and other important community destinations.	TM-1, TM-2
121	Critical Infrastructure	Work with local, state, federal and tribal partners to replace critical infrastructure and facilities of regional significance, and ensure long term resiliency for the Vancouver community and regional economy.	TM-1, IF-1



Comprehensive Plan – Goals & Policies Planning Commission Workshop

Rebecca Kennedy (she/her), Deputy Director, Community Development
Domenique Martinelli (she/her), Senior Planner, Community Development

May 13, 2025

Introduction

Agenda

- ➔ Organization, process, philosophy
- ➔ Review of next set of goals and policies
 - Interactive policy workbook included in materials to facilitate review
- ➔ Review next steps / discussion



Community Feel



Equity and Inclusion



Parks and Recreation



Transportation



Plan Organization

- **Plan Vision Statement** – Overarching vision statement for the plan effort that guides the direction of the plan. What will Vancouver **be** like in 2045?
- **Chapter** – Broad categories by which we organize the comprehensive plan and its overall direction.
- **Chapter Vision Statement** – Vision statement for individual chapters that set the stage for more detailed goals, policies, and actions. Only **one** statement per chapter.
- **Goal** – Desired outcome that the city aims to achieve. It represents a future condition of what we expect something to be. Each goal relates to only **one** chapter.
- **Policy** – Deliberate system of principles to guide decisions and achieve outcomes stated within the goals. A policy can relate to **many** chapters.
- **Action** – The specific action proposed to be taken to accomplish a policy. Includes capital investments, establishment of programs, best practices.



Draft Goals: Community Feel

CF-1

Social Infrastructure

CF-2

Inclusive and Affirming Environments

CF-3

Community Preparedness

CF-4

Innovation

- *Currently 24 policies related to the Community Feel Chapter.*
- *Note that most policies relate to more than one chapter.*



Draft Goals: Equity

EI-1 Equitable Community

EI-2 Universal Design and Access

EI-3 Youth and Aging Population

EI-4 Transparent and Inclusive Governance

EI-5 Inclusive Use Of Technology



- *Currently 34 policies related to the Equity Chapter.*



Key Policy Takeaways



Community Feel (CF)

- Community members called for vibrant public spaces that reflect diverse histories, build belonging, and foster safety.
- Feedback emphasized the need for more gathering spaces, artist hubs, and culturally reflective public art.
- Policies promote public art, placemaking, safety, community preparedness, innovative practices and approaches, and culturally sensitive design.



Equity and Inclusion (EI)

- Community members stressed embedding equity into City processes and using data to target investments.
- Feedback highlighted the need for multilingual services, culturally competent outreach, and inclusive governance.
- Policies promote universal design principles, multilingual services, culturally competent practices, planning for a range of ages and incomes, equitable and ethical use of technology, investments in underserved areas, and uplifting historically underrepresented populations.



Draft Goals: Parks

H-1 Increase Health Through Recreation

H-2 Parks, Trails and Natural Spaces

H-3 Community Health and Wellness

H-4 Thriving Cultural Ecosystems

- *Currently 20 policies related to the Parks Chapter.*



Draft Goals: Transportation

TM-1 Integrated Transportation and Connectivity

TM-2 Change Travel Behavior

TM-3 Efficient Freight Access

TM-4 Eliminate Traffic Fatalities

- *Currently 19 policies related to Transportation and Mobility Chapter.*



Key Policy Takeaways



Parks and Recreation (PR)

- Residents prioritized expanding parks, greenways, and community spaces to promote health, resilience, and cultural inclusion.
- Engagement emphasized equitable access to parks, community centers, gardens, and healthy food options.
- Policies support conservation, providing adequate levels of parks space, connectivity of natural spaces, new community-driven public spaces, preservation of cultural resources, investments in the arts, and adequately funding parks.



Transportation (TM)

- Community feedback emphasized the need for accessible, safe, multimodal travel options that connect people to services.
- Participants prioritized safer sidewalks, better bike networks, transit access, and transportation equity.
- Policies advance active transportation, equitable transit-oriented development, coordinating with regional partners, planning for freight corridors, and developing low stress bike and small mobility networks.



Next Steps

- Update this batch of policies based on Planning Commission feedback and share with working groups that helped develop them.
- Review remaining policies at follow up workshop:
 - ➔ Infrastructure, Public Facilities and Services
 - ➔ Annexation
- Review implementation actions and metrics at future Planning Commission workshop.
- Release of draft environmental impact statement (DEIS) analyzing impacts of two land use possibilities in early July.
- Release public comment draft of preferred land use map, full Comprehensive Plan document and Vancouver Municipal Code (VMC) Title 20 Development in the fall.



An aerial night photograph of a modern city waterfront. In the foreground, a wide, illuminated pedestrian bridge with a white cable support structure spans a body of water. The bridge is lined with warm white lights. To the left, a large, multi-story modern building with a glass facade is brightly lit, reflecting on the water. Other modern buildings are visible in the background, some with lights on. The sky is a mix of deep blue and orange from the setting or rising sun. The overall scene is vibrant and urban.

Questions and Discussion

www.beheardvancouver.org/plan2045



MEMORANDUM

DATE: May 13, 2025

TO: Chair Adigweme and Planning Commission members

FROM: Chim Chune Ko, Real Estate Project Manager, Economic Prosperity and Housing Department; Bryan Snodgrass, Principal Planner, Community Development Department

RE: **May 13 Workshop Review of Proposed Removal of Parking Minimums Citywide for Affordable and Attainable Housing Developments**

CC: Rebecca Kennedy, Deputy Director, Community Development Department

Introduction

With the pending adoption of a new Comprehensive Plan and zoning code anticipated at the end of 2025, the City Council has established limits on map or text changes that will be considered in advance of the new Plan and code to those providing for near term housing or addressing unmet Council priorities. With recent changes to regional development economics and the rapid slowdown in housing permits and production activity expanding the existing housing deficit, the City is working on immediate responses to address the ongoing housing affordability crisis. As part of this the City is proposing removing parking minimums citywide for all affordable and attainable housing developments to reduce costs to improve their economic viability. This action is the first in a series of strategic steps that the City is taking on to reduce barriers to housing production and to combat the negative impacts of broader economic and development trends on housing affordability and availability. This change also aligns with recent state legislation reducing or prohibiting off-street parking minimums for a variety of affordable and market rate housing products, childcare facilities, and several other uses.

Overview

To coordinate efforts of addressing the ongoing housing affordability crisis, the City has adopted the Housing Action Plan, a coordinated effort across City departments and

leadership to formulate and execute actions and policies to combat the housing crisis. To coordinate efforts of addressing the ongoing housing affordability crisis, the City has adopted the [Housing Action Plan](#), a coordinated effort across City departments and leadership to formulate and execute actions and policies to combat the housing crisis. This effort is working to increase housing production through implementing policies and actions that reduce housing development costs, improve City processes and streamline reviews, grow resources to support affordable housing developments, and reduce regulatory and code barriers, the latter occurring through the Comprehensive Plan and code update process that the Commission is already highly engaged with. Through this effort, eliminating parking minimums has been identified as a significant opportunity to reduce the cost burdens on new housing developments, incentivizing more housing development proposals and improving their chance of success. The proposed code change would amend Vancouver Municipal Code 20.945.070 Minimum Off-Street Parking Requirements and the 20.670.040 The Heights (HX) Plan District Design and Development Standards to reduce the required off-street parking requirement to zero spaces per unit for housing projects that provide at least 50% of their units at 100% AMI or below for a minimum of 10 years.

Background

Parking is costly to build and requiring excess parking add a significant financial burden that negatively impacts the feasibility of new housing production. Parking minimums frequently force developments to build more than they need, leading to added unnecessary costs and inefficient land uses. The City conducted a parking study for Downtown Vancouver in August 2024, which found that most of the 10,000 private parking spaces are underutilized due to single use agreements and other restrictions.¹ Despite this study being limited to downtown, this is likely indicative of a larger City-wide pattern.

The financial impact of parking on the development feasibility of both market rate² and affordable housing³ has been extensively researched. Parking costs can make up a significant portion of a project budget, particularly in higher density development where structured or underground parking is required⁴. A 2024 study found that for a 6-story podium building, parking costs approximately \$30,000 per unit, or around 7% of total

¹ Walker Consultants. "Downtown Access, Mobility and Parking Plan: Focusing on People | Be Heard Vancouver." 2025. [Beheardvancouver.org](https://www.beheardvancouver.org/24436/widgets/88706/documents/59436). 2025. <https://www.beheardvancouver.org/24436/widgets/88706/documents/59436>.

² Raetz, Hayley, Elizabeth Kneebone, and Carolina Reid. n.d. "The Hard Costs of Construction: Recent Trends in Labor and Materials Costs for Apartment Buildings in California." https://turnercenter.berkeley.edu/wp-content/uploads/2020/08/Hard_Construction_Costs_March_2020.pdf.

³ Reid, Carolina. n.d. "The Costs of Affordable Housing Production: Insights from California's 9% Low-Income Housing Tax Credit Program." https://turnercenter.berkeley.edu/wp-content/uploads/2020/08/LIHTC_Construction_Costs_2020.pdf.

⁴ Raetz, Hayley, Elizabeth Kneebone, and Carolina Reid. n.d. "The Hard Costs of Construction: Recent Trends in Labor and Materials Costs for Apartment Buildings in California." https://turnercenter.berkeley.edu/wp-content/uploads/2020/08/Hard_Construction_Costs_March_2020.pdf.

project costs.⁵ When parking minimums are higher than the project would otherwise need, projects are forced to cover these extra costs or unnecessarily reduce the number of units built. Both of these outcomes negatively affect housing production goals- if the project is forced to cover additional costs, the project becomes less feasible overall; in order to make a project feasible and reduce the amount of parking, the total number of overall units may be reduced, resulting in less efficient use of land. These costs are “especially burdensome for lower-income households, which often own fewer vehicles but are disproportionately affected by parking-related costs.”⁶ One study in Victoria, Canada showed that rents increased by 6% of the annual household budget for households in the lowest quintile for each parking stall provided, even though these households were less likely to own vehicles.⁷

Currently Vancouver Municipal Code (VMC) section 20.945.070 requires a minimum of 0.75 spaces/dwelling unit for multifamily housing, both market rate and affordable. Though the code does allow for up to 20% reduction, the City requirement was based on statutory changes at the state level several years ago and does not reflect the current market for building housing. Most projects will still build some amount of parking, but removing minimums allows market demand to drive the amount of parking created based on needs instead of arbitrary mandates. This way, projects are able to right size parking and eliminate unnecessary costs. This approach has proven effective in other jurisdictions and has the added benefit of promoting efficient land uses and encouraging alternative and more affordable transit modes particularly in amenity rich neighborhoods.⁸

The City funds an average of 236 affordable units per year, which is a small fraction of the annual average of 1,619 units that come on line every year. . Developers will still need to provide parking to meet the needs of tenants and with this change we expect developers to continue to provide sufficient parking to ensure their properties remain marketable and serve the needs of residents. The same applies to developers targeting families that make the medium income- re: those building “attainable” housing. Removing parking minimums doesn’t automatically remove parking, it simply gives the market the power to determine the parking need, reducing barriers to the development of new affordable and attainable housing while advancing the City’s Strategic Plan, Housing Action Plan, core Council policies priorities, and Council goals for the Comprehensive Plan and code update process. In addition, it represents the City taking

⁵ BAE Urban Economics. “Residential Development Cost Analysis”, City of Portland, January 4, 2024. [Portland Inclusionary Housing Feasibility Analysis Intro.](#)

⁶ Mojica, Christina. 2025. “Why Parking Minimums Are Holding Back Housing.” Reason Foundation. February 28, 2025. <https://reason.org/commentary/why-parking-minimums-are-holding-back-housing/>.

⁷ Litman, Todd. 2023. “Parking Requirement Impacts on Housing Affordability the Costs of Residential Parking Mandates and Benefits of Reforms.” <https://vtpi.org/park-hou.pdf>.

⁸ Grabar, Henry. 2024. “How Parking Reform Is Helping Transform American Cities.” Yale E360. January 31, 2024. <https://e360.yale.edu/features/free-parking-reform>.

an early action to implement, and go beyond, new legislation passed in the 2025 session that requires further parking reductions for housing and commercial uses.

Upcoming Housing Actions

In addition to the proposed change in parking minimums for affordable and attainable housing, the City is preparing a package of reforms to help boost housing production overall, some of which involve changes to City zoning standards under Title 20 and some which do not. These reforms include modifications to the MFTE program and timing of SDC and Impact Fee payments to improve financial feasibility on multifamily projects, as well as process improvements to speed up review of applications for new projects. Staff will look to bring these changes through the approval process later this summer. These reforms will complement the significant investment the City is already making to build more affordable housing through the Affordable Housing Fund, federal CDBG and HOME programs, the City's Fourth Plain for All investment strategy and the use of City-owned land for affordable housing projects downtown and in the Heights.

Action, Timeline, Next Steps

City staff will discuss the proposal for removing parking minimums for affordable and attainable housing projects at the May 13 Planning Commission workshop, to identify Planning Commission issues, concerns and any additional information that should be included in the upcoming May 27 Planning Commission hearing, or subsequent City Council review. The Council is scheduled for a June 9 workshop and June 16 public hearing.

City residents will be notified of the Planning Commission and City Council Hearings through a publication in the Columbian newspaper. Engagement with affordable, attainable and market rate developers is ongoing through the Comprehensive Plan update process and other City planning efforts. Other methods of outreach will be discussed at the workshop. Staff will issue a State Environmental Policy Act (SEPA) determination and checklist in advance of the public hearing addressing environmental impacts.

Next steps:

- Planning Commission Hearing 5/27
- City Council Workshop 6/9
- City Council Hearing 6/16

Staff Contact Information:

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Chim Chune Ko, EP&H Real Estate Project Manager ChimChune.Ko@cityofvancouver.us



CITY OF
Vancouver
WASHINGTON

Removal of Parking Minimums Citywide for Affordable and Attainable Housing Developments

Planning Commission Workshop

Bryan Snodgrass, Principal Planner, CDD

Chim Chune Ko, Real Estate Project Manager, EP&H

May 13, 2025

Agenda

- Acute Housing Need
- Closing the Housing Deficit
- Residential Issued Building Permits
- Multifamily Units Under Construction
- Why Now
- Impact of Removing Parking Minimums
- Additional Upcoming Housing Actions
- Alignment with Strategic Plan
- Next Steps



Acute Housing Need

- Ongoing Housing and Homeless Emergency
- Unprecedented population growth
- Deficit of at least 10,000 units
- 2% vacancy rate
- Rents increased 19% in 5 years
- 51% of renters cost burdened



Closing the Housing Deficit

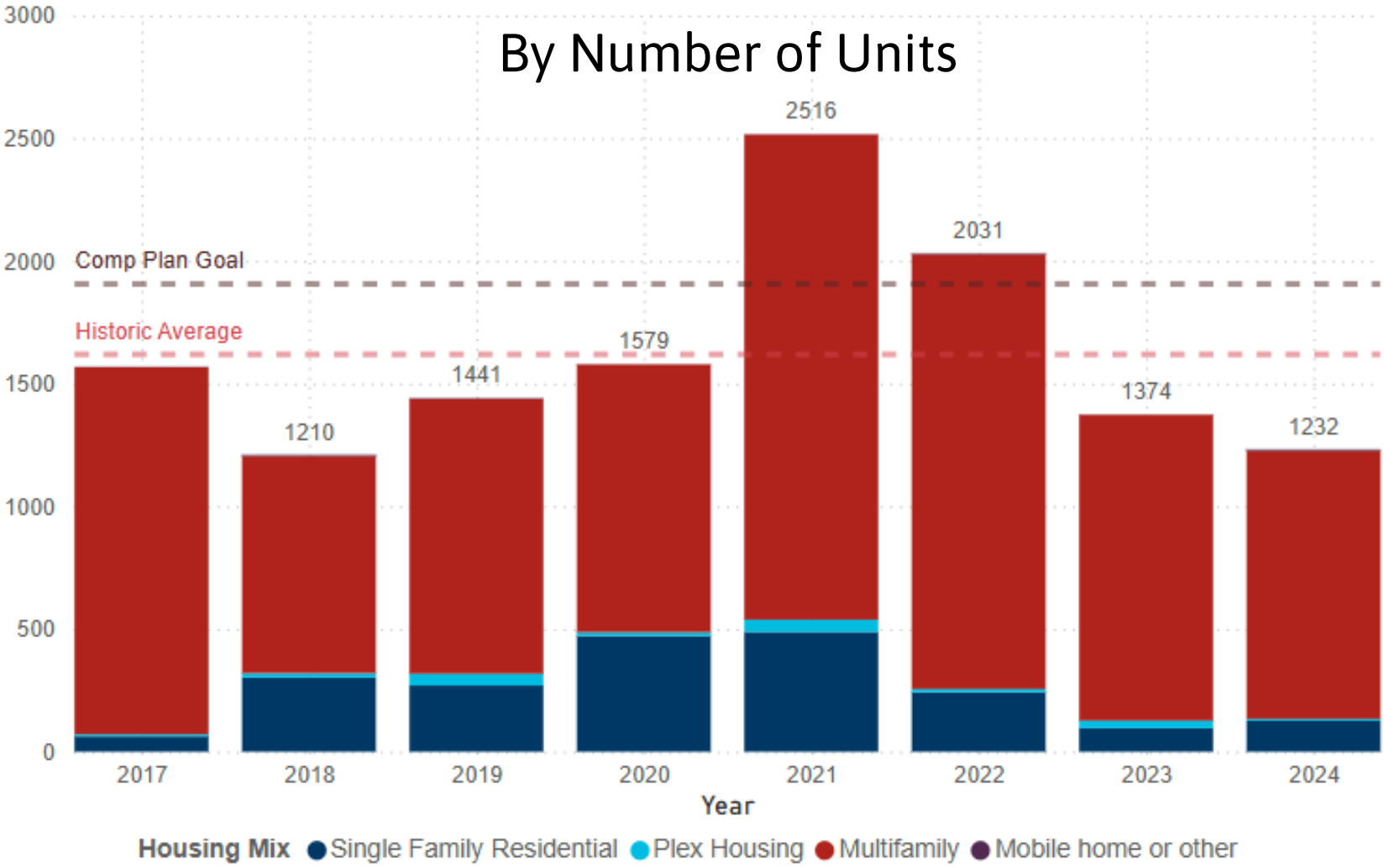
Immediate action required to meet goals

To meet our 20-year growth projections and close existing deficit in 10 years, we must:

- Increase housing production to at least **2,000** new units per year.
- Including at least **1,000** new units per year affordable to those earning 80% AMI or less.



Residential Issued Building Permits

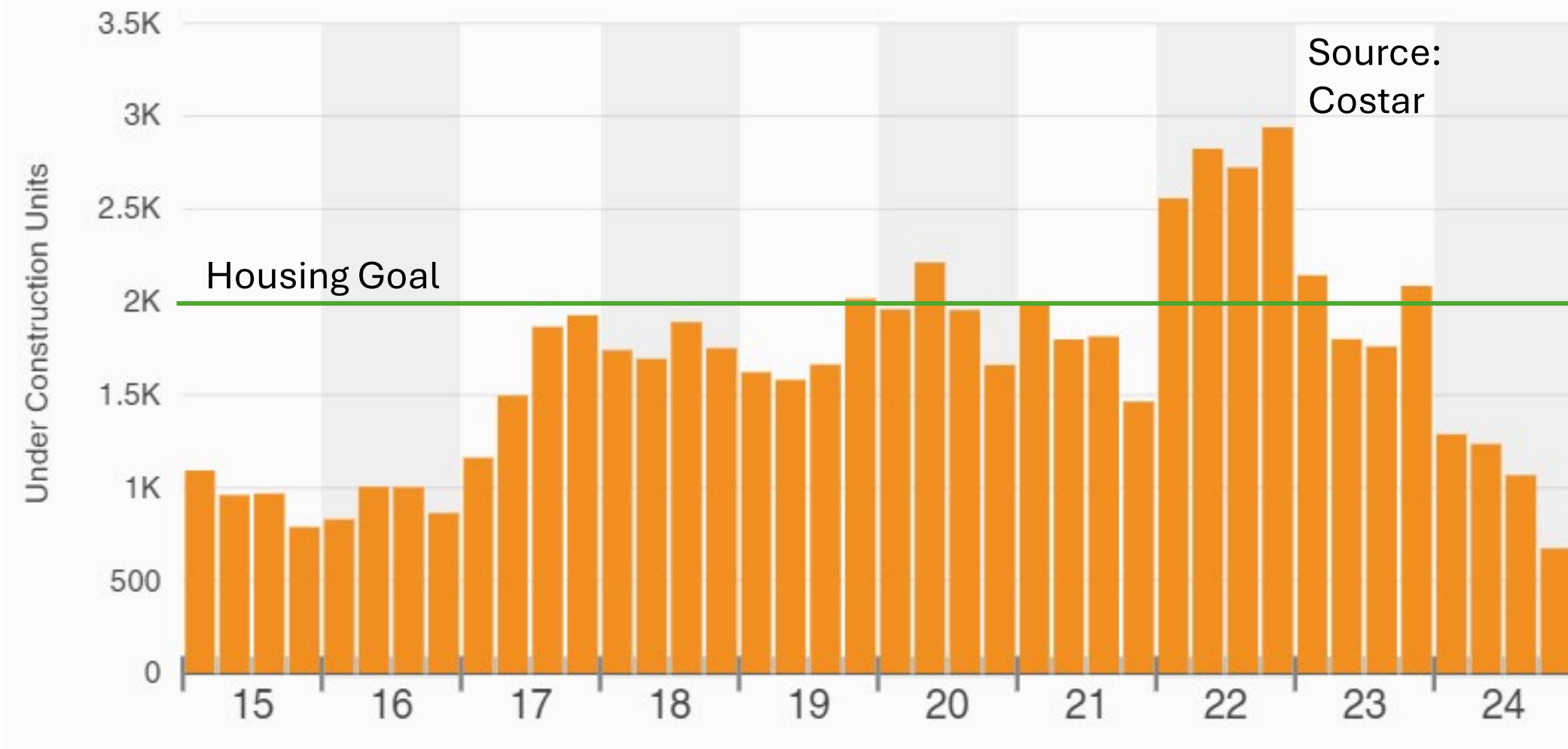


Permit activity in 2024 was 24% below the 10-year historic average and 35% below annual housing goal



Multifamily Units Under Construction

Units under construction in Q4 2024 were 55% below the 10-year historic annual average



Proposed Change

20.945.070 Minimum Off-Street Parking Requirements

20.670.040 The Heights (HX) Plan District Design and Development Standards

Reduce the off-street parking requirement for housing projects that provide at least 50% of units at 100% AMI or below for a minimum of 10 years to 0 required parking spaces City-wide for all housing types.



Why Now?

- The slowdown in housing production will impact the housing pipeline for the next several years.
- Relief from economic pressures unlikely in the near to mid term further exacerbating the current crisis
- Immediate City intervention necessary to prevent further expansion of housing deficit



Impact of Removing Parking Minimums

Allow market demand to drive parking production

- Allows property owners to decide how much parking they need/want
- Parking is expensive to build
 - Eliminates potential for City minimum to add unnecessary costs
 - Improves financial feasibility of affordable and attainable housing projects, increasing the likelihood of affordable and attainable housing development
- Parking takes up a lot of space
 - Reduces the amount of unnecessary space being taken up by parking
- Promotes shared parking agreements
 - Gives properties more flexibility to meet their parking need and utilize existing parking assets
 - City's parking study from August 2024 found most of Downtown Vancouver's 10,000 private parking spaces are underutilized due to single use agreements, which is likely indicative of a City-wide pattern



Additional Upcoming Housing Actions

- Modifications to the MFTE Program
- Timing of SDC and Impact Fee Payments
- Process improvements for development review
- Continued investment of City resources in affordable housing projects



Alignment with Strategic Plan



Housing and Human Needs

Works to reduce housing costs and increase production



Transportation and Mobility

Promotes alternative transportation modes



Vibrant and Distinct Neighborhoods

Promotes vibrant and connected communities



Next Steps



Thank You





STAFF REPORT

TO: Chair Adigweme and Planning Commission members

FROM: Bryan Snodgrass, Principal Planner, Community Development Department/ Comprehensive Planning Division

RE: May 13 Planning Commission public hearing of 2025 standalone rezones:

CC: Rebecca Kennedy, Deputy Director, Community Development Department

DATE of REPORT: May 2, 2025

Introduction

The Growth Management Act requires jurisdictions to annually consider proposed Comprehensive Plan or zoning map or text changes. Comprehensive Plan map or text changes must be reviewed collectively and no more than once per year, whereas zoning map or text changes can be reviewed at any time.

In recognition of the pending adoption of a new Comprehensive Plan and associated zoning map and text anticipated in December 2025 or early 2026, the Vancouver City Council has directed that all map or text changes be reviewed within and concurrently to the new Comprehensive Plan and zoning standards rather than separately, with limited exceptions. Those exceptions include changes needed to advance previously adopted action, to facilitate housing, to avoid sub-optimal outcomes, and to provide predictability in the development process. The two rezone proposals are brought forward at this time under the housing exception.

The proposals are submitted by separate property owners and request designations allowing higher density residential development. If the rezones are approved and the applicants submit pre-applications for site plan review prior to adoption of the new Comprehensive Plan and zoning map and text standards anticipated in December 2025 or early 2026, future development will be allowed to proceed under the standards in

place at that time, which in this case would be the proposed designations addressed in this report.

Background/Overview

Both proposals were reviewed at an April 8, 2025 Planning Commission workshop. A SEPA Determination of Non-Significance (DNS) was published and circulated along with an associated checklist on April 28, 2025. Consistent with City code requirements, advance notice of the May 13, 2025 Commission public hearing has been provided through publication in the Columbian Newspaper, hardcopy mailing to owners and residents of property within 500 feet of the sites, and posting of signs on the sites. Neighborhood associations have been contacted by email.

A City Council workshop on the rezones has been tentatively scheduled for June 16, 2025. Council hearings have not yet been scheduled.

If the zone changes are approved, future development will require submittal and approval of a Site Plan Review application, during which compliance with site specific development regulations would be reviewed administratively. To be evaluated under existing development standards, including the proposed zoning designations if approved, applications for Site Plan Review would need to be submitted prior to adoption of new designations anticipated at the end of 2025 or shortly after.

Both zone change applications include conceptual site plans indicating future development envisioned if the zone changes are approved. These may be considered at a high level as part of the review of the proposed zone changes, but are non-binding absent a Development Agreement.

Summary of Zone Change Proposals

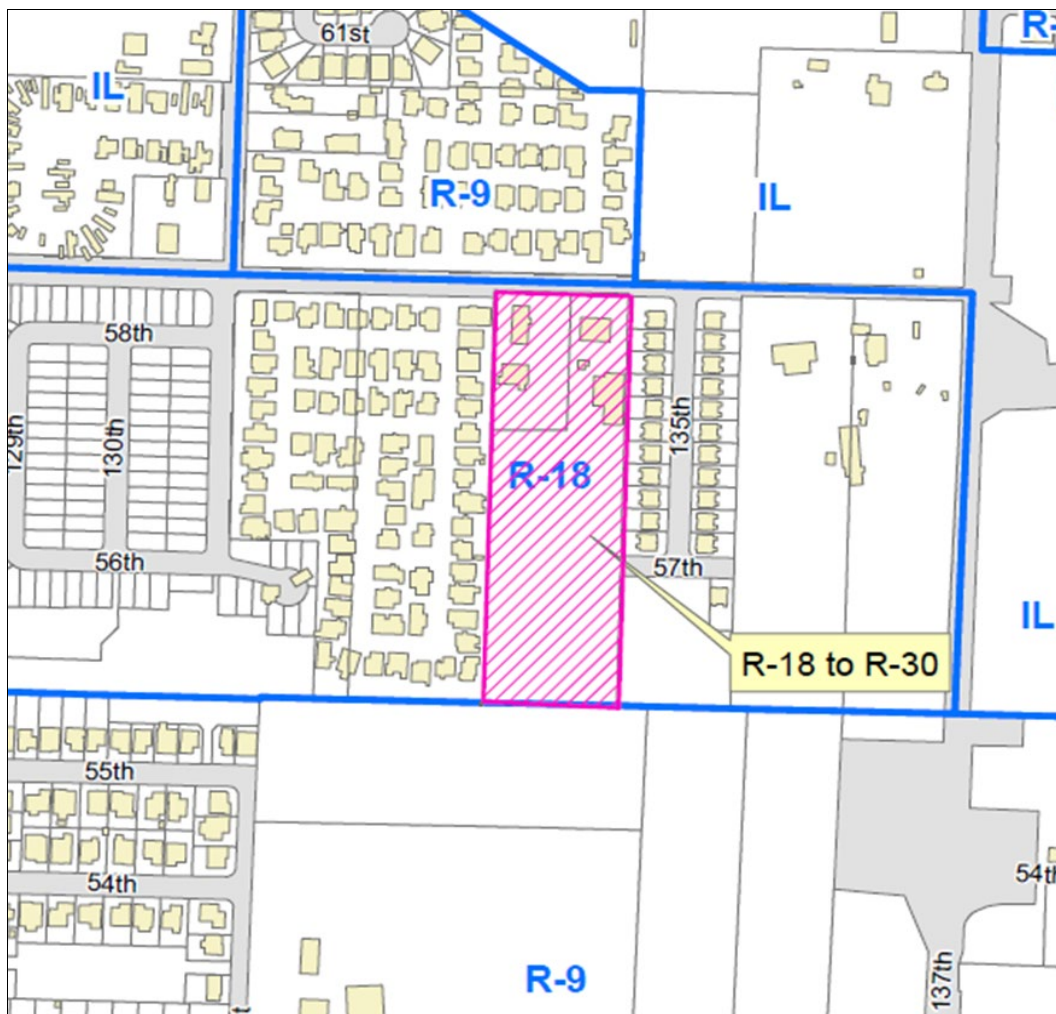
1. Bella Grove Zoning Amendment

A change from R-18 to R-30 is proposed on a 6.2-acre site at 13401 and 13309 NE 59th Street, tax lots 107812000 & 107814000, in the North Image Neighborhood. No change is proposed to the current Comprehensive Plan designation of Urban High Density. The applicant, property owner Jimmy Buel, previously received site plan approval for a 102-unit garden style apartment consisting of market rate one-bedroom units. If the proposed change to R-30 zoning is approved, the applicant indicates that new approval will be sought for a 152 to 164-unit garden style apartment project with up to 248 parking spaces. Included with this report is the previously approved site plan for 102 units under the current R-18 zoning, and a conceptual plan for future development of the site under the proposed R-30 zoning.

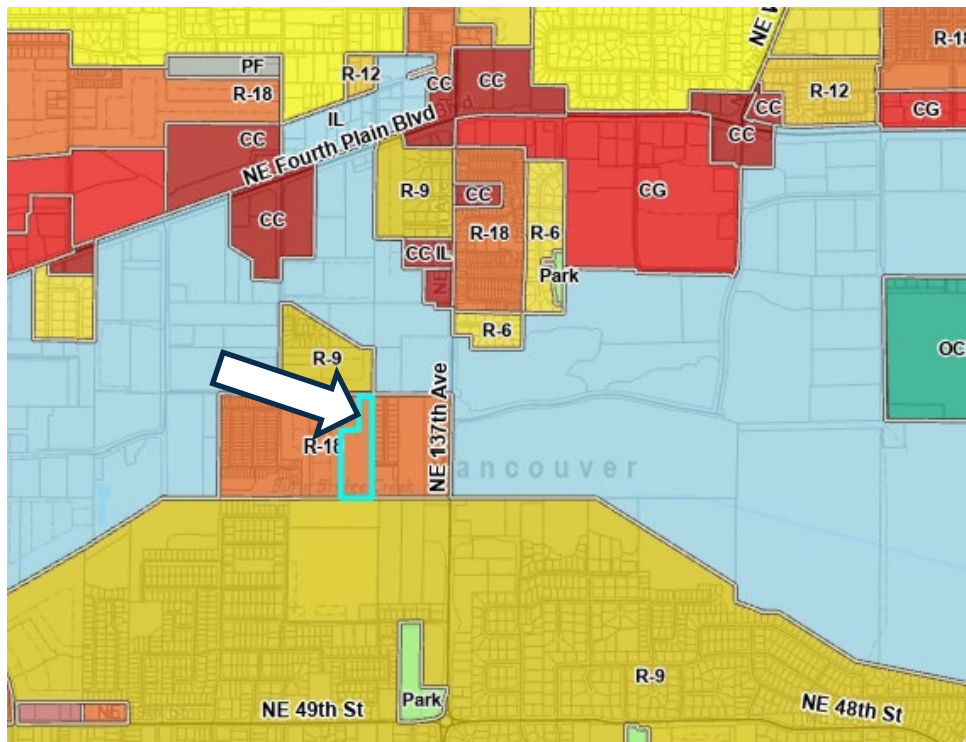
Currently the proposal site contains single family homes and outbuildings at the northern portion of the property. To the north of the proposal site across 59th Street is a mobile home park zoned R-9. East are three story duplexes zoned R-18. South is the Image Elementary School campus zoned R-9. West is a mobile home park zoned R-18.

Burnt Bridge Creek is at the southern edge of the proposal site. The full site is in the flood fringe and contains hydric soils and modeled wetlands according to Clark County GIS inventories. Compliance with VMC 20.740, Critical Areas Protection, will be required at the time of site plan review. The previously approved site plan for a 102-unit apartment development on the northern 2/3 of the site provides an indication of the likely footprint of future development on the site if the rezone is approved.

Bella Grove – Zoning Map



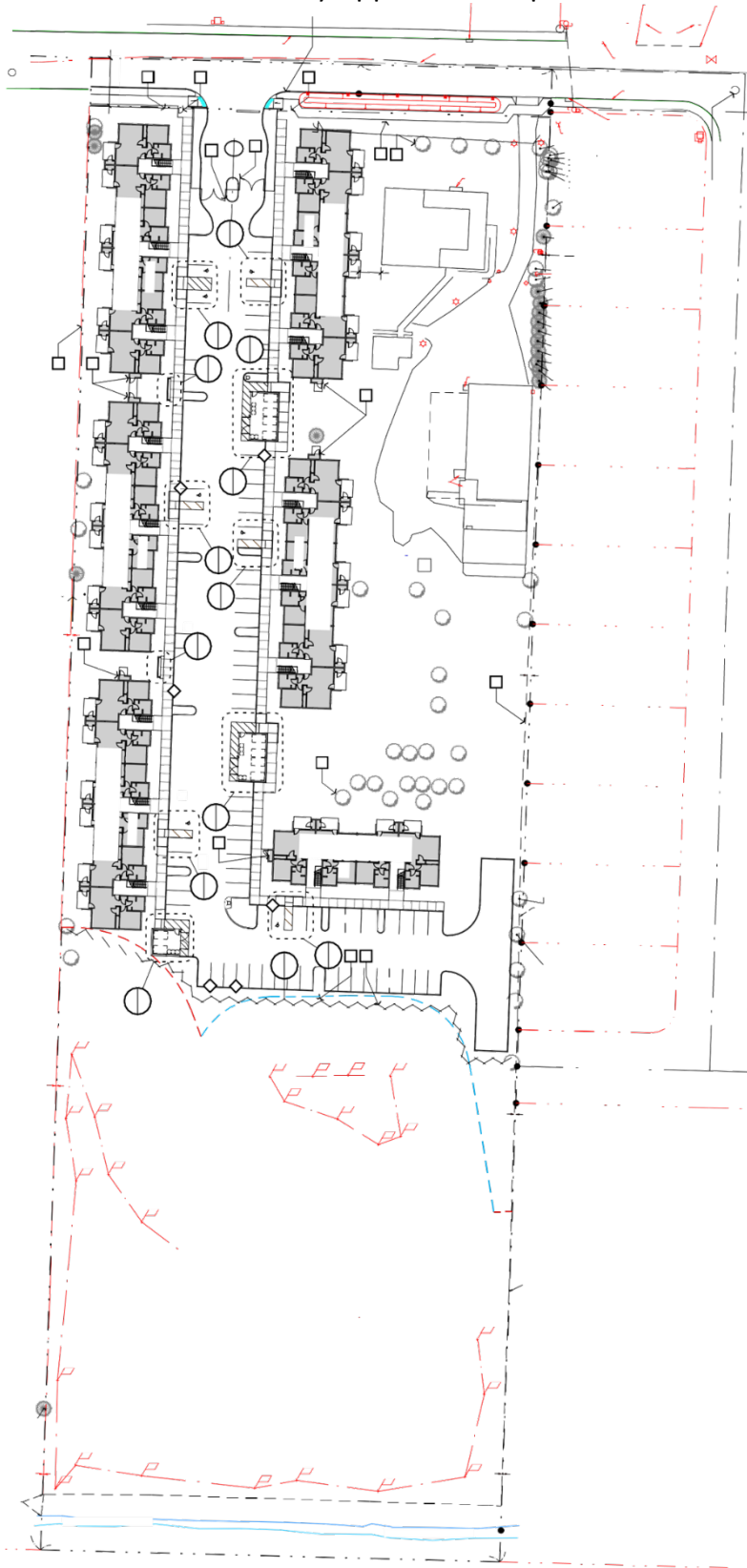
Bella Grove – Regional Zoning



Bella Grove – Future Conceptual Site Plan submitted by applicant (southern portion of site to remain undeveloped not fully shown)



Bella Grove – Previously approved site plan



The applicant has submitted a traffic study indicating that anticipated future development under the proposed R-30 zone would likely produce 1,238 trips per day and 93 in the evening peak hour, in comparison to 678 trips per day and 51 in the evening peak hour under the existing R-18 zone. The study finds that although the rezone would enable additional traffic, nearby intersections would operate under acceptable levels of service under both the existing and proposed zoning designations.

The nearest current transit service is the C-Tran #74 bus on Fourth Plain Boulevard, approximately 2200 feet north of the site.

The site is served by the Burnt Bridge Creek Elementary, Covington Middle, and Heritage High School in the Evergreen School District.

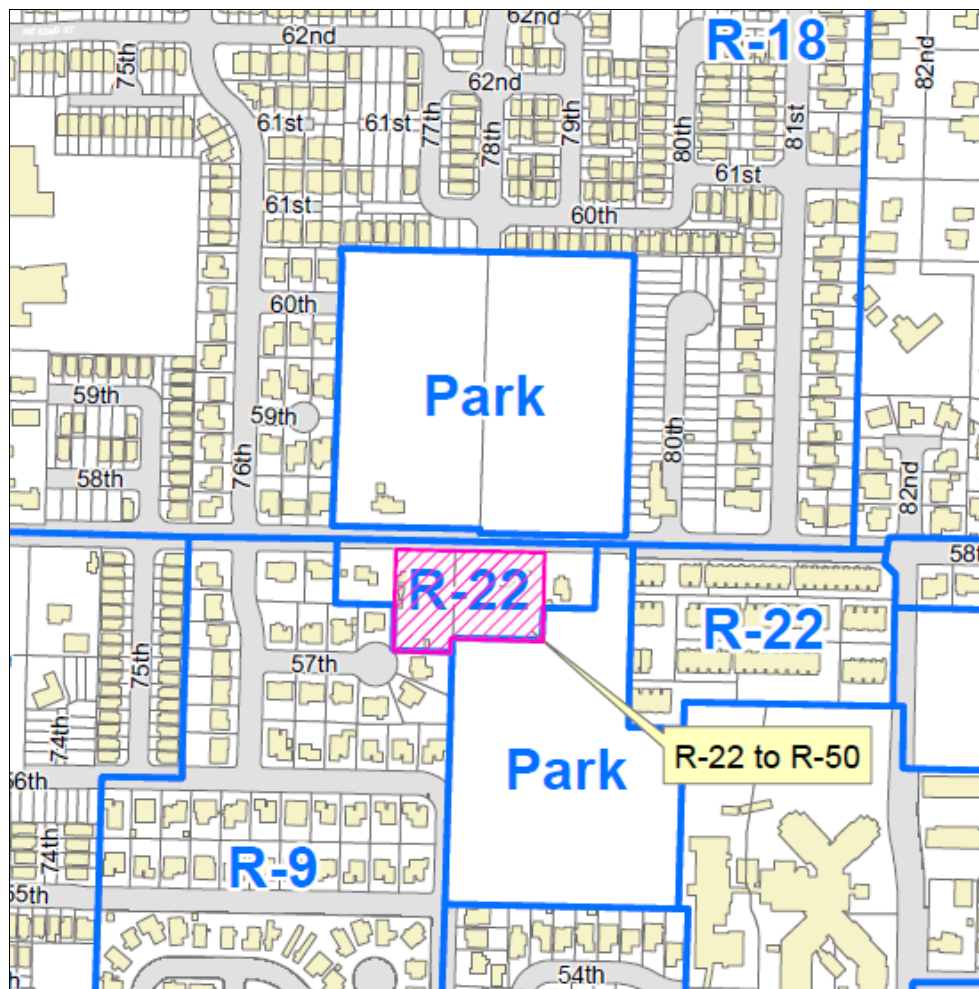
Draft future zoning under the updated Comprehensive Plan and land use map for the proposal site is envisioned as Medium Scale Neighborhood under both Possibility A and B. The updated Plan and new zoning standards are anticipated to be adopted at the end of 2025 following community review through the upcoming Environmental Impact Statement this summer, and adoption hearings in the fall and winter. The Medium Scale Neighborhood Designation is anticipated to allow a range of housing types including multi-family development, along with small commercial uses, at heights of up to 5 stories. More information on the potential future designations including the Medium Scale Neighborhood is available [here](#).

In general conformance with current zoning, properties to the east and west of rezone proposal site are anticipated to also be zoned Medium Scale Neighborhood under the new designations, and those to the north and south are anticipated to be zoned Low Scale Neighborhood.

2. 58th Street Zoning Amendment

A change from R-22 to R-50 is proposed on a 1.6-acre site at 7711 and 7809 NE 58th Street, tax lots 107971000 and 107982000 in the Walnut Grove neighborhood. The applicant, Serghei Cormanitche, represented by PLS Engineering, plans to submit a future application for site plan approval for a 4-story apartment building of up to 77 units if the zone change is approved.

58th Street Amendment – Zoning Map



NE 58TH STREET

CITY PARK

Scale: 1" = 20'

GENERAL NOTES:

APPLICANT/TOWNER:
Sunlight Park & IFC
Contact: Ben C. Conner
700 NE 58th St.
Vancouver, WA 98662
Office: (360) 777-5553
cell: (360) 777-5553
ben@conner.net

SITE ADDRESS:
Parcel #s: 10747-000,
12101 NE 58th St.,
Vancouver, WA 98648

CONTACT:
PLS Engineering
Jason Taylor, PE
69% W. Puyallup Blvd.
Vancouver, WA 98662
(360) 644-6419
jason@plsengineering.com

LAND USE:
The city Street Rezone process a zoning map amendment for parcels 10747-000 and 10750-000 which includes 1.82 acres. The applicant proposes to rezone the site from R2Z to HODU. If approved the applicant would seek to develop a single apartment building with 54-77 units depending on various siting factors. According to HBSE 1012B-CDD-1 multi-family units are a permitted use - either zone.

NOTES: The existing and proposed zones are High Density Residential, so a comprehensive plan amendment is not required.

TRANSPORTATION:
The development will require NE 58th Street along the frontage of the site. The site is near NE Anderson Road and NE 58th Street, which will provide access and efficient vehicular access to and from the site. Transportation mode 7R with a sign at the intersection of N. Anderson Road and NE 58th Street, approximately 0.4 miles west of the site.

Currently the site contains two single family homes. To the north of the proposal site across NE 58th Street is Raymond Shaffer Park, zoned Park. West are single family homesites zoned R-22. South and southeast is a City of Vancouver stormwater facility also zoned Park.

Draft future zoning for the proposal site under the updated Comprehensive Plan and development code is envisioned as Medium Scale Neighborhood under both Possibility A and B. The updated Plan and zoning standards are anticipated to be adopted at the end of 2025 following community review through the upcoming Environmental Impact Statement and fall adoption hearings. A range of housing types including multi-family development is anticipated to be allowed under the Medium Scale Neighborhood designation, along with small commercial uses, at heights of up to 5 stories.

Under the updated Plan and map, properties to the north, south, and southeast of the proposal site are anticipated to be zoned Park/Open Space, which is consistent with current zoning as no Parks will change under the updated Plan and map. Property to the west is anticipated to be zoned Medium Scale Neighborhood. More information on the potential future designations including the Medium Scale Neighborhood is available [here](#).

The applicant has submitted a trip generation study estimating that the proposed R-50 zoning could reasonably assume generation of 28 trips during the morning peak hour, 30 during the evening peak hour, and 350 per day, in comparison to 14 morning and 17 evening peak hour trips and 230 per day under the existing R-22 zoning.

The nearest current transit service is the C-Tran #78 bus on Andresen Road, approximately 1,500 feet west of the site.

The 137th Avenue Corridor Completion project, which will provide an improved connection from 49th Street to Fourth Plain Boulevard, is anticipated to be completed in early 2026. More information is available [here](#).

The site is served by the Walnut Grove Elementary, Gaiser Middle and Fort Vancouver High Schools in the Vancouver School District. Pedestrian access from the rezone site to Walnut Grove Elementary located northeast of the site will require additional improvements, as the rezone site and property to the immediate west on the south side of 58th Street does not contain sidewalk. Frontage improvements on 58th Street abutting the rezone will be required at the time of site plan review. A rectangular rapid flashing beacon (RRFB) may also be required to facilitate safe crossing of 58th Street to Shaffer Park. The park is currently unimproved but in the early stages of master planning, and will provide frontage improvements of its own, including sidewalks, at the time of development. Further information will be provided at the May 13 public hearing.

Review Criteria and Findings

Zoning map designations changes are reviewed under VMC [20.285.060](#).

20.285.060 Approval Criteria -Standalone Zoning Map Amendments

A. Zoning map amendments not involving associated comprehensive plan map amendments shall demonstrate the following:

- 1. How the proposal is more consistent with applicable policies of the Vancouver strategic plan and comprehensive plan than the existing designation; and*
- 2. That a change in circumstances has occurred since the existing designation was established. (Ord. M-3959 § 18, 07/19/2010; Ord. M-3922 § 14, 07/06/2009; Ord. M-3730 § 5, 12/19/2005; Ord. M-3643, 01/26/2004)*

Staff finds that both zone change proposals comply with the balance of Strategic and Comprehensive Plan policies. The proposals would allow for higher density housing, which will provide more units than housing developed under the current designations. The increased number of units represent an incremental increase over what is allowed under the current zoning. The Bella Grove proposal adds capacity for approximately 62 more units than the current zoning does, and the 58th Street proposal adds capacity for approximately 45 more units. The capacity increases are generally consistent with what would likely be allowed under the Medium Scale Neighborhood designation, which is envisioned to be applied to the sites in December 2025 or shortly after.

Staff finds the proposal to be consistent with [Strategic Plan](#) focus areas of Housing and Human Needs and Vibrant and Distinct Neighborhoods. The proposal also complies with applicable [Comprehensive Plan](#) policies, particularly regarding housing options under Policy H-1. The affordable housing crisis, and particularly the related new state housing mandates that Vancouver must comply with is the most relevant change in circumstances since establishment of the current zoning. The new legal requirements include allowing 4-6 units of middle housing on all single family lots and demonstrating capacity to accommodate more than 38,000 net new housing units citywide that are affordable at a range of income levels.

The proposals will allow for multi-family development that differs from some adjacent existing development, but the differences are moderate, particularly in the context of development that will likely be allowed under the updated Comprehensive Plan and zoning designations. The Bella Grove proposal has abutting development on two of its four sides, and those consist of three-story duplexes to the east and a mobile home park to the west. The 58th Street rezone abuts large lot homesites to the east and west, and a subdivision to the southwest. Based on the applicant's conceptual site plan, the nearest structures would be located around 30 feet from future apartment development on the site.

Recommended Action

Following applicant and public testimony at the May 13 hearing, staff recommends the Planning Commission undertake the following actions:

a

1. Bella Grove: Based on the May 2, 2025 staff memo and May 13 public hearing, recommend approval of the Bella Grove zone designation change as proposed from R-18 to R-30, at 13401 and 13309 NE 59th Street, tax lots 107812000 and 107814000.
2. 58th Street: Based on the May 2, 2025 staff report and May 13 public hearing, recommend approval of the 58th Street zone designation change as proposed from R-22 to R-50 at 7711 and 7809 NE 58th Street, tax lots 107971000 and 107982000.



NARRATIVE

FOR

58TH STREET REZONE

Submitted to

THE CITY OF VANCOUVER

FOR

SERGHEI COMARNITCHI

7524 NE 88th Street

Vancouver, WA 98662

(360) 772-5563

December 2024

General Information

Applicant/Owner:

Sunlight Rentals LLC
Contact: Serghei Comarnitchi
7524 NE 88th Street
Vancouver, WA 98662
(360) 772-5563
sunlight.inc@comcast.net

Project Contact:

PLS Engineering
Jayson Taylor, PE
604 W Evergreen Boulevard
Vancouver, WA 98660
(360) 944-6519
pm@plsengineering.com

Location:	NW ¼ of Section 17, T2N, R2E, WM
Address:	7809 & 7711 NE 58th St., Vancouver, WA 98662
Project Size:	1.62 acres
Zoning:	R-22
Comprehensive Plan:	UH
Current Use:	Single-family residences
Tax Lots:	107971000 & 107982000
School District:	Vancouver
Elementary:	Walnut Grove
Middle School:	Gaiser
High School:	Fort Vancouver
Water District:	Vancouver
Sewer District:	Vancouver
Fire District:	Vancouver Fire
Park District:	B
Transportation Impact Fee:	Pacific

Project Discussion

The 58th Street Rezone proposes a zoning map amendment for parcels 107971000 and 107982000 which include 1.62 acres. The applicant proposes to rezone the site from R-22 to R-50. If approved the applicant would seek to develop a single apartment building with up to 77 units depending on various site factors. According to Table 20.420.030-1 multi-dwelling units are a permitted use in either zone. The proposed zone would allow for up to a 5-story building but a 3 to 4 story building is a more likely building scenario. A 4-story building would be allowed under the current zoning designation.

Both the existing and proposed zones are High Density Residential, therefore a comprehensive plan amendment is not necessary.

The future site plan would be required to dedicate 0.08 acres as ROW resulting in a net site area of 1.54 acres. The maximum density would be 77 units and the minimum allowable density would be 54 units.

Zoning Map Amendment Approval Criteria

VMC 20.285.060.A. sets out the applicable zoning map amendment approval criteria not involving associated comprehensive plan map amendments.

This proposal is required to demonstrate the following:

1. How the proposal is more consistent with applicable policies of the Vancouver strategic plan and comprehensive plan than the existing designation; and
2. That a change in circumstances has occurred since the existing designation was established.

A. Consistency with Vancouver Strategic Plan

The City adopted the 2023-2029 Strategic Plan in June of 2023 that included eight focus areas. This narrative below shows how the proposal is consistent with five of the applicable focus areas:

Transportation and Mobility:

The development will improve all the existing abutting streets and proposed internal streets with sidewalks that will improve pedestrian mobility in and around the site. The site is near NE Andresen Road and NE 58th Street, which will provide quick and efficient vehicular access to and from the site. C-Tran operates bus route 78 with a stop at the intersection of NE Andresen Road and NE 58th Street, approximately 0.4 miles west of the site. The site is within an urban area and there is adequate roadway infrastructure to support the proposed development.

Housing and Human Needs:

The proposed development would potentially bring an additional 50-77 multi-family rental units to the market. Increasing housing supply contributes to improving affordability in the

area. These proposed units would contribute to the diverse range of housing options within the city and help make housing attainable to many that are not in a position to purchase a home.

Vibrant and Distinct Neighborhoods:

The proposed development will integrate well with the existing neighborhood that consists of a wide range of housing. There are existing single-family neighborhoods to the west of the site, a single-family home to the east of the site, a large park to the north and south of the site. The applicant intends to retain as much of the existing vegetation as possible along the south/west property lines to buffer the site from the existing single-family homes.

Safe and Prepared Community:

Emergency services will be provided by the Vancouver Police Department and Fire District. The nearest Fire Station is 0.6 miles to the NW of the site. The proposed site is also within an urban area that is served by public water. The site will be designed with fire hydrants that meet the spacing requirements of the current fire codes. The proposed apartments will also meet the current building codes that continually include updates that improve the performance of buildings during natural disasters, including earthquakes.

Climate and Natural Systems:

The proposed site development will include energy efficient units. The units will also be equipped with high efficiency heat pump HVAC and water heater systems. The HVAC systems will include air conditioning to improve livability during the summer months. The site design will also retain trees where possible that provide buffer between uses and shading/green space for the residents. The site will include stormwater systems that will collect and treat stormwater from pollution generating surfaces. All stormwater is proposed to be infiltrated into the ground.

2022 Housing Code Updates:

In response to the 2016-2021 strategic plan and the 2016 Affordable Housing Task Force recommendations, the City Council studied and approved housing code updates in 2022. This code update resulted in the creation of the R-50 zone to provide additional housing options and improve affordability within the city.

The Housing Code Updates webpage states the following as a purpose of the update:

“Vancouver, like many communities, is facing a housing crisis. As the city continues to grow, there is a desire and need for new types of housing that would allow residents to live more affordably while also maintaining neighborhood livability. However, current city zoning rules prohibit many of these housing options. Changes to the development code can create opportunities for the private sector to deliver a more diverse, affordable housing stock.”

The project goals of the housing update are stated as the following:

“The goal of the project is to update City codes to allow for different, smaller and more affordable types of housing choices. Many are recommended in the Affordable Housing Task

Force report (2016) and many are similar to what is allowed in Clark County and other Washington cities nearby and statewide.”

The specific goals include:

- Allowing for the development of diverse housing types to meet changing demographic needs and consumer preferences
- Expanding market rate, middle income, and affordable housing choices
- Maintaining neighborhood livability with incremental, rather than wholesale, change
- Providing more opportunities for people to live near where they work and attend school, and reduce costly commutes
- Facilitating development in areas with full existing public services

The current proposal is consistent with this plan and will help meet the City’s goals. The site plan proposal associated with the zone change will accomplish the following:

- The project will add diversity to the housing options in the immediate vicinity of the site.
- It will provide middle income housing geared toward families wanting to live in the City of Vancouver.
- The rezone will allow for density in an appropriate location within the city. While the proposed apartment building will be taller than the immediately adjacent uses. The park on the north and south ends of the site will provide a significant buffer between the site and single family uses.
- The site is located in the middle of the urban area of Vancouver and is surrounded by existing development.
- The project in is an area with full existing public services.

B. Consistency with the Comprehensive Plan

This request is consistent with the purpose of the existing Comprehensive Plan designation. Both the R-22 and R-50 zones are Urban Higher Density designations. The R-50 zone was newly added in 2022 to provide a higher density designation in the Urban Residential zones. The R-22 zoning district is designed to accommodate rowhouses, garden-type apartments, and lower-density multi-dwelling structures at densities up to 22 units per acre and a minimum lot size of 1,500 square feet per unit. The R-50 zoning district is designed to accommodate multi-dwelling structures at densities up to 50 units per acre. Approval of the proposed rezone will not affect the type of units that could be constructed onsite; it will allow a higher density, providing more affordable living options in the area.

This request furthers the Community Development policies on page 1-14 to 1-15 of the Comprehensive Plan:

CD-2 Efficient development patterns Encourage efficient development throughout Vancouver to ensure achievement of average density of 8 units per acre set by countywide planning policies. Encourage higher density and more intense development in areas that are more extensively served by facilities, particularly transportation and transit services.

Response:

- The site is in an urban area and with access to all required urban services including adequate transportation services. The nearest public transportation is approximately 0.4 miles to the west on NE Andresen Road. This is within a 3-minute bike ride from the site.

CD-3 Infill and redevelopment- Where compatible with surrounding uses, efficiently use urban land by facilitating infill of undeveloped properties, and redevelopment of underutilized and developed properties. Allow for conversion of single to multi-family housing where designed to be compatible with surrounding uses.

Response:

- This is a relatively small infill project, where the intent is to convert the existing underutilized land into an apartment housing project.

In addition, the request fulfills both CD-9, facilitating compatible uses adjacent to each other, and CD-10, placing housing near services (complementary land uses).

Chapter 3 of the Comprehensive Plan contains the City's Housing element. The Plan recognizes the need for diverse housing:

"As the baby boom generation ages over the next 20 years, there is likely to be a greater need and demand for smaller units, retirement homes, and assisted living." Page 3-3.

The plan notes that most residential housing is single-family housing (57%). *Id.* Housing affordability is also a City concern:

The Growth Management Act requires local jurisdictions to demonstrate that regulations allow and encourage housing for all economic segments of the community. Table 3-3 provides a breakdown of local households by income ranges, and the general share of Vancouver housing that can afford to buy or rent without having to spend more than 30% of their income.

There are several policies that would be furthered by this request, including:

H-1 Housing options

Provide for a range of housing types and densities for all economic segments of the population. Encourage equal and fair access to housing for renters and homeowners.

H-2 Affordability

Provide affordable housing by formulating innovative policies, regulations and practices, and establishing secure funding mechanisms. Target affordability programs toward households with incomes below the median.

C. Change in Circumstances

The housing and affordability crisis represents a change in circumstance since the existing zoning designation was established. Well-planned site-specific rezone requests are a way to increase the housing supply in the urban areas of the city. This increase in housing supply will help improve affordability within the city.

Issues from Pre-Application Conference

A preapplication conference was held on December 5, 2024. During the meeting the upcoming City of Vancouver rezone process for 2024 and 2025 was discussed. Bryan Snodgrass noted that the “rezone site is identified for a new Medium Scale Neighborhood designation under both of the two new citywide Land Use Possibility maps, which aligns reasonably well with proposed R-50 zoning. Specific standards have not been drafted for the Medium Scale Neighborhood designation, but the project website description envisions it will allow for 2 to 4 story townhome, rowhouse, courtyard or multifamily buildings, and also allow some commercial activities like cafes, restaurants, small offices, and retail.” The applicant is pursuing the rezone at this time rather than waiting for the future rezone process to be finalized.

Traffic was discussed, and Eric Hahn confirmed that a traffic study will be required. A traffic memo has been submitted with this rezone application and a full traffic study is being prepared and will be submitted shortly. The submitted memo indicates the potential trips that could occur with development under the current and proposed zone.

Table 2: Proposed Zone Change Trip Generation Summary

ITE Code		Size	AM Peak Hour			PM Peak Hour			Weekday Total
			Enter	Exit	Total	Enter	Exit	Total	
Existing R-22Zone									
Multifamily Housing (Low-Rise)	220	34 units	3	11	14	11	6	17	230
Proposed R-50 Zone									
Multifamily Housing (Mid Rise)	221	77 units	6	22	28	18	12	30	350
Net Change In Site Trip Generation Potential									
Net Increase			3	11	14	7	6	13	120

Conclusion

Approval of this application would result in a development that can be served by existing urban public services and will provide more flexibility in density and housing types, resulting in more affordable housing.



Memorandum

12/16/2024

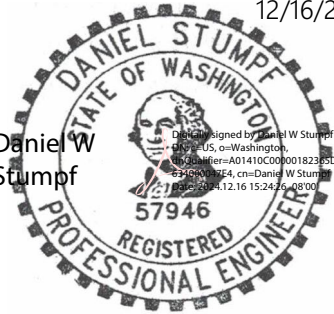
To: **Serghei Comarnitchi**
Sunlight Rentals, LLC

From: **Daniel Stumpf, PE**

Date: **December 16, 2024**

Subject: **58th Street Rezone**
Trip Generation Analysis

Daniel W
Stumpf



Introduction

This memorandum reports and evaluates the potential transportation impacts related to the proposed 58th Street Rezone project, located on two properties at 7711/7809 NE 58th Street in Vancouver, Washington. The proposal will rezone the properties from Urban High-Density R-22 to R-50. Future access to the site will likely be provided via a single driveway located along the west side of the project site along NE 58th Street.

The purpose of this memorandum is to examine and address transportation-related impacts from the proposed development. Specifically, this study reviews potential site trip generation under the existing R-22 and proposed R-50 zones. Trip generation calculations are included as an attachment to this memorandum.

Location Description

Project Site Description

The project site is located north of NE 56th Street, south of NE 58th Street, east of NE 76th Avenue, and west of NE 82nd Avenue in Vancouver, Washington. Located in a predominately residential area, the site is surrounded by a community park to the north, undeveloped City land to the southeast, and single-family houses surrounding the site in all other directions. One notable development near the project site is Vancouver Mall, located approximately a half mile to the southeast of the site.

The site includes two properties (assessor parcels 107971000 and 107982000) which encompass an approximate total of 1.62 acres (a net site developable area of 1.54 acres), where each parcel is developed with a single-family house with private driveways along NE 58th Street.

Vicinity Roadways

The project site is expected to take direct access to NE 58th Street. Table 1 provides a description of this vicinity roadway.

Table 1: Vicinity Roadway Descriptions

Street Name	Jurisdiction	Functional Classification	Speed (MPH)	On-Street Parking	Curbs & Sidewalks	Bicycle Lanes
NE 58th Street	Vancouver	Collector Arterial	25	Partially Permitted	Partial Both Sides	None

Table Notes: Functional Classification and Jurisdiction based on City of Vancouver Arterial Street System map.

Figure 1 below presents an aerial image of the nearby vicinity with the project site outlined in yellow.

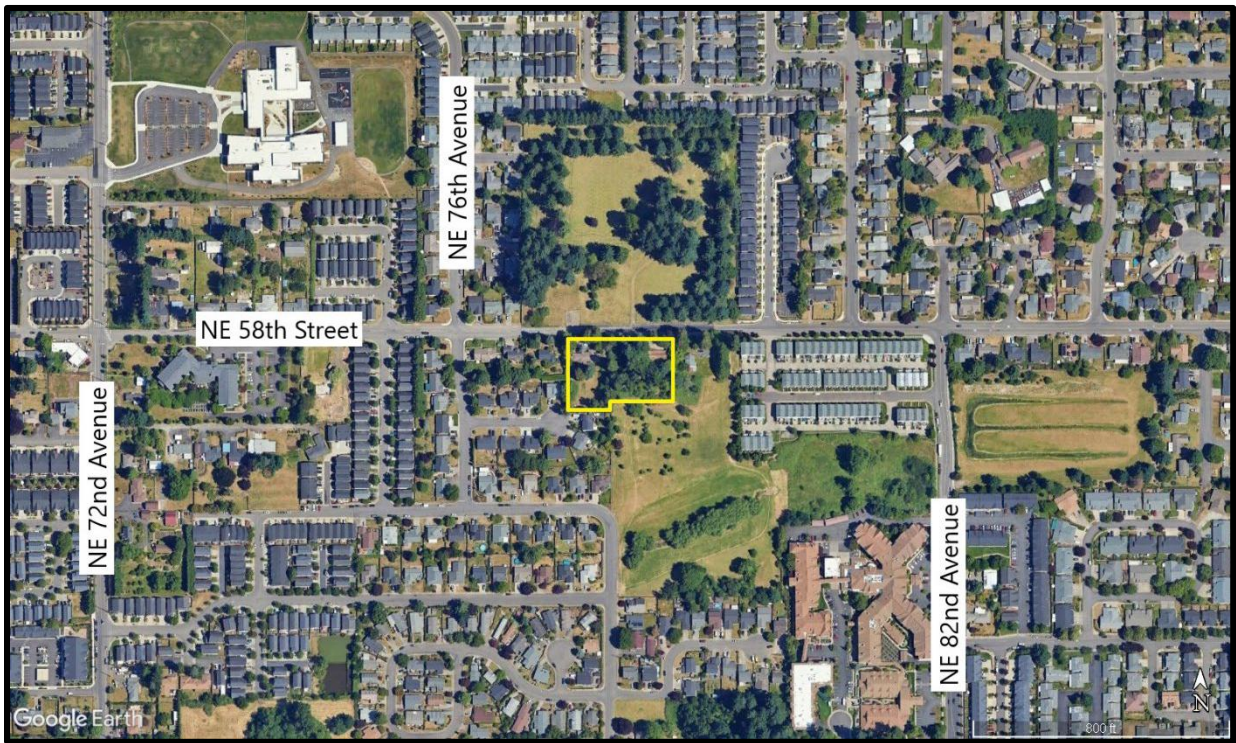


Figure 1: Aerial Photo of Site Vicinity (Image from Google Earth)

Site Trips

The subject site is currently zoned as R-22 and is proposed for a change in zoning to R-50. To determine the potential impacts of the proposed zone change, reasonable “worst-case” development scenarios for the existing and proposed zones were determined utilizing data for the most traffic-intensive uses permitted within each zone.

To determine a reasonable “worst-case” development scenario under the existing R-22 zone and the proposed R-50 zone, Vancouver Municipal Code (VMC) section 20.420 *Higher Density Residential Districts* was referenced and compared to a variety of land uses provided within the *Trip Generation Manual*¹. Based on an assessment of permitted uses under the R-22 and R-50 zones, data from the following land use codes were referenced:

- Land use code 220, *Multifamily Housing (Low-Rise)*, was used to estimate the existing R-22 trip generation potential of the site based on number of dwelling units. Based on correspondence with the project team, it is assumed that under the existing R-22 zoning a maximum three-story building could be constructed.
- Land use code 221, *Multifamily Housing (Mid-Rise)*, was used to estimate the proposed R-50 trip generation potential of the site based on number of dwelling units. Based on correspondence with the project team, it is assumed that under the proposed R-50 zoning a four to five-story building could be constructed.

To determine a dwelling unit count within the existing R-22 and proposed R-50 zones, the maximum unit per acre density rate from City code was referenced from VMC 20.420.040. The existing R-22 zone allows for a maximum 22 units per acre of developable space while the proposed R-50 zone allows for a maximum 50 units per acre of developable space. The project site encompasses approximately 1.62 acres, where approximately 1.54 acres of net developable space is available. The following reasonable “worst-case” development scenarios were assumed under each zone:

- Existing R-22 Zone: 34 dwelling units.
- Proposed R-50 Zone: 77 dwelling units.

The trip generation calculations show that under the existing R-22 zone, the subject site could reasonably generate up to 14 AM peak hour trips, 17 PM peak hour trips, and 230 average weekday trips. Under the proposed R-50 zone, the site could reasonably generate up to 28 AM peak hour trips, 30 PM peak hour trips, and 350 average weekday trips. Accordingly, the net change in the trip generation potential of the site after the proposed rezone is projected to increase by 14 AM peak hour trips, 13 PM peak hour trips, and 120 average weekday trips.

The trip generation estimates are summarized in Table 3. Detailed trip generation calculations are included in the technical appendix.

¹ Institute of Transportation Engineers (ITE), *Trip Generation Manual*, 11th Edition, 2021.



Table 2: Proposed Zone Change Trip Generation Summary

ITE Code		Size	AM Peak Hour			PM Peak Hour			Weekday Total
			Enter	Exit	Total	Enter	Exit	Total	
Existing R-22Zone									
Multifamily Housing (Low-Rise)	220	34 units	3	11	14	11	6	17	230
Proposed R-50 Zone									
Multifamily Housing (Mid-Rise)	221	77 units	6	22	28	18	12	30	350
Net Change In Site Trip Generation Potential									
Net Increase			3	11	14	7	6	13	120

If you have any questions or concerns regarding this analysis or need further assistance, please don't hesitate to contact us.



Located in the NW ¼ of Section 17, T2N, R2E W.M.
Vancouver, Washington



The development will improve NE 58th Street along the frontage of the site. The site is near NE Andresen Road and NE 58th Street, which will provide quick and efficient vehicular access to and from the site. C-Tran operates bus route 78 with a stop at the intersection of NE Andresen Road and NE 58th Street, approximately 0.4 miles west of the site.

Number of children	Number of families
20	10
10	20
0	100
0	90
10	80
20	70
20	60
10	50
0	40
0	30
10	20
20	10



Revisions	
1	
2	
3	
4	
5	
6	

Project No. 3587	
SCALE:	H: 1" = 20' V: N/A
DESIGNED BY:	JMT
DRAFTED BY:	MM
REVIEWED BY:	TGJ

01

01



TRIP GENERATION CALCULATIONS

Source: Trip Generation Manual, 11th Edition

Existing R-22 Zone

Land Use: Multifamily Housing (Low-Rise)

Land Use Code: 220

Land Use Subcategory: Not Close to Rail Transit

Setting/Location: General Urban/Suburban

Variable: Dwelling Units

Trip Type: Vehicle

Formula Type: Rate

Variable Quantity: 34

AM PEAK HOUR

Trip Rate: 0.4

	Enter	Exit	Total
Directional Split	24%	76%	
Trip Ends	3	11	14

PM PEAK HOUR

Trip Rate: 0.51

	Enter	Exit	Total
Directional Split	63%	37%	
Trip Ends	11	6	17

WEEKDAY

Trip Rate: 6.74

	Enter	Exit	Total
Directional Split	50%	50%	
Trip Ends	115	115	230

SATURDAY

Trip Rate: 4.55

	Enter	Exit	Total
Directional Split	50%	50%	
Trip Ends	77	77	154

Caution: Small Sample Size

Source: Trip Generation Manual, 11th Edition



TRIP GENERATION CALCULATIONS

Source: Trip Generation Manual, 11th Edition

Proposed R-50 Zone

Land Use: Multifamily Housing (Mid-Rise)

Land Use Code: 221

Land Use Subcategory: Not Close to Rail Transit

Setting/Location: General Urban/Suburban

Variable: Dwelling Units

Trip Type: Vehicle

Formula Type: Rate

Variable Quantity: 77

AM PEAK HOUR

Trip Rate: 0.37

	Enter	Exit	Total
Directional Split	23%	77%	
Trip Ends	6	22	28

PM PEAK HOUR

Trip Rate: 0.39

	Enter	Exit	Total
Directional Split	61%	39%	
Trip Ends	18	12	30

WEEKDAY

Trip Rate: 4.54

	Enter	Exit	Total
Directional Split	50%	50%	
Trip Ends	175	175	350

SATURDAY

Trip Rate: 4.57

	Enter	Exit	Total
Directional Split	50%	50%	
Trip Ends	176	176	352

Source: Trip Generation Manual, 11th Edition

REVISED REPORT

Bella Grove Apartments Rezone Traffic Impact Study

April 29, 2025

H. Lee & Associates, PLLC

**BELLA GROVE APARTMENTS REZONE
REVISED TRAFFIC IMPACT STUDY**



4/29/25

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April 29, 2025

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SECTION I STUDY SUMMARY

INTRODUCTION

This traffic impact analysis has been prepared to assess transportation impacts related to the proposed rezone of tax lots 107814000 and 10781200 in Vancouver, Washington. The project site is located at 13309 and 13401 NE 59th Street. The existing parcel is approximately 6.17 acres and is currently zoned R-18. The rezone proposal is to change the existing zoning from R-18 to R-30. Figure 1 shows the project vicinity.

Project Description

The build out of the existing R-18 zoning was based on City of Vancouver Municipal Code Section 20.420.020.B. Based on 20.420.020.B, the maximum density for the R-18 zoning is 18 units per acre. Applying the maximum density for the existing R-18 zoning to the project's net buildable acreage (6.17 acres) yields a maximum build out of 111 multifamily units.

The build out of the proposed R-30 zoning was based on City of Vancouver Municipal Code Section 20.420.020.B. Based on 20.420.020.B, the maximum density for the R-30 zoning is 30 units per acre. Applying the maximum density for the proposed R-30 zoning to the project's net buildable acreage (6.17 acres) yields a maximum build out of 185 multifamily units.

Scope of Traffic Impact Study

The scope of the traffic impact study was developed from correspondence with City of Vancouver staff. Originally, the following five intersections were required to be analyzed:

- NE 131st Avenue/NE Fourth Plain Boulevard
- NE 137th Avenue/NE Fourth Plain Boulevard
- NE 137th Avenue/NE 49th Street
- NE 137th Avenue/NE 59th Street (North)
- NE 137th Avenue/NE 59th Street (South)

However, the following two intersections were removed from the scope of the traffic study due to the current closures and construction along NE 137th Avenue between NE Fourth Plain Boulevard and NE 49th Street precluding the ability to conduct counts, lack of historical traffic counts available, and a discussion with city staff:

- NE 137th Avenue/NE 59th Street (North)
- NE 137th Avenue/NE 59th Street (South)

Since the current construction project will realign and improve NE 137th Avenue/NE 59th Street (North) and NE 137th Avenue/NE 59th Street (South) intersections to one intersection, an analysis isn't needed to demonstrate that standards are met.

The remainder of this report presents the following analysis:

- Existing P.M. peak hour traffic conditions in the project study area.
- Trip generation estimates for the build out of the existing zoning and the proposed zoning.
- Trip distribution and assignment of trips generated by the build out of the existing zoning and the proposed zoning.
- The 2045 condition traffic volumes were derived from RTC's 2040 regional transportation forecast model. The RTC model link volumes were post-processed to turning movement volumes based on the NCHRP 255 methodology and the TurnsW32 software. A 1.5 percent compounded annual growth factor was applied to these 2040 post-processed turning movement traffic volumes to derive the volumes for the 2045 analysis year. Since the RTC model included the build out of the project site assuming the existing zoning, these volumes represent the 2045 "Existing Zoning Build Out" condition traffic volumes.
- The 2045 "Proposed Zoning Build Out" condition traffic volumes were derived by subtracting the existing zoning trips from the 2045 "Existing Zoning Build Out" traffic volumes and then adding the proposed zoning trips.
- The 2045 "Existing Zoning Build Out" and 2045 "Proposed Zoning Build Out" conditions were analyzed and compared to each other to determine the traffic impacts of the rezone proposal.

SUMMARY OF FINDINGS AND RECOMMENDATIONS

- The "Existing Zoning Build Out" is expected to generate 739 daily, 43 A.M. peak hour (11 in, 32 out), and 56 P.M. peak hour (35 in, 21 out) net new trips.

The "Proposed Zoning Build Out" is expected to generate 1,238 daily, 73 A.M. peak hour (18 in, 55 out), and 93 P.M. peak hour (58 in, 35 out) net new trips.

The "Proposed Zoning Build Out" is expected to generate 499 daily, 30 A.M. peak hour (7 in, 23 out), and 37 P.M. peak hour (23 in, 14 out) more net new trips than the existing zoning.

- The study area intersections are projected to operate at acceptable levels of service in both the 2045 "Existing Zoning Build Out" and 2045 "Proposed Zoning Build Out" conditions.

- Based on the traffic impact analysis documented in this report, no physical, off-site mitigation would be needed and the rezoning of the proposed project site will not result in any significant degradation in traffic conditions nearby the project site.

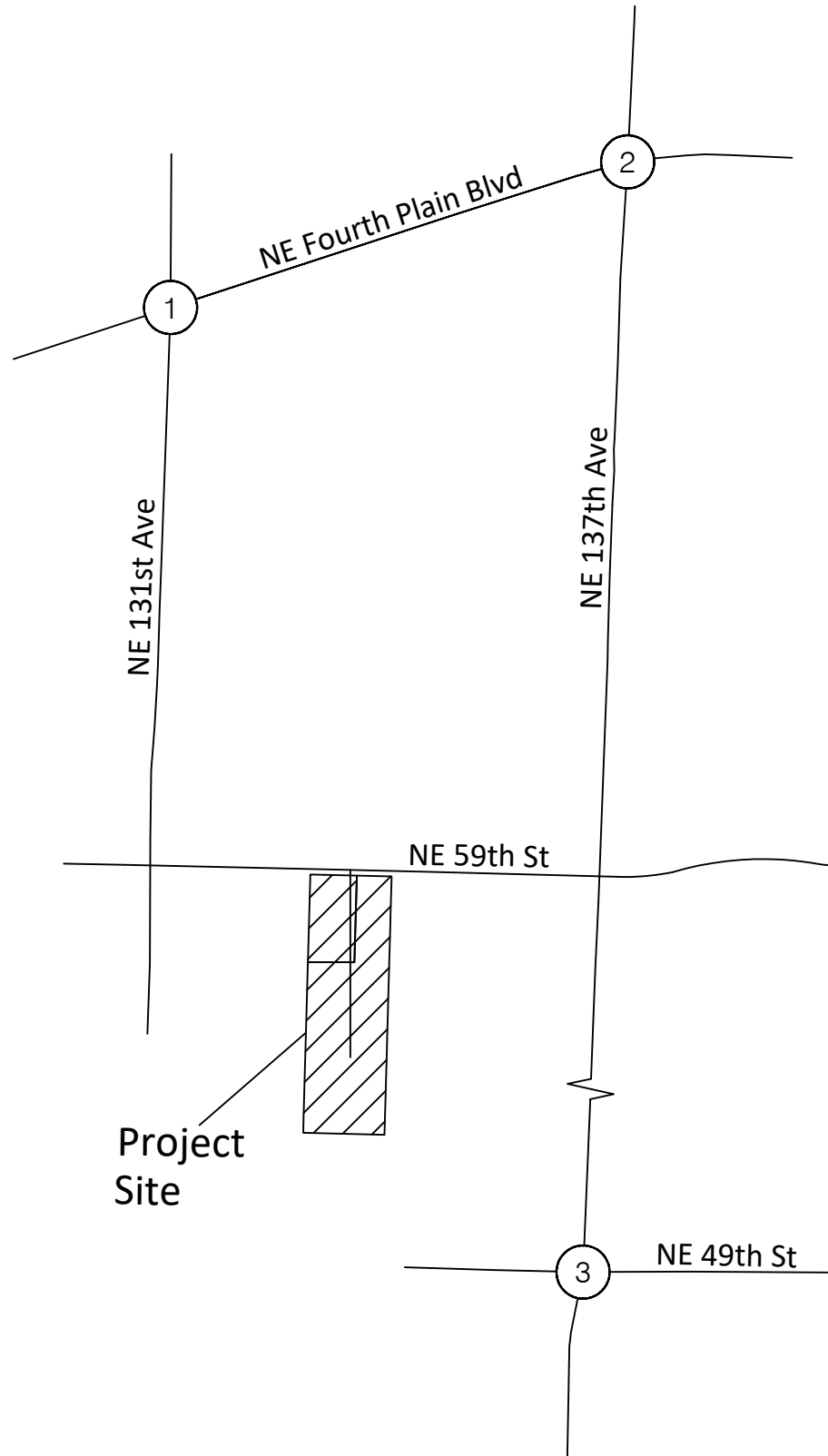


FIGURE 1
Site Vicinity Map

SECTION II EXISTING CONDITIONS

SITE CONDITION AND ADJACENT LAND USE

One single-family detached home exists on-site that will be demolished upon construction of the proposed project. Residential uses surround the project site and some vacant land exists to the south.

TRANSPORTATION FACILITIES

The following provides a description of the existing street system in the study area including the street classifications and characteristics.

NE Fourth Plain Boulevard: NE Fourth Plain Boulevard is a five-lane principal arterial west of NE 162nd Avenue and a two-lane state route (SR 500) east of NE 162nd Avenue. Intermittent medians exist along the roadway and additional turn pockets exist at major intersections. Sidewalks exist on both sides of the roadway west of NE 162nd Avenue. Intermittent bike lanes exist on both sides of the roadway west of NE 162nd Avenue. East of NE 162nd Avenue, intermittent sidewalks exist along the north side of the roadway. The posted speed limit is 50 mph east of NE 162nd Avenue and 40 mph west of NE 162nd Avenue.

NE 49th Street: NE 49th Street is two-lane minor arterial west of NE 137th Avenue and a two-lane collector roadway east of NE 137th Avenue. Intermittent sidewalks and bike lanes exist along both sides of the roadway. The posted speed limit is 35 mph.

NE 59th Street: NE 59th Street is two-lane collector roadway east of NE 137th Avenue. Sidewalks and bike lanes exist along both sides of the roadway east of NE 137th Avenue. West of NE 137th Avenue, sidewalks exist along both sides of the roadway in developed areas. The posted speed limit is 35 mph east of NE 137th Avenue and 30 mph west of NE 137th Avenue.

NE 131st Avenue: NE 131st Avenue is a two-lane collector roadway south of NE Fourth Plain Boulevard within the City of Vancouver. Intermittent sidewalks exist along both sides of the roadway. The posted speed limit south of NE 76th Street is 30 mph. North of NE 76th Street, the posted speed limit is 25 mph.

NE 137th Avenue: NE 137th Avenue is a minor arterial roadway. The roadway is comprised of two travel lanes, a center median/left turn lane and additional turn pockets at major intersections. Sidewalks and bike lanes exist on both sides of the roadway. The posted speed limit is 35 mph.

As part of this study, levels of service analyses were performed for the following intersections:

- NE 131st Avenue/NE Fourth Plain Boulevard

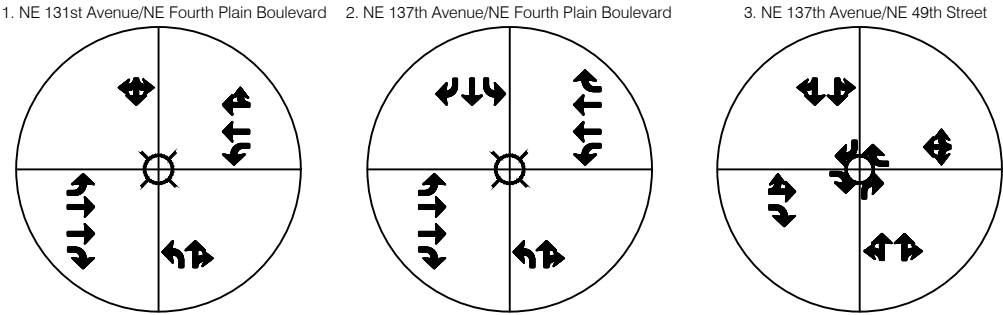
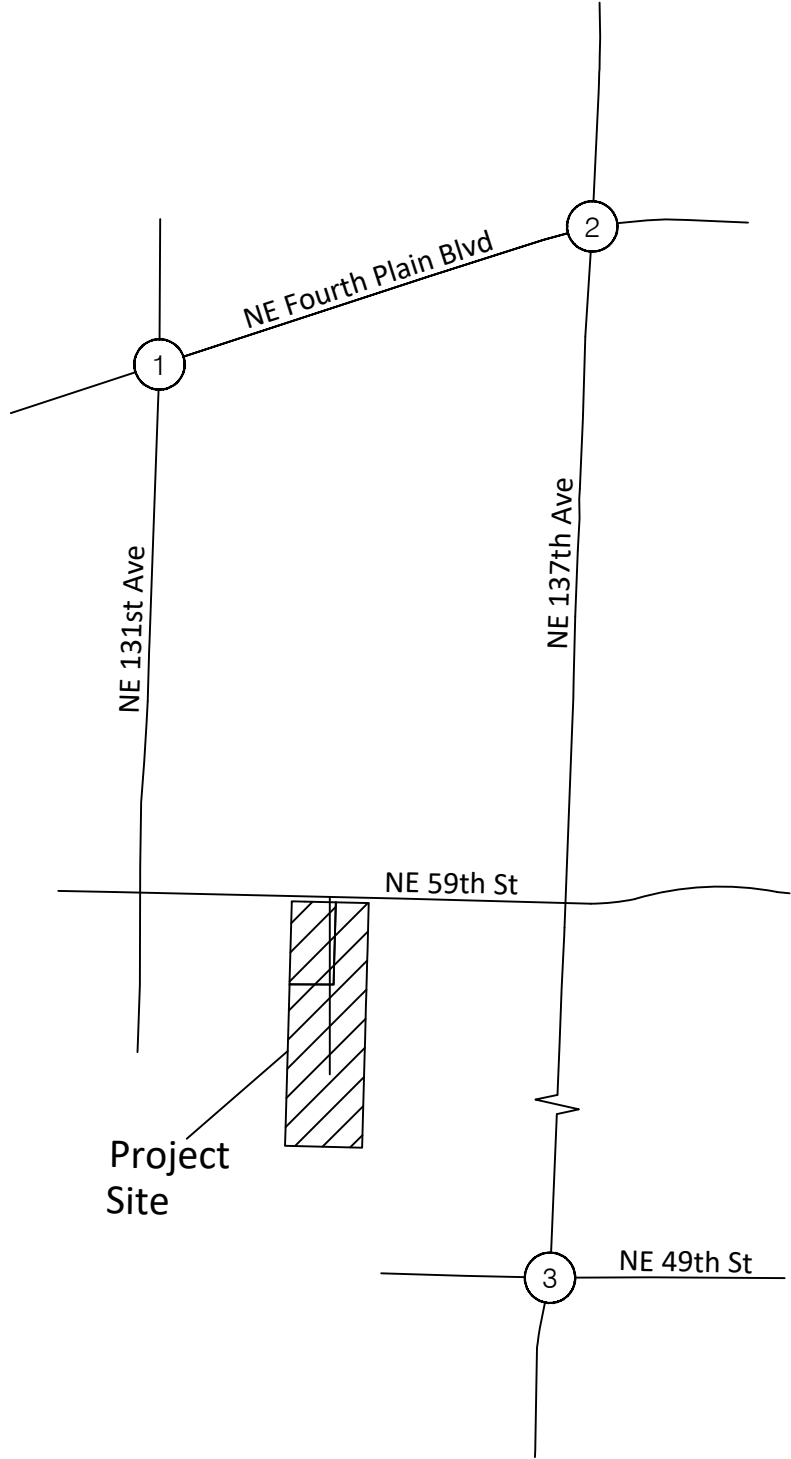
- NE 137th Avenue/NE Fourth Plain Boulevard
- NE 137th Avenue/NE 49th Street

The NE 131st Avenue/NE Fourth Plain Boulevard and NE 137th Avenue/NE Fourth Plain Boulevard intersections are signalized. The NE 137th Avenue/NE 49th Street study area intersection is a roundabout intersection. Figure 2 shows the lane configuration and traffic control at the study area intersections.

EXISTING TRAFFIC VOLUMES

Due to the current road closures and construction along NE 137th Avenue between NE Fourth Plain Boulevard and NE 49th Street, 2025 traffic counts were unable to be collected. Therefore, historical traffic counts were utilized at the study area intersections. Per conversations with City of Vancouver staff, historical traffic counts can be utilized as long as they are adjusted with a growth rate to the current year of 2025. HLA used a standard 1.5 percent compounded annual growth factor to adjust the historical traffic counts to the current year of 2025.

Per the Highway Capacity Manual (HCM), peak 15-minute traffic volumes were multiplied by four (4) to arrive at the peak hour traffic volumes. With this methodology of developing peak hour traffic volumes, the peak hour factor (PHF) is set to 1.00 because the peaking has already occurred by multiplying the peak 15-minute traffic volume by four (4). The existing condition traffic volumes are presented in Figure 3. The historical traffic counts can be referenced in Appendix A.



LEGEND

- Lane Usage
- Traffic Signal
- Stop Sign
- Roundabout

FIGURE 2
Existing Lane Configuration and Traffic Control

EXISTING LEVEL OF SERVICE

Based on the traffic volumes in Figure 3 and the existing lane configurations presented in Figure 2, peak hour traffic operations were analyzed at the study area intersections using the methodologies outlined in the Highway Capacity Manual (HCM) 7th Edition. According to the HCM, there are six levels of service (LOS) by which the operational performance of an intersection may be described. These levels of service range between LOS "A" which indicates a relatively free-flowing condition and LOS "F" which indicates operational breakdown.

The minimum level of service standard in the City of Vancouver can be referenced from Vancouver Municipal Code (VMC) Section 11.80.130(B) which states:

- B. A proposed development that adds at least five net new peak hour trips to an intersection approach operating at a LOS E or lower within the required traffic impact analysis area may be denied based upon any of the following:
 - 1. For signalized intersections, when off-site intersection conditions are at a LOS F, or
 - 2. For signalized intersections, when the LOS E and the volume to capacity ratio is greater than 0.95, or
 - 3. For unsignalized intersections, when the volume to capacity ratio for any lane on any approach is greater than 0.95, or
 - 4. When significant traffic hazards would be caused or materially aggravated by the proposed development, or
 - 5. Notwithstanding "a" through "d" of this subsection, traffic impacts to intersections on corridors built to ultimate capacity will be evaluated against the LOS standards identified in an adopted Corridor Management Plan.
- C. A proposed development that is subject to denial pursuant to this section may be approved subject to conditions of approval that address the impact of traffic generated by the proposed development.

If a City of Vancouver signalized intersection level of service is LOS E and is impacted by five or more project-generated trips, then the volume-to-capacity ratio needs to be greater than 0.95 for mitigation to be required unless the corridor is built to its ultimate capacity. If the corridor is built to its ultimate capacity, then the traffic impacts to intersections will be based upon LOS standards identified in the adopted Corridor Management Plan.

All levels of service calculations have been conducted in PTV Vistro. The actual signal timings were utilized at the signalized intersections. The signal timing information was obtained from the City of Vancouver and can be referenced in Appendix B.

Existing P.M. peak hour levels of service at the study area intersections are summarized in Table 1a. As shown in Table 1a, the signalized study area intersections are operating at LOS E or better with an overall intersection v/c ratio of less than 0.95 with the exception of the NE 137th Avenue/NE Fourth Plain Boulevard intersection which is operating with a v/c ratio of 0.99. However, as will be shown later in this study, the v/c ratio decreases to below 0.95 in the 2045 future conditions with the balancing of traffic volumes from the TurnsW32 software post-processing. The roundabout intersection is projected to operate at LOS A with a worst individual movement v/c ratio of 0.45. Appendix C contains the levels of service worksheets for the existing condition.

Table 1a. Existing Levels of Service

Signalized Intersection	P.M. Peak Hour		
	LOS	Average Delay (sec)	V/C Ratio
NE 131 st Avenue/NE Fourth Plain Boulevard	E	59.7	0.74
NE 137 th Avenue/NE Fourth Plain Boulevard	E	63.0	0.99
Roundabout Intersection			
NE 137 th Avenue/NE Fourth Plain Boulevard	A	8.64	0.45 ¹

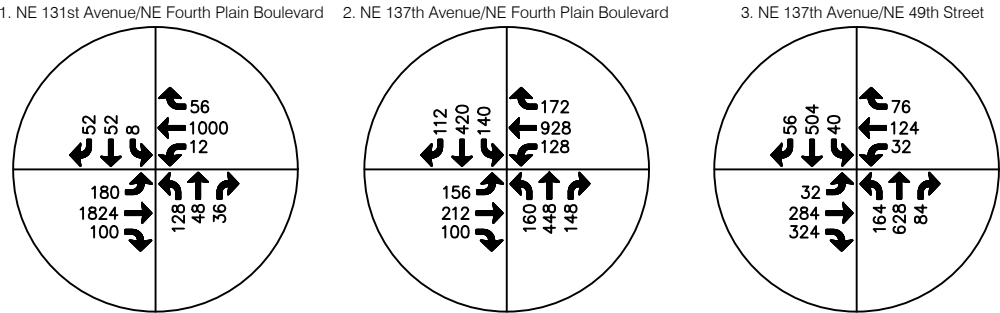
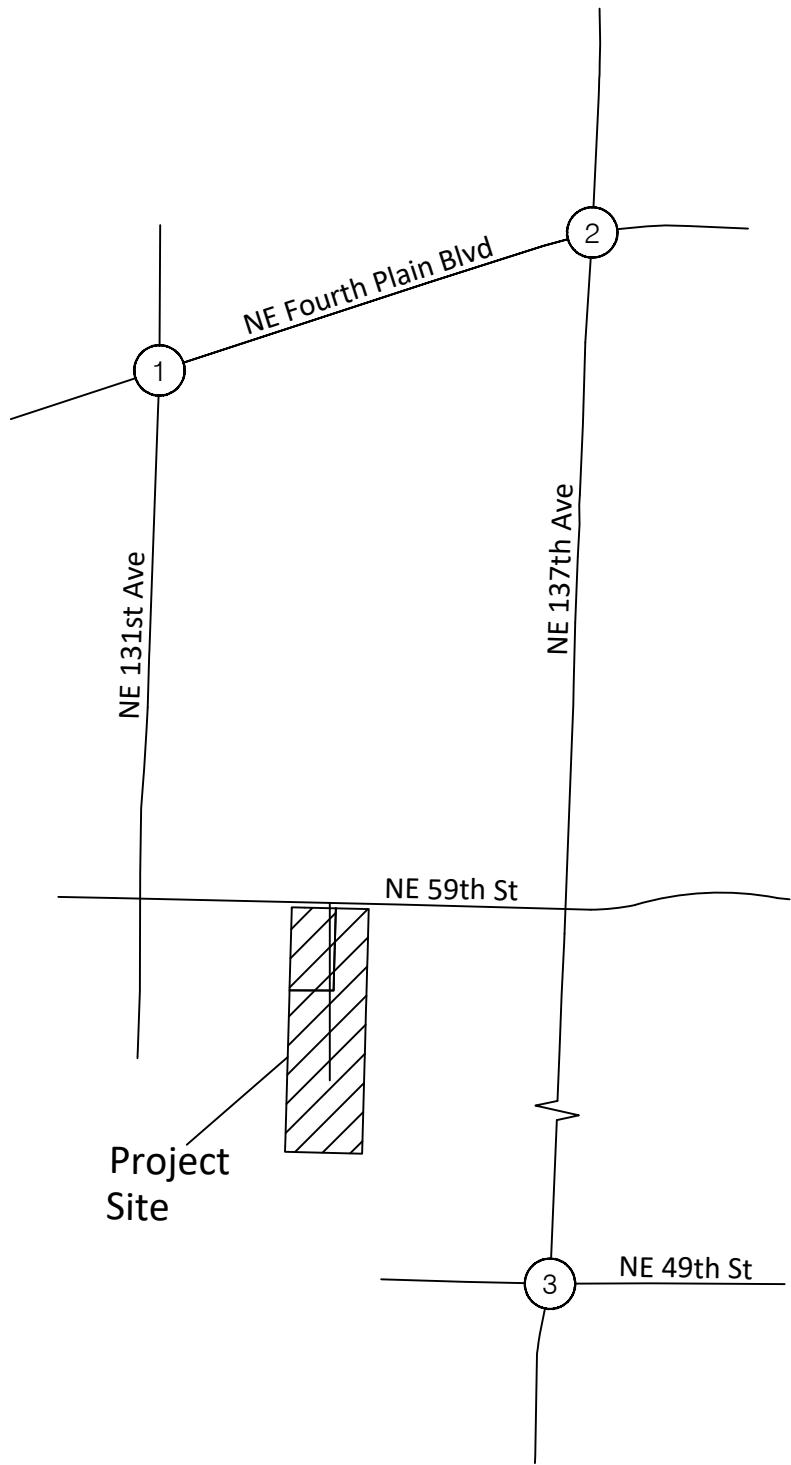
¹V/C Ratio is from the worst v/c ratio movement reported for intersection since PTV Vistro does not calculate overall intersection v/c ratio.

Table 1b shows the 95th percentile queue for the major movements at the study area intersections. These 95th percentile queues were obtained from PTV Vistro level of service output and can be referenced in Appendix C. As shown in Table 1b, all of the 95th percentile queues are within the available storages with the exception of the southbound left movement at the NE 137th Avenue/NE Fourth Plain Boulevard intersection which exceeds its available storage by 17 feet which equates to less than one car length. However, in the 2045 future conditions, this queuing issue is resolved with the balancing of volumes from the TurnsW32 software post-processing.

Table 1b. 95th Percentile Queuing for Existing Condition

Intersection	P.M. Peak Hour Queue ¹	Available Storage	Storage Exceeded?
NE 131 st Avenue/NE Fourth Plain Boulevard Eastbound Right	70 feet	545 feet	No
NE 137 th Avenue/NE Fourth Plain Boulevard Northbound Left	235 feet	290 feet	No
Southbound Left	202 feet	185 feet	Yes
Southbound Right	107 feet	220 feet	No
Eastbound Right	99 feet	275 feet	No
Westbound Right	179 feet	370 feet	No
NE 137 th Avenue/NE 49 th Street Northbound Left/Through	54 feet	380 feet	No
Southbound Left/Through	30 feet	180 feet	No
Eastbound Right	48 feet	180 feet	No

¹ Minimum queue length is one car length – 25 feet



LEGEND

128/200
A.M./P.M. Peak Hour
Traffic Volume

FIGURE 3
Existing A.M. and P.M.
Peak Hour Traffic Volumes

ACCIDENT HISTORY

Accident data was requested from the Washington State Department of Transportation (WSDOT), but it has not yet been received. If requested by city staff, HLA will conduct a separate accident data analysis for the study area intersections in a separate memorandum.

EXISTING PUBLIC TRANSIT SERVICE

C-Tran provides public transit service in the City of Vancouver. Currently there are no routes that provide service adjacent to the project site. The closest route to the project site is Route #74 – East Fourth Plain/162nd Avenue, which provides service approximately 0.40 miles north of the project site along NE Fourth Plain Boulevard.

NON-MOTORIZED TRANSPORTATION

Sidewalks exist along NE 59th Street in developed areas.

PLANNED TRANSPORTATION IMPROVEMENTS

A review of the City of Vancouver's Six-Year Transportation Improvement Program (TIP), 2025-2030, revealed that there is one reasonably funded project in the study area:

NE 137th Avenue – NE 49th Street to NE Fourth Plain Boulevard

This project includes an urban upgrade of the existing two-lane (narrow) rural roadway. This project also includes corridor upgrades which include one lane in each direction with a turn lane or median divider, roundabouts, sidewalks, ADA ramps, mobility lanes, stormwater facilities and streetlights. These improvements will enhance safety, manage access, and minimize delays now caused by turning vehicles. This project is currently underway. The total estimated project cost is \$30,000,000.

SECTION III TRAFFIC IMPACT ANALYSIS

ANALYSIS METHODOLOGY

The P.M. peak hour traffic impacts generated by the proposed Bella Grove Apartments Rezone were analyzed as follows.

- Trip generation estimates for the build out of the existing and proposed zonings were estimated using the rates in "Trip Generation, 11th Edition," (Institute of Transportation Engineers, 2021).
- Trip distribution and assignment of trips generated by the build out of the existing and proposed zonings.
- The 2045 condition traffic volumes were derived from RTC's 2040 regional transportation forecast model. The RTC model link volumes were post-processed to turning movement volumes based on the NCHRP 255 methodology and the TurnsW32 software. A 1.5 percent compounded annual growth factor was applied to these 2040 post-processed turning movement traffic volumes to derive the volumes for the 2045 analysis year. Since the RTC model included the build out of the project site assuming the existing zoning, these volumes represent the 2045 "Existing Zoning Build Out" condition traffic volumes.
- The 2045 "Proposed Zoning Build Out" condition traffic volumes were derived by subtracting the existing zoning trips from the 2045 "Existing Zoning Build Out" traffic volumes and then adding the proposed zoning trips.
- The 2045 "Existing Zoning Build Out" and 2045 "Proposed Zoning Build Out" conditions were analyzed and compared to each other to determine the traffic impacts of the rezone.

DEVELOPMENT PLANS

As previously stated, the build out of the existing R-18 zoning was based on City of Vancouver Municipal Code Section 20.420.020.B. Based on 20.420.020.B, the maximum density for the R-18 zoning is 18 units per acre. Applying the maximum density for the existing R-18 zoning to the project's net buildable acreage (6.17 acres) yields a maximum build out of 111 multifamily units.

The build out of the proposed R-30 zoning was based on City of Vancouver Municipal Code Section 20.420.020.B. Based on 20.420.020.B, the maximum density for the R-30 zoning is 30 units per acre. Applying the maximum density for the proposed R-30 zoning to the project's net buildable acreage (6.17 acres) yields a maximum build out of 185 multifamily units.

TRIP GENERATION

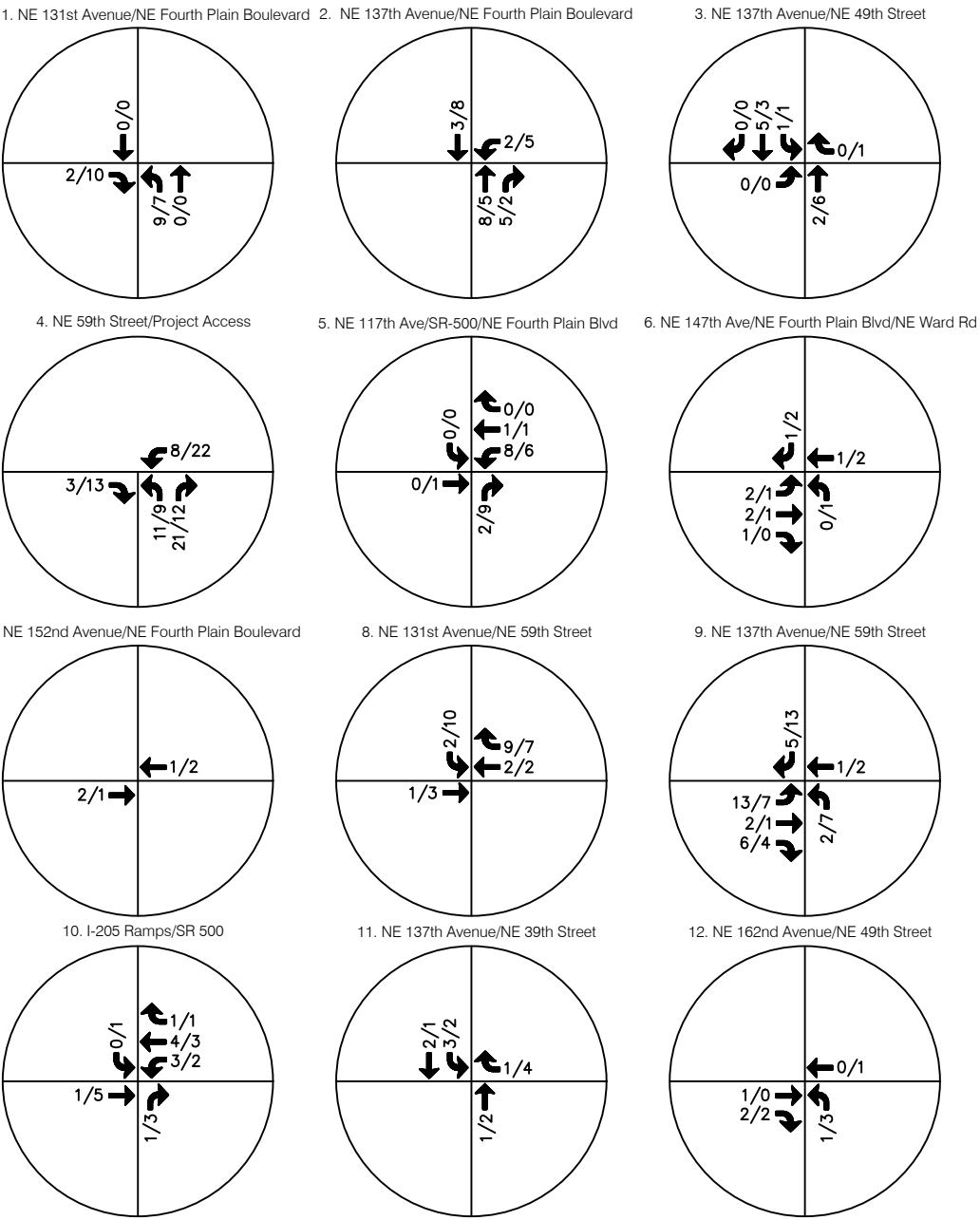
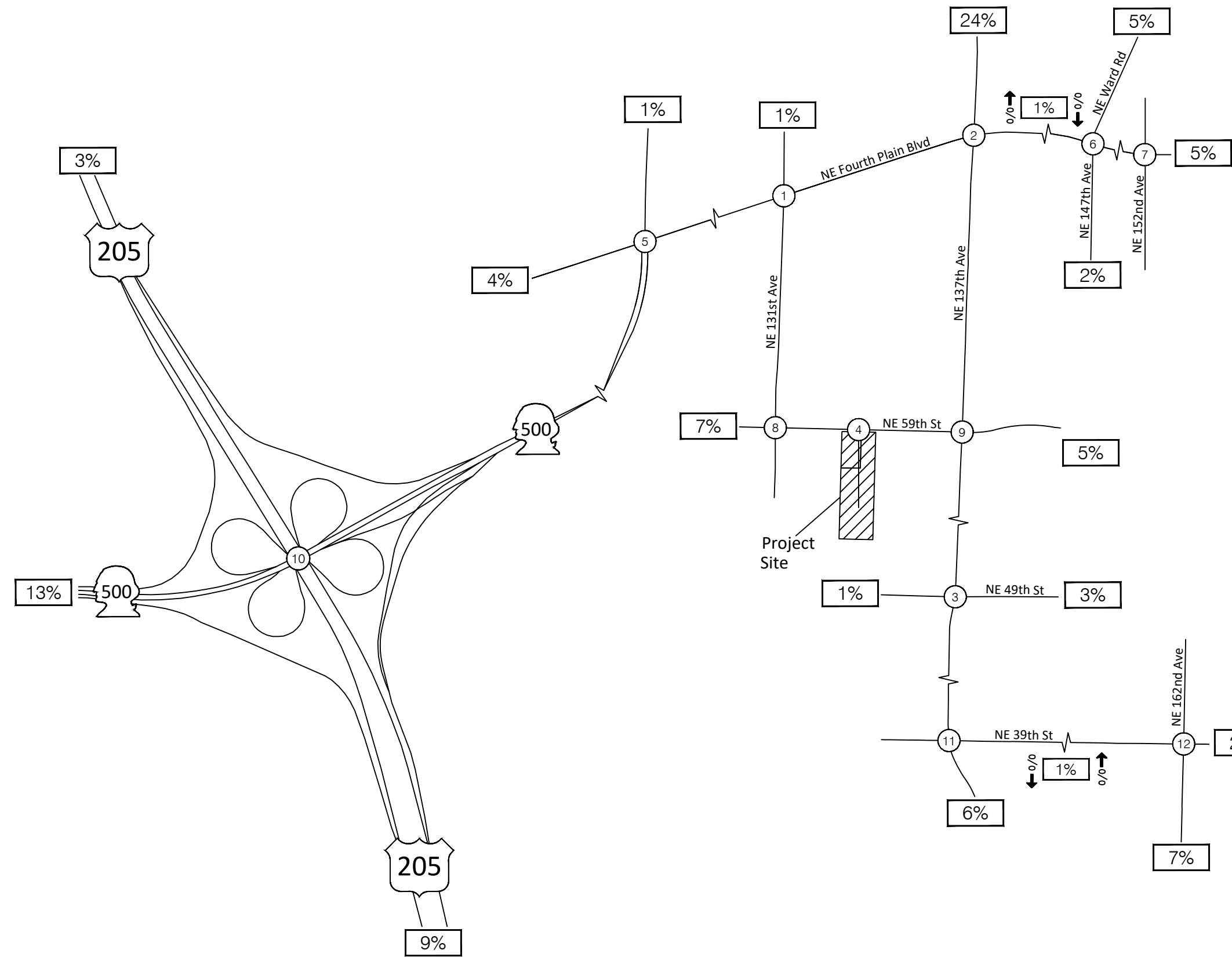
Estimates of daily, A.M. peak hour, and P.M. peak hour trips generated by the build out of the existing and proposed zonings were developed from rates published in “Trip Generation, 11th Edition” (Institute of Transportation Engineers, 2021). The build out of the existing zoning is expected to generate 739 daily, 43 A.M. peak hour (11 in, 32 out), and 56 P.M. peak hour (35 in, 21 out) net new trips. The build out of the proposed zoning is expected to generate 1,238 daily, 73 A.M. peak hour (18 in, 55 out), and 93 P.M. peak hour (58 in, 35 out) net new trips. The proposed zoning is expected to generate 499 daily, 30 A.M. peak hour (7 in, 23 out), and 37 P.M. peak hour (23 in, 14 out) more net new trips than the existing zoning. Table 2 summarizes the trip generation comparison of the “Existing Zoning Build Out” and “Proposed Zoning Build Out” conditions.

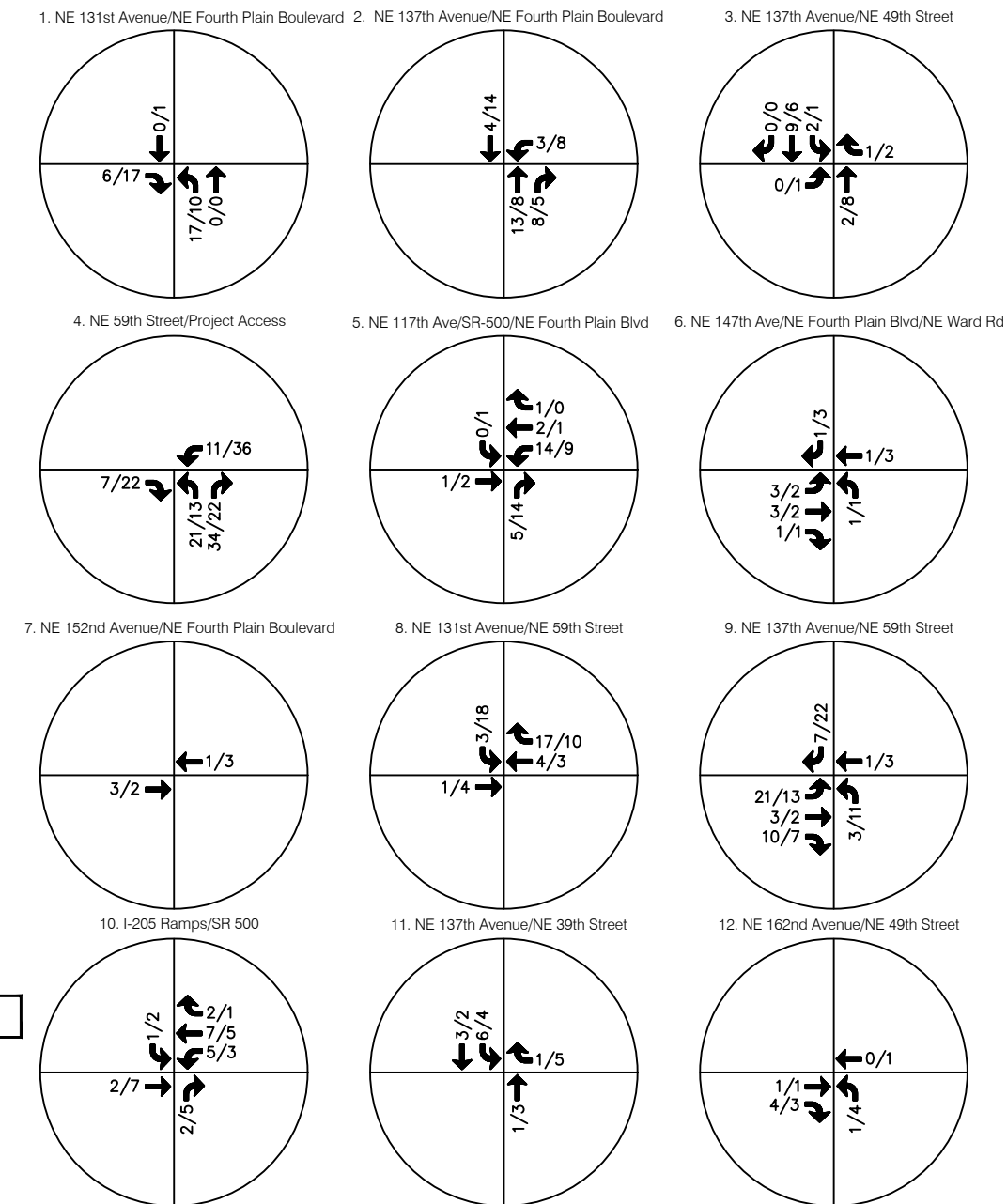
Table 2. Trip Generation for Bella Grove Apartments Rezone

Land Use	Amount	Average Daily	A.M. Peak			P.M. Peak		
			In	Out	Total	In	Out	Total
Existing R-18 Zoning – Multifamily Housing (Low-Rise) – ITE Code 220								
Rate per unit		6.74	0.10	0.30	0.40	0.32	0.19	0.51
Trips	111 units	748	11	33	44	36	21	57
Proposed R-30 Zoning – Multifamily Housing (Low-Rise) – ITE Code 220								
Rate per unit		6.74	0.10	0.30	0.40	0.32	0.19	0.51
Trips	185 units	1,247	18	56	74	59	35	94
Existing Single Family Detached Home Trip Credit								
Rate per dwelling unit		9.43	0.18	0.52	0.70	0.59	0.35	0.94
Trips	1 existing unit	(9)	-	(1)	(1)	(1)	-	(1)
Net Trips for Existing R-18 Zoning		739	11	32	43	35	21	56
Net Trips for Proposed R-30 Zoning		1,238	18	55	73	58	35	93
Proposed Zoning Trip Increase		499	7	23	30	23	14	37

TRIP DISTRIBUTION AND ASSIGNMENT

A generalized peak hour trip distribution was developed from the select zone assignment from RTC’s regional model which can be referenced in Appendix D. Figure 4a shows the resulting trip distribution pattern and assignment of the trips generated by the build out of the existing zoning. Figure 4b shows the resulting trip distribution pattern and assignment of the trips generated by the build out of the proposed zoning.





2045 “EXISTING ZONING BUILD OUT” TRAFFIC VOLUMES AND LOS

The 2045 condition traffic volumes were derived from RTC’s 2040 regional transportation forecast model. The RTC model link volumes were post-processed to turning movement volumes based on the NCHRP 255 methodology and the TurnsW32 software. A 1.5 percent compounded annual growth factor was applied to these 2040 post-processed turning movement traffic volumes to derive the volumes for the 2045 analysis year. Since the RTC model included the build out of the project site assuming the existing zoning, these volumes represent the 2045 “Existing Zoning Build Out” condition traffic volumes. Appendix D contains the RTC model traffic volumes utilized and the results of the post-processing from the TurnsW32 software. Figure 5 shows the post-processed “Existing Zoning Build Out” traffic volumes.

Levels of service were calculated at the study area intersections with the 2045 “Existing Zoning Build Out” traffic volumes shown in Figure 5 and the lane configurations shown previously in Figure 2. Appendix E contains the levels of service worksheets for the 2045 “Existing Zoning Build Out” condition.

The 2045 “Existing Zoning Build Out” P.M. peak hour levels of service at the study area intersections are summarized in Table 3a. As shown in Table 3a, all of the signalized study area intersections are projected to operate at LOS E or better with an overall intersection v/c ratio of less than 0.95. The roundabout intersection is projected to operate at LOS A with a worst individual movement v/c ratio of 0.51.

Table 3a. 2045 “Existing Zoning Build Out” Levels of Service

Signalized Intersection	P.M. Peak Hour		
	LOS	Average Delay (sec)	V/C Ratio
NE 131 st Avenue/NE Fourth Plain Boulevard	D	54.6	0.66
NE 137 th Avenue/NE Fourth Plain Boulevard	D	46.3	0.90
Roundabout Intersection			
NE 137 th Avenue/NE Fourth Plain Boulevard	A	8.7	0.51 ¹

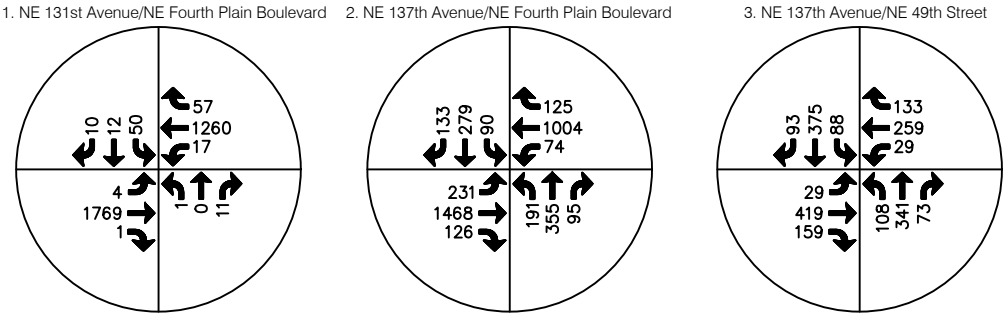
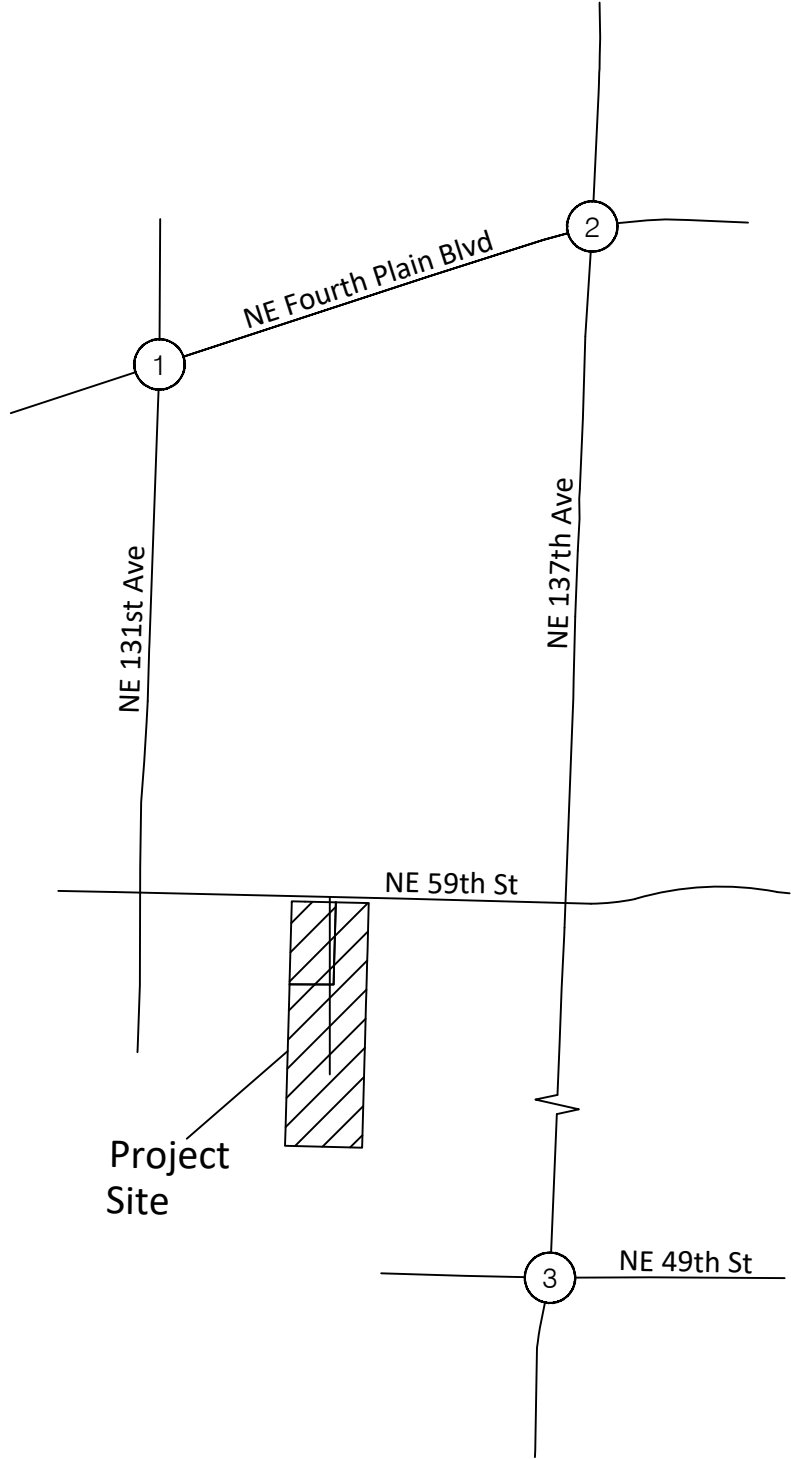
¹V/C Ratio is from the worst v/c ratio movement reported for intersection since PTV Vistro does not calculate overall intersection v/c ratio.

Table 1b shows the 95th percentile queue for the major movements at the study area intersections. These 95th percentile queues were obtained from PTV Vistro level of service output and can be referenced in Appendix E. As shown in Table 3b, all of the 95th percentile queues are within the available storages.

Table 3b. 95th Percentile Queuing for 2045 “Existing Zoning Build Out”

Intersection	P.M. Peak Hour Queue ¹	Available Storage	Storage Exceeded?
NE 131 st Avenue/NE Fourth Plain Boulevard Eastbound Right	25 feet	545 feet	No
NE 137 th Avenue/NE Fourth Plain Boulevard Northbound Left	267 feet	290 feet	No
Southbound Left	136 feet	185 feet	No
Southbound Right	156 feet	220 feet	No
Eastbound Right	98 feet	275 feet	No
Westbound Right	121 feet	370 feet	No
NE 137 th Avenue/NE 49 th Street Northbound Left/Through	32 feet	380 feet	No
Southbound Left/Through	30 feet	180 feet	No
Eastbound Right	25 feet	180 feet	No

¹ Minimum queue length is one car length – 25 feet



LEGEND

128/200
A.M./P.M. Peak Hour
Traffic Volume

FIGURE 5
2045 Existing Zoning "With Project"
A.M. and P.M. Peak Hour Traffic Volumes

2045 “PROPOSED ZONING BUILD OUT” TRAFFIC VOLUMES AND LOS

The 2045 “Proposed Zoning Build Out” condition traffic volumes were derived by subtracting the existing zoning trips (Figure 4a) from the 2045 “Existing Zoning Build Out” traffic volumes and then adding the proposed zoning trips (Figure 4b). Figure 6 shows the 2045 “Proposed Zoning Build Out” traffic volumes. Levels of service were calculated at the study area intersections with the 2045 “Proposed Zoning Build Out” traffic volumes shown in Figure 6 and the lane configurations shown earlier in Figure 2. Appendix F contains the levels of service worksheets for the 2045 “Proposed Zoning Build Out” condition.

The 2045 “Proposed Zoning Build Out” P.M. peak hour levels of service at the study area intersections are summarized in Table 4a. As shown in Table 4a, all of the signalized study area intersections are projected to operate at LOS E or better with an overall intersection v/c ratio of less than 0.95. The roundabout intersection is projected to operate at LOS A with a worst individual movement v/c ratio of 0.52.

Table 4a. 2045 “Existing Zoning Build Out” Levels of Service

Signalized Intersection	P.M. Peak Hour		
	LOS	Average Delay (sec)	V/C Ratio
NE 131 st Avenue/NE Fourth Plain Boulevard	D	54.5	0.66
NE 137 th Avenue/NE Fourth Plain Boulevard	D	48.2	0.92
Roundabout Intersection			
NE 137 th Avenue/NE Fourth Plain Boulevard	A	8.9	0.52 ¹

¹V/C Ratio is from the worst v/c ratio movement reported for intersection since PTV Vistro does not calculate overall intersection v/c ratio.

Table 4b shows the 95th percentile queue for the major movements at the study area intersections. These 95th percentile queues were obtained from PTV Vistro level of service output and can be referenced in Appendix F. As shown in Table 4b, all of the 95th percentile queues are within their available storages.

Table 4b. 95th Percentile Queuing for 2045 “Proposed Zoning Build Out”

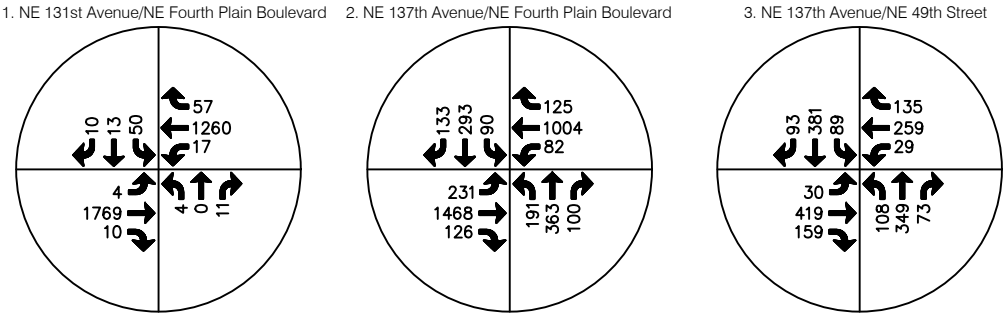
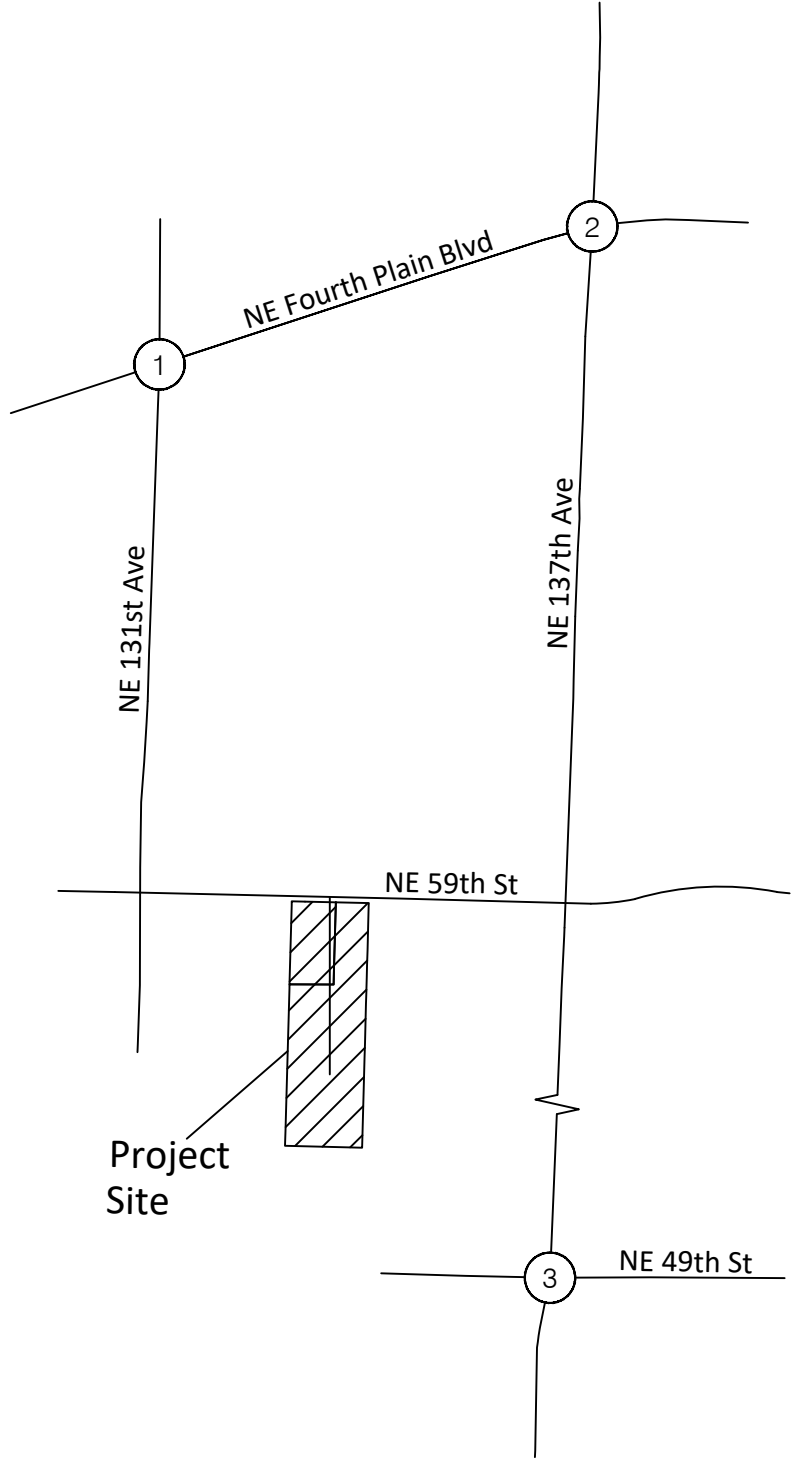
Intersection	P.M. Peak Hour Queue ¹	Available Storage	Storage Exceeded?
NE 131 st Avenue/NE Fourth Plain Boulevard Eastbound Right	25 feet	545 feet	No

¹Minimum queue length is one car length – 25 feet

Table 4b. 95th Percentile Queuing for 2045 “Proposed Zoning Build Out” Continued

Intersection	P.M. Peak Hour Queue ¹	Available Storage	Storage Exceeded?
NE 137 th Avenue/NE Fourth Plain Boulevard			
Northbound Left	269 feet	290 feet	No
Southbound Left	136 feet	185 feet	No
Southbound Right	154 feet	220 feet	No
Eastbound Right	101 feet	275 feet	No
Westbound Right	121 feet	370 feet	No
NE 137 th Avenue/NE 49 th Street			
Northbound Left/Through	33 feet	380 feet	No
Southbound Left/Through	31 feet	180 feet	No
Eastbound Right	25 feet	180 feet	No

¹ Minimum queue length is one car length – 25 feet



LEGEND

128/200
A.M./P.M. Peak Hour
Traffic Volume

FIGURE 6
2045 Proposed Zoning "With Project"
A.M. and P.M. Peak Hour Traffic Volumes

CONCLUSIONS

- The “Existing Zoning Build Out” is expected to generate 739 daily, 43 A.M. peak hour (11 in, 32 out), and 56 P.M. peak hour (35 in, 21 out) net new trips.

The “Proposed Zoning Build Out” is expected to generate 1,238 daily, 73 A.M. peak hour (18 in, 55 out), and 93 P.M. peak hour (58 in, 35 out) net new trips.

The “Proposed Zoning Build Out” is expected to generate 499 daily, 30 A.M. peak hour (7 in, 23 out), and 37 P.M. peak hour (23 in, 14 out) more net new trips than the existing zoning.

- The study area intersections are projected to operate at acceptable levels of service in both the 2045 “Existing Zoning Build Out” and 2045 “Proposed Zoning Build Out” conditions.
- Based on the traffic impact analysis documented in this report, no physical, off-site mitigation would be needed and the rezoning of the proposed project site will not result in any significant degradation in traffic conditions nearby the project site.

APPENDIX A
TRAFFIC COUNTS

HISTORICAL

Intersection: NE 131st Avenue/NE Fourth Plain Boulevard
PM Peak Hour Turning Movement Volumes

Date: 12/11/19

Time	SB				WB				NB				EB				Total	
	SBR	SBT	SBL	Trucks	WBR	WBT	WBL	Trucks	NBR	NBT	NBL	Trucks	EBR	EBT	EBL	Trucks		
<u>15 Minute Totals</u>																		
4:00 - 4:15 PM	10	13	10	1	12	238	13	8	11	8	22	1	15	369	23	4	744	
4:15 - 4:30 PM	10	12	5	1	12	265	7	5	9	17	23	0	6	382	27	6	775	
4:30 - 4:45 PM	19	22	5	1	6	232	12	4	11	19	18	0	15	337	28	5	724	
4:45 - 5:00 PM	6	5	3	2	12	214	10	4	14	11	17	1	9	375	28	4	704	
5:00 - 5:15 PM	12	12	2	1	13	229	3	2	8	11	29	0	23	417	41	6	800	
5:15 - 5:30 PM	9	15	6	0	11	269	10	6	13	17	18	1	19	379	27	2	793	
5:30 - 5:45 PM	12	14	5	0	7	247	11	2	18	17	24	1	21	345	24	7	745	
5:45 - 6:00 PM	9	10	4	0	5	207	10	2	16	8	25	0	13	332	25	4	664	
	87	103	40	6	78	1,901	76	33	100	108	176	4	121	2,936	223	38	800	
<u>Hourly Total by 15 minutes</u>																		
4:00 - 5:00 PM	45	52	23	5	42	949	42	21	45	55	80	2	45	1,463	106	19	2,947	
4:15 - 5:15 PM	47	51	15	5	43	940	32	15	42	58	87	1	53	1,511	124	21	3,003	
4:30 - 5:30 PM	46	54	16	4	42	944	35	16	46	58	82	2	66	1,508	124	17	3,021	
4:45 - 5:45 PM	39	46	16	3	43	959	34	14	53	56	88	3	72	1,516	120	19	3,042	
5:00 - 6:00 PM	42	51	17	1	36	952	34	12	55	53	96	2	76	1,473	117	19	3,002	
Peak Hour 4:45 - 5:45 PM	39	46	16	3	43	959	34	14	53	56	88	3	72	1516	120	19	3,042	
Peak Hour Factor	0.81				0.89				0.83				0.89				0.95	
Peak Hour % Trucks	3%				1%				2%				1%					
Peak 15 Min % Trucks	4%				1%				0%				1%					

Intersection: NE 131st Street/NE Fourth Plain Boulevard
PM Peak Hour Turning Movement Volumes

Date: 12/11/19
2025 Adjusted

Time	SB				WB				NB				EB				Total													
	SBR	SBT	SBL	Trucks	WBR	WBT	WBL	Trucks	NBR	NBT	NBL	Trucks	EBR	EBT	EBL	Trucks														
<u>15 Minute Totals</u>																														
4:00 - 4:15 PM	11	14	11	1	13	260	14	9	12	9	24	1	16	403	25	4	812													
4:15 - 4:30 PM	11	13	5	1	13	290	8	5	10	19	25	0	7	418	30	7	849													
4:30 - 4:45 PM	21	24	5	1	7	254	13	4	12	21	20	0	16	368	31	5	792													
4:45 - 5:00 PM	7	5	3	2	13	234	11	4	15	12	19	1	10	410	31	4	770													
5:00 - 5:15 PM	13	13	2	1	14	250	3	2	9	12	32	0	25	456	45	7	874													
5:15 - 5:30 PM	10	16	7	0	12	294	11	7	14	19	20	1	21	414	30	2	868													
5:30 - 5:45 PM	13	15	5	0	8	270	12	2	20	19	26	1	23	377	26	8	814													
5:45 - 6:00 PM	10	11	4	0	5	226	11	2	17	9	27	0	14	363	27	4	724													
<u>Peak 15 Minutes</u>																														
5:00 - 5:15 PM	13	13	2	1	14	250	3	2	9	12	32	0	25	456	45	7	874													
<u>Hourly Total by 15 minutes</u>																														
4:00 - 5:00 PM	50	56	24	5	46	1,038	46	22	49	61	88	2	49	1,599	117	20	3,223													
4:15 - 5:15 PM	52	55	15	5	47	1,028	35	15	46	64	96	1	58	1,652	137	23	3,285													
4:30 - 5:30 PM	51	58	17	4	46	1,032	38	17	50	64	91	2	72	1,648	137	18	3,304													
4:45 - 5:45 PM	43	49	17	3	47	1,048	37	15	58	62	97	3	79	1,657	132	21	3,326													
5:00 - 6:00 PM	46	55	18	1	39	1,040	37	13	60	59	105	2	83	1,610	128	21	3,280													
<u>Peak Hour Based On Peak 15 Minute</u>																														
	52	52	8	4	56	1000	12	8	36	48	128	0	100	1824	180	28	3,496													
Peak Hour Factor																		1.00												
Peak 15 Min % Trucks																		4%	1%				0%				1%			

HISTORICAL

Intersection: NE 137th Avenue/NE Fourth Plain Boulevard
PM Peak Hour Turning Movement Volumes

Date: 12/11/19

Time	SB				WB				NB				EB				Total	
	SBR	SBT	SBL	Trucks	WBR	WBT	WBL	Trucks	NBR	NBT	NBL	Trucks	EBR	EBT	EBL	Trucks		
<u>15 Minute Totals</u>																		
4:00 - 4:15 PM	24	58	32	1	37	212	20	11	36	293	35	2	23	83	24	2	877	
4:15 - 4:30 PM	23	63	40	1	34	227	27	9	29	77	29	1	25	302	38	6	914	
4:30 - 4:45 PM	25	80	37	1	43	195	25	5	24	79	25	2	24	291	35	3	883	
4:45 - 5:00 PM	23	71	41	5	36	173	20	6	21	103	27	3	26	288	31	6	860	
5:00 - 5:15 PM	10	53	28	2	31	183	28	3	28	98	28	1	31	289	32	7	839	
5:15 - 5:30 PM	26	96	32	2	39	212	29	8	34	102	37	2	23	277	36	8	943	
5:30 - 5:45 PM	22	75	35	1	20	198	35	2	18	81	25	1	26	303	32	7	870	
5:45 - 6:00 PM	20	50	21	1	30	171	21	3	18	66	23	3	21	269	31	2	741	
																Peak 15 Total		943
<u>Hourly Total by 15 minutes</u>																		
4:00 - 5:00 PM	95	272	150	8	150	807	92	31	110	552	116	8	98	964	128	17	3,534	
4:15 - 5:15 PM	81	267	146	9	144	778	100	23	102	357	109	7	106	1,170	136	22	3,496	
4:30 - 5:30 PM	84	300	138	10	149	763	102	22	107	382	117	8	104	1,145	134	24	3,525	
4:45 - 5:45 PM	81	295	136	10	126	766	112	19	101	384	117	7	106	1,157	131	28	3,512	
5:00 - 6:00 PM	78	274	116	6	120	764	113	16	98	347	113	7	101	1,138	131	24	3,393	
Peak Hour 4:00 - 5:00 PM	95	272	150	8	150	807	92	31	110	552	116	8	98	964	128	17	3,534	
Peak Hour Factor	0.91				0.91				0.53				0.82				0.97	
Peak Hour % Trucks	2%				3%				1%				1%					
Peak 15 Min % Trucks	1%				3%				1%				2%					

Intersection: NE 137th Avenue/NE Fourth Plain Boulevard
 PM Peak Hour Turning Movement Volumes

Date: 12/11/19
 2025 Adjusted

Time	SB				WB				NB				EB				Total
	SBR	SBT	SBL	Trucks	WBR	WBT	WBL	Trucks	NBR	NBT	NBL	Trucks	EBR	EBT	EBL	Trucks	
<u>15 Minute Totals</u>																	
4:00 - 4:15 PM	26	63	35	1	40	232	22	12	39	320	38	2	25	91	26	2	957
4:15 - 4:30 PM	25	69	44	1	37	248	30	10	32	84	32	1	27	330	42	7	1,000
4:30 - 4:45 PM	27	87	40	1	47	213	27	5	26	86	27	2	26	318	38	3	962
4:45 - 5:00 PM	25	78	45	5	39	189	22	7	23	113	30	3	28	315	34	7	941
5:00 - 5:15 PM	11	58	31	2	34	200	31	3	31	107	31	1	34	316	35	8	919
5:15 - 5:30 PM	28	105	35	2	43	232	32	9	37	112	40	2	25	303	39	9	1,031
5:30 - 5:45 PM	24	82	38	1	22	217	38	2	20	89	27	1	28	331	35	8	951
5:45 - 6:00 PM	22	55	23	1	33	187	23	3	20	72	25	3	23	294	34	2	811
<u>Peak 15 Minutes</u>																	
5:15 - 5:30 PM	28	105	35	2	43	232	32	9	37	112	40	2	25	303	39	9	1,031
<u>Hourly Total by 15 minutes</u>																	
4:00 - 5:00 PM	103	297	164	8	163	882	101	34	120	603	127	8	106	1,054	140	19	3,860
4:15 - 5:15 PM	88	292	160	9	157	850	110	25	112	390	120	7	115	1,279	149	25	3,822
4:30 - 5:30 PM	91	328	151	10	163	834	112	24	117	418	128	8	113	1,252	146	27	3,853
4:45 - 5:45 PM	88	323	149	10	138	838	123	21	111	421	128	7	115	1,265	143	32	3,842
5:00 - 6:00 PM	85	300	127	6	132	836	124	17	108	380	123	7	110	1,244	143	27	3,712
<u>Peak Hour Based On Peak 15 Minute</u>																	
	112	420	140	8	172	928	128	36	148	448	160	8	100	1212	156	36	4,124
Peak Hour Factor																	1.00
<u>Peak 15 Min % Trucks</u>																	
	1%				3%				1%				2%				

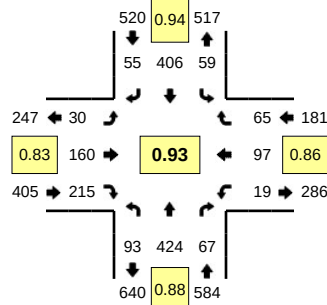
HISTORICAL

Type of peak hour being reported: Intersection Peak

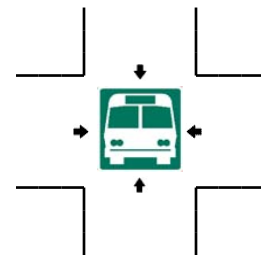
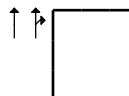
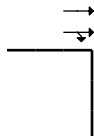
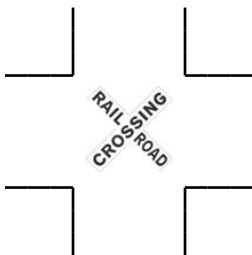
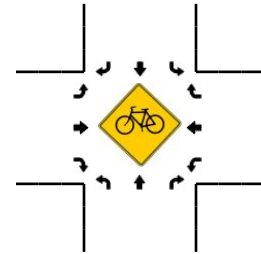
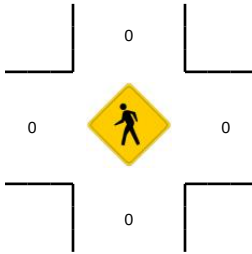
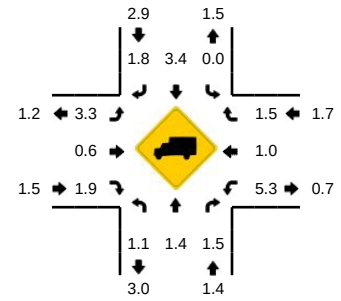
Method for determining peak hour: Total Entering Volume

LOCATION: NE 137th Ave -- NE 49th St
CITY/STATE: Vancouver, WA

QC JOB #: 10396415
DATE: 12/4/2008



Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 5:10 PM -- 5:25 PM



5-Min Count Period Beginning At	NE 137th Ave (Northbound)				NE 137th Ave (Southbound)				NE 49th St (Eastbound)				NE 49th St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	6	41	5	0	4	22	4	0	6	5	11	0	2	6	1	0	113	
4:05 PM	2	22	0	0	4	31	7	0	1	6	9	0	3	8	3	0	96	
4:10 PM	3	39	2	0	1	39	9	0	3	10	10	0	1	10	9	0	136	
4:15 PM	7	34	1	0	6	29	3	1	2	5	13	0	1	5	1	0	108	
4:20 PM	3	37	3	0	3	34	7	0	5	9	10	0	2	10	0	0	123	
4:25 PM	7	35	3	0	3	18	5	0	1	3	17	0	1	8	6	0	107	
4:30 PM	11	27	10	0	2	51	9	0	0	13	19	0	0	8	5	0	155	
4:35 PM	9	40	4	0	7	27	4	0	6	15	18	0	0	3	5	0	138	
4:40 PM	8	35	7	0	1	26	4	0	1	14	15	0	0	2	7	0	120	
4:45 PM	2	40	2	0	11	40	3	0	1	12	13	0	2	16	7	0	149	
4:50 PM	13	35	5	0	6	36	3	0	3	9	14	1	0	13	4	0	142	
4:55 PM	7	28	1	0	8	28	4	0	5	9	16	0	3	5	8	0	122	
5:00 PM	9	40	4	0	1	36	4	0	2	20	25	0	3	6	6	0	156	1509
5:05 PM	8	39	5	0	3	31	3	0	2	18	17	0	0	8	4	0	138	1552
5:10 PM	15	43	7	0	4	31	4	0	0	17	21	0	3	10	5	0	160	1594
5:15 PM	10	28	5	0	6	36	6	0	7	12	19	1	2	8	8	0	148	1618
5:20 PM	1	43	10	0	2	36	6	0	0	10	17	0	4	14	4	0	147	1658
5:25 PM	0	26	7	0	8	28	5	0	1	11	21	0	2	4	2	0	115	1682
5:30 PM	2	22	5	0	3	24	2	0	2	15	13	0	0	5	3	0	96	1690
5:35 PM	6	27	7	0	3	20	2	0	2	17	13	0	3	7	5	0	112	1631
5:40 PM	6	28	5	0	4	21	3	0	4	7	13	0	7	13	5	0	116	1605
5:45 PM	4	25	6	0	6	25	3	0	1	10	12	0	2	13	4	0	111	1601
5:50 PM	7	18	2	0	3	28	4	0	0	7	9	0	1	5	5	0	89	1563
5:55 PM	6	20	6	0	2	23	1	0	3	7	16	0	2	6	4	0	96	1510
5:59 PM	6	20	6	0	2	23	1	0	3	7	16	0	2	6	4	0	96	1484
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	104	456	88	0	48	412	64	0	28	156	228	4	36	128	68	0	1820	
Heavy Trucks	0	8	0	0	0	4	0	0	0	0	0	0	0	0	0	0	12	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles																		
Railroad																		
Stopped Buses																		

Comments:

Report generated on 3/2/2009 4:24 PM

SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>)

Intersection: NE 137th Avenue/NE 49th Street
PM Peak Hour Turning Movement Volumes

Date: 12/04/08
2025 Adjusted

Time	SB				WB				NB				EB				Total													
	SBR	SBT	SBL	Trucks	WBR	WBT	WBL	Trucks	NBR	NBT	NBL	Trucks	EBR	EBT	EBL	Trucks														
<u>15 Minute Totals</u>																														
4:00 - 4:15 PM	26	118	12	0	17	31	8	0	9	131	14	0	39	27	8	0	440													
4:15 - 4:30 PM	19	104	15	0	9	30	5	0	9	137	22	0	52	22	5	0	429													
4:30 - 4:45 PM	22	134	13	0	22	17	0	0	27	131	36	0	67	54	0	0	523													
4:45 - 5:00 PM	13	134	32	0	24	44	6	0	10	133	28	0	55	39	6	0	524													
5:00 - 5:15 PM	14	126	10	0	19	31	8	0	21	157	41	0	81	71	8	0	587													
5:15 - 5:30 PM	22	129	21	0	18	33	10	0	28	125	14	0	73	43	10	0	526													
5:30 - 5:45 PM	9	84	13	0	17	32	13	0	22	99	18	0	50	50	13	0	420													
5:45 - 6:00 PM	10	98	14	0	17	31	6	0	18	81	22	0	48	31	6	0	382													
<u>Peak 15 Minutes</u>																														
5:00 - 5:15 PM	14	126	10	0	19	31	8	0	21	157	41	0	81	71	8	0	587													
<u>Hourly Total by 15 minutes</u>																														
4:00 - 5:00 PM	80	490	72	0	72	122	19	0	55	532	100	0	213	142	19	0	1,916													
4:15 - 5:15 PM	68	498	70	0	74	122	19	0	67	558	127	0	255	186	19	0	2,063													
4:30 - 5:30 PM	71	523	76	0	83	125	24	0	86	546	119	0	276	207	24	0	2,160													
4:45 - 5:45 PM	58	473	76	0	78	140	37	0	81	514	101	0	259	203	37	0	2,057													
5:00 - 6:00 PM	55	437	58	0	71	127	37	0	89	462	95	0	252	195	37	0	1,915													
<u>Peak Hour Based On Peak 15 Minute</u>																														
	56	504	40	0	76	124	32	0	84	628	164	0	324	284	32	0	2,348													
Peak Hour Factor																		1.00												
Peak 15 Min % Trucks																		3%	2%				1%				2%			

APPENDIX B

SIGNAL TIMING INFORMATION

ID: 289

Name: Fourth Plain & 131 Av

Configuration: Permanent

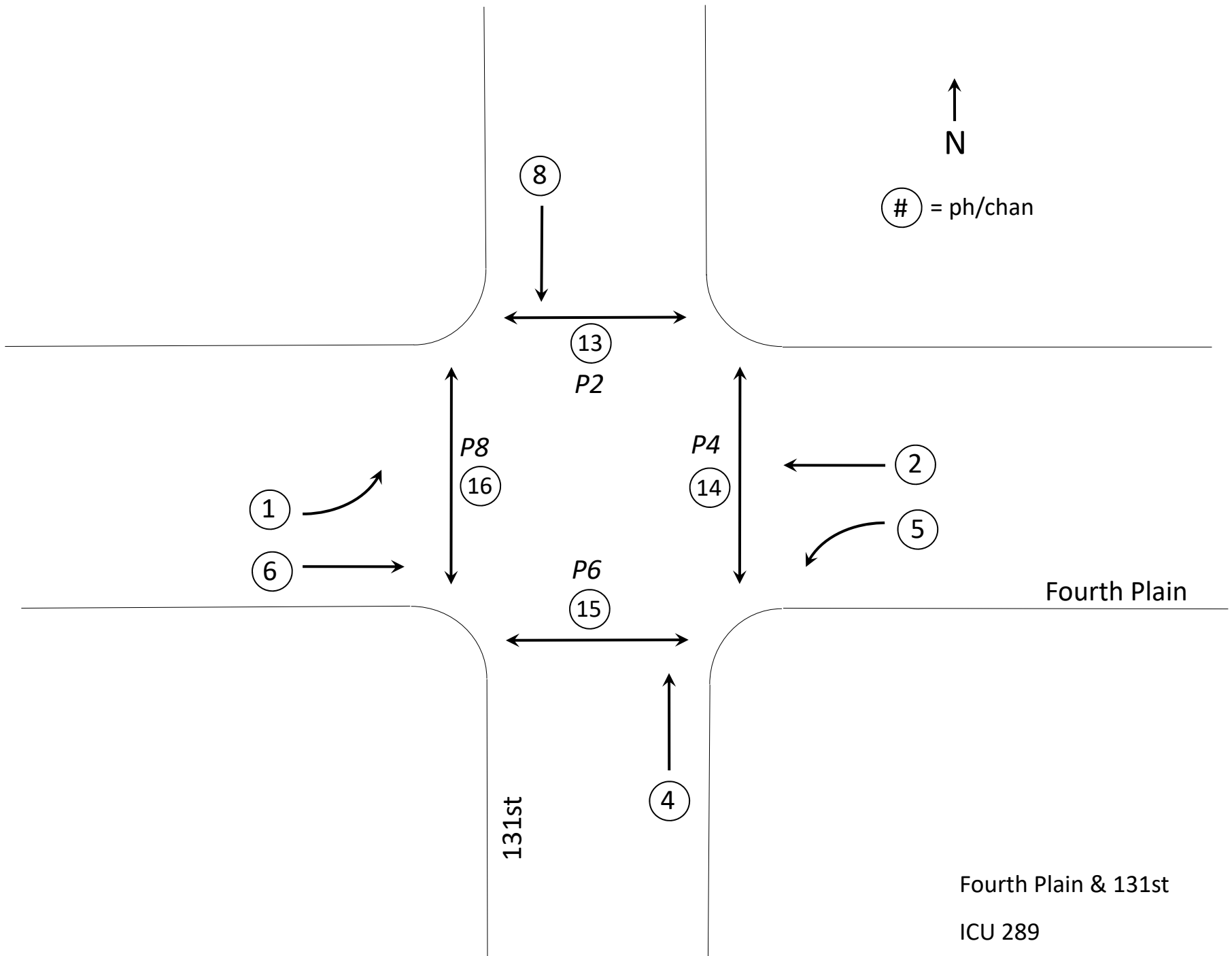
Param	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7	Phase 8	Phase 9	Phase 10	Phase 11	Phase 12	Phase 13	Phase 14	Phase 15	Phase 16
Walk	0	7	0	7	0	7	0	7	0	0	0	0	0	0	0	0
Ped Clearance	0	16	0	25	0	14	0	23	0	0	0	0	0	0	0	0
Min Green	5	15	0	5	5	15	0	5	0	0	0	0	0	0	0	0
Passage	3	3	0	3	3	3	0	3	0	0	0	0	0	0	0	0
Max1	20	60	0	30	20	60	0	30	0	0	0	0	0	0	0	0
Max2	15	100	0	32	9	100	0	32	0	0	0	0	0	0	0	0
Yellow	4	4	4	4	4	4	4	4	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Red	1	1	1	1	1	1	1	1	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Red Revert	2	2	2	2	2	2	2	2	0	0	0	0	0	0	0	0
Added Initial	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max Initial	3	5	0	3	3	5	0	3	0	0	0	0	0	0	0	0
Time Before Reduce	0	30	0	0	0	30	0	0	0	0	0	0	0	0	0	0
Cars Before Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time To Reduce	0	10	0	0	0	10	0	0	0	0	0	0	0	0	0	0
Reduce By	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	3	2.5	0	3	3	2.5	0	3	0	0	0	0	0	0	0	0
Dynamic Max Limit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dynamic Max Step	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Startup	RED	RED	RED	YELLOW	RED	RED	RED	YELLOW	RED	RED	RED	RED	RED	RED	RED	RED
Enable	On	On	Off	On	On	On	Off	On	Off	Off	Off	Off	Off	Off	Off	Off
Auto Entry	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off
Auto Exit	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off
Non Act1	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off
Non Act2	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off
Lock Call	On	Off	Off	Off	Off	Off	Off	Off	On	On	On	On	On	On	On	On
Min Recall	Off	On	Off	Off	Off	On	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off
Max Recall	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off
Ped Recall	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off
Soft Recall	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off
Dual Entry	Off	Off	Off	On	Off	Off	Off	On	Off	Off	Off	Off	Off	Off	Off	Off
Sim Gap Enable	Off	On	Off	Off	Off	On	Off	Off	On	On	On	On	On	On	On	On
Guar Passage	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off
Rest In Walk	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off
Cond Service	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off
Add Init Calc	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off
Ring	1	1	1	1	2	2	2	2	0	0	0	0	0	0	0	0
Concur 1	5	5	7	7	1	1	3	3	0	0	0	0	0	0	0	0
Concur 2	6	6	8	8	2	2	4	4	0	0	0	0	0	0	0	0
Concur 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Concur 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Concur 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Concur 6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Concur 7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Concur 8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

ID: 289

Name: Fourth Plain & 131 Av

Configuration: Permanent

Pattern	Cycle Time	Offset Time	Split Number	Seq Number
Pattern 1	0	0	0	1
Pattern 2	120	98	2	2
Pattern 3	0	0	0	1
Pattern 4	0	0	0	1
Pattern 5	0	0	0	1
Pattern 6	0	0	0	1
Pattern 7	0	0	0	1
Pattern 8	110	75	8	3
Pattern 9	0	0	0	1
Pattern 10	0	0	0	1
Pattern 11	0	0	0	1
Pattern 12	110	33	12	2
Pattern 13	0	0	0	1
Pattern 14	0	0	0	1
Pattern 15	0	0	0	1
Pattern 16	0	0	0	1
Pattern 17	0	0	0	1
Pattern 18	0	0	0	1
Pattern 19	0	0	0	1
Pattern 20	0	0	0	1
Pattern 21	0	0	0	1
Pattern 22	0	0	0	1
Pattern 23	0	0	0	1
Pattern 24	0	0	0	1
Pattern 25	0	0	0	1
Pattern 26	0	0	0	1
Pattern 27	0	0	0	1
Pattern 28	0	0	0	1
Pattern 29	0	0	0	1
Pattern 30	0	0	0	1
Pattern 31	0	0	0	1
Pattern 32	0	0	0	1
Pattern 33	0	0	0	1
Pattern 34	0	0	0	1
Pattern 35	0	0	0	1
Pattern 36	0	0	0	1
Pattern 37	0	0	0	1
Pattern 38	0	0	0	1
Pattern 39	0	0	0	1
Pattern 40	0	0	0	1
Pattern 41	0	0	0	1
Pattern 42	0	0	0	1
Pattern 43	0	0	0	1
Pattern 44	0	0	0	1
Pattern 45	0	0	0	1
Pattern 46	0	0	0	1
Pattern 47	0	0	0	1
Pattern 48	0	0	0	1



Fourth Plain & 131st

ICU 289

ID: 291

Name: Fourth Plain & 137 Av

Configuration: Upload

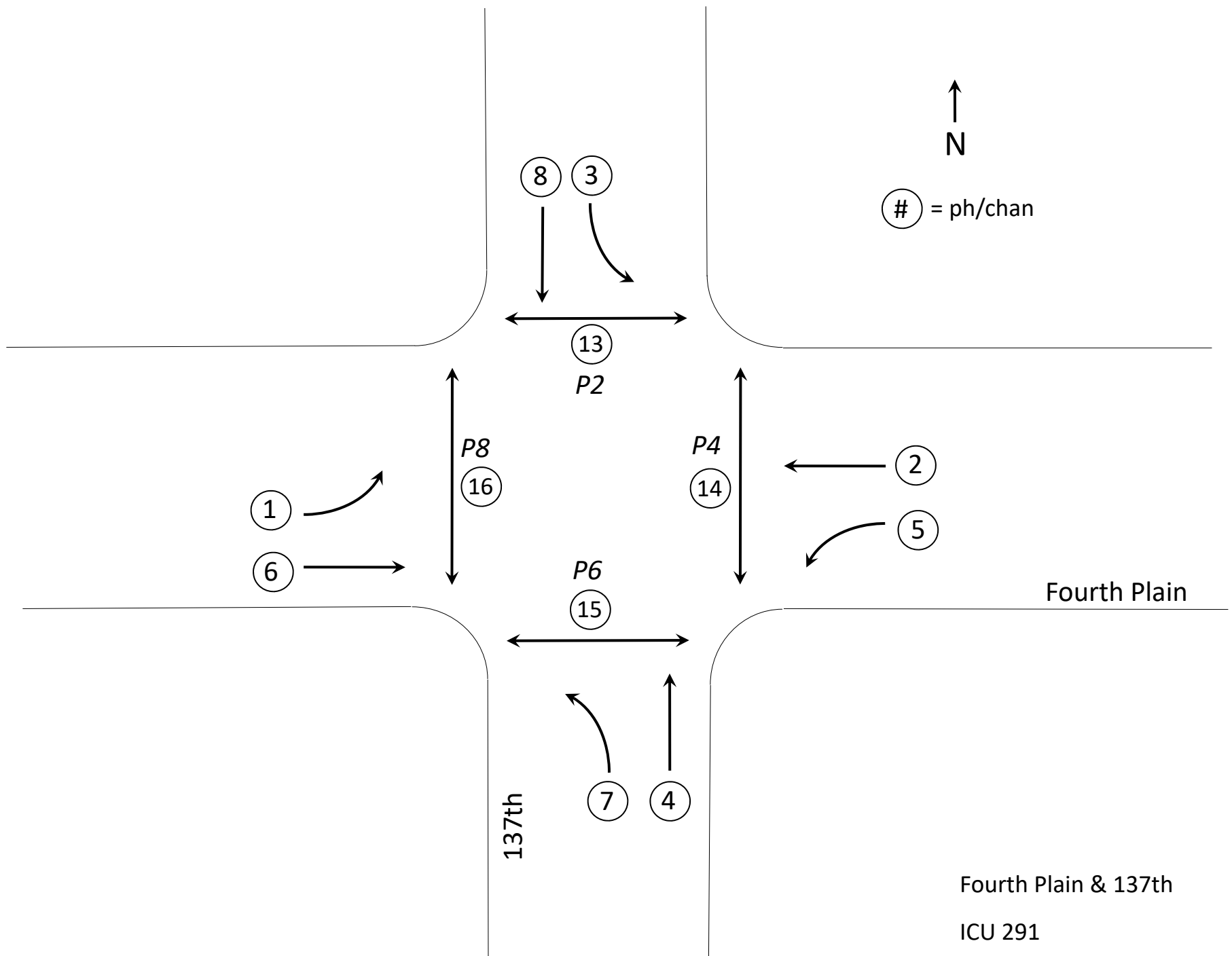
Param	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7	Phase 8	Phase 9	Phase 10	Phase 11	Phase 12	Phase 13	Phase 14	Phase 15	Phase 16
Walk	0	7	0	7	0	7	0	7	0	0	0	0	0	0	0	0
Ped Clearance	0	21	0	25	0	23	0	26	0	0	0	0	0	0	0	0
Min Green	5	15	5	5	5	15	5	5	0	0	0	0	0	0	0	0
Passage	1	1	1	1	1	4	1	1	0	0	0	0	0	0	0	0
Max1	20	60	20	30	20	60	20	30	0	0	0	0	0	0	0	0
Max2	15	100	11	25	10	60	13	25	0	0	0	0	0	0	0	0
Yellow	4	4.5	4	4	4	4.5	4	4	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Red	1	1	1	1	1	1	1	1	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Red Revert	2	2	2	2	2	2	2	2	0	0	0	0	0	0	0	0
Added Initial	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max Initial	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time Before Reduce	0	0	0	0	0	15	0	0	0	0	0	0	0	0	0	0
Cars Before Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time To Reduce	0	0	0	0	0	15	0	0	0	0	0	0	0	0	0	0
Reduce By	0	0	0	0	0	0.5	0	0	0	0	0	0	0	0	0	0
Min Gap	1	1	1	1	1	2	1	1	0	0	0	0	0	0	0	0
Dynamic Max Limit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dynamic Max Step	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Startup	RED	RED	RED	YELLOW	RED	RED	RED	YELLOW	RED	RED	RED	RED	RED	RED	RED	RED
Enable	On	On	On	On	On	On	On	On	Off	Off	Off	Off	Off	Off	Off	Off
Auto Entry	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off
Auto Exit	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off
Non Act1	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off
Non Act2	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off
Lock Call	Off	Off	Off	Off	Off	Off	Off	Off	On	On	On	On	On	On	On	On
Min Recall	Off	On	Off	Off	Off	On	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off
Max Recall	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off
Ped Recall	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off
Soft Recall	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off
Dual Entry	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off
Sim Gap Enable	Off	On	Off	Off	Off	On	Off	Off	On	On	On	On	On	On	On	On
Guar Passage	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off
Rest In Walk	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off
Cond Service	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off
Add Init Calc	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off
Ring	1	1	1	1	2	2	2	2	0	0	0	0	0	0	0	0
Concur 1	5	5	7	7	1	1	3	3	0	0	0	0	0	0	0	0
Concur 2	6	6	8	8	2	2	4	4	0	0	0	0	0	0	0	0
Concur 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Concur 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Concur 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Concur 6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Concur 7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Concur 8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

ID: 291

Name: Fourth Plain & 137 Av

Configuration: Upload

Pattern	Cycle Time	Offset Time	Split Number	Seq Number
Pattern 1	0	0	0	1
Pattern 2	120	1	2	3
Pattern 3	0	0	0	1
Pattern 4	0	0	0	1
Pattern 5	0	0	0	1
Pattern 6	0	0	0	1
Pattern 7	0	0	0	1
Pattern 8	110	15	8	2
Pattern 9	0	0	0	1
Pattern 10	0	0	0	1
Pattern 11	0	0	0	1
Pattern 12	110	55	12	3
Pattern 13	0	0	0	1
Pattern 14	0	0	0	1
Pattern 15	0	0	0	1
Pattern 16	0	0	0	1
Pattern 17	0	0	0	1
Pattern 18	0	0	0	1
Pattern 19	0	0	0	1
Pattern 20	0	0	0	1
Pattern 21	0	0	0	1
Pattern 22	0	0	0	1
Pattern 23	0	0	0	1
Pattern 24	0	0	0	1
Pattern 25	0	0	0	1
Pattern 26	0	0	0	1
Pattern 27	0	0	0	1
Pattern 28	0	0	0	1
Pattern 29	0	0	0	1
Pattern 30	0	0	0	1
Pattern 31	0	0	0	1
Pattern 32	0	0	0	1
Pattern 33	0	0	0	1
Pattern 34	0	0	0	1
Pattern 35	0	0	0	1
Pattern 36	0	0	0	1
Pattern 37	0	0	0	1
Pattern 38	0	0	0	1
Pattern 39	0	0	0	1
Pattern 40	0	0	0	1
Pattern 41	0	0	0	1
Pattern 42	0	0	0	1
Pattern 43	0	0	0	1
Pattern 44	0	0	0	1
Pattern 45	0	0	0	1
Pattern 46	0	0	0	1
Pattern 47	0	0	0	1
Pattern 48	0	0	0	1



Fourth Plain & 137th

ICU 291

APPENDIX C
EXISTING LEVELS OF SERVICE

Intersection Level Of Service Report
Intersection 1: NE 131st Avenue/NE Fourth Plain Boulevard

Control Type:	Signalized	Delay (sec / veh):	59.7
Analysis Method:	HCM 7th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.735

Intersection Setup

Name	NE 131st Avenue			NE 131st Avenue			NE Fourth Plain Boulevard			NE Fourth Plain Boulevard		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0	1	0	1	1	0	0
Entry Pocket Length [ft]	270.00	100.00	100.00	100.00	100.00	100.00	420.00	100.00	550.00	270.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	NE 131st Avenue			NE 131st Avenue			NE Fourth Plain Boulevard			NE Fourth Plain Boulevard		
Base Volume Input [veh/h]	128	48	36	8	52	52	180	1824	100	12	1000	56
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	4.00	4.00	4.00	1.00	1.00	1.00	1.00	1.00	1.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	128	48	36	8	52	52	180	1824	100	12	1000	56
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	32	12	9	2	13	13	45	456	25	3	250	14
Total Analysis Volume [veh/h]	128	48	36	8	52	52	180	1824	100	12	1000	56
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	1 - Coordination Group
Cycle Length [s]	120
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	98.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	20.00

Phasing & Timing (Basic)

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	4	4	4	8	8	8	1	6	6	5	2	2
Auxiliary Signal Groups												
Maximum Green [s]	33	33	33	33	33	33	16	56	56	16	56	56
Amber [s]	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Walk [s]	7	7	7	7	7	7	0	7	7	0	7	7
Pedestrian Clearance [s]	25	25	25	23	23	23	0	14	14	0	16	16
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	20.0	20.0	6.0	6.0	6.0	20.0	6.0	6.0	20.0	6.0	6.0
Advanced Detector Location [ft]	94.0	94.0	94.0	94.0	94.0	94.0	0.0	94.0	94.0	0.0	94.0	94.0
Advanced Detector Length [ft]	6.0	6.0	6.0	6.0	6.0	6.0	0.0	6.0	6.0	0.0	6.0	6.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Pattern 1

Split [s]	38	38	38	38	38	38	21	61	61	21	61	61
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	5	5	5	5	5	5	5	15	15	5	15	15
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Recall		Yes			Yes		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	47	47	47	20	56	56	2	37	37
g / C, Green / Cycle	0.39	0.39	0.39	0.17	0.47	0.47	0.01	0.31	0.31
(v / s)_i Volume / Saturation Flow Rate	0.10	0.05	0.07	0.10	0.51	0.06	0.01	0.28	0.28
s, saturation flow rate [veh/h]	1311	1766	1669	1795	3589	1602	1795	1885	1850
c, Capacity [veh/h]	317	695	689	305	1675	748	26	587	576
d1, Uniform Delay [s]	35.55	23.16	23.61	45.96	32.00	18.20	58.64	39.65	39.65
k, delay calibration	0.50	0.50	0.11	0.11	0.12	0.11	0.11	0.17	0.17
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.80	0.36	0.11	1.82	43.03	0.08	11.79	8.35	8.50
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.40	0.12	0.16	0.59	1.09	0.13	0.46	0.91	0.91
d, Delay for Lane Group [s/veh]	39.35	23.52	23.72	47.78	75.03	18.28	70.44	48.00	48.16
Lane Group LOS	D	C	C	D	F	B	E	D	D
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	3.55	1.60	2.10	5.03	32.68	1.56	0.44	15.93	15.67
50th-Percentile Queue Length [ft/ln]	88.79	39.89	52.41	125.64	817.11	38.92	11.07	398.33	391.63
95th-Percentile Queue Length [veh/ln]	6.39	2.87	3.77	8.70	44.86	2.80	0.80	22.48	22.16
95th-Percentile Queue Length [ft/ln]	159.83	71.79	94.34	217.55	1121.53	70.06	19.93	561.99	553.91

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	39.35	23.52	23.52	23.72	23.72	23.72	47.78	75.03	18.28	70.44	48.07	48.16
Movement LOS	D	C	C	C	C	C	D	F	B	E	D	D
d_A, Approach Delay [s/veh]	33.07			23.72			70.00			48.33		
Approach LOS	C			C			E			D		
d_I, Intersection Delay [s/veh]	59.66											
Intersection LOS	E											
Intersection V/C	0.735											

Emissions

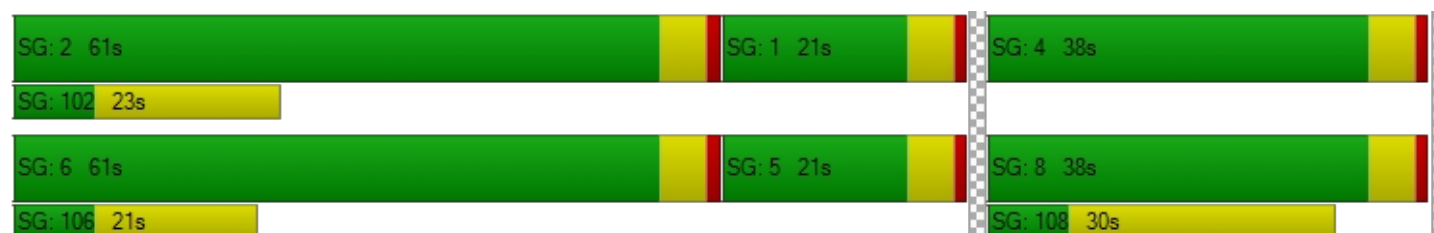
Vehicle Miles Traveled [mph]	25.81	16.93	10.18	28.39	287.67	15.77	3.69	163.66	160.66
Stops [stops/h]	106.55	47.86	62.90	150.77	1961.05	46.70	13.29	478.00	469.96
Fuel consumption [US gal/h]	2.68	1.36	1.31	4.25	57.42	1.40	0.43	15.76	15.50
CO [g/h]	187.04	95.31	91.39	296.94	4013.40	97.57	30.37	1101.86	1083.27
NOx [g/h]	36.39	18.54	17.78	57.77	780.86	18.98	5.91	214.38	210.76
VOC [g/h]	43.35	22.09	21.18	68.82	930.14	22.61	7.04	255.37	251.06

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	0.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.50	49.50	49.50	0.00
I_p,int, Pedestrian LOS Score for Intersectio	2.076	1.922	3.360	0.000
Crosswalk LOS	B	A	C	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	550	550	933	933
d_b, Bicycle Delay [s]	31.54	31.54	17.07	17.07
I_b,int, Bicycle LOS Score for Intersection	1.909	1.744	3.295	2.441
Bicycle LOS	A	A	C	B

Sequence

Ring 1	2	1	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	5	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: NE 137th Avenue/NE Fourth Plain Boulevard

Control Type:	Signalized	Delay (sec / veh):	63.0
Analysis Method:	HCM 7th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.985

Intersection Setup

Name				NE 137th Avenue			NE Fourth Plain Boulevard			NE Fourth Plain Boulevard		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	200.00	100.00	100.00	190.00	100.00	250.00	280.00	100.00	305.00	420.00	100.00	360.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			35.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name				NE 137th Avenue			NE Fourth Plain Boulevard			NE Fourth Plain Boulevard		
Base Volume Input [veh/h]	160	448	148	140	420	112	156	1212	100	128	928	172
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	3.00	3.00	3.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	160	448	148	140	420	112	156	1212	100	128	928	172
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	40	112	37	35	105	28	39	303	25	32	232	43
Total Analysis Volume [veh/h]	160	448	148	140	420	112	156	1212	100	128	928	172
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	1 - Coordination Group
Cycle Length [s]	120
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	1.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	20.00

Phasing & Timing (Basic)

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	7	4	4	3	8	1	1	6	6	5	2	2
Auxiliary Signal Groups												
Maximum Green [s]	14	32	32	14	33	8	8	41	41	12	45	45
Amber [s]	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.5	4.5	4.0	4.5	4.5
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Walk [s]	0	7	7	0	7	0	0	7	7	0	7	7
Pedestrian Clearance [s]	0	25	25	0	26	0	0	23	23	0	21	21
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.5	3.5	3.0	3.5	3.5
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	20.0	6.0	6.0	20.0	6.0	6.0	20.0	6.0	6.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	94.0	94.0	0.0	94.0	94.0	0.0	94.0	94.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	6.0	6.0	0.0	6.0	6.0	0.0	6.0	6.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Pattern 1

Split [s]	19	37	37	19	38	13	13	46	46	17	50	50
Lead / Lag	Lead	-	-	Lead	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	5	5	5	5	5	5	5	5	5	5	5	5
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Recall	No	Yes		No	Yes		No	No		No	No	
Maximum Recall	No	No		No	No		No	Yes		No	No	
Pedestrian Recall	No	No		No	No		No	Yes		No	No	

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.50	5.50	5.00	5.50	5.50
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.50	3.50	3.00	3.50	3.50
g_i, Effective Green Time [s]	13	40	11	38	38	13	38	38	10	35	35
g / C, Green / Cycle	0.10	0.33	0.09	0.32	0.32	0.11	0.32	0.32	0.09	0.29	0.29
(v / s)_i Volume / Saturation Flow Rate	0.09	0.33	0.08	0.22	0.07	0.09	0.34	0.06	0.07	0.26	0.11
s, saturation flow rate [veh/h]	1795	1806	1795	1885	1602	1781	3560	1589	1767	3532	1577
c, Capacity [veh/h]	188	597	169	604	513	198	1130	504	154	1035	462
d1, Uniform Delay [s]	52.82	40.13	53.40	35.68	29.81	51.94	40.96	29.84	53.91	40.66	33.65
k, delay calibration	0.17	0.44	0.11	0.25	0.11	0.12	0.50	0.50	0.17	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	15.16	34.10	9.88	3.38	0.21	7.57	48.56	0.88	16.25	3.05	0.50
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.85	1.00	0.83	0.70	0.22	0.79	1.07	0.20	0.83	0.90	0.37
d, Delay for Lane Group [s/veh]	67.98	74.22	63.28	39.06	30.02	59.51	89.52	30.72	70.16	43.71	34.15
Lane Group LOS	E	E	E	D	C	E	F	C	E	D	C
Critical Lane Group	No	Yes	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	5.53	22.92	4.58	11.12	2.38	4.91	23.70	2.20	4.43	13.17	3.97
50th-Percentile Queue Length [ft/ln]	138.18	573.02	114.41	278.03	59.55	122.86	592.59	54.94	110.83	329.17	99.21
95th-Percentile Queue Length [veh/ln]	9.38	30.77	8.08	16.59	4.29	8.55	33.17	3.96	7.89	19.12	7.14
95th-Percentile Queue Length [ft/ln]	234.57	769.31	202.12	414.76	107.19	213.75	829.29	98.88	197.16	477.94	178.58

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	67.98	74.22	74.22	63.28	39.06	30.02	59.51	89.52	30.72	70.16	43.71	34.15
Movement LOS	E	E	E	E	D	C	E	F	C	E	D	C
d_A, Approach Delay [s/veh]	72.90			42.60			82.33			45.13		
Approach LOS	E			D			F			D		
d_I, Intersection Delay [s/veh]	63.05											
Intersection LOS	E											
Intersection V/C	0.985											

Emissions

Vehicle Miles Traveled [mph]	150.48	560.54	28.57	85.70	22.85	47.91	372.23	30.71	40.73	295.26	54.73
Stops [stops/h]	165.81	687.62	137.29	333.63	71.46	147.43	1422.21	65.92	133.00	790.00	119.05
Fuel consumption [US gal/h]	9.32	35.88	3.92	9.11	2.09	5.05	49.38	2.37	4.59	26.59	4.32
CO [g/h]	651.75	2507.71	274.29	637.03	146.28	353.24	3451.72	165.86	321.02	1858.71	302.31
NOx [g/h]	126.81	487.91	53.37	123.94	28.46	68.73	671.58	32.27	62.46	361.64	58.82
VOC [g/h]	151.05	581.19	63.57	147.64	33.90	81.87	799.97	38.44	74.40	430.77	70.06

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.50	49.50	49.50	49.50
I_p,int, Pedestrian LOS Score for Intersectio	2.410	2.557	3.045	3.058
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	533	550	675	742
d_b, Bicycle Delay [s]	32.27	31.54	26.33	23.75
I_b,int, Bicycle LOS Score for Intersection	2.807	2.668	2.771	2.573
Bicycle LOS	C	B	C	B

Sequence

Ring 1	2	1	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	5	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: NE 137th Avenue/NE 49th Street

Control Type:	Roundabout	Delay (sec / veh):	8.6
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	1	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	380.00	100.00	100.00	190.00	100.00	100.00	160.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	1	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	49.21	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	164	628	84	40	504	56	32	284	324	32	124	76
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.00	1.00	1.00	3.00	3.00	3.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	164	628	84	40	504	56	32	284	324	32	124	76
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	41	157	21	10	126	14	8	71	81	8	31	19
Total Analysis Volume [veh/h]	164	628	84	40	504	56	32	284	324	32	124	76
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	2			2			1			1		
Circulating Flow Rate [veh/h]	364			325			593			833		
Exiting Flow Rate [veh/h]	882			744			350			416		
Demand Flow Rate [veh/h]	164	628	84	40	504	56	32	284	324	32	124	76
Adjusted Demand Flow Rate [veh/h]	164	628	84	40	504	56	32	284	324	32	124	76

Lanes

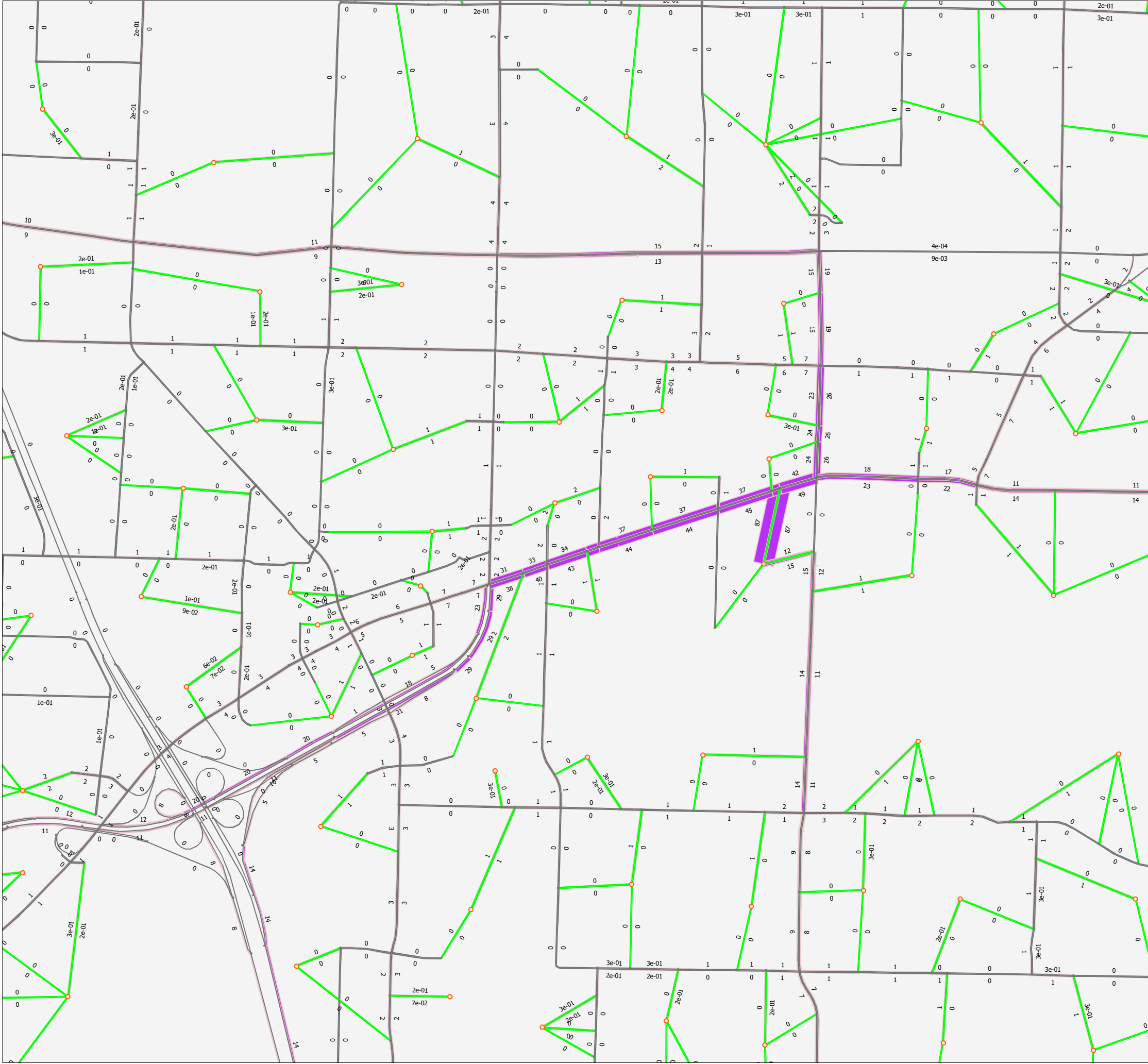
Override Calculated Critical Headway	No	No	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00
A (intercept)	1350.00	1420.00	1350.00	1420.00	1420.00	1420.00	1380.00
B (coefficient)	0.00092	0.00085	0.00092	0.00085	0.00091	0.00091	0.00102
HV Adjustment Factor	0.99	0.99	0.97	0.97	0.98	0.98	0.98
Entry Flow Rate [veh/h]	416	469	291	328	323	331	237
Capacity of Entry and Bypass Lanes [veh/h]	967	1043	1002	1078	828	828	591
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	957	1033	973	1047	812	812	579
X, volume / capacity	0.43	0.45	0.29	0.30	0.39	0.40	0.40

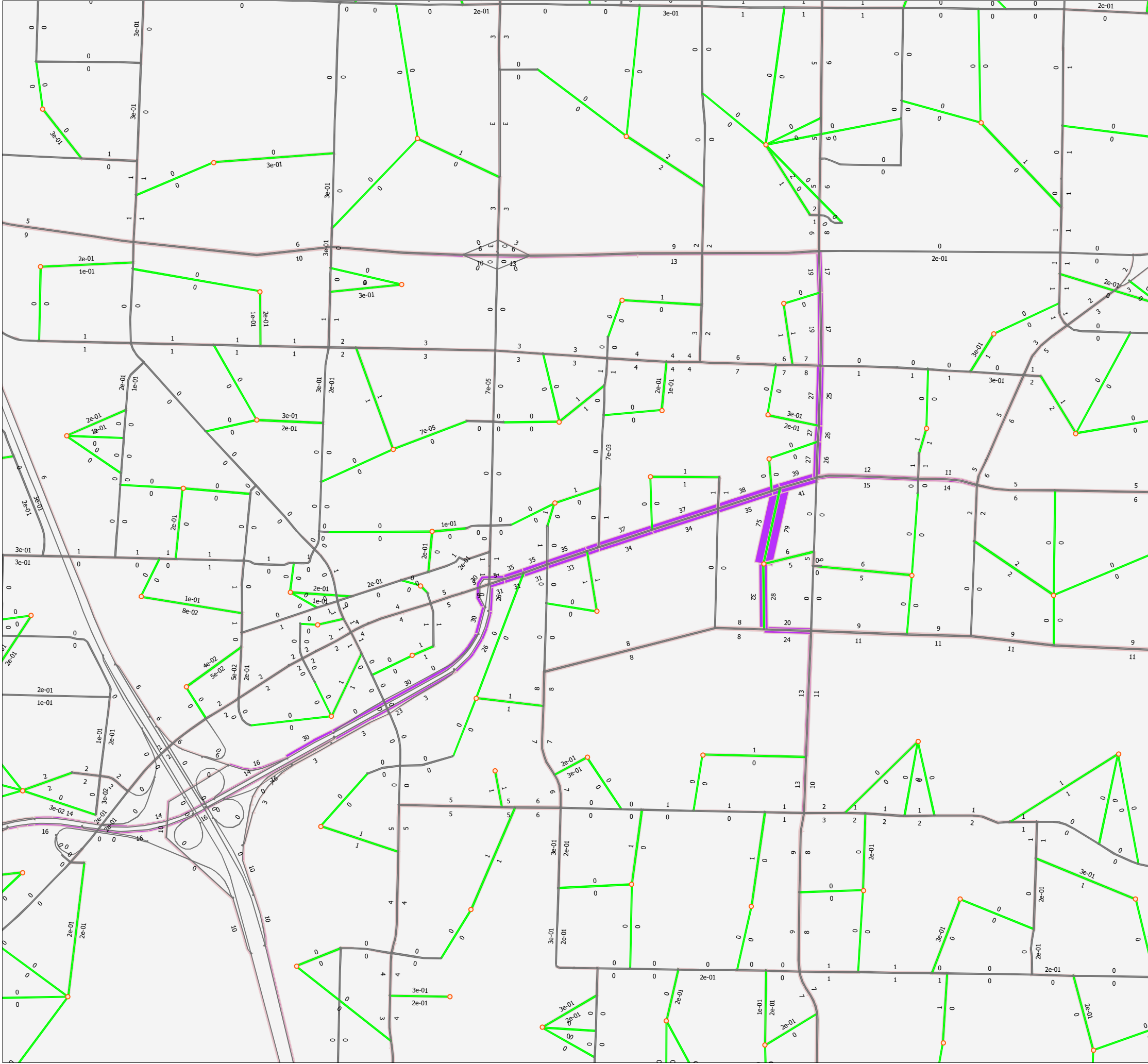
Movement, Approach, & Intersection Results

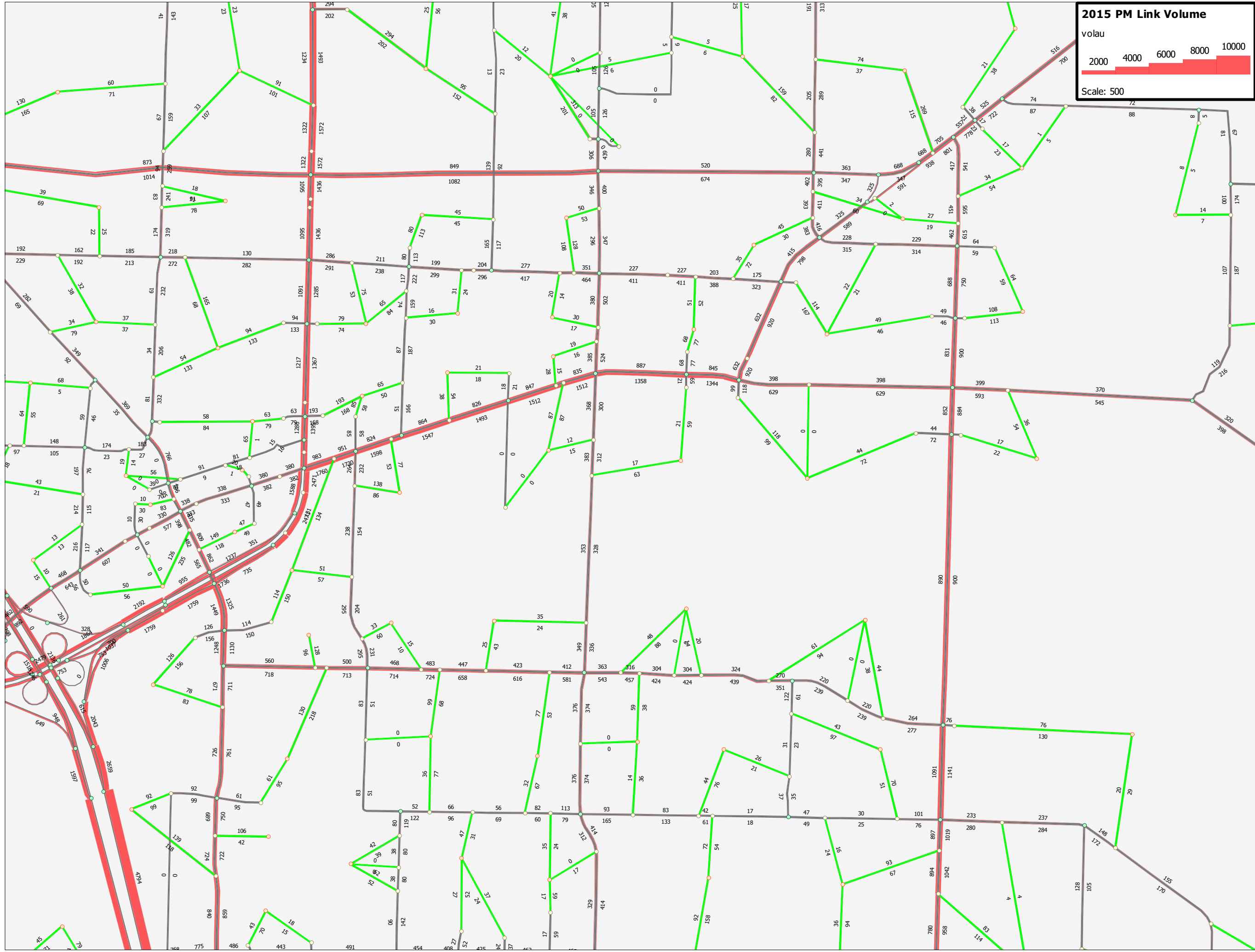
Lane LOS	A	A	A	A	A	A	B
95th-Percentile Queue Length [veh]	2.20	2.37	1.21	1.29	1.86	1.93	1.92
95th-Percentile Queue Length [ft]	54.89	59.33	30.22	32.30	46.43	48.30	48.05
Approach Delay [s/veh]	8.64		6.55		9.27		12.32
Approach LOS	A		A		A		B
Intersection Delay [s/veh]	8.64						
Intersection LOS	A						

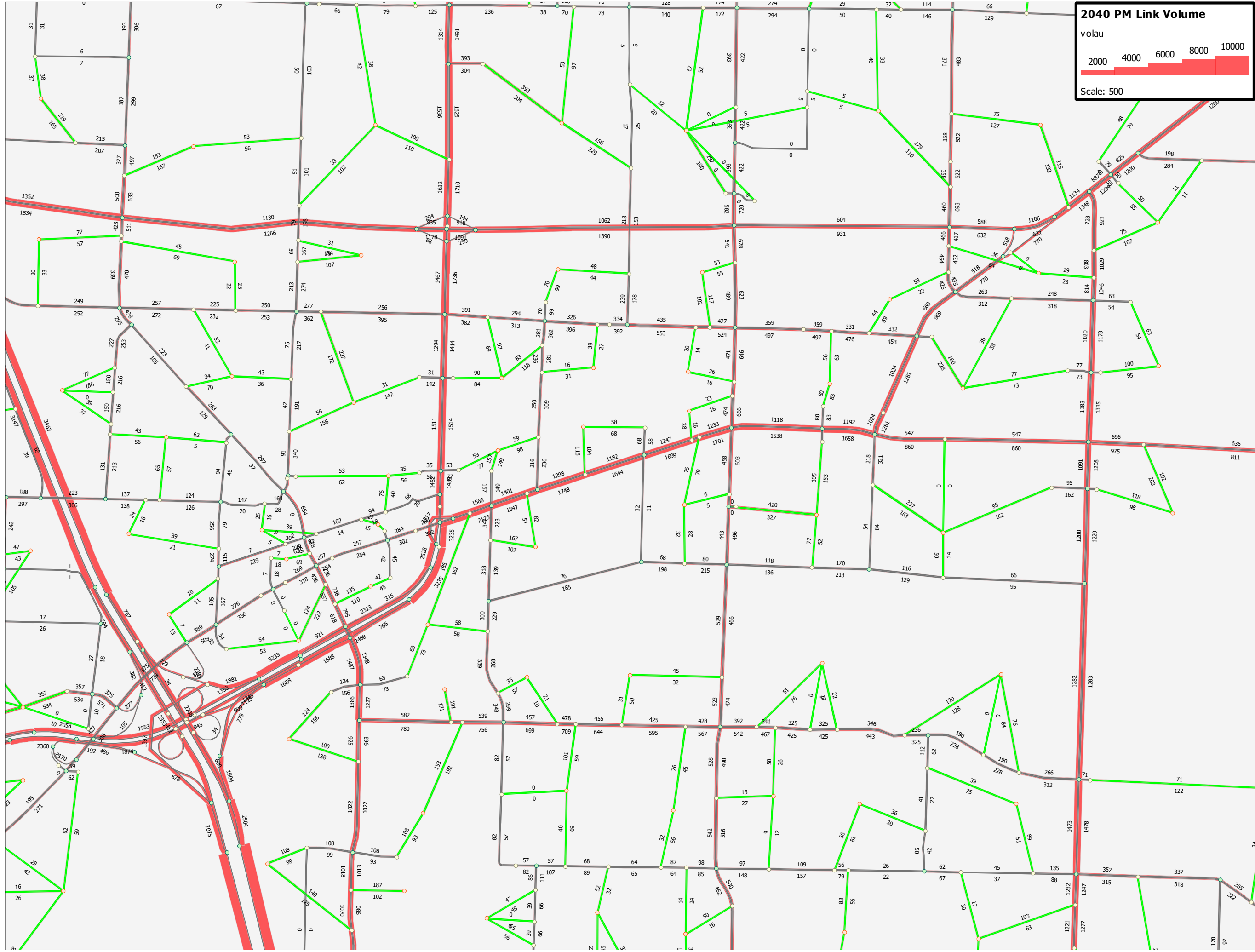
APPENDIX D

RTC MODEL VOLUMES AND TURNSW32 WORKSHEETS

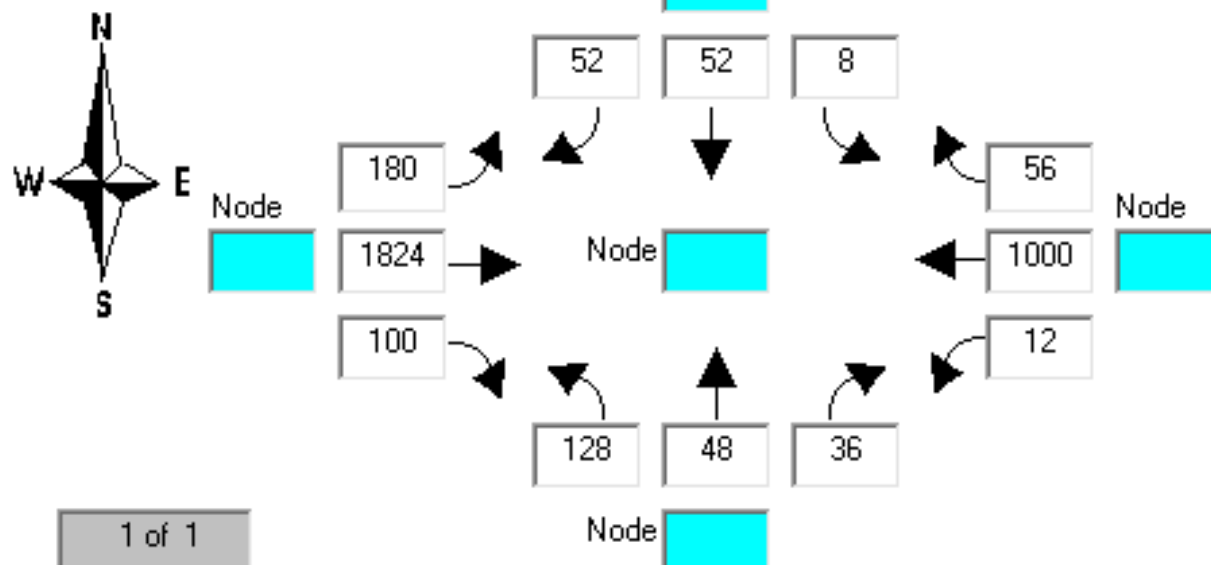








☒ Count data
☐ Turn %-ages

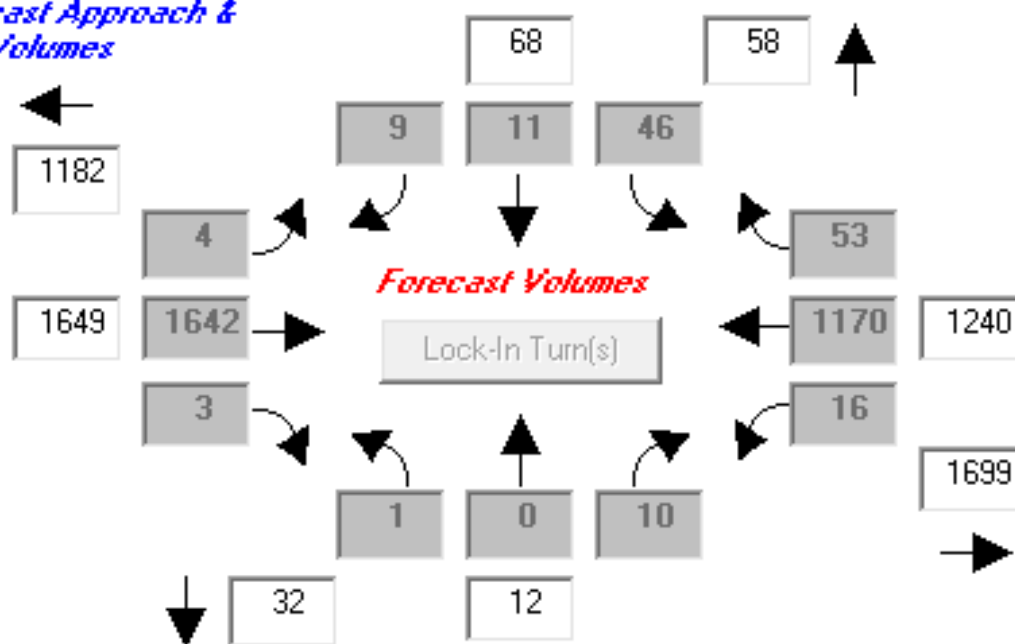


1 of 1

[Previous](#)

Next

Enter Forecast Approach & Departure Volumes



% Convergence

Iterations

Forecast Volumes

Lock-In Turn(s)

Reset

Iterate

.....
Print

Close

NE 137th Avenue/NE Fourth Plain Boulevard

Enter Turning Counts

Node []

Node []

Node []

Node []

Count data (selected)
Turn %-ages

Previous
Next

2 of 2

Enter Forecast Approach & Departure Volumes

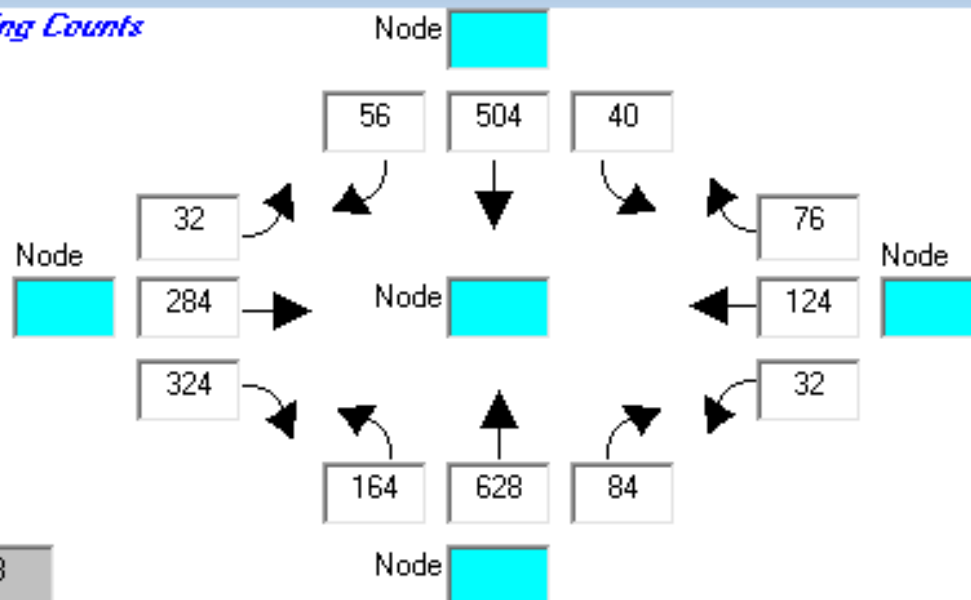
Forecast Volumes

Lock-In Turn(s)

0 % Convergence
10 Iterations

Reset
Iterate
Print
Close

Enter Turning Counts



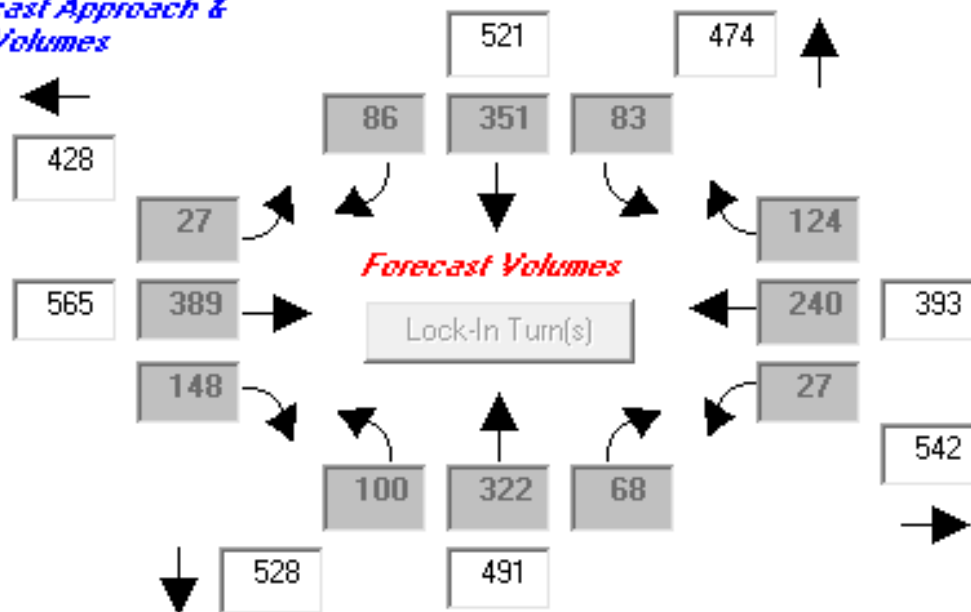
- ☒ Count data
- ☐ Turn %-ages

Previous

Next

3 of 3

Enter Forecast Approach & Departure Volumes



0 % Convergence

8 Iterations

Reset

Iterate

Print

Close

APPENDIX E

2045 “EXISTING ZONING BUILD OUT” LEVELS OF SERVICE

Intersection Level Of Service Report
Intersection 1: NE 131st Avenue/NE Fourth Plain Boulevard

Control Type:	Signalized	Delay (sec / veh):	54.6
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.664

Intersection Setup

Name	NE 131st Avenue			NE 131st Avenue			NE Fourth Plain Boulevard			NE Fourth Plain Boulevard		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0	1	0	1	1	0	0
Entry Pocket Length [ft]	270.00	100.00	100.00	100.00	100.00	100.00	420.00	100.00	550.00	270.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	NE 131st Avenue			NE 131st Avenue			NE Fourth Plain Boulevard			NE Fourth Plain Boulevard		
Base Volume Input [veh/h]	1	0	11	50	12	10	4	1769	1	17	1260	57
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	4.00	4.00	4.00	1.00	1.00	1.00	1.00	1.00	1.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	0	11	50	12	10	4	1769	1	17	1260	57
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	3	13	3	3	1	442	0	4	315	14
Total Analysis Volume [veh/h]	1	0	11	50	12	10	4	1769	1	17	1260	57
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	1 - Coordination Group
Cycle Length [s]	120
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	98.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	20.00

Phasing & Timing (Basic)

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	4	4	4	8	8	8	1	6	6	5	2	2
Auxiliary Signal Groups												
Maximum Green [s]	33	33	33	33	33	33	16	56	56	16	56	56
Amber [s]	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Walk [s]	7	7	7	7	7	7	0	7	7	0	7	7
Pedestrian Clearance [s]	25	25	25	23	23	23	0	14	14	0	16	16
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	20.0	20.0	6.0	6.0	6.0	20.0	6.0	6.0	20.0	6.0	6.0
Advanced Detector Location [ft]	94.0	94.0	94.0	94.0	94.0	94.0	0.0	94.0	94.0	0.0	94.0	94.0
Advanced Detector Length [ft]	6.0	6.0	6.0	6.0	6.0	6.0	0.0	6.0	6.0	0.0	6.0	6.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Pattern 1

Split [s]	38	38	38	38	38	38	21	61	61	21	61	61
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	5	5	5	5	5	5	5	15	15	5	15	15
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Recall		Yes			Yes		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	47	47	47	12	56	56	2	46	46
g / C, Green / Cycle	0.39	0.39	0.39	0.10	0.47	0.47	0.02	0.38	0.38
(v / s)_i Volume / Saturation Flow Rate	0.00	0.01	0.05	0.00	0.49	0.00	0.01	0.35	0.35
s, saturation flow rate [veh/h]	1412	1615	1420	1795	3589	1602	1795	1885	1856
c, Capacity [veh/h]	522	630	605	185	1675	748	32	719	708
d1, Uniform Delay [s]	22.33	22.46	24.12	48.36	32.00	17.08	58.40	35.40	35.44
k, delay calibration	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.28	0.28
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.01	0.05	0.09	0.05	29.11	0.00	12.45	12.12	12.51
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.00	0.02	0.12	0.02	1.06	0.00	0.52	0.92	0.92
d, Delay for Lane Group [s/veh]	22.33	22.51	24.21	48.41	61.11	17.08	70.86	47.52	47.95
Lane Group LOS	C	C	C	D	F	B	E	D	D
Critical Lane Group	No	No	Yes	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.02	0.20	1.37	0.11	29.45	0.01	0.62	20.08	19.91
50th-Percentile Queue Length [ft/ln]	0.46	5.05	34.15	2.72	736.16	0.36	15.42	502.12	497.84
95th-Percentile Queue Length [veh/ln]	0.03	0.36	2.46	0.20	39.99	0.03	1.11	27.43	27.23
95th-Percentile Queue Length [ft/ln]	0.83	9.09	61.46	4.90	999.76	0.66	27.75	685.86	680.80

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	22.33	22.51	22.51	24.21	24.21	24.21	48.41	61.11	17.08	70.86	47.72	47.95
Movement LOS	C	C	C	C	C	C	D	F	B	E	D	D
d_A, Approach Delay [s/veh]	22.50			24.21			61.06			48.03		
Approach LOS	C			C			E			D		
d_I, Intersection Delay [s/veh]	54.64											
Intersection LOS	D											
Intersection V/C	0.664											

Emissions

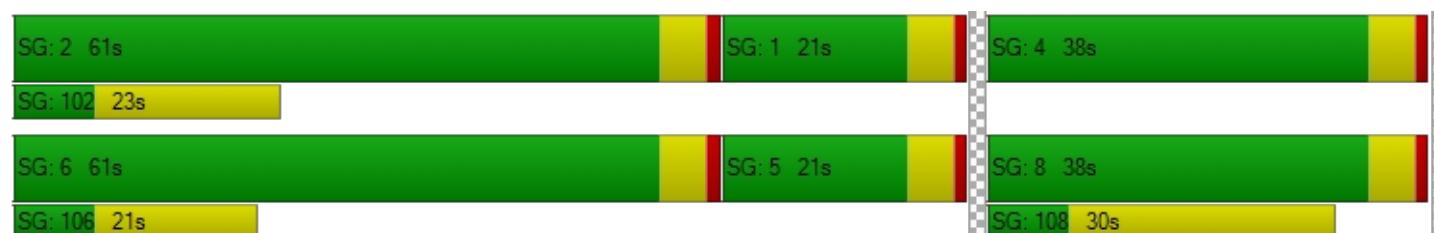
Vehicle Miles Traveled [mph]	0.20	2.22	6.55	0.63	278.99	0.16	5.22	203.57	200.91
Stops [stops/h]	0.55	6.06	40.98	3.27	1766.77	0.44	18.50	602.54	597.40
Fuel consumption [US gal/h]	0.02	0.18	0.85	0.09	49.35	0.01	0.61	19.62	19.45
CO [g/h]	1.11	12.24	59.46	6.58	3449.40	0.94	42.91	1371.44	1359.38
NOx [g/h]	0.22	2.38	11.57	1.28	671.13	0.18	8.35	266.83	264.49
VOC [g/h]	0.26	2.84	13.78	1.52	799.43	0.22	9.94	317.85	315.05

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	0.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.50	49.50	49.50	0.00
I_p,int, Pedestrian LOS Score for Intersectio	1.968	1.793	3.128	0.000
Crosswalk LOS	A	A	C	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	550	550	933	933
d_b, Bicycle Delay [s]	31.54	31.54	17.07	17.07
I_b,int, Bicycle LOS Score for Intersection	1.579	1.678	3.023	2.660
Bicycle LOS	A	A	C	B

Sequence

Ring 1	2	1	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	5	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: NE 137th Avenue/NE Fourth Plain Boulevard

Control Type:	Signalized	Delay (sec / veh):	46.3
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.902

Intersection Setup

Name				NE 137th Avenue			NE Fourth Plain Boulevard			NE Fourth Plain Boulevard		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	200.00	100.00	100.00	190.00	100.00	250.00	280.00	100.00	305.00	420.00	100.00	360.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			35.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name				NE 137th Avenue			NE Fourth Plain Boulevard			NE Fourth Plain Boulevard		
Base Volume Input [veh/h]	191	355	95	90	279	133	231	1468	126	74	1004	125
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	3.00	3.00	3.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	191	355	95	90	279	133	231	1468	126	74	1004	125
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	48	89	24	23	70	33	58	367	32	19	251	31
Total Analysis Volume [veh/h]	191	355	95	90	279	133	231	1468	126	74	1004	125
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	1 - Coordination Group
Cycle Length [s]	120
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	1.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	20.00

Phasing & Timing (Basic)

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	7	4	4	3	8	1	1	6	6	5	2	2
Auxiliary Signal Groups												
Maximum Green [s]	14	32	32	14	33	8	8	41	41	12	45	45
Amber [s]	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.5	4.5	4.0	4.5	4.5
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Walk [s]	0	7	7	0	7	0	0	7	7	0	7	7
Pedestrian Clearance [s]	0	25	25	0	26	0	0	23	23	0	21	21
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.5	3.5	3.0	3.5	3.5
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	20.0	6.0	6.0	20.0	6.0	6.0	20.0	6.0	6.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	94.0	94.0	0.0	94.0	94.0	0.0	94.0	94.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	6.0	6.0	0.0	6.0	6.0	0.0	6.0	6.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Pattern 1

Split [s]	19	37	37	19	38	13	13	46	46	17	50	50
Lead / Lag	Lead	-	-	Lead	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	5	5	5	5	5	5	5	5	5	5	5	5
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Recall	No	Yes		No	Yes		No	No		No	No	
Maximum Recall	No	No		No	No		No	Yes		No	No	
Pedestrian Recall	No	No		No	No		No	Yes		No	No	

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.50	5.50	5.00	5.50	5.50
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.50	3.50	3.00	3.50	3.50
g_i, Effective Green Time [s]	15	32	8	25	25	22	54	54	6	38	38
g / C, Green / Cycle	0.12	0.26	0.06	0.21	0.21	0.19	0.45	0.45	0.05	0.31	0.31
(v / s)_i Volume / Saturation Flow Rate	0.11	0.25	0.05	0.15	0.08	0.13	0.41	0.08	0.04	0.28	0.08
s, saturation flow rate [veh/h]	1795	1817	1795	1885	1602	1781	3560	1589	1767	3532	1577
c, Capacity [veh/h]	220	482	115	389	331	333	1590	710	95	1107	494
d1, Uniform Delay [s]	51.72	43.08	55.36	44.35	41.20	45.56	31.27	19.96	56.07	39.53	30.73
k, delay calibration	0.16	0.27	0.11	0.11	0.11	0.40	0.50	0.50	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	14.14	18.14	11.15	2.48	0.79	9.12	10.45	0.55	12.77	3.20	0.27
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.87	0.93	0.79	0.72	0.40	0.69	0.92	0.18	0.78	0.91	0.25
d, Delay for Lane Group [s/veh]	65.86	61.23	66.51	46.83	41.99	54.68	41.72	20.50	68.84	42.73	31.00
Lane Group LOS	E	E	E	D	D	D	D	C	E	D	C
Critical Lane Group	No	Yes	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	6.50	15.36	3.02	7.92	3.46	7.15	21.16	2.17	2.52	14.21	2.69
50th-Percentile Queue Length [ft/ln]	162.48	383.93	75.43	197.88	86.48	178.70	529.08	54.34	62.89	355.14	67.28
95th-Percentile Queue Length [veh/ln]	10.68	21.78	5.43	12.53	6.23	11.53	28.71	3.91	4.53	20.39	4.84
95th-Percentile Queue Length [ft/ln]	267.00	544.60	135.78	313.23	155.67	288.31	717.70	97.81	113.21	509.67	121.10

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	65.86	61.23	61.23	66.51	46.83	41.99	54.68	41.72	20.50	68.84	42.73	31.00
Movement LOS	E	E	E	E	D	D	D	D	C	E	D	C
d_A, Approach Delay [s/veh]	62.61			49.08			41.90			43.12		
Approach LOS	E			D			D			D		
d_I, Intersection Delay [s/veh]	46.30											
Intersection LOS	D											
Intersection V/C	0.902											

Emissions

Vehicle Miles Traveled [mph]	179.64	423.23	18.36	56.93	27.14	70.95	450.85	38.70	23.54	319.44	39.77
Stops [stops/h]	194.97	460.72	90.52	237.46	103.78	214.43	1269.80	65.21	75.47	852.33	80.73
Fuel consumption [US gal/h]	11.03	25.57	2.60	6.61	2.95	7.22	41.09	2.55	2.62	28.54	3.01
CO [g/h]	771.12	1787.66	181.65	462.34	206.30	504.53	2872.00	178.42	183.23	1995.29	210.13
NOx [g/h]	150.03	347.81	35.34	89.96	40.14	98.16	558.79	34.71	35.65	388.21	40.88
VOC [g/h]	178.71	414.31	42.10	107.15	47.81	116.93	665.61	41.35	42.47	462.43	48.70

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	49.50			49.50			49.50			49.50		
I_p,int, Pedestrian LOS Score for Intersectio	2.318			2.490			3.150			3.085		
Crosswalk LOS	B			B			C			C		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	533			550			675			742		
d_b, Bicycle Delay [s]	32.27			31.54			26.33			23.75		
I_b,int, Bicycle LOS Score for Intersection	2.617			2.388			3.065			2.552		
Bicycle LOS	B			B			C			B		

Sequence

Ring 1	2	1	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	5	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: NE 137th Avenue/NE 49th Street

Control Type:	Roundabout	Delay (sec / veh):	8.7
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	1	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	380.00	100.00	100.00	190.00	100.00	100.00	160.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	1	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	49.21	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	108	341	73	88	375	93	29	419	159	29	259	133
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.00	1.00	1.00	3.00	3.00	3.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	108	341	73	88	375	93	29	419	159	29	259	133
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	27	85	18	22	94	23	7	105	40	7	65	33
Total Analysis Volume [veh/h]	108	341	73	88	375	93	29	419	159	29	259	133
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	2			2			1			1		
Circulating Flow Rate [veh/h]	548			403			506			483		
Exiting Flow Rate [veh/h]	578			510			469			592		
Demand Flow Rate [veh/h]	108	341	73	88	375	93	29	419	159	29	259	133
Adjusted Demand Flow Rate [veh/h]	108	341	73	88	375	93	29	419	159	29	259	133

Lanes

Override Calculated Critical Headway	No	No	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00
A (intercept)	1350.00	1420.00	1350.00	1420.00	1420.00	1420.00	1380.00
B (coefficient)	0.00092	0.00085	0.00092	0.00085	0.00091	0.00091	0.00102
HV Adjustment Factor	0.99	0.99	0.97	0.97	0.98	0.98	0.98
Entry Flow Rate [veh/h]	248	280	270	304	457	163	430
Capacity of Entry and Bypass Lanes [veh/h]	816	892	932	1009	896	896	844
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	808	883	905	979	879	879	827
X, volume / capacity	0.30	0.31	0.29	0.30	0.51	0.18	0.51

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A	B	A	B
95th-Percentile Queue Length [veh]	1.29	1.35	1.20	1.27	2.96	0.66	2.94
95th-Percentile Queue Length [ft]	32.14	33.64	30.01	31.83	74.05	16.46	73.58
Approach Delay [s/veh]	7.69		6.89		9.55		11.33
Approach LOS	A		A		A		B
Intersection Delay [s/veh]	8.74						
Intersection LOS	A						

APPENDIX F

2045 “PROPOSED ZONING BUILD OUT” LEVELS OF SERVICE

Intersection Level Of Service Report
Intersection 1: NE 131st Avenue/NE Fourth Plain Boulevard

Control Type:	Signalized	Delay (sec / veh):	54.5
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.664

Intersection Setup

Name	NE 131st Avenue			NE 131st Avenue			NE Fourth Plain Boulevard			NE Fourth Plain Boulevard		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0	1	0	1	1	0	0
Entry Pocket Length [ft]	270.00	100.00	100.00	100.00	100.00	100.00	420.00	100.00	550.00	270.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	NE 131st Avenue			NE 131st Avenue			NE Fourth Plain Boulevard			NE Fourth Plain Boulevard		
Base Volume Input [veh/h]	4	0	11	50	13	10	4	1769	10	17	1260	57
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	4.00	4.00	4.00	1.00	1.00	1.00	1.00	1.00	1.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	4	0	11	50	13	10	4	1769	10	17	1260	57
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	0	3	13	3	3	1	442	3	4	315	14
Total Analysis Volume [veh/h]	4	0	11	50	13	10	4	1769	10	17	1260	57
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	1 - Coordination Group
Cycle Length [s]	120
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	98.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	20.00

Phasing & Timing (Basic)

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	4	4	4	8	8	8	1	6	6	5	2	2
Auxiliary Signal Groups												
Maximum Green [s]	33	33	33	33	33	33	16	56	56	16	56	56
Amber [s]	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Walk [s]	7	7	7	7	7	7	0	7	7	0	7	7
Pedestrian Clearance [s]	25	25	25	23	23	23	0	14	14	0	16	16
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	20.0	20.0	6.0	6.0	6.0	20.0	6.0	6.0	20.0	6.0	6.0
Advanced Detector Location [ft]	94.0	94.0	94.0	94.0	94.0	94.0	0.0	94.0	94.0	0.0	94.0	94.0
Advanced Detector Length [ft]	6.0	6.0	6.0	6.0	6.0	6.0	0.0	6.0	6.0	0.0	6.0	6.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Pattern 1

Split [s]	38	38	38	38	38	38	21	61	61	21	61	61
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	5	5	5	5	5	5	5	15	15	5	15	15
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Recall		Yes			Yes		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	47	47	47	12	56	56	2	46	46
g / C, Green / Cycle	0.39	0.39	0.39	0.10	0.47	0.47	0.02	0.38	0.38
(v / s)_i Volume / Saturation Flow Rate	0.00	0.01	0.05	0.00	0.49	0.01	0.01	0.35	0.35
s, saturation flow rate [veh/h]	1410	1615	1425	1795	3589	1602	1795	1885	1856
c, Capacity [veh/h]	522	630	607	185	1675	748	32	719	708
d1, Uniform Delay [s]	22.39	22.46	24.10	48.36	32.00	17.17	58.40	35.40	35.44
k, delay calibration	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.28	0.28
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.03	0.05	0.09	0.05	29.11	0.01	12.45	12.12	12.51
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.01	0.02	0.12	0.02	1.06	0.01	0.52	0.92	0.92
d, Delay for Lane Group [s/veh]	22.42	22.51	24.19	48.41	61.11	17.18	70.86	47.52	47.95
Lane Group LOS	C	C	C	D	F	B	E	D	D
Critical Lane Group	No	No	Yes	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.07	0.20	1.38	0.11	29.45	0.15	0.62	20.08	19.91
50th-Percentile Queue Length [ft/ln]	1.85	5.05	34.62	2.72	736.16	3.67	15.42	502.12	497.84
95th-Percentile Queue Length [veh/ln]	0.13	0.36	2.49	0.20	39.99	0.26	1.11	27.43	27.23
95th-Percentile Queue Length [ft/ln]	3.32	9.09	62.31	4.90	999.76	6.60	27.75	685.86	680.80

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	22.42	22.51	22.51	24.19	24.19	24.19	48.41	61.11	17.18	70.86	47.72	47.95
Movement LOS	C	C	C	C	C	C	D	F	B	E	D	D
d_A, Approach Delay [s/veh]	22.49			24.19			60.84			48.03		
Approach LOS	C			C			E			D		
d_I, Intersection Delay [s/veh]	54.49											
Intersection LOS	D											
Intersection V/C	0.664											

Emissions

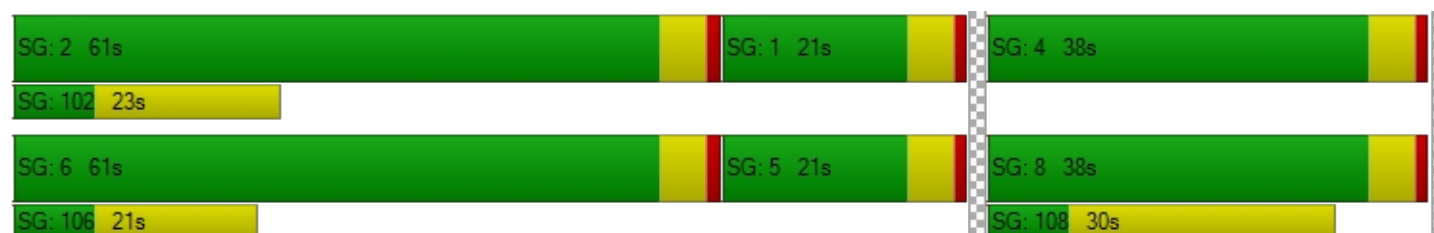
Vehicle Miles Traveled [mph]	0.81	2.22	6.64	0.63	278.99	1.58	5.22	203.57	200.91
Stops [stops/h]	2.22	6.06	41.54	3.27	1766.77	4.40	18.50	602.54	597.40
Fuel consumption [US gal/h]	0.06	0.18	0.86	0.09	49.35	0.13	0.61	19.62	19.45
CO [g/h]	4.45	12.24	60.26	6.58	3449.40	9.42	42.91	1371.44	1359.38
NOx [g/h]	0.87	2.38	11.72	1.28	671.13	1.83	8.35	266.83	264.49
VOC [g/h]	1.03	2.84	13.97	1.52	799.43	2.18	9.94	317.85	315.05

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	0.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.50	49.50	49.50	0.00
I_p,int, Pedestrian LOS Score for Intersectio	1.972	1.794	3.135	0.000
Crosswalk LOS	A	A	C	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	550	550	933	933
d_b, Bicycle Delay [s]	31.54	31.54	17.07	17.07
I_b,int, Bicycle LOS Score for Intersection	1.584	1.680	3.031	2.660
Bicycle LOS	A	A	C	B

Sequence

Ring 1	2	1	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	5	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: NE 137th Avenue/NE Fourth Plain Boulevard

Control Type:	Signalized	Delay (sec / veh):	48.2
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.917

Intersection Setup

Name				NE 137th Avenue			NE Fourth Plain Boulevard			NE Fourth Plain Boulevard		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	200.00	100.00	100.00	190.00	100.00	250.00	280.00	100.00	305.00	420.00	100.00	360.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			35.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name				NE 137th Avenue			NE Fourth Plain Boulevard			NE Fourth Plain Boulevard		
Base Volume Input [veh/h]	191	363	100	90	293	133	231	1468	126	82	1004	125
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	3.00	3.00	3.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	191	363	100	90	293	133	231	1468	126	82	1004	125
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	48	91	25	23	73	33	58	367	32	21	251	31
Total Analysis Volume [veh/h]	191	363	100	90	293	133	231	1468	126	82	1004	125
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	1 - Coordination Group
Cycle Length [s]	120
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	1.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	20.00

Phasing & Timing (Basic)

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	7	4	4	3	8	1	1	6	6	5	2	2
Auxiliary Signal Groups												
Maximum Green [s]	14	32	32	14	33	8	8	41	41	12	45	45
Amber [s]	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.5	4.5	4.0	4.5	4.5
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Walk [s]	0	7	7	0	7	0	0	7	7	0	7	7
Pedestrian Clearance [s]	0	25	25	0	26	0	0	23	23	0	21	21
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.5	3.5	3.0	3.5	3.5
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	20.0	6.0	6.0	20.0	6.0	6.0	20.0	6.0	6.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	94.0	94.0	0.0	94.0	94.0	0.0	94.0	94.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	6.0	6.0	0.0	6.0	6.0	0.0	6.0	6.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Pattern 1

Split [s]	19	37	37	19	38	13	13	46	46	17	50	50
Lead / Lag	Lead	-	-	Lead	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	5	5	5	5	5	5	5	5	5	5	5	5
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Recall	No	Yes		No	Yes		No	No		No	No	
Maximum Recall	No	No		No	No		No	Yes		No	No	
Pedestrian Recall	No	No		No	No		No	Yes		No	No	

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.50	5.50	5.00	5.50	5.50
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.50	3.50	3.00	3.50	3.50
g_i, Effective Green Time [s]	15	33	8	26	26	22	52	52	7	38	38
g / C, Green / Cycle	0.12	0.27	0.06	0.21	0.21	0.18	0.43	0.43	0.06	0.31	0.31
(v / s)_i Volume / Saturation Flow Rate	0.11	0.25	0.05	0.16	0.08	0.13	0.41	0.08	0.05	0.28	0.08
s, saturation flow rate [veh/h]	1795	1816	1795	1885	1602	1781	3560	1589	1767	3532	1577
c, Capacity [veh/h]	219	494	115	403	342	321	1546	690	104	1107	494
d1, Uniform Delay [s]	51.73	42.68	55.36	43.93	40.46	46.36	32.68	20.86	55.71	39.53	30.73
k, delay calibration	0.17	0.29	0.11	0.11	0.11	0.40	0.50	0.50	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	15.17	18.98	11.15	2.53	0.72	10.62	13.67	0.58	12.14	3.20	0.27
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.87	0.94	0.79	0.73	0.39	0.72	0.95	0.18	0.79	0.91	0.25
d, Delay for Lane Group [s/veh]	66.91	61.66	66.51	46.46	41.18	56.98	46.35	21.44	67.84	42.73	31.00
Lane Group LOS	E	E	E	D	D	E	D	C	E	D	C
Critical Lane Group	No	Yes	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	6.56	15.89	3.02	8.30	3.42	7.31	22.31	2.23	2.76	14.21	2.69
50th-Percentile Queue Length [ft/ln]	164.05	397.35	75.43	207.52	85.51	182.81	557.63	55.85	69.05	355.14	67.28
95th-Percentile Queue Length [veh/ln]	10.76	22.43	5.43	13.03	6.16	11.75	30.05	4.02	4.97	20.39	4.84
95th-Percentile Queue Length [ft/ln]	269.08	560.81	135.78	325.64	153.92	293.68	751.27	100.52	124.30	509.67	121.10

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	66.91	61.66	61.66	66.51	46.46	41.18	56.98	46.35	21.44	67.84	42.73	31.00
Movement LOS	E	E	E	E	D	D	E	D	C	E	D	C
d_A, Approach Delay [s/veh]	63.19			48.60			45.98			43.22		
Approach LOS	E			D			D			D		
d_I, Intersection Delay [s/veh]	48.18											
Intersection LOS	D											
Intersection V/C	0.917											

Emissions

Vehicle Miles Traveled [mph]	179.64	435.46	18.36	59.78	27.14	70.95	450.85	38.70	26.09	319.44	39.77
Stops [stops/h]	196.86	476.82	90.52	249.02	102.62	219.37	1338.31	67.01	82.87	852.33	80.73
Fuel consumption [US gal/h]	11.08	26.37	2.60	6.92	2.92	7.37	43.14	2.59	2.88	28.54	3.01
CO [g/h]	774.69	1843.23	181.65	483.81	204.15	515.47	3015.68	181.34	201.35	1995.29	210.13
NOx [g/h]	150.73	358.63	35.34	94.13	39.72	100.29	586.74	35.28	39.18	388.21	40.88
VOC [g/h]	179.54	427.19	42.10	112.13	47.31	119.46	698.91	42.03	46.66	462.43	48.70

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	49.50			49.50			49.50			49.50		
I_p,int, Pedestrian LOS Score for Intersectio	2.329			2.496			3.150			3.088		
Crosswalk LOS	B			B			C			C		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	533			550			675			742		
d_b, Bicycle Delay [s]	32.27			31.54			26.33			23.75		
I_b,int, Bicycle LOS Score for Intersection	2.639			2.411			3.065			2.559		
Bicycle LOS	B			B			C			B		

Sequence

Ring 1	2	1	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	5	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: NE 137th Avenue/NE 49th Street

Control Type:	Roundabout	Delay (sec / veh):	8.9
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	1	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	380.00	100.00	100.00	190.00	100.00	100.00	160.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	1	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	49.21	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	108	349	73	89	381	93	30	419	159	29	259	135
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.00	1.00	1.00	3.00	3.00	3.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	108	349	73	89	381	93	30	419	159	29	259	135
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	27	87	18	22	95	23	8	105	40	7	65	34
Total Analysis Volume [veh/h]	108	349	73	89	381	93	30	419	159	29	259	135
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	2			2			1			1		
Circulating Flow Rate [veh/h]	550			403			514			492		
Exiting Flow Rate [veh/h]	584			521			469			593		
Demand Flow Rate [veh/h]	108	349	73	89	381	93	30	419	159	29	259	135
Adjusted Demand Flow Rate [veh/h]	108	349	73	89	381	93	30	419	159	29	259	135

Lanes

Override Calculated Critical Headway	No	No	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00
A (intercept)	1350.00	1420.00	1350.00	1420.00	1420.00	1420.00	1380.00
B (coefficient)	0.00092	0.00085	0.00092	0.00085	0.00091	0.00091	0.00102
HV Adjustment Factor	0.99	0.99	0.97	0.97	0.98	0.98	0.98
Entry Flow Rate [veh/h]	252	284	273	308	458	163	432
Capacity of Entry and Bypass Lanes [veh/h]	815	890	932	1009	890	890	836
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	807	882	905	979	873	873	819
X, volume / capacity	0.31	0.32	0.29	0.30	0.51	0.18	0.52

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A	B	A	B
95th-Percentile Queue Length [veh]	1.32	1.38	1.22	1.30	3.01	0.66	3.02
95th-Percentile Queue Length [ft]	32.92	34.46	30.53	32.39	75.27	16.59	75.52
Approach Delay [s/veh]	7.77		6.93		9.68		11.58
Approach LOS	A		A		A		B
Intersection Delay [s/veh]	8.85						
Intersection LOS	A						



2025 Standalone zoning map designation changes

Planning Commission Public Hearing

Bryan Snodgrass, Principal Planner, City of Vancouver Community Development Department, Comprehensive Planning Division

May 13, 2025



Agenda

- Process for review of separate map and text changes in advance of updated Comprehensive Plan
- Staff recommendations for two standalone rezone applications



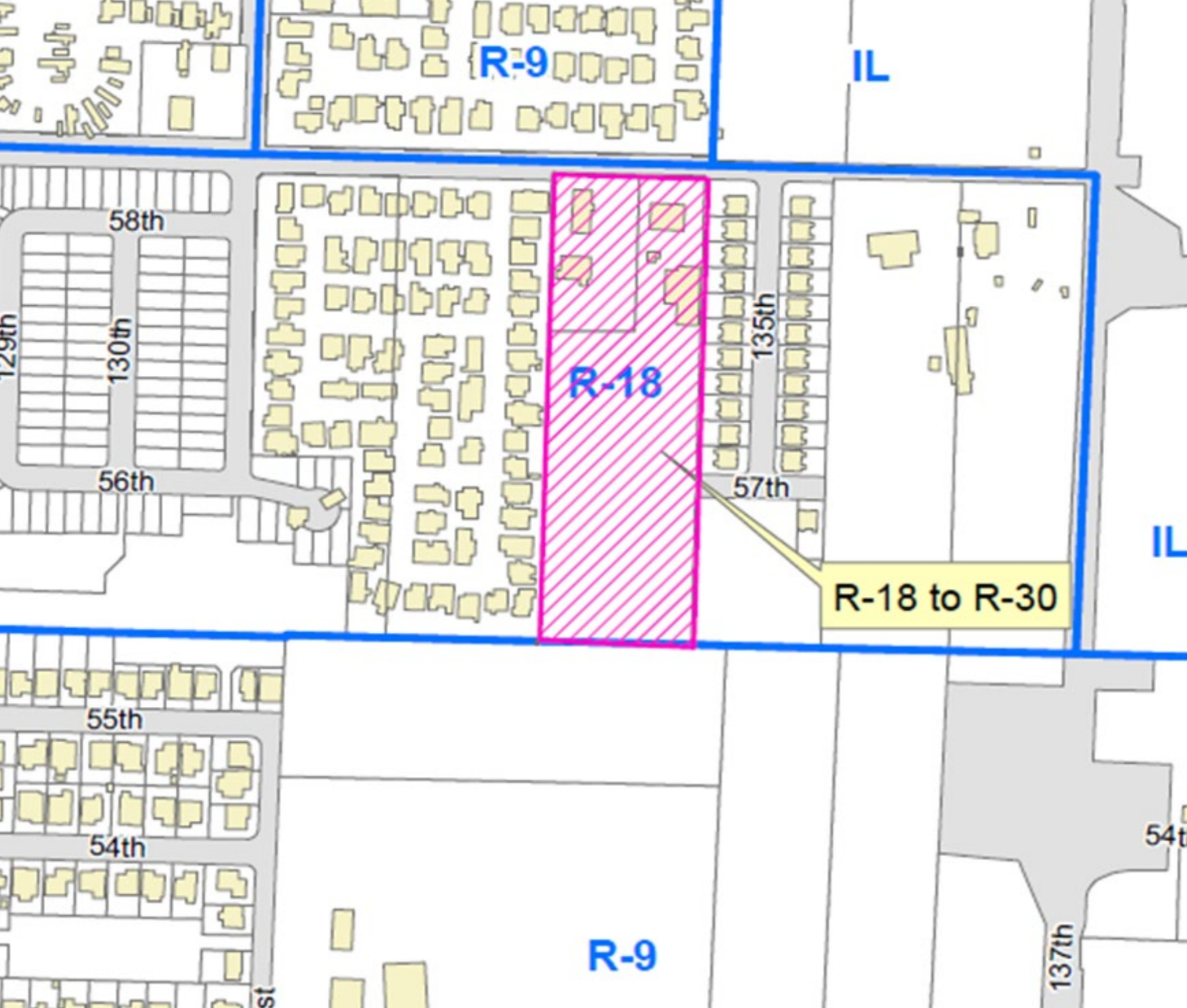
Individual changes prior to updated Comprehensive Plan and zoning

- Citywide updates anticipated December 2025 or early 2026.
- Advance changes limited to providing short term housing, addressing unmet Council priorities, or process issues.



Zone change approval criteria under VMC 20.285.060

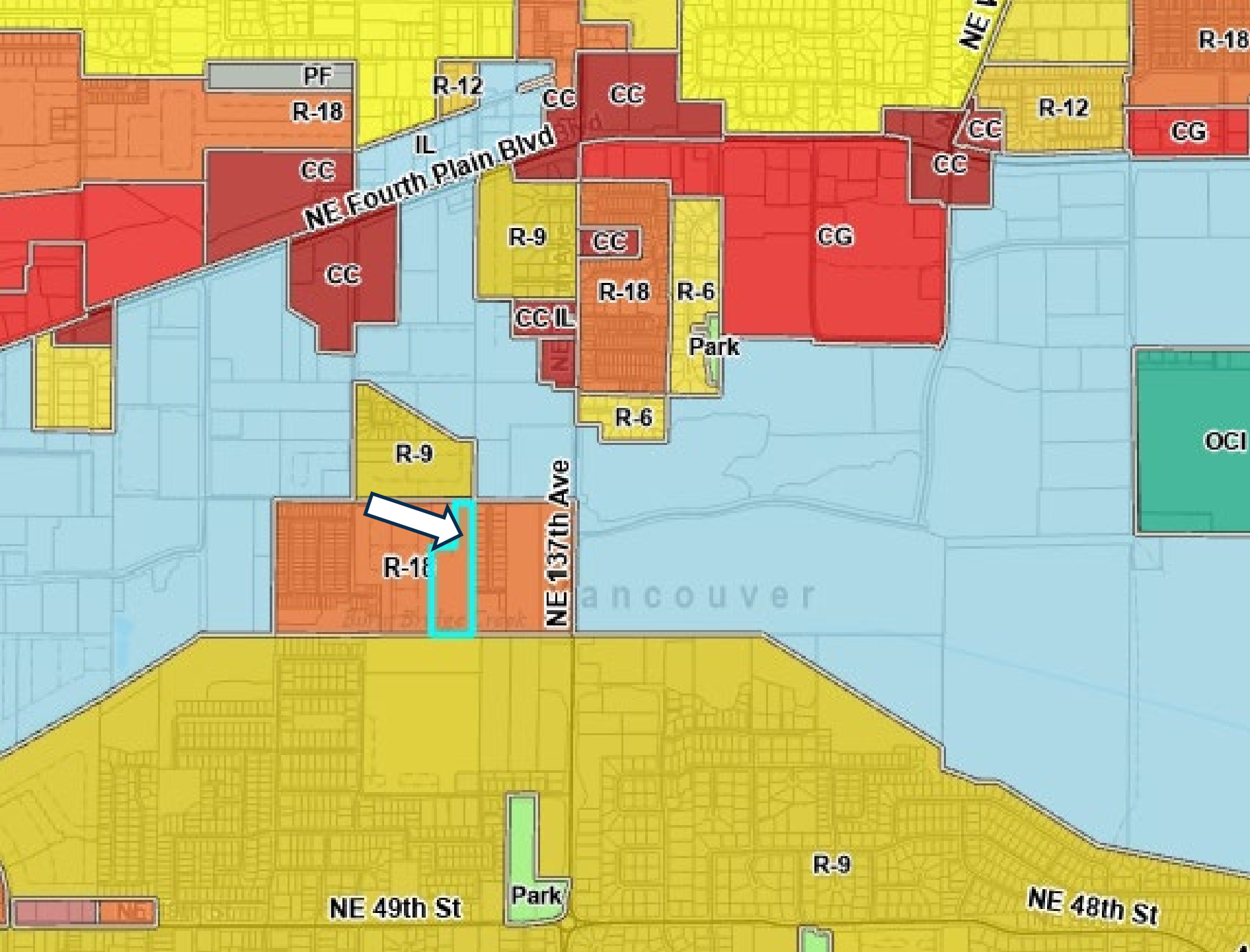
1. Consistency of proposed designation with applicable policies of the Vancouver strategic plan and comprehensive plan, compared with existing designation
2. Change in circumstances since the existing designation was established.



Bella Grove Zone Change – R-18 to R- 30 east of 59th Street and 135th Avenue

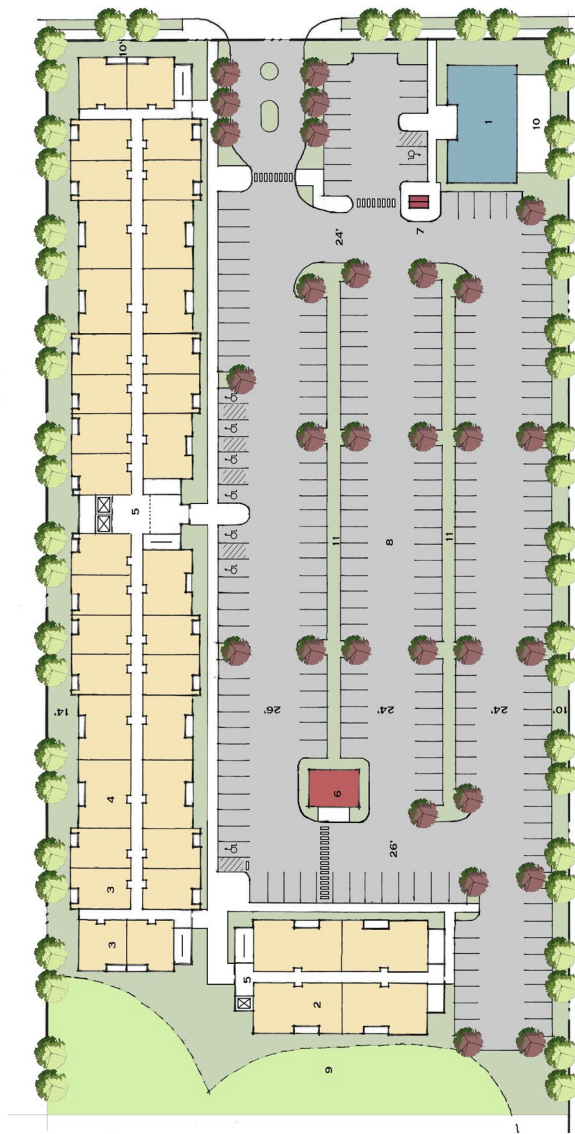
- Mobile home parks north and west, duplexes east, Image Elementary campus south
- Medium Scale Neighborhood in Possibility A and B
- Burnt Bridge Creek at bottom of site. Extensive hydric soils and modeled wetlands throughout.

Bella Grove Zone Change – Regional Zoning



Bella Grove Zone Change – Conceptual Site Plan

- Previous approval for 102-unit market rate garden apartment development on northern 2/3 of site
- Would instead apply for Site Plan approval for 164-unit market rate apartment development (shown) if rezone approved





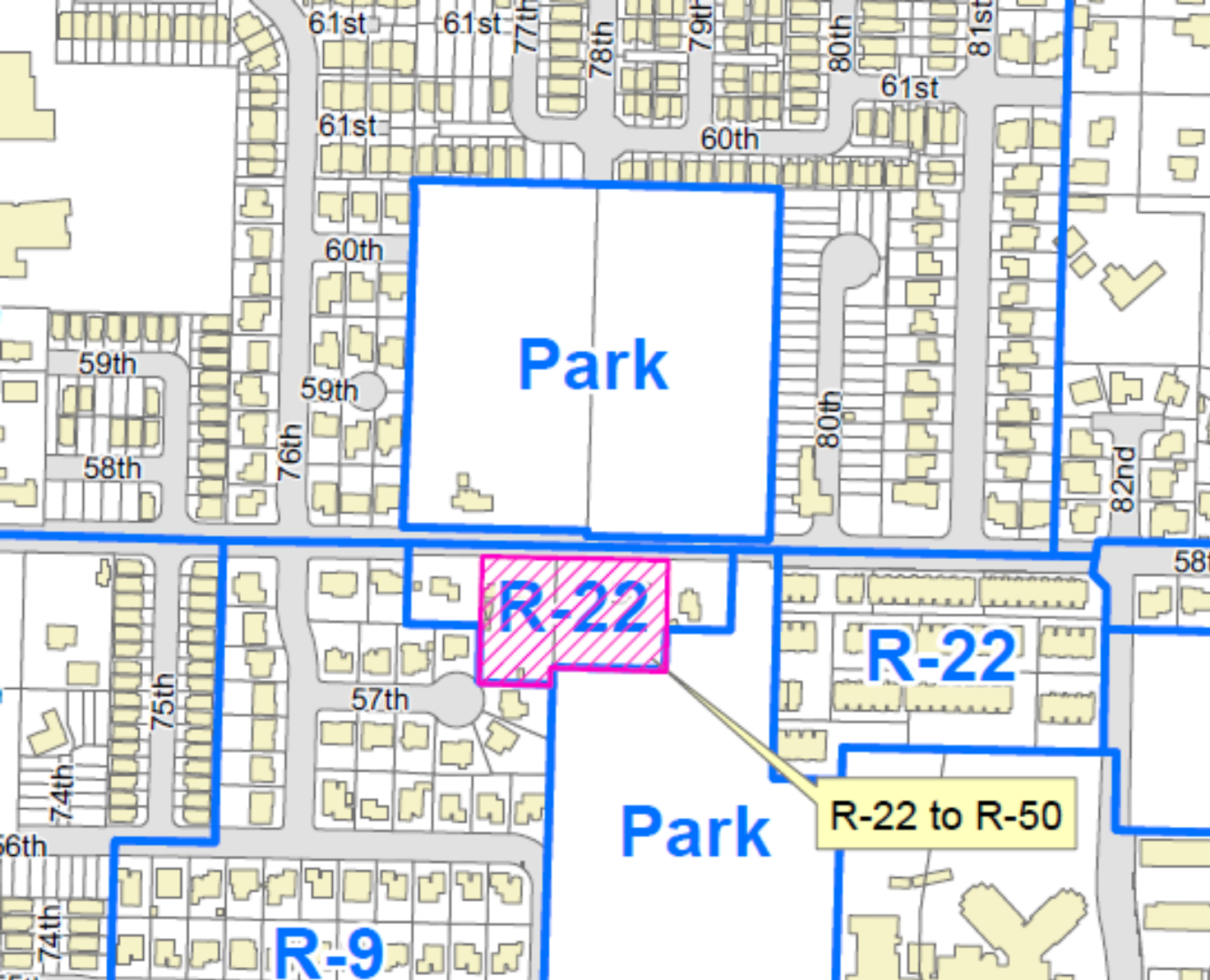
Bella Grove Zone Change – Analysis and findings

- Adds capacity for 62 additional higher density units beyond current allowance
- Generally consistent with density allowances under envisioned future Medium Scale Neighborhood designation
- Abuts existing higher density uses



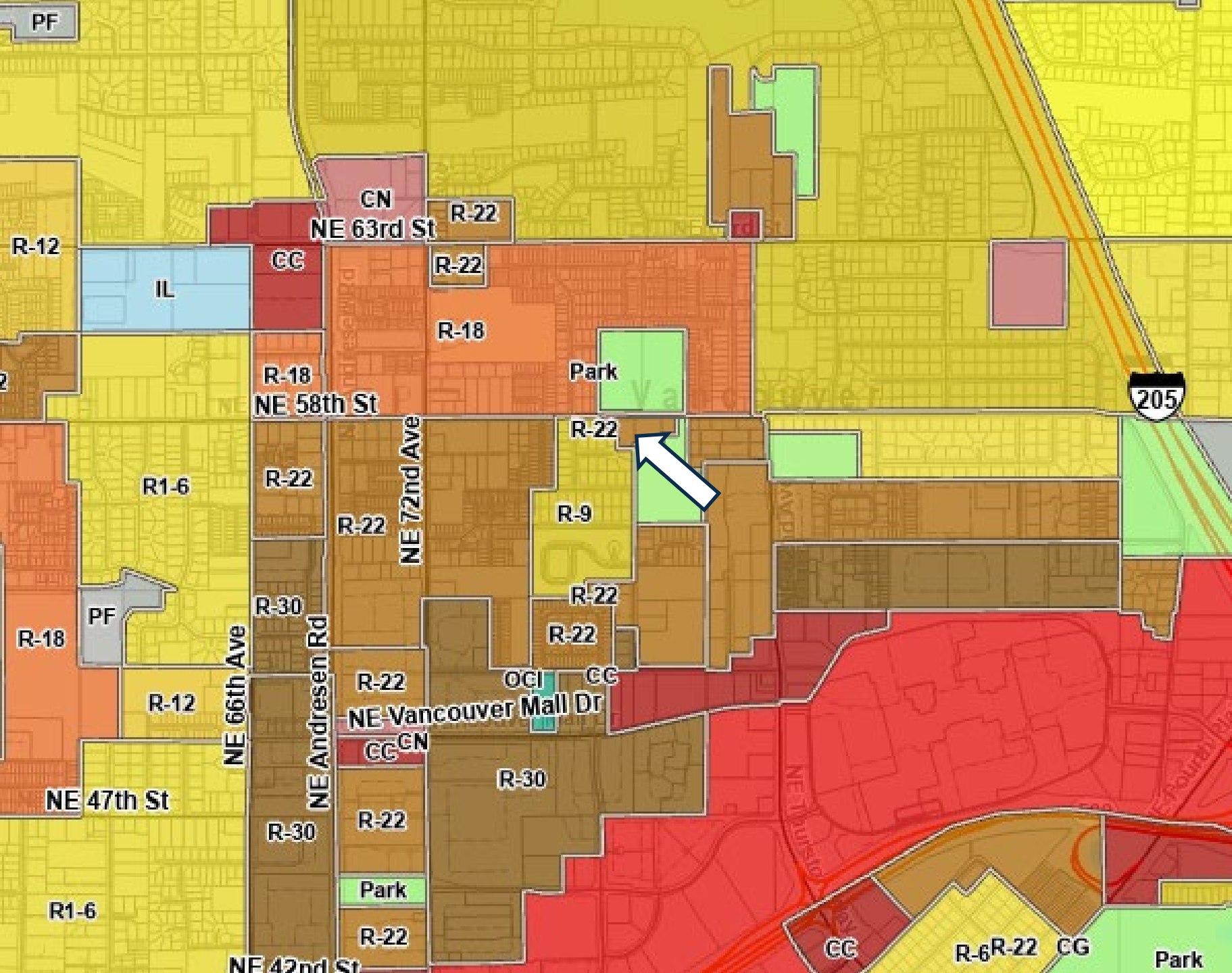
Return to Planning Commission

- Questions of staff, applicant and public testimony, deliberations
- Sample motion: *Based on findings in the staff report and May 13 public hearing, the Planning Commission recommends approval of the Bella Grove zone change from R-18 to R-30, at 13401 and 13309 NE 59th Street, tax lots 107812000 and 107814000.*



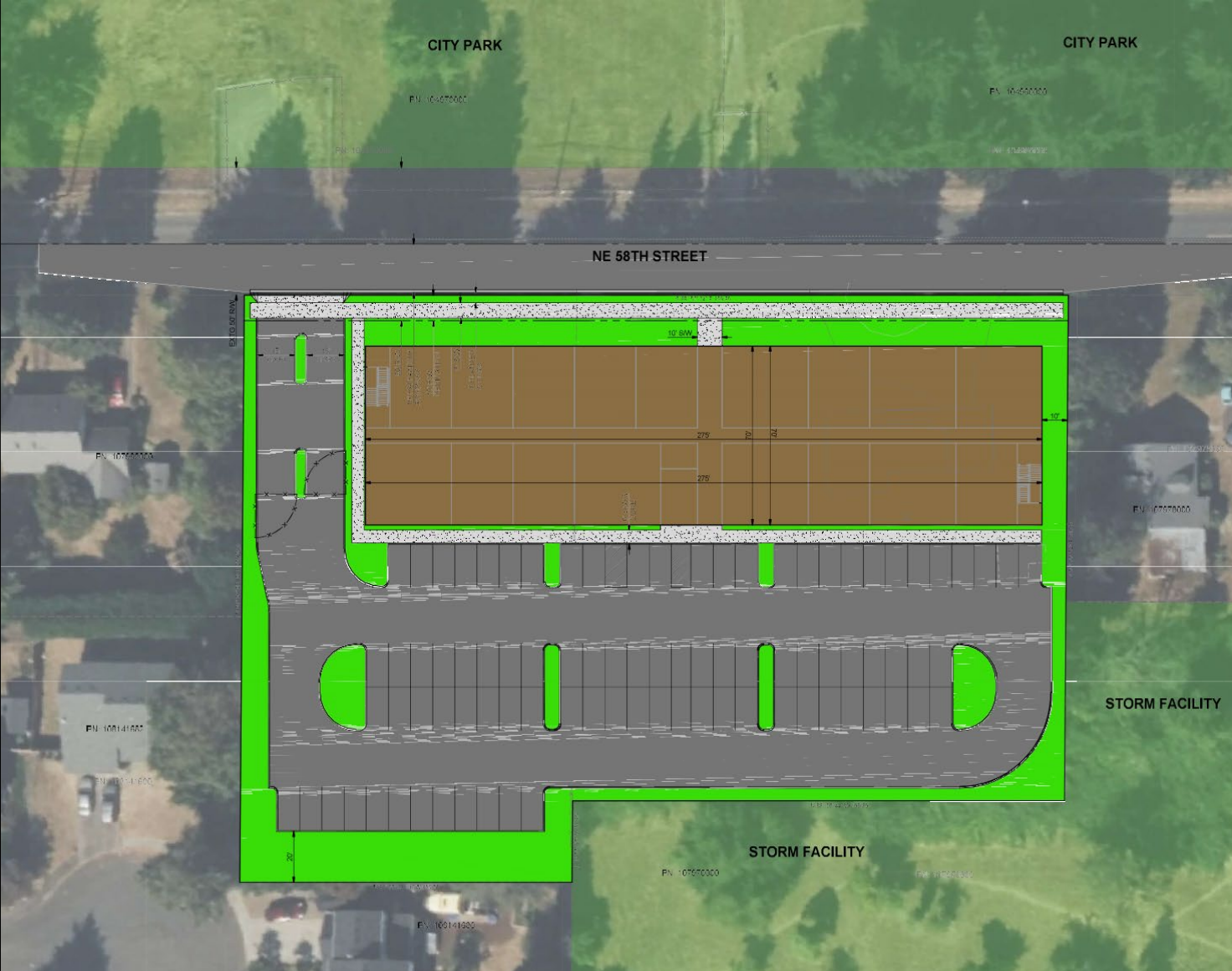
58th Street Zone Change – R-22 to R- 50 at 58th Street east of 76th Avenue

- Park north, single family homesites east and west, stormwater facility and single family homes south
- Medium Scale Neighborhood in Possibility A and B



58th Street Zone Change – Regional Zoning





58th Street Zone Change – Conceptual Site Plan

- 77-unit apartment proposed if rezone approved





58th Street Zone Change – Analysis and findings

- Adds capacity for 45 additional higher density units beyond current allowance
- Generally consistent with density allowances under envisioned future Medium Scale Neighborhood designation
- Some separation between likely apartment footprint and existing abutting homes





Return to Planning Commission

- Questions of staff, applicant and public testimony, deliberations
- Sample motion: *Based on findings in the staff report and May 13 public hearing, the Planning Commission recommends approval of the 58th Street zone change from R-22 to R-50 at 7711 and 7809 NE 58th Street, tax lots 107971000 and 107982000.*

Thank You



bryan.snodgrass@cityofvancouver.us

360-487-7946



From: [Andrew Smith](#)
To: [Planning Commission](#)
Subject: 58th St Rezone Hearing questions
Date: Sunday, May 11, 2025 10:26:31 AM

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> Dear City of Vancouver,
> I have some questions for the hearing on 5/13/25 about the proposed zoning designation from R-22 to R-50 on NE 58th Street.
>
> 1) I cannot find any other examples of R-50 zoning in the City of Vancouver. It seems incongruous to have such high density among lower density single family residences. What makes this site appropriate for the highest density residential zoning in the city?
>
> 2) What potential impacts of this change are anticipated on traffic on NE 58th St., noise in the neighborhood, and increased use of the nearby parks? How will these effects be mitigated with the zoning change?
>
> Thank you,
> Andrew Smith
> 5904 NE 80th Ct.
>

From: [Jay Renaud](#)
To: [Planning Commission](#)
Subject: 58th Street Zoning Public Hearing
Date: Monday, May 12, 2025 8:02:59 AM

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To: City of Vancouver Planning Commission

Re: 58th Street Zoning Public Hearing on May 13th, 2025.

Dear Commissioners:

During the several decades that we have lived at our address of 7402 NE 58th Street, we have welcomed new residents as the area transitioned from semi-rural to highly urban. First there were two storey single family homes. Then there was a multi-storey public housing project. Then there were row homes. All these led to much more traffic on our now thru street which, despite the welcome installation of speed bumps, has become a GPS choice for drivers from west of Andresen who hasten to access Vancouver Mall and the I-205. Most recently, a just-completed dense project of 18 rental units will add further to the busy traffic load. All of these changes we recognize are proper and inevitable given the many desirable features of this part of Vancouver, and the surrounding neighborhood is now a thriving mix of housing styles, life styles and income levels, density and open space. But now we do reject the proposal to rezone and build to R-50 as proposed by the Sunlight group. This is too radical a shift that would threaten the existing positive qualities of life on this street. Those lots should be developed for housing, but at the existing level of R-22, which allow a significant increase in housing here without upsetting the level of serenity that now exists. The project just opened at NE 74th Ct. would be a good model to go into those lots, meeting the community need for increased density while retaining the current flavor of the neighborhood.

Jay and Mary Renaud

From: tx-cherri@sbcglobal.net
To: [Planning Commission](#)
Subject: To the Planning Commission
Date: Monday, May 12, 2025 4:10:03 PM

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- Why are we being railroaded into increasing the number of proposed 80-Plus apartments on 58th Street between the parks? But please don't allow them to change to the high density **R50** for such a small area - something never done before!
- Really that area shouldn't have 34 units, by the park.
- Vancouver has never allowed more density than R-35
- And most every family has more than 1 car, did they answer where these people will park? Probably the streets and 58 Street is narrow!
- Sunlight Apartments has already shown they are sneaky and back-handed to get their way, with the apartments crammed in the end of 62nd Street with only **ONE** entrance/exit (couldn't have an opening on 72nd because of the school). These children still walk home from school thru the neighborhood! And you allowed for 200-plus person complex (not to mention every adult has a car) to be built in the Walnut Grove neighborhood and by a school?? Incredible.
- Aren't you a **PLANNING** Commission -- WHY IS IT NOW BEING ALTERED to the detriment of the school and the neighborhood by hiding his intentions of making as much money as he can, while devaluating our homes with more apartments, not enuf parking, and crowding in more people.
- And speaking of schools, was there a study done of how this will affect the local schools in attendance and growth?
- Was there an environmental study done at all?
- Behind the area of the proposed new apartments is a marshland and floods in that area.
- 58th Street is narrow already, and now has BUMPS but that doesn't seem to slow the cars down much, and now you are

adding more cars trying to get through the streets.

- There is a Senior Living area just down from 58th Street on 82nd Avenue, who take walks around the neighborhoods, and drive. And these apartments will provide more traffic.
- AND adding in the building up of the Raymond Shaffer Park, 58th street will be a mess for several years.

PLEASE don't change the zoning on 58th Street.

A Concerned home-owner, Cheryl Hummel

From: [Anastasiya Kozlovska](#)
To: [Shodgrass, Bryan](#)
Cc: [Kennedy, Rebecca](#); [Hibbs, Kail](#)
Subject: Walnut Grove 58th St Zoning, May 13th Timeline Concern
Date: Monday, May 5, 2025 1:42:26 PM

Some people who received this message don't often get email from anak27@uw.edu. [Learn why this is important](#)

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Hello Bryan, Rebecca, and Kail:

I'm reaching out as a Walnut Grove resident and one of the people neighboring the new proposed development on 58th St. Nice to met you!

This will be quite long, so in advance, I appreciate your time as I share my alarm about the timeline of this project. I worry about the surprising rush on decision-making, considering the magnitude of the proposed change. An R50 development is completely unprecedented for Vancouver. So, it demands a higher level of respect and community input before making such a big decision. I'm surprised that the Planning Committee wants to make a decision on this rezone within less than a week from the release of their staff report and largely based on mere assumptions about the Our Vancouver comprehensive plan, which isn't finalized yet.

-Firstly, Walnut Grove functionally only received notification of the Planning Committee agenda yesterday, leaving us with less than 6 business days to collaborate and testify, which is not *nearly* enough time. We don't think such a big decision should be rushed.

-I would like to consult with the Walnut Grove Neighborhood Association and my neighbors, who are also stakeholders as their houses are bordering this upcoming development. We'd also like a community engagement meeting/workshop with the City before any decision is made. We'd also appreciate it if you reached out to the abutting homeowners who will be affected by this development before making a decision.

-I'm also not seeing a SEPA report or *any* environmental study whatsoever, which I assure you the abutting homes and our overall neighborhood will want to see before any decision can be made. For an unprecedented, four story, all concrete, 77-unit, first *ever* R50 development, I find the staff report to be inadequate. We would like to see way more community involvement before we'll feel comfortable with the Planning Committee's resources and information. Right now, they do not have enough to make an informed decision.

-In regard to the new Comprehensive Plan: I don't think we should assume what the larger milieu of Vancouver Mall will look like until we finalize the Comprehensive Plan and begin planning mindfully with the big picture known: how will this apartment fit into the possible future mixed use/urban version of the plan? The staff report only addresses the possibility of Medium Size development. There's no way to know right now what the long-term Comprehensive Plan will look like, so the report's conclusion feels rushed and premature. R22, a tried-and-true zone, will be easier to fit into the existing Comprehensive Plan; R50, a brand-new concept for the City, should frankly only be considered when the new Comprehensive Plan is finalized.

With barely eight days before a decision is made, it is not nearly enough time for our community to prepare a response and canvas our values and desires for this project. We will need a lot more **accountability** before we allow any decisions to be made on this project. We have grave concerns regarding the environmental impact and suitability of these parcels for the first ever R50 development, for which the current infrastructure simply isn't adequate, and can be detrimental to the Clean Water Facility and Raymond E. Shaffer Parks neighboring it. A sketch overlying an outdated Google Maps photo is not adequate evidence to instill trust. If they cannot prove to our neighborhood that they can build an R50 with proper water runoff, responsibility for wildlife and environment, and wellbeing of neighbors, and other factors--which currently is not adequately investigated--then we will strongly oppose this rezoning.

Nevertheless, we cannot make a decision or prepare a testimony at this time other than to oppose because we do *not* have the necessary information and not nearly enough time to investigate this. Time is the main issue here.

If you can provide any more documentation used in the staff report, especially the traffic survey, or would like to share your thoughts, please let me know. I'm open to meeting in the coming days if that is easiest, email is fine, too. Otherwise, May 13th is too soon to make this decision. From a person who grew up in Vancouver to you, people who care about Vancouver enough to dedicate your careers to the City, I think we'll be on the same page when I say that one guy, Serghei, should not be the only or even the primary voice we listen to when making sweeping changes to the entirety of Vancouver's zoning conventions--and forever changing Walnut Grove--without hearing the existing residents' voices.

Thank you for your time and regards!

Best,

Anastasiya
Walnut Grove Resident

From: [Margot Rice](#)
To: [Planning Commission](#)
Subject: Zoning change
Date: Sunday, May 11, 2025 10:28:32 AM

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Dear Planning Commision,

The North Image neighborhood does not need another apartment building built. Currently there is Brookside, Oak Creek, Alder Creek and Haven Place all on NE 49th St. within a mile and a half of the proposed zoning change site. App of these apartments have vacancies. I do understand the need for housing in Vancouver, but it is not needed in North Image. 49th St. is already congested and more apartments will only make traffic worse. Please do not approve the zoning change.

Sincerely,

Margot Rice

From: [CHARLES BRASHER](#)
To: [Shodgrass, Bryan](#); [Planning Commission](#)
Cc: anak27@uw.edu
Subject: Written Testimony for May 13, 2025 Public Hearing on Proposed zoning change for two lots on NE 58th street
Date: Sunday, May 11, 2025 2:36:37 PM

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I am writing in regards to the above proposed zoning change from R-22 to R-50 on 1.6 acres (2 lots) that sit directly north of the city Water Quality Storage and Treatment Facility. Before I retired I worked as an Professional Registered Environmental Engineer in the midwest. At one point in my career I handled planning and construction of Federally Funded Wastewater Treatment Plants in the midwest which included many cities large and small. Most of the treatment systems had combined sewer systems and it was not cost effective to separate them. This meant that all storm and wastewater had to be treated at a wastewater treatment plant. The City of Vancouver was very forward thinking because the separation of the storm and sanitary sewer systems in Vancouver has been in place since 1890. By contrast, many cities, including Portland, have always allowed combined sewer systems and later found it nearly impossible, financially, to separate them. This has led them to have to capture and treat all wastewater from the combined sewer systems. This is a very costly and difficult engineering challenge, just think about Portland's Big Pipe Project, completed in 2011, cost \$1.4 billion with most of the financing from sewer ratepayers.

Many years ago storm water was mostly clean and was released to rivers and streams untreated with minimal impact. But that is no longer the case, stormwater runoff from our streets contains many petroleum products from our cars as well as other pollutants and cannot be released untreated to our waterways.

Directly south, behind the proposed project, is one of the City of Vancouver's Water Quality Storage and Treatment Facilities. The proposed 77 unit apartment building would add a large amount of stormwater into the treatment facility and is unacceptable. The Water Quality Storage and Treatment Facility is mainly grass that is kept mowed because of wildfire concerns. In the past it was not mowed and that made it much better for storm retention, control and treatment. It was also very beneficial as wildlife habitat. Now, since it is kept mowed, it has also become a prime place for people to walk their dogs. Not everyone picks up after their dogs which causes a further strain on the treatment capacity of the facility. Another 77 apartments means at least several hundred more people would have access to the Water Quality Storage and Treatment Facility right out their backdoor. This is not acceptable, access to the Facility should be minimized and not encouraged by building such a large apartment building on a small piece of land.

In conclusion, it is my professional opinion, that the proposed zoning change should not be approved because of the unacceptable increased demand that it puts on the City of Vancouver Water Quality Storage and Treatment Facility.

Charles Brasher PE

7709 NE 57th Circle
Vancouver 98662
(360)601-3271

From: [Pavlo Zhurbytsky](#)
To: [Planning Commission](#)
Subject: R-22 to R-50
Date: Sunday, May 11, 2025 2:15:04 PM

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To: Vancouver Planning Commission
Re: Opposition to Rezoning Proposal for 58th Street Development (R-22 to R-50)

Dear Members of the Planning Commission,

I am writing as a concerned resident of Walnut Grove to express my strong opposition to the proposed rezoning of the property near 58th Street from R-22 to R-50, which would allow for the construction of a 4 to 5-story, 77+ unit apartment complex.

Walnut Grove is a quiet, family-oriented neighborhood that was never designed to handle the level of density this development would bring. Our existing infrastructure—including narrow roads, local parks, schools, and water systems—cannot support the dramatic increase in traffic and population this proposal entails.

Here are my primary concerns:

Traffic and Safety: The estimate of 350 new daily car trips on 58th Street is deeply troubling. This narrow street is already congested, and additional traffic poses serious safety risks for children, pedestrians, and cyclists.

Lack of Environmental and Community Impact Studies: It is unacceptable that such a large-scale project is moving forward without a thorough environmental review or meaningful input from the Walnut Grove community.

Overcrowding and Strain on Public Resources: Our schools are near capacity, and our parks and green spaces are vital for community wellbeing. A development of this size would overburden these essential services.

Property Devaluation and Loss of Neighborhood Character: For many homeowners, this neighborhood represents a lifetime investment. Dramatically increasing density with no clear benefit to current residents risks lowering property values and fundamentally altering the character of Walnut Grove.

Luxury Development, Not Affordable Housing: Despite claims, this project does not address the need for truly affordable housing. It appears to be aimed at maximizing profit, not solving the housing crisis.

I urge you to reconsider this rezoning application. We ask for responsible, community-centered development that respects the history, scale, and needs of Walnut Grove.

Sincerely,
Green Tours LLC
Vancouver WA
5033338319

From: [Charles B. Baker](#)
To: [Sustainable Water](#), [Planning Commission](#)
Cc: [Boulder County](#)
Subject: Proposed zoning change at two lots on NE 58th street - Written Testimony
Date: Sunday, May 11, 2025, 12:17:27 PM





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Sent from my iPad

Above are pictures of the beautiful old trees that would be removed for the proposed development of the 1.6 acre site. My wife and I bought our house at 7709 NE 57th Circle in 1997 in the Robin Glen Development. At the time neither 58th street nor Thurston way went all the way through as they do now. Over the years we have seen many developments in the area. For the most part they have been well thought out and made sense for the area. Even the smaller homes on smaller lot sizes make sense because of the current housing concerns. But this new zoning change from R-22 to R-50 makes no sense at all and we are strongly against it. It will totally change the nature of our area and not for the better.

Even though we live in the city and close to the mall, the area still has a nice mix of properties that make it a good neighborhood to live in. The zoning change is totally uncalled for, R-22 is fine for the 1.6 acre site (2 lots). The new Schaffer park sits right across the street from it and a Water Quality Storage and Treatment facility directly behind it. The proposed 77 unit apartment building will totally overload the small property it is located on; not enough parking on property site, 58th street is a narrow street designated for kids and school buses and the increased traffic poses a danger for them, water quality control and treatment facility will be greatly impacted by not only a large amount additional storm water from the large 77 unit apartment building but also by an additional large number of people using it as dog walking park directly behind the property, and the removal of the beautiful old trees pictured above in a designated "Tree City".

Charles Brasher & Betty Lavis
7709 NE 57th Circle
Vancouver 98662
(360) 601 3271

From: [Ana From Walnut Grove](#)
To: [Planning Commission](#)
Subject: Testimony Regarding 58th Street Rezone Proposition Public Hearing: Municipal Code
Date: Monday, May 12, 2025 3:38:48 PM
Attachments: [image.png](#)
[image.png](#)
[image.png](#)
[image.png](#)
[image.png](#)

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Regarding 58th Street Rezone Proposition Public Hearing
May 13th, 2025 Planning Commission Meeting

Dearest Planning Commission:

I'm writing as a resident of an abutting home to the proposed 58th Street development and volunteer advocate for over 100 of my Walnut Grove neighbors, each of whom I spoke with personally and extensively. I would like to express our collective alarm and opposition to the proposed R-50 rezone, addressed in the following testimonies.

Thank you in advance for giving our testimonies the same attention and time as you have given to the Applicant's Narrative and Staff Report. Your time and dedication to community priorities and corporate accountability are not unnoticed.

Regarding Vancouver Municipal Code

On May 13th, the Commission and the Public will have a hearing deliberating the first *ever* R-50 development in the history of our Vancouver, Wash. I'm writing to advocate for a look at the Vancouver Municipal Code. Reading the Vancouver Municipal Code requirements for High Density Housing, it's clear that Walnut Grove and 58th Street neighborhoods are simply inappropriate for an R-50 development, and such a development would be an appealable violation of the Code.

I will be referencing "VMC 20.400 ZONING DISTRICTS," specifically "Chapter 20.420 HIGHER DENSITY RESIDENTIAL DISTRICTS."

20.420.025(A):

"1. Areas occupied by a substantial amount of multifamily development, but where factors such as narrow streets, on-street parking congestion, local traffic congestion, lack of alleys and irregular street patterns restrict local access and circulation and make a lower intensity of development desirable."

Response:

- **Lack of substantial multifamily development** (VMC 20.420.025(A)(1)): There are only two multifamily developments within Walnut Grove along 58th Street. One of those is a duplex, so approximately two-family shared dwelling, not true multi-family. Each of these is two stories tall. The overwhelming majority of land within Walnut Grove is single family housing, with two out of four abutting homes being R-9, low-density, single-family homes. Across 58th street is Raymond Shaffer Park, which requires attention, care, and priority in its development, and easy access once rebuilt. Currently, it is an undermaintained urban forest. Behind the proposed parcels is a Water

Treatment Facility, technically a Park designation, also wildly incompatible with a sudden multifamily development. Therefore, Walnut Grove nearest to 58th Street doesn't fit the "substantial amount of multifamily development" criteria.

20.420.025(A) Cont:

"1. Areas occupied by a substantial amount of multifamily development, but where factors such as narrow streets, on-street parking congestion, local traffic congestion, lack of alleys and irregular street patterns restrict local access and circulation and make a lower intensity of development desirable."

"3. Properties [R-18 and above] must have access from collector or arterial streets, such that vehicular travel to and from the site is not required to use local access streets through lower-density residential zones."

Response:

- **Narrow, irregular streets, no on-street parking, lack of alleys** (VMC 20.420.025(A)(1)): In the area immediately bordering the proposed development, 58th Street is 19' wide, with no pedestrian or bike access, nor street parking on either side, and is a 25-mph collector road. It is not an arterial, and not designed for high density through traffic, but rather intended for local neighborhood access and access to Shaffer Park. There are no alleys, and in fact, an "irregular" street pattern of a sudden narrowing with a barricade (see photos below). There are "*No Parking*" signs on both sides of 58th Street immediately closest to the proposed development.



Photo description: Photos of 58th Street nearest to the proposed development and Shaffer Park, about 19' wide with no parking, pedestrian access, and narrow. Plus, a *road blocked* sign.

- **Raymond Shaffer Park:** Shaffer Park's developers plan on creating pedestrian paths and bike lanes, further narrowing 58th street. The park *must* take priority in the conversation around 58th

Street, we cannot overshadow its development with the highly unnecessary conversation of “how in the world do we justify R-50 street code compliance” when R-22 would be far less burdensome and straightforward, maintaining focus on the Shaffer Park.

- **58th Street Congestion** (VMC 20.420.025(A)(1), (3)): 58th Street is already congested each morning due to overflow with cars going to Walnut Grove Elementary School. Cars line up twice a day for drop off and pick up starting at 72nd Ave and backing up to 58th street. This congestion is already distressing to surrounding neighbors on the corner of 72nd Ave and along 58th St, who had to put up permanent “*do not block driveway*” signs due to idling cars. This doesn’t sound like a street with good “circulation,” which is a code requirement for high intensity development (VMC 20.420.025(A)(1)).
- I also spoke with school staff personally. They’ve had to incorporate new makeshift traffic management signs. Staff take time away from other duties to do their best to direct traffic. They are *overwhelmed*.
- **Use of Neighborhood Streets** (VMC 20.420.025(A)(3)): The congestion already encourages people to regularly use neighborhood streets (62nd Street, 75th Ave, 76th Ave, 81st Ave, 84th Ave, all of which are low density R-9 neighborhood streets) to bypass 58th Street during peak hours when accessing 63rd Street and NE Andresen Rd. People regularly have to put up “*slow down for kids*” signs. These bypassing cars do not respect our speed limits and often get road rage when they have to stop for neighbors who are backing in and out of driveways. Adding hundreds more people to this already overstressed road milieu would be a frank safety issue—especially since we are also planning to encourage more foot traffic to our new Raymond Shaffer Park. I frankly worry for these future pedestrians, school children, and bicyclists.
- **Congestion Cont. and Neighborhood Streets** (VMC 20.420.025(A)(1), (3)): 77 new units will add more parents in cars trying to access the elementary school, plus more cars congested behind them (350 more per day!), tempted to bypass the traffic and use neighborhood streets. This would encourage the violation of “*vehicular travel to and from the site is not required to use local access streets through lower-density residential zones.*” (VMC 20.420.025(A)(3)). Realistically, Sunlight Rentals residents will most certainly use our neighborhood and private streets to bypass 58th Street on their way to major arterials.

Therefore, considering these circumstances, a high-density development, *especially* unprecedented R-50, will be a direct violation of VMC and a detriment to the already congested 58th Street, an underdeveloped collector street never intended to be a high density arterial.

20.420.025(A) Continued:

“2. Areas where properties are well-suited to multifamily development, but where adjacent single-family developments or public open space make a transitional scale of development (height and bulk) desirable. There should be a well-defined edge such as an arterial, open space, change in block pattern, topographic change or other significant feature that provides physical separation from the single-family area. (This is not a necessary condition where existing moderate-scale multifamily structures have already established the scale relationship with abutting single-family areas).”

Response:

- **Existing moderate scale structures** (VMC 20.420.025(A)(2)): Does not apply. All surrounding homes are single-family homes.
- **Well-defined edge** (VMC 20.420.025(A)(2)): there is no topographic, change in pattern, arterial, or other physical separation from single family areas. Two out of four houses do not even have an honest fence installed, and neighbors are distressed and unsure of where their property line even

is. There is no fence delineating the Stormwater Treatment Facility and the proposed development. For the remaining two R-9 single family houses abutting, the property has no topographic, street, for open space separation; other than being on a sharply inclined slope with severe concern for flooding and inappropriate water runoff once the all-cement parking lot of built. Otherwise, this development will be in our backyards, violating VMC 20.420.025(A)(2).

- **Transitional scale (height and bulk)** (VMC 20.420.025(A)(2)): The tallest developments in this neighborhood are two-stories tall. The majority of density here is single-family housing, hundreds of them. And, to reiterate, two out of the four abutting homes are R-9, and *all* of them are single-family houses. The owners of these houses intend to live here to old age, with some people already publishing deeds and trusts stating intention to keep these as single-family houses for their families. Unless forced to displace, which none of us desire, as we vehemently oppose R-50 rezoning for our genuine safety and neighborhood livability.
- **Height and bulk not desirable** (VMC 20.420.025(A)(2)): A four-to-five story R-50 would be wildly out of proportion for this majority low-density (R-9), single-family house neighborhood and our small, underdeveloped collector street. Four stories in height would also be twice the size of current developments (2-stories tallest) and wildly out of proportion and R-50 in this case would not be “transitional” as required above. It would also block our collective view of Shaffer Park because of the unequal height bulk. It isn’t just undesirable; it would be wholesale, non-incremental, and ruin our park and nature focused landscape.

20.420.025(C):

“5. [R-30 and above Zone Location Criteria] Principal streets in the area shall be sufficient to allow for two-way traffic and parking on both sides of the street. Vehicular access to the area shall not require use of streets passing through lower-density residential zones.”

Also Referencing Development Standard 503, 2.4 Parking for Vehicles:

“Parking in a fire lane shall be prohibited by approved markings meeting the standard of the Vancouver Fire Department and the City of Vancouver Transportation Department to the following public or private streets or lanes:

2.4.1 Access roads less than 28’ in width, no parking is allowed on street

2.4.2 Access roads 28’ wide but less than 36’ in width, parking is allowed only on one (1) side;

2.4.3 Access roads 36’ and greater in width, parking is allowed on both sides.

2.4.5 Additional access width may be required where ladder truck access or other access issues are identified. In those cases access roads in excess of 20’ in width may require no parking fire lane signage.”

Response:

- **Parking on both sides:** 58th Street is a 19’ road in the stretch between the proposed development and Raymond Shaffer Park. As it stands now, no parking is allowed in that portion, so R-30 and above would be a code violation due to parking. While there may be capacity to expand this to perhaps up to 28’, allowing parking on one side – which Shaffer Park is planning – this will likely make the street even narrower, especially with the addition of pedestrian walkways. That would still not satisfy the parking on both sides rule applying to R-30 and above, which requires 36’ width, that 58th street will never accommodate.
- **Ladder fire truck access:** with existing congestion, plus predictably worse congestion and narrower 58th Street after Raymond Shaffer Park and hypothetical R-50 are done (350+ new car trips daily, plus foot and bike traffic), access for firefighters would be a big issue. 58th street is the only access street for these apartments, as behind them are single family homes and a Stormwater Treatment Facility. R-50 vs R-22 means more crowding, less access to a potential fire; and a four

story 77-unit fire would be harder to fight on the narrow 58th Street, and more likely to spread to the bordering Stormwater Facility, which is very high risk for fires in the summer.

20.420.025(E): *R-50 Zone Location Criteria*

“1. Areas that are located within an urban center, defined in a subarea plan, or other location generally appropriate for higher-density multifamily housing.”

2. Areas of sufficient size to promote a high-quality, higher-density residential environment with close proximity (and good pedestrian connections) to public open spaces, neighborhood-oriented commercial services, other residential amenities, major employment centers, open space and recreational facilities.

“3. Properties near business and commercial areas that are or can be developed with compatible height and bulk.”

Response:

- **Pedestrian connections** (VMC 20.420.025(E)(2)): Very poor pedestrian connections along the entire length of 58th St, no pedestrian walkway near proposed development at all.
- **Urban center** (VMC 20.420.025(E)(1)): We are vast majority suburban and low density urban. We are not part of a subarea plan.
- **Commercial areas** (VMC 20.420.025(E)(3)): Not applicable at all. Abutting are parks and single-family homes, not nearly compatible bulk to comply with R-50 location criteria.

20.420.025(E) Cont:

“5. Areas that are served by major arterials and where transit service is good to excellent and street capacity could accommodate the traffic generated by high-density development. (Ord. M-4377 § 2(b), 2022; Ord. M-3730 § 12, 2005)”

Response:

- **Poor transit service** (VMC 20.420.025(E)(5)): The applicant describes a C-Tran 78 route stop half a mile from the development. Please view photos below of the undermaintained, infrequently serviced stop. It is not a transit center, and certainly not “good,” not nearly “excellent” service. Service is every 30 minutes on weekdays and every hour on weekends. These are not stops that can service 77 new units. People will understandably elect to take cars instead. Again, 58th cannot accommodate that increased congestion.



Photos description: Images of 78 bus stop On NE Andresen Rd, referenced as half a mile from proposed development in Staff Report; service is every 30 minutes on weekdays, one hour on weekends. “Good” to “excellent” characterization is arguable.

- **Arterial** (VMC 20.420.025(A)(2), (E)(5)): 58th Street is not an arterial per WSDOT maps. It is a collector street. This distinction is important to the WSDOT. R-50 requires an *arterial*.

For these reasons, just VMC 20.420.025(A), (C), and (E) alone disqualify Walnut Grove from most high-intensity development above R-22, let alone R-50. An R-18 development would be most suitable, though our neighborhood feels R-22 would be mildly more tolerable. R-50 would be a blatant code violation as it stands, however. Thank you again for your time and reverence for our very own Municipal Code.

Regards,

Anastasia K.

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