City of Redmond

Redmond
WASHINGTON

Agenda

Study Session

Tuesday, September 23, 2025
7:00 PM

City Hall: 15670 NE 85th St; Remote: Comcast Ch. 21/321, Ziply Ch. 34, Facebook (@CityofRedmond), Redmond.gov/rctvlive, or 510-335-7371

City Council

Mayor
Angela Birney

Councilmembers
Vanessa Kritzer, President
Jessica Forsythe, Vice President
Jeralee Anderson
Steve Fields
Angie Nuevacamina
Osman Salahuddin
Melissa Stuart

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AGENDA

ROLL CALL

1. Environmental Sustainability Action Plan 2025 Refresh – Strategy Review

Department: Executive, 45 minutes

Attachment A: Draft Strategies and Actions
Attachment B: 2020 ESAP Actions Crosswalk
Attachment C: Engagement Summary
Attachment D: Presentation

Legislative History

7/22/25	Committee of the Whole - Parks and Environmental Sustainability	referred to the City Council Study Session

2. Capital Facilities Plan 2050- General Government

Department: Parks and Recreation, 30 minutes

Attachment A: Draft Capital Facilities Plan 2025- General Government
Attachment B: Presentation

Legislative History

6/24/25	Committee of the Whole - Parks and Environmental Sustainability	presented

3. Redmond Town Center Master Planned Development and Development Agreement - Quasi Judicial

Department: Planning and Community Development, 60 minutes

Attachment A: Technical Committee Report and Recommendation
Attachment B: Draft Development Agreement and Exhibits
Attachment C: Issues Matrix

Legislative History

8/4/25	Committee of the Whole - Planning and Public Works	referred to the City Council Study Session

4. Council Talk Time

10 minutes

ADJOURNMENT

Meeting videos are usually posted by 12 p.m. the day following the meeting at redmond.legistar.com, and can be viewed anytime on Facebook/YouTube (@CityofRedmond) and OnDemand at redmond.gov/OnDemand

Memorandum

Date: 9/23/2025
Meeting of: City Council Study Session

File No. SS 25-059
Type: Study Session

TO: Members of the City Council
FROM: Mayor Angela Birney
DEPARTMENT DIRECTOR CONTACT(S):

Executive	Lisa Maher	425-556-2427

DEPARTMENT STAFF:

Executive	Jenny Lybeck	Sustainability Manager
Executive	Micah Bonkowski	Sustainability Program Administrator

TITLE:
Environmental Sustainability Action Plan 2025 Refresh - Strategy Review

OVERVIEW STATEMENT:
In March 2025, the City of Redmond began the update to 2020 Environmental Sustainability Action Plan (ESAP) with the goal of prioritizing strategies for the next five years and aligning with Redmond 2050. Throughout the summer months, staff conducted outreach to better understand community barriers and priorities as it relates to sustainability and climate action. Similarly, a detailed analysis was completed to quantify pathways to the City's climate and sustainability goals. During the September 23 Study Session, staff will review community feedback, discuss the proposed Five Big Moves and the strategies identified to advance progress towards the City's goals, solicit feedback on the Plan framework, and review next steps.

☒ **Additional Background Information/Description of Proposal Attached**

REQUESTED ACTION:

☐ **Receive Information** ☒ **Provide Direction** ☐ **Approve**

REQUEST RATIONALE:

- **Relevant Plans/Policies:**
  Environmental Sustainability Action Plan (ESAP), Climate Vulnerability Assessment, Climate Emergency Declaration, Redmond 2050 Climate Resiliency and Sustainability Element
- **Required:**
  N/A
- **Council Request:**
  N/A

- **Other Key Facts:**
  - The 2020 ESAP commits Redmond to refresh the plan every five years. This allows the City to evaluate new strategies and reprioritize efforts based on key performance indicator progress.
  - The City is working with the consulting firm Kim Lundgren Associates (KLA) to complete the update.
  - Key objectives for the Plan update include:
    - Align with Redmond 2050 and the Climate Resilience and Sustainability Element.
    - Co-create a prioritized, actionable 5-year workplan in partnership with community.
    - Establish a long-term plan to meet 2040 and 2050 sustainability goals.
    - Strengthen partnerships with stakeholders across the community to accelerate progress.
    - Improve transparency and community understanding of the ESAP in implementation and inspire action.
  - The 2025 Refresh builds on years of climate action, including significant advancements towards City's climate and sustainability goals because of Redmond 2050 code changes and the opening of light rail.
  - A crosswalk between the 2025 proposed actions and the 2020 ESAP actions is included in Attachment B. A summary of the 168 actions within the 2020 plan includes:
    - 78 actions were removed because they are complete or ongoing
    - 7 actions were removed because they are no longer relevant
    - 55 actions were migrated to 2025 plan
    - 28 actions were identified as 2030+ actions
  - Work completed to date, and the 2025 proposed actions put Redmond on a path to achieve 2050 GHG reduction targets.

OUTCOMES:
Outcomes from the Study Session include Council feedback on the proposed strategies and actions.

Staff anticipates the update process will conclude in Q4 2025 and include an updated plan document with tools to effectively communicate the plan. Community engagement and activation throughout the plan update process will support ongoing implementation efforts.

COMMUNITY/STAKEHOLDER OUTREACH AND INVOLVEMENT:

- **Timeline (previous or planned):**
  - June: solicit community feedback on barriers and other sustainability actions via events and community questionnaire.
  - July/August: host focus groups and conduct more targeted outreach around possible priority actions.
  - September/October: solicit feedback on draft plan framework and priorities
  - October/November: solicit feedback on draft 2025 plan
  - Ongoing: raise awareness about climate and sustainability work and opportunities to get involved
- **Outreach Methods and Results:**
  - Community office hours: April 15, May 20, June 26
  - Environmental Sustainability Advisory Committee meetings: April 28, May 22, July 16
  - Sustainability Hosted Community Workshops/Events: Flatstick Climate Trivia Night (June 24), ESAP Refresh Community Workshop (July 16), Picnic (August 23)
  - Community Events: Beat the Bunny (April 12), CHIME Music Festival (June 14), Sounders Watch Party (June 23), Derby Days (July 12), Rockin on the River (August 13 and 20)

- Informational Presentations: OneRedmond (April 24), Planning Commission (August 27) Human Services Commission (September 8)
- Non-profit partnerships: Indian American Community Services, United Hub, Centro Cultural Mexicano, Sustainability Ambassadors
- Digital and print outreach via social media, FOCUS, and email newsletters

- **Feedback Summary:**
  Reoccurring themes heard across events and stakeholders include:
  - Desire for climate education and resource promotion through accessible (non-social media or email) channels
  - Desire for community programming for climate action
  - Affordability is a barrier, especially for energy efficiency home upgrades
  - Concern about grid capacity and power outages increasing through electrification efforts
  - Desire to make public transit more connected and thus accessible within Redmond

A full summary of engagement efforts and feedback heard is included as Attachment C.

BUDGET IMPACT:

Total Cost:
2025/2026 budget: $175,000

Approved in current biennial budget: ☒ **Yes** ☐ **No** ☐ **N/A**

Budget Offer Number:
2025/2026 Environmental Sustainability

Budget Priority:
Healthy and Sustainable

Other budget impacts or additional costs: ☐ **Yes** ☐ **No** ☒ **N/A**
If yes, explain:
N/A

Funding source(s):
Grant funds
General Fund

Budget/Funding Constraints:
N/A

☐ **Additional budget details attached**

COUNCIL REVIEW:

Previous Contact(s)

Date	Meeting	Requested Action

1/28/2025	Committee of the Whole - Parks and Environmental Sustainability	Provide Direction
3/4/2025	Business Meeting	Approve
4/22/2025	Committee of the Whole - Parks and Environmental Sustainability	Provide Direction
5/27/2025	Study Session	Receive Information

Proposed Upcoming Contact(s)

Date	Meeting	Requested Action
10/28/2025	Study Session	Provide Direction
12/2/2025	Business Meeting	Approve

Time Constraints:
The City is targeting adoption of the 2025 ESAP Update by the end of the year.

ANTICIPATED RESULT IF NOT APPROVED:
Delays in approvals would result in less capacity allocated towards implementation.

ATTACHMENTS:
Attachment A: Draft Plan Framework, Strategies, and Actions
Attachment B: 2020 ESAP Action Crosswalk
Attachment C: Engagement Summary
Attachment D: Presentation

2025 Environmental Sustainability Action Plan Refresh

Draft - 5 Big Moves and Actions

This document outlines the draft strategies and actions for the 2025-2030 Environmental Sustainability Action Plan. Specifically -

- The 5 Big Moves the City is prioritizing to reduce greenhouse gas emissions and increase community and environmental resilience to climate impacts.
- The 10 strategies guiding how Redmond will accomplish the Five Big Moves.
- And the actions we're proposing to advance implementation.

The updated framework proposes to approach equity not as a single action, but as the foundation for how each sustainability and climate initiative is designed and implemented, in alignment with Redmond 2050 Policy CR-2.

These strategies and actions are draft, and comments are being accepted at sustainability@redmond.gov through October 3, 2025.

5 Big Moves to Meet our Climate Goals

The proposed 5 Big Moves represent the greatest opportunities for action to substantially reduce greenhouse gas emissions and meaningfully enhance resilience to climate hazards. They were identified through data analysis, community feedback, implementation trends and accomplishments, best practices, and to support implementation of Redmond 2050. The proposed Big Moves include:

1. Make Existing Buildings Better
2. Build Efficient and Resilient Buildings
3. Provide Safe and Sustainable Transportation
4. Achieve Zero Waste of Resources
5. Foster a Resilient Community and Environment

10 Strategies to Achieve the Big Moves

The Strategies guide how Redmond will accomplish the five Big Moves. They include:

1. **Reduce the direct use of fossil fuels across the community.**
   In Redmond, ~52% of our greenhouse gas emissions come from the direct use of fossil fuels, such as natural gas and gasoline. Eliminating fossil fuels use in buildings and transportation and transitioning to electricity created from renewable sources represents our biggest opportunity to mitigate Redmond's contribution to climate change.

2. **Increase energy efficiency and performance in existing buildings.**

In addition to transitioning existing buildings to run on electricity or onsite renewable energy instead of fossil fuels, we also need to reduce our overall energy usage through efficiency and performance measures. Reducing our need for energy will reduce our utility bills, the demand placed on the electrical grid, and enable us to reach 100% clean electricity more quickly.

3. **Manage growing electricity demand and support grid resilience.**
   The need to "electrify everything" goes hand-in-hand with the need to ensure our electrical grid can handle the increase in demand. In addition, while State- and utility-level policies are putting our region on a path to achieve 100% clean electricity, this transition will be difficult and slow-moving. Our buildings must be smart and adaptive to ensure we can stay on track for our GHG targets while providing services to an integrated electric grid that can match power demand with clean energy resources.

4. **Support high performance building standards and climate policies.**
   Redmond is set to add over 39 million square feet of new buildings by 2050, a 75% increase from what exists today. These new buildings are projected to increase electricity usage 40% - even with state buildings codes. Redmond must ensure that new development is built to be energy efficient and with low-carbon materials from the start while supporting policies and standards that reinforce this approach.

5. **Level the playing field for non-vehicle transportation modes.**
   To develop a sustainable transportation system with diverse options, we must make it easy, safe, and convenient to get around without a car. Redmond can encourage this by completing connections across transit, pedestrian, and bicycle networks while de-emphasizing accommodations for single occupancy vehicles. All of these strategies become more effective as smarter land use decisions cut down the time and distance that it takes for community members to get around.

6. **Encourage community members to choose low-carbon transportation options.**
   As our built environment evolves to facilitate diverse modes of transportation, ensuring that community members utilize those modes means ensuring that they can access and afford them. Accessible ride services, incentives, secure storage for e-bikes, and confidence in available EV charging infrastructure will all help Redmond community members make the shift.

7. **Reduce consumption.**
   The waste we send to landfill creates greenhouse gases like methane and expanding composting and recycling opportunities is one piece of the puzzle to reduce GHGs. But the emissions associated with producing what we consume can be even higher. Replacing the consumption of materials with reusable and durable goods can reduce emissions from both angles, while working to conserve resources and ecosystems globally.

8. **Create a circular economy.**

Instead of the traditional "take-make-waste" linear model, circular systems focus on designing out waste, reusing products, and regenerating natural systems. We're taking steps to understand the resource potential in today's waste stream while nurturing the businesses and doers that will drive value creation from materials that are increasingly costly to throw away.

9. **Provide resources to support community members before, during, and after climate hazards.**
   We are seeing climate hazards increase in frequency and intensity across the Redmond community. All community members should have equitable access to the tools and information needed to prepare for, respond to, and recover from climate-related events, such as extreme heat, intense storms, and flooding.

10. **Maintain infrastructure and healthy ecosystems to mitigate the impacts of climate change.**
    Ensuring that our infrastructure and ecosystems are resilient to climate hazards will help ensure that all living beings in our community can enjoy the benefits they provide. This involves protecting and restoring natural features like tree canopy and streams as well as upgrading essential systems like our water and stormwater infrastructure to manage drought, flooding and extreme weather events.

Actions We'll Pursue to Support our 10 Strategies

Specific actions proposed to be implemented over the next five years have been identified for each Big Move, for the community and city operations. These actions will be accompanied alongside metrics and targets that can be tracked to demonstrate progress. Long term actions to be evaluated with the 2030 plan update will be included as an appendix. They are currently identified in the *2020 ESAP Action Crosswalk* document.

Big Move #1: Make Existing Buildings Better

Vision: Redmond's existing homes and commercial buildings are high performing, energy efficient, and climate-read.

Big Move 1: Make Existing Building Better **Community Actions**		**Lead Dept.**	**Associated Strategies**	**Relative Cost** $ - staff time only $$ - up to $250,000 $$$ - $250,000+	**2020 ESAP Reference**
1.1	Expand Energy Smart Eastside with a focus on weatherization, resident education, technical assistance, and financing.	Executive	1, 2, 3	$$$	B1.3, B1.6, B3.3, B3.5, B3.6

Big Move 1: Make Existing Building Better **Community Actions**		**Lead Dept.**	**Associated Strategies**	**Relative Cost** $ - staff time only $$ - up to $250,000 $$$ - $250,000+	**2020 ESAP Reference**
1.2	Implement technical support programs to assist compliance with Building Performance Standards with targeted support for multifamily and nonprofit buildings.	Executive	2	$$$	B5.1
1.3	Support expansion of Washington State's benchmarking requirement and advocating for future program growth to include emissions reporting requirements.	Executive	2	$	B5.2
1.4	Partner with PSE and the community to advance grid modernization and resilience opportunities in Redmond.	Executive	2	$	B4.1
1.5	Develop HOA and building management guidance for solar and other energy infrastructure on multifamily buildings.	Executive	2	$	New
1.6	Explore partnerships and opportunities to integrate home energy disclosure information into home listings.	Executive	2	$	New

Big Move 1: Make Existing Building Better **City Operations Actions**		**Lead Dept.**	**Associated Strategies**	**Relative Cost** $ - staff time only $$ - up to $250,000 $$$ - $250,000+	**2020 ESAP Reference**
1.7	Develop preventative maintenance and staffing plan and funding strategy for critical building systems and infrastructure.	Parks	2	$$	B2.3, CED1
1.8	Establish policy to guide decarbonization in City maintenance and retrofit projects.	Parks	1	$	CED 1
1.9	Develop decarbonization plans for five City facilities, including solar assessments and evaluation of electrical capacity.	Parks	1	$$	CED 1

Big Move 1: Make Existing Building Better **City Operations Actions**		**Lead Dept.**	**Associated Strategies**	**Relative Cost** $ - staff time only $$ - up to $250,000 $$$ - $250,000+	**2020 ESAP Reference**
1.10	Advance findings from solar and energy storage feasibility study.	Parks	1	$$	C1.4, CED 1

Big Move #2: Build Resilient and Efficient Buildings

Vision: Redmond constructs new homes and commercial buildings that are resilient to climate hazards and produce zero emissions.

Big Move 2: Build Resilient and Efficient Buildings **Community Actions**		**Lead Dept.**	**Associated Strategies**	**Relative Cost** $ - staff time only $$ - up to $250,000 $$$ - $250,000+	**2020 ESAP Reference**
2.1	Develop a handbook, training, and case studies for the City's green building and resilience codes and standards to reduce adoption barriers among developers.	Executive	4	$	B1.5, B3.4
2.2	Explore expanded incentives for grid flexibility technologies, resilience hubs, and leading green building certifications in the Redmond Zoning Code.	Executive/Planning	3	$	B2.2
2.3	Identify opportunities for thermal networks or micro-grids in retail redevelopment and other neighborhood plans.	Executive/Planning	1, 3	$$	New
2.4	Explore additional incentives and/or technical support for affordable and middle housing to advance green building techniques.	Executive/Planning	4	$$	B1.5
2.5	Identify grid capacity gaps and implement solutions that enable timely upgrades and support the City's decarbonization, density, and natural systems goals.	Executive/Planning	3	$$	New

Big Move 2: Build Resilient and Efficient Buildings **Community Actions**		Lead Dept.	Associated Strategies	Relative Cost $ - staff time only $$ - up to $250,000 $$$ - $250,000+	2020 ESAP Reference
2.6	Support state and regional policies that preserve and advance clean energy and climate goals, including incentives for renewable energy production and adoption of advanced energy codes.	Executive	4	$	T3.2, B1.1, B1.2, B1.9, C4.5
2.7	Develop a cross-departmental team that works to address challenges related to land use code in siting renewable energy and other green economy facilities.	Executive	4	$	B3.2

Big Move 2: Build Resilient and Efficient Buildings **Municipal Actions**		Lead Dept.	Associated Strategies	Relative Cost $ - staff time only $$ - up to $250,000 $$$ - $250,000+	2020 ESAP Reference
2.8	Pilot tools to integrate life-cycle cost information into capital expense budgeting processes for new facilities.	Public Works	4	$$	C3.9
2.9	Establish a policy for identifying sustainable best practices for municipal facilities and infrastructure to reduce operational and embodied carbon.	Executive/Parks/Public Works	4	$	B2.6, CED 1, CED 6
2.10	Adopt a standard specification to procure low embodied carbon concrete.	Executive/Parks/Public Works	4, 8	$$	B2.8, CED 1

Big Move #3: Provide Accessible and Sustainable Transportation

Vision: Redmond accelerates the transition to electric vehicles and connected, low-carbon mobility options.

Big Move 3: Provide Accessible and Sustainable Transportation **Community Actions**		**Lead Dept.**	**Associated Strategies**	**Relative Cost** $ - staff time only $$ - up to $250,000 $$$ - $250,000+	**2020 ESAP Reference**
3.1	Design and construct complete bicycle spine network within a mile of light rail stations	Planning/Public Works	5	$$$	T1.9, T1.10, T2.6, CED 8
3.2	Seek increased transit service and frequency by advocating to King County Metro, the Washington State Legislature, and exploring the potential for Redmond to directly fund more frequent Metro bus service using local revenue sources	Planning	5	$$$	New, CED 8
3.3	Actively manage existing parking and minimize new parking through a combination of regulations and incentives.	Planning	5	$$$	T2.1, T2.5, T3.3
3.4	Provide subsidies for e-bikes, scooter shares, and other shuttle options to mitigate first/last mile barriers for commuters who utilize public transit.	Planning	3, 6	$$$	T1.8, CED 8
3.5	Expand Commute Trip Reduction and other Transportation Demand Management efforts to include all employers.	Planning	6	$$	New, CED 8
3.6	Advocate for and connect existing multifamily housing properties and HOAs with resources, grants, and technical assistance to install EV charging.	Executive	6	$$	T3.3, T3.5
3.7	Launch an EV car share pilot.	Executive	1, 6	$$	New

Big Move 3: Provide Accessible and Sustainable Transportation **Municipal Actions**		Lead Dept.	Associated Strategies	Relative Cost $ - staff time only $$ - up to $250,000 $$$ - $250,000+	2020 ESAP Reference
3.8	Expand the commute trip reduction program for City staff.	Planning	6	$$	New
3.9	Review City Green Fleet Policy and develop a fleet transition and funding approach that prioritizes right-sizing and electrification to meet the 2030 emissions reduction goal, while establishing decision criteria for when fuel-efficient internal combustion vehicles are still required.	Public Works	1	$$$	T4.1

Big Move #4: Achieve Zero Waste of Resources

Vision: Redmond reduces consumption and diverts as much waste as possible from the landfill while promoting a circular economy.

Big Move 4: Achieve Zero Waste of Resources **Community Actions**		Lead Dept.	Associated Strategies	Relative Cost $ - staff time only $$ - up to $250,000 $$$ - $250,000+	2020 ESAP Reference
4.1	Launch a public education campaign focused on waste reduction and resources for recycling and composting.	Public Works	7	$	M1.2, M2.1, M2.3
4.2	Develop a pilot program to incentivize local food service establishments to use durable and reusable dishware.	Public Works	7	$$	M1.5
4.3	Amend the Construction and Demolition Ordinance to establish a required diversion rate and evaluate a deconstruction requirement.	Public Works	8	$	M4.2
4.4	Develop a solid waste strategic plan informed by stakeholder outreach and a waste characterization study.	Public Works	7, 8	$$	New

Big Move 4: Achieve Zero Waste of Resources **Community Actions**		Lead Dept.	Associated Strategies	Relative Cost $ - staff time only $$ - up to $250,000 $$$ - $250,000+	2020 ESAP Reference
4.5	Support state implementation of Extended Producer Responsibility program.	Public Works	8	$	M1.7

Big Move 4: Achieve Zero Waste of Resources **Municipal Actions**		Lead Dept.	Associated Strategies	Relative Cost $ - staff time only $$ - up to $250,000 $$$ - $250,000+	2020 ESAP Reference
4.6	Achieve TRUE Zero Waste certification for large City facilities.	Public Works	7, 8	$$	New, CED 3
4.7	Develop zero waste guidelines for all City-sponsored events.	Public Works	7, 8	$$	M1.8, CED 3
4.8	Implement a sustainable purchasing program.	Finance	7, 8	$$	M1.8, M3.3, CED 3
4.9	Create public-facing resources and case studies to highlight how the City has reused materials and promote circular economy principles.	Public Works	8	$$	New, CED 3

Big Move #5: Foster a Resilient Community and Environment

Vision: Redmond cultivates thriving natural environments and neighborhoods that are resilient to the impacts of climate change.

Big Move 5: Foster a Resilient Community and Environment **Community Actions**		Lead Dept.	Associated Strategies	Relative Cost $ - staff time only $$ - up to $250,000 $$$ - $250,000+	2020 ESAP Reference
5.1	Create a robust communications network that leverages trusted messengers and various tactics to reach a wide audience, including those with limited English proficiency.	Executive/Fire	9	$	C4.6

Big Move 5: Foster a Resilient Community and Environment **Community Actions**		**Lead Dept.**	**Associated Strategies**	**Relative Cost** $ - staff time only $$ - up to $250,000 $$$ - $250,000+	**2020 ESAP Reference**
5.2	Implement a City-managed emergency alert system.	Executive/Fire	9	$$	New
5.3	Establish formal partnerships with nonprofits and other organizations to reach broader audiences and build capacity across the community for climate initiatives and programming.	Executive	9	$$	C2.4, C4.4
5.4	Develop comprehensive educational materials and programming to increase understanding, engagement, and awareness about sustainability and resilience opportunities.	Executive/Fire	9	$	New
5.5	Support the growth of resilience hubs in Redmond, exploring opportunities at City facilities, neighborhood hubs, multifamily properties, schools, and nonprofits.	Executive/Fire	9	$$	C2.7
5.6	Establish a rapid response program to distribute fans, air purifiers, and other resources to vulnerable community members during extreme heat and smoke events.	Executive/Fire	9	$$	New
5.7	Develop and implement a community wildfire protection plan.	Fire	10	$$	New
5.8	Evaluate reflective pavement and cool roofs to reduce urban heat island effect.	Public Works/Parks	10	$$	New
5.9	Update local floodplain maps to inform future development and potential policies.	Public Works	10	$$	N1.8
5.10	Develop a community water resilience and reduction strategy that guides programs and planning to protect both water quantity and supply.	Public Works	10	$$	W1.2, W2.5
5.11	Create and disseminate outreach materials to educate the community about proper tree care and sustainable landscaping practices.	Planning/Parks	10	$	N1.5

Big Move 5: Foster a Resilient Community and Environment **Community Actions**		Lead Dept.	Associated Strategies	Relative Cost $ - staff time only $$ - up to $250,000 $$$ - $250,000+	2020 ESAP Reference
5.12	Form partnerships to increase tree canopy plantings and habitat restoration on private land.	Parks	10	$$	N2.1, N4.1

Big Move 5: Foster a Resilient Community and Environment **Municipal Actions**		Lead Dept.	Associated Strategies	Relative Cost $ - staff time only $$ - up to $250,000 $$$ - $250,000+	2020 ESAP Reference
5.13	Implement advanced metering infrastructure (AMI) for Redmond's water system, to improve data and management practices.	Public Works	10	$$$	New
5.14	Leverage best available climate impacts data to inform sizing of new City stormwater infrastructure projects and advocate regionally for updated standards.	Public Works	10	$$	N3.10, W2.4,
5.15	Update regional facilities plans and basin plans to inform and advance regional stormwater management policies.	Public Works	10	$$$	New
5.16	Hire an urban forestry position that unifies and manages tree canopy programs, policies, and community engagement.	Parks	10	$$$	N1.6

2020 Environmental Sustainability Action Plan Action Crosswalk

Action	Role in 2025 Plan	Time Frame Established in 2020 Plan	Primary Department/Division	Brief Summary
TRANSPORTATION & LAND USE				
(T1) Increase the Equitable Use of Non-SOV Modes of Transportation				
T1.1 - Implement Growth and Transportation Efficiency Center program. Develop a framework and implementation plan for the City's Growth and Transportation Efficiency Center (GTEC) program in order to integrate transportation demand management (TDM) actions with infrastructure improvements, facilitate growth, and maximize the efficiency of transportation infrastructure.	Remove - ongoing	Ongoing	Planning - Long Range	Work is underway through the Transportation Master Plan update and ongoing transportation planning work.
T1.2 - Commuter Mobility Partnerships Partner with organizations such as the Transportation Management Association (TMA) to increase commuter mobility and efficient use of transportation systems through services, incentives, education, ad the promotion of single occupancy vehicle alternatives to residents.	Remove - ongoing	Ongoing	Planning - TPE	This is a core element of transportation planning efforts in partnership with GoRedmond. https://www.redmond.gov/951/Commute-Resources.
T1.3 - Multimodal Transit/Facilities Partner with transit agencies to maintain and enhance multimodal transit services and related facilities, including better first/last mile access to transit and preparing for opening of Link Light Rail.	Remove - ongoing	Ongoing	Planning - TPE	4 light rail stations are now open, numerous onoing efforts are underway to activate light rail and reduce VMT.
T1.4 - Pilots for Trip Reduction Continue piloting trip reduction initiatives such as app-based carpooling and scooter/bike share.	Remove - ongoing	Ongoing	Planning - TPE	In collaboration with KCM and Hopelink, the City started Community Van - https://www.goredmond.com/redmond-community-van The City continued the micromobility pilot with Lime (ebikes & escooters). The City was awarded a grant to operate a shuttle from the DT light rail station.
T1.5 - Reevaluate TDM Performance Measures Reevaluate and revise TDM performance measures as needed to ensure they are directly linked to Redmond's livability, sustainability, and affordability.	Remove - complete	Ongoing	Planning - TPE	All other performance measures will be finalized through the TMP by the end of 2025.
T1.6 - Mobility Data Publication Continue to refine and improve mobility for all targets and data tracking systems. Make the programs and data available for the public.	Remove - complete	Ongoing	Planning - TPE	Updated, although performance measures are being updated and finalized through the TMP by the end of 2025. https://www.redmond.gov/850/
T1.7 - Improve Student Alternative Transport Improve alternative transportation options for local schools.	Remove - ongoing	Ongoing	Planning - TPE	All schools participated in the SchoolPool program. The City also partnered with Sustainable Neighborhood Ambassador Program (SNAP) bringing Redmond student capacity to work on transportation specific campaigns for Redmond High School.
T1.8 - Increase New Mobility Options Encourage and foster the use of new mobility options, such as bike share, electric bike and scooter, and ride hailing.	Intagrated into 2025 Plan through Action 3.4	Near term	Planning - TPE	Lime bike/scooter share pilot is being made permanent with a new contract going into effect January 1, 2025. Also, see T1.4
T1.9 - Bike Storage Incentives and Requirements Develop incentives for current development and mandates for new development to increase the number of sage bicycle storage spaces around planned light rail stations.	Remove - complete	Near term	Planning - TPE	Code currently requires new development to provide bike parking. The TMP bike chapter will include strategies for providing convenient and secure bike parking within the public right of way in urban centers and mobility hubs to encourage more bike trips to urban centers.
T1.10 - Active Mobility Infrastructure Investments Identify and implement pedestrian and bicycle infrastructure investments that promote connectivity, safety, and mobility for all.	Intagrated into 2025 Plan through Action 3.1	Mid term	Planning - TPE	The City is prioritizing improvements to bicycle lanes and crossings by enhancing bicycle safety through ongoing paving projects, as well as the installation of Rapid Rectangular Flashing Beacons (RRFB) and pedestrian-activated crossing signals. Additional initiatives include Capital Improvement Projects (CIP) such as the continuation of the 156th Shared Use Path, extension of the NE 40th St shared use path, and in 2025 ped/bike safety enhancements to 148th Ave NE, and citywide speed reduction study.
T1.11 - Comprehensive Transportation Outreach and Education Develop education and outreach programs and materials for transportation initiatives related to reducing emissions and community mobility.	Remove - ongoing	Mid term	Planning - TPE	Move Redmond hosted Walk and Talks through out the city highlighting new transportation projects, continued with bike maintenance and learning to ride a bike classes, and well as Open Streets and the 2 Line Opening.
(T2) Leverage Sustainable Land Use Policy to Encourage Non-SOV Modes of Transportation				
T2.1 - Downtown Redmond Parking Implement Downtown Strategic Parking Management Plan's Conditions Report subsequent phases to evaluating parking needs and management.	Intagrated into 2025 Plan through Action 3.3	Ongoing	Planning - TPE	The Downtown Parking Plan will be updated in 2025.

Action	Role in 2025 Plan	Time Frame Established in 2020 Plan	Primary Department/Division	Brief Summary
T2.2 - Transportation Master Plan Implementation Support development of the Transportation Master Plan and the implementation of a complete streets policy.	Remove - ongoing	Ongoing	Planning - TPE	Work is underway with the TMP update and expected to be complete by the end of 2025. The TMP is centered around a complete streets network.
T2.3 - Unbundle Parking Develop an ordinance requiring unbundled parking in all rental housing so residents that do not own a car will not have the cost of parking bundled in their rent.	Remove - ongoing	Near term	Planning - Long Range	This is standard practice.
T2.4 - Diversify Housing Options Allow for ADU, duplexes, 4+8 unit apartments/condos, ADUs, and retrofits in single family zones to promote affordable higher density housing/commercial development.	Remove - complete	Mid term	Planning - Long Range	The City's Housing Element and zoning regulations have been revised to implement HB 1110 and HB 1337 requirements. Adoption is scheduled for end of 2024.
T2.5 - Parking Maximums/Minimums Develop parking maximum and minimum requirements in urban areas and along transit corridors.	Intagrated into 2025 Plan through Action 3.3	Mid term	Planning - Long Range	Updates to the Transportation Element and Redmond's Zoning Code are drafted and will reduce or eliminate parking minimums. These updates are scheduled for adoption by the end of 2024.
T2.6 - Increase "Spine Network" Goal 2030 Identify new partnerships and funding sources to support an increased "spine" bike network above the current expectation of 51% completion by 2030 and identify opportunities to provide bicycling facilities that will be comfortable for more riders, such as cycle tracks/multi-use paths.	Intagrated into 2025 Plan through Action 3.1	Mid term	Planning - Long Range Planning - TPE	Updates to the Bicycle Design Guide are underway.
T2.7 - Create More Walkable Communities Review and update land use and zoning policy to promote more walkable built environment.	Remove - complete	Mid term	Planning - Long Range	This action is on track to be complete through Redmond 2050.
T2.8 - Ten-minute Communities Review and update lad use, zoning, and planning policy to prioritize the development of affordable 10-minute communities. These walkable communities prioritize accessibility and meet commercial, recreational, and transportation needs.	Remove - redundant	Mid term	Planning - Long Range	See T2.7
(T3) Shift to More Efficient and Lower-Carbon Fuels				
T3.1 - Freight VMT/Idling Identify and implement opportunities for reducing freight VMT and idling, especially from delivery trucks.	2030+	Ongoing	Planning - TPE	Continued work is underway to evaluate VMT reduction opportunities are being explored through the Transportation Master Plan update.
T3.2 - Advanced Clean Car Standards Continue to support the State to retain and improve upon its 2018 decisions to adopt California's Advanced Clean Car Standards.	Intagrated into 2025 Plan through Action 2.6	Ongoing	Executive - Sustainability	Work continued at the state level. In Dec. 2022, Washington adopted California's vehicle emissions standards. The Clean Vehicles Program rule increases zero emission vehicle sales of passenger cars, light-duty trucks, and medium-duty vehicles to 100% starting in 2035. It also requires cleaner burning engines in medium- and heavy-duty trucks. https://ecology.wa.gov/air-climate/air-quality/vehicle-emissions
T3.3 - EV Demand Eval & Parking Requirements Review EV infrastructure strategy and predictions for EV adoption with input from PSE and other regional stakeholders, including evaluation for EV parking supply and demand and ways to make charging more accessible.	Intagrated into 2025 Plan through Action 3.3	Ongoing	Executive - Sustainability	The Transportation Master Plan includes a new e-mobility strategy.
T3.4 - Electrical Code for EVs Update electrical code to ensure adequate electrical capacity is available to serve one electric vehicle charging station per parking space.	Remove - complete	Near term	Planning - DSC	City code now requires 100% EV ready for multifamily, in addition to state requirements.
T3.5 - EV Charging Business Partnerships Partner with organizations such as OneRedmond to encourage businesses to install charging stations at workplaces and to provide support for commercial entities interested in providing charging stations for their employees.	Intagrated into 2025 Plan through Action 3.6	Near term	Executive - Sustainability	PSE continues to expand its Up & Go program to support infrastructure for workplace charging. https://www.pse.com/en/pages/electric-cars/Workplace-charging
(T4) Reduce Energy Consumption and Emissions Associated with City Fleet Use				
T4.1 - Municipal Fleet Conversion Continue implementing the Green Fleet Purchasing Policy.	Intagrated into 2025 Plan through Action 3.9	Ongoing	Public Works - Mobility Infras.	20 fleet EV chargers were installed at the Municipal Parking garage to support the City's growing fleet of EVs. https://www.redmond.gov/1815/Green-Fleet-Operations
T4.2 - Telecommuting and Alternative Work Schedule Expand telecommute and flexible schedules for City employees and encourage Redmond businesses to adopt.	Remove - ongoing	Near term	Human Resources	The City's telecommuting policy was adopted in 2022, permitting approved staff to work virtually. https://www.redmond.gov/1955/
BUILDINGS & ENERGY				
(B1) Support Building Sustainability, Education, Technical Assistance, and Code Advancement				

Action	Role in 2025 Plan	Time Frame Established in 2020 Plan	Primary Department/Division	Brief Summary
B1.1 - Production Incentive Support Support Washington State renewable energy production incentives that encourage the development of residential and commercial solar and other distributed generation and storage projects.	Intagrated into 2025 Plan through Action 2.6	Ongoing	Executive - Sustainability	City Council approved updates to the Green Building Incentive Program in 2025, which includes land use incentives for additional solar and battery storage for new developments.
B1.2 - Support/Advocate for New Codes Work with advocacy organizations and Regional Code Council (RCC) to support and implement state energy code advancement.	Intagrated into 2025 Plan through Action 2.6	Ongoing	Executive - Sustainability	The 2021 Energy Code was adopted in March 2024 and includes significant strides in electrification and energy efficiency.
B1.3 - Green Starter Kits Coordinate with regional programs such as EnviroStars to promote and distribute sustainability starter kits to businesses and homes looking to go green.	Intagrated into 2025 Plan through Action 1.1	Near term	Executive - Sustainability	EnviroStars program offers support and resources for businesses. Limited staff capacity has impacted efforts to expand programming to residential.
B1.4 - Solar and EV-Ready Infrastructure Requirements Require "solar-ready" and EV infrastructure for all new commercial and residential development.	Remove - complete	Near term	Planning - DSC	2021 State Building Code includes requirement for EV ready infrastructure. https://apps.leg.wa.gov/wac/default.aspx?cite=51-50-0429 The 2021 code went into effect in March 2024. Redmond proactively adopted Appendix T, which requires solar ready provisions for residential and town homes. https://redmond.municipal.codes/RMC/15.08.020 Through zoning code, City requires100% EV ready for multifamily and 20% for commercial.
B1.5 - Green Certification Incentives Reevaluate, promote and incentivize through zoning code green certification programs for commercial and multi-family buildings and development, including Built Green, LEED, and Salmon-Safe Urban Development Certification.	Intagrated into 2025 Plan through Action 2.1 and 2.4	Near term	Executive - Sustainability	Council approved updates to the Green Building Incentive Program in May 2024. The new program includes increase requirements for all electric construction, increased building efficiency, and other green building outcomes, in alignment with the ESAP.
B1.6 - Low-Interest Loans Explore low interest loan options to finance energy efficiency upgrades for commercial and residential buildings.	Intagrated into 2025 Plan through Action 1.1	Near term	Executive - Sustainability	City continued to advertise King County's CPACR program. Energy Smart Eastside is evaluating low interest loans for residential programming.
B1.7 - Universal Efficient Building Standard Adopt a universal standard for energy-efficient buildings, such as the International Residential (IRC) codes for sustainable residential buildings, that considers feasibility and affordability for building owners and tenants.	2030+	Near term	Executive - Sustainability	City Council approved updates to the Green Building Incentive Program in 2025, which includes energy, embodied carbon, and EV requirements for new construction.
B1.8 - Pipelines for Employment Collaborate with higher education institutions to develop pipelines for employment in green construction industry professional services.	2030+	Near term	Human Resources	The Energy Smart Eastside program is exploring workforce development opportunities through a grant awarded by the Department of Commerce.
B1.9 - Phase Out HFCs Work with King County to phase out use and disposal of hydrofluorocarbons (HFCs) such as from vehicle and building air conditioning units.	Intagrated into 2025 Plan through Action 2.6	Near term	Executive - Sustainability	Work continued in collaboration with the K4C - HFC phase out remained a priority of the K4C legislative agenda.
B1.10 - Height/sf Incentives for Energy Upgrades Create and implement a program offering additional height and floor area incentives for significant upgrades in energy and water use.	Remove - complete	Mid term	Executive - Sustainability	See action B1.5
(B2) Advance Green Building within City Facilities				
B2.1 - Financing for Energy Efficiency Assess various options for financing and grants to energy efficiency projects for municipal buildings.	Remove - ongoing	Ongoing	Executive - Sustainability	The City is currently leveraging the state Department of Enterprise Services Energy Performance Contract to advance energy efficiency retrofits at City Hall and the Public Safety Building. The projects are underway and scheduled to be complete in 2026.
B2.2 - Energy and Water Retrofits Continue to implement energy and water conservation retrofits and operational improvements for municipal facilities, street lights and traffic signals, and pump stations.	Remove - ongoing	Ongoing	Parks - Ops	The City completed a Facility Condition Assessment and associated decarbonization component to inform maintenance practices. The City also initiated a lighting retrofit at City Hall and comprehensive energy efficiency work at the Public Safety Building to reduce energy consumption and support Clean Buildings Performance Standard compliance.
B2.3 - Facilities Strategic Maintenance Plan Coordinate and implement recommendations from the Facilities Strategic Maintenance Plan that support sustainability. Evaluate option for an internal Revolving Fund as a dedicated source of capital, funded by savings from energy efficiency upgrades.	Intagrated into 2025 Plan through Action 1.7	Ongoing	Parks - Ops	Lighting and HVAC, and controls projects are underway at multiple facilities in support of the FSMP, including an energy efficiency project at City Hall and the Public Safety Building.
B2.4 - Resource Conservation Management Plan Develop a Resource Conservation Management Plan and general government policy to guide energy efficiency investments, operations, and behaviors in City facilities.	Remove - ongoing	Ongoing	Parks - Ops	Work is underway to update the RCMP through the Facility Condition Assessment and compliance with the Clean Buildings Performance Standard.
B2.5 - Information Technology Improvements Implement solutions to reduce energy demand from the City's IT infrastructure.	Remove - ongoing	Ongoing	Executive - Sustainability	The City leverages cloud computing for its IT infrastructure, which are powered by clean electricity thanks to Microsoft's commitment to sustainability.

Action	Role in 2025 Plan	Time Frame Established in 2020 Plan	Primary Department/Division	Brief Summary
B2.6 - New City Building Green Certification Develop a policy that requires all new municipal owned buildings shall be constructed to a minimum certification level, such as the Gold level as defined by the U.S. Green Building Council (USGBC) Leadership in Energy & Environmental Design (LEED) for New Construction.	Intagrated into 2025 Plan through Action 2.9	Near term	Executive - Sustainability	Work is underway through the Facility Condition Assessment and Decarbonization Component.
B2.7 - Existing City Building Green Certification Implement updates needed for existing City buildings to achieve ENERGY STAR or equivalent recognition. Continue to track progress in platform such as EPA Portfolio Manager.	2030+	Near term	Executive - Sustainability	All City facilities are benchmarked through EPA Portfolio Manager. Certification for exiting City buildings is not being pursued at this time due to staff capacity, although a detailed analysis was completed of City Hall and the Public Safety Building in support of the Clean Buildings Performance Standard compliance.
B2.8 - Embodied and Operational Carbon Introduce a policy/program to address embodied and operation carbon in municipal operations.	Intagrated into 2025 Plan through Action 2.10	Mid term	Executive - Sustainability	Not started
(B3) Shift to Renewable Energy Sources and Building Decarbonization				
B3.1 - Financial Tools for Renewables Employ financial tools or group purchases to incentivize the installation of on-site renewable energy. Group purchasing can greatly reduce the cost of installing renewables by securing bulk purchasing discounts.	Remove - redundant	Near term	Executive - Sustainability	See B3.3
B3.2 - Cross-Departmental Task Force Develop a cross-departmental task force that works to address challenges related to land use code in siting renewable energy and other sustainability facilities in the city.	Intagrated into 2025 Plan through Action 2.7	Near term	Planning - Process Improvement	Not started
B3.3 - Fuel Switching Pilot Program Pilot a voluntary program that focuses on residential and commercial fuel switching from natural gas to electric.	Intagrated into 2025 Plan through Action 1.1	Near term	Executive - Sustainability	The City, in partnership with the Eastside Climate Partnership, operate the residential heat pump program Energy Smart Eastside. The program includes a low income full cost coverage program and a moderate income incentive. More than $5M in grant funds have been secured to support growth of the program, including contractor engagement, workforce development evaluation, and capacity building. https://www.redmond.gov/1771.
B3.4 - Green Building Training Educate City planning and permitting staff on codes and approaches for incentivizing decarbonization, such as through electric head pumps. Update permitting process if needed to quickly review and flag decarbonization projects.	Intagrated into 2025 Plan through Action 2.1	Near term	Planning - DSC	Staff training is an ongoing element of the Development Services programming. City staff have been training on the updated code (adopted March 2024) given the extensive changes.
B3.5 - Fuel Switching Contractor Training Conduct contractor training and development of sales packages for building owners wanting to get off fossil fuels.	Intagrated into 2025 Plan through Action 1.1	Mid term	Executive - Sustainability	See B3.3
B3.6 - Incentivize Electrification Implement incentives such as expedited and free permitting for switching from fossil fuel (e.g. natural gas) to renewable electricity.	Intagrated into 2025 Plan through Action 1.1	Mid term	Executive - Sustainability	See B1.5 and B3.3
B3.7 - All-Electric New Construction Evaluate natural gas consumption and emissions trends and explore incentives for all-electric construction. Consider restrictions on new natural gas hookups in developments and buildings under a phase-in schedule that considers technological feasibility, need based on community-wide emissions and pair with relevant exemptions.	2030+	Long term	Executive - Sustainability	Not started
(B4) Prepare the Energy Grid for Future Conditions				
B4.1 - PSE Smart Grid Technologies Partner with PSE to implement in Redmond their smart grid technologies meant to improve reliability and management of the grid.	Intagrated into 2025 Plan through Action 2.2 and 1.4	Ongoing	Executive - Sustainability	Past efforts include opportunities to pilot PSE's new Demand Response program at the Senior and Community Center when the utility rolls out the program. The City also completing a grant-funded solar plus storage feasibility study at five city facilities.
B4.2 - Energy Storage Introduce a policy to streamline permitting and interconnection processes for energy storage projects.	2030+	Mid term	Planning - Process Improvement	Not started
(B5) Expand Performance Benchmarking and Improvements				
B5.1 - Energy Use Disclosure Require energy use disclosure and benchmarking for buildings, starting with commercial ad multifamily buildings over a size threshold.	Intagrated into 2025 Plan through Action 1.2	Near term	Executive - Sustainability	All buildings 50,000 SF and above must benchmark buildings, per the state Clean Buildings Performance Standard. The square footage threshold was lowered to 20,000 SF during the 2021 legislative session. Buildings must meet a specific energy use intensity target. Washington is the first state in the country to adopt such requirements. The City will launch technical assistance to support compliance with this state mandate through education and supportive programming. https://www.commerce.wa.gov/growing-the-economy/energy/buildings/clean-buildings-standards/

Action	Role in 2025 Plan	Time Frame Established in 2020 Plan	Primary Department/Division	Brief Summary
B5.2 - Efficiency Requirements Above Cost/sf Threshold Require that all permitted residential and nonresidential building improvements over a square footage or cost threshold evaluate and enhance energy efficiency.	2030+	Mid term	Executive - Sustainability	See B5.1
B5.3 - Point-of-Sale Weatherization Introduce point-of-sale efficiency and performance standards for residential and commercial buildings, with affordable pathways for small businesses and lower and moderate-income households.	Intagrated into 2025 Plan through Action 1.6	Mid term	Executive - Sustainability	Not started
B5.4 - Large Commercial/Industrial Efficiency Requirement and Tune-up Ordinance Building on proposed WA state policy, develop a phased timeline when all existing non-residential commercial and industrial buildings over a square footage threshold must meet energy performance standards and implement efficiency upgrades and improvements that provide a positive return on investment.	Intagrated into 2025 Plan through Action 1.3	Long term	Executive - Sustainability	See B 5.1
MATERIALS MANAGEMENT & WASTE				
(M1) Increase Diversion of Community Waste while Reducing Cross-Contamination within Waste Streams				
M1.1 - Regional Composting Work with K4C to develop a composting master plan to expand community and regional composting infrastructure.	Remove - ongoing	Ongoing	Public Works - Utilities & Environ	The City executed a new solid waste agreement with Recology. The new agreement includes embedded organics services for all customer classes. The City also conducted ongoing education and outreach to businesses and multifamily properties to maximize diversion and reduce contamination. At the state level, Washington is working through the rule making for House Bill 1799 (HB 1799) requiring diversion of organic materials away from landfill disposal and towards food rescue programs and organics management facilities. HB 1799 requires all commercial businesses to have organics and recycling. https://ecology.wa.gov/Waste-Toxics/Reducing-recycling-waste/Waste-reduction-programs/Organic-materials/2022-organics-management-law
M1.2 - Multi-family Outreach Provide recycling and composting education and outreach targeted at multifamily property managers and tenants.	Intagrated into 2025 Plan through Action 4.1	Ongoing	Public Works - Utilities & Environ	See M2.1
M1.3 - New Construction Waste Stream Efficiency and Opportunity Work with multifamily developers, owners and residents, as well as commercial buildings, to develop requirements for new construction to provide sufficient space and safety for recycling and food waste collection, along with garbage.	Remove - ongoing	Ongoing	Public Works - Utilities & Environ	Required in current code
M1.4 - Food Donation Support a food donation program for grocery stores to send surplus food.	Remove - no longer relevant	Near term	Public Works - Utilities & Environ	Research was done with grocers, and surplus food is being saved and routed to programs, there is no need for City intervention on this topic.
M1.5 - Citywide Compostables Requirement Require compostable and paper disposables in restaurants and stores.	Intagrated into 2025 Plan through Action 4.2	Mid term	Public Works - Utilities & Environ	This action will be re-evaluated in 2025/2026 following statewide Styrofoam ban for take-out containers.
M1.6 - Incentive Based Models Conduct comparative research to understand where other cities have had success with incentive-based models such as disposal fee.	Remove - ongoing	Mid term	Public Works - Utilities & Environ	Rates already incentivize lower disposal.
M1.7 - End Use Market for Recyclables Partner regionally to bolster the market for recycled materials, to accommodate increased flows from implementation of diversion actions. Include options for addressing non-recyclable plastics.	Intagrated into 2025 Plan through Action 4.5	Mid term	Public Works - Utilities & Environ	EPR passed and will be implemented over the next several years.
M1.8 - City Recycle Reuse Explore ways the City can recycle and reuse during its normal maintenance.	Intagrated into 2025 Plan through Action 4.7 & 4.8	Mid term	Public Works - Utilities & Environ	Programs for recycling and Surplus of City equipment already exist and are embedded in operations.
M1.9 - Recyclables Ban Prohibit disposal of targeted recoverable traditional recyclable materials and organics in single and multi-family garbage.	2030+	Mid term	Public Works - Utilities & Environ	Not started

Action	Role in 2025 Plan	Time Frame Established in 2020 Plan	Primary Department/Division	Brief Summary
M1.10 - Commercial Recycling Requirements Require commercial property owners/managers to provide recycling and organics collection containers and service that are as convenient as garbage containers and adequate to serve the number of tenants.	Remove - ongoing	Mid term	Public Works - Utilities & Environ	See M1.1
M1.11 - Mandatory Curbside Collection for Residents Explore the introduction of mandatory curbside collection of recyclables and organics for all single and multi-family residences. Develop a right-sized program for Redmond.	Remove - ongoing	Long term	Public Works - Utilities & Environ	EPR and Organics Management laws at the state level are moving the City this way. No City action needed.
M1.12 - Solid Waste Disposal Encourage and assist exploration for sustainable solid waste disposal options to prepare for post-2040, in addition to expanding Cedar Hills.	Remove - ongoing	Long term	Public Works - Utilities & Environ	The City is an active participant in the King County Long Term Disposal Option Subcommittee to inform next disposal option.
(M2) Reduce Community Waste Generation				
M2.1 - Waste Reduction Outreach Build and implement community outreach and education plans around proper waste reduction, recycling, composting, with a focus on food waste.	Intagrated into 2025 Plan through Action 4.1	Ongoing	Public Works - Utilities & Environ	The City has a long standing and robust education and outreach program including: annual site visits to multifamily properties; collaboration with schools; commercial technical assistance; video library; residential education and outreach webinars and events; front porch pick ups and more. Learn more at https://www.redmond.gov/389/
M2.2 - Stewardship Policies Support and advocate for strong product stewardship policies at the state and national levels, minimizing environmental impacts of product and packaging throughout all lifecycle stages, especially manufacturing.	Intagrated into 2025 Plan through Action 4.5	Ongoing	Public Works - Utilities & Environ	The City is a leading stakeholder advocating for proposed extended producer responsibility regulations and other key pieces of legislation.
M2.3 - Community Zero Waste, Repair, Upcycling Workshops Host zero waste, repair/reuse, or upcycling community workshops.	Intagrated into 2025 Plan through Action 4.1	Near term	Public Works - Utilities & Environ	The Sustainable Living Program hosts classes and does outreach by tabling at events and public locations, including the Redmond Library, the Redmond Farmers Market, Rockin' on the River, etc. From 2022 to 2023, there was a 50% increase in the number of people who directly engaged with Sustainable Living outreach (2,184 in 2023, versus 1,454 in 2022). In 2023, we focused more or our efforts on tabling than classes which resulted in more engagement.
M2.4 - Styrofoam Policy and Engagement Engage businesses that use Styrofoam in Redmond. Explore Styrofoam reduction through policy mandates and implement, as appropriate.	Remove - complete	Mid term	Public Works - Utilities & Environ	In 2021 the state legislature passed SB 5022 which bans Styrofoam for food packaging and strengthens markets for recycled plastic. No additional programming is in place at the City at this time.
M2.5 - Zero Waste Assistance Provide zero waste building planning assistance.	Remove - unclear action	Mid term	Public Works - Utilities & Environ	Not started
(M3) Reduce Waste and Environmental Impact from City Purchasing and Operations				
M3.1 - Reduce City Landfill Waste Provide composting and recycling at all City buildings and for all municipal operations, including specialized items.	Intagrated into 2025 Plan through Action 4.6 and 4.7	Ongoing	Public Works - Utilities & Environ	Composting and recycling are available at all key facilities.
M3.2 - Increase Use of Electronic Documents Enhance systems for electronic documentation and file-sharing.	Remove - ongoing	Ongoing	TIS	The City now leverages DocuSign for contract routing and other approvals. Prior to 2020, these documents were executed by paper agreements.
M3.3 - City Food Waste Recycling Continue food waste recycling at City Hall, the Maintenance and Operations Center, Public Safety Building, Senior Center, Teen Center, and all city fire stations.	Remove - ongoing	Ongoing	Public Works - Utilities & Environ	See M3.1
M3.4 - Green Purchasing/Procurement Develop and enforce green City purchasing procedures and policies, including for green cleaning materials and support end-use markets for recycled materials.	Intagrated into 2025 Plan through Action 4.8	Near term	Public Works - Utilities & Environ	A draft Sustainable Purchasing Policy is complete. Staff are working to rollout systems and components of the policy by the end of 2024.
M3.5 - Fleet Hazardous Waste Set a policy/goal for hazardous waste generated by the city's Purchasing and Fleet divisions (separate) to be zero or near zero.	2030+	Mid term	Public Works - Mobility Infras.	Not started
(M4) Address Constructions and Demolition (C&D) Waste				
M4.1 - Contractor Outreach Conduct contractor outreach and job site technical assistance to encourage reduction, reuse, and recycling of C&D waste.	Remove - ongoing	Near term	Public Works - Utilities & Environ	Implementation materials for the City's recently adopted C&D recycling policy, including a contractor and developer guide are published.

Action	Role in 2025 Plan	Time Frame Established in 2020 Plan	Primary Department/Division	Brief Summary
M4.2 - C&D Diversion Requirements Develop comprehensive policies around C&D recycling and recovery. Prohibit disposal of recoverable C&D materials.	Intagrated into 2025 Plan through Action 4.3	Mid term	Public Works - Utilities & Environ	A construction and demolition recycling policy was adopted by Council in April 2024. The policy requires projects to track and report C&D waste recycled. The policy will go into effect in 2025. Implementation materials, including a contractor and developer guide will be developed in 2024/2025.
M4.3 - C&D Recycling Service Require recycling service for C&D materials at all job sites.	Remove - complete	Mid term	Public Works - Utilities & Environ	See M4.3
M4.4 - C&D Reuse Partnerships Coordinate with King County and area cities to develop end-use markets for recyclable/recycled C&D materials.	Remove - ongoing	Mid term	Public Works - Utilities & Environ	
NATURAL SYSTEMS				
(N1) Protect and Enhance Equitably Accessible Native Habitats and Open Space and Support Local Agriculture				
N1.1 - Enforce Critical Areas Code and Regulations Strengthen, revise, and enforce codes for critical areas including, fish and wildlife habitat conservation areas, frequently flooded areas, geologically hazardous areas, unstable slopes, and associated areas and ecosystems.	Remove - ongoing	Ongoing	Planning - Current Planning	Policy updates complete through Redmond 2050, including Temporary Construction Dewatering policies. https://www.redmond.gov/1325
N1.2 - Watershed Approach for Restoration Use watershed approach for habitat restoration planning and activities and update Redmond's Watershed Management Plan on a regular basis (plan states every 5 years).	Remove - complete	Near term	Public Works - Utilities & Environ	The Watershed Plan update is complete and will be incorporated into the Stormwater and Surface Water System Plan currently in development. The SSWSP is scheduled for adoption in 2025.
N1.3 - Urban Agriculture Expansion Partner with nonprofits, low income communities, and underrepresented communities to expand urban agriculture opportunities in community gardens, schools, and parks and on rooftops.	Remove - ongoing	Mid term	Parks - Planning	Research work has been completed to help determine a site in the Downtown core area. The proposed site now needs to be routed for proper approvals before the City can move into design. Should the sites be approved, the goal is to have the sites ready for the public by spring 2025 planting.
N1.4 - Habitat Protection Zoning Support planning and zoning efforts that protect natural resources, including water resources, open space, and habitats.	Remove - complete	Mid term	Public Works - Utilities & Environ	Updates were made to the Critical Area section of the Zoning Code in 2024. These updates increased protections for Critical Areas and will be adopted through Redmond 2050.
N1.5 - Community Education and Outreach Educate community on importance of local, native, and drought-tolerant habitats and planting.	Intagrated into 2025 Plan through Action 5.11	Mid term	Public Works - Utilities & Environ	Work continued in partnership with Cascade Water Alliance. Educational information was distributed through the Summer 2024 Focus as well as Cascade Gardner classes offered throughout the year. https://cascadewater.org/water-efficiency/teacher-student-learning-resources/
N1.6 - Urban Forestry Staff Hire additional staff to implement the goals and strategies associated with increasing canopy cover across the city and to update the 20-year plan.	Intagrated into 2025 Plan through Action 16	Mid term	Parks - Ops	The City hired an AmeriCorps Fellow for the 24/25 service year to support Tree Canopy Strategic Plan goals. Key priorities include the development and implementation of a residential tree giveaway program.
N1.7 - Private Development Restoration Requirements Require private development to address restoration issues onsite and explore options for enhanced requirements.	2030+	Mid term	Planning - Long Range	Not started
N1.8 - Address Developed Areas that Flood Establish development standards, prioritize habitat, establish ecosystem minimums for habitat development, and/or purchase areas for development and retrofit of developed areas that flood or have degraded habitat and water quality.	Intagrated into 2025 Plan through Action 5.9	Mid term	Public Works - Utilities & Environ	Not started
(N2) Enhance Resilience of Natural Areas and Systems to Climate Change				
N2.1 - Forest Management Plan Implementation Continue to make progress on and update the 20-year Forest Management Plan developed by the Green Redmond Partnership to restore and enhance natural areas, assess current urban forest health, and outline future urban forest goals and strategies.	Intagrated into 2025 Plan through Action 5.12	Ongoing	Parks - Planning	See N4.1 and N4.2
N2.2 - Drought/Heat Tolerant Plantings Acquire plants grown from regional seed to support continued genetic diversity of native species and resilience of native habitat and soil and are able to be drought-tolerant, climate-adapted, and efficiently sequester carbon.	Remove - ongoing	Ongoing	Parks - Planning	The City developed and adopted a Climate Resilience and Sustainability in Vegetation Management Plan in 2024 to guide planting and maintenance practices in alignment with the ESAP and Climate Vulnerability Assessment. www.redmond.gov/953/
N2.3 - Improve Fish Passage Remove barriers to fish migration and prevent the creation of new barriers.	Remove - ongoing	Ongoing	Public Works - Utilities & Environ	Ongoing practice
N2.4 - Green Space Access Implement the Parks, Arts, Recreation, Culture and Conservation (PARCC) Plan to ensure access to green space, with a focus on areas of poor or unequal access.	Remove - ongoing	Ongoing	Parks - Planning	The PARCC Plan was updated in 2023. Implementation is ongoing.

Action	Role in 2025 Plan	Time Frame Established in 2020 Plan	Primary Department/Division	Brief Summary
N2.5 - Update Critical Habitat Update priority habitat corridors for preserving and enhancing critical habitat for wildlife and incorporate into departmental plans and codes such as critical areas.	2030+	Near term	Public Works - Utilities & Environ	The City is updated the Wildlife Habitat Plan, which includes corridor mapping that complements updated critical area regulations for wetland buffers.
N2.6 - Drought-tolerant and Lawn Removal Incentives Establish incentives/rebates for drought tolerant residential landscaping and removal of grass lawns.	Remove - ongoing	Mid term	Public Works - Utilities & Environ	Cascade Water Alliance Incentive
(N3) Expand Green Infrastructure and Associated Services				
N3.1 - IPM Plan for City Owned Properties Use Redmond Park's Integrated Pest Management (IPM) plan for city-owned properties.	Remove - ongoing	Ongoing	Public Works - Utilities & Environ	The City launched a cross departmental team to develop and integrate an IPM policy into City maintenance and operations practices. That policy was adopted and in place in 2022.
N3.2 - Environmental BMP & Design Standard Implementation & Enforcement Implement and enforce Environmental Best Management Practices & Design Standards on development and redevelopment projects.	Remove - ongoing	Ongoing	Public Works - Utilities & Environ	Standard specifications and requirements are outlined in the Stormwater Technical Notebook. https://www.redmond.gov/392/Stormwater-Utility
N3.3 - Proactively Maintain Stormwater Infrastructure Proactively maintain stormwater infrastructure including pipes, catch basins, vaults, ponds, and swales.	Remove - ongoing	Ongoing	Public Works - Utilities & Environ	This is a core element of the City's programming and permit requirements.
N3.4 - Stormwater Capital Improvement Plan Updates Update the stormwater capital improvement plan at least annually and implement the flood reduction, water quality improvement, and habitat enhancement CIPs according to the established schedule.	Remove - ongoing	Ongoing	Public Works - Utilities & Environ	Core element of City's stormwater programming.
N3.5 - Restore Redmond's Watersheds Implement the recommendations of the Redmond's Watershed Management Plan.	Remove - ongoing	Ongoing	Public Works - Utilities & Environ	2024 project completion updates: Monticello (Opti monitor and control SW management system installs x 2).
N3.6 - Update the City's Watershed Plan The City will update the Watershed Plan and utilize the best available science and technology to evaluate the previous plan's goals.	Remove - complete	Near term	Public Works - Utilities & Environ	4 stormwater ponds in Monticello Creek Watershed have been retrofitted with active control systems that reduce the frequency of high-energy, erosive flows into Monticello Creek. The City has been awarded a $400K grant from the Department of Ecology for watershed planning in High School Creek Watershed (a priority watershed) starting in 2025. The City is using a King County grant to conduct an “enhanced street sweeping” monitoring program in Tosh Creek watershed to assess the effectiveness of this BMP on stream water quality.
N3.7 - Stormwater Flow Control Retrofits Construct or retrofit stormwater flow control and infiltration facilities.	Remove - ongoing	Near term	Public Works - Utilities & Environ	2024 saw the installation and completion of Opti-system at two sites - Redmond Transit Center and Overlake Station SW Vaults.
N3.8 - Stormwater Treatment Retrofits Construct or retrofit stormwater runoff treatment facilities.	Remove - ongoing	Near term	Public Works - Utilities & Environ	Redmond treats stormwater runoff as sites redevelop or are retrofitted using a variety of facilities that hold, filter, or treat the runoff. These facilities range from small Best Management Practices treating less than an acre, to large regional facilities that treat entire basins in Redmond. 2024 saw the completion of the 90th Street Pond project.
N3.9 - Regional Stormwater Facilities Plan Coordinate development of the City's urban centers with stormwater management improvements to meet the City's water quality goals, support new development that is required by the Growth Management Act, and do so in a cost-effective way.	Remove - ongoing	Near term	Public Works - Utilities & Environ	The City continues to implement the Redmond Paired Watershed Study to assess the effectiveness of watershed restoration actions in Toss and Monticello Creek Watersheds. This study will end in 2026.
N3.10 - Drainage System Resilience Prepare natural drainage systems for changes in precipitation patterns.	Intagrated into 2025 Plan through Action 5.14	Near term	Public Works - Utilities & Environ	The City was awarded a grant to complete a white paper outlining the best practices and standards in this space. A subsequent grant was awarded in 2024 to complete the second phase of this project, which is to update the City's precipitation data to integrate climate change, and integrate that data into the City's stormwater model. That work is currently underway.
N3.11 - Urban Biodiversity Mapping Inventory and map urban biodiversity for the prioritization of enhancement, protection, and re-connection.	2030+	Near term	Public Works - Utilities & Environ	High-level biodiversity mapping has been integrated into the Wildlife Habitat Plan update (N2.5). Detailed biodiversity mapping will need to be funded separately.
N3.12 - Stormwater Retrofit Incentives Plan, create incentives for, and support green stormwater retrofit projects such as rain gardens and other low-impact designs.	2030+	Mid term	Public Works - Utilities & Environ	
N3.13 - Assess Health of City-owned ROW Trees Assess the health of natural systems for parks and ROW trees (urban forests will be part of 20-year plan). Develop goals, risk tolerances, and restoration strategies to manage tree species and canopy cover.	Remove - ongoing	Mid term	Parks - Ops	A City hired arboriculture consulting firm conducted a health and risk assessment of trees located on city-owned parcels and rights-of-way. Hazardous trees were identified for future pruning or other mitigation work to keep our community safe. The City hired a tree care company to perform the mitigation work outlined in the assessment. The City will continue this work into 2025-2026.

Action	Role in 2025 Plan	Time Frame Established in 2020 Plan	Primary Department/Division	Brief Summary
(N4) Increase Citywide Tree Canopy				
N4.1 - Planting in Open Space Park Lands Increase canopy on City's property by planting open space areas in parks consistent with park master plan, street trees, riparian and restoration plantings.	Intagrated into 2025 Plan through Action 5.12	Ongoing	Parks - Ops	The Parks Department and volunteers planted 664 trees and 380 plants in 2023. In addition, the Public Works Department planted 2,071 trees and 951 plants in stream buffers and critical areas to further support habitat restoration and tree canopy goals. In total 2,735 trees were planted in 2023.
N4.2 - Reevaluate Tree Regulations Reevaluate tree regulations to protect existing canopy and to ensure trees are replanted with a "right sized tree." Develop best practices for tree health and maintenance.	Remove - ongoing	Ongoing	Parks - Ops	Tree code updates are currently underway.
N4.3 - Tree Canopy LiDAR Dataset Acquire updated LiDAR dataset to reset canopy baseline.	Remove - complete	Ongoing	Public Works - Utilities & Environ	The City currently leverages Infrared aerial imagery from the United States Department of Agriculture, which is analyzed using GIS image analyst tools. The City also integrated aerial imagery analysis in 2023 and 2024 in partnership with other cities across the region.
N4.4 - Neighborhood Matching Grants for Tree Canopy Cover Encourage use of Neighborhood Matching Grants to maintain and increase canopy in neighborhoods, especially for low-cost or no-cost trees, where canopy is needed based on tree canopy plans for neighborhoods.	Remove - no longer relevant	Ongoing	Executive - Sustainability	N/A - The neighborhood matching grants program ended in 2021.
N4.5 - Tree Canopy Policies Add new policies to the comprehensive plan describing the tree canopy goal, timeframe, and other key strategies that includes maintaining and updating canopy data and tracking tree removal and replacement.	Remove - complete	Near term	Planning - Current Dev	Updated tree policies were complete through Redmond 2050 Natural Environment element.
N4.6 - Targeted Parcel Acquisition Evaluate acquisition of forest parcels, especially in neighborhoods or zones with less canopy, to preserve current urban forest cover.	2030+	Mid term	Parks - Planning	Not started
N4.7 - Tree Canopy Dashboard Develop an outward facing dashboard that allows public to see tree canopy performance measures for stormwater, heating/cooling, air quality, public health, economic development and climate.	Remove - complete	Mid term	TIS	Dashboard is published and available at https://www.redmond.gov/1726/
N4.8 - Develop Tree Canopy Plans for Neighborhoods Work with neighborhoods in ongoing efforts to increase canopy and forest health in their neighborhoods.	2030+	Mid term	Parks - Planning	Not started
WATER MANAGEMENT				
(W1) Achieve a Secure and Sustainable Water Supply that is Equitable, Affordable, and Accessible				
W1.1 - Align with Regional Planning Ensure continued alignment of City water management actions with regional planning framework, City policies, sustainability practices, and state and federal environmental regulations.	Remove - ongoing	Ongoing	Public Works - Utilities & Environ	This continues to be a core element of the City's work, including commenting on state and federal regulations, serving as an active member of Cascade Water Alliance, and Temporary Construction Dewatering policy changes.
W1.2 - Climate Risks to Water Availability Evaluate risks to water availability due to changes in precipitation patterns (more frequent drought conditions, high precipitation events, low recharge).	Intagrated into 2025 Plan through Action 5.10	Mid term	Public Works - Utilities & Environ	The City completed a Climate Vulnerability Analysis in 2022 which explored key climate risks and the vulnerabilities to various systems in our community. Additional work is planned to update the City's groundwater model to consider climate through a climate planning grant. https://www.redmond.gov/1708/Climate-Preparedness
(W2) Conserve Community Water Resource and Maximize Water Efficiency Savings				
W2.1 - Community Awareness Program Conduct climate-science based community awareness programs for water conservation practices.	Remove - ongoing	Ongoing	Public Works - Utilities & Environ	This is a core element of outreach and education work completed through Cascade Water Alliance.
W2.2 - Water-efficient Landscaping Continue to install and implement water-efficient landscaping and practices for streetscapes (including traffic circles), park sites, City facilities, and City-maintained plantings.	Remove - ongoing	Ongoing	Public Works - Ops	The City completed the Climate Resiliency and Sustainability in Vegetation Management Plan.
W2.3 - "One water" Education Expand public education on water conservation and the "one water" concept that all water is reusable.	Remove - redundant	Near term	Public Works - Utilities & Environ	See W2.1
W2.4 - New Standards for Resilience in Water Systems Study and determine if new standards need to be adopted to strengthen infrastructure to address increased flooding, such as larger bridges and culverts and other stormwater conveyance systems.	Intagrated into 2025 Plan through Action 5.14	Near term	Public Works - Utilities & Environ	The City was awarded a grant to complete a white paper outlining the best practices and standards in this space. A subsequent grant was awarded in 2024 to complete the second phase of this project, which is to update the City's precipitation data to integrate climate change, and integrate that data into the City's stormwater model. That work is currently underway.

Action	Role in 2025 Plan	Time Frame Established in 2020 Plan	Primary Department/Division	Brief Summary
W2.5 - Water Usage Reduction Strategy Create a Water Usage Reduction Strategy to provide the strategic framing for all other water efficiency strategies and actions.	Intagrated into 2025 Plan through Action 5.10	Near term	Public Works - Utilities & Environ	Not started
W2.6 - Grey Water for Irrigation Study code barriers and code/policy incentives for promoting greywater reuse over traditional irrigation. Establish a plan to upgrade irrigation controls and operational efficiency on City properties using grey water.	2030+	Mid term	Public Works - Utilities & Environ	Not started
W2.7 - Golf Course Recycled Water Partner with King County to use recycled water for irrigation of golf courses. Develop a plan to have all public golf courses 100% irrigation with recycled water.	2030+	Long term	Public Works - Utilities & Environ	Not started
(W3) Protect Quality and Quantity of Drinking Water Resources				
W3.1 - Identify Groundwater Impacts Protect groundwater by identifying impacts to groundwater through inspection and education.	Remove - ongoing	Ongoing	Public Works - Utilities & Environ	This work is a core element of the City's Wellhead Protection Program. https://www.redmond.gov/831/GroundwaterWellhead-Protection
W3.2 - Ground Contamination Management Refine a plan to manage existing groundwater contamination. Identify and address groundwater resources at risk. Include a monitoring and tracking program.	Remove - ongoing	Ongoing	Public Works - Utilities & Environ	See W3.1
W3.3 - Groundwater Monitoring Program Monitor groundwater monitoring well network to identify impacts to water quality and quantity early, monitor emerging contaminants, and provide an early warning to supply wells.	Remove - ongoing	Ongoing	Public Works - Utilities & Environ	Completed winter 2024 monitoring and report.
W3.4 - Update TCD Code Conduct a triple bottom line analysis of temporary construction dewatering (TCD) to determine policy options to reduce tensions between water resources management and compact growth.	Remove - complete	Ongoing	Public Works - Utilities & Environ	Code changes to limit TCD incorporated into Redmond 2050 updates
W3.5 - Septic/Sewer System Improvements Eliminate direct discharge into the stormwater system from the sanitary and private septic/sewer systems.	Remove - ongoing	Ongoing	Public Works - Utilities & Environ	No changes in 2023/2024
W3.6 - Water Efficiency Standards Increase water efficiency and resiliency standards for new development such as requiring dual piping so new buildings are rainwater/reclaimed water ready.	2030+	Mid term	Public Works - Utilities & Environ	Not started
W3.7 - Irrigation Water Efficiency Revise City codes to promote greater irrigation water efficiency. Considerations could include: rate change, irrigation standards, equipment upgrades, and scaling up properties.	2030+	Mid term	Public Works - Utilities & Environ	Not started
W3.8 - Septic Elimination/Sewer System Expansion Encourage conversion from on-site wastewater disposal systems as sewer lines become available so that all septic systems in the city are eventually eliminated.	Remove - outside scope	Long term	Public Works - Utilities & Environ	See W3.5
W3.9 - Landscaping and Irrigation Standards Require drought-tolerant planting and efficient irrigation systems on all new development.	2030+	Long term	Public Works - Utilities & Environ	Not started
CLIMATE RESILIENCE & CROSS-CUTTING				
(C1) Ensure All City Services and Infrastructure are Resilient to Climate Change Impacts				
C1.1 - Regional Collaboration for Utility Resilience Participate in regional efforts that increase Redmond's capacity to respond to climate change impacts to City-run utility services.	Remove - ongoing	Ongoing	Public Works - Utilities & Environ	The City is part of the Puget Sound Regional Climate Preparedness Collaborative and engages in various regional resilience planning initiatives, such as the collaborative effort led by King County to address heat mitigation strategies in the region.
C1.2 - Reevaluate Environmental BMPs and Design Standards for all City Properties Participate in regional efforts that increase Redmond's capacity to respond to climate change impacts to City-run utility services.	Remove - ongoing	Mid term	Public Works - Utilities & Environ	See W2.4
C1.3 - Wildfire Response Ensure local fire department has the equipment and training to manage wildfires.	Remove - complete	Mid term	Fire	Wildland firefighting gear was procured in 2022 to expand Redmond's wildfire fighting capabilities.
C1.4 - Backup Power Projects Identify and prioritize solar and microgrid power projects at critical City-owned facilities and at targeted districts.	Intagrated into 2025 Plan through Action 1.10	Mid term	Executive - Sustainability	See B4.1
C1.5 - Wildfire Mitigation Planning Identify permanent funding from the City of Redmond to support forest health improvements to reduce wildfire risk and expand public awareness campaigns on wildfires.	2030+	Mid term	Fire	Not started

Action	Role in 2025 Plan	Time Frame Established in 2020 Plan	Primary Department/Division	Brief Summary
(C2) Enhance Resilience of Populations that will be Disproportionately Impacted by Climate Change				
C2.1 - Equity Commitments Commit to climate policy through an equity lens. Reassess current City programs (including the actions in this plan) to evaluate and state equity goals in the face of climate change and sustainability issues.	Intagrated into 2025 Plan through foundational to implementation	Ongoing	Executive - Sustainability	Efforts continued to implement the City's sustainability efforts through an equity lens. Key initiatives include the Climate Vulnerability Index to inform key audiences, EV infrastructure planning, and the Energy Smart Eastside Boost program, which provides full cost coverage heat pump installations for low income community members.
C2.2 - Vulnerability Roadmap Conduct a communitywide climate vulnerability assessment (e.g. urban heat islands, air pollution) to identify and implement resilience-building actions.	Remove - complete	Near term	Executive - Sustainability	The City completed a Climate Vulnerability Assessment and Index in 2022. The Assessment also included potential strategies and considerations for teams as they make updates to their comprehensive plan elements and strategic plans.
C2.3 - Comprehensive Vulnerability Planning Ensure all City plans (e.g. Comprehensive Plan, Emergency Management Plan) account for vulnerable populations and communities.	Remove - ongoing	Near term	Executive - Sustainability	Sustainability and resilience are core pillars of the Redmond 2050 update. In addition, the City completed the Climate Vulnerability Assessment through Redmond 2050 to weave resilience considerations into all aspects of the draft Environmental Impact Statement and Redmond 2050 update. https://www.redmond.gov/1708/Climate-Preparedness
C2.4 - Impacts to Communities of Concern Ensure that the City provides opportunities to gather public feedback and understand the impacts of plan implementation on communities of concern.	Intagrated into 2025 Plan through Action 5.4	Near term	Executive - Sustainability	The city and ESAC hosted multiple community events to receive feedback from the community.
C2.5 - Disadvantaged Workers Ensure contracts for City construction projects for energy efficiency, fuel conversion, and green energy provide opportunities for local hiring and disadvantaged worker employment.	2030+	Mid term	Finance	Not started
C2.6 - Critical Areas Resilience Evaluate and respond to impacts in Critical Areas due to larger storms and warmer, drier summer weather (steep slopes, wetlands, upland riparian areas, upland restoration areas, instream habitat, aquifer recharge areas.)	2030+	Mid term	Public Works - Utilities & Environ	Not started
C2.7 - Neighborhood Visioning & Resilience Hubs Support neighborhoods in the development of Neighborhood Visioning Plans. Plans should share sustainability findings and identify infrastructure such as corner stores to serve as "resilience hubs" that sustain neighborhoods in the event of an emergency.	Intagrated into 2025 Plan through Action 5.5	Mid term	Planning - Long Range	Not started
C2.8 - Severe Weather Building Standards Develop building standards that include greater resistance to high winds and flooding.	2030+	Long term	Executive - Sustainability	Climate resilient design standards integrated adopted through Redmond 2050.
(C3) Institutionalize Consideration of Sustainability and Climate Change Across City Activities and Decision-making				
C3.1 - Align Budget with Climate Goals Align City budget decisions around climate mitigation and climate resiliency initiatives.	Remove - ongoing	Ongoing	Finance	The City leverages budgeting by priorities. Healthy and Sustainable is one of the four budget priorities. Learn more. https://www.redmond.gov/988/
C3.2 - GHG Monitoring & Dashboard Continue to benchmark, report, and regularly monitor community and municipal GHG emissions. Consider building a public-facing dashboard that includes information on Redmond's GHG emissions and personal carbon footprints.	Remove - ongoing	Ongoing	Executive - Sustainability	The sustainability data dashboard was published in 2022. The City continues to make enhancements to improve the user experience and metrics tracked. https://www.redmond.gov/1726/ The City also publishes annual progress reports that include other metrics not captured in the dashboard.
C3.3 - Leverage Smart Cities Strategies Leverage the rollout of smart cities strategies to support projects that improve sustainability tracking, emissions reduction, and cost savings related activities.	Remove - ongoing	Ongoing	TIS	The City continues to evaluate and deploy smart technology strategies to support city operations, including transportation and stormwater applications. Most recently the city expanded use of the Opti system to two new storwmater ponds to regulate flow out of the ponds.
C3.4 - Carbon Neutrality Plan for City Operations Develop a plan for City operations to achieve carbon neutrality.	Remove - complete	Near term	Executive - Sustainability	The City Operations Zero Carbon Strategy was adopted by Council in 2021. This Strategy sets the course for Council's Climate Emergency Declaration. https://www.redmond.gov/DocumentCenter/View/21088
C3.5 - Climate Awareness for Employees Build City employees climate change awareness in their role for considering climate impacts in their day-to-day decisions at work.	Remove - ongoing	Near term	Executive - Sustainability	Training and staff engagement part of ongoing work. New hire training in development.
C3.6 - Strategies to Expand Employee Participation Develop a cross-departmental working group or program to expand participation in climate solution strategies and environmental sustainability programming among City staff by the Sustainability Manager.	Remove - ongoing	Near term	Executive - Sustainability	The internal Sustainability Governance Committee was reorganized in 2024 to better support the growth of the sustainability work at the City. The internal team has been in place since 2021.
C3.7 - Climate Consideration Policy Implement a policy requiring all major City capital projects, procurements, and policies consider and attempt to mitigate climate change impacts, including contracting as possible from women & minority-owned businesses.	Intagrated into 2025 Plan through Action 2.9	Near term	Public Works - Utilities & Environ	Not started
C3.8 - City Environmental Sustainability ROI Develop and implement standard for creating project-specific return on investment determinations for environmental sustainability throughout a project's lifecycle.	2030+	Near term	Public Works - CIP	Not started

Action	Role in 2025 Plan	Time Frame Established in 2020 Plan	Primary Department/Division	Brief Summary
C3.9 - Economic ROI Tools to Encourage Climate Protection Create financial tools that capture the full lifecycle costs and benefits of City decisions, including the ROI of energy efficiency projects and the environmental costs of products and services.	Intagrated into 2025 Plan through Action 2.8	Mid term	Public Works - CIP	Not started
(C4) Pursue Cross-Sectoral, Community Wide Solutions to Address Climate Change and Cross-Cutting Sustainability Issues				
C4.1 - Countywide Commitment to Renewable Energy Resources Build on existing state renewable energy commitments, including the Washington State Renewable Portfolio Standard (RPS), to partner with local utilities, state regulators and other stakeholders on a countywide commitment to renewable energy resources.	Remove - ongoing	Ongoing	Executive - Sustainability	The City continues to advocate at the state level and work in partnership with PSE to support the growth of renewable energy resources.
C4.2 - K4C Financing Opportunities Request K4C to hire a financial expert to develop strategies for King County and its cities and utilities to create financing opportunities for climate change mitigation and implementation projects (e.g. state and federal policy changes).	Remove - ongoing	Ongoing	Executive - Sustainability	King County adopted the C-PACER program to provide financing for commercial upgrades. The City promotes the C-PACER program on its website. Ongoing collaborative efforts are being explored for residential programs.
C4.3 - EPA Air Quality Standards Partner with Puget Sound Clean Air Agency to track and monitor Redmond's air quality and potentially reevaluate plans to ensure they align with 100% of US EPA National Ambient Air Quality Standards.	2030+	Near term	Executive - Sustainability	Not started
C4.4 - K-12 Education Support an educational agenda to enhance outreach and awareness efforts for K-12 schools on environmental stewardship and partner with organizations to help implement.	Intagrated into 2025 Plan through Action 5.3	Ongoing	Executive - Sustainability	The City partnered with Sustainability Ambassadors in 2024 to support additional engagement with schools. Key topics underway through Sustainability Ambassadors include transpiration and energy. Additional City/K-12 efforts are underway through multiple efforts including Redmond 2050, Cascade Water Alliance, Nature Vision, Green Schools, and the Eastside Climate Challenge.
C4.5 - Climate Policy Advocacy Advocate for climate policy at the state level.	Intagrated into 2025 Plan through Action 2.6	Ongoing	Executive - Sustainability	Climate and sustainability remain key pillars of the City's legislative agenda.
C4.6 - Climate Awareness for Residents Provide educational resources (e.g. GHG monitoring tools) and opportunities to help residents become aware of and engage in implementation of the Redmond Climate Action Implementation Plan and sustainability initiatives.	Intagrated into 2025 Plan through Action 5.1	Near term	Executive - Sustainability	Multiple tools and resources available.
C4.7 - Youth Sustainability Ambassadors Train youth, through the school systems, to be youth sustainability ambassadors.	Remove - ongoing	Near term	Executive - Sustainability	The City launched a partnership with Sustainability Ambassadors in 2024 to support youth engagement at Redmond High School.
C4.8 - Community Check-Ins Provide ample opportunities to engage the community around sustainability issues and needs, and incorporate feedback into ongoing sustainability programs and initiatives. Include periodic community surveys to solicit feedback and understand concerns, such as costs.	Remove - ongoing	Near term	Executive - Sustainability	The City launched quarterly office hours in 2023 where staff and members of the Environmental Sustainability Advisory Committee are out in the community and available to answer questions about sustainability efforts. Events included library office hours, coffee shop meet ups, and building tours of green buildings in Redmond.
C4.9 - Local Carbon Sequestration Evaluation Evaluate the potential to sequester carbon through local projects, such as enhancing local tree canopy and green infrastructure, and implement actions to achieve further emission reductions.	2030+	Near term	Executive - Sustainability	A high level evaluation was completed with the adoption of the City's Zero Carbon Strategy.
C4.10 - Environmental Justice Program Develop an environmental justice program that identifies the communities suffering from environmental burdens, such as air quality hotspots. Explore partners to work with to close the gap on these inequities and reduce burdens.	2030+	Mid term	Executive - DEI	N/A
CLIMATE EMERGENCY DECLARATION				
CED 1: Carbon Neutrality by 2030. Reach carbon neutrality from municipal operations by 2030, striving for an annual reduction target of at least 10% of greenhouse gas emissions.	Intagrated into 2025 Plan through Action 1.7, 1.8, 1.9, 1.10, 2.9, 2.10	Mid term	Executive - Sustainability	In 2022 government operations emissions decreased 55% compared to the 2011 baseline. This was primarily driven by the transition to Puget Sound Energy's Green Direct program. Efforts to decarbonize the City building supply and fleet are in progress, but eliminating GHGs from City operations is not likely within next five years.
CED 2: Water Conservation. Increase water conservation practices, reduce water intensity, and implement strategies to minimize use of potable water in municipal operations to achieve a net positive water footprint by 2030.	2030+	Mid term	Public Works - Utilities and Environ	Water efficient fixtures are installed as equipment fails, but achieving a net positive water footprint from City operations is not likely within next five years.
CED 3: Zero Waste of Resources. Reduce waste generation across municipal operations to meet a zero-waste goal by 2030.	Intagrated into 2025 Plan through Action 4.6, 4.7, 4.8, 4.9	Mid term	Public Works - Utilities and Environ	Multiple efforts are underway, including the development of a Sustainable Purchasing Policy, Construction and Demolition Recycling policy (approved by Council in 2024), and ongoing recycling and composting services at City facilities. Despite this, achieving zero waste of resources in not likely within the next five years.
CED 4: Divest from Fossil Fuels. Divest from fossil fuels in COR investment portfolio by 2030, seek supplemental assistance, and develop strategic partnerships to include green financing options when feasible.	2030+	Mid term	Finance	Staff capacity has been allocated to the D365 upgrade. Efforts on this action are anticipated to begin in 2026.

Action	Role in 2025 Plan	Time Frame Established in 2020 Plan	Primary Department/Division	Brief Summary
CED 5: Green Building Incentives for Private Development. Adopt a minimum standard for private vertical construction to meet a minimum of LEED Silver, Built Green 4 Star, or equivalent prior to receiving any public incentives from the City by 2022.	Complete	Mid term	Executive - Sustainability, Planning - Long Range	Updates to the Green Building Incentive Program were complete through Redmond 2050. Requirements of the proposed program include land use incentives for all electric and other green building attributes in new construction and major redevelopments. https://www.redmond.gov/1921
CED 6: Green Building Standards for City Operations. Adopt a minimum standard for new public vertical construction to LEED NC Gold or better and a minimum standard for existing buildings operations and maintenance for LEED EBOM Silver or better.	Intagrated into 2025 Plan through Action 2.8	Mid term	Executive - Sustainability	Decarbonization planning and policy development is underway through the Facility Condition Assessment and Decarbonization planning project.
CED 7: Green Direct. Maintain participation in Puget Sound Energy's Green Direct Energy Partnership for clean energy in municipal operations.	Complete	Mid term	Executive - Sustainability	The City sources dedicated clean electricity from PSE's Green Direct program. Renewable electricity powers 84.5% of City operations electricity consumption (not natural gas).
CED 8: Staff Training. Recognize that our employees will be our biggest asset in advancing innovation, and we will create new opportunities to enable them to contribute to our efforts. Establish a minimum 10% of City staff receive Climate Change education/training annually with a minimum of 50% of employees trained on or before the end of 2025.	Ongoing	Mid term	Executive - Sustainability	Training and staff engagement part of ongoing work. New hire training in development.
CED 9: Mode Shift Investments. Invest in transportation mode-shift by prioritizing pedestrian, bicycle, and transit-oriented projects.	Intagrated into 2025 Plan through Action 3.1, 3.2, 3.4, 3.5	Mid term		Multiple efforts are ongoing to continue to prioritize mode-shift including projects to support light rail activation, updates to the Transportation Master Plan, e-scooter pilot, and more.
CED 10: Climate Vulnerability Assessment. Prepare a Vulnerability Risk Assessment Strategy by July 2021, analyzing local risks, losses, and other impacts due to wildfires, sea level rise, heatwaves and drought, extreme weather, extreme precipitation and flooding, and more than one extreme event in succession.	Complete	Mid term		The City developed and adopted the Climate Vulnerability Assessment in 2023 in partnership with Redmond 2050. https://www.redmond.gov/1708/
CED 11: Policy Impacts. Provide informational statements on greenhouse gas impacts, greenhouse gas reduction, and fiscal impacts with respect to policy and budget decisions to provide wholistic environmental decision making.	2030+	Mid term		Not started.
CED 12: GHG Reporting for City Operations. Adopt a tool to monitor and report on the full carbon and energy footprint for the city for all departments and all capital projects within two years.	Ongoing	Mid term		GHG reporting for City operations is completed every two years. The next inventory update is scheduled for 2025, for calendar year 2024. Capital project emissions are not calculated at this time.
CED 13: Integrated Pest Management. Transition to a fully integrated pest and vegetation management system that is free of harmful chemicals and eliminates noxious weeds.	Complete	Mid term		The City launched a cross departmental team to develop and integrate an IPM policy into City maintenance and operations practices. That policy was adopted and in place in 2022.

2025 ESAP Refresh Engagement Summary

Executive Summary

At the onset of the 2025 Environmental Sustainability Action Plan (ESAP) update process, the City's Environmental Sustainability Advisory Committee (ESAC) and the City staff developed a community outreach strategy focused on:

- **Reaching "beyond the choir"** of community members who are already interested in climate-related initiatives and listen, engage, and understand the needs of those who are most impacted by climate change.
- **Engage and inspire** the community throughout the update process to foster a sense of collective ownership and excitement about achieving a healthy, thriving, and climate resilient Redmond.



Figure 1: Goals for ESAP Refresh Engagement

These efforts led to an enhanced understanding of the Redmond community through various NGO collaborations, a growing sense of environmental stewardship within the community, and stronger communication networks overall.

This document is a summary of the engagement activities and feedback gathered between April and August 2025. The contents of this document have informed the development of the Five Big Moves framework and have been integrated into the proposed strategies and actions. This is a living document that will be updated throughout the ESAP Refresh process.

Between the months of April and August 2025, the City completed the following engagement and activation work:

- Participated in nine community-led events
- Coordinated and planned 10 City-run events
- Established paid partnerships with four community nonprofit organizations
- Held three workshops
- Published a communitywide questionnaire with 184 responses and a staff questionnaire with 41 responses
- Added 509 new subscribers to the Sustainability e-newsletter
- Published 34 social media posts about the ESAP Refresh
- Published four Focus news stories about the ESAP Refresh
- Saw 295 engaged visitors on the 2020 ESAP Refresh Let's Connect page

Recurring themes heard across events and stakeholders include:

- Desire for climate education and resource promotion through accessible (non-social media or email) channels
- Desire for community programming for climate action
- Affordability is a barrier, especially for energy efficiency home upgrades
- Concern about grid capacity and power outages increasing through electrification efforts
- Desire to make public transit more connected and thus accessible within Redmond

NGO Partner Efforts

The City established agreements with four community-based organizations (United Hub, El Centro Cultural Mexicano, Indian American Community Services, Sustainability Ambassadors) to raise awareness about the ESAP update, collect meaningful and culturally relevant input from community members about ways they can reduce GHG emissions, and support ESAP-related environmental education in accessible ways with the objective of building lasting trust and relationships within the community. Each organization's scope of work included hosting focus groups to get feedback on the plan update, translating communications materials and distributing them through their channels, and hosting climate-related events to activate their communities.

A summary of each NGO partner is included below.

United Hub

United Hub serves the Asian community within Redmond, primarily seniors, adults, and families with students. Key concerns from their community included affordable and energy-efficient housing, reducing consumer waste, and protecting natural resources. They hosted two focus groups and three events.

El Centro Cultural Mexicano

El Centro Cultural Mexicano serves the Latinx community within Redmond, primarily youth, young families, and low-income adults. Key concerns from their community included sustainable and accessible transportation, affordable and energy-efficient housing, and diversion of waste. They will be hosting two focus groups and one creative sustainability-themed community event.

Indian American Community Services

Indian American Community Services serves the South Asian community within Redmond, primarily young families, immigrants, youth, women in crisis, and small businesses. Key concerns from their community included community resilience, affordable and energy-efficient housing, and sustainable and accessible transportation. They hosted six focus groups and participated in one community event.

Redmond Sustainability Ambassadors

The Redmond Sustainability Ambassadors scope is largely focused on activation efforts. The partnership kicked off in July and key feedback is still forthcoming. They plan to implement behavioral change

campaigns in school and across social media, including a Bus Bingo program, Carbon Commute Count Survey, and more.

Community Questionnaire Summary

The Sustainability Team published a communitywide ESAP questionnaire that was open for 2 months. The questionnaire was incentivized through weekly raffles for the first month, then promoted through partner channels for the second month, leading to 184 submissions. Split into six sections, this questionnaire collected information on community members' barriers in taking climate action, opportunities they would be interested to see included in the plan, concerns, and ideas to be considered through this plan update. The following are key highlights from the questionnaire:

Demographics

- 76% of respondents live in Redmond
- Ages of respondents ranged from under 18 (2.5%) to over 75 (11.2%) with the largest percentage (24.7%) being ages 45-54
- 54% were single-family homeowners, 17% were multi-unit complex owners, and 24% were renters in multi-unit complexes or single-family homes

Community Preparedness and Resilience

- 75% of respondents are very or extremely concerned about climate change, only 13.6% were slightly or not at all concerned
- Extreme heat, air quality, and power outages are the climate-related events causing the most concern
- Emergency planning information (50.5%) and alerts (48.95%) reported to be most helpful in preparing for future emergencies

Buildings and Energy

- Energy savings (57.8%) were the biggest motivators for the 83 people that reported making energy upgrades to their homes
- 35.3% of respondents are willing to transition to electricity from natural gas, 20.6% are unwilling, and 14.7% said they'd need more information
- Cost (40.2%) was by far the greatest barrier for respondents to switch to electric systems for their homes, and incentives or financial support (48.9%) is what would most help respondents in making this switch
- Over a dozen write-in responses mentioned concerns about power outages and grid capacity as barriers toward complete electrification

Transportation

- 28.5% of respondents reported the biggest deterrent from using the light rail was the distance from their homes

- 69.6% of respondents are not considering an e-bike for their transportation needs and reported that concerns over cost (40.8%), safe storage (38%), and street safety (33.2%) were the most frequently cited reasons
- 19 write-in mentions voicing desire for more protected lanes and connected trails throughout the City of Redmond
- 10 write-in mentions voicing first/last mile challenges and desire for local public transport connectivity

Waste

- 48.4% of respondents were not aware the City offers composting services
- 57.1% of respondents would support a policy requiring restaurants to use durables and 43.5% of respondents would support a program offering reusable to-go items in restaurants
- Desire for more waste education, signage, and campaigns around recycling and composting

Natural Resources

- Respondents said free or low-cost trees (28.3%) or help from a City arborist (25%) would be most helpful to care for trees in their area
- Restrictions from HOAs and condo property management were mentioned as barriers for planting trees for many respondents
- Most respondents are willing to take various measure to reduce water consumption in summer months, with 42.9% reporting they already do

Staff Questionnaire Summary

The Sustainability Team conducted a staff survey at the Sustainability Fair in June to better understand how staff view sustainability within their work, and ways to best engage them. 41 responses were collected.

City Event Engagement Summary

Thus far, the Sustainability Team has attended 9 tabling events, hosted staff and community workshops, a property owner roundtable, held 6 monthly office hours (Meet and Greens), put on a climate trivia night, and regularly engaged with the Environmental Sustainability Advisory Committee in efforts to collect feedback for the plan update from the community. Through these efforts, the Sustainability Team has meaningfully interacted with over 250 community members.

Community Workshop

The community workshop took place on July 16, 2025. It was promoted via newsletters, social media, and partner channels. It had ~20 attendees, and 240 comments were collected concerning the proposed Five Big Moves.

Staff Workshop

The staff workshop was held on July 17, 2025. Directors and managers from various departments came together to identify barriers and opportunities in their work to support the proposed Five Big Moves, and to provide possible ideas for implementation. 25 attendees were in attendance, and comments on over 25 topics were collected.

Property Owner Roundtable

A roundtable with property managers in Redmond was held July 16, 2025. Four property managers from the area came together to identify barriers and opportunities. Key takeaways additional support needed for CBPS compliance, concerns over grid capacity, and electrification impacts on affordable housing.

Trivia Night

In efforts to increase climate awareness and educate the public on the City's sustainability efforts, the Sustainability Team hosted a Climate Trivia Night at Flatstick Pub on June 24, 2025. The event was promoted through newsletters, social media, and word of mouth. There were ~10 teams who participated and the trivia questions were displayed to all patrons of flatstick. No feedback was requested at this event, however, afterwards we received comments from community members that they enjoyed the event, look forward to more climate engagement events, and were grateful that the City made the effort to make climate education accessible and interesting.

Picnic in the Park

The Sustainability Team hosted a community picnic at Anderson Park on August 23, 2025, bringing community members together to talk about ways to take climate action and collect feedback on what resources and support would be most helpful from the City to reach Redmond's climate goals. CBO partners provided translations of engagement materials in Spanish and Chinese. It was promoted via newsletters, social media, and partner channels. There were 40 attendees, and 160 votes were collected to help prioritize community implementation pathways.

Tabling Events

The Sustainability Team tabled at 9 events so far and connected with an estimated ~150 community members through this mechanism. Goals through this engagement varied depending on where we were in the update process, what the event was, and the audiences that were present. At least one of the following, often multiple, were the focus at tabling events:

- Collect feedback for the plan / promote the questionnaire
- Connect community members to sustainability opportunities (ESE, Solarize, Ridwell, etc.)
- Spread awareness for engagement opportunities (Trivia Night, Meet and Green, Green Redmond Partnership, KCLS Book lists, etc.)

Meet and Greens

The Sustainability Team holds monthly office hours (Meet and Greens) around Redmond for community members to drop in and talk about sustainability. Usually these are held at the Redmond Library, but we have also met at Downtown Park, El Centro Cultural Mexicano, and continue to look for new locations that are accessible to different areas of the community. These sessions often serve as a time for community members to get updates on work, ask questions, and discuss community priorities.

Environmental Sustainability Advisory Committee

The Environmental Sustainability Advisory Committee meets bi-monthly and serves as the technical advisors for key milestones and decisions within the ESAP Refresh process. The ESAC provided guidance on the community engagement strategy at the April 28 meeting and is now supporting activation by volunteering to staff events and engagement activities.

Most recently the ESAC received a briefing on the 5 Big Moves framework (July 24 meeting) and provided feedback requesting the framework better reflect and prioritize equity.

Tribal Engagement

Provided an informational overview about the ESAP Refresh to the Duwamish Tribe and Snoqualmie Tribe at a City Planning information meeting in March 2025. At the request of the Duwamish Tribe the Sustainability Team provided a more detailed briefing, and they attended our Sustainable Advisory Committee meeting to learn more about the Plan.

In Sept, the City initiated a Non-Project Action Consultation Initiation Request to review the draft plan actions to the federally-recognized and other Tribes within the region, including the Muckleshoot Indian Tribe, Duwamish Tribe, Snohomish Tribe, Tulalip Tribes, and Stillaguamish Tribe of Indians.

Air Purifier Distribution Pilot Program

The Sustainability Team piloted and air purifier distribution program to promote community resilience against wildfires and smoke events. Eligibility for the program required self-attestation to making REQS and to living in the 98052 zip code. The program included targeted outreach through Avon Villa, Martin's Mobile Villa, and Friendly Village. Applications for the program were open from July 4 to August 23 and ~80 air purifiers were distributed to residents in the month of August.

Conclusion and What's Next

Through these engagement efforts, the Sustainability Team has an enhanced understanding of the Redmond community's barriers, needs, and capacities regarding the plan update that they are using to inform the actions that will be included in the draft plan. Future engagement efforts will continue to shape these proposed actions and set forth implementation blueprints for both municipal and community climate efforts. There are several upcoming opportunities already set on the calendar.

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2025 ESAP Refresh Strategy Review

Jenny Lybeck
Micah Bonkowski
Valeria Cosgrove
Erin O'Mara

September 23, 2025

Redmond
WASHINGTON

Purpose and Agenda

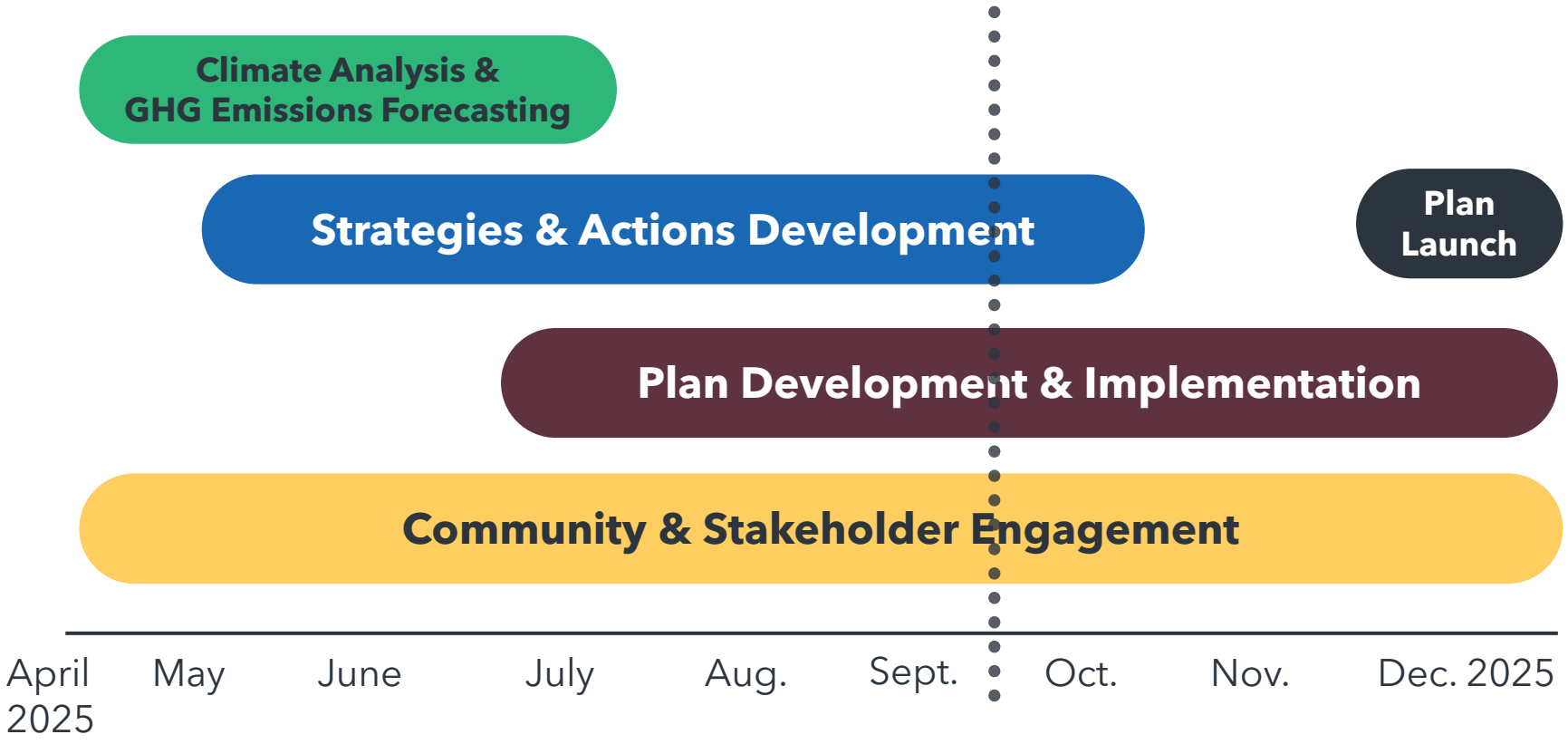
Purpose

Review draft ESAP Refresh strategies and provide strategic input on priorities.

Agenda

1. 2025 ESAP Refresh Overview
2. 5 Big Moves Framework
3. Strategy Review
4. Discussion and Next Steps

Project Timeline + Outcomes



Outcomes

- Municipal + community climate strategy
  - Aligned with vision of Redmond 2050
- Prioritize outcomes that:
  - Cut emissions
  - Build resilience to climate impacts
  - Uplift vulnerable communities
- Empower community to act

5 Big Moves

to meet our climate goals

10 Strategies

guiding how Redmond will accomplish the Big Moves

1: Make Existing Buildings Better

2: Build Efficient and Resilient Buildings

3: Provide Safe and Sustainable Transportation

4: Achieve Zero Waste of Resources

5: Foster a Resilient Community and Environment

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Big Move 1
Make Existing Buildings Better

Strategies

1. Reduce the direct use of fossil fuels across the community.
2. Increase energy efficiency and performance of existing buildings.

Key Actions

- Scale up technical assistance to support existing building energy efficiency and decarbonization
  - Energy Smart Eastside
  - Clean Buildings Performance Standard
- Support state expansion of Clean Buildings Performance Standard
- Explore home energy disclosure opportunities
- Decarb plans for City facilities, electric first policy, preventative maintenance

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Big Move 2
Build Resilient and Efficient Buildings

Strategies

1. Manage growing electricity demand and support grid resilience
2. Support high performance building standards and climate policies

Key Actions

- Handbook and training for new codes
- Incentives for grid flexibly, resilience, etc.
- Technical assistance and incentives for green building techniques in affordable housing and middle housing
- Grid capacity

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Big Move 3
Provide Accessible and Sustainable Transportation

Strategies

1. Level the playing field for non-vehicle transportation modes.
2. Encourage community members to choose low-carbon transportation options.

Key Actions

- Parking management and minimizing new parking
- E-bike subsidies and first/last mile pilot
- Expansion of commute trip reduction and other transportation demand management efforts
- EV infrastructure in existing multifamily and car share
- City fleet decarbonization strategy

Big Move 4
Achieve Zero Waste of Resources

Strategies

1. Reduce consumption.
2. Create a circular economy.

Key Actions

- Educational campaign
- Durables pilot to incentivize local eateries
- Construction and demolition diversion requirements
- Solid waste strategic plan
- Implement sustainable purchasing

Big Move 5
Foster a Resilient Community & Environment

Strategies

1. Provide resources to support community members before, during, and after climate hazards.
2. Maintain infrastructure and healthy ecosystems to mitigate the impacts of climate change.

Key Actions

- Expand communications, partnerships, and tools to reach and educate community
- Resilience hubs
- Update floodplain maps
- Water resilience and reduction strategy
- Expand tree plantings, education, hire staff
- Develop community wildfire protection plan

Building on the 2020 ESAP

	2020 ESAP	2025 Refresh
Focus	Environmental sustainability	Greenhouse gas reduction + climate resilience
Timeframe	30-years with near, medium, and long-term actions	5-years with a long-term action appendix
Strategies	24 strategies	10 strategies
Actions	168 - 78 removed - complete, ongoing - 7 removed, no longer relevant - 55 migrated to 2025 plan - 28 identified as 2030+ actions	Currently 54
Climate Emergency Declaration	Included in plan	Integrated into plan actions, recognizing City operations account for 0.4% of community emissions
Format	6 Focus Areas	5 Big Moves
Equity	Equity-specific actions	Foundational value guiding implementation

Discussion and Next Steps

Discussion

- Do these strategies reflect the right priorities for Redmond?
- Are there any gaps in the approach to equity, resilience, or emissions reduction?

Next Steps

- Action Review
  - 9/12 – 10/3: Comments accepted on proposed strategies and actions
- Draft Plan Review
  - 10/28: Optional Council Study Session
  - 11/7: Community comment period closes
- Final Draft Plan for Proposed Adoption
  - 12/2: Business Meeting

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Questions

Jenny Lybeck
jlybeck@redmond.gov

Redmond
WASHINGTON

Memorandum

Date: 9/23/2025
Meeting of: City Council Study Session

File No. SS 25-058
Type: Study Session

TO: Members of the City Council
FROM: Mayor Angela Birney
DEPARTMENT DIRECTOR CONTACT(S):

Parks	Loreen Hamilton	425-556-2336

DEPARTMENT STAFF:

Parks	Cameron Zapata	Senior Park Planner
Planning and Community Development	Glenn Coil	Senior Planner
Parks	Quinn Kuhnhausen	Facilities Manager

TITLE:
Capital Facilities Plan 2050- General Government

OVERVIEW STATEMENT:
Redmond's Capital Facilities Plan 2050- General Government Facilities Plan (CFP) ensures the City has the necessary facilities to serve the community now and into 2050. The plan prioritizes needs and recommends investments in Fire, Police, Public Works and Park Operations, Parks and Recreation, and Administrative facilities over the next 25 years.

☒ **Additional Background Information/Description of Proposal Attached**

REQUESTED ACTION:

☒ **Receive Information** ☐ **Provide Direction** ☐ **Approve**

REQUEST RATIONALE:

- **Relevant Plans/Policies:**
  Redmond 2050 Comprehensive Plan-Capital Facilities Element
  Policies CF-1, CF-2, CF-3, CF-6
  Redmond Community Strategic Plan
  Redmond Environmental Sustainability Action Plan
- **Required:**
  Washington State Growth Management Act (GMA), RCW 36.70A
- **Council Request:**
  N/A
- **Other Key Facts:**
  $200,000 was allocated for this project in the 2025/2026 adopted budget.

OUTCOMES:
The completion of the CFP will fulfill Growth Management Act and Comprehensive Plan requirements. The completion of this plan will forecast the future needs for general government facilities through 2050 to support future anticipated growth.

COMMUNITY/STAKEHOLDER OUTREACH AND INVOLVEMENT:

- **Timeline (previous or planned):**
  N/A
- **Outreach Methods and Results:**
  N/A
- **Feedback Summary:**
  N/A

BUDGET IMPACT:

Total Cost:
$169,966

Approved in current biennial budget: ☒ **Yes** ☐ **No** ☐ **N/A**

Budget Offer Number:
0000311

Budget Priority:
Vibrant and Connected, Healthy and Sustainable

Other budget impacts or additional costs: ☐ **Yes** ☐ **No** ☒ **N/A**
If yes, explain:
N/A

Funding source(s):
One Time Budget 2025-2026

Budget/Funding Constraints:
Funded through one time budget in 2025-2026 and needs to be completed in this timeframe.

☐ **Additional budget details attached**

COUNCIL REVIEW:

Previous Contact(s)

Date	Meeting	Requested Action
6/24/2025	Committee of the Whole - Planning and Public Works	Receive Information

Proposed Upcoming Contact(s)

Date	Meeting	Requested Action
10/28/2025	Study Session	Receive Information
11/18/2025	Committee of the Whole - Planning and Public Works	Provide Direction
12/2/2025	Business Meeting	Approve

Time Constraints:
Projects identified in CFP will be incorporated into the City's updated Capital Investment Strategy (CIS) and Capital Improvement Plan (CIP), which will begin in 2025, in anticipation of the 2027-2028 City budget.

ANTICIPATED RESULT IF NOT APPROVED:
If the Capital Facilities Plan is not completed and adopted the City will not have a Washington Growth Management Act (GMA) compliant Capital Facilities element for its Redmond 2050 Comprehensive Plan. New facility capital projects cannot be placed on the CIP. The City will be unable to impose and collect impact fees for use on projects associated with growth.

ATTACHMENTS:
Attachment A: Draft Capital Facilities Plan 2050- General Government
Attachment B: Slide Deck





GENERAL GOVERNMENT FACILITIES PLAN 2027 - 2050

CITY OF REDMOND

DRAFT | SEPTEMBER 2025



Acknowledgements

Mayor Angela Birney

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Jessica Forsythe, Vice President
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Osman Salahuddin
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Jeannine Woodyear, Vice-Chair
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Introduction

Redmond's General Government Facilities Plan (GGFP) aims to ensure the City of Redmond will have the facilities it needs to serve the community today and into the future. It prioritizes needs and recommends investments in Fire, Police, Public Works, Park Operations, Parks and Recreation, and Administration facilities over the next 25 years.

As major facility investments can take years to accomplish and require complex community engagement, design, and funding processes, this GGFP sets the framework for the City to plan for needed investments, focus resources, acquire needed property, and leverage partnership opportunities. This Plan supports and implements the vision of the Redmond 2050 Comprehensive Plan and is adopted by Council by reference into the Capital Facilities Element to fulfill Growth Management Act and City requirements for capital facilities planning. This plan also updates and extends the planning horizon of the 2025-30 Capital Facilities Plan – General Government Facilities to 2050.

The report is organized into four sections:

- **Planning Context** introduces the regulatory requirements that guide this GGFP, Redmond's municipal facilities, and this portfolio-wide assessment.
- **Portfolio Overview** covers citywide facility information, the facility condition assessment, facility rankings, and service life information.
- **Existing Conditions and Recommendations** covers major issues, facility condition ratings, alternatives evaluation and outcomes where applicable, and recommendations for Fire, Police, Public Works, Park Operations, Parks and Recreation, and Administration facilities.
- **Capital Investment Strategy** outlines near-term (6 years) and longer-term investment strategies and a feasible plan for implementation. It describes the benefits of implementing the GGFP for reducing risk, addressing functional and condition issues, emergency preparedness, and resilience, and improving services for underserved communities and geographies.

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1 – Planning Context

1.1 – Capital Facilities Planning Requirements

Implementing the development of capital facilities requires a disciplined and comprehensive planning process, and this is accomplished with functional plans that meet requirements for capital facility planning set forth by the Growth Management Act and are consistent with policies in the Capital Facilities Element.

State Law

The Washington State Growth Management Act (GMA) outlines the framework for capital facilities planning, including general government facilities. See RCW 36.70A and RCW 36.70A.070(3). Consistent with Capital Facilities Element policy CF-3, the City adopts this General Government facilities Plan by reference to ensure compliance with GMA requirements.

The GMA requires inclusion of:

GMA Requirement	GGFP Response
An inventory of existing capital facilities owned by public entities, including green infrastructure, showing the locations and capacities of the capital facilities	See Section 2.
A forecast for the future needs for such capital facilities.	See Section 3.
The proposed locations and capacities of expanded or new capital facilities.	See Section 3.
At least a six-year plan that will finance such capital facilities within projected funding capacities and clearly identifies sources of public money for such purposes	The City's current CIP is the six-year financing plan that fulfills this requirement. Further information for outyears is provided in Sections 1 and 4.
A requirement to reassess the comprehensive plan land use element if probable funding falls short of meeting existing needs and to ensure that the land use element, capital facilities element, and financing plan are coordinated and consistent.	See the Capital Facilities Element policy CF-10.

Further guidance is provided by Washington Administrative Code 365-196-415.

The GMA also requires jurisdictions to have capital facilities in place and readily available when new development occurs, or population grows in a service area. This concept is known as "concurrency", and it means that capital facilities needed to serve new development and/or a growing service area population must be in place at the time of

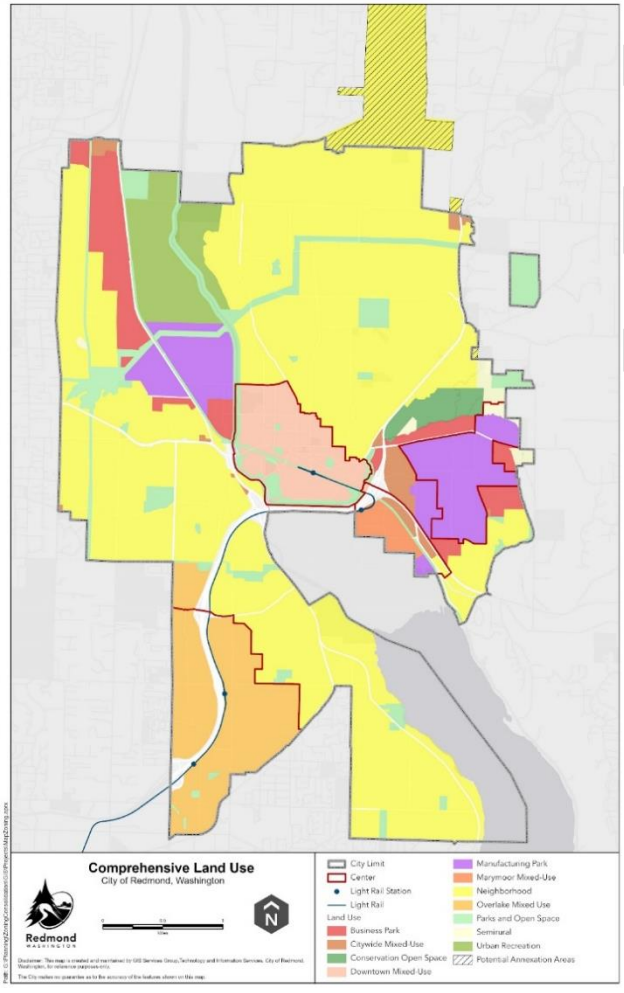
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initial need, and they must be of sufficient capacity serve the population. If the facilities are not in place, a financial commitment must be made to provide the facilities within six years of the time of the initial need and maintain service levels at or above local minimum standards, known as levels-of-service.

Redmond 2050 and the Capital Facilities Element

Redmond 2050 is the city's comprehensive plan with strategies to shape development and advance community priorities as the population grows a projected 47% by 2050, from 80,000 to 118,000. Its guiding principles are equity and inclusion, resiliency, and sustainability.

The future land use map and zoning direct new development, population, and jobs to three mixed-use growth centers served by regional light rail transit: Downtown, Marymoor Village, and Overlake. Other key features of Redmond's geography are two industrial areas northwest and southeast of Downtown, the regional Marymoor Park bordering the north end of Lake Sammamish, and multiple trail corridors. Redmond also has critical areas (environmental features) like streams, wetlands, and steep slopes where development is restricted.



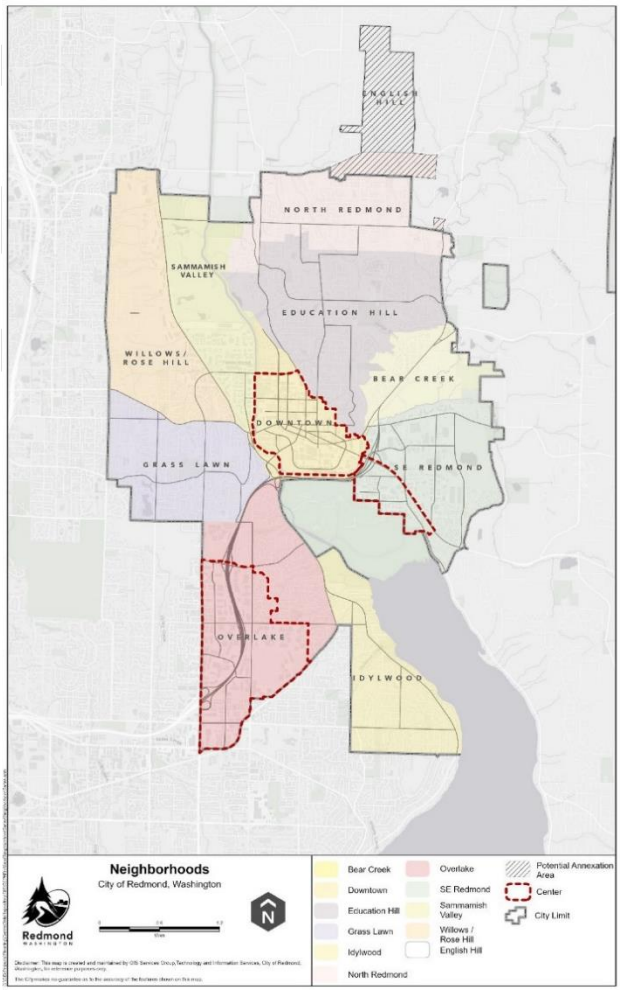


Figure 1: Redmond 2050 future land use map (left) and neighborhoods map (right).

Redmond has been transitioning from being a Seattle suburb to a full-service city. As population and jobs grow and service demands increase, facilities that have served the community well for decades will be unable to meet growing needs without timely investments to address deficiencies and accommodate growth.

Redmond 2050 contains a Capital Facilities Element, which includes a facilities vision statement, general inventory, level-of-service standards, and goals and policies that guide financial decisions. It directs the development of the City's capital investment program in support of the community's vision for the future and affects both public agencies and private decisions related to individual developments.

This GGFP is a functional plan for municipal facilities that contains more specific information and recommendations. See the General Government Facilities Plan Scope in the next section below. The GGFP supports and implements the vision of the Redmond 2050 Comprehensive Plan, and is adopted by Council by reference into the Capital Facilities element in order to fulfill Growth Management Act and City requirements noted in Policy CF-2 for capital facilities planning. This plan also updates and extends the planning horizon of the 2025-30 Capital Facilities Plan – General Government Facilities to 2050.

Key Capital Facilities Element and related policies include (some are paraphrased for brevity):

- FW-CF-1 (one of several framework principles): Optimize strategic actions and investments over near-, mid-, and long-term portions of the Comprehensive Plan's 2050 planning horizon while recognizing the need to retain flexibility to leverage opportunities and respond to changing conditions.
- CF-6: Establish capital facility level-of-service standards that help determine long-term capital facility and funding requirements.
- CF-18: Identify shared capital needs and the lands that may be used to meet these needs with nearby cities, King County, neighboring counties, the State of Washington, the Puget Sound Regional Council, school districts, special purpose districts and other government agencies. Maintain a capital acquisition budget and schedule that reflects the jointly agreed upon priorities.
- CR-39 (Climate Resilience and Sustainability Element): Implement the City of Redmond Operations Zero Carbon Strategy to decarbonize and achieve carbon neutrality for city facilities, operations, and services.

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Policy CF-2 Checklist

Capital Facilities Element policy CF-2 establishes requirements for Redmond's functional plans. The requirements are listed in the table below, alongside an explanation and section reference for how the GGFP satisfies each.

CF-2 Requirement	GGFP Response
CF-2: Include in functional plans and supporting documents, at a minimum, the following components necessary to maintain an accurate account of long-term capital facility needs and associated costs to the City, and consistency with the Comprehensive Plan and applicable provisions of the Zoning Code:	
A description of the current capital facility infrastructure, including green infrastructure, and the scope and cost of its operation and maintenance;	Descriptions: See the portfolio overview in Section 2.1 - Introduction. Green infrastructure: The Project Team has determined this requirement is not applicable to the GGFP. Some green features of existing facilities are documented in Section 3 – Existing Conditions and Recommendations, and the City's principles for decarbonization and sustainability are described in Section 1.2 – Facility Planning Principles. Scope of operations: See the introductions to functional areas and descriptions of existing facilities in Section 3.1 – Introduction. Cost of maintenance: See the summary of maintenance liabilities in Section 2.2 – Operations and Maintenance, and the costs of maintenance in the project lists in Sections 3 and 4.
A description of current capital facility deficiencies and appropriate strategies to remedy these deficiencies;	Current deficiencies: See the summary of maintenance liabilities in Section 2.2 – Observed Deficiencies and Predicted Renewals. Deficiency remedies: Generally, most deficiencies and other liabilities will be addressed by funding 100% of the project costs identified by the 2023 Facility Conditions Assessment. See strategy details in the project lists of Sections 3 and 4.
An analysis of capital facilities needed through the year 2050, and preliminary cost estimates to meet those needs;	Capital facilities needed: See qualitative descriptions of facility needs in Section 3 – Existing Conditions and Recommendations. See a list of functional plans that provide additional analysis in Section 1.2 – General Government Facilities Plan Scope. Preliminary cost estimates: See the project lists in Sections 3 and 4.
An analysis specifying how capital facilities will be financed and maintained;	See Section 1.4 – Funding for Capital Investment.
A description of the functional plan's public outreach, participation and review process;	See Section 1.5 – Planning Process.
Criteria to be used to prioritize projects and inform the Capital Investment Strategy;	See the GGFP suggested supplemental criteria to the Capital Investment Strategy in Section 4.2 – Prioritization Criteria.

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CF-2 Requirement	GGFP Response
An analysis of how proposed investments impact underserved communities and geographies;	See Section 1.2 – Facility Planning Principles.
A description of how the plan addresses emergency preparedness and resilience to natural hazards, including climate change impacts;	See Section 1.2 – Facility Planning Principles.
A description of how the functional plan and supporting documents fulfill Growth Management Act requirements; and	See Section 1.1 – State Law.
An analysis indicating that the functional plan, including any subsequent revisions or modifications, is consistent with Comprehensive Plan policies, Zoning Code regulations, and applicable state and federal laws.	Comprehensive Plan policies: This table fulfills the key Comprehensive Plan policy applicable to general government facilities. Zoning Code regulations: See Section 1.6 – Zoning Analysis. Applicable state and federal laws: See Section 1.1 – State Law.

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1.2 – Facility Planning Principles

The section implements sub-policies of CF-2 related to:

- Decarbonization and sustainability
- Emergency preparedness and resilience to natural hazards
- Underserved communities and geographies

This section also addresses policy CF-6 with regards to the accessibility level-of-standard for general government facilities.

Decarbonization and Sustainability

The following key documents guide the approach to decarbonization and sustainability of Redmond's general government facilities:

- 2024 Portfolio Decarbonization Report
- 2021 City of Redmond Operations Zero Carbon Strategy
- 2020 Environmental Sustainability Action Plan
- 2025 Environmental Sustainability Action Plan (in development)

Building Energy Use and Decarbonization

The City of Redmond has adopted aggressive sustainability goals for city operations through City Council's Climate Emergency Declaration, including a goal of net zero greenhouse gas emissions by 2030. Redmond also participates in the King County-Cities Climate Collaborative (K4C), which share a target to reduce energy use in all existing buildings 25% below 2012 levels by 2030. All new facilities must meet LEED Gold or a similar green building standard.

The City's energy consumption is expected to increase from more than 10 million kWh annually to approximately 11.4 million kWh by 2030 due to the addition of new infrastructure, reinforcing the need for and importance of energy conservation. Fossil fuels used to heat and cool Redmond's facilities account for nearly 20% of the City's 2022 greenhouse gas emissions. Therefore, the strategic actions relevant to this GGFP are focused on energy efficiency retrofits at existing municipal facilities, including transitioning space and water heating to all-electric and adding electric vehicle charging infrastructure for the City's fleet.

The City of Redmond participates in PSE's Green Direct program, which provides carbon-free electricity for approximately 85% of City operations' electricity consumption. Because of the City's participation in Green Direct, emissions from facilities account for about 36% of the City's total 2022 GHG emissions, down from more than 71% in 2020, although this still illustrates the need for efficiency to reduce demand on the grid as more buildings are electrified.

In 2024 the City worked with Ecotope to complete a portfolio decarbonization analysis and report. The scope of the analysis included the significant facilities in the portfolio

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(excluding RCCMV, MOC, Police's North and South Garage buildings, and the Municipal Parking Garage). The analysis evaluated interrelated variables including energy use and on-site fossil fuel consumption, total greenhouse gas emissions, Washington state's 2019 Clean Buildings Performance Standard (CBPS) compliance requirements, and HVAC equipment age and condition. These variables were combined into weighted evaluation criteria to identify the degree to which each of these metrics might influence the prioritization of city facility upgrades and the deployment of decarbonization strategies in conjunction with any other maintenance work.

The results of the decarbonization analysis are integrated into a facilities dashboard created with the 2023 Facilities Condition Assessment by Meng Analysis.

Key findings:

- The Redmond Pool is the most energy intensive building in the City's portfolio on a per-square-foot basis. A majority of the building's energy demand is met by electricity.
- Fire stations have high energy use intensity for their size, and their energy demand is mostly met by gas, making them a key opportunity for retrofits.
- City Hall has the greatest carbon emissions impact by a large margin, followed by the Redmond Pool, the Public Safety Building, Fire Station 16, and Fire Station 11.
- City Hall and the Public Safety Building, being over 50,000 square feet of floor area, are the only facilities subject to CBPS compliance in 2028 and will be required to demonstrate improved energy performance compared to current operation. Other buildings only need to report performance.
- The Redmond Senior & Community Center, opened in 2024, was designed as an energy efficient and all-electric building. Evaluation of its performance is incomplete, but early indicators show it has a very low carbon impact and that it is possible for large buildings to significantly decarbonize.
- Eliminating on-site natural gas consumption, replacing gas-powered space heating and cooling equipment with electric heat pumps, and upgrading aging HVAC systems are common strategies recommended across the facilities portfolio.
- Demand on the regional electric grid is increasing significantly as other jurisdictions and property owners seek to decarbonize. Redmond is partnering with Bellevue on a regional study of the issue. Case-by-case investigation of electrical capacity will be needed at each facility to inform retrofits' scope, especially as electric vehicle charging is added.

Relevant to the subsection on emergency preparedness, some Redmond facilities include on-site emergency generators to provide backup power (including all fire stations, the Public Safety Building, and City Hall). To maintain readiness, generators must be turned on weekly for about 30 minutes, which can represent a significant amount of combustion emissions beyond those generated by regular building operation. Generator use is not fully included in the decarbonization analysis but is included in the City's biannual greenhouse gas emissions inventory.

Maintenance projects can contribute to decarbonization goals by identifying and prioritizing maintenance and equipment replacement strategies that reduce building carbon impacts. In many cases, it is more efficient and cost-effective to bundle building upgrades together to reduce mobilization costs. In general, the work to decarbonize facilities are integrated into the recommended maintenance projects categorized as observed deficiencies, predicted renewals, and opportunity projects in the FCA. The project lists in Section 3 and 4 of this GGFP group these projects under "routine maintenance" headings.

Other Sustainability Measures

Besides energy use for building heating/cooling, sustainability documents from the City report that facility operations can be improved with the following key strategies related to water, solid waste, and transportation:

- Convert building lighting to LED
- Consider opportunities to add on-site renewable energy generation to existing and new facilities, especially solar power
- Consider opportunities to use low-embodied carbon materials when designing and constructing new facilities
- Consider opportunities to capture rainwater, reuse water, reduce impervious surface area, and improve stormwater management
- Consider opportunities to protect and expand tree canopy coverage during major facility investments
- Reduce City operations-generated solid waste and divert more waste from the landfill with recycling and composting
- Locate new facilities on location-efficient sites with robust transportation options for staff commuting and the visiting public, including connections to quality transit and safe walking and biking routes
- Transition the City's fleet to electric vehicles where models are available and are operationally feasible

In the current CIP, $1.3M is set aside for citywide sustainability improvements including automation of HVAC controls and converting to LED lighting, and is $1.7M is provided for electric vehicle charging equipment at the Municipal Parking Garage, Fire Station 11, and Fire Station 12.

Emergency Preparedness and Resilience to Natural Hazards

The following key documents guide the approach to emergency preparedness and resilience to natural hazards for Redmond's general government facilities:

- 2023 Comprehensive Emergency Management Plan
- 2022 Climate Vulnerability Assessment Report

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- 2020-2025 King County Regional Hazard Mitigation Plan: City of Redmond Annex

Summary of Hazards

The City of Redmond is dedicated to protecting the lives, property, and environment of its residents through preparedness, response, recovery, and mitigation activities. Redmond's facilities must provide continuity of operations to support the community. In the context of the GGFP, emergency preparedness and resilience to natural hazards involves potential risks from incidents like large earthquakes, flooding, major urban fires, wildfires, winter storms, power outages, utility disruptions (e.g. water supply), health hazards, terrorism, civil disturbances, and cyber attacks.

The King County Regional Hazard Mitigation Plan and the Redmond-specific annex to the plan provide detailed hazard and vulnerability identification, risk assessment, and mitigation planning. The Redmond Comprehensive Emergency Management Plan provides a framework for how the City government, its departments, and its employees will respond to emergency incidents.

Essential public services by functional area that need to be maintained during citywide emergencies include:

- Fire and Police – Responding to major life safety incidents, including emergency medical services, fire suppression, search and rescue, traffic control, and security operations
- Public Works – Responding to disruptions or damage in utility delivery and the transportation system
- Administration - Operation of the emergency operations center at City Hall, public communications, and coordination with partner agencies
- Parks and Recreation – Operation of emergency shelters and distribution of food and water to affected residents
- Parks Operations and Facilities – Response to storm damage at facilities, parks, and streets (e.g. tree damage)

Fire stations are particularly important. They are classified as essential facilities under the International Building Code and so are designed to remain operational during catastrophic incidents. Further, new or remodeled fire stations present an opportunity for them perform a secondary role as community resilience hubs, with storage areas for volunteer community emergency response (CERT) teams to make supplies accessible to neighborhoods during disasters.

Facilities Planning and Maintenance

City facilities need to be adequately maintained so they can support incident response activities and continuation of essential services. The Comprehensive Emergency Management Plan establishes these key ongoing maintenance and management actions:

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- Identify safety hazards. For those that can't be eliminated immediately, find ways to isolate or lessen risks pending permanent resolution.
- Verify structural and non-structural hazard analysis of city buildings to identify and mitigate hazardous conditions. This should be in coordination with facility management.
- Establish procedures to quickly determine threats to city facilities and to alert occupants.
- Review each Facility Emergency Plan for city buildings and train personnel in regard to building emergency standard operating guidelines, including evacuation, shelter-in-place, and lockdown.
- Maintain emergency backup power for all essential systems and facilities. Critical electronic data communication systems should have uninterruptible power supplies and surge protection.
- Periodically test building warning systems and procedures to ensure they remain functional.
- Regularly verify that security cameras and monitors are working properly.

The following are identified as key risks in the general government facilities portfolio:

- Multiple fire stations are beyond their expected service life and have compounding functional issues that hamper operational capacity and emergency readiness, especially at Fire Stations 11, 12, 13, and 14
- The Public Safety Building has significant maintenance liabilities and functional issues that hamper its ability to serve a growing workforce and maintain optimal emergency readiness
- Parts of Downtown are at elevated risk of earthquake and flooding impacts, which could impact the operations for multiple facilities including the Fire headquarters station, Police headquarters which also houses the 911 dispatch center, and the Administration headquarters which also houses the City's emergency operations center.
- Lack of public facilities in Overlake for City staff support, incident staging, emergency shelter, etc.
- Redundancy in power generation is a critical priority, but some facilities that provide critical functions do not have emergency generators or battery storage for backup power, or lack electrical equipment like transfer switches and portable generator plug-ins.

Capital Projects

The GGFP addresses these considerations by:

- Recommending major renovation or replacement of Fire Station 11 and replacement of Fire Station 12
- Recommending Redmond Fire and King County Fire District 34 coordinate to support facility reinvestment or replacement, particularly for Fire Stations 13 and 14

- Right-sizing new fire stations to improve distributing storage capacity for emergency supplies, along with including funding for a new Fire logistics facility for additional storage and streamlined supply chain management (e.g. shelter equipment, first aid supplies, and related resources)
- Recommending replacement of the Public Safety Building
- Recommending redevelopment of the Maintenance and Operations Center, which will include a modern department operations center for Public Works, Park Operations, and Facilities
- Recommending emergency generator upgrades at several fire stations and a new generator at RCCMV (assuming City ownership). Battery storage could also be considered at facilities primarily powered by electricity, such as RSCC.
- Recommending new Fire, Police, and Parks and Recreation facilities in the Overlake neighborhood to provide better citywide coverage and public access
- Including "opportunity projects" for on-site renewable energy generation (i.e. solar panels) at multiple fire stations and RCCMV (assuming City ownership)
- Recommending citywide municipal building renovations, maintenance, and repairs and "routine maintenance" at all facilities, including maintenance of essential electrical, plumbing, HVAC, telecommunications, security, and fire systems

Underserved Communities and Geographies

The City has a duty in ensuring all Redmond residents and businesses have sufficient access to general government facilities and public services. As the city has grown over time, some communities and neighborhoods have had more investment than others. Both direct and indirect local policies and regulations have resulted in disparities. There is a concerted effort at the regional level and in Redmond to identify and address current and past inequities in zoning and land use polices particularly among communities of color, people with low-incomes, and historically underserved communities.

Considerations relevant to the GGFP include:

- Fire has quantitative level of service standards for response time to maximize protection of life and property, which impacts the distribution of fire stations.
- Police has a qualitative level of service standard for community expectations on response time. Officers are on patrol in their vehicles throughout the city, so distributed police facilities are less critical than for Fire.
- Parks and Recreation has level of service standards to ensure residents have reasonable access to indoor recreation options.
- Public Works & Park Operations are less geography-sensitive and can rely on single/centralized locations because of their limited public interface and life-safety emergency response needs.
- Customer-service oriented administration and community meeting spaces need to be easily accessible, while other administration functions are less geography-sensitive.

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The future land use map and zoning direct most new development, population, and jobs to three mixed-use growth centers served by regional light rail transit: Downtown, Marymoor Village, and Overlake. These growth centers are of particular interest because areas with higher and growing population density warrant greater public facilities investments to support quality of life, ensure accessibility goals and response time levels of service are met, and to make efficient use of resources.

Communities at Risk of Displacement

The Redmond 2050 Housing Element defines displacement risk as: "Areas in the jurisdiction that may be at higher risk of displacement from market forces that occur with changes to zoning development regulations and public capital investments." Displacement risk can be a useful indicator of populations facing racially disparate impacts, housing affordability challenges, or low incomes and who may be more sensitive to the impacts of government facility policies and investment decisions.

Data from the Puget Sound Regional Council finds that of the approximately 12 census tracts that make up most of Redmond, all but three were rated as "low" for displacement risk. All three of the census tracts that were not rated as "low" were rated as "moderate" displacement risk. Census tracts do not align perfectly with neighborhoods, but these three tracts roughly include Downtown, Sammamish Valley, Willows / Rose Hill, and the southern portion of Overlake.

With this data and other analysis, City staff conclude a significant amount of residential displacement has already occurred and a large segment of the population cannot afford to live in Redmond. Downtown and Overlake are two of the three growth centers and have a concentration of existing and planned multifamily housing that is relatively less expensive than single-family housing, which may mean relatively moderate- and low-income households are located in these areas and drive the moderate displacement risk. City staff are also strategizing how to minimize business displacement as commercial properties are developed.

To avoid exacerbating existing trends, facilities investments (land acquisition and new construction) should avoid or minimize the displacement of residents and businesses, especially low-moderate income residents and the businesses that serve them. To mitigate trends and promote multiple community goals, there is also a limited potential for new facilities to be part of mixed-use developments that include subsidized housing or commercial space, particularly in the three growth centers.

Communities of Color

Redmond is a culturally diverse community with substantial populations from some BIPOC (Black, Indigenous, and People of Color) communities. In 2020, Redmond residents identified as:

- White: 49%
- Asian: 37%

- Hispanic or Latino (of any race): 8%
- Two or more races: 4%
- Black or African American: 2%
- Other race: 1%
- American Indian and Alaska Native: 0%
- Native Hawaiian and Other Pacific Islander: 0%

The siting and design of general government facilities can have an impact on communities of color by changing their proximity and accessibility to public services. Areas of the city with the greatest concentrations of BIPOC residents (more than 50% of people identifying as a race other than White alone) are the southern portion of Overlake and Southeast Redmond.

Overlake

A key underserved geography is the Overlake growth center. Various functional plans note Overlake lacks general government facilities for Police and Parks and Recreation. The neighborhood is also not ideally served by Redmond Fire, as identified by the Fire Functional Plan. During GGFP development, Police identified a need for a police facility presence in Overlake as the area grows. These gaps are notable because Overlake is already a dense, mixed-use area and is expected to continue growing from approximately 4,300 residents in 2019 to 23,000 residents by 2050, most of whom will live in multifamily housing.

The GGFP plans to fill these gaps in the following ways:

- Fire Station 12 will be relocated more centrally to Overlake, providing faster response times for fire and medical calls to more people.
- An Overlake police precinct will provide more support for law enforcement functions and customer service, and potentially reduce response times for major incidents.
- An Overlake community center will fill a gap for indoor recreation identified by the Parks & Recreation Department.
- A new Administrative office space is planned to open by 2030 as part of public-private partnership. This will bring more customer service functions and government presence to Overlake ahead of larger investments.

The City needs to acquire land or partner with non-City property owners for these new facilities. Consideration should be made for displacement risk and burdens when siting and designing new facilities to avoid exacerbating community impacts from market forces and physical development.

Downtown

The Downtown growth center is well-served by the headquarters facilities for Fire, Police, and Administration. Potential displacement risk is low because general government

facilities investments will likely be limited to locations where the City already owns land, including the Fire Station 11 site and the Redmond municipal campus.

The Redmond Senior & Community Center is a key asset for Downtown residents but somewhat distant from the core "center of gravity" for the Downtown population south of the campus. Maintenance and upgrades to the active transportation network will help ensure easy access to this facility.

Southeast Redmond / Marymoor Village

Marymoor Village is a growth center within the larger Southeast Redmond neighborhood. Marymoor Village is transitioning from an industrial and commercial district to a mixed-use residential district. While close to Downtown and connected by a new light rail line, it is physically separated from Downtown's government facilities by Highway 520 and major streets. The neighborhood is also not ideally served by Redmond Fire given its current and planned residential population density.

The key GGFP recommendation for this area is the purchase and renovation of the Redmond Community Center at Marymoor Village. City ownership would allow full control over maintenance and capital investment. This will enable better predictability for future planning of facilities and recreation programs that serve residents in this area (especially communities of color).

Bear Creek / Avondale

The Bear Creek area, particularly along the Avondale Road corridor, is not a growth center but has a concentration of multifamily housing and a mobile home park serving some low-moderate income households. Compared to its population density it has a lack of public amenities and infrastructure. No facilities investments are planned in this area. Maintenance and upgrades to the active transportation and transit networks could improve access to facilities in Downtown and Southeast Redmond.

Willows / Rose Hill

The Willows / Rose Hill neighborhood in northwest Redmond is a geography not ideally served by Redmond Fire, as identified by the Fire Functional Plan. However, mutual aid coverage is available from the City of Kirkland's Fire Station 26 to the west. Redmond Fire has identified the Willows Road corridor as a potential location for a fire station to maximize citywide coverage by Redmond Fire facilities.

Public safety is a key consideration because this area has a significant daytime employment population at industrial facilities and business parks. Other functional areas, such as Parks and Recreation, are less critical because large parts of the neighborhood are covered by forest and a golf course; the area has limited population density compared to the growth centers.

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Accessibility

The Americans with Disabilities Act of 1990 (ADA) is a civil rights law that prohibits discrimination based on disability. As applied to facilities, it requires buildings that are accessible to the general public to meet minimum accessibility standards. It also requires applicable employers to provide reasonable accommodations to employees with disabilities. Practical implementation in public buildings includes items like handicap-accessible parking spaces, level ground-floor access and ramps, elevators in certain buildings, and interior furnishings and fixtures (such as light switches, door handles, and restrooms) that are easy to use by people with a range of physical disabilities.

Designing accessible buildings is a standard practice of contemporary architectural design, but buildings built before the ADA was enacted require retrofits to improve compliance.

In 2019 the City prepared an ADA Transition Plan with upgrades strategically prioritized at facilities with higher public usage, such City Hall, Redmond Pool, community centers, and the Public Safety Building. In the current CIP, $1.5M is set aside for citywide accessibility improvements and removing barriers.

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1.2 – General Government Facilities Plan Scope

This GGFP focuses on municipal facilities occupied by Redmond staff, maintained by Redmond's facilities team, and/or open to the public. Within the GGFP, facilities are grouped into five functional areas: Fire, Police, Public Works & Parks Operations, Parks and Recreation, and Administration.

For further details on some of the in-scope general government facilities in this plan, see the following:

- Redmond Fire Department Functional Plan (service background analysis, facility details, and equipment not covered by this GGFP)
- Redmond Fire Department Community Risk Assessment & Standards of Cover (assesses risk and needs of the community including geographical considerations)
- King County Fire District 34 (rural fire district operated in partnership with Redmond)
- Redmond Police Department Functional Plan (service background analysis, facility details, and equipment not covered by this GGFP)
- Redmond Parks, Arts, Recreation, Culture & Conservation (PARCC) Plan

Out-of-scope capital facilities and public infrastructure are covered by the following Redmond plans or other agencies:

- Parks and recreation (parkland and other park facilities not covered by this GGFP): Redmond Parks, Arts, Recreation, Culture, and Conservation (PARCC) Plan
- All City utilities: Utilities Strategic Plan
- Water utility: Redmond Water System Plan
- Wastewater/sanitary sewer utility: Redmond General Wastewater Plan
- Stormwater utility including green stormwater infrastructure:
    - Stormwater Management Plan and National Pollutant Discharge Elimination System (NPDES) Permit
    - Stormwater and Surface Water System Plan (under development)
    - Stormwater Management Program Plan (updated annually)
    - Watershed Management Plan
- Solid waste utility
    - Solid Waste and Recycling Program (no functional plan; services in Redmond are provided by a private contractor)
    - King County Comprehensive Solid Waste Management Plan
    - King County Hazardous Waste Management Program Plan
- Electricity and natural gas: Puget Sound Energy
- Telecommunications: Various private providers
- Transportation: Redmond Transportation Master Plan
- Transit: King County Metro and Sound Transit
- Schools: Lake Washington School District (six-year capital facility is updated annually)

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- Criminal justice: King County

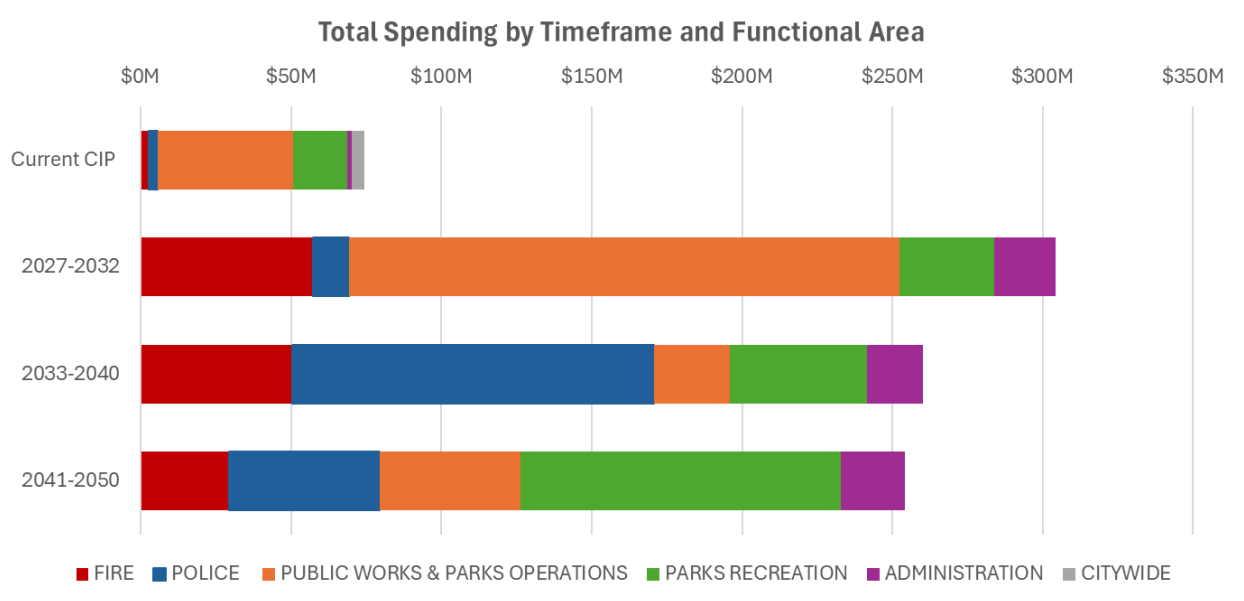
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1.3 – Summary of Costs

Estimated capital project costs for the City of Redmond through the 2050 planning period total to approximately $850-928 million.

The table below shows capital costs by functional area and planned years of expenditure. All numbers are millions. Where a capital facility and land acquisition has a low-high cost range, only the higher cost is reflected in this summary. For detailed costs by functional year and timeframe, see Section 3 or Section 4.

TOTAL SPENDING						
Functional Area	**Current CIP**	**2027-2032**	**2033-2040**	**2041-2050**	**2051+**	**TOTALS**
CITYWIDE	$4.3M	$0.0M	$0.0M	$0.0M	--	$4.3M
FIRE	$2.8M	$57.5M	$50.4M	$29.4M	$35.0M	$175.1M
POLICE	$3.1M	$11.8M	$120.4M	$50.0M	--	$185.3M
PUBLIC WORKS & PARK OPERATIONS	$45.0M	$183.1M	$25.0M	$46.9M	--	$300.1M
PARKS AND RECREATION	$18.0M	$31.5M	$45.6M	$106.4M	--	$201.6M
ADMINISTRATION	$1.4M	$20.4M	$18.8M	$21.3M	--	$61.8M
TOTALS	**$74.6M**	**$304.3M**	**$260.2M**	**$254.1M**	**$35.0M**	**$928.2M**

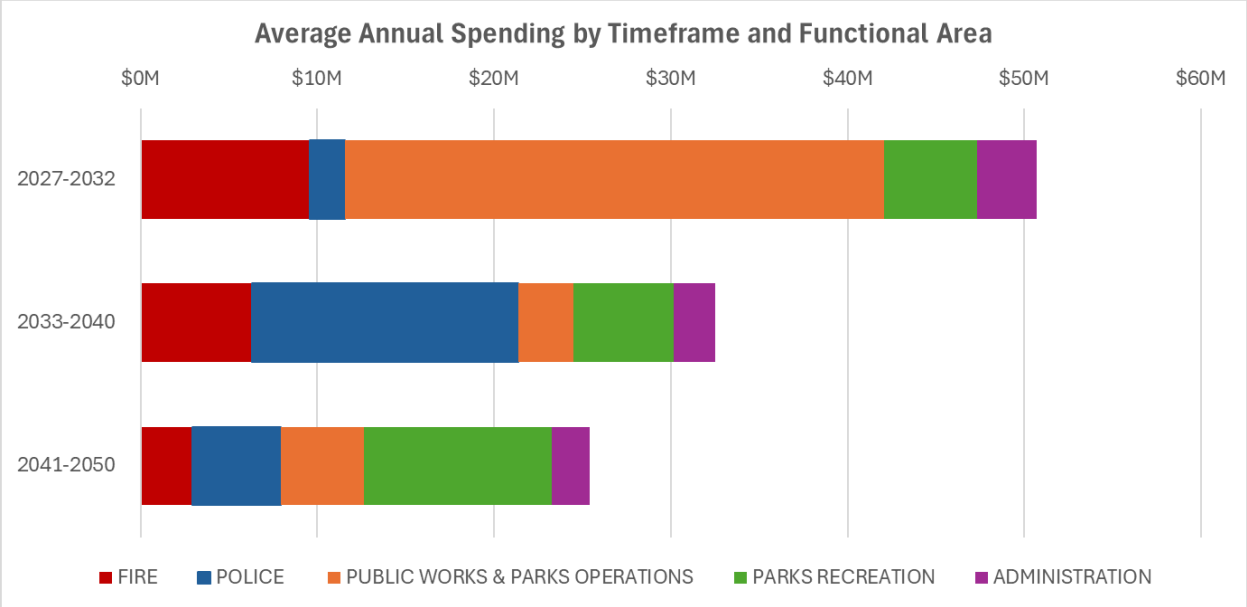


1.4 – Funding for Capital Investment

Redmond's Capital Investment Program (CIP) is a six-year financial plan that identifies capital investments and the strategies and resources for funding those investments. The CIP advances the City's vision and supports the Capital Investment Strategy (CIS).

Capital expenditures budgeted for the six-year period 2025-2030 is $502.4 million. About 32 percent of this, or $160.8 million is for the General Government/Facilities portfolio which represents the five functional areas of the GGFP scope. This is an average spend of $26.8 million per calendar year. By comparison, spending will need to increase to an average of $45.7 million per calendar year in the six-year 2027-2032 CIP period to implement the GGFP. This increase is driven by several major replacement projects in the near-term. Average annual spending will decrease in later timeframes to 2050 after new facilities are constructed and maintenance obligations change.

AVERAGE ANNUAL SPENDING				
Timeframe Length	**6 years**	**8 years**	**10 years**	**24 years**
Functional Area	**2027-2032**	**2033-2040**	**2041-2050**	**TOTALS**
FIRE	$9.6M	$6.3M	$2.9M	$7.3M
POLICE	$2.0M	$15.1M	$5.0M	$7.7M
PUBLIC WORKS & PARK OPERATIONS	$30.5M	$3.1M	$4.7M	$12.5M
PARKS AND RECREATION	$5.3M	$5.7M	$10.6M	$8.4M
ADMINISTRATION	$3.4M	$2.3M	$2.1M	$2.6M
TOTALS	**$50.7M**	**$32.5M**	**$25.4M**	**$38.5M**



Like most local governments in Washington State, the City of Redmond has multiple funding and financing options for general government facilities.

- General fund (funded by property tax, sales tax, fees, etc.)
- Real estate excise tax (primarily used for capital facilities)
- Grants
- Bonds/debt financing (councilmanic or voter approved)
- Impact fees
- Developer contributions
- Partnerships (with other local government agencies)

INSERT HERE - FINANCE INFO ON SOURCE ASSUMPTIONS BY FUNCTIONAL AREA AND TIMEFRAME

1.5 – Planning Process

This plan was prepared by MAKERS Architecture and Urban Design (MAKERS) in partnership with the City of Redmond. ACC Cost Consultants (ACC) provided cost estimates to support the effort.

This plan is the culmination of the capital facilities planning conducted as part of the Redmond 2050 Comprehensive Plan update. It supports the updated policies found in the Capital Facilities element and extends the planning horizon of the Capital Facilities Plan - General Government Facilities 2025-30 to the year 2050.

The Redmond 2050 planning process occurred over five years, and consisted of extensive community engagement, including community, Planning Commission, and Council feedback and input on the types and locations of facilities the City of Redmond needs and desires over the next 25 years.

Themes that emerged include:

- More inclusive, safer, and accessible facilities.
- Upgrades to facilities for environmental sustainability and support efficiency and greenhouse gas reduction goals.
- New facilities that support complete neighborhoods.
- Desire for more community and cultural spaces, especially for children and seniors.

Also of note, the City printed and distributed blank postcards to various locations throughout the community to encourage creative responses to the questions related to community design and needs. Of the 450 comments received, over 70 were related to facilities and infrastructure. More information on the City's engagement process can be found at https://www.redmond.gov/1495/Engagement-Summaries .

The General Government Facilities Plan was developed in three phases:

1) **Needs Assessment**: The project team established a baseline understanding of in-scope facilities by reviewing existing information, interviewing City staff, and visually assessing facility function. Facilities were then rated relative to condition, operational importance, and opportunities to meet other City goals such as energy performance and emergency preparedness. City leadership brainstormed potential solutions to the most challenging facilities issues at focused work sessions and a Visioning Workshop.

2) **Alternatives Analysis**: Working with City staff, the team developed and evaluated alternative solutions to address priority issues where relevant. Staff provided feedback on how well each alternative met operational needs and project objectives and confirmed draft recommendations in each functional area.

3) **Capital Recommendations and Plan**: Working with City leadership, the project team refined recommendations, assessed financial feasibility, developed a suggested implementation schedule in alignment with the CIP schedule, and drafted the GGFP document. The team then refined the GGFP to incorporate feedback from staff, Planning Commission, City Council, and the public. Additional opportunities for public feedback were provided at four Planning Commission meetings, a public hearing on September 24, 2025, and one City Council work session, with an additional one if needed.

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1.6 – Zoning Analysis

This subsection fulfills a Capital Facilities Element policy requiring analysis of consistency with the Redmond Zoning Code. Other zoning codes are not included. The analysis is high-level and focuses on basic permitted land use standards. More detailed analysis of other standards should be done on a project-by-project basis, such as supplemental land use conditions, dimensional standards, open space, parking, and infrastructure.

General Government Facility	Zone	Permitted Use Findings
FIRE		
Fire Station 11	Downtown Core	Public administration, which is broadly defined to include "government services" such as fire stations, is permitted outright.
Fire Station 11 Annex		
Fire Station 12	N/A	Non-Redmond zoning
Fire Station 16	Manufacturing Park	Public administration, which is broadly defined to include "government services" such as fire stations, are limited or conditional use and limited to being located in the Manufacturing Park (MP) Overlay. These facilities are outside the overlay and therefore are nonconforming.
Apparatus Maintenance Facility		
Fire Station 17	Neighborhood Residential	Public administration, which is broadly defined to include "government services" such as fire stations, are a limited or conditional use, must avoid materially detrimental impacts to neighboring residential uses, and are required to provide a traffic mitigation plan.
Fire Station 13 (FD34)	N/A	Non-Redmond zoning
Fire Station 14 (FD34)	N/A	Non-Redmond zoning
Fire Station 18 (FD34)	N/A	Non-Redmond zoning
Fire Station 11 Replacement	TBD	If renovated or replaced on same site or replaced municipal campus, see Fire Station 11 above. If replaced elsewhere, further zoning analysis will be needed.
Fire Station 12 Replacement	Overlake Business and Advanced Technology or Overlake Village	Public administration, which is broadly defined to include "government services" such as fire stations, is permitted outright in both zones.
POLICE		
Public Safety Building (PSB)	Downtown Core	Public administration, which is broadly defined to include "government services" such as police stations, is permitted outright.
North Garage Building		
South Garage Building		

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General Government Facility	Zone	Permitted Use Findings
Overlake Police Precinct	Overlake Business and Advanced Technology or Overlake Village	Public administration, which is broadly defined to include "government services" such as police stations, is permitted outright in both zones.
PUBLIC WORKS & PARK OPERATIONS		
Maintenance and Operations Center (MOC)	Manufacturing Park	Public administration, which is broadly defined to include "government services" such as operations yards, are limited or conditional use and may only be in the Manufacturing Park (MP) Overlay. The MOC is outside the overlay and therefore is nonconforming. The fuel facility may not be permitted in the critical aquifer recharge area (see RZC 21.04.5000 and 21.64.050).
PARKS AND RECREATION		
Redmond Pool	Neighborhood Residential	Public pools are not explicitly referenced, and may be a nonconforming use. A CUP is required for commercial swimming pools. In general, recreation and assembly uses are a limited use and have limits on facility capacity, must avoid materially detrimental impacts to neighboring residential uses, and are required to provide a traffic mitigation plan.
Redmond Senior & Community Center (RSCC)	Downtown Core	Recreation and assembly uses are permitted outright.
Redmond Community Center at Marymoor Village (RCCMV)	Marymoor Edge	Recreation and assembly uses are permitted outright.
Old Fire House Teen Center	Downtown Core	Recreation and assembly uses are permitted outright.
Overlake Community Center	Overlake Business and Advanced Technology or Overlake Village	Recreation and assembly uses are permitted outright in both zones.
ADMINISTRATION		
Redmond City Hall	Downtown Core	Public administration is permitted outright.
Municipal Parking Garage	Downtown Core	Accessory to City Hall and other municipal campus uses. Automobile parking facilities are also permitted outright.

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2 – Portfolio Overview

2.1 – Introduction

As of 2025, the General Government Facilities Plan covers 12 sites and 32 buildings with an approximate building floor area of 586,000 square feet.

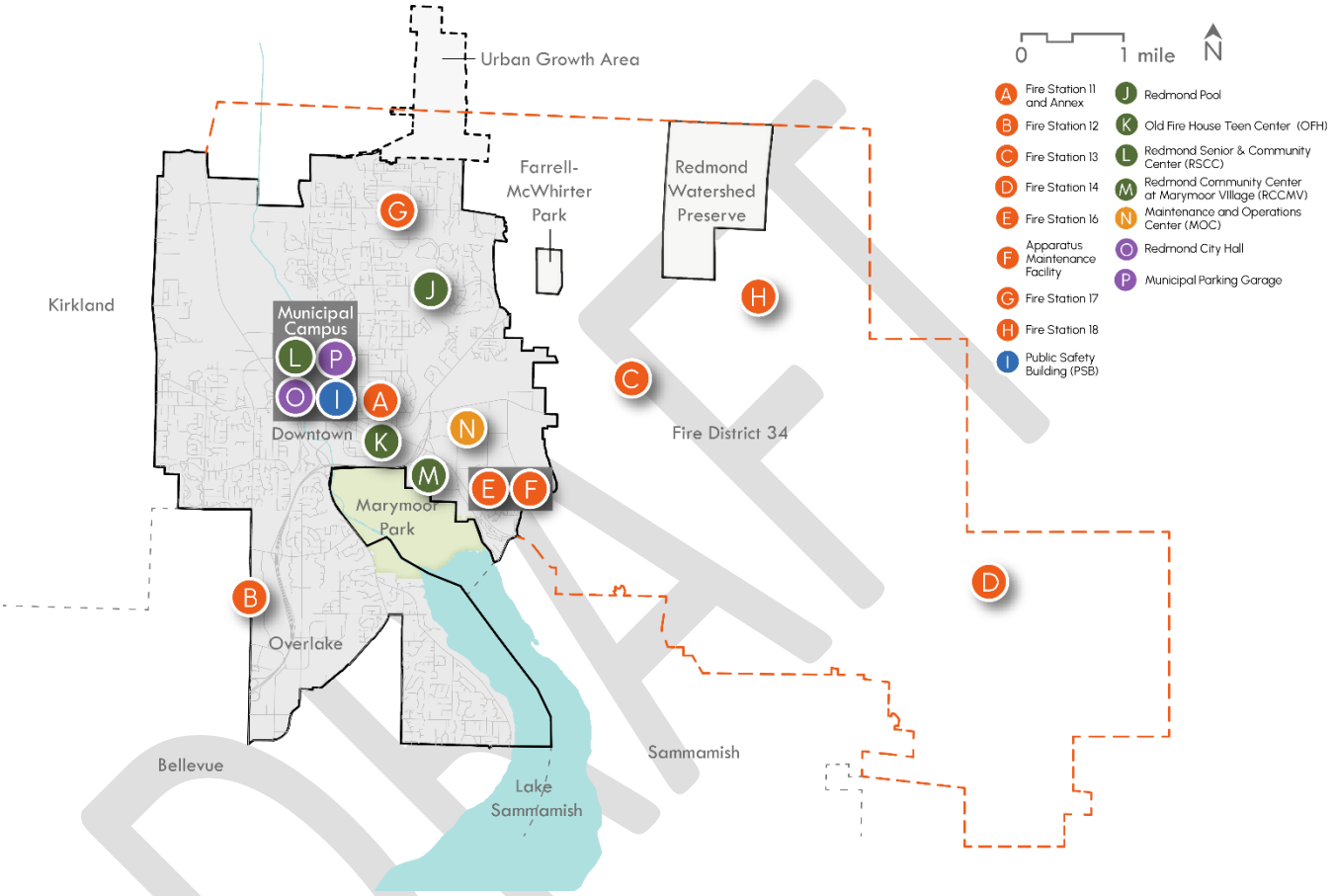


Figure 1: Citywide general government facilities map

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General Government Facility	Year Built	Building Floor Area (gross square feet)	Full Time Employees
FIRE			
Fire Station 11	1981	21,271	20
Fire Station 11 Annex	1985	1,916	5
Fire Station 12	1980	6,637	19
Fire Station 16	1996	9,852	15
Apparatus Maintenance Facility	1996	5,625	3
Fire Station 17	2012	19,397	7
Fire Station 13 (FD34)	1973	6,548	12
Fire Station 14 (FD34)	1991	9,530	9
Fire Station 18 (FD34)	2002	7,714	10
POLICE			
Public Safety Building (PSB)	1990	94,975	134 (not including cadets and volunteers)
North Garage Building	2008	1,250	0
South Garage Building	2008	1,000	0
PUBLIC WORKS & PARK OPERATIONS			
Maintenance and Operations Center (MOC) – 14 buildings and structures	1970-2005	63,627 (total enclosed area)	151
PARKS AND RECREATION			
Redmond Pool	1970	12,554	0 (contracted out)
Redmond Senior & Community Center (RSCC)	2024	56,481	7
Redmond Community Center at Marymoor Village (RCCMV)	2005	20,491	8
Old Fire House Teen Center	1952	2,500	0 (currently closed)
ADMINISTRATION			
Redmond City Hall	2005	113,068	284
Municipal Parking Garage	2005	125,959	0

Figure 2: Citywide general government facilities inventory

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2.2 – Facility Condition Assessment

MENG Analysis completed a facility condition assessment (FCA) and decarbonization plan for City-owned buildings in 2013 and 2023. Most relevant to the GGFP, the FCA includes a Facility Condition Index and lists each facility's maintenance liabilities.

Facility Condition Index (FCI)

The FCI measures the relative condition of facilities within the portfolio. It is calculated by dividing the total maintenance backlog by current replacement value (CRV). An FCI less than 0.10 is good or excellent, and an FCI greater than 0.21 is poor or critical.

The 2023 FCA finds that most Redmond facilities are in reasonably good condition, with notable exceptions at Fire Stations 11, 12, and 13 and significant issues at the Old Fire House Teen Center. Conditions have greatly improved at the Redmond Pool due to recent investment.

Note that the Maintenance and Operations Center is absent from the 2023 FCA due to its status as a high priority replacement project. The Redmond Senior & Community Center is absent as it opened after the FCA was conducted.

General Government Facility	Previous FCI (2013)	Current FCI (2023)	Interpretation (2023)	Condition Change
FIRE				
Fire Station 11	0.21	0.19	Fair	Improved
FS 11 Annex	0.18	0.21	Poor	Worsened
Fire Station 12	0.18	0.18	Fair	Constant
Fire Station 16	0.14	0.12	Fair	Improved
Apparatus Maintenance Facility	0.11	0.11	Fair	Constant
Fire Station 17	0.02	0.13	Fair	Worsened
Fire Station 13 (FD34)	0.20	0.18	Fair	Improved
Fire Station 14 (FD34)	0.12	0.12	Fair	Constant
Fire Station 18 (FD34)	0.06	0.11	Fair	Worsened
POLICE				
Public Safety Building	0.14	0.16	Fair	Worsened
North Garage Building	0.02	0.04	Excellent	Worsened
South Garage Building	0.02	0.04	Excellent	Worsened
PARKS AND RECREATION				
Redmond Pool	0.23	0.11	Fair	Improved
Redmond Community Center at Marymoor Village (RCCMV)	N/A	0.10	Good	N/A
Old Fire House Teen Center	0.22	0.23	Poor	Worsened
ADMINISTRATION				
Redmond City Hall	0.05	0.09	Good	Worsened
Municipal Parking Garage	0.10	0.12	Fair	Worsened

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Operations and Maintenance

Adequately funded and performed maintenance is necessary to maintain operations at any facility. Proactive maintenance handles small issues before they spiral into major problems and also maintains comfort for building staff and visitors. Proper maintenance can extend the service life of facilities and prolong the intervals between major reinvestment and replacement, saving public dollars.

The costs of routine maintenance are provided in this GGFP, drawing from the observed deficiencies and planned renewals documented in the 2023 Facility Conditions Assessment and major maintenance already planned in the Capital Investment Program.

Observed Deficiencies and Predicted Renewals

The FCA breaks down maintenance liabilities by facility and by system type. Liabilities are identified either as observed deficiencies or predicted renewals:

- A "deficiency" requires remediation within five years and has a direct cost of at least $5,000. These are identified through survey site visits and facility staff. The FCA calculates deficiencies for the years 2023-2028.
- A "renewal" is a building system that should be planned for replacement at the end of its estimated lifespan. These are predicted through computer modeling based on historical models of similar buildings. The FCA calculates planned renewals for the years 2029-2042.

For estimated maintenance liabilities after 2042 and for new buildings not covered by the FCA, see methodology in Section 4.3.

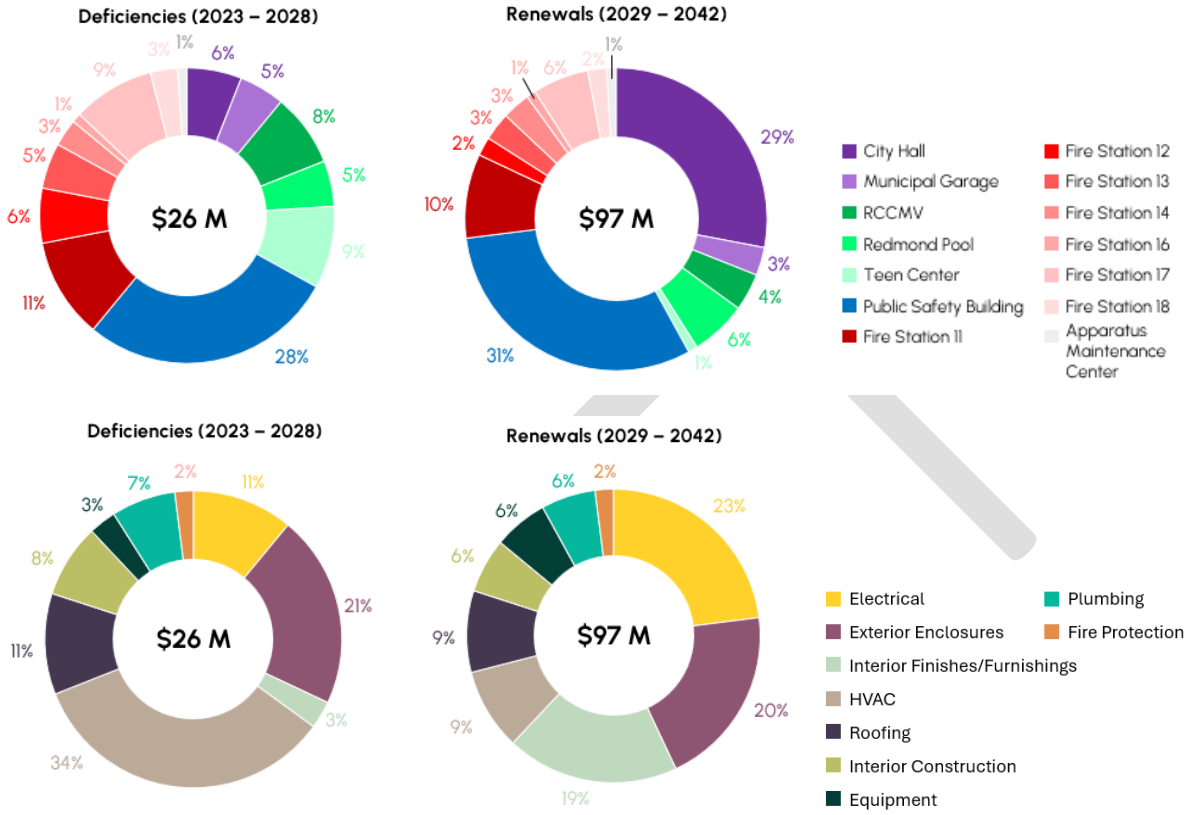
The Public Safety Building, City Hall, and Fire Station 11 make up the bulk of Redmond's maintenance liabilities. The PSB is responsible for $7.3 million in observed deficiencies and $30.1 million in predicted renewals across all building systems; City Hall is responsible for $1.4 million in deficiencies and $8.1 million in renewals; and Fire Station 11 is responsible for $2.9 million in deficiencies and $9.7 million in renewals. Among Redmond's highest priority functional areas to address, Fire facilities make up about 40 percent of Redmond's total deficiencies.

HVAC is the highest cost deficiency category across the Redmond portfolio, followed by exterior enclosures. The Public Safety Building, Fire Station 11, and Old Fire House Teen Center have the highest deficiency costs; Fire Station 16, the Apparatus Maintenance Facility, and Fire Station 18 have some of the lowest of these costs. 2025 is the year with the largest deficiency cost total across all facilities, at $7.8 million. The lowest deficiency cost total is projected to be 2028, at $2.5 million.

Electrical infrastructure is the most expensive renewal category, closely followed by exterior enclosures and interior finishes. The Public Safety Building, City Hall, and Fire Station 11 have the highest projected renewal costs through 2042; Fire Station 16, the Apparatus Maintenance Facility, and Fire Station 18 have some of the lowest of these

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costs. 2029 and 2031 are projected to be the years with the highest renewal cost total across all facilities, at $17.9 million respectively. Only $0.1 million will be spent on renewals in 2039.

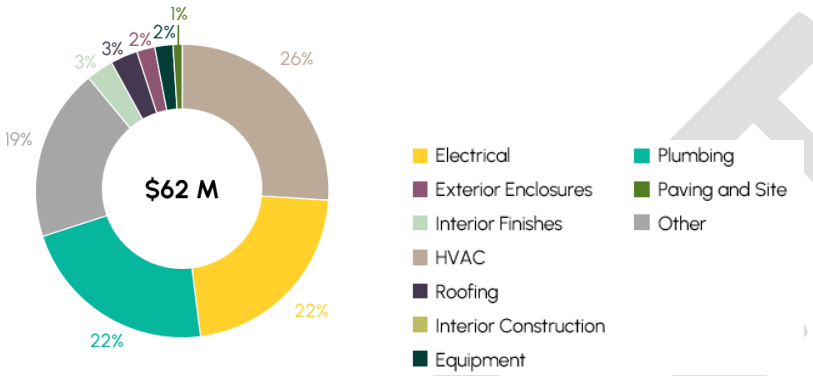


Maintenance liabilities by building and system

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Opportunity Projects

The FCA also identifies “opportunity projects”. These are optional projects identified by the surveyor to improve user experience, resiliency, safety, security, or energy efficiency. HVAC, electrical, and plumbing systems represent the most significant opportunities across Redmond facilities. The ‘Other’ category in the graphic below includes security features, fuel infrastructure, and other unique items across the portfolio, including major municipal campus improvements (see related notes in Section 3.7).



Opportunity projects by system

Remedies

Most deficiencies, renewals, and opportunities will be addressed by funding routine maintenance and/or major renovations. The project lists in Section 3 and 4 include this work under “routine maintenance” headings and these generally include 100% of the costs identified by the FCA, with some exceptions. Opportunity costs for applicable facilities are generally split between the 2027-2032 and 2033-2040 timeframes.

The project lists note where some deficiencies, renewals, and opportunities costs are reduced or foregone when a facility is planned to be replaced.

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2.3 – Qualitative Facility Rankings

Select facilities were qualitatively ranked by their ability to meet operational requirements. Buildings not ranked include the Fire Station 11 Annex and the Apparatus Maintenance Facility, the scores of which were tied with Fire Station 11 and Fire Station 16, respectively. Periphery buildings like the North and South Garage Buildings at the PSB and the Municipal Parking Garage were also not assessed. The MOC was excluded due to its separate planning and reconstruction process currently underway.

The selected facilities were ranked according to the following criteria:

- **Condition** considers physical condition, maintenance frequency, and complexity, as noted by the FCA and reported by Redmond facilities staff.
- **Function and Quality** considers workspace quality and gender neutrality, health and security, and workspace functionality.
- **Criticality** considers the relative importance of a facility in providing services, the volume of services provided, the consequence of service disruptions, and the criticality of the facility in responding to emergencies and/or providing essential services during emergency conditions or recovery.
- **Opportunity** considers the ability of the building and property to adapt to future needs and the opportunity to improve performance related to building energy use, LEED goals, equity, and other citywide initiatives and goals.

Rankings are summarized in the following table: darker colors represent poor performance and indicate higher priorities to address in the GGFP. As shown, Fire Stations 11 and 12 are in the worst condition and have poor workspace function and quality. These are critical facilities with investments that offer opportunities to support citywide initiatives and goals and the highest priorities for investments. Blank cells indicate a building was not assessed in that category.

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General Government Facility	Condition	Function & Quality	Criticality	Opportunity
FIRE				
Fire Station 11				
Fire Station 12				
Fire Station 16				
Fire Station 17				
Fire Station 13 (FD34)				
Fire Station 14 (FD34)				
Fire Station 18 (FD34)				
POLICE				
Public Safety Building				
PARKS AND RECREATION				
Redmond Pool				
Redmond Community Center at Marymoor Village (RCCMV)				
Old Fire House Teen Center		N/A		
Redmond Senior & Community Center (RSCC)	N/A			
ADMINISTRATION				
Redmond City Hall				

Facility assessment findings summarized

Good condition, function  *Poor condition, function*

Critical, high opportunity  *Not critical, low opportunity*

Note: Blank cells indicate a building was not assessed in that category.

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2.4 – Service Life

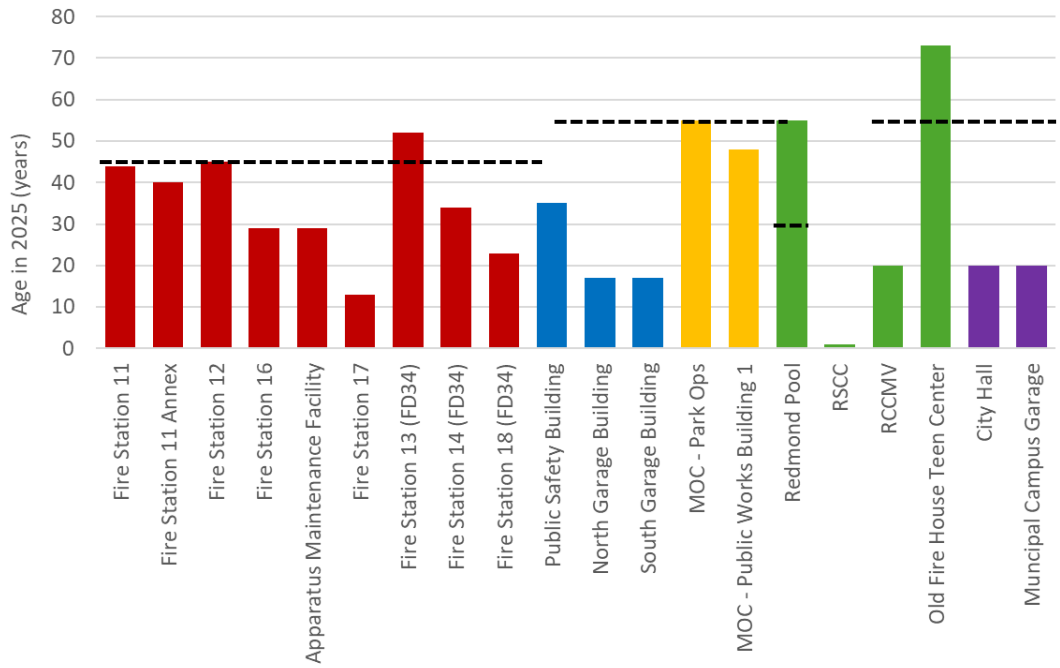
Facilities planning considers "service life", or the length of time for which a component or facility typically remains usable for its intended purpose. Facility service life varies depending on maintenance upkeep, functional requirements, and construction quality. A well-built facility meeting user needs can be renovated to extend its service life, while a poorly constructed, not purpose-built facility may require premature investments and/or early replacement.

Typical service life assumptions are provided by the federal government:

Facility Type	Service Life
Pools	30 years
Fire stations	45 years
All other facilities (police stations, community centers, operations yards, etc.)	55 years

Unified Facilities Criteria "3-701-01 DoD Facilities Pricing Guide"

As illustrated below, ten of Redmond's facilities are at or approaching the end of typical service life. Fire Stations 11 and its Annex, 12, and 13 are at or beyond the 45-year mark and due for reinvestment or replacement and Fire Station 16 and the Apparatus Maintenance Facility will be approaching end of service life in 15 years. Even with reinvestment, the Redmond Pool building shell is well beyond the typical 30-year service life, and the Public Safety Building will need investment or replacement by 2050. Other facilities at end of life are being addressed in parallel efforts: the MOC complex is planned for replacement and the City is studying the best approach to address the Old Fire House Teen Center. Fire Stations 13 and 14 are the responsibilities of Fire District 34.



Dashed lines indicate service life for different facility types

3 – Existing Conditions and Recommendations

3.1 – Introduction

This chapter is organized by functional area and covers:

- **Key Findings:** Summarizes facility location and function and highlights key issues and considerations.
- **Summary Recommendations and Project List:** Provides recommendations and target implementation dates departmentwide within four timeframes aligned with Redmond budget cycles: projects underway or in the current Capital Investment Plan (CIP) through 2032; 2033-2040; 2041-2050; and beyond 2050.

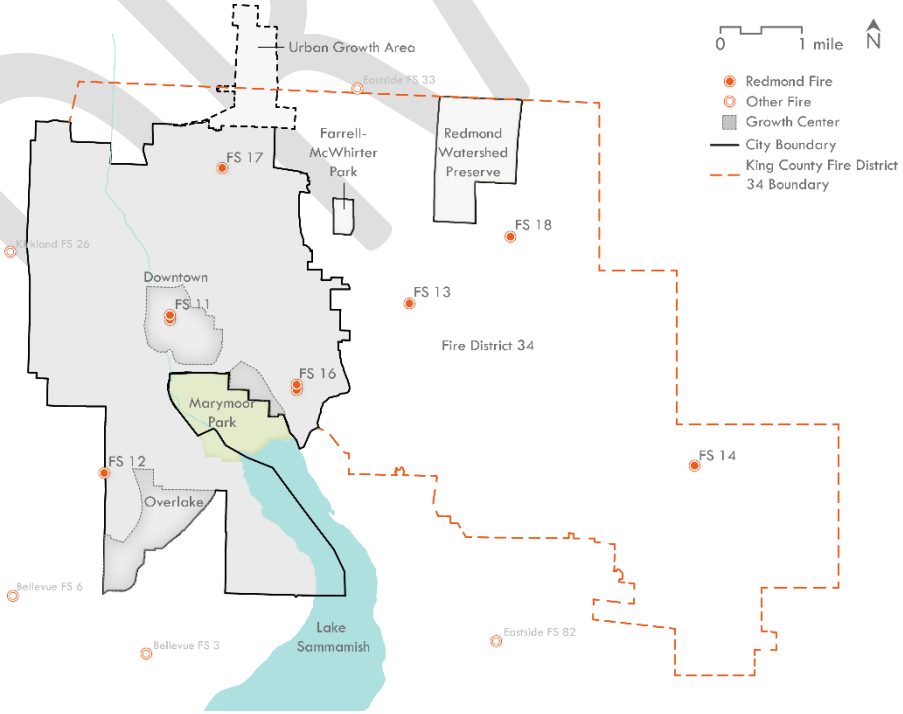
Municipal campus considerations are included in its own section due to intersections with Administration, Police, Parks and Recreation, and potentially Fire facilities.

3.2 – Fire

The Fire Department (Fire) operates nine buildings at seven sites within a 45-square-mile service area. This includes seven fire stations, an apparatus maintenance facility at the Fire Station 16 site, and an annex building at the Fire Station 11 site for the Mobile Integrated Health and Community Care outreach programs.

Fire Fast Facts

7 facilities
9 buildings
88,490 gross square feet
99 firefighters and support staff



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The Fire service area includes King County Fire Protection District 34 (FD 34), a 28-square-mile area east of city limits in unincorporated King County with approximately 24,700 residents. FD 34 is a special district governed by an elected board of commissioners. The district contains Stations 13, 14, and 18. In a partnership dating back to 1969, the City of Redmond owns these three stations and staffs them with City employees, and these stations are operationally integrated with the City's Fire department.

Through an interlocal agreement between Redmond and FD 34, capital responsibilities and cost-sharing for these stations is structured as follows:

- Major capital improvements and facility renovations are led and funded by FD 34.
- The City of Redmond is responsible for routine maintenance, managed through either Parks or Fire Department staff.
- Apparatus replacement for FD 34 stations is funded by the district through an apportioned cost model and is aligned with Redmond Fire's joint capital planning process.

As FD 34 is responsible for major capital improvements and facility renovations Stations 13, 14, and 18, they were not included in this GGFP's recommendations or fire impact fee planning. Functional needs and issues are noted here, but capital improvements and renovations will require separate planning and funding through FD 34's governance.

Capital Facility Element policy CF-6 establishes this level of service for Fire Department services: *Travel time of six minutes or less for 90 percent of emergency fire and medical calls in the city.*

Notable systemwide planning considerations for Fire include:

- For new fire stations, Redmond assumes a standard configuration of four apparatus bays and capacity for up to 10 operational personnel, resulting in an estimated 20,000 square foot footprint.
- Older stations do not meet best practices for station design, including an emphasis on accommodating decontamination for firefighter equipment, and preventing contamination in living areas, and healthy sleeping environments.
- Fire apparatus (trucks, engines, and ambulances) are unique equipment that need to be supported be adequately designed facilities
- Redmond has a higher-than-average share of female firefighters, which highlights the lack of gender-appropriate features at some older stations, such as undersized restrooms.
- Stations ideally have extra capacity for staff during temporary situations, such as an extended emergency or a facility repair.
- Training and exercise happen regularly at all stations, indoor and outdoor, though some stations better support certain training activities.
- Lack of adequate security systems for parking areas and buildings is a common issue.

Key Findings

Fire Station 11

8450 161st Avenue Northeast, Redmond, WA 98052



Fire Station 11 serves the Downtown area and the Willows, Education Hill, and Sammamish Valley neighborhoods. It functions as the Fire headquarters (including for Fire District 34) and it is the primary logistics coordination point. It has a four-lane apparatus bay and houses seven firefighters per shift, along with 13 administrative staff.

The Fire Station 11 Annex building also serves as the operational base for the department's Mobile Integrated Health and Community Care outreach programs. It represents a growing capital category for alternative response models that reduce 911 call volume and improve outcomes through upstream care. A decision on the future location of these programs will be made after reinvestment is planned for Fire Station 11.

Fire Station 11 needs a renovation or replacement to meet modern standards due to the building's age and condition, misalignment with modern best practices for station design, and supporting new apparatus needs.

Functional issues include:

- Insufficient dorm and storage space for added staffing or specialty teams
- Poor internal zoning for modern turnout flow and decontamination
- Poor design for sleep hygiene, including lack of split tones for different units
- Administrative functions and the visitor lobby are constrained with no room for growth
- The station lacks adequate meeting and training space for firefighters and administrators

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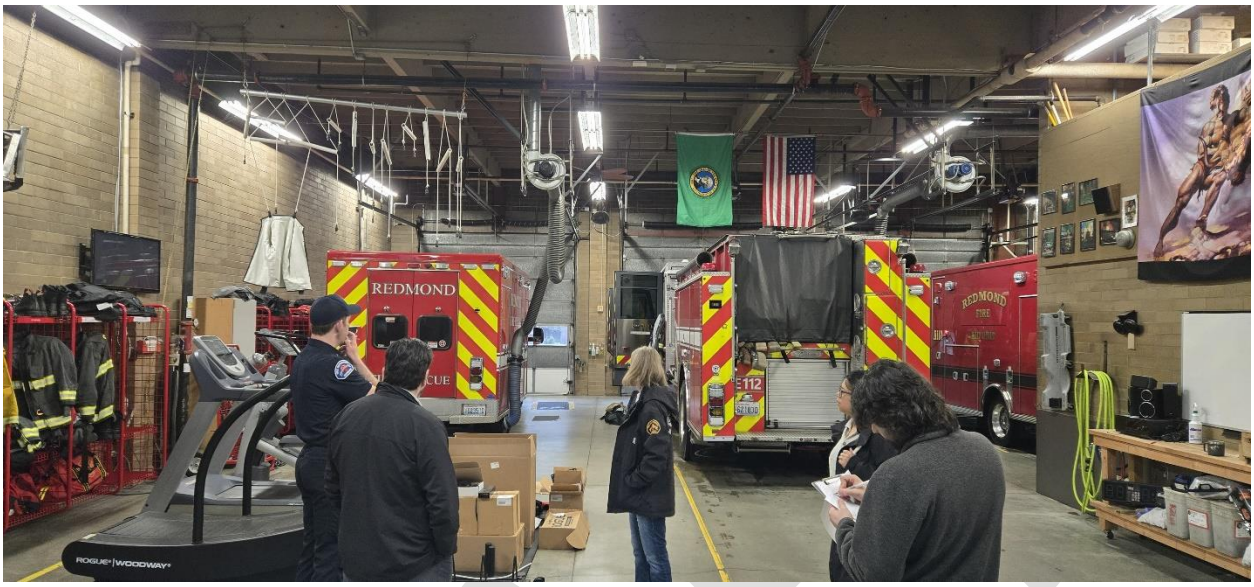
- A tractor-drawn aerial (TDA), or large ladder truck, is necessary to serve taller buildings in Downtown but a TDA cannot fit in the existing apparatus bay
- Poor drainage in the apparatus bay
- Lack of gender-appropriate features

The Fire Functional Plan also notes the station's current location in Downtown is not ideal for meeting level-of-service requirements and maximizing citywide coverage. Alternatives for the future of this facility are explored in the Fire Station 11 Alternatives Evaluation.

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Fire Station 12

4211 148th Ave NE, Bellevue, WA 98007



Fire Station 12 serves the Overlake, Viewpoint, Grass Lawn, Rose Hill, and Idlywood neighborhoods. Its specialty is physical fitness equipment. It has a three-lane apparatus bay and houses five firefighters per shift. It recently began hosting the first electric fire engine in Washington state, and additional electric vehicle infrastructure is planned.

Fire Station 12 needs replacement to meet modern standards due to the building's age and condition and misalignment with modern best practices for station design. It also needs relocation into the Redmond city limits at a location to better meet the level of service standards.

Functional issues include:

- Insufficient dorm and storage space for added staffing or specialty teams
- Poor internal zoning for modern turnout flow and decontamination
- Poor design for sleep hygiene, including lack of split tones for different units
- Lack of gender-appropriate features
- The site is undersized for growth and training opportunities
- Staff parking is limited
- The site is located in Bellevue and not well-located for serving the Overlake growth center

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Fire Station 16

6502 185th Ave NE, Redmond, WA 98052



Fire Station 16 serves the southeast area of Redmond, including light industrial and residential districts. Its specialty is technical rescue. It has a three-lane apparatus and houses three firefighters per shift. Fire Station 16 is part of a multi-building site that also hosts the Apparatus Maintenance Facility.

Functional issues include:

- Limited ground-floor storage in the apparatus bay for heavy equipment and supplies
- Lack of gender-appropriate features
- Common areas have a spartan commercial feel as opposed to the residential nature of fire stations

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Fire Station 17

16917 NE 116th St, Redmond, WA 98052



Fire Station 17 serves the north part of Redmond, including Education Hill. Its specialty is emergency medical services supply, and it has the City's backup emergency operations center. It has a three-lane apparatus bay and houses four firefighters per shift, in addition to the Fire Department's medical services officer.

Functional issues include:

- Several rooms are unfinished from the original construction in 2012, hampering the capacity for additional firefighters, medical administrative staff, and storage
- The exterior cladding is failing and needs to be replaced (currently planned for 2025)
- The building has poor energy performance
- Staff parking is limited

In addition, the City of Redmond owns a small parcel adjacent to the station. This parcel is vacant and used for training. Adjacent wetlands and buffer restrictions reduce the feasibility of developing this parcel with improved training facilities or other functions.

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Fire Station 13 (FD 34)

8791 208th Ave NE, Redmond, WA 98053

Fire Station 13 serves the Avondale corridor parts of Education Hill. Its specialty is hazardous materials equipment. It houses three firefighters per shift.

Functional issues include:

- Apparatus bay is too small to allow for expansion of crews and operations
- Inadequate exhaust system for the apparatus bay
- Poorly functioning septic system, which has previously required a temporary building closure for repairs
- Poorly functioning building systems, including electrical and HVAC, and a failing roof
- Does not meet current earthquake design standards
- Lack of gender-appropriate features

Fire Station 14 (FD 34)

5021 264th Ave NE, Redmond, WA 98053

Fire Station 14 serves the eastern rural areas of the district. Its specialty is personal protective equipment. It houses three firefighters per shift.

Functional issues include:

- Apparatus bay is too small to allow for expansion of crews and operations
- Inadequate exhaust system for the apparatus bay
- Poorly functioning building systems, including electrical, HVAC, and plumbing
- Does not meet current earthquake design standards
- Lack of gender-appropriate features
- Exterior paving is in poor condition

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Fire Station 18 (FD 34)

22710 NE Alder Crest Dr, Redmond, WA 98053



Fire Station 18 serves the Redmond Ridge and Trilogy neighborhoods. Its specialty is small tools and apparatus supplies, and responding to calls on neighborhood trails. It has a three-lane apparatus bay and houses three firefighters per shift.

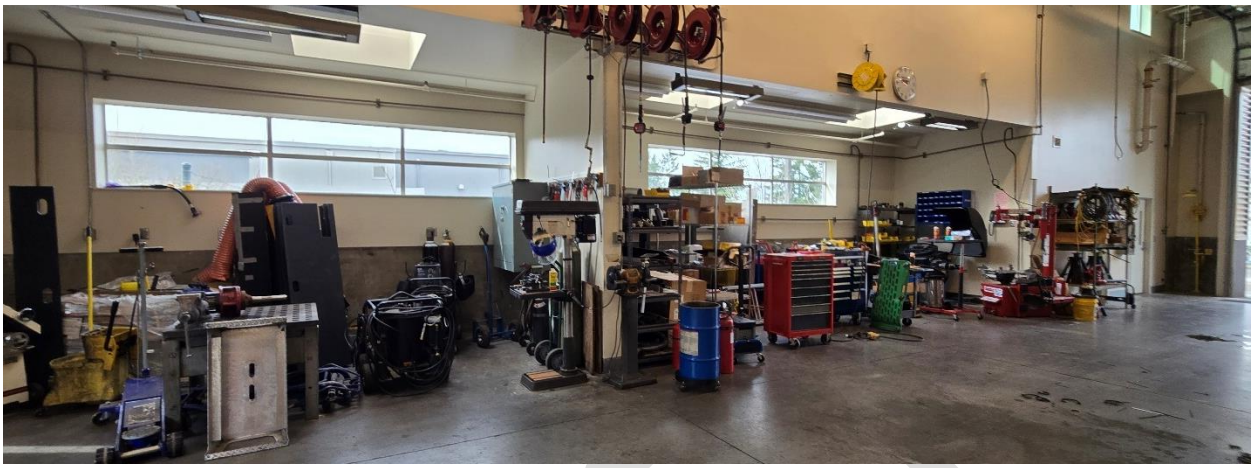
Functional issues include:

- Lack of tool and supply storage, and an undersized workshop area
- Lack of interior training opportunities
- Poor design for sleep hygiene (though not to the extent of other stations)

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Apparatus Maintenance Facility

6502 185th Ave NE, Redmond, WA 98052



The Apparatus Maintenance Facility maintains all Fire Department apparatus and other vehicles. After the redevelopment of the MOC is completed, maintenance of smaller Fire vehicles, such as staff cars, will move to the MOC. The Fire Fleet Shop will remain focused on maintaining larger firefighting apparatus (trucks, engines, and ambulances).

Functional issues include:

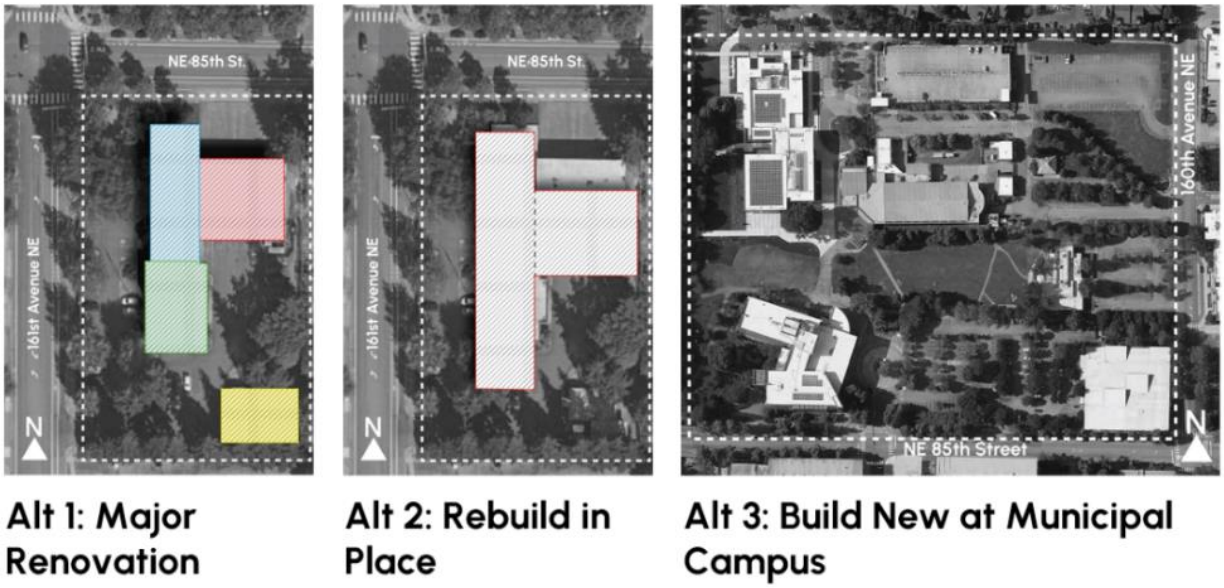
- The building has adequate capacity, but one of the three maintenance bays is not pull-through
- There are no decontamination facilities for staff
- Some mechanical equipment is obsolete, such as vehicle lifts and pump-testing tools

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Fire Station 11 Alternatives Evaluation

Several reinvestment alternatives were studied for Fire Station 11, with key considerations noted in the list below:

- **Alternative 1:** A major renovation of the existing building. Most, but not all, of the building's physical and functional issues would be addressed. Expansion of the apparatus bay was assumed for this GGFP (expansion of dorm rooms and office space will also be under consideration by the Fire department in an upcoming feasibility study).. This would require temporary facilities for at least two years.
- **Alternative 2:** Rebuild the station on the current site. A new building would meet all modern standards and could likely be rightsized for current and future needs. This would require temporary facilities for at least two years.
- **Alternative 3:** Rebuild the station at the Redmond municipal campus. A new building would meet all modern standards and could be rightsized for current and future needs. This would not require temporary facilities and could be built while the existing building remains in operation.



Diagramatic illustrations of the three potential alternatives for Fire Station 11

Summary Recommendations and Project List

Fire Station 11

Apparatus Bay Expansion

Expansion of the Fire Station 11 apparatus bay is an unavoidable cost necessary to accommodate a new TDA. The TDA is expected to be delivered from the manufacturer by 2028, before the next major investment for the station can be designed and implemented.



Example of a tractor-drawn aerial ladder truck. Image by RyanP77 and licensed as CC BY-NC-SA 2.0.

Alternatives Recommendation: Conduct a Renovation and Replacement Study

The Fire Functional Plan identifies "Station 11 Phase 2 Study" to prepare for long-term facility decisions. This study will evaluate options for rebuilding or reconfiguring the non-apparatus areas of Station 11. The current scope of the study is:

- Expansion needs for administrative functions
- Long-term seismic and energy performance upgrades
- Opportunities for co-location or modular design with other city functions
- Site feasibility for expansion/remodel of Station 11 at its current location

Ideally the study would also include:

- Evaluation of options to reconstruct the facility on the existing site and at alternative locations, such as the municipal campus. A replacement could reduce the expense and risks of reinvesting in an older building that is undersized and may be challenging to upgrade to modern standards.
- Consideration of costs and challenges of operating a temporary facility during renovation or redevelopment.
- Estimate of the potential for capital revenue from a land sale or ground lease.

Future Relocation

The Fire Functional Plan identifies a need to relocate this facility after 2050, in conjunction with a new Fire Station 19, to maximize level of service and citywide coverage.

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Fire Station 12

The replacement and relocation of Fire Station 12 is a top priority and recommended for the 2033-2040 timeframe. The station is currently located outside Redmond city limits in Bellevue, and it is not well-positioned to meet level of service and response times for the Overlake growth center and the Idylwood residential neighborhood.



Fire Station 12

The relocation of the station will require the acquisition of new land in Overlake, which is a challenging proposition because of the limited land available for sale on the private market and the subsequent price of land and real estate in the area. The City has preliminarily identified a potential site at Redmond Technology Station, known as the "remainder parcel", that is at the corner of 156th Avenue NE and NE 36th Street. The 1.6 acre parcel is currently owned by Sound Transit and Microsoft has the first right of refusal since the site was originally owned by Microsoft before it was acquired for transit purposes. The City has considered concepts for a vertical mixed-use facility at this location, potentially including police and community functions.



Redmond Technology Station. The "remainder parcel" is the vacant area on the southeast corner.

Should the "remainder parcel" prove unavailable, there are other potential sites in the area owned by Microsoft and other private landowners. The estimated property acquisition cost reflects a minimum site size of 1.25 acres for this fire station. A larger site would be needed for co-location with an Overlake police precinct or other public facilities. Another possibility is co-location with a mixed-use residential or commercial building with the fire station on the ground level; while a common arrangement in global cities, this would be a new format for Redmond and it depends on finding a willing development partner.

Fire Station 16

This station is past the midpoint of a typical 45-year service life, and it is due for lifecycle renovations. No other major projects are planned for this facility.

Fire Station 17

The planned interior buildout should proceed to maximize the staffing capacity of this facility.

This station will reach the midpoint of a typical 45-year service life in 2035 and it will be due for lifecycle renovations. No other major projects are planned for this facility.



Unfinished space at Fire Station 17.

Fire Station 19

The Fire Functional Plan identifies this new station to be built after the planning period (2051+) to address the widening level of service deficiencies for the Downtown area. The need for a new station northeast of Downtown was originally modeled based on a relocated Fire Station 11 moving west of Downtown to the Willows Road area. If Fire Station 11 is retained in Downtown, the need for this new station and/or its location will need to reevaluated.

Fire Stations 13, 14, and 18 (FD 34)

Major capital improvements and facility renovations for these three stations are led and funded by FD 34. Coordination between Redmond Fire and FD 34 is needed to support facility reinvestment or replacement, particularly for Fire Stations 13 and 14 in the near- or mid-term, to meet modern best practices for station design and improve operational capabilities.

Apparatus Maintenance Facility

This facility will be due for lifecycle renovations in the planning period. No other major projects are planned.

Fire Logistics Facility

The Fire Functional Plan identifies the need for a centralized logistics facility to reduce burdens on operational space and firefighter staff time at individual stations. Fire operations require constant resupply and regular upgrades for a variety of equipment. A central facility can streamline receiving and distribution for the Fire department and citywide emergency preparedness needs. Centralized space is also desired for storage of some Fire reserve vehicles, which currently occupy bay space at several stations or are parked outdoors and exposed to weather (some reserve vehicles would remain at high-call stations).

In the near-term, leasing an existing warehouse space with capacity for vehicle storage is the most likely approach and funding is in the project list. Redmond has several industrial

areas, including Southeast Redmond and the Willows Road corridor, that may have suitable warehouse space available.

City ownership of a logistics facility is eventually desired. The Fire Functional Plan includes $5M for investment in a City-owned facility; this could be a new location or a shared facility at the MOC. The Bellevue Fire Department is also known to have a similar logistics need and could be a potential partner for a jointly operated facility.

Fire Training Facility

The Fire Functional Plan identifies a long-term need for a City-owned training facility to support firefighter recruit academies, specialty instruction, and coordinated training exercises. The department currently lacks a dedicated, department-controlled facility suitable for in-service instruction, large-scale drills, or multi-agency exercises. Most hands-on training occurs at fire stations or temporary spaces, which limits flexibility and accessibility. While regional partnerships currently provide some access, these arrangements present challenges in scheduling, scale, and long-term sustainability. A local training space would improve readiness, accelerate onboarding, reduce overtime due to unfilled vacancies, and support specialized needs including rail, high-rise, and wildland response.



Vehicle extrication training at the empty lot next to Fire Station 17.

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Fire Project List

The Fire Functional Plan lists firefighting equipment and mobile apparatus as capital costs that are not included in this list. For notes on project lists, see Section 4.3.

TIMEFRAME	PROJECT	ROM COST	NOTES
Current CIP	EV charging stations	$0.9M	FS 11 and FS 12. Cost from 2025-2030 Capital Facilities Plan.
Current CIP	Personal protective equipment storage/cleaning upgrades	$0.4M	Multiple stations. Cost from 2025-2030 Capital Facilities Plan.
Current CIP	FS 17 interior buildout and admin relief	$0.4M	Cost from Fire Functional Plan
Current CIP	FS 17 siding replacement	$1.1M	Cost from 2025-2030 Capital Facilities Plan
2027-2032	Diesel exhaust upgrades	$0.5M	Multiple stations. Cost from Fire Functional Plan.
2027-2032	Emergency generator upgrades and redundancy	$0.5M	Multiple stations. Cost from Fire Functional Plan.
2027-2032	FS 11 apparatus bay expansion	$1.6M	Cost from Fire Functional Plan
2027-2032	FS 11 renovation and replacement study	$0.4M	Cost from Fire Functional Plan
2027-2032	FS 11 major renovation or replacement	$15-35M	Cost from Fire Functional Plan (20,000 square feet minimum). Project type decision is pending study results. If replacement, it occurs 2033-2040. If renovation, replacement occurs 2051+. Maintenance costs assume a replacement and 2036 opening.
2027-2032	Logistics - Tenant improvements to leased warehouse	$0.6M	Cost from Fire Functional Plan
2027-2032	Logistics - City-owned facility investment	$5.0M	New facility or shared storage at MOC. Cost from Fire Functional Plan
2027-2032	Routine maintenance		OD, PR, OP, and CRV costs from 2023 FCA. Excludes FD 34.
	Observed deficiencies	$7.4M	Total cost of 2023-2028 OD.
	Predicted renewals	$5.1M	Total cost of 2029-2032 PR.
	Opportunity projects	$1.4M	50% of total cost of OP. Excludes FS 11 and 12.
2033-2040	FS 12 land acquisition	$10.0M	Cost from Fire Functional Plan (1.25 acre minimum)

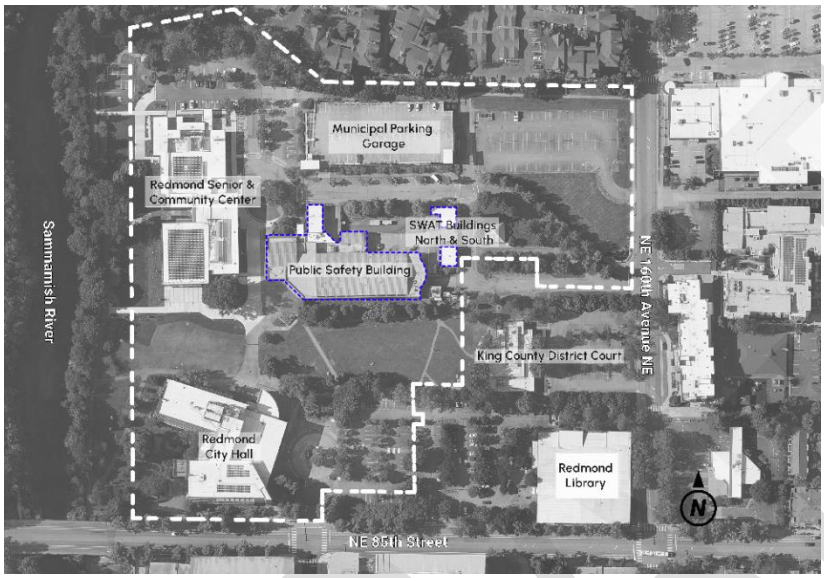
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TIMEFRAME	PROJECT	ROM COST	NOTES
2033-2040	FS 12 construct replacement	$30.0M	Cost from Fire Functional Plan (20,000 square feet minimum). Maintenance costs assume 2036 opening.
2033-2040	FS 12 old property sale or lease	TBD	Not estimated
2033-2040	Routine maintenance		OD, PR, OP, and CRV costs from 2023 FCA. Excludes FD 34.
2033-2040	Predicted renewals	$6.4M	Total cost of 2033-2040 PR. Excludes FS 11 and 12.
	Opportunity projects	$1.4M	50% of total cost of OP. Excludes FS 11 and 12.
	New FS 11 and 12 estimate	$2.6M	Based on a percentage of building construction cost per year. Costs from Fire Functional Plan.
2041-2050	FS 16 lifecycle renovation	$12.0M	Cost from Fire Functional Plan
2041-2050	Apparatus Maintenance Facility lifecycle renovation	TBD	Not estimated
2041-2050	Routine maintenance		OD, PR, OP, and CRV costs from 2023 FCA. Excludes FD 34.
	Predicted renewals	$0.5M	Total cost of 2041-2042 PR
	Existing facilities 2043+	$3.9M	Based on a percentage of CRV per year.
	New FS 11 and 12 estimate	$13.0M	Based on a percentage of building construction cost per year. Cost from Fire Functional Plan.
2051+	FS 11 replacement acquire land	TBD	Only needed if FS 11 is renovated instead of replaced in earlier timeframe
2051+	FS 11 construct replacement	TBD	Only needed if FS 11 is renovated instead of replaced in earlier timeframe
2051+	FS 19 acquire land	TBD	Not estimated
2051+	FS 19 construct station	$35M	Cost from Fire Functional Plan
2051+	FS 17 lifecycle renovation	TBD	Not estimated
2051+	Fire training facility	TBD	Not estimated

The project lists use the following abbreviations:

FCA = 2023 Facility Conditions Assessment
OD = observed deficiency
PR = predicted renewal
OP = opportunity project
CRV = current replacement value
CIP = Capital Investment Program
ROM = rough order of magnitude
M = million dollars
FS = Fire Station
FD 34 = Fire District 34

3.3 – Police



Location of Police facilities on the municipal campus



Police Fast Facts

1 primary facility
3 buildings
97,255 gross square feet
134 staff

The Police Department (Police) operates one primary facility within the service area, which consists of Redmond city limits (17 square miles). Four workstations are located at several fire stations and the private Microsoft campus and are available for use by officers in the field.

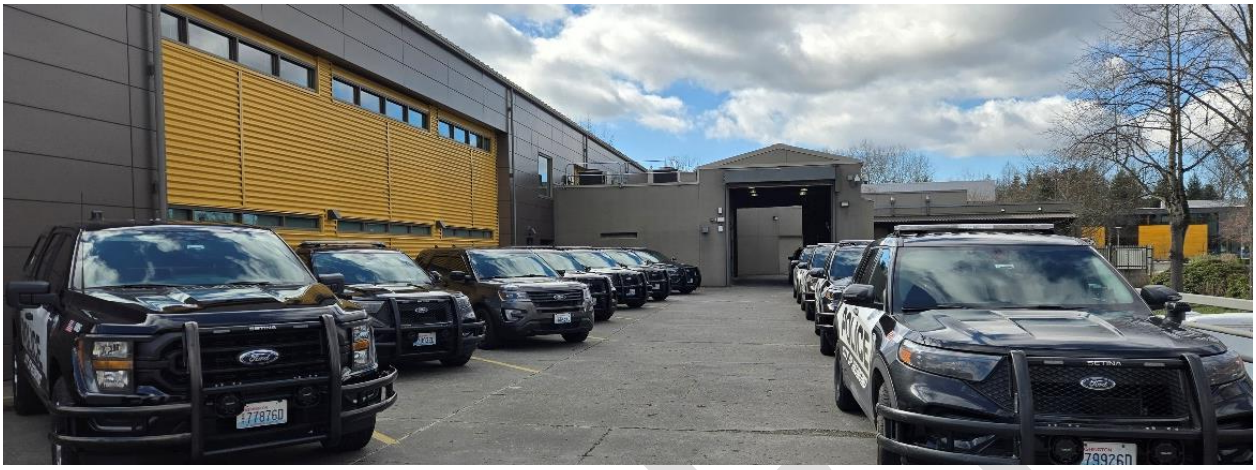
Capital Facility Element policy CF-6 establishes this level of service for Police Department services:

- *Police capital facility needs are associated with police services, general operations, special operations and support services. The service standard is to have facilities and equipment sufficient to meet the demand for police services and to meet needs of staff assigned to service delivery.*
- *Ensure emergency response times meet community expectations and call response types.*

Key Findings

Public Safety Building

8701 160th Ave NE, Redmond, WA 98052



Public Safety Building

The Public Safety Building (PSB) is the headquarters and primary facility for Police. The building served as both City Hall and the police station until 2005, when the separate City Hall building opened. The PSB consists of administration office space and workspace for patrol officers. It also hosts a variety of specialized functions, including the City's 911 dispatch center, the City's data center, suspect holding and interview areas, an armory, evidence storage and processing labs, and locker rooms. The basement level hosts a firing range, parking for police personnel and fleet vehicles, and bulk evidence storage. The building features an emergency generator. The PSB is one of several buildings on the Redmond municipal campus.

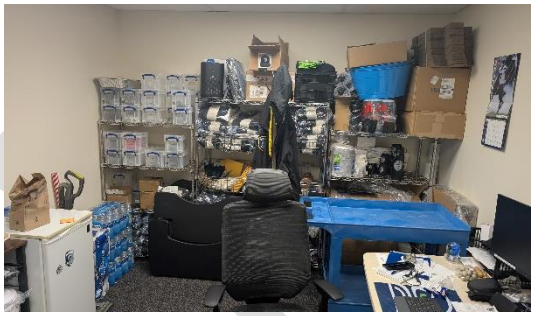
The building has maintenance issues that stem from its original design and its conversion to an exclusive Police facility. It is inefficiently configured and the building systems are challenging and costly to maintain, with HVAC and electrical systems near their end of life. Because the backlog of maintenance is outpacing the building's current replacement value, 2023 FCA found that the building's condition worsened since the 2013 FCA. This is despite recent investments of approximately $13.5 million, demonstrating the building's significant maintenance needs. From 2015 to the present maintenance work has included a seismic retrofit, exterior siding and roof replacement, replacement of heat pumps and HVAC components, 911 center remodel, and locker room upgrades.

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Key functional issues include:

- The building is undersized for projected 2050 staff growth, which may be more than double current staff levels
- Incremental renovations over time are not well-served by the building's HVAC and electrical systems, which are reaching the end of their service lives
- Operational elements like the vehicle evidence pens, fleet parking, armory, training spaces, and dispatch center are at capacity
- Windowless offices, poor radio communications, seismic bracing, inefficient circulation, and other issues reduce occupant comfort and efficient workflow
- The Mobile Command post is an oversized vehicle without adequate secure parking
- Seasonal flooding of the basement garage is a major nuisance







The Public Safety Building requires a major decision, so alternatives are explored below in the section Public Safety Building Alternatives Evaluation.

North and South Garage Buildings

8701 160th Ave NE, Redmond, WA 98052

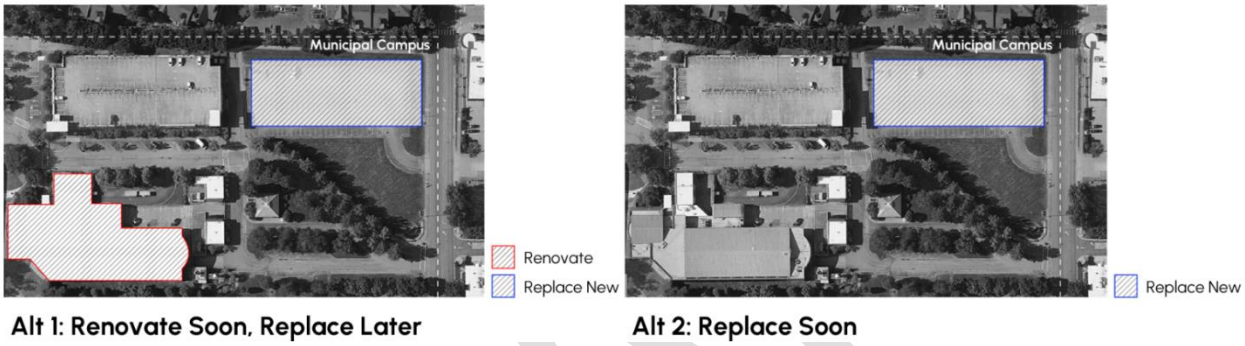
These are two small buildings adjacent to the Public Safety Building. Originally used for specialized vehicle storage, today the North Garage is used for bike patrol storage and the South Garage is used for tactical training.

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Public Safety Building Alternatives Evaluation

Approaches to address the Public Safety Building issues and meet future needs are described and shown below.

- **Alternative 1:** Renovate for the near-term, with a replacement in the long-term. This would address critical functional issues and risks in the current building to meet all needs while delaying replacement. Renovating before replacing will add to the total project cost.
- **Alternative 2:** Replacement in the medium-term. Replacing on a quicker timeline would avoid steeper maintenance and renovation costs for the current building. The floor area would be larger based on future staffing needs.



Illustrations of the two potential alternatives for the Public Safety Building

Summary Recommendations and Project List

Public Safety Building

Recommendation: Pursue Alternative 2

The Public Safety Building should be replaced in the medium-term. Retaining the building for its full-service life through 2045 or beyond would likely require significant investment to keep its systems fully operational but would not address the core facility issues. Therefore, replacing the facility in the 2033-2040 timeframe is recommended. Replacement is recommended in the latter half of that timeframe due to project cost and accommodating higher priority fire station replacements in the same period.

The expense and inconvenience of temporary police facilities during construction should be avoided. The facility would ideally be replaced on the Redmond municipal campus, which offers good citywide access, proximity to the growing population density of Downtown and Marymoor Village, and adjacency to city administration. Alternatively, if it is deemed advantageous for Fire Station 11 to relocate to the municipal campus (see 3.7 – Municipal Campus Considerations), and if there is no longer space to rebuild the PSB, the Fire Station 11 site could be considered for the PSB.

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North and South Garage Buildings

These two small structures are functionally integrated with the Public Safety Building. No major projects are planned. Their functions should be replaced at the same time as the Public Safety Building. It may be ideal for their functions to be integrated into the Public Safety Building replacement for ease of access and to reduce the extra costs of building and maintaining exterior enclosures.

Overlake Precinct

The Police Functional Plan identifies a need for a precinct in the Overlake growth center to serve the growing population density and more efficiently dispatch to calls in southern areas of Redmond. The precinct would house commissioned officers and fleet vehicles, professional support staff (including a customer service desk), and could also support functions like records storage and training spaces, if advantageous. The Public Safety Building replacement in Downtown would continue functioning as the headquarters, supporting most staff and specialized functions.

Similar to the replacement of Fire Station 12, developing a precinct in Overlake will require the acquisition of new land, which is challenging proposition due to limited availability and high cost. The City has preliminarily identified a potential site at Redmond Technology Station, known as the “remainder parcel”, at the corner of 156th Avenue NE and NE 36th Street. The 1.6 acre parcel is currently owned by Sound Transit and Microsoft has the first right of refusal as it was originally owned by Microsoft before Sound Transit acquired it for light rail construction. The City has considered concepts for a vertical mixed-use facility at this location, potentially including police and community functions co-located with a replacement of Fire Station 12.



Redmond Technology Station. The “remainder parcel” is the vacant area on the southeast corner.

Should the “remainder parcel” prove unavailable, there are other potential sites in the area owned by Microsoft and other private landowners. The estimated property acquisition cost reflects a site size of 0.75 to 1 acre for the precinct, reflecting a potential mix of structured

and surface parking. A larger site would be needed for co-location with a fire station or other public facilities.

A private development partnership may be challenging because of the complex design requirements of police facilities. The new incentive program can be used to help offset some of the costs and encourage colocation (see RZC 21.55).

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Police Project List

For notes on project lists, see Section 4.3.

TIMEFRAME	PROJECT	ROM COST	NOTES
Current CIP	PSB Phase 2 mechanical and electrical improvements	$3.1M	Cost from 2025-2030 Capital Facilities Plan
2027-2032	Routine maintenance		OD, PR, OP, and CRV costs from 2023 FCA
	Observed deficiencies	$3.6M	50% of total cost of 2023-2028 OD
	Predicted renewals	$8.2M	50% of total cost of 2029-2032 PR
	Opportunity projects	$0.0M	0% of total cost of OP
2033-2040	PSB construct replacement	$100-110M	Cost range for 51,000 - 59,000 square feet staffed area plus 66,000 square feet secure parking. Costs from MAKERS and ACC. Maintenance costs assume 2039 opening.
2033-2040	Overlake Precinct land acquisition	$6-8M	Cost from MAKERS analysis of King County real estate assessed values and sales data for 0.75 - 1 acres.
2033-2040	Routine maintenance		OD, PR, OP, and CRV costs from 2023 FCA
	Predicted renewals	$0.0M	0% of total cost of 2033-2040 PR
	Opportunity projects	$0.0M	0% of total cost of OP
	New PSB estimate	$2.0M	Based on a percentage of building construction cost per year. Costs from MAKERS and ACC.
2041-2050	Overlake Precinct construction	$31-38M	Cost range for 20,000 - 25,000 square feet building and 0.75 - 1 acre site development. Costs from MAKERS and ACC. Maintenance costs assume 2044 opening.
2041-2050	Routine maintenance		OD, PR, OP, and CRV costs from 2023 FCA
	New PSB and Overlake Precinct estimate	$12.2M	Based on a percentage of building construction cost per year. Costs from MAKERS and ACC.

The project lists use the following abbreviations:

FCA = 2023 Facility Conditions Assessment
OD = observed deficiency
PR = predicted renewal
OP = opportunity project
CRV = current replacement value
CIP = Capital Investment Program
ROM = rough order of magnitude
M = million dollars
PSB = Public Safety Building

3.4 – Public Works & Parks Operations



Aerial view of the Maintenance and Operations Center



Public Works and Park Operations Fast Facts

1 facility
14 buildings
62,000 gross square feet
151 staff

The Public Works Department manages environmental services, maintains most fleet vehicles, builds and maintains Redmond's infrastructure for streets, trails, water, wastewater, and sewer. The Parks Operations group develops and maintains city parks and facilities. The facilities maintenance team is also part of Parks Operations.

Capital Facility Element policy CF-6 establishes this level of service for general government facilities:

- *Facilities that are safe and meet all applicable health, safety, and accessibility standards.*
- *Facilities that are properly sized, designed for their intended purpose, and evolve to meet future demands, such as population growth, expanded infrastructure, and changes in regulatory requirements.*
- *Critical facilities are built or upgraded to standards that increase the likelihood that vital services continue in the event of a disaster.*
- *Constructed to support the equitable provision and use of facilities for all users.*

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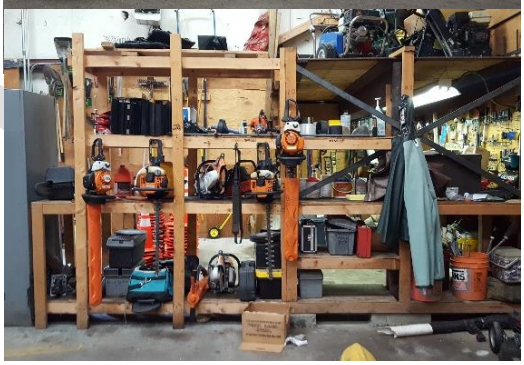
Key Findings

Maintenance and Operations Center

18080 NE 76th St, Redmond, WA 98052







Operational workgroups for Public Works, Parks Operations, and Facilities maintenance are based at the Maintenance and Operations Center (MOC) in southeast Redmond. Engineering and planning staff are located at City Hall. Other Public Works and non-recreation Parks buildings are outside the GGFP scope, including utility structures and small maintenance buildings.

The MOC has fourteen major and minor structures, including administrative offices, crew support spaces, shops, a decant facility, a fuel station used by all City departments, and storage for vehicles and materials.

The MOC was built piecemeal over time. Most buildings are in poor condition and do not adequately support efficient operations. Functional issues include:

- Crew reporting, dispatch, and meeting areas are undersized and are inefficiently configured
- Workgroups are siloed in multiple buildings, precluding interdepartmental collaboration and efficient use of limited site area
- The warehousing and storage facilities are undersized and decentralized, hindering efficient inventory control
- The fleet shop is undersized and is not equipped to service large vehicles
- The site design is inefficient, and fleet and staff parking are at capacity

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Summary Recommendations and Project List

Maintenance and Operations Center

Redevelopment of the MOC campus was identified as a priority in the 2019 Redmond Facilities Strategic Management Plan. The project is now underway, with a Master Plan completed in 2024 design development ongoing. Construction is in design development and anticipated to be completed in 2030.

This is currently Redmond's largest general government facilities project. The project will meet almost all facilities needs of Public Works, Facilities, and Park Operations through 2050.

The basic program (subject to change) is:

- Approximately 90,000 square foot operations building
- Approximately 99,000 square foot parking structure
- Approximately 60,000 square feet of fleet parking
- Approximately 14,000 square feet of covered exterior storage, fuel station, wash bays, and material bays

Construction will require the temporary relocation of crews, fleet, and materials. Consider interim locations during MOC reconstruction such as utility sites, surplus space on community center properties and the municipal campus, other City-owned properties, or if necessary short-term lease(s) of private property.

The Fire Functional Plan assumes a $5M contribution to the MOC redevelopment to support the Fire Department's logistics needs. If feasible, this should be incorporated to efficiently consolidate City inventories and address this need for the long term.

Project List

For notes on project lists, see Section 4.3.

TIMEFRAME	PROJECT	ROM COST	NOTES
Current CIP	MOC redevelopment	$45M	
2027-2032	MOC redevelopment	$180.0M	Total cost from City minus current CIP allocation. Maintenance assumes 2030 opening.
2027-2032	Routine maintenance - New MOC	$3.1M	Based on a percentage of building construction cost per year. Cost from CIP and Master Plan.
2033-2040	Routine maintenance - New MOC	$25.0M	Based on a percentage of building construction cost per year. Cost from CIP and Master Plan.
2041-2050	Routine maintenance - New MOC	$46.9M	Based on a percentage of building construction cost per year. Cost from CIP and Master Plan.

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The project lists use the following abbreviations:

FCA = 2023 Facility Conditions Assessment
OD = observed deficiency
PR = predicted renewal
OP = opportunity project
CRV = current replacement value
CIP = Capital Investment Program
ROM = rough order of magnitude
M = million dollars
MOC = Maintenance and Operations Center

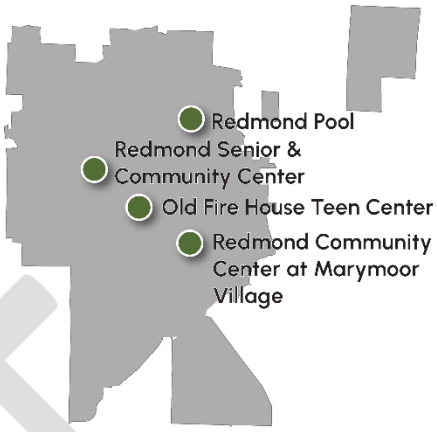
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3.5 – Parks and Recreation

The Redmond Parks & Recreation Department operates city parks and indoor recreation facilities for use by the general public. Four recreation facilities support cultural, athletic, and educational programming: Redmond Pool at Hartman Park, the Old Fire House Teen Center, the Redmond Senior & Community Center (RSCC), and the Redmond Community Center at Marymoor Village (RCCMV).

Capital Facility Element policy CF-6 establishes this level of service for parks and recreational facilities: *Provide recreational opportunities for all residents through sufficient and equitably distributed parks, trails, and recreational facilities.*

- *Percent of households within a ½ mile of developed city park.*
- *Percent of households within a ½ mile of trail access.*
- *Acreage of parkland per capita.*
- *Recreation and Conservation Office (RCO) Level of Service Metrics.*



Parks and Recreation Fast Facts

4 facilities
4 buildings
24,532 gross square feet
15 staff

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Key Findings

Redmond Senior & Community Center (RSCC)

8703 160th Ave NE, Redmond, WA 98052



The RSCC is Redmond's newest general government facility, having opened in May 2024 with a cost of approximately $63M. It is a two-story facility featuring a senior lounge, library, gymnasium, commercial kitchen, a variety of meeting rooms, and outdoor event space facing the Sammamish River. The facility provides regular programming for all ages and also has spaces available for rent. The RSCC is one of several buildings on the Redmond municipal campus and shares parking with other facilities.

There are minor maintenance and functional issues that will need to be addressed, such as improving acoustic insulation in several meeting rooms, a difficult-to-use glass door divider between the senior lounge and library, and challenging ADA access to the Red Oak room stage.

As part the City's decarbonization strategy, the RSCC is also Redmond's first all-electric public facility. Compared to a typical building, this means space and water heating are accomplished with electricity instead of natural gas. New equipment presents a learning curve for maintenance staff but also creates opportunities to learn and apply lessons to future upgrades and all-electric facilities across the City's portfolio.

The building may be used as an emergency shelter, but it cannot be officially designated as such because it is in a 100-year flood plain. Relatedly, because the building is all-electric it has high electric demands that would require a very large emergency generator, so instead the building is set up for connecting to a portable generator. However, a study has found the building is well-positioned for battery storage as an alternative resilience measure if physical space is available.

Redmond Community Center at Marymoor Village (RCCMV)

6505 176th Ave NE, Redmond, WA 98052



The City of Redmond has leased this property from the Lake Washington Institute of Technology (LWIT) since 2018. Originally built as a college classroom building, it features a small auditorium and a series of meeting rooms across two floors. The facility provides programming focused on physical activity, youth, and summer camps. In early 2025, teen programming was relocated from Old Fire House Teen Center to RCCMV.

RCCMV is located in the Marymoor Village growth center adjacent to Marymoor Park and three blocks from a light rail station, and It is ideally positioned to support a growing residential population in a designated urban center.

Functional issues include:

- Limited capacity for staff growth.
- Limited storage capacity, particularly on the second floor.
- Common areas are limited and the lobby size is inadequate.
- The kitchen is underused and not applicable to the building's current programming.
- The auditorium is not configured for live music and other social activities that are associated with the building's current programming.
- Teen programming is spread throughout the building, which is not ideal due to the program's size, specialized features, and unique user needs.
- Outdated A/V technology, poor acoustics, and poor lighting control are an issue in many of the multipurpose rooms.
- The building lacks an emergency generator to support its potential designation as an emergency shelter.
- Vehicular circulation on the site is constrained during peak times.

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The City and LWIT have expressed mutual interest in exchanging ownership of the full property (building and land). Once the City controls the property, it would allow for a right sizing of the spaces, capital investment in areas of concern, and increased improvements to improve usability. While the building was not originally built for use as a community center, the property has ample space for increasing the footprint and improving the facility for expanded recreational programming in the future.

Old Fire House Teen Center

16510 NE 79th St, Redmond, WA 98052



In early 2025, teen services were relocated from this facility to RCCMV and the building currently is vacant. When active the building has been well-liked by users, but its cellular organization of spaces does not support its program well.

Functional issues include:

- A renovation may improve the quality of some spaces but would not result in the more open floor plan required due to space limitations.
- Live music programming may be incompatible with increased residential development in the area.
- All building systems are in need of investment and replacement.
- The hose tower is not seismically reinforced and requires a retrofit or demolition.
- Previous retrofit does not meet code and was not sufficient for needed reinforcement.
- Presence of hazardous materials throughout facility creating operational and maintenance challenges.
- Original windows, building envelope, and structure have allowed water penetration and require replacement.
- All renovation, replacement, and updates will require significant hazardous material abatement.

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Redmond Pool

17535 NE 104th St, Redmond, WA 98052



Redmond Pool, located within Hartman Park, is the only public pool in Redmond and the surrounding area. It is used by recreational and competitive users, including school swim teams. Staffing is contracted to a nonprofit organization.

The facility is one of the oldest in Redmond's portfolio. It was in deteriorating condition and at risk of closing, but a major investment completed in 2021 gave the facility new life. A $9.3 million investment provided a new roof, new water filtration and HVAC systems, and fully renovated the locker rooms and lobby.

Functional issues include:

- The pool is undersized given its popularity and it is outmoded compared to modern aquatic centers
- Lack of storage for materials and program supplies
- The pool deck has ADA accessibility challenges
- Parking is limited and inefficiently designed

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Summary Recommendations and Project List

Redmond Senior & Community Center

The RSCC will reach the midpoint of a typical 55-year service life beyond the 2050 planning horizon. No major projects are planned for this facility.

Redmond Community Center at Marymoor Village

Assuming City ownership of the property, a major renovation is recommended to improve its functionality. The building requires upgrades to various systems and equipment to better serve recreation programs.

The scope of renovations may include:

- Audio/video technology upgrades
- Enlarged common spaces
- Increased program storage
- Removal of kitchen facility
- Consolidation of teen programming (if remaining at this location)
- Adding an emergency generator.

Assuming City ownership of the property, as it approaches the end of its service life a reinvestment study is recommended to evaluate the best use and design of the facility and its property for continuing to meet recreation program needs of a growing population. The property is large and could host a variety of additional indoor and outdoor recreation programs in an expanded building, a second building, a new building that replaces and expands on the existing functionality, or other configurations.

Old Fire House Teen Center

A separate planning process is underway to determine the future of the building. No major projects are planned for this facility.

Redmond Pool

Even with recent investments, the pool building is far beyond its expected service life of 30 years. In the long-term the City should study options to replace this facility and meet the increasing demand for pool access.

Options to evaluate may include:

- Rebuilding a modest community-focused aquatic center in the same location, leaving additional demand for services to be met by other agencies or the private market
- Rebuilding a larger and more modern aquatic center at the same location
- Building a larger and more modern aquatic center in a more central location

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- Replacing the facility and adding a second aquatic center in another location, such as the Marymoor or Overlake growth centers (ideally co-located with a community center)
- Partnering with a neighboring city or school district on a jointly funded and owned regional aquatic center
- Partnering with a private/nonprofit partner to develop a second aquatic center
- Operating a single pool and leaving additional demand to the private market

Overlake Community Center

As noted in Section 1.2 – Facility Planning Principles, the neighborhood is underserved for a community center with indoor recreation. The Redmond 2050 Comprehensive Plan and its Overlake Neighborhood Plan Addendum, along with the Redmond Parks, Arts, Recreation, Culture & Conservation (PARCC) Plan elaborate on this need and say, "The new center could be a stand-alone facility or a partnership with a developer or another jurisdiction, and it should include amenities such as a gymnasium, fitness rooms, community meeting rooms, a general social living room area."

The City has preliminarily identified a potential site at Redmond Technology Station, known as the "remainder parcel", that is at the corner of 156th Avenue NE and NE 36th Street. The 1.6 acre parcel is currently owned by Sound Transit and Microsoft has the first right of refusal since the site was originally owned by Microsoft before it was acquired for light rail construction. The City has considered concepts for a vertical mixed-use facility at this location, potentially including a community center co-located with a replacement of Fire Station 12 and a police facility. Should this "remainder parcel" prove unavailable, there are other potential sites in the area owned by Microsoft and other private landowners.

The rough estimate of area needed for this facility is between 40,000 and 60,000 square feet, to be refined during design. The required land area will vary, but for planning purposes, a stand-alone, two-story, 40,000-60,000 square foot community center would likely require a site of between 0.75-2 acres, depending on the number of stories, parking configuration and structure, the extent of outdoor recreation features, etc.

Given limited available land, opportunities to include this facility in a multi-story private mixed-use development should be explored. A community center in a mixed-use building (e.g. with residential and/or commercial space) may limit its potential size or require multiple projects to offer the quantity and variety of desired recreational programming. According to the Redmond PARCC plan, *"...the City should be flexible and creative in its approach to provide indoor recreation space that is open to the public. Development incentives for new mixed used buildings to provide indoor meeting space, black box theaters, or other recreation space that is open to the public should be pursued."*

Redmond Zoning Code 21.55.1000 provides a private development incentive for inclusion of a "community center or library (20,000 sq. ft. minimum)" in Overlake.

Project List

For notes on project lists, see Section 4.

TIMEFRAME	PROJECT	ROM COST	NOTES
Current CIP	RCCMV property acquisition	$18M	Cost from Parks & Recreation staff.
2027-2032	RCCMV renovations	$24.3M	Renovation cost from MAKERS and ACC, plus 2027-2032 routine maintenance.
2027-2032	RCCMV emergency generator	TBD	Not estimated
2027-2032	Routine maintenance		OD, PR, OP, and CRV costs from 2023 FCA. Excludes OFHTC.
	Observed deficiencies	$1.3M	Total cost of 2023-2028 OD. Pool only.
	Predicted renewals	$1.0M	Total cost of 2029-2032 PR. Pool only.
	Opportunity projects	$2.0M	50% of total cost of OP. Pool only.
	New RSCC estimate	$2.9M	Based on a percentage of building construction cost per year. Cost from City.
2033-2040	RCCMV reinvestment study	$0.5M	Cost from MAKERS
2033-2040	Overlake community center land acquisition	$6-16M	Cost from MAKERS analysis of King County real estate assessed values and sales data for 0.75 - 2 acres.
2033-2040	Pool replacement study	$0.5M	Cost from MAKERS
2033-2040	Routine maintenance		OD, PR, OP, and CRV costs from 2023 FCA. Excludes OFHTC.
	Predicted renewals	$16.5M	Total cost of 2033-2040 PR
	Opportunity projects	$4.3M	50% of total cost of OP
	New RSCC estimate	$7.8M	Based on a percentage of building construction cost per year. Cost from City.
2041-2050	Overlake community center construction	$52-81M	Cost range for 40,000 - 60,000 square feet building and 0.75 - 2 acre site development. Costs from MAKERS and ACC. Maintenance costs assume 2046 opening.
2041-2050	Routine maintenance		OD, PR, OP, and CRV costs from 2023 FCA. Excludes OFHTC.
	Predicted renewals	$2.2M	Total cost of 2041-2042 PR
	Existing facilities 2043+	$5.2M	Based on a percentage of CRV per year.
	New RSCC and OCC estimate	$17.7M	Based on a percentage of building construction cost per year. Costs from City, MAKERS, and ACC.
2051+	Pool construct replacement	TBD	Not estimated

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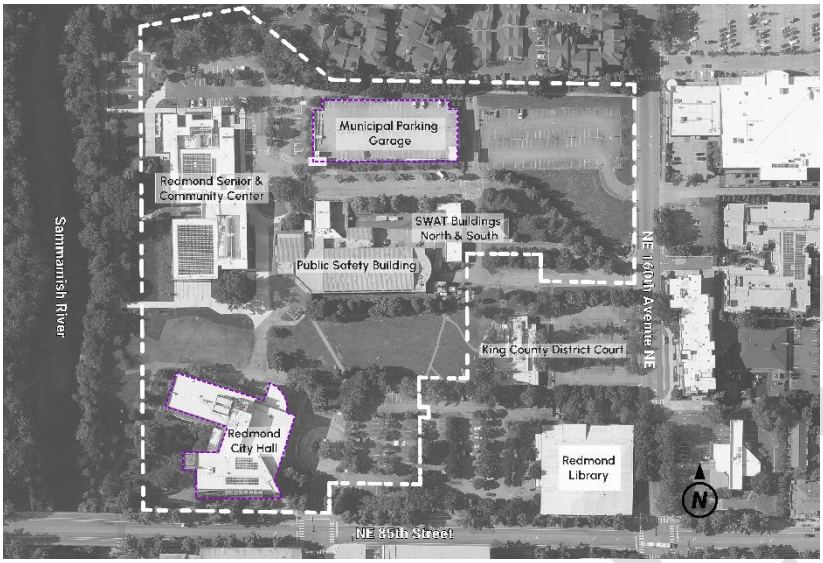
TIMEFRAME	PROJECT	ROM COST	NOTES
2051+	RCCMV reinvestment	TBD	Not estimated

The project lists use the following abbreviations:

FCA = 2023 Facility Conditions Assessment
OD = observed deficiency
PR = predicted renewal
OP = opportunity project
CRV = current replacement value
CIP = Capital Investment Program
ROM = rough order of magnitude
M = million dollars
OFHTC = Old Fire House Teen Center
RSCC = Redmond Senior & Community Center
RCCMV = Redmond Community Center at Marymoor Village
OCC = Overlake Community Center

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3.6 – Administration



Location of Administration facilities on the municipal campus



Administration Fast Facts

2 facilities
239,027 gross square feet
284 staff at City Hall

Administration facilities are those not covered by other functional areas. Administration represents a large share of City staff and functions, including elected officials, finance, human resources, information technology, development services, economic development, and environmental sustainability. It also represents some administrative components of functional areas including Fire, Public Works, and Parks.

Capital Facility Element policy CF-6 establishes this level of service for general government facilities:

- *Facilities that are safe and meet all applicable health, safety, and accessibility standards.*
- *Facilities that are properly sized, designed for their intended purpose, and evolve to meet future demands, such as population growth, expanded infrastructure, and changes in regulatory requirements.*
- *Critical facilities are built or upgraded to standards that increase the likelihood that vital services continue in the event of a disaster.*
- *Constructed to support the equitable provision and use of facilities for all users.*

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Key Findings

City Hall

15670 NE 85th St, Redmond, WA 98052



City Hall is the primary facility for Administration, housing most city department offices, City Council chambers, and several public-facing uses such as conference rooms and a customer service center used for permitting, business licenses, and bill payment. The building includes the primary emergency operations center and features an emergency generator. All departments except Police have a staff presence at City Hall. City Hall is one of several buildings on the Redmond municipal campus.

City Hall and the Municipal Parking Garage were built for the City by Wright Runstad in a public-private partnership. Ownership was transferred to the City in 2013. Building management is contracted to CBRE.

A renovation of City Hall's ground floor addressed security concerns and added a ground floor customer service center and meeting spaces. A reorganization of office space and workgroups was completed in 2025 to improve adjacencies and recapture some underutilized areas on all floors.

Functional issues include:

- City Hall is underutilized due to hybrid/remote work policies.
- Space on most floors of City Hall could be used more efficiently, e.g. smaller cubicles and less dedicated desks with more emphasis on hoteling or desk sharing.
- The HVAC system is at midlife and has balancing issues.
- City Hall is far removed from the Overlake growth center, which limits face-to-face public access to City customer service for residents of a large and growing neighborhood

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Municipal Parking Garage

8711 160th Ave NE, Redmond, WA 98052



This four-story facility is for municipal campus visitors, City staff personal vehicles, and some City fleet vehicles. It has 314 parking spaces. With the opening of the RSCC the first level of the garage is reserved for RSCC visitors and levels 2-4 are reserved for City use.

Summary Recommendations and Project List

City Hall

There may be space available to host administrative staff from other facilities when those facilities are being renovated or under construction.

This facility will be due for lifecycle renovations during the planning period. No other major projects are planned for this facility.

Municipal Parking Garage

This facility will be due for lifecycle renovations during the planning period. No other major projects are planned for this facility.

Overlake Administrative Annex

An Administration and customer service presence has long been targeted for the Overlake growth center, and as noted in Section 1.2 – Facility Planning Principles the neighborhood is underserved. To meet this need in the near-term the City is planning to purchase a commercial condominium at an affordable housing development adjacent to the Overlake Village Station. This space is anticipated to open in 2028.

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Should the City require additional or larger space in the area, co-location of Administration functions with another facility investment in Overlake (such as a community center) could be considered

Project List

For notes on project lists, see Section 4.3.

in Section 4.

TIMEFRAME	PROJECT	ROM COST	NOTES
Current CIP	Municipal Parking Garage EV charging stations	$0.8M	Cost from 2025-2030 Capital Facilities Plan
Current CIP	Overlake administrative annex space purchase	$0.6M	1,600 square feet commercial condominium. Cost from 2025-2030 Capital Facilities Plan
2027-2032	Routine maintenance		OD, PR, OP, and CRV costs from 2023 FCA
	Observed deficiencies	$2.8M	Total cost of 2023-2028 OD
	Predicted renewals	$2.3M	Total cost of 2029-2032 PR
	Opportunity projects	$15.3M	50% of total cost of OP
2033-2040	City Hall lifecycle renovation	$16.7M	Total cost of PR and 50% of total cost of OP for 2033-2040
2033-2040	Routine maintenance		OD, PR, OP, and CRV costs from 2023 FCA
	Predicted renewals	$1.7M	Total cost of 2033-2040 PR. Municipal parking garage only.
	Opportunity projects	$0.4M	50% of total cost of OP. Municipal parking garage only.
2041-2050	Routine maintenance		OD, PR, OP, and CRV costs from 2023 FCA
	Predicted renewals	$0.9M	Total cost of 2041-2042 PR
	Existing facilities 2043+	$20.4M	Based on a percentage of CRV per year.

The project lists use the following abbreviations:

FCA = 2023 Facility Conditions Assessment
OD = observed deficiency
PR = predicted renewal
OP = opportunity project
CRV = current replacement value
CIP = Capital Investment Program
ROM = rough order of magnitude
M = million dollars

3.7 – Municipal Campus Considerations

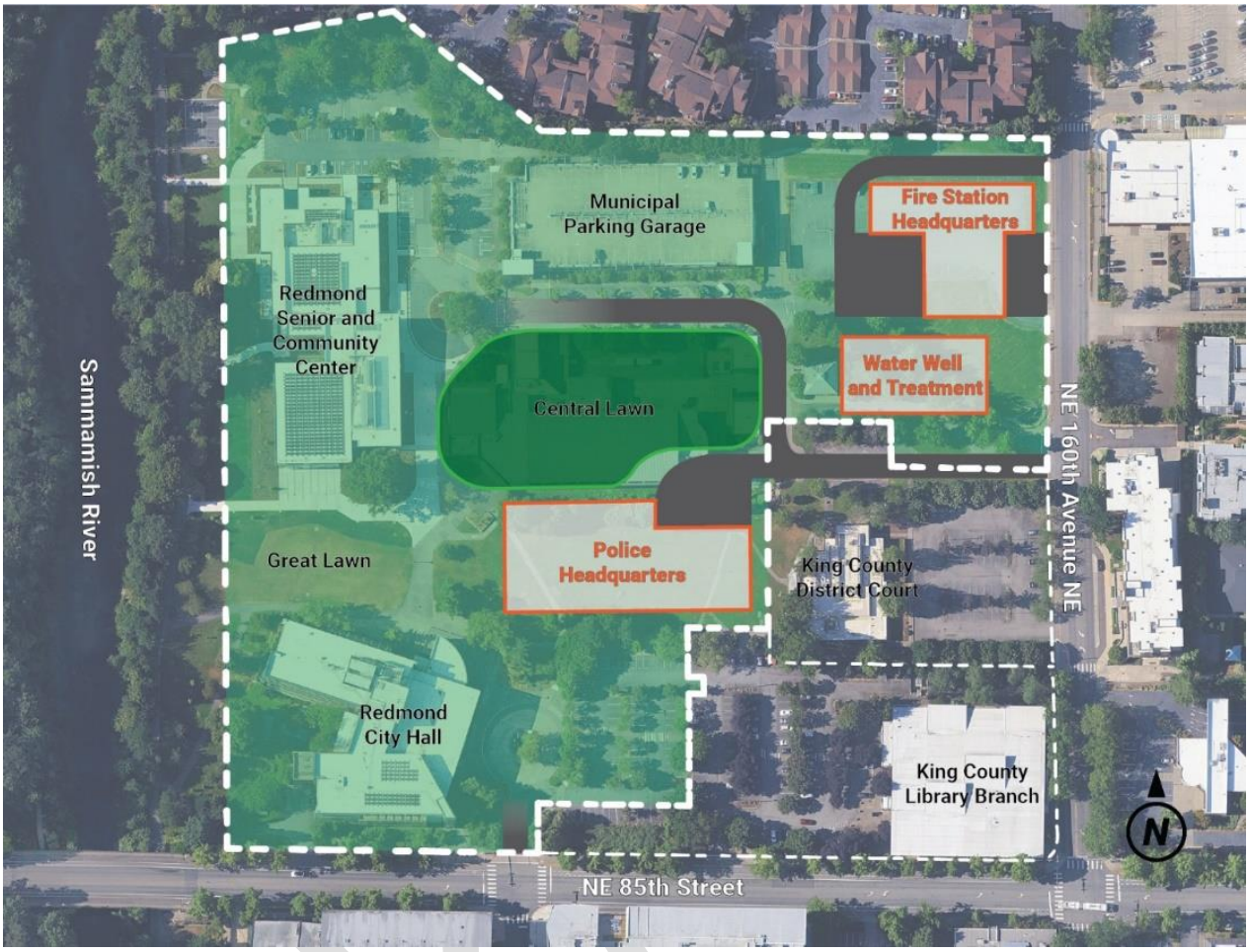
Several capital investment decisions and GGFP recommendations relate to use and development of the Redmond municipal campus, particularly for Police and Fire. Careful planning of the campus is necessary because it is one of the City's few large landholdings available for general government facilities needs and acquiring additional land is time-consuming and costly.

A facilities-driven master plan process for the municipal campus is recommended to make decisions about the future use and development of the campus. The master plan would address these key issues through 2050:

- Being a potential location for Fire Station 11 replacement, or a location for a temporary station while the existing FS 11 facility is renovated or redeveloped
- Being a likely location for replacement of the Public Safety Building
- Planned expansion of Well No. 4 capacity and new water treatment facilities
- Potential development of a new regional stormwater management facility
- Some open space on the campus is used for recreation and community events

While a campus master plan typically includes many components such as transportation, open space, and public benefits, such a master plan would need to be driven by general government facilities requirements due to Redmond's public safety needs and limited public landholdings.

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Illustrative concept for a potential municipal campus vision

Access is an important consideration for public safety facilities. If Fire Station 11 is replaced on the campus, the apparatus bay ideally has immediate access to the street network to minimize response times in its coverage area. The most available street frontage on the campus is 160th Avenue NE on the east side of the campus. If the Public Safety Building is rebuilt on the campus, close access to the street network is less critical because officers are on patrol in their vehicles throughout the city.

Well No. 4

Redmond Public Works operates Well No. 4 on the east side of the municipal campus to provide critical freshwater supplies for the city. The well is contained within a small utility structure next to the Public Safety Building. Physical and legal (water rights) challenges around water wells mean Well No. 4 will most likely remain in its current location.

As of 2025, the well is temporarily offline while water quality and production issues are evaluated. Public Works is assessing the need to potential build a second well on the campus, provide new treatment for per- and polyfluoroalkyl chemicals (PFAS, commonly

referred to as “forever chemicals”), and provide new greensand filtration for removing iron, manganese, hydrogen sulfide, and arsenic.

Combined, these new water facilities may require up to 25,000 square feet of site area, or more than half an acre. If these facilities are consolidated and if campus access to 160th Ave NE is reconfigured, these new facilities can be accommodated in campus open spaces south or east of Well No. 4.

Stormwater Management

Public Works has preliminarily identified the need for a regional stormwater management facility in the vicinity of the municipal campus. No further details are available at the time of this writing. The concept needs to be further scoped before implications for general government facilities planning can be evaluated. Alternatives for underground facilities and locations off the campus are recommended for evaluation.

Open Spaces/Lawns

The “Great Lawn” between City Hall and the Redmond Senior & Community Center is frequently used for community events and likely needs to be preserved. Enhancing public use areas and open spaces should be a goal of the master planning process.

Opportunity Projects

The 2023 Facility Condition Assessment identified several major opportunity projects for the campus that could be further assessed by a master planning effort:

- Flood risk planning and mitigation. This includes a resiliency study and modest mitigation at the current site, such as a flood wall and diesel-engine-powered high-capacity flood pumps, to protect mission-critical facilities.
- Installation of a ground-source heat pump system for multiple buildings, reducing natural gas use and carbon footprint. This could also support a “district energy” approach with shared resources between on-campus and off-campus properties for economy of scale.
- Installing a new vehicle fuel island to reduce fleet vehicle travel time and wear-and-tear to the Maintenance and Operations Center.
- Installing covered pedestrian walkways between buildings on the campus, to improve pedestrian comfort during inclement weather.
- Installing a “blue light” security system and lighting improvements to improve safety for visitors and staff.

Expansion Opportunities and Partnerships

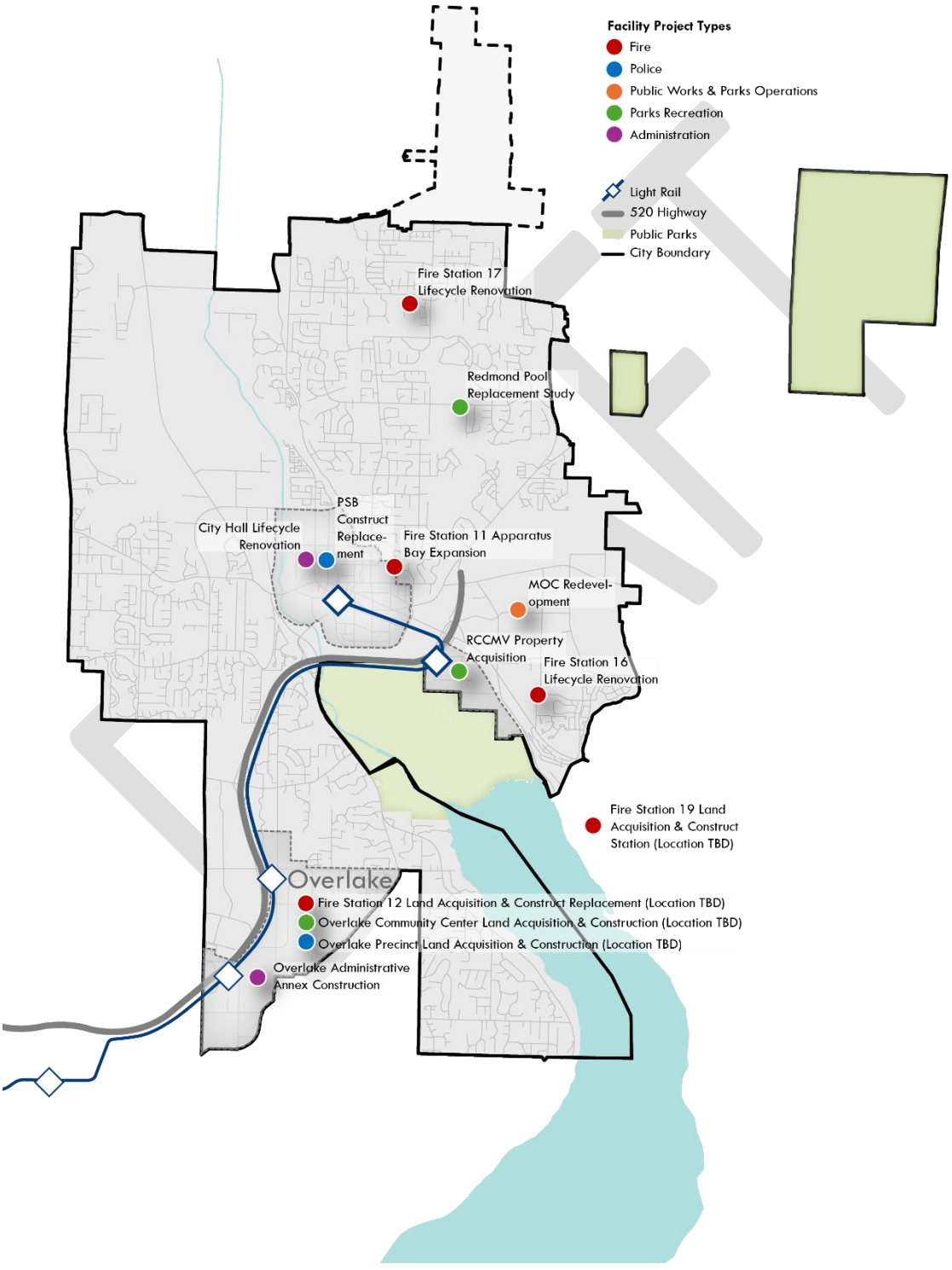
A related issue is opportunities to expand the campus or partner with other agency users. As planning gets underway for reinvestment in Fire Station 11 and the Public Safety Building in the 2030’s, the City of Redmond should collaborate with King County to discuss plans related to the District Court and the Redmond Library, and explore opportunities to

partner to address facilities issues, improve the campus as a whole, and better serve the community. Public agency partnerships may offer unique tools for campus expansion that are not available with private land, such as free or discounted sales and land swaps. Redevelopment and infill opportunities at adjacent private properties should also be understood and considered, such as at the shopping center east of the campus.

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4 – Capital Investment Strategy

The map below illustrates the locations of major capital investments reommended for Redmond's general government facilities from 2027 to 2050. Investments with unknown locations are noted as such.



4.1 – Introduction

This section summarizes the recommendations by timeframe:

- **Near-term.** This represents the current CIP 2025-2030 and the next CIP interval 2027-2032 (6 calendar years).
- **Medium-term.** 2033-2040 (8 calendar years).
- **Long-term.** 2041-2050 (10 calendar years).
- **Beyond 2050.**

4.2 – Prioritization Criteria

In addition to the adopted prioritization criteria in Redmond's Capital Investment Strategy the GGFP recommends these criteria for major capital projects and routine maintenance. Funding strategies and target implementation dates will be refined by City leadership.

Major Capital Projects

Implementation of major capital projects should be prioritized based on timeframe and criticality:

1. Immediate and near-term projects that are currently underway or in the current CIP.

2. Medium-term projects and projects identified as most critical based on the facility rankings in Section 2.3.

3. Long-term projects and other non-urgent projects that support long-term population growth.

Routine Maintenance

Low, medium, and high priorities for maintenance at existing buildings are identified in the 2023 Facilities Condition Assessment. These priorities should be factored into routine maintenance planning and budgeting.

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4.3 – Cost Estimates Overview

In this section, sources for costs are provided in the notes column of each project list. Some costs have a low-to-high range when the size of land acquisitions and new facilities is yet to be determined, and some costs are not provided where they are not yet available.

Costs of new construction and renovations for non-Fire projects assume a 40% soft cost markup and a 20% planning contingency markup. Costs of new construction and renovations for Fire projects assume a 30% soft cost markup.

All costs are in 2025 dollars. Cost escalation is factored as follows:

- Capital projects do not have escalation and are in 2025 dollars
- Routine maintenance for observed deficiencies, predicted renewals, and opportunities from the 2023 Facilities Conditions Assessment are based on 2023 dollars escalated at 3% per year for two years to 2025
- Estimated routine maintenance needs for 2043+ at existing facilities included in the FCA are based on the current replacement value reported in 2023 escalated at 3% per year for two years to 2025
- Estimated routine maintenance needs for new facilities not included in the FCA do not have escalation and are based on construction costs for new buildings provided by the City or developed by MAKERS and ACC, with the exception of the RSCC which is escalated at 3% per year for one year to 2025

The costs of routine maintenance are provided in this GGFP, drawing from the observed deficiencies, planned renewals, and opportunity projects documented in the 2023 Facility Conditions Assessment and major maintenance already planned in the Capital Investment Program. Observed deficiencies for current to 2032 include maintenance projects with budget dates back to 2023 because those observed deficiencies have not yet been addressed as of this writing Opportunity costs, where implemented, are evenly split between the 2027-2032 and 2033-2040 timeframes.

The FCA is limited in scope to facilities existing in 2023 and has a time horizon extending only to 2042. Therefore, MAKERS has provided additional maintenance cost estimates for new buildings and extended cost estimates for existing buildings in 2043-2050. The estimates generally use the industry best practice of funding annual maintenance at a level equal to 3% of facility Current Replacement Value ("Committing to the Cost of Ownership: Maintenance and Repair of Public Buildings", Committee on Advanced Maintenance Concepts for Buildings Research Board and Commission on Engineering and Technical Systems National Research Council, 1990). The calculation is adjusted for newer facilities as follows:

- First timeframe of facility life: 1% CRV
- Second timeframe of facility life: 2% CRV
- Third timeframe of facility life and beyond: 3% CRV

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Where CRV is not available for new facilities, the known or estimated construction cost of new buildings is used (excluding site development costs).

The project lists use the following abbreviations:

FCA = 2023 Facility Conditions Assessment
OD = observed deficiency
PR = predicted renewal
OP = opportunity project
CRV = current replacement value
CIP = Capital Investment Program
ROM = rough order of magnitude
M = million dollars
FS = Fire Station
OFHTC = Old Fire House Teen Center
FD 34 = Fire District 34
PSB = Public Safety Building
MOC = Maintenance and Operations Center
RSCC = Redmond Senior & Community Center
RCCMV = Redmond Community Center at Marymoor Village
OCC = Overlake Community Center

4.4 – Near-Term Actions (Current CIP to 2032)

The key areas of focus in this timeframe are:

- Citywide upgrades in energy efficiency and accessibility
- Redevelopment of the MOC
- Acquisition and renovation of the RCCMV
- Planning for the renovation or replacement of Fire Station 11
- Systems upgrades and modernization at multiple fire stations
- Tenant improvements at a leased warehouse for a Fire logistics facility
- Purchasing office space in Overlake for an administrative annex

TIMEFRAME	PROJECT	ROM COST	NOTES
CITYWIDE			
Current CIP	Sustainability Building Automation (Energy Management System) - Heating, Ventilation, and Air Conditioning (HVAC) Controls	$0.5M	Cost from 2025-2030 Capital Facilities Plan
Current CIP	Sustainability LED Lighting Building Retrofit	$0.8M	Cost from 2025-2030 Capital Facilities Plan
Current CIP	ADA Facilities Improvements	$1.5M	Cost from 2025-2030 Capital Facilities Plan
Current CIP	Municipal Buildings Renovations, Maintenance and Repairs	$1.5M	Cost from 2025-2030 Capital Facilities Plan

TIMEFRAME	PROJECT	ROM COST	NOTES
FIRE			
Current CIP	EV charging stations	$0.9M	FS 11 and FS 12. Cost from 2025-2030 Capital Facilities Plan.
Current CIP	Personal protective equipment storage/cleaning upgrades	$0.4M	Multiple stations. Cost from 2025-2030 Capital Facilities Plan.
Current CIP	FS 17 interior buildout and admin relief	$0.4M	Cost from Fire Functional Plan
Current CIP	FS 17 siding replacement	$1.1M	Cost from 2025-2030 Capital Facilities Plan
2027-2032	Diesel exhaust upgrades	$0.5M	Multiple stations. Cost from Fire Functional Plan.
2027-2032	Emergency generator upgrades and redundancy	$0.5M	Multiple stations. Cost from Fire Functional Plan.
2027-2032	FS 11 apparatus bay expansion	$1.6M	Cost from Fire Functional Plan
2027-2032	FS 11 renovation and replacement study	$0.4M	Cost from Fire Functional Plan
2027-2032	FS 11 major renovation or replacement	$15-35M	Cost from Fire Functional Plan (20,000 square feet minimum). Project type decision is pending study results. If replacement, it occurs 2033-2040. If renovation, replacement occurs 2051+. Maintenance costs assume a replacement and 2036 opening.
2027-2032	Logistics - Tenant improvements to leased warehouse	$0.6M	Cost from Fire Functional Plan
2027-2032	Logistics - City-owned facility investment	$5.0M	New facility or shared storage at MOC. Cost from Fire Functional Plan
2027-2032	Routine maintenance		OD, PR, OP, and CRV costs from 2023 FCA. Excludes FD 34.
2027-2032	Observed deficiencies	$7.4M	Total cost of 2023-2028 OD.

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TIMEFRAME	PROJECT	ROM COST	NOTES
2027-2032	Predicted renewals	$5.1M	Total cost of 2029-2032 PR.
2027-2032	Opportunity projects	$1.4M	50% of total cost of OP. Excludes FS 11 and 12.
POLICE			
Current CIP	PSB Phase 2 mechanical and electrical improvements	$3.1M	Cost from 2025-2030 Capital Facilities Plan
2027-2032	Routine maintenance		OD, PR, OP, and CRV costs from 2023 FCA
2027-2032	Observed deficiencies	$3.6M	50% of total cost of 2023-2028 OD
2027-2032	Predicted renewals	$8.2M	50% of total cost of 2029-2032 PR
2027-2032	Opportunity projects	$0.0M	0% of total cost of OP
PUBLIC WORKS & PARK OPERATIONS			
Current CIP	MOC redevelopment	$45.0M	Cost from current CIP
2027-2033	MOC redevelopment	$180.0M	Total cost from City minus current CIP allocation. Maintenance assumes 2030 opening.
2027-2032	Routine maintenance - New MOC	$3.1M	Based on a percentage of building construction cost per year. Cost from CIP and Master Plan.
PARKS AND RECREATION			
Current CIP	RCCMV property acquisition	$18.0M	Cost from Parks & Recreation staff.
2027-2032	RCCMV renovations	$24.3M	Renovation cost from MAKERS and ACC, plus 2027-2032 routine maintenance.
2027-2032	RCCMV emergency generator	TBD	Not estimated
2027-2032	Routine maintenance		OD, PR, OP, and CRV costs from 2023 FCA. Excludes OFHTC.
2027-2032	Observed deficiencies	$1.3M	Total cost of 2023-2028 OD. Pool only.
2027-2032	Predicted renewals	$1.0M	Total cost of 2029-2032 PR. Pool only.
2027-2032	Opportunity projects	$2.0M	50% of total cost of OP. Pool only.

TIMEFRAME	PROJECT	ROM COST	NOTES
2027-2032	New RSCC estimate	$2.9M	Based on a percentage of building construction cost per year. Cost from City.
ADMINISTRATION			
Current CIP	Municipal Parking Garage EV charging stations	$0.8M	Cost from 2025-2030 Capital Facilities Plan
Current CIP	Overlake administrative annex space purchase	$0.6M	1,600 square feet commercial condominium. Cost from 2025-2030 Capital Facilities Plan
2027-2032	Routine maintenance		OD, PR, OP, and CRV costs from 2023 FCA
2027-2032	Observed deficiencies	$2.8M	Total cost of 2023-2028 OD
2027-2032	Predicted renewals	$2.3M	Total cost of 2029-2032 PR
2027-2032	Opportunity projects	$15.3M	50% of total cost of OP

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4.5 – Medium-Term Actions (2033-2040)

The key areas of focus in this timeframe are:

- Replacing or renovating Fire Station 11, and replacing Fire Station 12
- Replacing the Public Safety Building
- Land acquisition in Overlake for a police precinct and community center
- Planning to reinvest/replace the RCCMV and Pool

TIMEFRAME	PROJECT	ROM COST	NOTES
FIRE			
2033-2040	FS 12 land acquisition	$10.0M	Cost from Fire Functional Plan (1.25 acre minimum)
2033-2040	FS 12 construct replacement	$30.0M	Cost from Fire Functional Plan (20,000 square feet minimum). Maintenance costs assume 2036 opening.
2033-2040	FS 12 old property sale or lease	TBD	Not estimated
2033-2040	Routine maintenance		OD, PR, OP, and CRV costs from 2023 FCA. Excludes FD 34.
2033-2040	Predicted renewals	$6.4M	Total cost of 2033-2040 PR. Excludes FS 11 and 12.
2033-2040	Opportunity projects	$1.4M	50% of total cost of OP. Excludes FS 11 and 12.
2033-2040	New FS 11 and 12 estimate	$2.6M	Based on a percentage of building construction cost per year. Costs from Fire Functional Plan.
POLICE			
2033-2040	PSB construct replacement	$100-110M	Cost range for 51,000 - 59,000 square feet staffed area plus 66,000 square feet secure parking. Costs from MAKERS and ACC. Maintenance costs assume 2039 opening.
2033-2040	Overlake Precinct land acquisition	$6-8M	Cost from MAKERS analysis of King County real estate assessed values and sales data for 0.75 - 1 acres
2033-2040	Routine maintenance		OD, PR, OP, and CRV costs from 2023 FCA

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TIMEFRAME	PROJECT	ROM COST	NOTES
2033-2040	Predicted renewals	$0.0M	0% of total cost of 2033-2040 PR
2033-2040	Opportunity projects	$0.0M	0% of total cost of OP
2033-2040	New PSB estimate	$2.0M	Based on a percentage of building construction cost per year. Costs from MAKERS and ACC.
PUBLIC WORKS & PARK OPERATIONS			
2033-2040	Routine maintenance - New MOC	$25.0M	Based on a percentage of building construction cost per year. Cost from CIP and Master Plan.
PARKS AND RECREATION			
2033-2040	RCCMV reinvestment study	$0.5M	Cost from MAKERS
2033-2040	Overlake community center land acquisition	$6-16M	Cost from MAKERS analysis of King County real estate assessed values and sales data for 0.75 - 2 acres
2033-2040	Pool replacement study	$0.5M	Cost from MAKERS
2033-2040	Routine maintenance		OD, PR, OP, and CRV costs from 2023 FCA. Excludes OFHTC.
2033-2040	Predicted renewals	$16.5M	Total cost of 2033-2040 PR
2033-2040	Opportunity projects	$4.3M	50% of total cost of OP
2033-2040	New RSCC estimate	$7.8M	Based on a percentage of building construction cost per year. Cost from City.
ADMINISTRATION			
2033-2040	City Hall lifecycle renovation	$16.7M	Total cost of PR and 50% of total cost of OP for 2033-2040
2033-2040	Routine maintenance		OD, PR, OP, and CRV costs from 2023 FCA
2033-2040	Predicted renewals	$1.7M	Total cost of 2033-2040 PR. Municipal parking garage only.
2033-2040	Opportunity projects	$0.4M	50% of total cost of OP. Municipal parking garage only.

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4.6 – Long-Term Actions (2041-2050)

The key areas of focus in this timeframe are:

- Constructing a police precinct in Overlake
- Constructing a community center in Overlake

TIMEFRAME	PROJECT	ROM COST	NOTES
FIRE			
2041-2050	FS 16 lifecycle renovation	$12.0M	Cost from Fire Functional Plan
	Apparatus Maintenance Facility lifecycle renovation	TBD	Not estimated
2041-2050	Routine maintenance		OD, PR, OP, and CRV costs from 2023 FCA. Excludes FD 34.
2041-2050	Predicted renewals	$0.5M	Total cost of 2041-2042 PR
2041-2050	Existing facilities 2043+	$3.9M	Based on a percentage of CRV per year.
2041-2050	New FS 11 and 12 estimate	$13.0M	Based on a percentage of building construction cost per year. Cost from Fire Functional Plan.
POLICE			
2041-2050	Overlake Precinct construction	$31-38M	Cost range for 20,000 - 25,000 square feet building and 0.75 - 1 acre site development. Costs from MAKERS and ACC. Maintenance costs assume 2044 opening.
2041-2050	Routine maintenance		OD, PR, OP, and CRV costs from 2023 FCA
2041-2050	New PSB and Overlake Precinct estimate	$12.2M	Based on a percentage of building construction cost per year. Costs from MAKERS and ACC.
PUBLIC WORKS & PARK OPERATIONS			
2041-2050	Routine maintenance - New MOC	$46.9M	Based on a percentage of building construction cost per year. Cost from CIP and Master Plan.
PARKS AND RECREATTION			

DRAFT

TIMEFRAME	PROJECT	ROM COST	NOTES
2041-2050	Overlake community center construction	$52-81M	Cost range for 40,000 - 60,000 square feet building and 0.75 - 2 acre site development. Costs from MAKERS and ACC. Maintenance costs assume 2046 opening.
2041-2050	Routine maintenance		OD, PR, OP, and CRV costs from 2023 FCA. Excludes OFHTC.
2041-2050	Predicted renewals	$2.2M	Total cost of 2041-2042 PR
2041-2050	Existing facilities 2043+	$5.2M	Based on a percentage of CRV per year.
2041-2050	New RSCC and OCC estimate	$17.7M	Based on a percentage of building construction cost per year. Costs from City, MAKERS, and ACC.
ADMINISTRATION			
2041-2050	Routine maintenance		OD, PR, OP, and CRV costs from 2023 FCA
2041-2050	Predicted renewals	$0.9M	Total cost of 2041-2042 PR
2041-2050	Existing facilities 2043+	$20.4M	Based on a percentage of CRV per year.

4.7 – Beyond 2050

The key areas of focus in this timeframe are:

- Constructing Fire Station 19
- Constructing Pool replacement(s)

TIMEFRAME	PROJECT	ROM COST	NOTES
FIRE			
2051+	FS 11 replacement acquire land	TBD	Only needed if FS 11 is renovated instead of replaced in earlier timeframe
2051+	FS 11 construct replacement	TBD	Only needed if FS 11 is renovated instead of replaced in earlier timeframe
2051+	FS 19 acquire land	TBD	Not estimated
2051+	FS 19 construct station	$35M	Cost from Fire Functional Plan
2051+	FS 17 lifecycle renovation	TBD	Not estimated

TIMEFRAME	PROJECT	ROM COST	NOTES
2051+	Fire training facility	TBD	Not estimated
PARKS AND RECREATION			
2051+	Pool construct replacement	TBD	Not estimated
2051+	RCCMV reinvestment	TBD	Not estimated

DRAFT

Capital Facilities Plan 2050- General Government

September 23, 2025

City Council

Redmond
WASHINGTON

Project Purpose and Goals

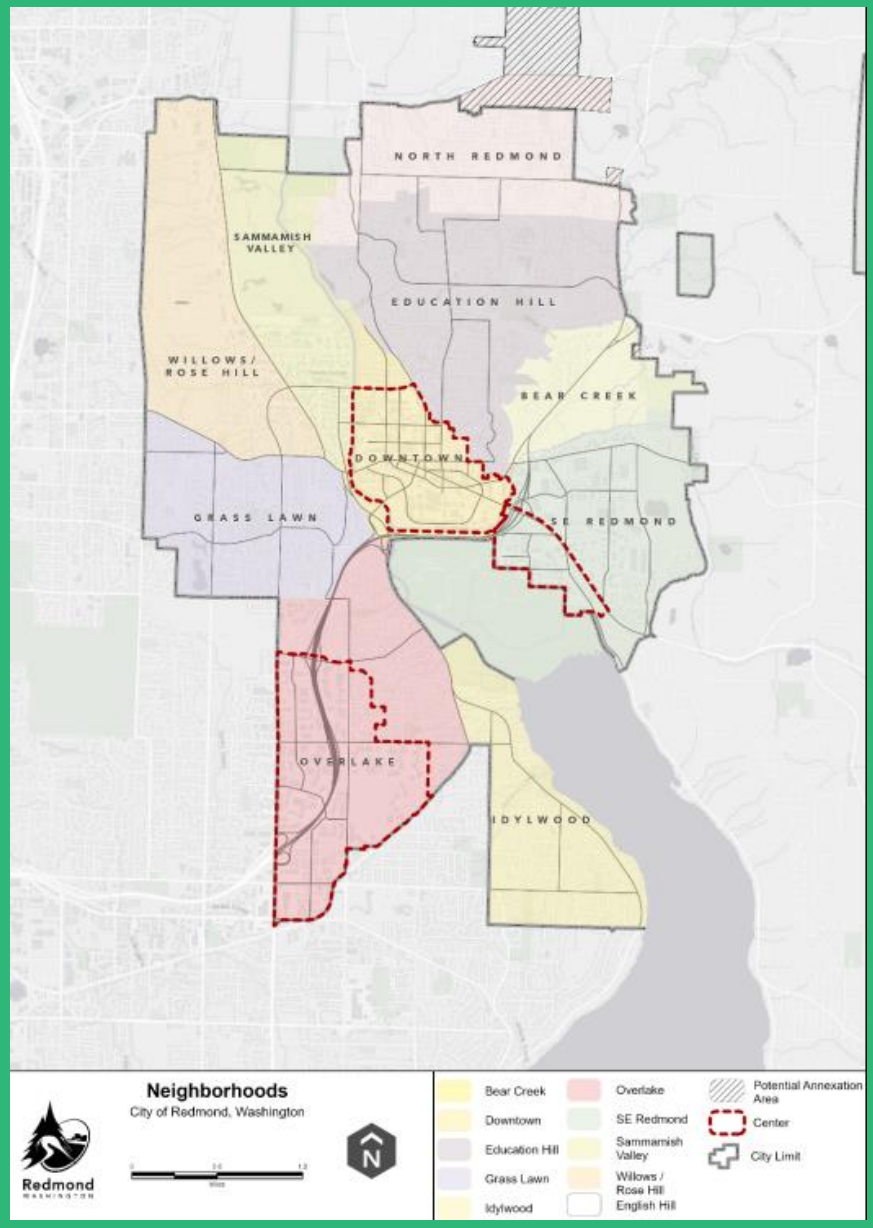
- Update of the 2025-2030 CFP
- Forecast of the future needs for capital facilities based on Comprehensive Plan growth targets to 2050 horizon
- Identify proposed locations and capacities of expanded or new capital facilities
- Analyze how the City will finance such capital facilities within projected funding capacities and clearly identifies sources of public money for such purposes
- Integrate changes to facility conditions and department needs since 2019

Benefits

- Keeping facilities open and functional for critical public services and community amenities
- Maintaining emergency preparedness and resilience
- Addressing underserved communities and geographies
- Improving environmental performance
- Upgrading accessibility for visitors and staff

City Context

- Three mixed-use growth centers identified by Redmond 2050
  - Downtown, Overlake, and Marymoor Village
  - Higher competition for land in growth centers
- Overlake Gaps
  - Lacks Police and Parks & Recreation facilities
  - Not ideally served by Redmond Fire
- How to Fill Overlake Gaps:
  - Relocate Fire Station 12
  - Include a police precinct
  - Include a community center
  - Include a new administrative office space
  - Encourage multi-use, flexible, and co-location of facilities

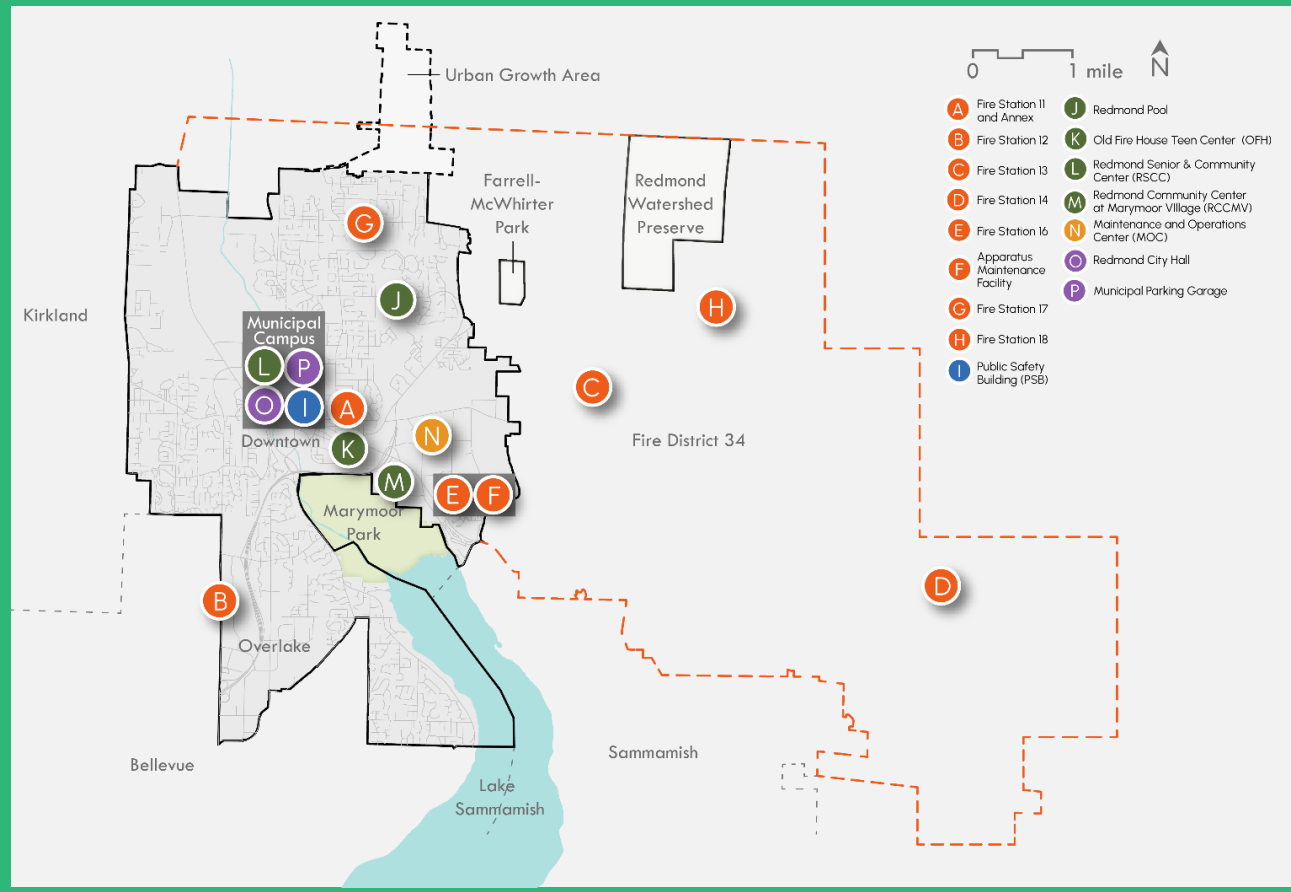


Relationship of the CFP2050 to other Functional Plans



CFP2050 Scope

- Facilities occupied and maintained by City staff and which support these functions:
  - Fire
  - Police
  - Maintenance & Operations (at MOC)
  - Indoor Recreation (community centers)
  - Administration (City Hall and garage)
- Excludes:
  - Fire District 34 (no spending is listed)
  - Minor utility and parks buildings
  - Non-City occupied buildings
- Separate processes are underway for the MOC and Old Fire House Teen Center



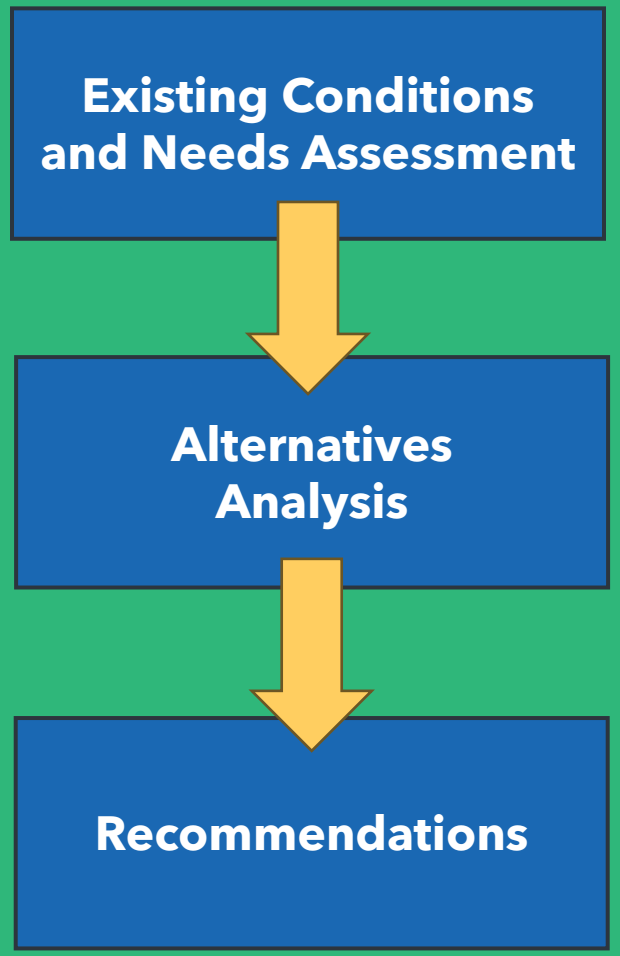
The facilities portfolio is 12 sites and 32 buildings, totaling approximately 586,000 square feet of building floor area

Project Team and Process

Project Team
Cameron Zapata
Loreen Hamilton
Lindsey Falkenburg
Glenn B. Coil
Quinn Kuhnhausen

Consultant Team
MAKERS Architecture & Urban Design
ACC Cost Estimating

Subject Matter Expertise
Fire
Police
Public Works
Parks Operations
Parks & Recreation
Finance
Planning
Environmental Sustainability





Facilities visioning workshop with all subject matter departments



Site tours and interviews with on-site staff

Key Findings[1]

- Facilities are in reasonably good condition overall
- Multiple buildings will reach the end of their service life before 2050
- Some areas are underserved
- Electrification can improve environmental performance
- Emergency preparedness is a continual need



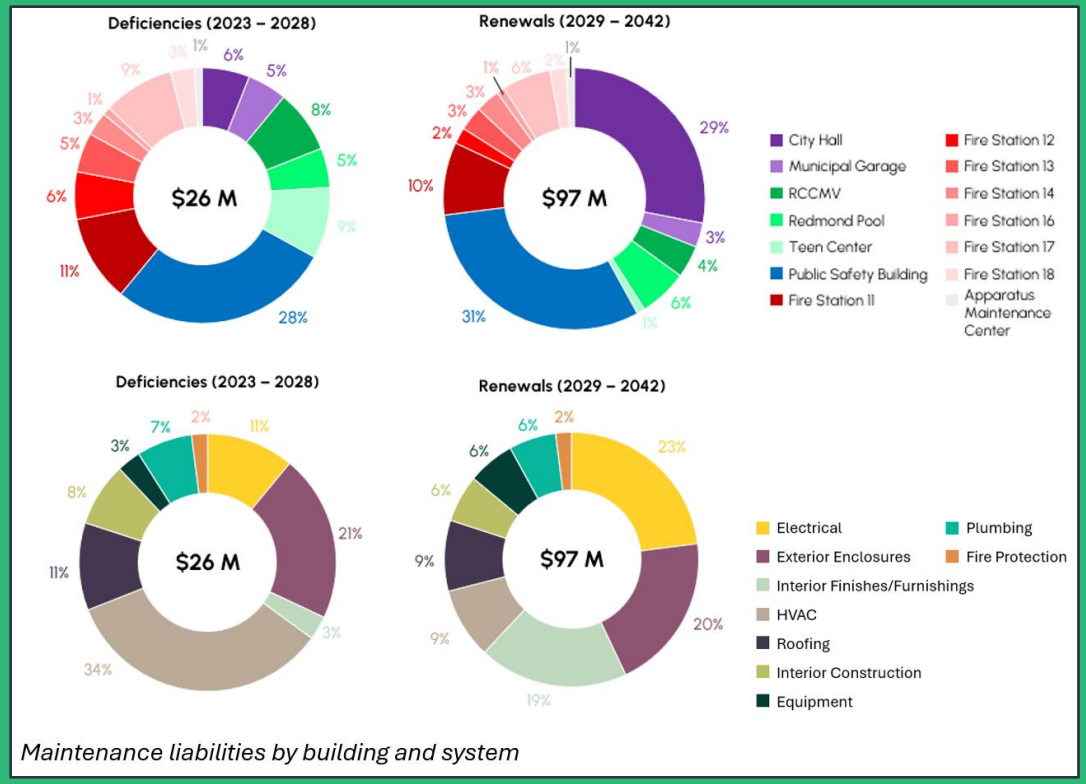




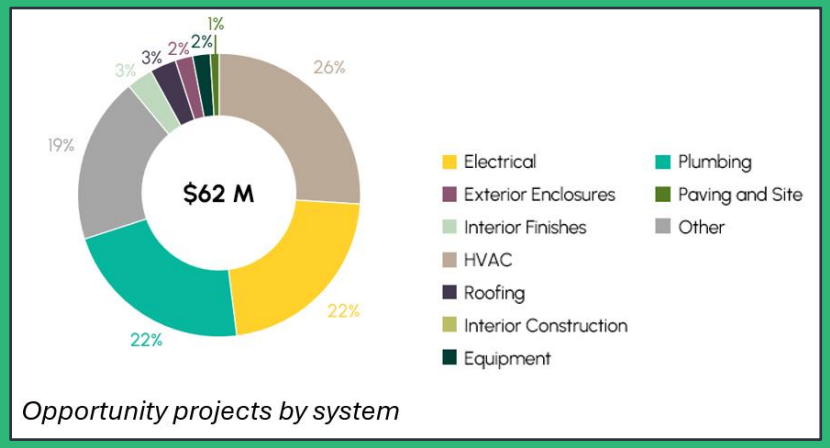
1. Sources include Redmond 2050, the Fire Functional Plan, other City documents, 2023 Facility Conditions Assessment, and interviews and tours with facility staff and subject matter experts

Maintenance

- Proactive maintenance prevents major problems
- Proper maintenance extends the service life and prolongs the intervals between major reinvestment
- Most deficiencies and renewals will be routine maintenance and/or major renovations.



Maintenance liabilities by building and system

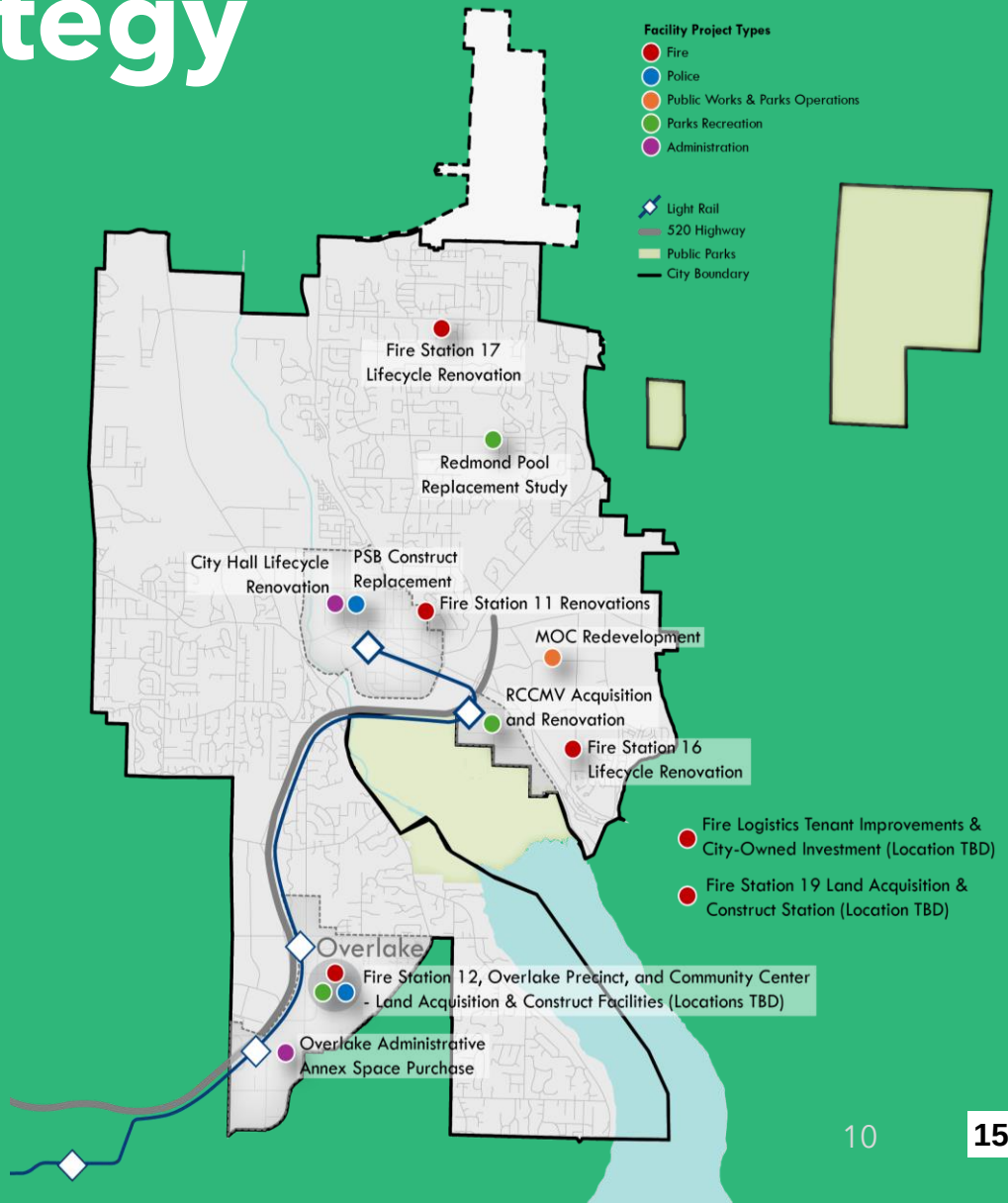


Opportunity projects by system

2. Facility Condition Assessment (MENG Analysis, 2024)

Capital Investment Strategy

- **Plan by timeframe:**
  - **Near-term:** Current CIP 2025-2030 and the next CIP interval 2027-2032
  - **Medium-term:** 2033-2040
  - **Long-term:** 2041-2050
  - Beyond 2050
- **Prioritize by:**
  - Immediate and near-term projects that are currently underway or in the current CIP.
  - Medium-term projects and projects identified as most critical based on qualitative facility rankings.
  - Long-term projects and other non-urgent projects that support long-term population growth.
- **Continue funding routine maintenance**



Major Projects 2027-2050
Fire

Timeframe	Facility	Project
2027-2032	Fire Station 11	Partial remodel (apparatus bay expansion) for new tractor-drawn aerial; renovation and replacement study; and implementation of major renovation or replacement
2027-2032	Fire Logistics	Tenant improvements to leased warehouse; follow-up investment in a City-owned facility (new or at MOC)
2033-2040	Fire Station 12	Land acquisition and new station in Overlake
2033-2040	Fire Station 16	Lifecycle renovation
2051+	Fire Station 11/19	Relocated and new station(s) to better serve Downtown area

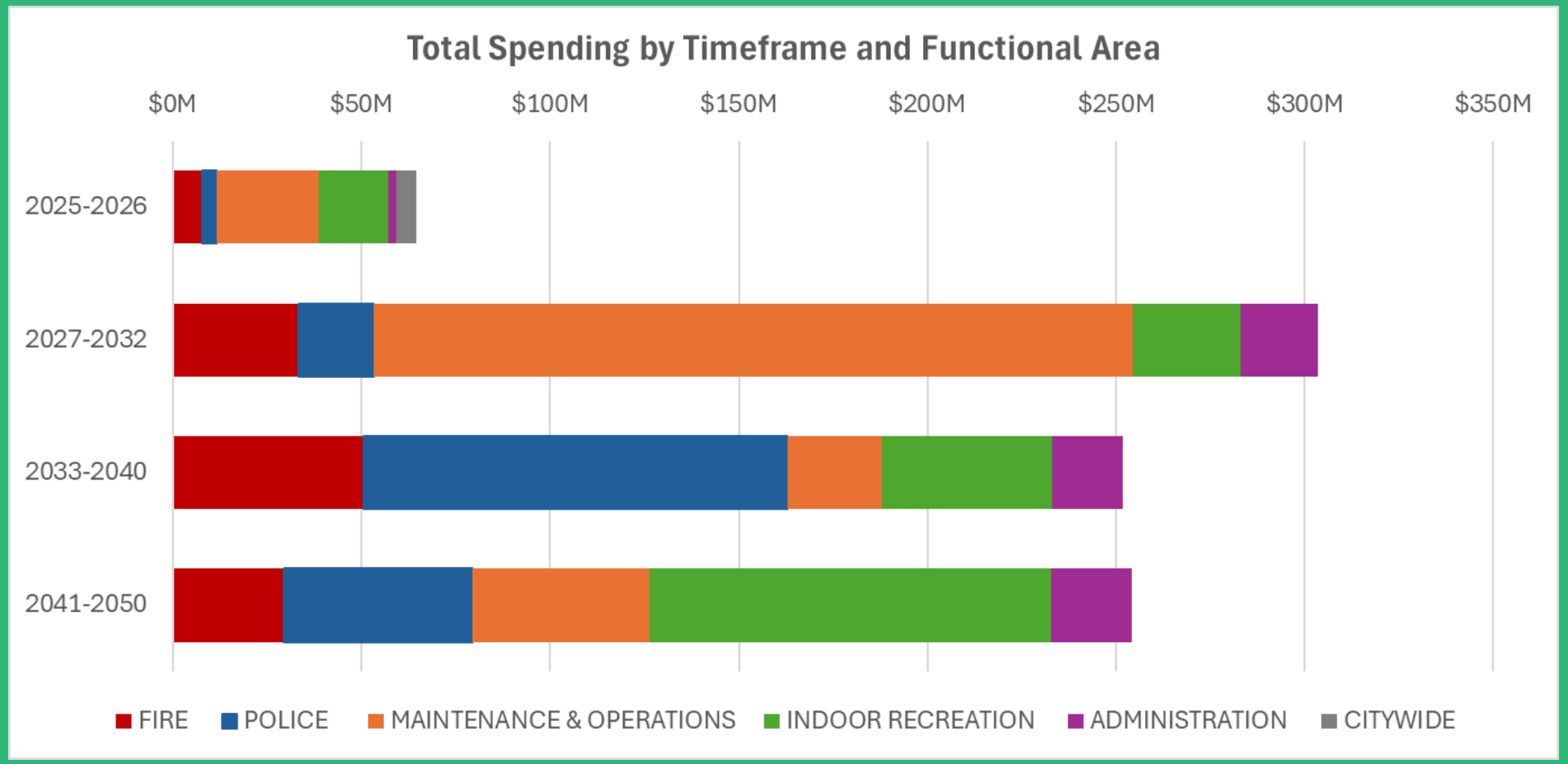
Major Projects 2027-2050
Police

Timeframe	Facility	Project
2033-2040	PSB	Replacement of Public Safety Building
2033-2040	Overlake Precinct	Land acquisition
2041-2050	Overlake Precinct	Construction of new precinct

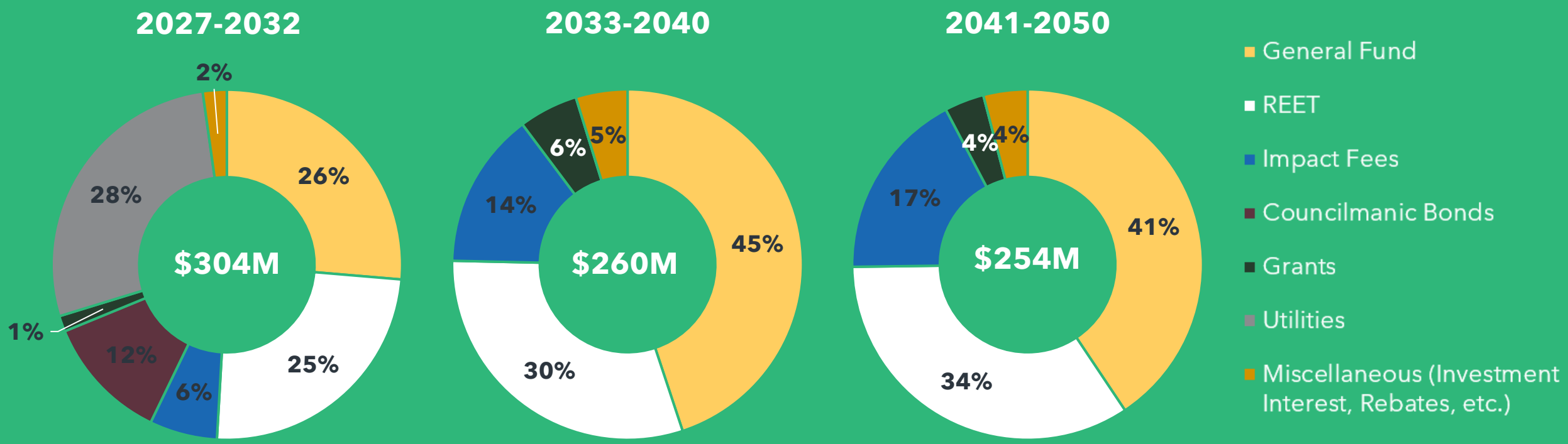
Major Projects 2027-2050
Maintenance & Operations, Indoor Recreation, and Administration

	Facility	Project
20027-2032	Old Fire House Teen Center	TBD- Currently in the middle of its own planning process– recommendation to come separately
2027-2032	MOC	Completion of construction project
2027-2032	RCCMV	Reinvestment study
2027-2032	Overlake CC	Land acquisition
2027-2032	RCCMV	Change of Use, major renovation, and routine maintenance
2033-2040	Pool	Replacement study
2033-2040	City Hall	Lifecycle renovation
2041-2050	Overlake CC	New community center construction

Cost Summary by Timeframe



Estimated Revenue Sources



The CFP2050 will not have a commitment on how projects are funded. These sources are assumed based on current and projected funding resources. Funding major civic facilities investments with cash is not feasible for most cities; councilmanic, voter-approved, and revenue bonds are common methods. Impact fees can also fund facilities in growth areas.

Specific funding strategies will be developed over time during budget processes.

Next Steps

- Planning Commission public hearing on October 8
- Final adoption by end of 2025
- Starting in 2026, staff will begin the process to update the CIP for 2027-2032

Thank You

Any Questions?

Cameron Zapata, Senior Parks Planner
czapata@redmond.gov

Redmond
WASHINGTON

15670 NE 85th Street
Redmond, WA

City of Redmond

Memorandum

Date: 9/23/2025
Meeting of: City Council Study Session

File No. SS 25-057
Type: Study Session

TO: Members of the City Council
FROM: Mayor Angela Birney
DEPARTMENT DIRECTOR CONTACT(S):

Planning and Community Development	Carol Helland	425-556-2107

DEPARTMENT STAFF:

Planning and Community Development	Alex Hunt	Senior Planner
Planning and Community Development	David Lee	Planning Manager
Planning and Community Development	Jason Lynch	Deputy Director

TITLE:
Redmond Town Center Master Planned Development and Development Agreement - Quasi Judicial

OVERVIEW STATEMENT:
Review and approve a Type V Quasi-Judicial consolidated review permit for development of a 19.34-acre site in five phases. The proposal includes: Phase 1, expansion of an existing parking structure; Phase 2, two 12-story residential mixed-use buildings with an alternative option for one building to be an office building; Phase 3, an 8-story mixed-use residential building; Phase 4, a 7-story mixed-use residential building; and Phase 5, another 7-story mixed-use residential building. A minimum of 20% of developed residential dwelling units will be affordable units to households making up to 60% of the area median income. Site improvements include streetscape improvements, public plaza/open space, private open space/amenities, landscaping, pedestrian walkways, and vehicular access/circulation.

The Type V Quasi-Judicial review process includes a recommendation by the Technical Committee to the City Council. The City Council holds a public hearing and renders a final decision taking into account the Technical Committee recommendation and hearing testimony. The Technical Committee recommendation is included with this memorandum as Attachment A, and the Draft Development Agreement as Attachment B.

As a reminder, Quasi-Judicial decisions of the City Council are governed by the Appearance of Fairness Doctrine. Communications outside the scope of a Council meeting must be disclosed and could result in the disqualification of a decision maker if objections to participation are raised by the parties.

☒ **Additional Background Information/Description of Proposal Attached**

REQUESTED ACTION:

☐ **Receive Information** ☒ **Provide Direction** ☐ **Approve**

REQUEST RATIONALE:

- **Relevant Plans/Policies:**
  Comprehensive Plan Policies
  LU-34: Encourage development of the Downtown as a place that:
    - Meets community needs for employment, shopping, recreation, civic activities, and cultural and night life opportunities.
    - Provides attractive and safe places to live close to amenities, such as restaurants and cafes, a wide selection of stores and services, frequent transit service, and plazas, parks, and art.
    - Protects Redmond's drinking water aquifer from contamination and loss of recharge and other natural resources.
    - Emphasizes access for pedestrians and bicycles.

  HO-6: Identify and implement strategies to meet affordable housing targets identified in the King County Countywide Planning Policies.
  HO-10: Foster the creation of complete neighborhoods through housing, transportation, and economic planning, to create clustered places where residents have easy access to homes, jobs, and recreation.
- **Required:**
  Per Redmond Zoning Code (RZC) Table 21.76.050B, Master Development Plans and Development Agreements are Type V Quasi-Judicial Permits. Consistent with RZC Table 21.76.050A, following a recommendation by the Technical Committee, Type V Permits require a public hearing and decision by City Council.
- **Council Request:**
  N/A
- **Other Key Facts:**
  N/A

OUTCOMES:
The outcomes of the project include the following:

- Expansion of Redmond's housing supply by approximately 675-920 units.
- Addition of new residential and commercial uses adjacent to the Downtown Redmond light rail station, supporting transit-oriented development goals.
- Provision of a publicly accessible open space network, including a linear pedestrian plaza that provides a mid-block connection between the Redmond Town Center shopping area to the Bear Creek Trail.
- Enhanced roadway improvements and pedestrian-oriented design to improve the pedestrian experience and ease of access.

COMMUNITY/STAKEHOLDER OUTREACH AND INVOLVEMENT:

- **Timeline (previous or planned):**
  Notice of Application: February 14, 2024
  Neighborhood Meeting: April 18, 2024
  Public Hearing Notice: TBD, a minimum of 21 days prior to Council hearing
- **Outreach Methods and Results:**
  Notice of Application: Mailed and posted on-site.
  Neighborhood Meeting Notice: Mailed.

Neighborhood Meeting: Hosted virtually.
Public Hearing Notice: Mailed and posted on-site.

- **Feedback Summary:**
  During the public comment period for the Notice of Application, ten (10) comments were received on the application. The comments were related to the following:
  - Shared parking property rights
  - Excess density, building height, and crowding
  - Impacts from construction, including parking availability and noise
  - Weather protection for commercial shopping area
  - Parking demand
  - Public art
  - Protection of existing tenant base

  During the August 4, 2025, Committee of the Whole - Planning and Public Works meeting, Councilmembers raised questions and comments related to the following topics, which are summarized and addressed in the Issues Matrix included as Attachment C:
  - Phasing and potential project timeline
  - Project renderings and images
  - 2023 Redmond Zoning Code updates related to the Town Center Zone
  - Overall project scope and impacts the existing commercial center

BUDGET IMPACT:

Total Cost:
Staff working on this project are funded through the adopted budget.

Approved in current biennial budget: ☒ **Yes** ☐ **No** ☐ **N/A**

Budget Offer Number:
0000303 - Development Services

Budget Priority:
Vibrant and Connected

Other budget impacts or additional costs: ☐ **Yes** ☒ **No** ☐ **N/A**
If yes, explain:
N/A

Funding source(s):
N/A

Budget/Funding Constraints:
N/A

☐ **Additional budget details attached**

COUNCIL REVIEW:

Previous Contact(s)

Date	Meeting	Requested Action
8/4/2025	Committee of the Whole - Planning and Public Works	Receive Information

Proposed Upcoming Contact(s)

Date	Meeting	Requested Action
10/21/2025	Business Meeting, Public Hearing	Approve

Time Constraints:
In order to maintain vesting to the Zoning Code standards under which the project was reviewed, the Development Agreement must be executed by December 31, 2025, pursuant to RZC 21.10.150.B. The applicant would appreciate a speedy and thorough review of the project.

ANTICIPATED RESULT IF NOT APPROVED:
The site would remain under-developed. The proposed addition of a mixture of residential and commercial uses adjacent to light rail would not occur.

ATTACHMENTS:
Attachment A - Technical Committee Report and Recommendation
Attachment B - Draft Development Agreement and Exhibits
- Exhibit A - Legal Description of Property
- Exhibit B - Depiction of Property
- Exhibit C - Master Plan
- Exhibit D - Fee-in-Lieu Calculation
- Exhibit E - Traffic Impact Analysis

Attachment C - City Council Issues Matrix

Type V Master Planned Development and Development Agreement
Technical Committee Report

Project Name:	Redmond Town Center Master Planned Development and Development Agreement
Location:	Parcel Nos. 720241-0010, -0020, -0030, and -0050
Project File Numbers:	LAND-2023-00296, LAND-2023-00297, PR-2023-00999
Project Description:	A Master Planned Development and Development Agreement to redevelop the Redmond Town Center Mixed-Use Subarea. The Master Plan consists of five phases and plans for the development of mixed-use, multi-family residential, commercial, and structured parking buildings ranging from 4-12 stories in height.
Applicant:	Mitch Ptacek, GGLO 1301 1st Ave, Unit 301 Seattle, WA 98101
Planner:	Alex Hunt, Senior Planner
Recommendation:	Approval with Conditions

Conclusion in Support of Recommendation: The Technical Committee has found the proposal to be in compliance with the Redmond Zoning Code (RZC), Redmond Comprehensive Plan, and Redmond Municipal Code. The City of Redmond issued a Determination of Non-Significance (DNS) for the subject proposal under the State Environmental Policy Act (SEPA) on December 6, 2024, under File No. SEPA-2023-00298.

Carol V. Helland

_____

Carol V. Helland, Director
Department of Planning and
Community Development

_____

Aaron Bert, Director
Public Works Department

Project Review Authority and Procedures

The City of Redmond **Technical Committee** is comprised of staff from different departments and disciplines who analyze project applications for compliance with City codes and regulations. Based on this analysis, the Technical Committee provides responses, conclusions, and recommendations (in the form of this report) to the City Council. The City Council will conduct a public hearing to receive public testimony

regarding the proposal and to review the Technical Committee's analysis and recommendations on the Master Planned Development Permit (LAND-2023-00296) and Development Agreement (LAND-2023-00297). Based upon the Technical Committee's recommendations and testimony received at the public hearing, the Council will make the final decision regarding the Master Planned Development Permit and Development Agreement.

Key Dates

Application Date: December 8, 2023
Completeness Date: January 19, 2024
Notice of Application: February 2, 2024
Neighborhood Meeting: April 18, 2024
Date SEPA Determination of Non-Significance Issued: December 6, 2024
SEPA Appeal Deadline: January 6, 2025
Technical Committee Recommendation Meeting: July 23, 2025
Public Hearing Date: Scheduled for October 12, 2025

Report Attachments

1. General Application Forms
2. Notice of Application and Certification of Public Notice
3. Neighborhood Meeting Notice Affidavit
4. Public Comments
5. SEPA Checklist, DNS Certificate of Posting
6. SEPA DNS Public Comments
7. Master Planned Development Design Package
8. Development Agreement
9. Preliminary Civil Plans
10. Drainage Report
11. Phase 1 Traffic Study
12. Phase 2 Traffic Study
13. Transportation Concurrency Application
14. Arborist Report
15. Critical Aquifer Recharge Area Evaluation

I. Proposal Summary

The proposed Master Planned Development (MPD) and Development Agreement (DA) propose development at the existing Redmond Town Center Mixed-Use Subarea while maintaining much of the existing commercial development on the site. The proposal includes five (5) phases of development and associated site improvements as described below. Phases may be developed in any order, provided amenities are delivered congruent with each particular phase.

- **Phase 1** proposes additions to the existing parking garage at the northwest corner of NE 73rd Way and 164th Avenue NE. The proposed changes include

the addition of two stories of additional parking to the existing parking structure for approximately 316 new parking spaces to replace parking lost with the development of existing surface parking areas in subsequent phases. Phase 1 also includes modified ground level public open space at the northeast corner of the parking structure.

- Phase 2 proposes two 12-story buildings immediately south of the existing RTC shopping center where surface parking is currently located. Two options are proposed for the development of Phase 2, and the applicant will select one of the approved options prior to submittal of a Site Plan Entitlement for Phase 2. Associated improvements are proposed with Phase 2, including a publicly accessible linear plaza between the two proposed buildings, bike infrastructure and traffic calming measures to connect to existing bike lanes, and pedestrian crossing and intersection improvements between RTC and the proposed Phase 2 development.
    - Phase 2, Option A consists of two 12-story mixed-use residential buildings with approximately 504 residential units, 378 structured parking spaces, and ground floor commercial uses.
    - Phase 2, Option B consists of one 12-story mixed-use residential building with approximately 252 residential units and 189 structured parking spaces as well as one 12-story mixed-use office building with approximately 245,530 square feet of office space and 255 structured parking spaces with ground floor commercial uses.
- Phase 3 proposes the demolition of the existing BJ's Restaurant building at 7211 166th Ave NE and the construction of an 8-story mixed-use residential building at the northwest corner of Bear Creek Parkway and 166th Avenue NE. The building would contain approximately 136 residential units, 102 structured parking spaces, and ground floor commercial area.
- Phase 4 proposes partial demolition of the commercial spaces at the northwest corner of the RTC shopping center parking garage and proposes the construction of a 7-story mixed-use residential building at the same location with approximately 148 residential units and 16,070 square feet of commercial area.
- Phase 5 proposes partial demolition of the commercial spaces at the northeast corner of the RTC shopping center parking garage and construction of a 7-story mixed-use residential building at the same location with approximately 140 residential units and 14,800 square feet of commercial area.

II. Site Description and Context

The overall project site encompasses approximately 19.34 acres; however, development associated with the proposed MPD will impact approximately 9 acres of land area within the site. The site is generally flat and is located within the Critical Aquifer Recharge Area I (CARA I).

With a Comprehensive Plan Land Use designation of Downtown Mixed Use and zoned as Town Center (TWNC), the site is currently developed with a commercial shopping center, structured parking garages, and surface parking. Town Center is one of the city's primary gathering places. Its mix of shops and restaurants, offices, hotel rooms, and housing brings people together during the day and evenings for planned or casual meetings. Comfortable walking connections from Town Center to the rest of Downtown help both areas thrive. Town Center will continue to develop as a major gathering and entertainment place within the community, connected with accessible and active transportation to Marymoor Park, the rest of Downtown, and the region.

The table below depicts existing zoning and land uses adjacent to the project site:

Direction	Existing Adjacent Land Use(s)	Zone
North	Light rail station, commercial retail	Anderson Park
South	Hotel, Bear Creek Trail	Town Center
East	Office	Town Center
West	Hotel, parking structure, office	Town Center

III. Public Notice and Comment

Requirements for public notice are contained in RZC 21.76.080.

A. Notice of Application:

The Notice of Application for this proposal was published on February 14, 2024. The notice was posted at City Hall, the Redmond Regional Library, and six (6) notice signs were posted on the property. A notice was also mailed to property owners within 500 feet of the site (Attachment 2, Notice of Application and Certificate of Public Notice).

Public Input: During the Notice of Application public comment period and throughout the project review, the City received ten (10) written comments (Attachment 4, Public Comments).

The comments expressed the following concerns or requests for consideration and staff has included responses below:

1. Lake Washington School District (LWSD) expressed concerns that the Phase 1 construction and additions to the parking structure would infringe upon an existing parking easement agreement between Redmond Town Center property ownership and LWSD.

Staff Response: The MPD and DA as conditioned would comply with City of Redmond parking requirements. While the City of Redmond expects the applicant to act in good faith to uphold existing agreements, the City is not a party to the above referenced agreement and does not have a responsibility to enforce the terms of that agreement as part of the MPD and DA review process. A subsequent Site Plan Entitlement (SPE) application will be required prior to commencement of any construction, at which time an additional Notice of Application and public comment period will be provided prior to SPE approval.

2. Comments expressed concerns with inappropriate density and crowding. Specific concerns were raised on the ability of the Redmond Fire Department to serve taller buildings.

   Staff Response: In 2023, Redmond City Council adopted amendments to the RZC to allow for taller buildings in the Town Center Zone based upon a set of incentives, including providing higher amounts of affordable housing. The amendments were based on several key policy goals of the City Council, including allowing higher residential densities in areas with access to light rail stations and supporting economic development in urban centers by achieving higher residential developments. The MPD application is consistent with the height and density requirements allowed in the RZC for development in the Town Center Zone. With regards to Fire Department requirements, future Site Plan Entitlement and Building Permit applications will be reviewed for site-specific compliance with all applicable Fire Code requirements.

3. Comments expressed concerns with construction noise and disruptions, including impacts to parking availability during construction.

   Staff Response: The applicant will be required to comply with construction noise hours and requirements established in Redmond Municipal Code (RMC) Section 6.36. Following a decision on the MPD and DA applications, individual permits shall be obtained for each phase through the Site Plan Entitlement and Building Permit process. Temporary traffic control and parking plans will be prepared and reviewed in conjunction with Site Plan Entitlement and related Building Permit applications.

4. Comments indicated that lack of weather protection is a cause of reduced foot traffic during rainy months.

   Staff Response: As part of the proposed public benefits outlined in the DA, the applicant proposes enhanced weather protection.

5. Questions on how new residential developments will meet parking demand and the availability of electric vehicle charging infrastructure.

   Staff Response: The Phase 1 expansion of the existing parking structure will mitigate for the loss of commercial surface parking, and additional structured parking will be provided in conjunction with the Phase 2 mixed-use buildings. The proposed parking complies with parking quantity requirement established in RZC 21.40. Quantity and availability of electric vehicle infrastructure will be further defined in the Site Plan Entitlement and construction permits for each individual phase.

6. Comments expressing a support for keeping existing public art, specifically the bear sculptures by Georgia Gerber, at Redmond Town Center.

   Staff Response: Comments have been shared with the applicant. At this time, staff is not aware of any plans to remove any existing public art.

7. Comments emphasizing the importance of supporting the existing commercial tenant base at Redmond Town Center.

   Staff Response: Some of the objectives of the application under review are to bring additional residents and employees to the site, enliven the Redmond Town Center site, and provide a more engaging retail experience. In addition, the Phase 1 expansion of the parking garage is intended to mitigate the loss of surface parking in Phase 2, so parking options will continue to exist for retail customers who arrive to the site by car. The enlivened retail experience and new structured parking will provide for the continued success of the existing commercial tenant base at Redmond Town Center.

B. Neighborhood Meeting:

Pursuant to the requirements of RZC 21.76.060.C, a neighborhood meeting was held on April 18, 2024 (Attachment 3, Neighborhood Meeting Notice).

IV. State Environmental Policy Act

The State Environmental Policy Act (SEPA) requires applicants to disclose potential impacts to the environment that may occur as a result of their project. A Determination of Non-Significance (DNS) was issued for this project on December 6, 2024 under File No. SEPA-2023-00298 (Attachment 5, SEPA Application Form, DNS Certificate of Posting). The applicant received comments on the SEPA DNS from LWSD (Attachment 6, SEPA DNS Public Comments). LWSD expressed concerns that the development affecting the Phase 1 parking structure would infringe upon the secured parking agreement between the property owner and LWSD.

V. Compliance with Development Regulations

A. Building Height – Exceptional Amenities for Additional Height (EAAH)

RZC 21.10.050 establishes development regulations applicable to the Town Center Zone. The maximum allowable building height with incentives is 12 stories, and in order to achieve that maximum height, development must comply with the EEAH requirements established in RZC 21.10.050.D.

Finding: The project as proposed complies with the EAAH incentive requirements to achieve the maximum 12 story height limit (See Attachment 7, MPD Plan Set, Page 23). A minimum of 20% of new residential units will be affordable at 60% of Area Median Income (AMI). Of the affordable units, a minimum 10% shall be two-bedroom units, and a minimum 5% shall be 3-bedroom units. All affordable units shall be electric ready, meaning that the units have the necessary wiring and electrical capacity to support converting to all electric equipment in the future. Additionally, 10% or 7,000 square feet of new ground level commercial space within the project boundary shall be reserved for small and local businesses, and the lesser of 25% or 4,000 square feet of new commercial spaces shall be no larger than 1,000 square feet to support startup and new businesses. Finally, new buildings will achieve LEED Platinum or equivalent. In order to comply with the EEAH incentives, all new development across all phases shall provide the proposed exceptional amenities.

B. Development Density

RZC Table 21.10.130A establishes residential density requirements for Downtown Zones. Sites within the Town Center Zone that are greater than 12,000 square feet and have a minimum site width of 120 feet shall not be regulated by a maximum number of dwelling units per acre.

Finding: The proposed project meets the residential density requirements of the Town Center Zone. Because the project site exceeds the 12,000 square feet and 120 feet minimum width, a maximum number of dwelling units is not applied. Density shall not be regulated by a maximum number of dwelling units, but by the application of bulk, height, parking, and all other applicable development standards.

C. Pedestrian Generating Uses

RZC Table 21.10.130A dictates that new development must retain or replace existing pedestrian generating and retail sales uses. Development may modify areas allocated to pedestrian generating and retail sales uses, subject to a minimum floor area to be negotiated as a condition to any Development Agreement.

Finding: The proposal complies with regulations related to the retention of pedestrian generating uses. In the absence of a definition provided in the RZC, the Draft Development Agreement defines 'pedestrian generating use' to include the following subset of uses: Retail; Food and Beverage; personal service uses (subset of Business and Service); copy centers and parcel and mail centers; the customer service portion of financial institutions; Arts, Entertainment, Recreation, and Assembly, Amusement, Sports, Recreation Establishments, and Athletic Clubs and Fitness Centers. The existing project site contains 267,958 square feet of pedestrian generating leasable square footage. As negotiated through the Development Agreement process, no less than 170,000 square feet of pedestrian generating uses shall exist within the RTC Master Plan project area at any given time.

D. Tree Protection & Replacement

RZC 21.72.060 requires a minimum of 35% of all significant trees to be retained. Significant trees are those trees with a diameter at breast height (dbh) of 6" or greater. Any trees being removed shall be replaced, with one (1) replacement tree required per tree removed, or in the case of landmark trees (those trees with 30" or greater dbh), three (3) replacement trees required per removed landmark tree.

Finding:

The MPD and DA comply with applicable tree retention and replacement requirements (See Attachment 7, MPD Plans, Page 70). The applicant is proposing enhanced tree preservation and will retain a minimum of 45% of significant trees on-site throughout all phases of the MPD. Tree protection and replacement is required in conjunction with RZC 21.72 and will be reviewed with Site Plan Entitlements for individual development phases.

E. Critical Areas

This property is in the Critical Aquifer Recharge Area I as defined by RZC 21.64.050 and as required by the Washington State Growth Management Act (RCW 36.70A.172), water quality standards for ground waters of the State of Washington (WAC 173-200) and Washington State Public Water System Standards (WAC 246-290).

Finding:

The Critical Area protection requirements of RZC 21.64.050 have been satisfied and the proposal has been conditioned in compliance with city codes to protect the Critical Aquifer Recharge Area. Provisions on dewatering, groundwater and wellhead protection are a requirement of this agreement. The Critical Aquifer Recharge Area Evaluation (December 2023) states that dewatering will likely not be necessary, but if it is needed, the project will meet requirements of RMC 13.25

(Temporary Construction Dewatering). As conditioned, the project will meet the requirements of RZC 21.64.050 and RMC 13.07.

F. Open Space

RZC 21.10.130.E establishes requirements related to residential usable open space in Downtown Zones. At least 100 square feet per residential unit of common usable open space shall be provided in the development, up to a maximum area equivalent to 20% of the site. Private usable open space shall be provided in the form of an attached patio or balcony for each unit per Table 21.10.130C.

Finding

As conditioned, the project complies with open space requirements. For each project phase providing residential units, the applicant has demonstrated in the conceptual floor plans how the minimum quantity of common residential usable space will be provided. As a condition of project approval, each phase developing residential units will be required to demonstrate at the time of Site Plan Entitlement submittal how private open space will be provided in compliance with RZC requirements.

G. Parking

RZC 21.40 establishes parking requirements, and RZC 21.10.050.D establishes maximum parking quantities for projects utilizing the EAAH incentive program.

Finding

As proposed, the project complies with parking requirements established in the RZC. New vehicle parking spaces will be provided as above ground structured parking in conjunction with the development of individual MPD phases. Specific design of parking facilities and parking stall quantities will be re-reviewed with Site Plan Entitlement applications to verify and ensure continued compliance with parking requirements as vested under the Development Agreement.

H. Affordable Housing

Affordable housing requirements for new residential development are established in RZC 21.20. New development is required to provide 10% of units as affordable to households making 80% AMI or less.

Finding

As proposed, the project complies with the City's affordable housing requirements. The applicant is pursuing the EAAH incentives for additional allowable building height, meaning they will be providing a higher quantity and deeper level of affordability than is typically required under RZC 21.20.

I. Transportation

RZC 21.17 requires the installation of transportation facilities and services necessary to support this development.

Finding:

As conditioned, the proposal will meet all requirements, per RZC 21.17. This Master Planned Development is planned to be developed in five (5) phases. Phase 1 would include a 2-story addition to an existing mixed-use parking garage, and ground level public open space improvements. Phases 2 and 3 would include two new 12-story mixed use buildings and one new 7-story residential building. Phases 4 and 5 would include two 7-story mixed use buildings, new streetscape and pedestrian plaza at NE 74th Street. Phasing of the improvements are proposed to be as follows:

- In Phase 2 of this Master Plan, an additional bicycle lane will be added at the NE 74th Street frontage, at west of 164th Avenue NE.
- In Phase 2 of this Master Plan, for the new 12-story Building 2A, road improvements will take place on three sides of this building – the NE 72nd Way, NE 73rd Way, and 166th Avenue NE frontages. Walkway and landscaping improvements will take place on all four sides of the building. The parking access for this building will be at the 166th Avenue NE frontage. The loading entry and trash pick-up will be at the NE 73rd Way frontage. A total of seven pedestrian entries are proposed, located on all four sides of this building.
- Also in Phase 2 of this Master Plan, for the new 12-story Building 2B, road improvements will take place on three sides of this building – the NE 72nd Way, NE 73rd Way, and 164th Avenue NE frontages. Walkway and landscaping improvements will take place on all four sides of the building. The parking access for this building will be at the 164th Avenue NE frontage. The loading entry and trash pick-up will be at the NE 73rd Way frontage. A total of seven pedestrian entries are proposed, located on all four sides of this building.
- Raised mid-block crossings will be installed at NE 72nd Way and NE 73rd Way, located between Buildings 2A & 2B.
- In Phase 3 of this Master Plan, for the new 7-story building, road improvements will take place on two sides of this building – the NE 72nd Way and 166th Avenue NE frontages. Landscaping improvements will take place on three sides of the building – the Bear Creek Parkway, NE 72nd Way and 166th Avenue NE frontages. Walkway improvements will take place on all four sides of the building. The parking access and loading entry for this building will be at the NE 72nd Way frontage. A total of four pedestrian entries are proposed, located on two sides of this building.
- As part of Phase 3 of this Master Plan, a raised mid-block crossing and ADA-compliant ramps are proposed to be installed at Bear Creek Parkway, just

south of the new building. Due to the anticipated significant increase of pedestrian traffic at Bear Creek Parkway resulting from the Redmond Town Center Master Planned development, additional pedestrian safety measures will be required during the site plan entitlement review process. Pending completion of the City's Safe Speed Study and Audit in 2026 and subsequent evaluation of vehicles speeds and safety improvements on Bear Creek Parkway, an alternative pedestrian enhancement other than the raised mid-block crossing may be considered. Pedestrian safety measures may include, but are not limited to, installing rectangular rapid flashing beacons (RRFBs), modifying road channelization, enhancing median to improve sight distance, and implementing pedestrian safety upgrades at the intersections of Bear Creek Parkway with 164th Avenue NE and 166th Avenue NE.

- In Phase 4 of this Master Plan, a new 7-story mixed use building will be constructed adjacent to the southeast corner of the NE 76th Street and 164th Avenue NE intersection. Existing parking structure entry/egress is located south of this new building accessing 164th Avenue NE, and will be improved as part of this development. Walkway and landscaping improvements will take place on two sides of the building – the NE 76th Street and 164th Avenue NE frontages. New parking garage stair and sidewalk access improvements will take place east of this new building, at the NE 76th Street frontage.
- In Phase 5 of this Master Plan, a new 7-story mixed use building will be constructed adjacent to the southwest corner of the NE 76th Street and 166th Avenue NE intersection. Existing parking structure entry/egress is located south of this new building accessing 166th Avenue NE, and will be improved as part of this development. Walkway and landscaping improvements will take place on two sides of the building – the NE 76th Street and 166th Avenue NE frontages. New parking garage stair and sidewalk access improvements will take place west of this new building, at the NE 76th Street frontage.
- Also in Phases 4 and 5 of this Master Plan, new streetscape and pedestrian plaza improvements will take place at NE 74th Street. Intersection improvements and raised pedestrian crossings will take place at three intersections – the NE 76th Street and 166th Avenue NE intersection, the NE 74th Street and 164th Avenue NE intersection, and the NE 74th Street and 166th Avenue NE intersection. At the NE 76th Street frontage, connection to the NE 76th Street Sound Transit Light Rail Station will be made, and existing parking structure entry/egress will also be improved.

J. Stormwater

The Redmond Municipal Code (RMC 15.24) and the 2022 Stormwater Technical Notebook (STN) requires that projects meet the applicable minimum requirements based on threshold requirements. Redmond Zoning Code (RZC

21.17.010.E) and (RZC 21.74.020) requires that all projects and developments are
required to be served by adequate surface water management system complying with the policies of the Comprehensive Plan and meeting the requirements of RMC Chapter 15.24, Clearing and Grading, and Storm Water Management, and the Storm water Technical Notebook and Construction Manuals.

Finding:

The proposed project is located within the Downtown Regional Facility Surcharge Area, and therefore flow control is not required per the 2022 City of Redmond Stormwater Technical Notebook. The proposed Phase 2 buildings will be constructed in place of an existing parking lot and will require removal of an existing 36-inch concrete storm pipe. A new 48-inch storm pipe will be installed in the access road north of the Phase 2 buildings and all current stormwater connections to the 36-inch storm pipe will be connected to the new 48-inch storm pipe. Phases 1,3,4 and 5 will continue to tie into the existing and updated storm conveyance system and will discharge to the Sammamish River. Additional water quantity facilities, catch basins, and storm pipes will be constructed for each phase, which will maintain the existing outlet location at 164th Ave NE and NE 73rd Way. Water quality needs will be met by an existing water quality pond adjacent to the outfall location to the Sammamish River.

As conditioned, the proposal will meet all requirements per RZC 21.64 and RMC 15.24.

K. Utilities

Per RZC 21.17.010.D, all developments shall be served by adequate public water and sanitary sewer systems approved by the City and meeting the design and construction requirements of the City's Technical Design and Construction Manuals.

Finding

The proposed project is located within an established downtown shopping center area. The existing 12-inch looped water supply system has sufficient capacity to serve the new buildings. As part of Phase 2, the developer will relocate the existing 12-inch water main along NE 73rd Street between 164th Avenue NE and 166th Avenue NE. Each new building will require one or two domestic water services and a fire line connection to the City's water main. Approximately 1,080 feet of the existing 8-inch sewer main along 164th Avenue NE and 1,050 feet along 166th Avenue NE will be upsized to 12-inch sewer mains. An additional sewer connection charge shall be paid prior to occupancy for each phase of the two new buildings.

As conditioned, the proposal will meet all applicable requirements of RZC 21.17.010.

VI. Criteria Applicable to all Land Use Permits:

Proposed land use actions within the City must comply with the criteria listed in RZC 21.76.070.B.3.a. These criteria are applicable to all land use permits to ensure overall consistency between proposed land use permits, applicable regulations, and the Comprehensive Plan. Staff's analysis of whether the proposal meets the decision criteria is below.

1. A proposed project's consistency with the City's development regulations shall be determined by consideration of:
   A. The type of land use;
   B. The level of development, such as units per acre or other measures of density;
   C. Availability of infrastructure, including public facilities and services needed to serve the development; and
   D. The character of the development, such as development standards.

   Staff Response: The MPD proposes a mix of land uses including multi-family residential, retail, restaurant, business and service, and office. All of the land uses proposed under the MPD application are permitted uses in the Town Center Zone pursuant to RZC 21.10.050. The maximum level of development density anticipated under all phases of the MPD is consistent with the density permitted for a site of its size in the Town Center Zone, as detailed in Section V above. Staff have reviewed the MPD for availability of infrastructure and the character of development as applied through RZC development regulations. As conditioned, the project is consistent with the above criteria. Additional technical review will be conducted at a higher level of detail in conjunction with the individual Site Plan Entitlement applications that will be submitted for each phase of development.

2. Upon review of a land use permit and accompanying site plan, the decision maker shall determine whether building design and/or site design complies with the following provisions:
   A. The Comprehensive Plan, RZC 21.02, *Preface,* RZC Article I, *Zone-Based Regulations,* RZC Article II, *Citywide Regulations,* and the Appendices that carry out these titles;
   B. The provisions of RMC Title 15, *Buildings and Construction*, that affect building location and general site design;
   C. The Washington State Environmental Policy Act (SEPA) if not otherwise satisfied;

D. RZC Article VI, *Review Procedures,* to the extent it provides the procedures to ensure compliance with the requirements in subsections B.3.a. ii. B and B.3.a.ii.C of this section;
E. Both within and outside the Transition Overlays, decision makers authorized by the RZC to decide upon discretionary approvals may condition such approvals and development permits, including but not limited to site plan approvals, to minimize adverse impacts on other properties and uses, and to carry out the policies of the Comprehensive Plan.

Staff Response: Technical Review staff have reviewed the proposed project and determined that it complies with the Comprehensive Plan, RZC, and RMC. The review of the applications has been consistent with RZC Article VI, Review Procedures, for a Type V Master Plan and Development Agreement. All associated future Site Plan Entitlement, Site Permit, and Building Permit applications will be reviewed for compliance at time of submittal. The proposal complies with SEPA requirements as described in Section IV.

The proposed development specifically addresses the following Comprehensive Plan goals and policies:

Comprehensive Plan Policy	Compliance Analysis
LU-34-Downtown Mixed-Use Designation: Encourage development of the Downtown as a place that:	
1. Meets community needs for employment, shopping, recreation, civic activities, and cultural and night life opportunities.	The proposed MPD builds off the existing community asset that is the Redmond Town Center and plans for additional employment, shopping, and recreation opportunities through additional commercial buildings that are easily accessed and integrated into the overall site design.
2. Provides attractive and safe places to live close to amenities, such as restaurants and cafes, a wide selection of stores and services, frequent transit service, and plazas, parks, and art.	Redmond Town Center is one of the primary commercial and shopping hubs of the Downtown area and will provide additional opportunities for dining, shopping, and informal gathering as a result of the MPD. The MPD also provides hundreds of housing units on-site that are close to those amenities offered by Redmond Town Center.
3. Protects Redmond's drinking water aquifer from contamination and loss of recharge and other natural resources.	The project avoids impacts to the Critical Aquifer Recharge Area by providing all proposed structured parking above grade and eliminating the need to excavate into the aquifer recharge area for underground parking.

Comprehensive Plan Policy	Compliance Analysis
4. Emphasizes access for pedestrians and bicycles.	The MPD proposes enhanced pedestrian and bicycle access throughout and around the site as a public benefit associated with new development.
HO-6: Identify and implement strategies to meet affordable housing targets identified in the King County Countywide Planning Policies.	As part of the incentive program allowing for 12-story buildings 20 percent of all new dwelling units will be affordable to households making 60% AMI.
HO-10: Foster the creation of complete neighborhoods through housing, transportation, and economic planning, to create clustered places where residents have easy access to homes, jobs, and recreation.	The proposed MPD provides additional housing, employment, shopping, and recreation opportunities in a cluster around a high-capacity light rail station, thereby contributing to a complete neighborhood.

VII. Master Planned Development Decision Criteria

Per RZC 21.76.070.P.5, the MPD shall meet the following criteria:

1. All elements of the MPD shall support and be consistent with the RZC and all applicable Comprehensive Plan policies.

   Staff Response: Staff has reviewed the proposal for compliance with the RZC and Comprehensive Plan as discussed in Section V and Section VI above.

2. MPDs proposed in the Overlake Metro Center shall be consistent with the Overlake policies in the Redmond Comprehensive Plan and shall include the items listed in RZC 21.76.070.P.5.d in addition to the following…

   Staff Response: Not applicable. The proposal is not located within the Overlake Metro Center.

3. MPDs proposed in the Marymoor Village Center shall include a phasing plan for bonus features and affordable housing as described in RZC 21.76.070.P.5.b.iii in addition to the items listed in RZC 21.76.070.P.5.d.

   Staff Response: Not applicable. The project is not located within the Marymoor Village Center.

4. All MPDs shall include the items listed below:

   i. A design concept that is in conformance with all applicable Comprehensive Plan policies and development regulations;

ii. Conceptual site plan indicating all proposed land uses (architectural design, exact building shapes, locations, and other detailed information required in a site plan shall not be required);

iii. Transportation and circulation plan indicating the layout and conceptual design of all streets, pedestrian pathways, parking, and location of transit facilities (as available), in plan view and cross section for streets (cross sections only required for projects in the Downtown);

iv. Location of proposed space for parks, open space, and any cultural facilities;

v. Phasing plan describing anticipated time frames for development and showing that completion of affordable housing shall be commensurate with the progress on the construction of the development;

vi. Location of any environmentally critical areas;

vii. Landscape and tree retention concepts, including consideration of the health and structural stability of retained trees, as determined by an arborist report;

viii. Preliminary plan indicating required connections to adjacent properties for transportation and open space systems;

ix. Overall approach to sustainable design, including consideration of the use of environmentally sustainable materials such as permeable pavement, where possible; and

x. Preliminary plan for other major infrastructure improvements (may be waived by the Technical Committee for sites in Overlake smaller than three acres).

Staff Response: The MPD application materials included the above listed items and was deemed a complete application on January 19, 2024.

5. The master plan must comply with all site requirements or design guidelines that would ordinarily apply to projects developed in the underlying zone.

Staff Response: The proposal complies with all standards of the underlying zone. Further review of site requirements and design guidelines shall be reviewed upon submittal of Site Plan Entitlement(s) for each phase.

6. Site requirements and other development standards and regulations shall be administered on the basis of the area controlled by the approved master plan ("plan area"), rather than on a site-by-site basis, provided the approved master plan demonstrates the ability to comply with the requirement in question.

   Staff Response: In its buildout condition, the Master Plan area demonstrates the ability to comply with all applicable development standards and regulations. The MPD was reviewed with respect to the entire development reviewed comprehensively. Further review of site requirements and other development standards will be reviewed upon submittal of Site Plan Entitlement(s) for each phase.

7. Property included in an MPD must be under the same ownership, or there must be a signed agreement establishing control over multiple ownerships.

   Staff Response: The MPD area is under single ownership.

VIII. Development Agreement Decision Criteria

Per RZC 21.76.070.L.3, the Development Agreement shall meet the following criteria:

1. The agreement must be consistent with the applicable development regulations for the property.

   Staff Response: The Development Agreement establishes an agreement between the City and the applicant to provide for coordinated development of the project site. All provisions of the agreement pertaining to development regulations comply with applicable RZC and RMC standards.

2. All impacts of the development must be mitigated by the measures set forth in the agreement or the agreement must provide a mechanism for analyzing and mitigating such impacts as they occur.

   Staff Response: The agreement provides for mitigation of development impacts to infrastructure, including street and right-of-way (ROW) improvements and additional sewer connection charges. The agreement provides for each individual phase of development to mitigate development impacts through the payment of impact fees.

3. The agreement must reserve the City's authority to impose new or different regulations to the extent required by a serious threat to public health and safety.

Staff Response: Section 4.3 of the agreement details the City's reserved right to impose new or different officially adopted regulations to the extent required by a serious threat to public health and safety.

4. The duration of the agreement must be reasonable in light of the anticipated build-out period for the proposed development and the needs of the City.

   Staff Response: Section 5 of the Development Agreement establishes the duration of the agreement, which is ten (10) years with an option to extend for an additional five (5) years. The duration is reasonable for the anticipated build-out period and is consistent with the expiration terms for Master Planned Developments established in RZC 21.

5. The agreement must be in the public interest and provide a public benefit.

   Staff Response: The agreement provides for a suite of public benefits including a 20,000 square foot linear pedestrian plaza, ROW improvements enhancing pedestrian and bicycle connectivity to light rail, enhanced weather protection, and avoidance of impacts to the groundwater aquifer. The agreement provides additional housing and commercial opportunities consistent with the land use vision for the Town Center Zone and is in the public interest.

IX. Vesting/Approval Expiration

This decision is vested to the development regulations in effect at the time of Development Agreement execution, per Section 4 of the Development Agreement (Attachment 8). The MPD approval of this project and Development Agreement shall expire ten years from the date of this decision, unless an approval extension is granted pursuant to Section 5 of the Development Agreement and RZC 21.76.070.P.3.

X. Conditions of Approval

A. Site Specific Conditions of Approval

The following conditions shall be reflected on the Civil Construction Review, unless otherwise noted:

1. Development Engineering - Transportation and Engineering
   Reviewer: Peter Lau, Senior Transportation Engineer
   Phone: 425-556-2715
   Email: plau@redmond.gov

a. **Easements and Dedications.** If appliable, easements and dedications shall be provided for City of Redmond review during the construction drawing review stage and must be finalized for recording before the approval of civil construction plans of each phase. The existing and proposed easements and right-of-way shall be shown on the civil plans. Prior to acceptance of the right(s) of way and/or easement(s) by the City, the developer will be required to remove or subordinate any existing private easements or rights that encumber the property to be dedicated.

At the time of construction, additional easements may be required to accommodate the improvements as constructed.

Code Authority: RZC 21.52.030.G; RMC 12.12

b. **Construction Restoration and Street Overlay.** In order to mitigate damage due to trenching and other work on the impacted areas of Bear Creek Parkway, NE 72nd Way, NE 73rd Way, NE 74th Street, NE 76th Street, 163rd Place NE, 164th Avenue NE and 166th Avenue NE, the asphalt street shall be planed, overlaid, and/or patched, per COR SD 201, 202, 203 and 301. If the Pavement Condition Index (PCI) of the existing pavement is below 70 (as determined by the City's bi-annual pavement survey), the development shall be required to plane and overlay the entire half street along the project frontage at a minimum as determined by the Traffic Operations and Safety Engineering Division in Public Works. Contact Adnan Shabir at 425-556-2776.

Code Authority: RMC 12.08; Redmond Standard Specifications & Details

c. Street Frontage Improvements

i. In Phase 2 of the Master Plan, the frontages along NE 72nd Way and NE 73rd Way would include 11-foot-wide asphalt travel lanes with appropriate tapers, type A-1 concrete curb and gutter, 6-foot-wide planter strips, 8-foot-wide concrete sidewalk, some other various widths of concrete sidewalk and landscape areas, storm drainage, street lights, street trees, street signs and underground utilities including power and telecommunications. The minimum pavement section for the streets shall consist of:

1. 3-inch Hot Mixed Asphalt (HMA) Class ½" PG 58H-22

2. 4-inch of 1-1/4" minus crushed rock base course per WSDOT standard spec 9-03.9(3).

3. Subgrade compacted to 95% compacted maximum density as determined by modified Proctor (ASTMD 1557).

4. Street crown 2% sloped to drain system.

Code Authority: RZC 21.10.150; RZC 21.52.030; RZC 21.17.010; RMC 12.12; RZC Appendix 2.A.2.Table 2; RZC Appendix 2A; Redmond Standard Specifications & Details

ii. In Phase 2 of the Master Plan, the frontages along 164th Avenue NE and 166th Avenue NE would include 11-foot-wide asphalt travel lanes with appropriate tapers, 6-foot-wide bicycle lane, 8-foot-wide parking lane, type A-1 concrete curb and gutter, 13-foot-wide pedestrian areas, storm drainage, street lights, street trees, street signs and underground utilities including power and telecommunications. The minimum pavement section for the streets shall consist of:

1. 3-inch HMA Class ½" PG 58H-22

2. 4-inch of 1-1/4" minus crushed rock base course per WSDOT standard spec 9-03.9(3).

3. Subgrade compacted to 95% compacted maximum density as determined by modified Proctor (ASTMD 1557).

4. Street crown 2% sloped to drain system.

Code Authority: RZC 21.10.150; RZC 21.52.030; RZC 21.17.010; RMC 12.12; RZC Appendix 2.A.2.Table 2; RZC Appendix 2A; Redmond Standard Specifications & Details

iii. In Phase 3 of the Master Plan, the frontage along NE 72nd Way would include 11-foot-wide asphalt travel lanes with appropriate tapers, 8-foot-wide parking lane, type A-1 concrete curb and gutter, between 5-foot-wide to 8-foot-wide planter strips, between 7-foot-wide to 10.5-foot-wide concrete sidewalks, storm drainage, street lights, street trees, street signs and underground utilities including power and telecommunications. The minimum pavement section for the streets shall consist of:

1. 3-inch HMA Class ½" PG 58H-22

2. 4-inch of 1-1/4" minus crushed rock base course per WSDOT standard spec 9-03.9(3).

3. Subgrade compacted to 95% compacted maximum density as determined by modified Proctor (ASTMD 1557).

4. Street crown 2% sloped to drain system.

Code Authority: RZC 21.10.150; RZC 21.52.030; RZC 21.17.010; RMC 12.12; RZC Appendix 2.A.2.Table 2; RZC Appendix 2A; Redmond Standard Specifications & Details

iv. In Phase 3 of the Master Plan, the frontage along 166th Avenue NE must meet current City Standards which include 14-foot-wide asphalt shared travel lanes with appropriate tapers, 12-foot-wide asphalt left turn lane, type A-1 concrete curb and gutter, 4-foot-wide planter strips within 13-foot-wide to 17-foot-wide pedestrian

areas, storm drainage, street lights, street trees, street signs and underground utilities including power and telecommunications. The minimum pavement section for the streets shall consist of:

1. 3-inch HMA Class ½" PG 58H-22
2. 4-inch of 1-1/4" minus crushed rock base course per WSDOT standard spec 9-03.9(3).
3. Subgrade compacted to 95% compacted maximum density as determined by modified Proctor (ASTMD 1557).
4. Street crown 2% sloped to drain system.

Code Authority: RZC 21.10.150; RZC 21.52.030; RZC 21.17.010; RMC 12.12; RZC Appendix 2.A.2.Table 2; RZC Appendix 2A; Redmond Standard Specifications & Details

v. In Phase 3 of the Master Plan, the frontage along Bear Creek Parkway must meet current City Standards which include 12-foot-wide westbound (WB) asphalt travel lane with appropriate tapers, a total of 42-foot-wide eastbound (EB) travel lanes and median, type A-1 concrete curb and gutter, 30-foot-wide sidewalk area with landscape areas included, storm drainage, street lights, street trees, street signs and underground utilities including power and telecommunications. The minimum pavement section for the streets shall consist of:

1. 4-inch HMA Class ½" PG 58H-22
2. 5-inch HMA Class 1" PG 58H-22
3. 4-inch of 1-1/4" minus crushed rock base course per WSDOT standard spec 9-03.9(3).
4. Subgrade compacted to 95% compacted maximum density as determined by modified Proctor (ASTMD 1557).
5. Street crown 2% sloped to drain system.

In Phase 3 of the Master Plan, raised mid-block crossing and ADA ramps are proposed to be installed at Bear Creek Parkway, south of the new building. Pending completion of the City's Safe Speed Study and Audit in 2026 and subsequent evaluation of vehicles speeds and safety improvements on Bear Creek Parkway, an alternative pedestrian enhancement other than the raised mid-block crossing may be considered. With the anticipated significant increase of pedestrian traffic at Bear Creek Parkway due to the Redmond Town Center Master Planned development, the City reserves the right to require additional pedestrian safety measures including, but not limited to, RRFB pedestrian crossings, road channelization revisions, median enhancements for sight distance, and others, at the Bear Creek Parkway frontage. The intersections of Bear Creek Parkway and 164th Avenue NE, and Bear Creek Parkway and 166th Avenue NE, will also be evaluated for pedestrian safety improvements.

Code Authority: RZC 21.10.150; RZC 21.52.030; RZC 21.17.010; RMC 12.12; RZC Appendix 2.A.2.Table 1; RZC Appendix 2A; Redmond Standard Specifications & Details

vi. ADA ramp requirements:

Curb ramps for persons with disabilities are required to all new curb constructions and to all replacement curbs constructed in combination with sidewalks, paths, or other pedestrian access ways. In Phase 3 of the Master Plan, ADA ramps will be installed at Bear Creek Parkway, south of the new 7-story building.

Code Authority: RCW 35.68.075; RZC 21.A.21.a

vii. A 20-scale Channelization Plan is required and should be separate or incorporated into the Transportation Plan, provided the details are clearly visible, for any public street being modified or constructed. The plan shall include the existing and proposed signs, striping and street lighting and signal equipment for all streets adjacent to the site and within at least 150 feet of the site property line (both sides of the street). The plan shall conform to the requirements in the City of Redmond Standard Specifications and Details Manual.

Code Authority: RZC 21.52.030.F, RZC Appendix 2; Redmond Standard Specifications & Details; RCW 47.24.020

viii. Sidewalks constructed to City standards are required at the following locations:

1. In Phase 2 of the Master Plan, 8-foot-wide concrete sidewalks would be installed at the NE 72nd Way and NE 73rd Way frontages. Walkway and landscaping improvements will take place on all four sides of the building.
2. In Phase 2 of the Master Plan, 13-foot-wide pedestrian areas would be installed at the 164th Avenue NE and 166th Avenue NE frontages.
3. In Phase 3 of the Master Plan, 7-foot-wide to 10.5-foot-wide concrete sidewalks would be installed at the NE 72nd Way frontage.
4. In Phase 3 of the Master Plan, 13-foot-wide to 17-foot-wide pedestrian areas with 4-foot-wide planter strips included, would be installed at the 166th Avenue NE frontage.
5. In Phase 3 of the Master Plan, 30-foot-wide sidewalk area with landscape areas included, would be installed at the Bear Creek Parkway frontage.
6. In Phase 3 of the Master Plan, walkway improvements would be installed on the west side of the new 7-story building.

7. In Phase 4 of the Master Plan, walkway improvements would be installed on two sides of the building – the NE 76th Street and 164th Avenue NE frontages.

8. In Phase 5 of the Master Plan, walkway improvements would be installed on two sides of the building – the NE 76th Street and 166th Avenue NE frontages.

9. In Phases 4 and 5 of this Master Plan, new streetscape and pedestrian plaza improvements would be installed at NE 74th Street.

Code Authority: RZC 21.10.150, RZC 21.17.010; RZC 21.52.050; RMC 12.12

d. Access Improvements

i. The type and location of the proposed site accesses are approved as shown on the Redmond Town Center Master Planned Development site plan prepared by GGLO on March 31, 2025.

Code Authority: RZC 21.52.030.E; RZC Appendix 2.D

ii. The following driveways are required to be improved as specified below:

10. In Phase 1 of the Master Plan, the two existing parking structure entries/egresses at the NE 73rd Way and 163rd Place NE frontages, would continue to be used by the new development.

11. In Phase 2 of the Master Plan, for the new 12-story Building 2A, the parking access for this building will be at the 166th Avenue NE frontage. The loading entry and trash pick-up will be at the NE 73rd Way frontage.

12. In Phase 2 of the Master Plan, for the new 12-story Building 2B, the parking access for this building will be at the 164th Avenue NE frontage. The loading entry and trash pick-up will be at the NE 73rd Way frontage.

13. In Phase 3 of the Master Plan, for the new 7-story building, the parking access and loading entry for this building will be at the NE 72nd Way frontage.

14. In Phase 4 of the Master Plan, an existing parking structure entry/egress located south of the new 7-story mixed use Building 4 accessing 164th Avenue NE, will be improved as part of this development.

15. In Phase 5 of the Master Plan, an existing parking structure entry/egress located south of the new 7-story mixed use Building 5 accessing 166th Avenue NE, will be improved as part of this development.

16. In Phases 4 and 5 of the Master Plan, located between the new Buildings 4 and 5 accessing NE 76th Street, an existing parking structure entry/egress will also be improved as part of this development.

Code Authority: RZC Appendix 2.D

e. **Underground Utilities.** All existing aerial power distribution and communication lines shall be converted to underground along the street frontages and within the development. All new utilities serving the development shall be placed underground.

Code Authority: RZC 21.17.020; RZC Appendix 2.A.3 and 11

f. **Street Lighting.** Illumination of the street(s) along the property frontage must be analyzed to determine if it conforms to current City standards. Streetlights may be required to illuminate the property frontage. Luminaire spacing should be designed to meet the specified criteria for the applicable lamp size, luminaire height and roadway width. Contact Isabel Diaz, Transportation Operations at (425) 556-2733 with questions. The street lighting shall be designed using the criteria found in the City's Illumination Design Manual which can be accessed at: http://www.redmond.gov/development/CodesAndRules/StandardizedDetails

With Site Plan Entitlement approval, the applicant shall contact Puget Sound Energy (Street Lighting division) for coordination and development of a Work Sketch plan to include any proposed work on PSE-owned lights and or poles. The final PSE Street Lighting plan is required to be included in the final plan set prior to final approval of the Coordinated Civil Review.

To begin the PSE Lighting coordination process, fill out the Street Lighting information request form here: https://www.pse.com/en/construction-services/pole-services

Code Authority: RZC 21.52.030.F, RZC Appendix 2.A.11

g. **Temporary Pedestrian Access Plan.** The applicant is required to provide a temporary pedestrian access plan for approval by the City prior to any construction on the project site. This plan needs to show how pedestrian traffic passing by the proposed development will be accommodated during the entire length of the construction phase.

A pedestrian access plan should provide pedestrian protection with barriers or covered walkways that parallel existing facilities along the street frontage on the same side of the street on which the development is occurring. These routes must be accessible for persons with disabilities per the current ADA regulations and standards, including the provision of ramps, minimum widths, a detectable edge, and smooth surfaces for wheelchair access. If, under extenuating circumstances, a parallel accessible route cannot be provided along the street frontage adjacent to the

development, pedestrians must be detoured with advance signing in accordance with the Manual on Uniform Traffic Control Devices (MUTCD). This route must be accessible for people with low or no vision. The developer may be required to install temporary crosswalks and street lighting as part of this detour.

In order to keep existing routes open during the construction of new structures adjacent to existing sidewalks, pedestrian protection must be in place and inspected prior to construction adjacent to and at the same grade or above, as detailed in IBC 3306.1 (see table below) to protect pedestrians from falling debris. Pedestrian protection should be designed to provide sturdiness, adequate light for nighttime use and safety, and proper sight distance at intersections and crosswalks. Plans and details for the construction of these covered walkways shall be included as part of the civil construction plan set.

Table 3306.1. PROTECTION OF PEDESTRIANS

HEIGHT OF CONSTRUCTION	DISTANCE FROM CONSTRUCTION TO SIDEWALK, WALKWAY, OR LOT LINE	TYPE OF PROTECTION REQUIRED
8 feet or less	Less than 5 feet	Construction railings
	5 feet or more	None
More than 8 feet	Less than 5 feet	Barrier and covered walkway
	5 feet or more, but not more than one-fourth the height of construction	Barrier and covered walkway
	5 feet or more, but between one-fourth and one-half the height of construction	Barrier
	5 feet or more, but exceeding one-half the height of construction	None

Code Authority: MUTCD 2023 (or latest revision) sections 6D.01, 6D.02, & 6D.05
Condition Applies: Civil Construction

2. Development Engineering – Water and Sewer
   Reviewer: Zheng Lu, Senior Utility Engineer
   Phone: 425-556-2844
   Email: zlu@redmond.gov

   a. **Water Service.** Water service will require a developer extension of the City of Redmond water system as follows:

   - **Phase 1** proposes additions to the existing parking garage located at the northwest corner of NE 73rd Way and 164th Avenue NE.
     A new 4-inch water service line will be installed as proposed by the applicant. The existing 2-inch water service may be abandoned in accordance with Redmond standards. No extension of the public water main is required.
   - **Phase 2** proposes two 12-story buildings immediately south of the existing RTC shopping center where surface parking is currently located.

     Approximately 650 feet of the existing 12-inch water main located on the north side of the two proposed buildings shall be abandoned and relocated to the new access street. Fire hydrants shall be installed at locations approved by the Redmond Fire Department. The fire lines and Fire Department Connection (FDC) lines shall be reconnected serving the existing Redmond Town Center building to the north.

     Construct at least two adequately sized residential and commercial water services and a 6-inch fire line on the west side of the west building and connect to the existing 12-inch water main along 164th Avenue NE.

     Construct at least two adequately sized residential and commercial water services and a 6-inch fire line on the east side of the east building and connect to the existing 12-inch water main along 166th Avenue NE.

   - **Phase 3** proposes the demolition of the existing BJ's Restaurant building at 7211 166th Ave NE and the construction of an 8-story mixed-use residential building at the northwest corner of Bear Creek Parkway and 166th Avenue NE.

     Construct at least two adequately sized residential and commercial water services and a 6-inch fire line on the east side of the east building and connect to the existing 12-inch water main along 166th Avenue NE.

- Phase 4 proposes partial demolition of the commercial spaces at the northwest corner of the RTC shopping center parking garage and proposes the construction of a 7-story mixed-use residential building at the same location.

  Construct at least two adequately sized residential and commercial water services and a 6-inch fire line on the north side of the building and connect these services to the existing 12-inch water main along NE 76th Street.

- Phase 5 proposes partial demolition of the commercial spaces at the northeast corner of the RTC shopping center parking garage and construction of a 7-story mixed-use residential building at the same location.

  Construct at least two adequately sized residential and commercial water services and a 6-inch fire line on the north side of the building and connect these services to the existing 12-inch water main along NE 76th Street.

Code Authority: RZC 21.17.010.D

b. Sewer Service. Sewer service will require a developer extension of the City of Redmond sewer system as follows:

- Phase 1 proposes additions to the existing parking garage at the northwest corner of NE 73rd Way and 164th Avenue NE.

  An additional sewer connection charge, as outlined in a City Resolution currently under consideration by the City Council to fund the upgrade of the regional sewer lift station, force main, and downstream sewer upsizing, shall be paid prior to occupancy of the garage building.

- Phase 2 proposes two 12-story buildings immediately south of the existing RTC shopping center where surface parking is currently located.

  Replace approximately 470 feet of the existing 8-inch sewer main with a 10-inch sewer main along 164th Avenue NE, between Bear Creek Parkway and NE 73rd Way and connect two 8-inch side sewers from the proposed west building to this new sewer main.

  Replace approximately 450 feet of the existing 8-inch sewer main with the 10-inch sewer main along 166th Avenue NE, between Bear Creek Parkway and

NE 73rd Way and connect two 8-inch side sewers from the proposed new east building to this new sewer main.

An additional sewer connection charge, as outlined in a City Resolution currently under consideration by the City Council to fund the upgrade of the regional sewer lift station, force main, and downstream sewer upsizing, shall be paid prior to occupancy of two buildings.

- Phase 3 proposes the demolition of the existing BJ's Restaurant building at 7211 166th Ave NE and the construction of an 8-story mixed-use residential building at the northwest corner of Bear Creek Parkway and 166th Avenue NE.

  Connect two 8-inch side sewers from the proposed new east building to the 10-inch sewer main along 166th Avenue NE, between Bear Creek Parkway and NE 73rd Way, which was installed in Phase 2 construction.

  An additional sewer connection charge, as outlined in a City Resolution currently under consideration by the City Council to fund the upgrade of the regional sewer lift station, force main, and downstream sewer upsizing, shall be paid prior to occupancy of this building.

- Phase 4 proposes partial demolition of the commercial spaces at the northwest corner of the RTC shopping center parking garage and proposes the construction of a 7-story mixed-use residential building at the same location.

  Replace approximately 610 feet of the existing 8-inch sewer main with a 10-inch sewer main along 164th Avenue NE, from NE 73rd Way to north and connect two 8-inch side sewers from the proposed phase 4 building to this new sewer main.

  An additional sewer connection charge, as outlined in a City Resolution currently under consideration by the City Council to fund the upgrade of the regional sewer lift station, force main, and downstream sewer upsizing, shall be paid prior to occupancy of this building.

- Phase 5 proposes partial demolition of the commercial spaces at the northeast corner of the RTC shopping center parking garage and construction of a 7-story mixed-use residential building at the same location with approximately 140 residential units and 14,800 square feet of commercial area.

Replace approximately 600 feet of the existing 8-inch sewer main with a 10-inch sewer main along 166th Avenue NE from NE 73rd Way to north and connect two 8-inch side sewers from the proposed Phase 5 building to this new sewer main.

An additional sewer connection charge, as outlined in a City Resolution currently under consideration by the City Council to fund the upgrade of the regional sewer lift station, force main, and downstream sewer upsizing, shall be paid prior to occupancy of this building.

Code Authority: RZC 21.17.010.D

c. Easements. Easements shall be provided for all water and sewer improvements as required in the Design Requirements for Water and Sewer System Extensions. Easements for the water and sewer mains shall be provided for City of Redmond review at the time of construction drawing review. All easements must be recorded prior to construction drawing approval.

Code Authority: RZC 21.74.020.C, RZC Appendix 3.VII

d. Sewer System Study. The City of Redmond is currently working on a rezone of the Leary Way sewer basin to support higher-density, mixed-use development. As part of this effort, the Public Works Department has retained a consultant engineering firm to evaluate the capacity and performance of the existing sanitary sewer system and to identify recommended improvements to the City's collection and conveyance infrastructure, including the upsizing of the regional sewer lift station. The study includes planning-level cost estimates and has informed the development of a capital improvement project (CIP). It also establishes additional sewer connection charges for future developments to recover infrastructure costs. The study focuses on the downstream areas of Leary Way, Bear Creek Parkway, and the associated lift station. The City will be responsible for constructing the regional improvements, with associated costs recouped through additional connection charges. As part of this coordinated effort, the Redmond Town Center developer is responsible for replacing and upsizing the sewer mains along 164th Avenue NE and 166th Avenue NE per Sewer General Plan and will be required to pay the additional connection charge as outlined in the sewer system study. The additional sewer connection charge shall be as established in the City Council resolution as described in Paragraph 'b' above.

Code Authority: RZC Appendix 3, Growth Management Act, King Count Comprehensive Plan, WAC 173-240

e. **Permit Applications.** Water meter and side sewer applications shall be submitted for approval to the Development Engineering Division. Permits and meters will not be issued until all improvements are constructed and administrative requirements are approved. In certain limited circumstances, at the sole determination of the City of Redmond, water meter and/or side sewer permits may be issued prior to completion of improvements and/or administrative requirements. In such cases, various additional guarantees or requirements may be imposed as determined by the Development Engineering Division. All reimbursement fees shall be paid prior to issuance of water and side sewer permits if applicable.

Code Authority: RMC 13.08.010; RMC 13.12.120

3. Development Engineering – Stormwater/Clearing and Grading
Reviewer: Jody Conyers, Stormwater Engineer
Phone: 425-556-2468
Email: jconyers@redmond.gov

a. Water Quantity Control.

i. Project lies within the Downtown Regional Stormwater Facility Basin. Stormwater quantity control will be provided by the City of Redmond upon payment of the Downtown Capital Facility Charge. Phase 2 will remove existing 36-inch pipe and upgrade to a new 48-inch pipe in the access road north of phase 2 buildings. All current buildings connecting to the old 36-inch pipe will be connected to the new 48-inch pipe. Phase 2 will directly discharge to the water quality ponds and then directly discharge to the Sammamish River. Phases 1,3,4 and 5 will tie into the upgraded 48-inch pipe and continue on through the water quality ponds and then directly discharge to the Sammamish River.

ii. Provide for overflow routes through the site for the 100-year storm.

Code Authority: RMC 15.24.080.I

b. Water Quality Control.

i. Basic water quality treatment shall be provided in a privately maintained existing water quality pond. Treatment is required for the 6-month, 24-hour return period storm.

ii. The project intends to address any additional Enhanced water quality needs using proprietary stormwater treatment facilities that are approved by City code.

Code Authority: RMC 15.24.080.H

c. **Public Stormwater Easements.** Public easements will be required for any public stormwater conveyance systems on private property. Easements shall be provided for City of Redmond review at the time of construction drawing approval. The existing and proposed easements shall be shown on the civil plans. Prior to acceptance of the easement(s) by the City, the developer will be required to remove or subordinate any existing private easements or rights to encumber the property to be dedicated. Prior to construction drawing approval, fully executed and recorded offsite easements shall be provided to the Development Engineering Division. Additionally, prior to construction drawing approval, fully executed and recorded offsite or onsite easements shall be provided to the Development Engineering Division.

Code Authority: RZC 21.74.020.C

d. **Private Stormwater Easements.** Private stormwater easements will be required where drainage systems are located across adjacent properties and will remain under private ownership. Maintenance of private drainage systems will be the responsibility of the property owners benefiting from the easement. Prior to construction drawing approval, fully executed and recorded easements shall be provided to the Development Engineering Division. Additionally, prior to construction drawing approval, fully executed and recorded offsite or onsite easements shall be provided to the Development Engineering Division.

Code Authority: RZC 21.74.020.C

e. **Clearing and Grading.** No site-specific requirements.

Code Authority: RZC 21.74.020.J, RMC 15.24.050, RMC 15.24.080, RMC 15.24.082

f. **Temporary Erosion and Sediment Control (TESC).** Rainy season work permitted October 1st through April 30th with a Wet Weather Plan (WWP) incorporated into the CCR plan set. The WWP will be used to apply for a separate WWP permit (as needed) after the Civil SITE Construction permit issuance, and additional WWP permit fees may apply based on the fee schedule at that time.

Code Authority: RMC 15.24.080

g. **Department of Ecology Notice of Intent Construction Stormwater General Permit.** Notice of Intent (NOI) must be submitted to the Department of Ecology (DOE) at least 60 days prior to construction on a site that disturbs an area of one acre or larger. Additional information is available at: https://ecology.wa.gov/Regulations-

Permits/Permits-certifications/Stormwater-general-permits/Construction-stormwater-permit

Code Authority: Department of Ecology Rule

h. **Regional Capital Facilities Charge:** A Regional Capital Facilities Charge applies to this project, located in the Downtown Sub-basin. Please see the Development Engineering Fee Schedule for current fee information.

Code Authority: RMC 13.20.045 (Downtown), RMC 13.20.040 (Citywide)

4. Natural Resources

Reviewer: Jessica Atlakson, Environmental Scientist
Phone: 425-556-2874
Email: jatlakson@redmond.gov

a. **Permanent Dewatering.** Permanent dewatering, including the use of subfloor drains, is prohibited for this site because it is located within the Critical Aquifer Recharge Area.

Code Authority: RMC 13.07.085

b. **Temporary Construction Dewatering**. If temporary construction dewatering is necessary, all documentation must be submitted in accordance with RMC 13.25 and the City's Temporary Construction Dewatering Operating Policy during the review process, including a Temporary Construction Dewatering Feasibility Study and Temporary Construction Dewatering Plan. Civil plan profiles shall depict the seasonal high groundwater level elevation on profiles for all underground elements, including crane footing, foundations, elevator pits, utilities, and stormwater infiltration facilities.

Temporary Construction Dewatering Operating Policy: https://www.redmond.gov/DocumentCenter/View/8140/Temporary-ConstructionDewatering-Operating-Policy-PDF

Code Authority: RMC 13.25

c. **Underground Elevator Cylinders**. Elevators shall meet wellhead and groundwater protection performance standards, including encasement of any underground hydraulic elevator cylinders and using vegetable oil for hydraulic fluid.

Code Authority: RMC 15.24.095

d. Wellhead and Groundwater Protection. Wellhead and groundwater performance standards shall be met as per RMC 15.24.095, including providing the City with all well monitoring and decommissioning reports. A description of meeting these standards shall be provided in the Stormwater Pollution Prevention Plan.

Code Authority: RMC 15.24.095

e. Discovery of Soil Contaminants during Construction. Report any contaminants to the City during project construction and remediate in accordance Washington State reporting and cleanup processes of the Model Toxics Control Act, WAC 173-340.

Code Authority: RMC 15.24.095

5. Fire Department
Reviewer: Scott Turner, Assistant Fire Marshal
Phone: 425-556-2273
Email: sturner@redmond.gov

The current submittal is generally adequate for LAND-2023-00296 Approval but does not fully represent compliance with all requirements. The following conditions are integral to the approval and shall be complied with in Civil Drawings, Building Permit Submittals, Fire Code Permit submittal, and/or other applicable processes:

a. Site Plan Condition

1. Required fire access shall meet all requirements of Redmond Fire Department Standard (RFDS) 2.0: Access and Addressing.
2. Addresses for all structures and suites within will be assigned during the civil review process and shall conform to Redmond Fire Department Addressing Standards.
3. Emergency Medical Services (EMS) access per RMC 15.06 is to be provided to all buildings. The required striping and signage for this location shall be determined in the civil review process.
4. Fire service access and appurtenances shall not be obstructed from deliveries, trash, storage, or other building functions.
5. Required fire access roadways not in the public way are required to be recorded in an Emergency Vehicle Access Easement (EVAE).
6. Required fire access roadways shall be able to support the weight of fire department vehicles: 77,000 pounds and a point load of 45,000 pounds over a 24”x24” pad, or as determined by the City of Redmond Engineer. The access roadways shall be in place when the building exceeds one story above grade.

7. Striping and signage are required for all fire access roadways and will be determined in the civil review process.

b. Fire Protection Plan

1. The building shall be fully sprinklered as per the IFC, NFPA 13 and RFDS 5.0.
2. All areas shall have compliant Class I standpipe coverage, as per IFC, NFPA 14 and RFDS 4.0. Temporary standpipe coverage is required per IFC and RFDS 4.0.
3. All areas shall have an IFC, NFPA 72, and RFDS 9.0 compliant fire detection and alarm system.
4. Fire hydrants shall be located to meet required commercial hydrant spacing and to meet fire flow requirements in the International Fire Code and RMC 15.06. Exact locations will be determined in the civil review process.
5. Hydrants must be in place and serviceable prior to the delivery, use, or storage of combustible building materials on-site or when Type 1A construction is complete.
6. Primary and secondary fire department connections are required and shall meet the requirements of RFDS 5.0
7. During construction, fire mitigation for adjacent buildings may be required per the International Building Code (IBC) and the International Fire Code (IFC) as amended by RMC 15.06.013 A. (59). Proposed plans for fire mitigation shall be submitted with the building permit submittal documents.
8. The water supply capacity shall be capable of providing 3,500 gallons per minute (gpm) to the site and meet all requirements of the City of Redmond Engineer.
9. Per Appendix B (Fire Flow) of the IFC as amended by RMC 15.06, a building separation may be required to limit the fire flow of any one portion of the building to 3,500 gpm. Initial fire flow calculations based on the proposed building square footage and building construction type have been calculated in the SPE process and shall be updated in the civil review and building permit review.
10. See the Fire Code Permit section for other Fire Protection requirements.

c. Change or Modification

1. Determination of adequate fire flow as per RFDS 3.0: Fire Flow has been approximated in the SPE. Any changes in the size and building type of the structure at the time of building permit submittal could result in building changes including the addition of fire walls.
2. If an underground tank is discovered on site, a separate fire permit for removal is required.
3. Required fire access roadways, or "Fire Lanes", may be established at the time of plan review, pre-construction site inspection, and/or post construction site inspection. Additional fire lanes, marking, or re-marking

may be required anytime during the life of the development upon evaluation by and direction of the Fire Marshal.

d. Fire Code Permits

As part of the fire protection plan for this building, all IFC construction permits as described in the IFC Chapter 105.7 as amended by RMC 15.06.013 A.(17) are required. This may include but is not limited to the following permits:

1. Fire Alarm and detection systems and related equipment for an NFPA 72 compliant fire alarm.
2. Fire Sprinkler systems and related equipment for an NFPA 13 compliant fire sprinkler system(s).
3. Standpipe systems for an NFPA 14 compliant standpipe system(s).
4. Fire Pumps and related equipment
5. Emergency Responder Radio
6. Flammable Combustible Liquids
7. Gates and Barricades across fire apparatus access roads
8. Places of Assembly
9. Fixed Fire Suppression systems
10. Solar Photovoltaic systems
11. Smoke Control or exhaust systems
12. Smoke control shall be installed as specified in the IBC and IFC. Depending on the smoke control requirements and design, outside technical review and inspections may be required at the applicant's expense.
12. Demolition of existing structures shall require a permit.
13. Removal of existing underground storage tanks requires a permit.

Code Authority: RMC 15.06; RZC Appendix 2, Redmond Fire Department Standards and Redmond Standard Specifications and Details

6. Planning Department

Reviewer: Alex Hunt, Senior Planner
Phone: 425-556-2475
Email: ahunt@redmond.gov

a. Development Agreement. Development shall be subject to the terms of the executed Development Agreement (LAND-2023-00297). Amendments to the proposed development shall be processed as established in Section 4.5 of the executed Development Agreement.

Code Authority: RZC 21.76

b. **Tree Preservation Plan.** A Tree Health Assessment and Tree Preservation Plan depicting all significant and landmark trees required to be preserved as part of the site development must be provided with the Site Plan Entitlement for each phase.

Code Authority: RZC 21.72.060.D

c. **Exceptional Amenities for Additional Height.** As part of the Exceptional Amenities for Additional Height (EAAH) program, the priority techniques chosen for the development shall be applied across the project limits as required by RZC 21.10.050.C for the development of buildings up to 12 stories tall.

Code Authority: RZC 21.10.050.C

d. **Affordable Housing.** Proposed affordable housing units shall comply with the implementation provisions of RZC 21.20.040, and each phase that includes residential units designated as affordable shall be required to record an Affordable Housing Agreement pursuant to RZC 21.20.080.

Code Authority: RZC 21.20

e. **Noise Report.** A noise report prepared by a qualified acoustical consultant must be submitted and approved prior to civil drawing approval. The noise report shall comply with RMC 6.36 and provide sound attenuation measures.

Code Authority: RMC 6.36.060

f. **Private Open Space.** For each phase containing residential dwelling units, the applicant shall demonstrate compliance with the private usable open space requirements of RZC 21.10.130E.

Code Authority: RZC 21.10.130
Condition Applies: Site Plan Entitlement

g. **Bonds.** Bonds for Landscaping, Tree Preservation, Tree Replacement and Mitigation shall be provided no less than 5 days prior to request for civil construction drawing(s) signatures. Drafts of the Bond Agreements, Bond quantity Worksheets and Bond Calculation Worksheets shall be submitted

at time of Civil Construction Application. If not provided at time of CCR submittal, entire submittal will be rejected for intake.

Code Authority: RZC 21.767.090.F
Condition Applies: Civil Construction Permit

h. Publicly Accessible Open Space. Prior to the issuance of a certificate of occupancy for each phase, a public access easement for any publicly accessible open space and pedestrian network in that phase must be recorded with the King County Recorder's Office. The public access easement(s) shall be in a form approved by the City to ensure that the open space and pedestrian network will remain accessible to the public for the life of the development. This shall be a covenant running with the land, binding on the assigns, heirs, and successors of the applicant.

Code Authority: RZC 21.76.020.D.5.b.

i. Archeological and Historical Preservation: A professional archaeological monitor shall be present to monitor all ground disturbing activities, and an archaeological Monitoring and Inadvertent Discovery Plan (MIDP) shall be prepared and submitted to DAHP and the interested Tribes for review prior to ground disturbance.

Code Authority: RZC 21.30.070.D
Condition Applies: Civil Construction & Building Permit

j. Construction Parking Requirements and Contact Information. A sign shall be posted on-site visible to the public throughout the duration of all construction activity per the Construction Contact Sign Handout. Construction activities consist of all site work including, but not limited to grading, landscaping, infrastructure and building permit related construction. Applicant and contractor shall work with city planner prior to mylar signing to determine location(s) of sign(s). Contact information shall remain up-to-date and visible at all times. The assigned city planner shall be notified within two business days when contact person has been changed and a picture of the updated sign shall be e-mailed. Construction Parking requirements for the project shall be denoted on the bottom portion of the sign per handout instructions.

Code Authority: RZC 21.76.070.B.3.a.ii.A; Comprehensive Plan TR-19

k. **Agency Permits.** The applicant shall be responsible for identifying and obtaining all required permits from other agencies, including local, regional, state and federal permits.

Code Authority: RZC 21.76.070.B
Condition Applies: As determined by the permitting agency

7. Potholing

Reviewer: Jody Conyers, Senior Engineer and Zheng Lu, Utility Senior Engineer
Phone: 425-556-2468 and 425-556-2844
Email: jconyers@redmond.gov and zlu@redmond.gov

All existing utilities at the location of the proposed water/sewer mains, storm and service line crossings shall be potholed prior to submittal of first Civil Plan Review.

Potholing in the City Right-of Way requires a permit, approved traffic control plans, and a performance bond before commencing work. The developer shall include in the Right-of-Way permit, a list of potholing numbers along with the potholing information for each number, such as utility name, type of facility and the reason for potholing.

The developer shall do the following during and after potholing:

1. Follow City of Redmond Detail 203 for pothole restoration.
2. Protect existing traffic loops.
3. Survey all potholing locations.

Based on the final survey, a modified design of sewer, water and storm facilities may be necessary to avoid conflict with existing utilities.

All potholing information shall be included in the plans and profiles of water, sewer and storm design in first submittal of CCR review. The developer shall add clearance information on the water/sewer/storm profiles at all crossings of existing and proposed utilities. Minimum clearance of one foot is required between the sewer/water mains and other utilities including storm sewer.

Code Authority: Water and Wastewater System Extensions Design Requirements Section IV. 3. M and Section V. 3. K; Stormwater Technical Notebook, Issue No. 8, Amended June 5, 2019; Stormwater Technical Notebook, Issue No. 9, Effective July 1, 2022

B. Compliance with City of Redmond Codes and Standards

This approval is subject to all applicable City of Redmond codes and standards, including the following:

Transportation and Engineering

RZC 21.10.150	Downtown Pedestrian System
RMC 6.36	Noise Standards
RZC 21.52	Transportation Standards
RZC 21.40.010.E	Design Requirements for Parking Facilities
RZC 21.54	Utility Standards
RMC 12.08	Street Repairs, Improvements & Alterations
RMC 12.12	Required Improvements for Buildings and Development
RMC 12.16	Highway Access Management
RZC 21.76.100.F.9.C	Nonconforming Landscaping and Pedestrian System Area
RZC 21.76.020.G	Site Construction Drawing Review
RZC 21.76.020.G.3	Preconstruction Conference
RZC 21.76.090.F	Performance Assurance
RZC Appendix 2	Construction Specification and Design Standards for Streets and Access
City of Redmond	Record Drawing Requirements, November 2024
City of Redmond	Standard Specifications and Details (current edition at the time of this approval letter issued)

Water and Sewer

RMC 13.04	Sewage and Drainage
RMC 13.08	Installing and Connecting Water Service
RMC 13.10	Cross-Connection and Backflow Prevention
RZC 21.17.010	Adequate Public Facilities and Services Required
RZC Appendix 3	Design Requirements for Water and Wastewater System Extensions
City of Redmond	Standard Specifications and Details (current edition at the time of this approval letter issued)
City of Redmond	Design Requirements: Water and Wastewater System Extensions – April 2019.

Stormwater/Clearing and Grading

RMC 13.25	Temporary Construction Dewatering
RMC 15.24	Clearing, Grading, and Storm Water Management
RZC 21.32.080	Types of Planting
RZC 21.64	Critical Areas
RZC 21.64.040	Frequently Flooded Areas
RZC 21.64.050	Critical Aquifer Recharge Areas
RZC 21.64.060	Geologically Hazardous Areas
City of Redmond	Standard Specifications and Details (current edition at the time of this approval letter issued)
City of Redmond	Stormwater Technical Notebook, Issue No. 9, Effective July 1, 2022
Department of Ecology	Stormwater Management Manual for Western Washington (July 2019)

Fire

RMC 15.06	Fire Code
RZC Appendix 2	Construction Specification and Design Standards for Streets and Access
City of Redmond	Fire Department Design and Construction Guide
City of Redmond	Fire Department Standards

Planning

RZC 21.10:	Downtown
RZC 21.58, 60, 62	Design Standards
RMC 3.10	Impact Fees
RZC 21.32	Landscaping and Tree Protection
RZC 21.34	Exterior Lighting Standards
RMC 6.36	Noise Standards
RZC 21.38	Outdoor Storage and Service Areas
RZC 21.40	Parking Standards
RZC 21.64	Critical Areas
RZC 21.44	Signs
RZC 21.50	Transition Area Overlay Areas
RZC Appendix 1	Critical Areas Reporting Requirements

Building

RMC 15.08	Building Code
RMC 15.12	Electrical Code
RMC 15.14	Mechanical Code
RMC 15.16	Plumbing Code

RMC 15.18	Energy Code
RMC 15.20	Ventilation and Indoor Air Quality Code

Development Agreement LAND-2023-00297

REDMOND TOWN CENTER DEVELOPMENT AGREEMENT

This DEVELOPMENT AGREEMENT ("Agreement") is entered into this ____ day of _____, 2025 ("Effective Date"), by and between the City of Redmond ("City"), a Washington municipal corporation, and Fairbourne Properties, LLC ("Owner"), a Delaware limited liability company. The City and Owner are referred to collectively as the "Parties" and individually as a "Party."

RECITALS

A. Owner is planning the development of land located at 7525 166th Avenue NE in Redmond, Washington and legally described on the attached Exhibit A (the "Property"). The Property consists of four parcels: Parcel 7202410030, Parcel 7202410010, Parcel 7202410050, and Parcel 7202410020. The Property is located in the Redmond Town Center in the City's Town Center ("TWNC") zone.

B. As allowed by Redmond Zoning Code ("RZC") 21.76.070.P.2.a, Owner has prepared a master plan entitled "Redmond Town Center Master Planned Development" dated _____ ("Master Plan") to provide for coordinated development of the Property. Owner has applied for review under the State Environmental Policy Act, and approval of the Master Plan and this Development Agreement under City File Nos. SEPA-2023-00298, LAND-2023-00296, and LAND-2023-00297 respectively. The Master Plan has been the subject of a public review process that included public review and comment at a neighborhood meeting and recommendations for approval by the City's Design Review Board and Technical Committee. The Redmond City Council also conducted a public hearing to obtain further public comment on the Master Plan and this Agreement.

C. The existing site development includes: six two-story commercial retail buildings: Buildings 3A, 3D, 3B, 3C, 4E, and 4F; two parking garages: I Garage, and G Garage; a single-story restaurant --Building 4B; and a surface parking lot labeled 4IC.

D. The development plan includes site improvements, a two-story addition to an existing parking garage (I Garage), four mixed-use residential buildings (Buildings 4IC-East, 4B, 3A and 3D) and two scenarios for the Building 4IC-West—either a mixed-use residential building or a mixed-use office building ("the Project"). The Project will be developed across multiple, distinct phases during the duration of the Agreement.

E. Environmental impacts of the development proposed by the Master Plan and Site Plan Entitlements were identified and considered through the State Environmental Policy Act ("SEPA") Checklist prepared on November 6, 2023 and Determination of Nonsignificance issued by the Technical Committee on December 6, 2024.

F. Completion of the Project in accordance with this Agreement will promote the goals and policies of the Redmond Comprehensive Plan, including but not limited to, allowing residents and visitors greater access to major employment and transit hubs, emphasizing regional

retail as part of mixed-use developments, and providing a mix of retail and commercial opportunities that meet a range of needs from daily goods and services to niche and boutique retailers, to restaurants and entertainment. The Comprehensive Plan goals furthered by the Project include, but are not limited to: FW-GR-1, FW-CTR-1 , FW-DT-1. LU-7, LU-8, HO-10, HO-13, DT-3, DT-4, DT-5, DT-11, DT-12, and DT-14.

G. RCW 36.70B.170 through 36.70B.210 authorize cities to enter into development agreements with property owners to govern the future development of real property. A development agreement between Owner and the City is a collaboration that will provide mutual benefit for the Parties and the residents and businesses of downtown Redmond.

H. By executing this Agreement, the Parties intend to set forth their mutual agreements and understandings as they relate to the development of the Property and the Project.

AGREEMENT

PURSUANT TO RCW 36.70B.170 through 36.70B.210 and in consideration of, and subject to, the mutual promises, benefits, and obligations set forth herein, the City and Owner enter into the following Development Agreement and agree to be bound by its terms.

1. Land and FAR. The Property governed by this Agreement, exclusive of public right-of-way, consists of approximately 841,913 square feet of land located at 7525 166th Avenue NE, 7345 164th Avenue NE, 7530 164th Avenue NE in Redmond, Washington and legally described on the attached Exhibit A (the "Property"). The Property governed by this Agreement is depicted on Exhibit B to this Agreement. Future dedications of land for right-of-way or other public use or improvements and future acquisitions of right-of-way the City or other public agencies through condemnation or otherwise shall not reduce the land area used for calculating compliance with applicable land use regulations, the development rights provided for in this Agreement, or development rights provided through applicable land use regulations.

2. The Project. The Project is anticipated to be developed in phases. Phase 1 is located on Parcel 7202410020 and will consist of a 2-story addition to an existing parking garage. The current Phase 2 includes two subphases—Phases 2A and 2B. Phase 2A (Building 4IC-East Building) will consist of a 12-story residential building and Phase 2B (Building 4IC-West Building) is expected to include either a 12-story mixed-use residential building or a 12-story office building. The three remaining phases will consist of 7-story mixed-use residential buildings as outlined on page 25 of the Master Plan (Exhibit C) and are identified as Buildings 4B, 3A, and 3D. The Project also proposes limited demolition of up to three buildings to occur in multiple phases as outlined in the Master Plan. To achieve additional building height above the base building height outlined in Table RZC 21.10.050B, the Project will provide Extraordinary Amenities for Additional Height ("EAAH") in accordance with RZC 21.10.050.D. A proposed path for compliance is outlined in the Master Plan (Exhibit C). The Project will also include a publicly accessible linear plaza, enhanced pedestrian crossings connecting NE 74th St with Bear Creek Parkway, plaza and pedestrian improvements to 74th Street, additional bike infrastructure and traffic calming at 164th and 166th Streets, preserve additional trees beyond what is required by Code, and green roofs on non-mechanical or amenity areas of the new buildings (except for the two-story addition to the existing parking garage which does not need to comply with EAAH).

Notably, the Project was also able to eliminate all below grade parking on the Project to avoid negative impacts to the ground water aquifer associated with dewatering.

3. Conformance with Master Plan. The Redmond City Council approved the Master Plan on _____, 2025. Approval of the development shown in the Master Plan and identified in this Agreement is specifically conditioned upon provision of the public amenities and other features identified in the Master Plan and/or this Agreement. The Project shall substantially conform to the Master Plan, including amendments thereto as provided for in RZC 21.76.090(D). In the event of a conflict between the Master Plan and this Agreement, this Agreement shall control.

4. Vested Rights.

4.1 Development Regulations. Development of the Project shall be vested to and governed by City development regulations in effect as of June 27, 2025, pursuant to the provisions of RZC 21.10.150.B as it exists on the Effective Date of this Agreement. Except as expressly stated otherwise herein, any amendments to or additions made during the term of this Agreement to City development regulations shall not apply to or affect the conditions of development of the Project. As used in this Agreement, "development regulations" shall be deemed to include regulations, policies, and guidelines addressing zoning, environmental review (including SEPA procedures and substantive SEPA policies), building and site design, utilities, stormwater, transportation concurrency and other laws, ordinance, policies, and administrative regulations and guidelines of the City governing land development.

4.2 Exemptions. The following are exempt from vesting under this Agreement:

4.2.1 Plan review fees, inspection fees, and transportation, school, and fire impact fees established by schedules, charts, tables, or formulae;

4.2.2 Water, sewer, stormwater, stormwater capital facility charges and other utility connection charges, stormwater monthly billing, general facility charges, Cascade Water Alliance charges, Metro charges, and monthly service charges;

4.2.3 Amendments to building, plumbing, mechanical, fire, and other construction codes adopted pursuant to RCW 19.27 and 19.27A; and

4.2.4 Other City enactments that are adopted pursuant to state or federal mandates (such as, but not limited to, the City's NPDES Municipal Stormwater Permit) that preempt the City's authority to vest regulations.

4.3 City's Reserved Rights. Notwithstanding any other provisions of this Agreement, pursuant to RCW 36.70B.170(4) the City reserves authority to impose new or different officially adopted regulations of general applicability to the extent required by a serious threat to

public health and safety, as determined by the Redmond City Council after written notice and an opportunity to be heard has been provided to Owner.

4.4 Amendments to Agreement and Master Plan. This Agreement and the Master Plan may be amended administratively if the request does not increase the overall project density as described below in this section, does not alter the public benefits described in Sections 12-20 of this Agreement, and does not include a use not approved by this Agreement. When reviewing this administrative modification, due to the conceptual nature of a phased Master Plan, the total amount of square footage or number of dwelling units approved under the Master Plan is that density which was analyzed in the Traffic Impact Analysis (Exhibit E). The location of vehicular and pedestrian access points may be amended through the site plan entitlement deviation procedure, as outlined in the Master Plan and Section 6.1 below. Any amendment not meeting the criteria in this subsection must be approved by the Redmond City Council using the process for consideration of development agreements set forth in the RZC. Changes to the proposed compliance method for providing EAAH in accordance with RZC 21.10.050.D shall not be deemed an Amendment to this Agreement.

5. Term. The term of this Agreement shall be ten (10) years, except as provided in this Section. The Redmond Zoning Code currently limits the term of a master plan approval in Downtown to ten (10) years, with the potential for a five (5) year extension. The City and Owner intend for this Agreement to be in effect for a term concurrent with the Master Plan and intend that any request for extension of the Master Plan will be processed concurrently with an extension of this Agreement, and that any expiration of the Master Plan shall cause this Agreement to expire. The City and Owner agree that if the Master Plan is extended, the term of this Agreement shall likewise be extended for the term of the Master Plan.

6. Development Approvals.

6.1 Flexibility. Detailed plans for development of the Property shall be as approved through the site plan entitlement process, the coordinated civil review process and other approval processes set forth in the RZC, as applicable. The Master Plan is intended to be an overall approved development umbrella, with certain right-of-way improvements, public infrastructure, and public benefits to be delivered in certain phases. As noted in Section 2 of this Agreement, the Master Plan includes two scenarios for development of Building 4IC-West—Site Planning Concept One consists of mixed used multifamily building; Site Planning Concept Two consists of an office building. The Master Plan is not intended to require a specific order to the phased development; square footages, building shapes, or building footprints on specific parcels; or require or preclude access points to/from parcels if deviations to access are sought during the Site Plan Entitlement process. Such graphics and text in the Master Plan shall not constrain the process of designing and approving individual developments, which shall address applicable city-wide and Downtown design guidelines, codes, and standards.

6.2 Conditions. The City shall not impose any condition on the Project, or on any development proposal within the Project, that is inconsistent with the Master Plan, except as authorized in this Agreement or otherwise authorized by applicable City codes or state or federal

regulations, including but not limited to those codes and regulations set forth in Section 4.2 against which Owner is not vested, or under those circumstances set forth in Section 4.3.

6.3 Development Site/Land Division. The size, configuration and number of legal lots or development parcels within the Property may be modified if approved by the City without amendment of the Master Plan through boundary line adjustments, lot consolidations, binding site plans, short plats, subdivisions or the creation of condominiums. Any future land division or consolidation shall not impact the ultimate size of open spaces, infrastructure, or other required public plazas and amenity spaces or public benefits or improvements, unless permitted as an administrative amendment to this Agreement and unless the City obtains like public amenity space, public benefits, or infrastructure.

7. Phasing of Development.

7.1 Description of Phases. Owner will develop the Property in up to five phases that are described in the Master Plan (Exhibit C) at pages 72-76. Amendment of the phasing plan, including the order of commencement for each phase, may be administratively approved by agreement of Owner and the City staff as long as all infrastructure, public amenity space, and public benefits associated with each respective phase are consistent with the public benefits table included in the Master Plan, and each phase provides for adequate mitigation of the impacts associated with the development proposed in that phase.

7.2 Street and Right-of-Way Improvements. Owner will construct the street improvements in phases as shown in the Master Plan and required by the Master Plan conditions of approval in order to mitigate the transportation impacts associated with the Project. The improvements and associated right-of-way are generally shown on pages 60-65, 84 and 91 of the Master Plan (Exhibit C). Changes to the Project that result in administrative amendments to this Agreement under Section 4.5 will not require additional street and/or right of way improvements beyond those described in the Master Plan and this Agreement, so long as the change to the Project generates the same or fewer vehicle trips and/or generally maintains the same trip distribution to the surrounding roadway network as the Project prior to the amendment, based on the methodology of the Transportation Impact Analysis accompanying the Master Plan. Easements and dedications shall be provided for the City of Redmond's review at the time of construction drawing approval and finalized for recording prior to the issuance of a civil site permit. The construction of any street frontage improvement, and the dedication of each completed street frontage improvement and associated right-of-way shall be completed prior to the issuance of a civil site permit in the phase for which the improvement is required, whichever is sooner. Should Owner desire to construct improvements designated for future phases at an earlier time, such work shall be subject to City approval and shall be coordinated with the City. The improvements shall be designed and constructed in accordance with the Master Plan and shall comply with City of Redmond standards and code requirements.

7.3 Utilities. Any required water mains, sewer mains, and storm drainage facilities will be installed in public right-of-way or in easements acceptable to the City. Any necessary right-of-way and easements shall be dedicated or conveyed to the City. Construction of such improvements shall be in accordance with City standards, including but not limited to, the

City's standard construction details and the City of Redmond Stormwater Manual. Owner will construct improvements as shown in the Master Plan in phases according to the phasing schedule approved as part of that Plan. No additional utility improvements will be required to be constructed by Owner, except as outlined in Section 7.4 and as may be necessary to meet state or federal mandates against which Owner is not vested under Section 4.2 and except as may be required by the City under circumstances described in Section 4.3. Changes to the Project that result in administrative amendment to this Agreement will not result in additional utility requirements beyond those described in the Master Plan and its conditions of approval, provided that there is no increase in stormwater runoff as the result of the amendment and provided that the utility demands of the amendment do not exceed the capacity of the proposed Master Plan utilities or the City utility system used by the Project. Deviations from the Master Plan that provide materially equivalent utility service and that comply with City standards may be proposed by the Owner and approved administratively by the City staff without amendment of the Master Plan or this Agreement.

7.4 Additional Sewer Connection Charge. The Owner acknowledges that sewer infrastructure improvements are needed to support additional zoning density in the Redmond Town Center zone. Owner agrees to pay any applicable additional connection charge that is assessed by the City through Council-approved Resolution No. [XXX], in accordance with [section] of the Resolution. If no additional connection charge is assessed through an approved resolution, Owner acknowledges that no additional development can occur unless and until the sewer system is upgraded as required to support the increased flows only from the proposed development. Both Owner and City acknowledge that (i) interim upgrades to the sewer system, including piecemeal upgrades to the lift station, that do not create the necessary capacity for the full Basin are not the preferred method of creating additional capacity, and, (ii) in the event the City does not pass a resolution based on an equitable share of the costs which have been incurred by the City to design, engineer, construct, and install the sewer system improvements, the financial burden to upgrade the entire basin system may be unfeasible for Owner to support entirely, even with a Reimbursement Agreement in place. Therefore, in the event the City does not pass a resolution, Owner and City agree to work in good faith to determine if interim improvements that support this development are available, provided said interim improvements are deemed reasonable and proportionate.

8. Transportation Impact Fees and Credits.

8.1 Generally. Except as otherwise provided in this Agreement, Owner shall pay transportation impact fees for the Project in effect at the time building permits are issued for each building.

8.2 Calculation of Transportation Impact Fees. The City's method and procedure for calculating net new project demand for mobility units for purposes of transportation impact fees shall account for structures currently existing on the Property ("Existing Structure"). There are three Existing Structures on the Property that are anticipated to be replaced with a new structure. The City agrees that, for purposes of evaluating Transportation Impact Fees, Owner will receive credit for 8,738 s.f. of shopping center use in Building 4B, 47,799 s.f. of shopping center use space in Building 3A, and 41,287 s.f. shopping center use for the Building 3D, as detailed in

the Traffic Impact Analysis dated March 28, 2025 (Exhibit E). Upon demolition of any Existing Structure, credit for reduction of existing demand for mobility units attributable to such Existing Structure shall automatically accrue to the owner of the Existing Structure. The credit may be used in whole or part by such owner to reduce the demand for mobility units attributable to such owner's development within the Master Plan Property or may be assigned to another owner or developer of property within the Master Plan Property. Credits may only be used in the calculation of net new mobility unit demand for development within the Master Plan Property and may not be used in connection with any development located outside of the Master Plan Property. Consistent with the Redmond Municipal Code (RMC) 3.10.120, at the time of building permit issuance, the Owner may choose to use the City's standard traffic impact fee rates outlined in the schedules in RMC 3.10.100 for the year of the building permit issuance, or have an independent study conducted to develop unique transportation impact fee rates. All independent fee calculation studies shall meet the standards outlined in RMC 3.10.120 and shall be submitted to the City for review and approval.

8.3 Credits against Transportation Impact Fees. Per the City of Redmond Municipal Code Chapter 3.10, Section 3.10.130.A, whenever a development approval is conditioned upon a developer's conveyance of land for and/or construction of specified system improvements, the developer shall be entitled to a credit against the impact fee that would be imposed for the value of the land or property interest conveyed and/or the actual cost of construction. The total amount of credit granted shall not exceed the total amount of the impact fee the Owner is required to pay upon completion of the Project. If the amount of credits in a particular phase exceeds the amount of the impact fee required for that phase, Owner may apply the remaining credit against impact fees required for future phases of development in the Project.

In consideration of Owner constructing the transportation improvements as set forth in this agreement and shown in the Master Plan, the city shall credit against all Redmond transportation impact fees due to the City the total project cost (including land value, design, permit fees, construction costs, and right-of-way dedications) of improvements made and listed in the Redmond Transportation Facilities Plan (TFP) or subsequently added to the plan or its successor. If not already part of the TFP, City staff shall propose for City Council decision the inclusion in the TFP of all transportation improvements listed below. In the event Owner pays all or part of the cost of a TFP project in lieu of construction, the credit shall be determined consistent with RMC 3.10.130.A.1.

8.3.1 Street frontage improvements and mid-block pedestrian crossing improvements on Bear Creek Parkway
8.3.2 Street frontage improvements on NE 76th Street
8.3.3 Intersection improvements at NE 76th Street/166th Ave NE

In order to accommodate Owner construction of transportation improvements prior to City Council decision on inclusion in the TFP, and pursuant to Redmond Municipal Code Chapter 3.10, Section 3.10.130.A, the total cost of improvements shall be estimated prior to any impact fee payment made by Owner and credited against such payment. Owner shall be required to provide a performance assurance device acceptable to the City for the amount of such credit. If the Redmond City Council has approved amendment of the TFP to include any or all the improvements described above as transportation improvements, City shall release Owner from its performance assurance requirement upon completion of the transportation improvements, pursuant to Redmond

Municipal Code Chapter 3.10, Section 3.10.130.D. In the event the City Council has approved amendment of the TFP and the transportation improvements described above are not included, Owner shall pay the remaining traffic impact fees equal to the amount of the credit received. If the City Council has not yet voted on the TFP by the completion of the Project, Owner shall be required to extend or provide a new performance assurance device in the amount of such credit for the time period of the extension.

9. Transportation Management.

9.1 Transportation Mitigation. On-site street and right of way improvements required to mitigate the transportation impacts associated with the Project are outlined in the Master Plan. No additional on-site or off-site transportation mitigation will be required for construction of the Project. Changes to the Project that result in administrative amendments to this Agreement will not result in additional transportation mitigation beyond those described in the Master Plan and this Agreement, so long as the change to the Project generates the same or lesser trips as anticipated with the development outlined in Master Plan, based on the methodology of the Transportation Impact Analysis accompanying the Master Plan.

9.2 Transportation Concurrency Certificate for Development Proposed on or before December 31, 2030. Pursuant to RZC 21.52.010.B.7, development proposed in a building permit application submitted to the City on or before December 31, 2030 as part of Phase I or subsequent phases, as described in the Master Plan, shall be deemed to have met the transportation concurrency requirements set forth in the RZC, so long as the change to the Project generates the same or lesser trips as the project approved as part of the Master Plan, based on the methodology of the Transportation Impact Analysis (Exhibit E) accompanying the Master Plan.

9.3 Transportation Concurrency Certificate for Development Proposed After December 31, 2030. No building permit shall be issued for any new development proposed in a building permit application submitted to the City after December 31, 2030 until the transportation concurrency requirements set forth in RZC 21.52.010 as of the date of this Agreement have been satisfied.

10. **Pedestrian Generating Uses.** Table RZC 21.10.050.B provides that "[n]ew development must retain or replace existing pedestrian generating and retail sales uses." The Code further allows an applicant to modify areas allocated to pedestrian generating and retail sales uses, subject to a minimum floor area to be negotiated as a condition to any Development Agreement.

10.1 Pedestrian Generating Uses Definition. Pedestrian generating uses are not defined in the Code. The Parties agree that pedestrian generating uses include the following subset of uses: Retail; Food and Beverage; personal service uses (subset of Business and Service); copy centers and parcel and mail centers; the customer service portion of financial institutions; Arts, Entertainment, Recreation, and Assembly, Amusement, Sports, Recreation Establishments, and Athletic Clubs and Fitness Centers.

10.2 **Applicability of Pedestrian Generating and Retail Sales Uses Requirement.** The City interprets new development to include any changes of use within the Project Limit. Even though the Master Plan will only impact the existing pedestrian generating and retail sales uses located within Buildings 4IC-East, 4IC-West, 4B, 3A and 3D, and the I Garage as shown in the Master Plan (Exhibit C), the minimum floor area for pedestrian generating and retail sales uses will apply to all buildings within the Project Limit.

10.3 **Minimum Required Pedestrian Generating and Retail Sales Uses.** The Parties agree that the minimum pedestrian generating and retail sales uses as defined in subsection 10.1 to be retained within the Project Limit is _170,000 s.f. This minimum limit will apply upon the Effective Date of this Agreement. Owner will submit to the City an annual report during the Term of this Agreement upon request from the City (which request shall be no more frequently than once per calendar year). If an existing tenant vacates space designated as a pedestrian generating or retail sales use, the vacant space shall not, on a stand-alone basis, cause Owner to fall out of compliance with this provision.

11. **Phasing Exceptional Amenities for Additional Height.** The Master Plan demonstrates the Project's compliance with RZC 21.10.050.D to obtain the additional height for the Project. RZC 21.10.050.D.1.c.v.C provides that, "[i]f construction of a multi-building development is to be phased, each phase shall provide for a proportionate installation of amenities." The currently anticipated phasing plan to provide exceptional amenities for additional height under the Residential Option and the Office Option is outlined on p. 23 of the Master Plan (Exhibit C).

11.1 **Fee in Lieu.** RZC 21.10.050.D.1.c.v.C provides that "[n]o phase may depend upon the future construction of amenities unless the development agreement includes a phasing plan that will ensure the public benefit of the amenity is received through on-site development or in-lieu fee payment within a prescribed time horizon." In the Office Option, if the office building at Building 4IC-West is built prior to the residential building at Building 4IC-East, Owner shall pay into escrow a fee in lieu as calculated in Section 11.1.1. If the residential building at Building 4IC-East does not begin construction by the earlier of (i) five years following completion of the office building at Building 4IC-West, or, (ii) the expiration of this Agreement, the fee in lieu shall be released from escrow and paid to the City by the 30th of the following Month. If the fee is paid to the City, the fee in lieu would satisfy the affordable housing requirements for the residential building planned at Building 4IC-East. If the residential building at Building 4IC-East begins construction within the timeframe outlined above, the fee in lieu shall be released from escrow and returned to the Owner by the 30th of the month following commencement of construction.

11.1.1 Fee in Lieu Calculation. The fee has been calculated using the fee-in lieu provisions in RZC 21.20.050.B.2 in effect as of the Effective Date of this agreement. The Parties agree that the calculated fee shown in Exhibit D of this Agreement is the initial fee for the fee in lieu. The fee will be adjusted for the final unit counts included in Building 4IC-East at the time of SPE application (if applicable) and increased by the Seattle Area Case-Schiller Home Price Indes on an annual basis from the date of execution of the Development Agreement until payment.

11.2 Local Commercial Uses. One method for providing EAAH is to provide "10% of new ground level commercial space or a total of 7,000 square feet of total commercial space dedicated to local commercial," as defined in RZC Table 21.10.050C. Total commercial space includes all tenant space within the Project site. A proposed tenant will be determined to fall within the "local commercial" definition at the time of the initial Tenant Improvement permit application and will continue to be considered a "local commercial" use even if the business expands to additional locations in the future. If this method is used, Owner will demonstrate initial compliance by documenting in each Site Plan Entitlement application for a new building its compliance with this provision. After receipt of the Certificate of Occupancy issued for the first building constructed under this Master Plan utilizing EAAH, Owner will submit to the City a subsequent annual report during the Term of this Agreement upon request from the City (which request shall be no more frequently than once per calendar year). Vacant space or an existing tenant vacating space shall not, on a stand-alone basis, cause Owner to fall out of compliance with this provision.

11.3 Small Commercial Uses. An additional method for providing EAAH is to provide "the lesser of 25% or 4,000 s.f. of new commercial space no larger than 1,000 square feet." If this method is used, Owner will demonstrate initial compliance by documenting in each Site Plan Entitlement application for a new building its compliance with this provision. After receipt of the Certificate of Occupancy issued for the first building constructed under this Master Plan utilizing EEAH, Owner will submit to the City a subsequent annual report during the Term of this Agreement upon request from the City (which request shall be no more frequently than once per calendar year). Vacant space, or an existing tenant vacating space shall not, on a stand-alone basis, cause Owner to fall out of compliance with this provision.

11.4 Sustainable Development. Owner will achieve LEED Platinum certification, or equivalent, for all new buildings in Phases 2-5. The addition to the parking garage (Phase 1) is not required to achieve any green building certification. Owner will, as a condition of issuance of a Certificate of Occupancy for each new building, provide the certification of compliance with this requirement for the building seeking a Certificate of Occupancy.

12. Enhanced Tree Preservation. Owner will preserve up to 60% of existing significant trees, while the code requires only 35% preservation, as outlined in page 73 of the Master Plan (Exhibit C). The percentage of trees to be retained may be reduced as an administrative amendment so long as the total amount of trees to be preserved exceeds 45% on the development site.

13. Linear Pedestrian Plaza. Owner will construct, operate, and maintain an approximately 20,566 square feet multi-purpose pedestrian plaza that connects 73rd Way with Bear Creek Parkway, as depicted in the approved Master Plan (Exhibit C) to be constructed with Buildings 4IC-East and 4IC-West, whichever is first. Owner shall maintain the plaza in a safe, clean, and sanitary condition. The public shall be allowed access to the public plaza at all times except during periods that the plaza must be closed for any necessary maintenance or repair. Owner may establish reasonable rules for the use of the plaza as long as such rules do not unreasonably limit public access.

14. NE 74th Street Improvements. Owner will convert NE 74th Street from 164th Street NE to 166th Street NE into a pedestrian-first public plaza by incorporating alternative paving, additional landscaping, street furniture and lighting. These improvements will create or maintain approximately 71,731 square feet of dedicated additional open space and pedestrian space. The new 74th St paving design will extend across 164th and 166th streets with tabletop intersections to provide traffic calming and prioritize pedestrian circulation. The timing of the proposed improvements will coincide with the development of the adjacent Buildings 3A or 3D, whichever comes first. Buildings 3A and 3D are currently anticipated to occur to be constructed in Phases 4 and 5, respectively.

15. Mid-Block Crossing(s). Owner will construct mid-block crossing at 73rd Way between 164th and 166th Ave with Phase 2, as part of the 4IC buildings, and additional mid-block crossings at 72nd Way and Bear Creek Parkway between 164th and 166th Street as part of the construction of Building 4B, currently anticipated to be constructed in Phase 3.

16. Additional Intersection Improvements. Owner will construct enhanced pedestrian intersection improvements at 166th and 76th Street, (similar to the existing Leary and Cleveland St intersection) including signalized pedestrian crossing from the light rail station, raised crossing and accessible curb ramps extensions, and special paving. These improvements will be constructed as part of Phase 3.

17. Green Roofs. The proposed project will include green roofs on non-mechanical or amenity areas of new building rooftops, excluding the two-story garage addition at the I Garage.

18. Bike Infrastructure. Owner will construct bicycle facilities on NE 164th Street and NE 166th Street to link existing bike lanes and trails through the site and connect to the new light rail station. The bicycle improvements along NE 164th Street will occur as part of the construction of Building 4IC-West, currently anticipated to be built in Phase 2A. The bicycle improvements along NE 166th Street will occur as part of the construction of Building 4IC-East, currently anticipated to be built in Phase 2B.

19. Enhanced Pedestrian Oriented Design. The Owner will provide several enhancements intended to improve the pedestrian experience consistent with the precedent character examples outlined in pages 30-35 of the Master Plan (Exhibit C). Specifically, Owner will provide (1) overhead weather protection along new commercial retail facades that exceed code requirements, (2) pedestrian scaled lighting through building mounted lighting, light bollards, or

pedestrian scaled light poles at pedestrian gateways, (3) a minimum of 100 SF of furnished seating groups/gathering areas at the Linear N-S Pedestrian Plaza between buildings 4ICW and 4ICE and Gateways 1 and 2, (4) and overhead catenary lighting or art installation between buildings 4ICW and 4ICE. These enhanced Pedestrian-Oriented Design elements will be provided on a phased basis during the corresponding construction phase of new building construction physically closest to the respective improvement. The NE 74th St. enhancements will be completed with the earlier of Phase 4 or 5.

20. Groundwater aquifer impact mitigation. RZC 21.10.050 permits one story of below grade parking to serve as replacement retail parking. Despite this allowance, Owner agrees that no new below-grade parking will be constructed as part of the Project.

21. Public Benefit. The City agrees that the commitments made by Owner under this Agreement provide sufficient public benefit to meet the requirements of RZC 21.76.070.L.3.e.

22. Transfer of Ownership. In the event of transfer of ownership of all or any portion of the Property, the benefits accruing to, and the obligations placed upon the Owner under this Agreement shall run with the land and title to the Property and inure to the benefit of, and be binding upon, each person having any right or title or other legal interest in the Property with respect to that party's interest in the Property. This Agreement shall be deemed to create privity of contract and estate with and among all persons and entities acquiring any interest in the Property subsequent to the date hereof.

23. Miscellaneous Provisions.

23.1 Code Citations. All citations and references to the Redmond Zoning Code and Redmond Municipal Code in this Agreement shall refer to those provisions in force as of the date of this Agreement.

23.2 Recording. This Agreement shall be recorded with the King County Recorder's Office. The provisions of this Agreement shall run with the land and be binding upon and inure to the benefit of the Parties, their successors in interest and assigns.

23.3 Amendments. Amendments to this Agreement shall be governed by Section 4.5 above.

23.4 Specific Performance. The Parties specifically agree that damages are not an adequate remedy for breach of this Agreement and that the Parties are entitled to specific performance of all terms of this Agreement by any Party in default hereof.

23.5 Governing Law - Venue. This Agreement shall be governed and construed in accordance with the laws of the State of Washington, notwithstanding any conflicts of law provisions. Venue for any litigation under this Agreement shall be King County Superior Court.

23.6 Notices. All notices and other communications required or otherwise provided for by this Agreement shall be in writing and shall be given to the following persons:

City of Redmond:
Attention: Carol Helland
Director of Planning and
Community Development
P.O. Box 97010
Mail Stop: 4SPL
Redmond, WA 98073-9710

Fairbourne Properties LLC
Attention: _____'=
200 S Michigan Avenue, Suite 400
Chicago, IL 60601

And to its Attorney:
Attention: Rebecca Mueller
Redmond City Attorney
P.O. Box 97010
Mail Stop: 4SPL
Redmond, WA 98073-9710

And to its Attorney:
McCullough Hill, PLLC
Attention: Katie Kendall
701 Fifth Avenue, Suite 6600
Seattle, WA 98104

The Parties may, from time-to-time, notify each other in writing of changes in the names and addresses of persons to receive notices and communications and such changes shall become effective upon receipt by the non-notifying Party. Notices shall be deemed received within three days after being placed in the United States Mail, properly addressed and postage prepaid, or upon personal delivery.

23.7 Full Understanding – Construction. The Parties each acknowledge, represent and agree that they have read this Agreement, that they fully understand the terms thereof; that they have had the opportunity to be fully advised by their legal counsel and any other advisors with respect thereto; and that they are executing this Agreement after sufficient review and understanding of its contents.

23.8 Attorney's Fees. If either Party institutes litigation against the other Party to enforce any provision of this Agreement or to redress any breach thereof, the prevailing Party shall be entitled to recover its costs and reasonable attorney's fees incurred in such litigation.

23.9 Severability. If any section, sentence, clause or phrase of this Agreement is determined to be invalid or unconstitutional by any court of competent jurisdiction, the remaining sections, sentences, clauses and phrases shall remain viable and in full force and effect.

23.10 Counterparts. This Agreement may be executed in counterparts, with each Party sending a .pdf of its signature to the other Party via email transmission. This Agreement, when fully executed and signature pages exchanged as provided herein shall be effective as the original document.

23.11 Equal Opportunity to Participate in Drafting. The Parties have participated and had an equal opportunity to participate in the drafting of this Agreement. No ambiguity shall be construed against any Party based upon a claim that such Party drafted the ambiguous language.

23.12 Exhibits. This Agreement includes the following Exhibits:

Exhibit A: Legal Description of the Property
Exhibit B: Depiction of the Property
Exhibit C: Master Plan
Exhibit D: Fee-in-Lieu Calculation
Exhibit E: Traffic Impact Analysis

23.13 Final and Complete Agreement. This Agreement constitutes the final and complete expression of the Parties on all subjects relating to the development of the Property. This Agreement supersedes and replaces all prior agreements, discussions and representation on all subjects relating to the development of the Property. Neither Party is entering into this Agreement in reliance on any oral or written promises, inducements, representations, understandings, interpretations or agreements other than those contained in this Agreement and the exhibits hereto.

23.14 Effect of Expiration or Termination. Upon expiration or sooner termination of this Agreement, all rights and obligations of the Parties under this Agreement shall terminate and be of no further effect. All development for which a permit is issued after the expiration or termination of this Agreement shall be required to comply with all applicable development regulations in effect at that time and shall be required to pay impact fees in effect at the time of permit issuance. All development for which a permit is issued after expiration or termination of this Agreement shall be required to satisfy any applicable concurrency requirements notwithstanding the issuance of any concurrency certificate during the effective period of this Agreement. All development for which a permit is issued after the expiration or sooner termination of this Agreement shall be subject to SEPA review if not previously completed and may be conditioned to mitigate any environmental impacts of such development, notwithstanding any mitigation provided during the term of this Agreement and the City shall not be required to credit any mitigation provided during the term of this Agreement against any mitigation subsequently determined necessary to mitigate the environmental impacts of any development for which a permit is issued after expiration or sooner termination of this Agreement. It is the intent of the Parties that the requirements of this Agreement shall apply only during its term and that once this Agreement has expired or is terminated, all rights created by the terms of this Agreement will have expired or terminated. All conditions of any permit approvals shall continue to apply, however, as long as the development approved by such permits remains on the Property.

IN WITNESS WHEREOF, the Parties have executed this Agreement as of the date first set forth above.

FAIRBOURNE PROPERTIES, LLC **a Delaware limited liability company**	**CITY OF REDMOND**
By: _____	**By: _____**
Its Manager	**Angela Birney** **Its: Mayor**
Date:_____	**Date: _____**

Attest:

_____

Cheryl D. Xanthos, City Clerk

APPROVED AS TO FORM:

_____

Rebecca Mueller, City Attorney

STATE OF WASHINGTON)
) ss.
COUNTY OF _____)

I certify that I know or have satisfactory evidence that _____ is the person who appeared before me, and said person acknowledged that (he/she) signed this instrument, on oath stated that (he/she) was authorized to execute the instrument and acknowledged it as the _____ of _____ to be the free and voluntary act of such party for the uses and purposes mentioned in the instrument.

DATED: _____

_____
Printed:_____
NOTARY PUBLIC in and for Washington
Residing at: _____

My appointment expires: _____

STATE OF WASHINGTON)
) ss.
COUNTY OF KING)

I certify that I know or have satisfactory evidence that Angela Birney is the person who appeared before me, and said person acknowledged that he signed this instrument, on oath stated that he was authorized to execute the instrument and acknowledged it as the Mayor of the CITY OF REDMOND, to be the free and voluntary act of such party for the uses and purposes mentioned in the instrument.

DATED: _____

_____
Printed: _____
NOTARY PUBLIC in and for Washington
Residing at: _____
My appointment expires: _____

EXHIBIT A

LEGAL DESCRIPTION OF PROPERTY

SITE NOTES

SITE ADDRESSES:
7530 164TH AVE NE
7345 164TH AVE NE
7330 164TH AVE NE
7211 166TH AVE NE
REDMOND, WA 98052

TAX ACCOUNT NOS.:
720241-0010-00
720241-0010-91
720241-0020-08
720241-0030-06
720241-0050-01
720241-0134-01

ZONING:
TWNC – TOWN CENTER NEIGHBORHOOD COMMERCIAL

ZONING AGENCY:
CITY OF REDMOND
PLANNING DEPARTMENT
15670 NE 85TH STREET
REDMOND, WA 98073
(425) 556-2440

SETBACKS:
CURRENT SETBACK REQUIREMENTS SUBJECT TO SITE PLAN REVIEW. CURRENT SETBACKS MAY DIFFER FROM THOSE IN EFFECT DURING DESIGN/CONSTRUCTION OF EXISTING IMPROVEMENTS.

THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY BY THE GOVERNING JURISDICTION INDICATES THAT STRUCTURES ON THIS PROPERTY COMPLIED WITH MINIMUM SETBACK AND HEIGHT REQUIREMENTS FOLLOWING CONSTRUCTION.

FLOOD ZONE:
THIS SITE APPEARS ON NATIONAL FLOOD INSURANCE RATE MAP, DATED AUGUST 19, 2020, COMMUNITY PANEL NO. 53033C0386H, AND IS SITUATED IN ZONE "X", AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.

AREA:
PARCEL 1-A AS SHOWN CONTAINS 338,510 SQUARE FEET OR 7.7711 ACRES, MORE OR LESS.
PARCEL 1-B AS SHOWN CONTAINS 123,429 SQUARE FEET OR 2.8335 ACRES, MORE OR LESS.
PARCEL 1-C AS SHOWN CONTAINS 362,023 SQUARE FEET OR 8.3109 ACRES, MORE OR LESS.
PARCEL 1-E AS SHOWN CONTAINS 18,409 SQUARE FEET OR 0.4226 ACRES, MORE OR LESS.
PARCEL 5-C AS SHOWN CONTAINS 67,556 SQUARE FEET OR 1.5509 ACRES, MORE OR LESS.(NOT INCLUDED IN TITLE REPORT)
PARCEL 5-D AS SHOWN CONTAINS 24,998 SQUARE FEET OR 0.5739 ACRES, MORE OR LESS.

TOTAL SITE AS SHOWN CONTAINS 934,915 SQUARE FEET OR 21.4627 ACRES, MORE OR LESS.

**PARKING SPACE COUNT:*
PARKING SPACES TOTAL 1,664 INCLUDING 45 DISABLED PARKING SPACES AND 5 ELECTRIC VEHICLE STATIONS. 7 PARKING SPACES CONVERTED TO CAR WASH AREA NOT INCLUDED.

SUBSTRUCTURES:
BURIED UTILITIES ARE SHOWN AS INDICATED ON RECORDS MAPS FURNISHED BY OTHERS AND VERIFIED WHERE POSSIBLE BY FEATURES LOCATED IN THE FIELD. WE ASSUME NO LIABILITY FOR THE ACCURACY OF THOSE RECORDS. FOR THE FINAL LOCATION OF EXISTING UTILITIES IN AREAS CRITICAL TO DESIGN CONTACT THE UTILITY OWNER/AGENCY.

TELECOMMUNICATIONS/FIBER OPTIC DISCLAIMER:
RECORDS OF UNDERGROUND TELECOMMUNICATIONS AND/OR FIBER OPTIC LINES ARE NOT ALWAYS AVAILABLE TO THE PUBLIC. BRH HAS NOT CONTACTED EACH OF THE MANY COMPANIES, IN THE COURSE OF THIS SURVEY, WHICH COULD HAVE UNDERGROUND LINES WITHIN ADJACENT RIGHTS-OF-WAY. THEREFORE, BRH DOES NOT ACCEPT RESPONSIBILITY FOR THE EXISTENCE OF UNDERGROUND TELECOMMUNICATIONS/FIBER OPTIC LINES WHICH ARE NOT MADE PUBLIC RECORD WITH THE LOCAL JURISDICTION. AS ALWAYS, CALL 1-800-424-5555 BEFORE CONSTRUCTION.

DESCRIPTION:

PARCEL A:
PARCELS 1-A AND 1-B, REDMOND TOWN CENTER, A BINDING SITE PLAN, ACCORDING TO THE PLAT THEREOF RECORDED IN VOLUME 176 OF PLATS, PAGES 56 THROUGH 67, INCLUSIVE, IN KING COUNTY, WASHINGTON; AND REVISED PARCEL 1-C, REDMOND TOWN CENTER, AMENDED BINDING SITE PLAN OF PARCELS 1-C AND 1-D, ACCORDING TO THE PLAT THEREOF RECORDED IN VOLUME 271 OF PLATS, PAGES 89 THROUGH 92, INCLUSIVE, IN KING COUNTY, WASHINGTON; AND PARCEL 1-E, REDMOND TOWN CENTER, AMENDED BINDING SITE PLAN OF PARCELS 1-C AND 1-E, ACCORDING TO THE PLAT THEREOF RECORDED IN VOLUME 261 OF PLATS, PAGES 11 THROUGH 16, INCLUSIVE, IN KING COUNTY, WASHINGTON;

PARCEL A-1:
THOSE CERTAIN NON-EXCLUSIVE EASEMENTS AS DESCRIBED IN THAT CERTAIN FIRST AMENDED AND RESTATED DECLARATION OF COVENANTS, CONDITIONS AND RESTRICTIONS FOR REDMOND TOWN CENTER DATED DECEMBER 17, 1996, BY AND BETWEEN TOWN CENTER ASSOCIATES AND WALLS, BUTLER, MADDEN & TEEL, L.P., RECORDED DECEMBER 30, 1996 UNDER RECORDING NO. 9612301015 AND AMENDED BY INSTRUMENTS RECORDED UNDER RECORDING NOS. 9710220652, 9812040966, AND 20191206000770, IN KING COUNTY, WASHINGTON.

SURVEYOR'S NOTE: NOT PLOTTABLE.

PARCEL A-2:
THOSE CERTAIN EASEMENTS AS DESCRIBED IN THAT CERTAIN EASEMENT AGREEMENT DATED MAY 2, 1996, BY AND BETWEEN TOWN CENTER ASSOCIATES AND LAKE WASHINGTON SCHOOL DISTRICT NO. 414, RECORDED MAY 3, 1996 UNDER RECORDING NO. 9605031084, IN KING COUNTY, WASHINGTON.

SURVEYOR'S NOTE: IDENTIFIES COMMON AREAS IN ENTIRE BINDING SITE PLAN BEING ROADWAYS WITHIN BINDING SITE PLAN. BLANKET OVER ROADWAYS.

PARCEL A-3:
THOSE CERTAIN NON-EXCLUSIVE EASEMENTS AS DESCRIBED IN THAT CERTAIN EASEMENT AGREEMENT DATED AUGUST 28, 1997, BY AND BETWEEN TOWN CENTER ASSOCIATES AND REDINN HOTEL, L.P., RECORDED FEBRUARY 26, 1998 UNDER RECORDING NO. 9802262288, IN KING COUNTY, WASHINGTON, BEING A RE-RECORDING OF DOCUMENT RECORDED UNDER RECORDING NO. 9709030819.

SURVEYOR'S NOTE: IDENTIFIES COMMON AREAS IN ENTIRE BINDING SITE PLAN BEING ROADWAYS WITHIN BINDING SITE PLAN. BLANKET OVER ROADWAYS.

PARCEL A-4:
THOSE CERTAIN NON-EXCLUSIVE EASEMENTS AS DESCRIBED IN THAT CERTAIN EASEMENT AGREEMENT DATED MARCH 13, 1998, BY AND BETWEEN TOWN CENTER ASSOCIATES AND RECREATIONAL EQUIPMENT, INC., RECORDED MARCH 13, 1998 UNDER RECORDING NO. 9803131453, AND AMENDED BY INSTRUMENTS RECORDED UNDER RECORDING NOS. 20020405002627 AND 20020910000707, IN KING COUNTY, WASHINGTON.

SURVEYOR'S NOTE: IDENTIFIES COMMON AREAS IN ENTIRE BINDING SITE PLAN BEING ROADWAYS WITHIN BINDING SITE PLAN. BLANKET OVER ROADWAYS.

PARCEL A-5:
THOSE CERTAIN GRANT OF EASEMENTS AS DESCRIBED IN THAT CERTAIN EASEMENT AGREEMENT DATED JULY 12, 1999, BY AND BETWEEN PPR REDMOND RETAIL LLC AND PPR REDMOND OFFICE LLC, RECORDED JULY 12, 1999 UNDER RECORDING NO. 19990712002115, IN KING COUNTY, WASHINGTON.

SURVEYOR'S NOTE: IDENTIFIES COMMON AREAS IN ENTIRE BINDING SITE PLAN BEING ROADWAYS WITHIN BINDING SITE PLAN. BLANKET OVER ROADWAYS AND AS DESCRIBED IN RECORDED DOCUMENT.

PARCEL A-6:
THOSE CERTAIN EASEMENT GRANT AS DESCRIBED IN THAT CERTAIN PROJECT AGREEMENT DATED AUGUST 27, 2002, BY AND BETWEEN PPR REDMOND RETAIL LLC, PPR REDMOND OFFICE LLC AND REDMAR PROPERTY L.P., RECORDED AUGUST 30, 2002 UNDER RECORDING NO. 20020830002260, IN KING COUNTY, WASHINGTON, AND AMENDED BY THAT CERTAIN UNRECORDED FIRST AMENDMENT TO PROJECT AGREEMENT.

SURVEYOR'S NOTE: NOT PLOTTABLE.

PARCEL A-7:
THOSE CERTAIN GRANT OF EASEMENTS AS DESCRIBED IN THAT CERTAIN OPERATION AND EASEMENT AGREEMENT DATED AUGUST 31, 2012, BY AND BETWEEN PPR REDMOND RETAIL LLC, PPRT REDMOND OFFICE I LLC AND PPRT REDMOND OFFICE I LLC, RECORDED OCTOBER 8, 2012 UNDER RECORDING NO. 20121008000641, AND AMENDED BY INSTRUMENT RECORDED UNDER RECORDING NO. 20130529002316, IN KING COUNTY, WASHINGTON.

SURVEYOR'S NOTE: NOT PLOTTABLE, IDENTIFIES UTILITY EASEMENTS IN COMMON ROADWAY AREAS AND ROADWAY EASEMENTS BEING ROADWAY WITHIN BINDING SITE PLANS.

PARCEL A-8:
THAT CERTAIN EASEMENT GRANT AS DESCRIBED IN THAT CERTAIN EASEMENT AGREEMENT DATED SEPTEMBER 2, 1997, BY AND BETWEEN REDINN HOTEL, L.P. AND TOWN CENTER ASSOCIATES, RECORDED SEPTEMBER 3, 1997 UNDER RECORDING NO. 9709030820, IN KING COUNTY, WASHINGTON; (BENEFITS PARCELS 1-A OF SAID REDMOND TOWN CENTER, A BINDING SITE PLAN).

PARCEL A-9:
THOSE CERTAIN EASEMENTS FOR CURB CUTS, ENTRANCES, DRIVE AISLES AND RAMPS, AND FOR PEDESTRIAN AND VEHICULAR TRAFFIC AS ESTABLISHED BY DECLARATION OF COVENANTS, CONDITIONS AND RESTRICTIONS – PARCEL 5-B REDMOND TOWN CENTER, RECORDED DECEMBER 29, 2015, UNDER RECORDING NUMBER 20151219000777, AND AMENDED BY INSTRUMENT RECORDED UNDER RECORDING NUMBER 20190712000715.

PARCEL D:
NEW PARCEL 5-D, REDMOND TOWN CENTER, AMENDED BINDING SITE PLAN OF PARCEL 5-B, ACCORDING TO THE PLAT THEREOF RECORDED IN VOLUME 271 OF PLATS, PAGES 70 THROUGH 74, INCLUSIVE, IN KING COUNTY, WASHINGTON.

PARCEL D-1:
THOSE CERTAIN NON-EXCLUSIVE EASEMENTS AS DESCRIBED IN THAT CERTAIN FIRST AMENDED AND RESTATED DECLARATION OF COVENANTS, CONDITIONS AND RESTRICTIONS FOR REDMOND TOWN CENTER DATED DECEMBER 17, 1996, BY AND BETWEEN TOWN CENTER ASSOCIATES AND WALLS, BUTLER, MADDEN & TEEL, L.P., RECORDED DECEMBER 30, 1996 UNDER RECORDING NO. 9612301015 AND AMENDED BY INSTRUMENTS RECORDED UNDER RECORDING NOS. 9710220652, 9812040966, AND 20191206000770, IN KING COUNTY, WASHINGTON.

SURVEYOR'S NOTE: NOT PLOTTABLE.

PARCEL D-4:
THOSE CERTAIN NON-EXCLUSIVE EASEMENTS AS DESCRIBED IN THAT CERTAIN EASEMENT AGREEMENT DATED MARCH 13, 1998, BY AND BETWEEN TOWN CENTER ASSOCIATES AND RECREATIONAL EQUIPMENT, INC., RECORDED MARCH 13, 1998 UNDER RECORDING NO. 9803131453, AND AMENDED BY INSTRUMENTS RECORDED UNDER RECORDING NOS. 20020405002627 AND 20020910000707, IN KING COUNTY, WASHINGTON.

SURVEYOR'S NOTE: IDENTIFIES COMMON AREAS IN ENTIRE BINDING SITE PLAN BEING ROADWAYS WITHIN BINDING SITE PLAN. BLANKET OVER ROADWAYS.

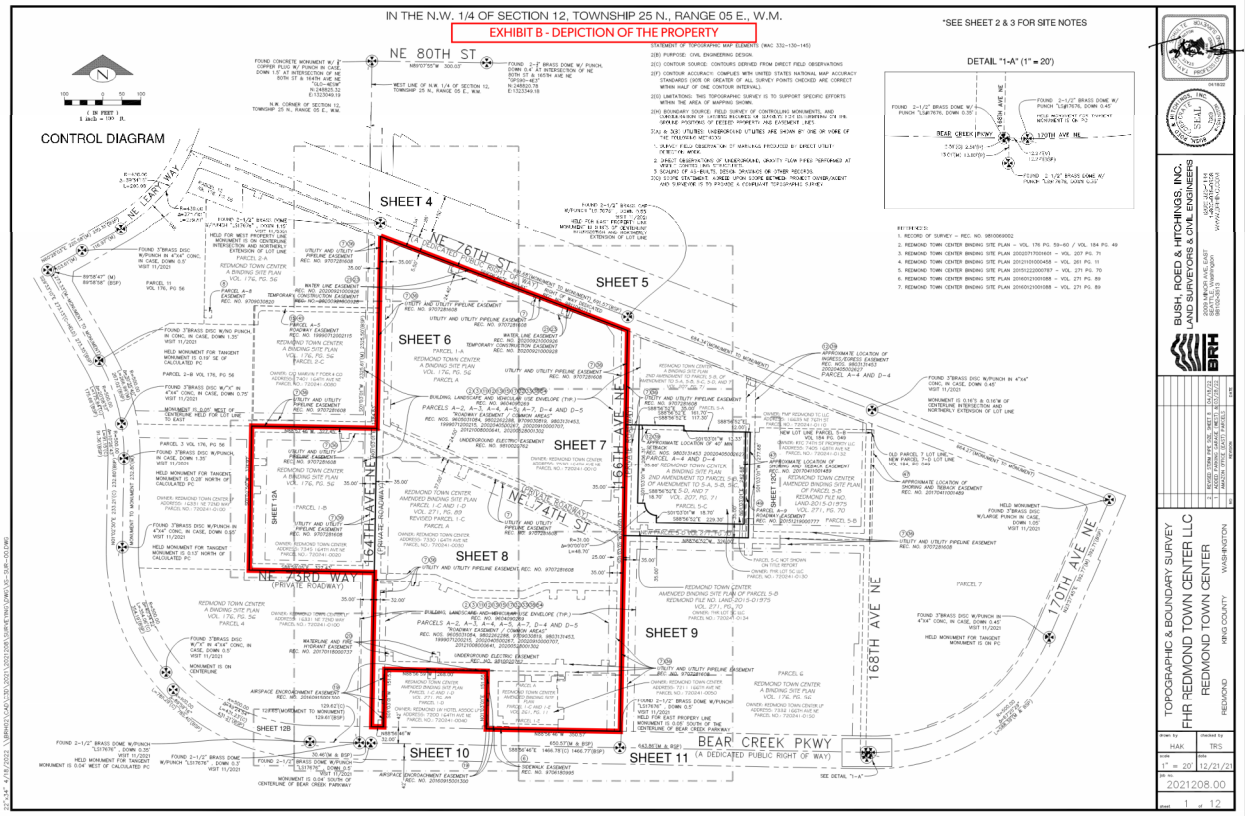
PARCEL D-5:
THOSE CERTAIN GRANT OF EASEMENTS AS DESCRIBED IN THAT CERTAIN EASEMENT AGREEMENT DATED JULY 12, 1999, BY AND BETWEEN PPR REDMOND RETAIL LLC AND PPR REDMOND OFFICE LLC, RECORDED JULY 12, 1999 UNDER RECORDING NO. 19990712002115, IN KING COUNTY, WASHINGTON.

SURVEYOR'S NOTE: IDENTIFIES COMMON AREAS IN ENTIRE BINDING SITE PLAN BEING ROADWAYS WITHIN BINDING SITE PLAN. BLANKET OVER ROADWAYS AND AS DESCRIBED IN RECORDED DOCUMENT.

TITLE REPORT REFERENCE:
THIS SURVEY WAS CONDUCTED ACCORDING TO THE DESCRIPTION SHOWN, FURNISHED BY CHICAGO TITLE INSURANCE COMPANY, GUARANTEE/CERTIFICATE NO. 214299-SC, DATED OCTOBER 25, 2021. THE EASEMENTS SHOWN OR NOTED HEREON RELATE TO THIS COMMITMENT.

EXHIBIT B

DEPICTION OF THE PROPERTY





REDMOND
TOWN CENTER
MASTER PLANNED
DEVELOPMENT

Redmond, WA

GGLO

Hines
Fairbourne Properties
May 20, 2025
Round 3 Resubmittal

PROJECT TEAM

Owner

Fairbourne Properties
One East Wacker Drive, Suite 3110
Chicago, Illinois 60601

Contact:
Laura Faber
lfaber@fairbourne.com
312.667.1716
www.fairbourne.com

Development Manager

Hines
One East Wacker Drive, Suite 3110
Chicago, Illinois 60601

Contact:
Patrick Woodruff
Patrick.Woodruff@hines.com
206.839.8424
www.hines.com

Architect, Landscape Architect, Urban Design

GGLO
1301 Fifth Avenue
Suite 2200
Seattle, Washington 98101
206.467.5828

Contact:
Mitch Ptacek
mptacek@gglo.com
206.902.5478
www.gglo.com

Transportation Engineer

Transportation Engineering NorthWest | TENW
11400 SE 8th St
Suite 200
Bellevue, WA 98004

Civil Engineer

Coughlin Porter Lundeen | CPL
801 2nd Ave
Suite 900
Seattle, WA 98104

Structural Engineer

Magnusson Klemencic Associates | MKA
1301 5th Ave
Suite 3200
Seattle, WA 98101

Parking Consultant

HWA Parking
9600 Great Hills Trail
Suite 150 W
Austin, Texas 78759

LOCATION



1.INTRODUCTION

- Project Introduction
- Project Goals
- Site Context
- History and Culture
- Site History
- Development History
- Adjacent Developments
- Existing Pedestrian and Bike Analysis
- Adjacent Land Use Map
- View Corridor
- Critical Area Plan
- Adjacent Developments
- Site Context Plan
- Existing Town Center
- Site Survey
- Town Center Zone
- Zoning Summary

2.DESIGN CONCEPT

- Existing Project Data Summary
- Proposed Masterplan
- Building Data Matrix and Unit type
- Pedestrian Generating uses and Retail
- Parking Data
- Frontage Plan
- Proposed and Existing Masterplan
- Proposed Ground Level
- Proposed Level 2 - Parking Level
- Overall Massing Views
- Bulk and Scale Diagrams
- Shadow Studies
- Concept Render Views

3. OPEN SPACE PLAN

- Existing Open Space
- Proposed Open Space
- Proposed Bike Route and Pedestrian
- Ground Level Plan
- Roof Level Plan
- Conceptual Landscape Plan
- Open Space Programs
- Open Space Tracts/Easements
- Public Amenities/Outdoor Plazas
- Cultural Facilities
- Tree Preservation Plan

4. SITE DEVELOPMENT

- Phasing Plan
- Conceptual Transportation Plan
- Conceptual Roadway Sections
- Conceptual Grading Plan
- Conceptual Stormwater Plan
- Conceptual Sewer Plan
- Conceptual Water Plan
- Fire Access Plan

5. APPENDIX

- Public Notice Site Plan
- Proposed Buildings
  - Phase 1 - I Garage Expansion
  - Phase 2 - Building 4IC
  - Phase 3 - Building 4B
  - Phase 4 - Building 3A
  - Phase 5 - Building 3D
- Existing G Garage Modifications
- Phase 1 - TIA

SECTION 1 - INTRODUCTION

PROJECT INTRODUCTION



INTRODUCTION

As Redmond leads the way in reinventing suburban downtowns, the Redmond Town Center Master Plan seeks to reinvent a car-dependent suburban shopping center and office park into a walkable mixed use development easily accessible by bike and transit. In addition to bringing new residents and employees to the site, the plan will enliven the pedestrian ground plane, energize the street scape, provide a more engaging retail experience, expand public gathering spaces, replace existing surface parking lots, and provide a mix of uses to promote a truly "18hr x 7 day" town center.

LOCATION

The project boundary at the south side of downtown encompasses approximately 19 acres at the heart of the original 120 acre Redmond Town Center Area. The site is generally bounded by 76th St and the Redmond Connector to the North, 164th and 166th to the East and West, and Bear Creek Parkway to the South. The plan maintains and supports the existing retail core center on 74th St while providing improved connections to the surrounding neighborhood and open space that was remains in preservation from the original masterplan.

PROJECT GOALS



NEIGHBORHOOD AXON VIEW
NTS

PROJECT GOALS

Reinvention of an auto-oriented retail shopping center and office park into a true mixed-use, transit oriented, walkable town center to better serve the Redmond Community.

NEW FRONT DOOR AND DENSITY SURROUNDING DOWNTOWN AND REGIONAL TRANSIT

The addition of light rail to the neighborhood is a game changer, both for Redmond Town Center and for the Region as a whole, providing predictable, timely connectivity to Bellevue, Seattle, SeaTac Airport, and other major population centers throughout the Pacific Northwest. Repositioning the project to create a more engaging streetscape and ground plane to pull pedestrian traffic into the heart of the project from the new light rail station, while creating new transit oriented housing and jobs, which will combine to support a thriving retail town center immediately adjacent to downtown Redmond. Site gateways 1 and 2, as described on pp 30 are focal points of this design, creating an urban edge and represent the primary front doors to Redmond Town Center with porosity and pathways into the site.

ACTIVATION OF THE GROUND PLANE & STREETSCAPE

An active and engaging ground plane is critical to the creation of the type of retail that will be successful in a post-Covid world. Pedestrian friendly street design, indoor/outdoor spaces, and public gathering zones to encourage cross pollination amongst the mix of uses will help transition the current “campus” setting into a true “community” space.

PEDESTRIAN AND BICYCLE CONNECTIVITY THROUGH SITE

Proposed development will include associate streetscape improvements, traffic calming, new bike lanes, enhanced pedestrian crossing to prioritize and encourage pedestrian and bicycle traffic through the site, all focused on the center core and associated new public plazas and green spaces.

CREATE A DYNAMIC 18 HOUR A DAY X 7 DAY A WEEK SITE NEIGHBORHOOD

A true mixed-use neighborhood relies on a mix of uses activating the ground plane throughout the day along with a full time resident population. The additional residential and office density create the necessary critical mass of population to drive the desired retail merchandising mix. Creating density of jobs and housing in walkable Transit Oriented Development “T.O.D.” sites reduces the traffic impact of development and the environmental burden of new growth. New housing will include a min. 20% affordable units at 60% AMI and support local business.

MITIGATE INFRASTRUCTURE / ENVIRONMENTAL IMPACT

Added density will be thoughtfully designed to mitigate impacts and enhance the surrounding environment. The project took great strides to reduce ground water impacts by eliminating below grade parking. All new buildings will be designed to LEED Platinum rating or equivalent.

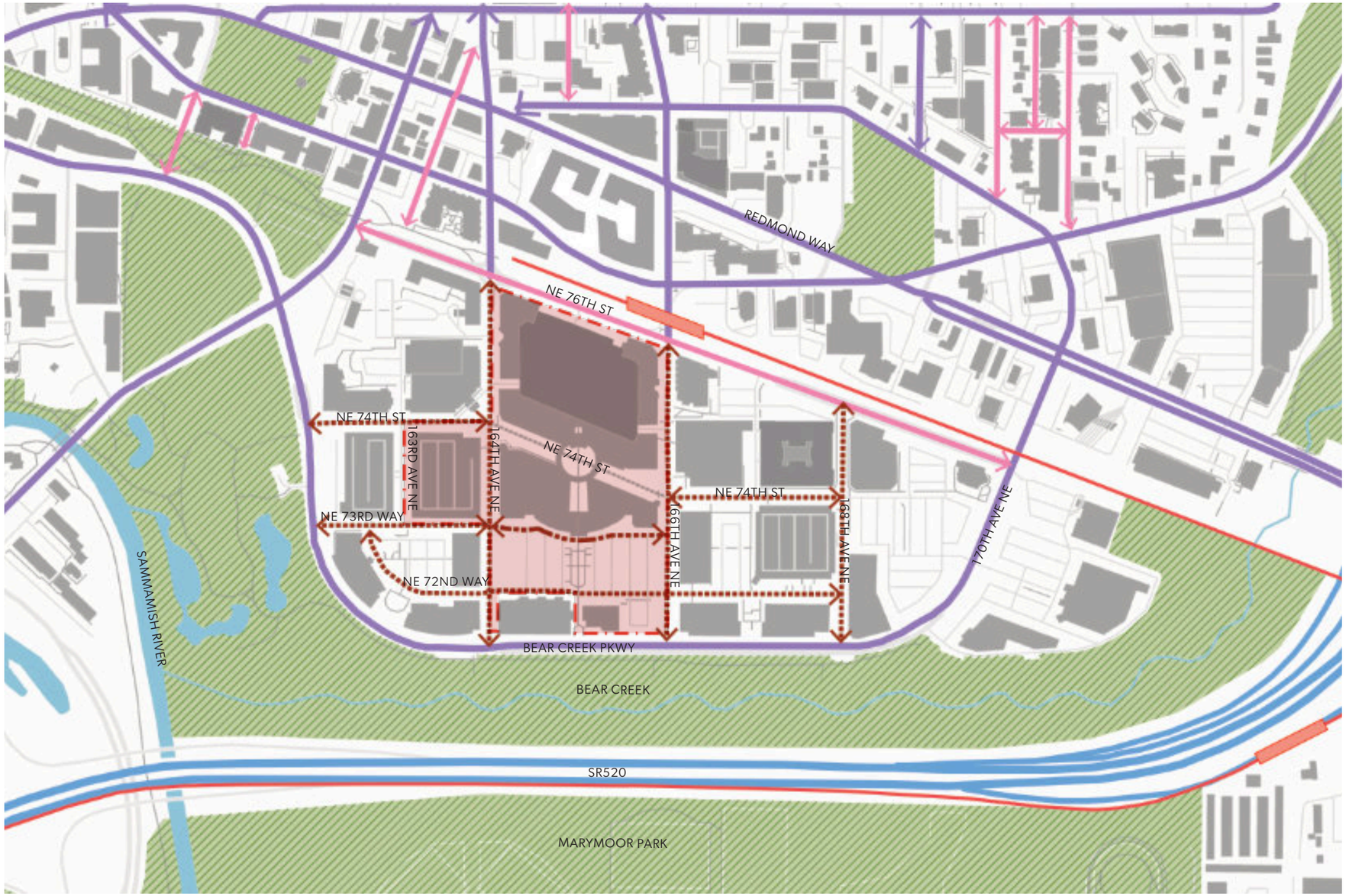
GREATER DIVERSITY OF BUILDING DESIGN + CHARACTER

Proposed residential development will diversify the current office campus / regional mall, and allow for a transition to a more natural neighborhood like Park Lane in Kirkland or Ballard Avenue in Seattle. Throughout the center, the ground plane will continue to contain a mix of uses that will engage with the street and sidewalk.

PUBLIC BENEFITS

Please see the proposed Development Agreement Public Benefits Scorecard for additional details on the project goals and benefits.

SITE CONTEXT



LEGEND

- PROJECT BOUNDARY
- LIGHT RAIL
- LIGHT RAIL STATION
- SR520
- ARTERIAL STREET (EXISTING PUBLIC STREET)
- ACCESS STREET (EXISTING PUBLIC STREET)
- EXISTING PRIVATE STREET
- WATERWAYS
- OPEN SPACE AND NATURAL LANDSCAPE

SITE CONTEXT MASTER PLAN
NTS

SITE HISTORY



1934 AERIAL PHOTO - LOOKING SOUTH
NTS



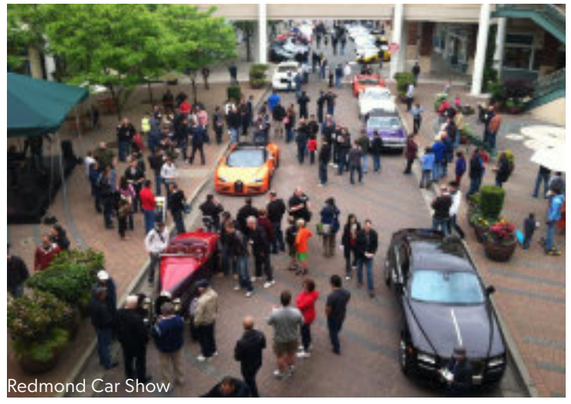
1990 AERIAL PHOTO - REDMOND GOLF LINKS
NTS



Historic Derby Days



Microsoft Halo Launch Party



Redmond Car Show

HISTORIC REDMOND

Archaeological sites at Bear Creek and the Marymoor Park date to the early to mid Holocene approximately 10,000 years ago. The area is located in the traditional territory of the Salish people, including the Muckleshoot, Tulalip,and Stillaguamish tribes.

The first European settlers did not arrive at the land adjacent to the Sammamish Slough until the 1870s, with the first post office established in 1881. The area was initially referenced to as Salmonberg due to the abundant Salmon population before being official named Melrose and eventually Redmond in 1883.

REDMOND GOLF LINKS

James and Rose Hubbart incorporated Redmond Golf Links on August 8, 1931. They laid out the golf course on what had once been Luke McRedmond's homestead now the site of Redmond Town Center. The Golf Links Clubhouse occupied what had been Luke's daughter's home and hotel, now referred to as the Justice White House on Leary Way.

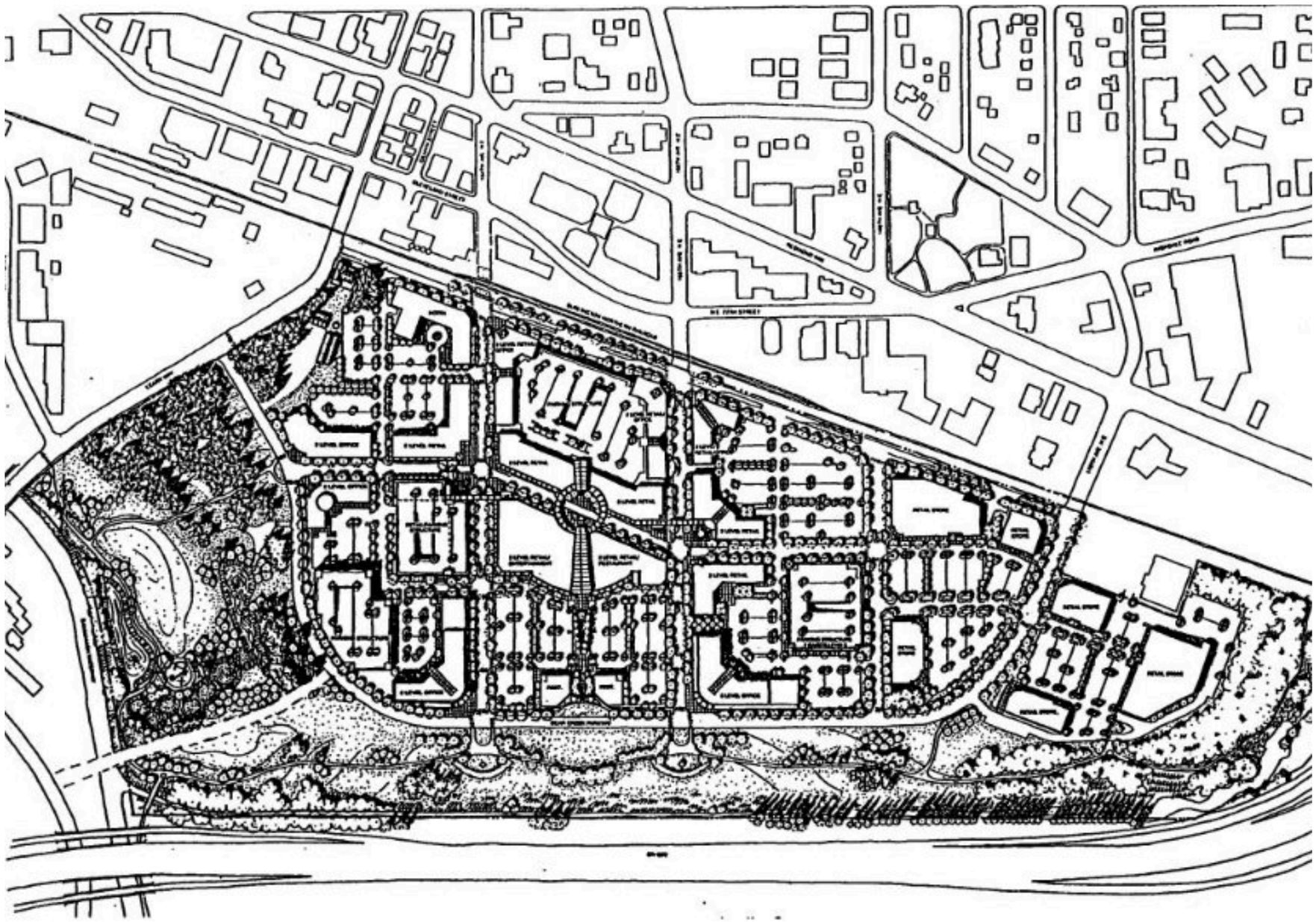
In 1978, concerned citizens formed Civic Action on Redmond Environment (CARE), a group which opposed the area being developed into a shopping center. The 1979 mayoral race featured the discussion of keeping the golf course as is or changing it.

REDMOND TODAY

Today, Redmond enjoys a diverse and growing economic base. The community is home to some of the major high-tech firms in the country, including Microsoft, Nintendo of America, Honeywell, General Dynamics Airborne Electronic Systems, and Medtronic Emergency Response Systems. Redmond is also the headquarters of such businesses as Genie Industries. A strong retail sector is enhanced by Redmond Town Center, an open-air mixed-use center featuring 110 stores, 22 restaurants, one hotel, and 600,000 square feet of office space.

From an original incorporated area of three square blocks, the City has expanded to its present size of over 17.25 square miles. Regional growth around the Eastside will continue to impact Redmond as more people and businesses are attracted to the area.

DEVELOPMENT HISTORY



1995 TOWN CENTER MASTER PLAN
NTS

PROJECT HISTORY

- **120-acre Golf Course annexed in 1986,** after a 6-year annexation process
- Planned for a Regional Shopping Center and Mixed-Use Development in 1995
- Annexation ordinance contained **37 conditions,** or objectives, for development of the golf course:
  - Retail Center as the **Focal point for Downtown**;
  - **Utilize Density** at the Center of the Project to **minimize land area** and ensure **preservation of Open Space;**
  - Include a **mix of uses** - including Retail, Office, Residential;
  - **Active Open Space and Public Amenities;**
  - **Engage with Downtown Redmond;**
  - **Encourage Pedestrian Circulation** to Downtown Redmond
- The 37 Conditions, codified in 1986 and further refined in the Master Plan, still represent design best practices.

1995 TOWN CENTER MASTER PLAN PLANNING CONCEPTS

- Consistency with Redmond's character
- Project integration with downtown Redmond
- Focus on pedestrians
- Site integration and comparison shopping
- Convenient, unobtrusive parking
- Visual connections with Redmond
- Preservation of the green gateway to Redmond

ADJACENT DEVELOPMENTS



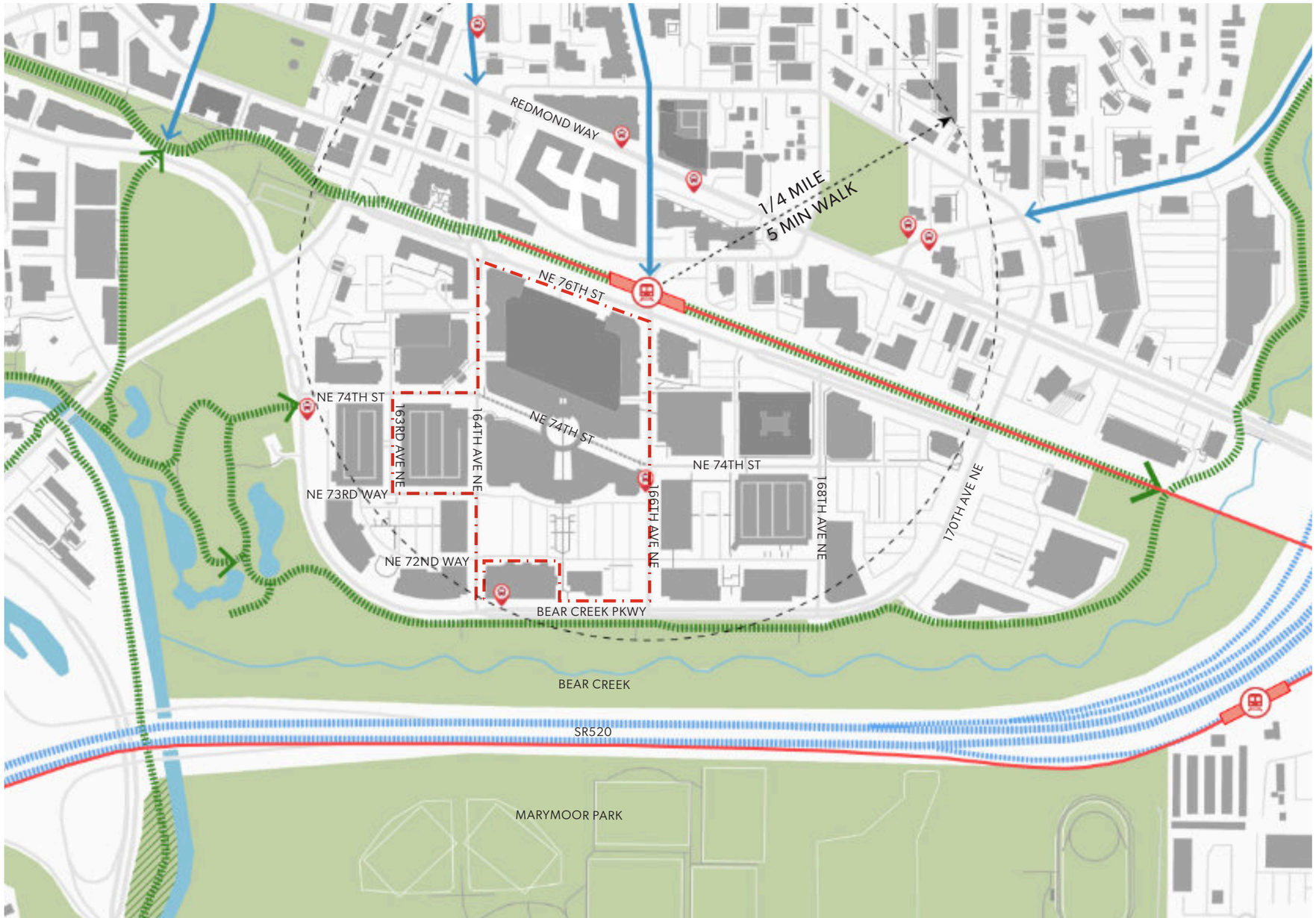
ADJACENT DEVELOPMENTS MAP
NTS

LEGEND

- PROJECT BOUNDARY
- UNDER CONSTRUCTION
- COMPLETED
- DESIGN OR UNDER REVIEW

1. REDMOND CENTRAL
2. REDMOND CENTRAL
3. PENNY LANE III-LOT 18
4. PENNY LANE II
5. AUTHENTIC MOTORCARS
6. ANDERSON PARK HOTEL
7. BRIGHT ANGELS ACADEMY
8. BEAR CREEK SHOPPING CENTER INFILTRATION UPGRADES
9. BILL BROWN BUILDING SIGNAGE AND CANOPIES
10. PORCH AND PARK
11. BARBER BOUNDARY LINE ADJUSTMENT
12. REDMOND RIVERWALK CONDOMINIUM-RECLADDING PROJECT
13. CLEVELAND
14. CITY-OWNED BUILDING DEMOLITION
15. AMLI REDMOND WAY
16. MCDONALDS REMODEL
17. ANDERSON PARK WALL CONDUIT
18. ANDERSON PARK APARTMENTS
19. THE STELVIO
20. LAKE HILLS TRUNK AND NORTHWEST LAKE SAMMAMISH INTERCEPTOR UPGRADE
21. LMC MARYMOOR SOUTH PARK
22. HOMEGROWN

EXISTING PEDESTRIAN AND BIKE ANALYSIS



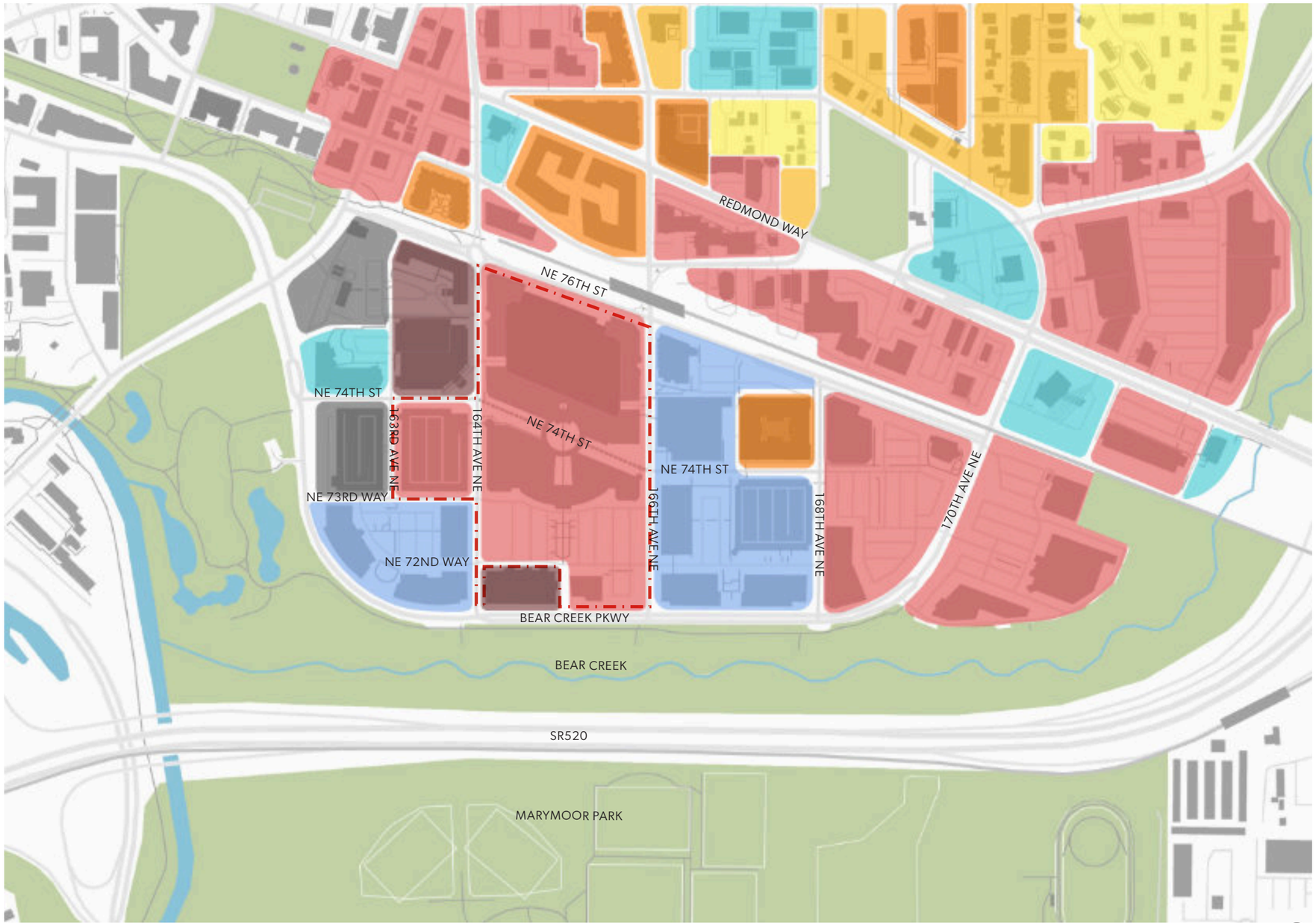
LEGEND

- PROJECT BOUNDARY
- LIGHT RAIL
- LIGHT RAIL STATION
- SR520
- EXISTING MULTI-USE TRAIL (PAVED)
- EXISTING BIKE LANES
- WALK RADIUS
- LIGHT RAIL STATION
- BUS STOP

EXISTING PEDESTRIAN AND BIKE ANALYSIS MAP

NTS

ADJACENT LAND USE MAP

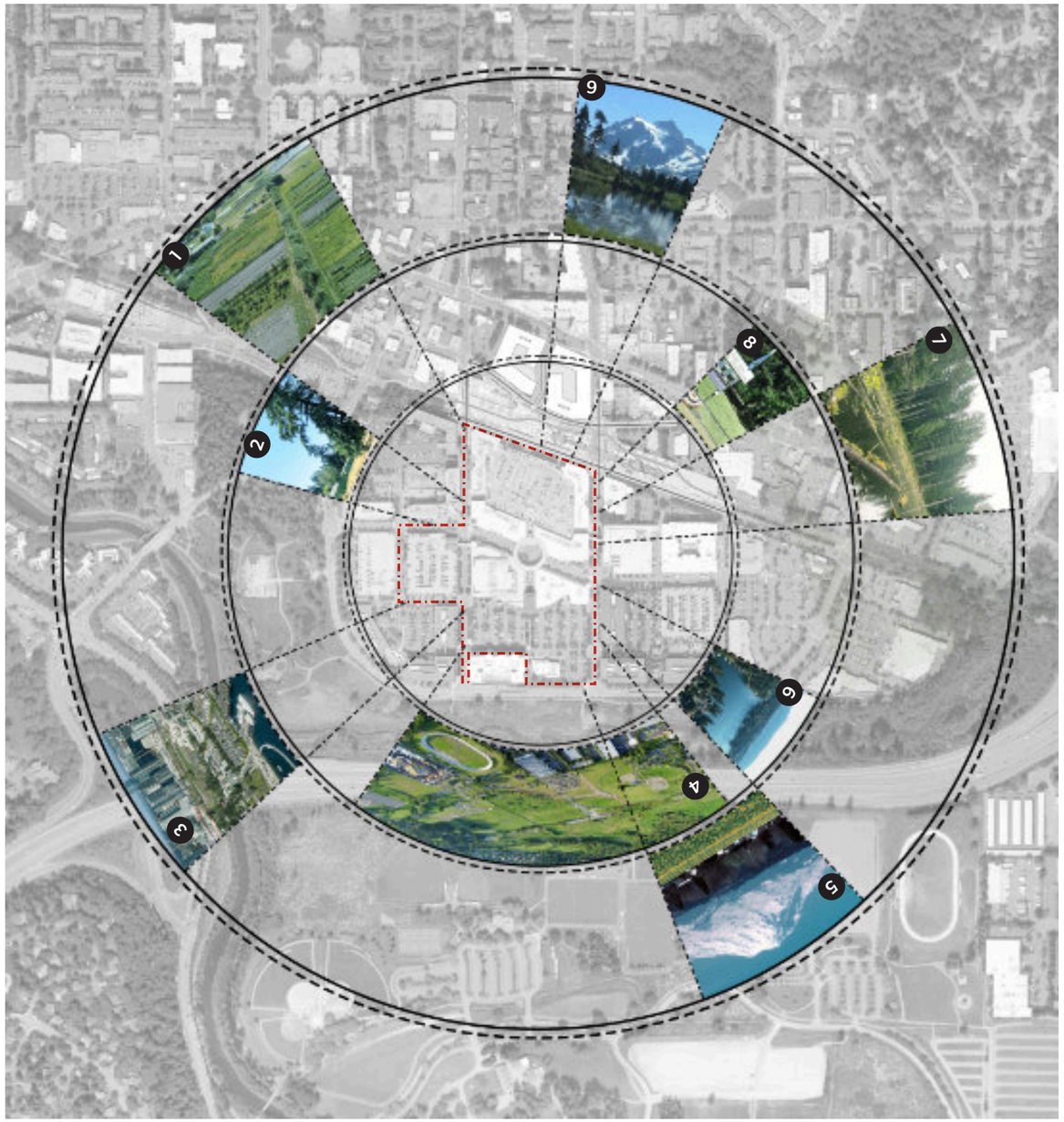


LEGEND

- PROJECT BOUNDARY
- OFFICE
- RESIDENTIAL (SINGLE FAMILY, LOW DENSITY)
- RESIDENTIAL (MULTI FAMILY, MEDIUM & HIGH DENSITY)
- RESIDENTIAL MIXED-USE
- RETAIL
- PUBLIC INSTITUTION (SCHOOL, BANK, ETC.)
- HOTEL/ HOSPITALITY
- PARK AND OPEN SPACE
- PARKING

ADJACENT LAND USE MAP
NTS

VIEW CORRIDOR



VIEW CORRIDOR MAP

NTS



Sammamish Valley



Heron Rookery Park



Downtown Bellevue



Marymoor Park



Mount Rainier



Lake Sammamish



Redmond Watershed Preserve

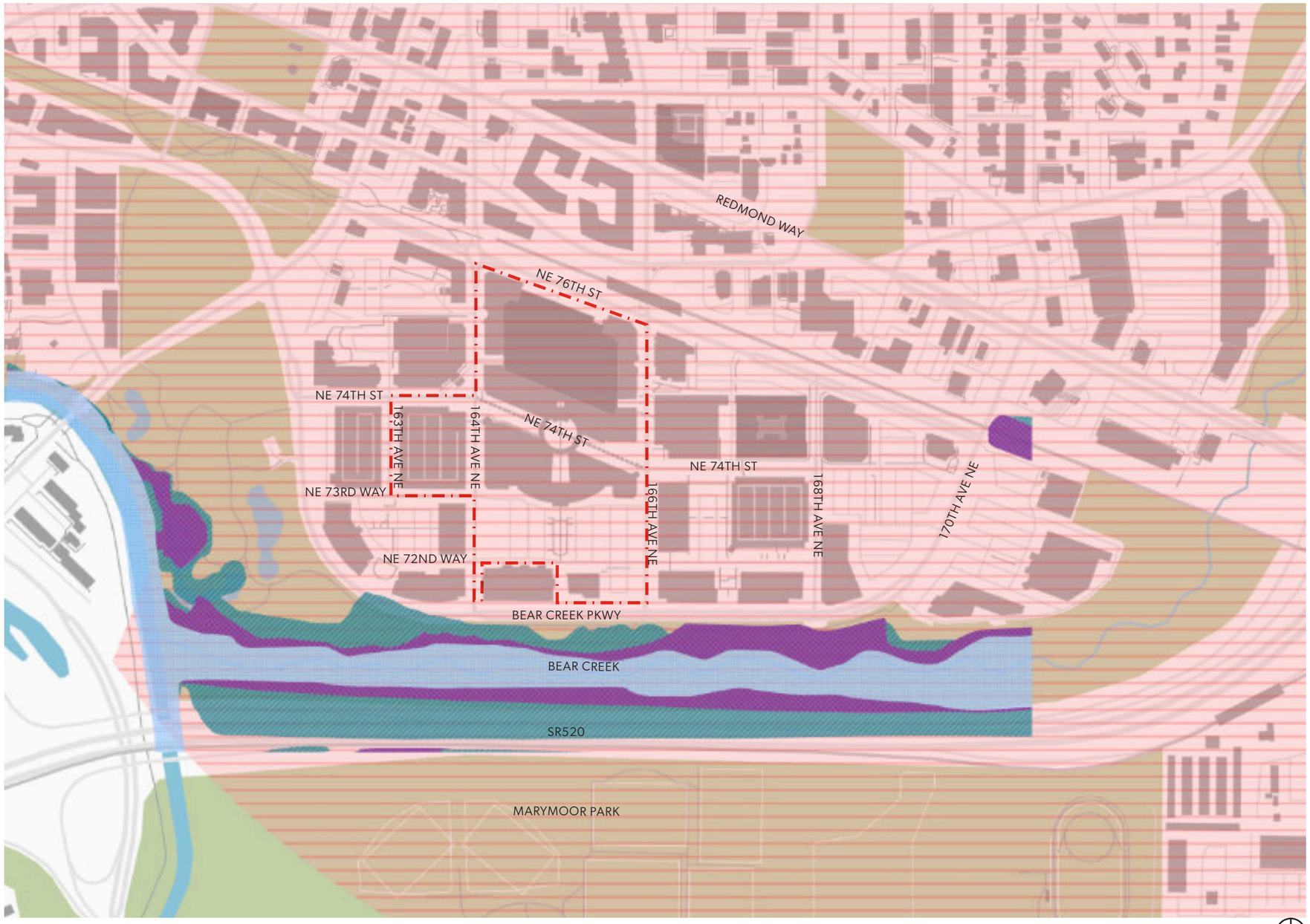


Hartman Park



Mount Baker

CRITICAL AREA PLAN

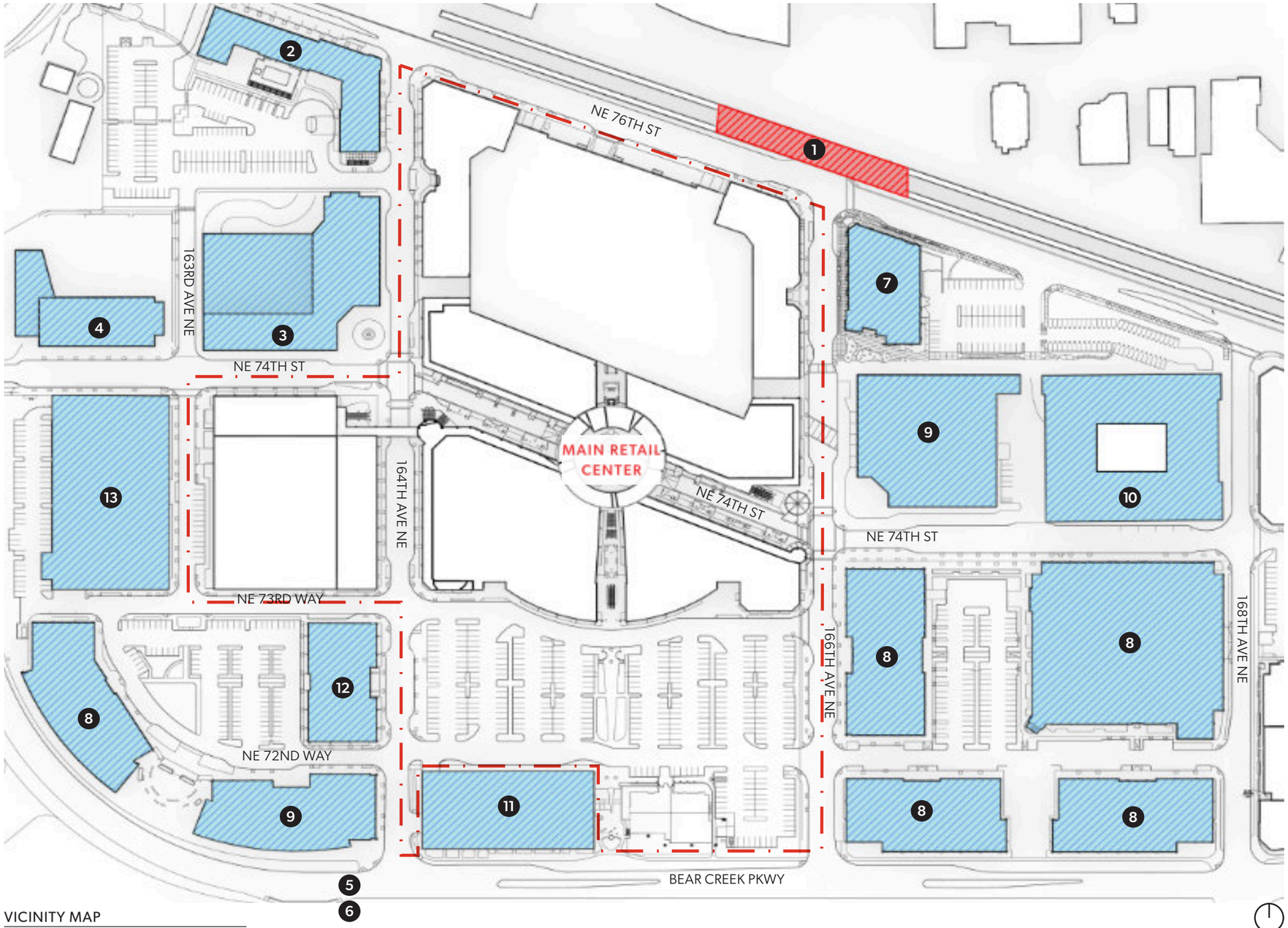


LEGEND

- PROPERTY LINE
- ZONE X - 0.2% ANNUAL CHANCE FLOOD HAZARD
- ZONE AE - 1% ANNUAL CHANCE FLOOD HAZARD
- ZONE AE - REGULATORY FLOODWAY
- CARA I

CRITICAL AREA PLAN
NTS

SITE CONTEXT PLAN



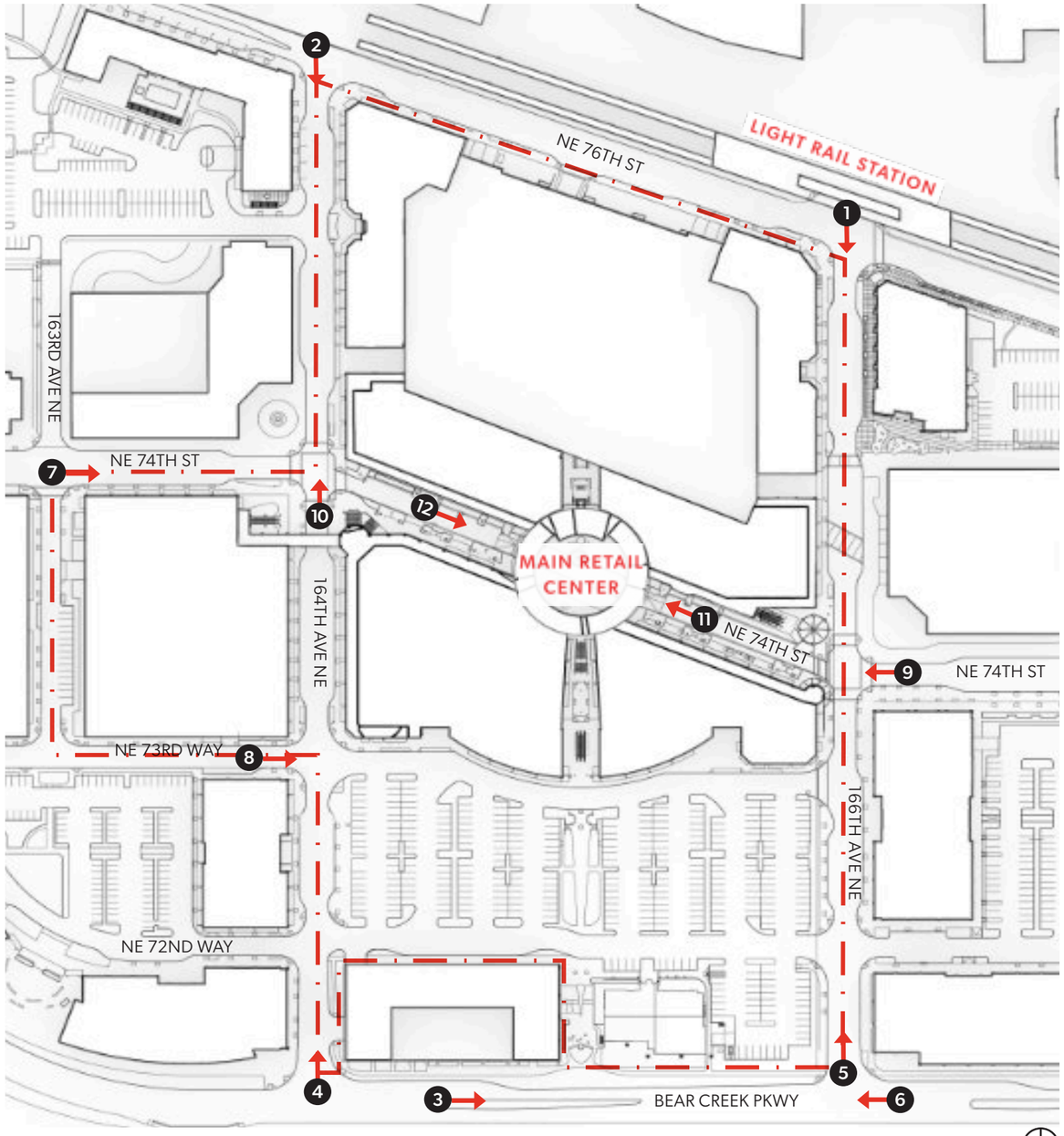
VICINITY MAP

NTS

LEGEND

- PROJECT BOUNDARY
- 1 LIGHT RAIL STATION
- 2 RESIDENCE INN BY MARRIOTT SEATTLE
- 3 SEATTLE MARRIOTT REDMOND
- 4 LAKE WASHINGTON SCHOOL DISTRICT
- 5 BEAR CREEK PARKWAY
- 6 BEAR CREEK TRAIL
- 7 VOLKSWAGEN OFFICE
- 8 MICROSOFT OFFICE
- 9 AMAZON OFFICE
- 10 TALISMAN MULTIFAMILY BUILDING
- 11 ARCHER HOTEL
- 12 AT&T CORPORATE OFFICE
- 13 PARKING GARAGE

EXISTING TOWN CENTER



VICINITY MAP
NTS


1


2


3


4


5


6


7


8

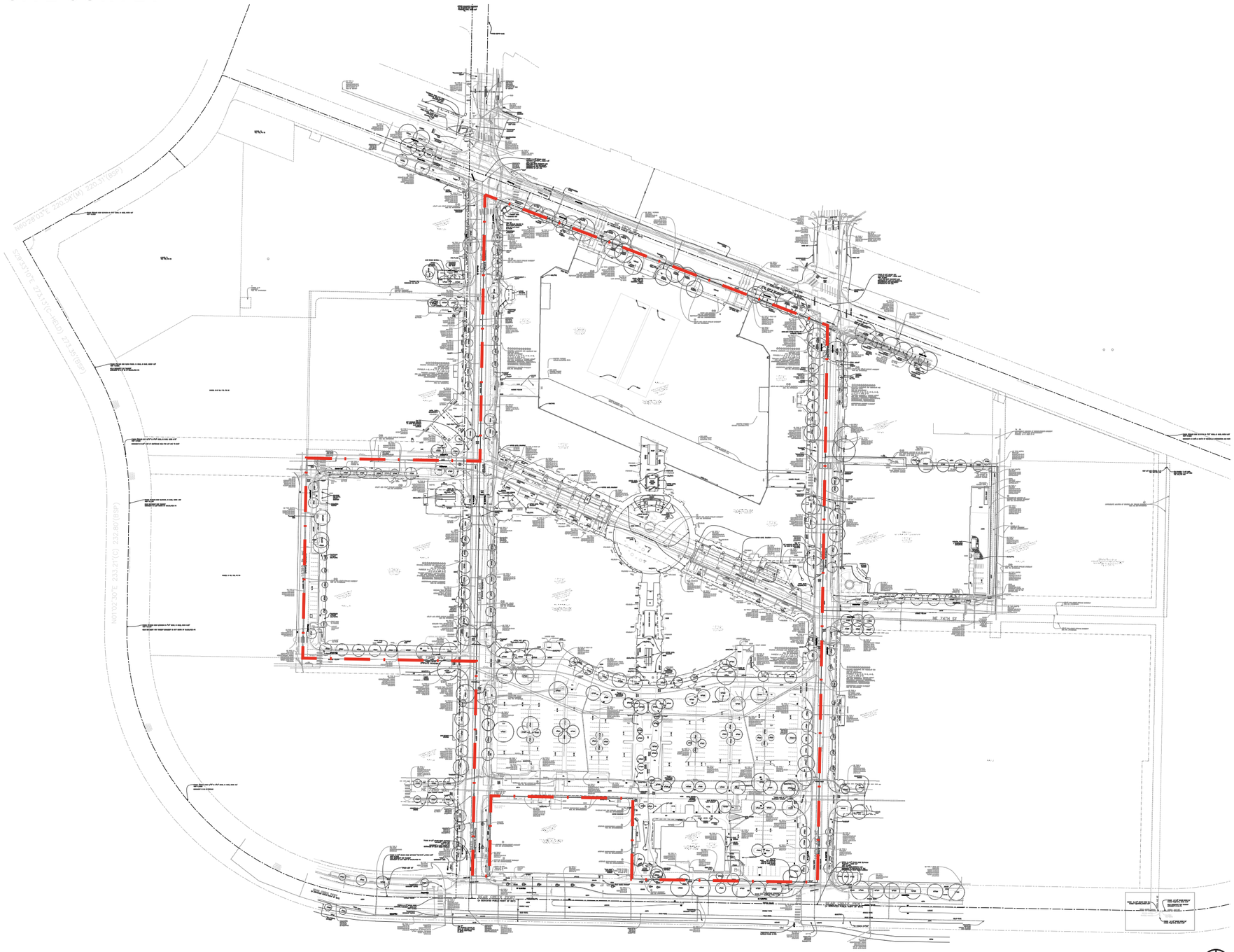

9


10


11


12

SITE SURVEY



SITE SURVEY
0' 100' 200'

SITE ADDRESS:

7530 164TH AVE NE
7345 164TH AVE NE
7330 164TH AVE NE
7211 166TH AVE NE
REDMOND, WA 98052

TAX ACCOUNT NOS:

720241-0010-00
720241-0010-91
720241-0020-08
720241-0050-01

ZONING:

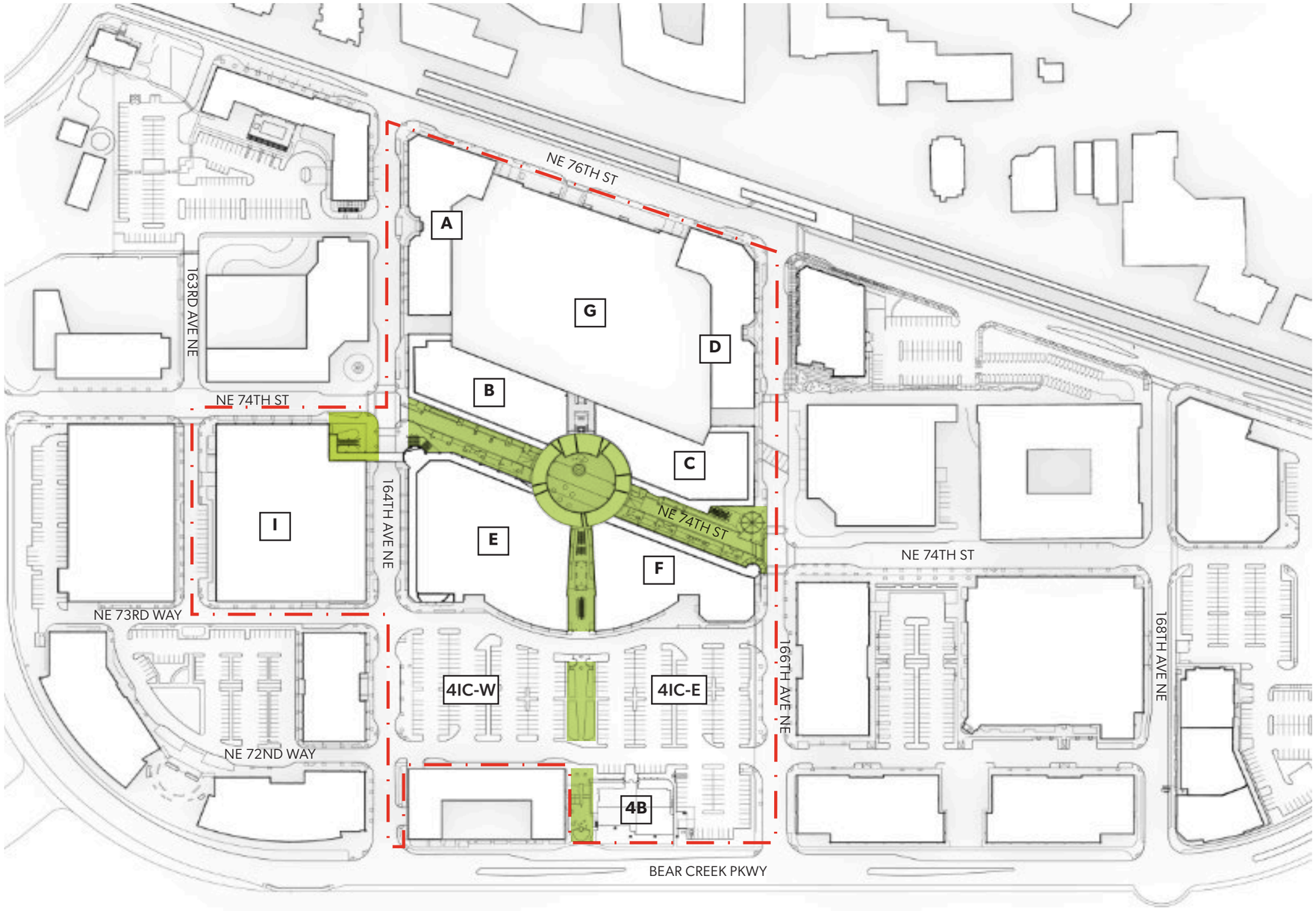
TWNC - TOWN CENTER NEIGHBORHOOD COMMERCIAL

AREA:

PARCEL 1-A AS SHOWN CONTAINS 338,510 SQUARE FEET OR 7.7711 ACRES, MORE OR LESS.
PARCEL 1-B AS SHOWN CONTAINS 123,429 SQUARE FEET OR 2.8335 ACRES, MORE OR LESS.
PARCEL 1-C AS SHOWN CONTAINS 362,023 SQUARE FEET OR 8.3109 ACRES, MORE OR LESS.
PARCEL 1-E AS SHOWN CONTAINS 18,409 SQUARE FEET OR 0.4226 ACRES, MORE OR LESS.

TOTAL SITE AREA: 842,371 SQUARE FEET (19.34 ACRES)

EXISTING PROJECT DATA SUMMARY



EXISTING MASTERPLAN
NTS

LEGEND

- PROJECT BOUNDARY
- # EXISTING BUILDING
- EXISTING GROUND LEVEL PUBLIC OPEN SPACE

BLDG	COMMERCIAL GROSS AREA SQ FT	
BLDG A	LEVEL 1	23,451 SF
	LEVEL 2	24,348 SF
	TOTAL	47,799 SF
BLDG B	LEVEL 1	25,095 SF
	LEVEL 2	22,928 SF
	TOTAL	48,023 SF
BLDG C	LEVEL 1	23,885 SF
	LEVEL 2	22,243 SF
	TOTAL	46,128 SF
BLDG D	LEVEL 1	20,264 SF
	LEVEL 2	21,023 SF
	TOTAL	41,287 SF
BLDG E	LEVEL 1	59,872 SF
	LEVEL 2	54,844 SF
	TOTAL	114,716 SF
BLDG F	LEVEL 1	31,380 SF
	LEVEL 2	29,464 SF
	TOTAL	60,844 SF
BLDG G	LEVEL 1	0 SF (No Commercial)
BLDG I	LEVEL 1	26,458 SF
BLDG 4B	LEVEL 1	8,738 SF
	TOTAL	393,993 SF

PEDESTRIAN GENERATING USE SUMMARY

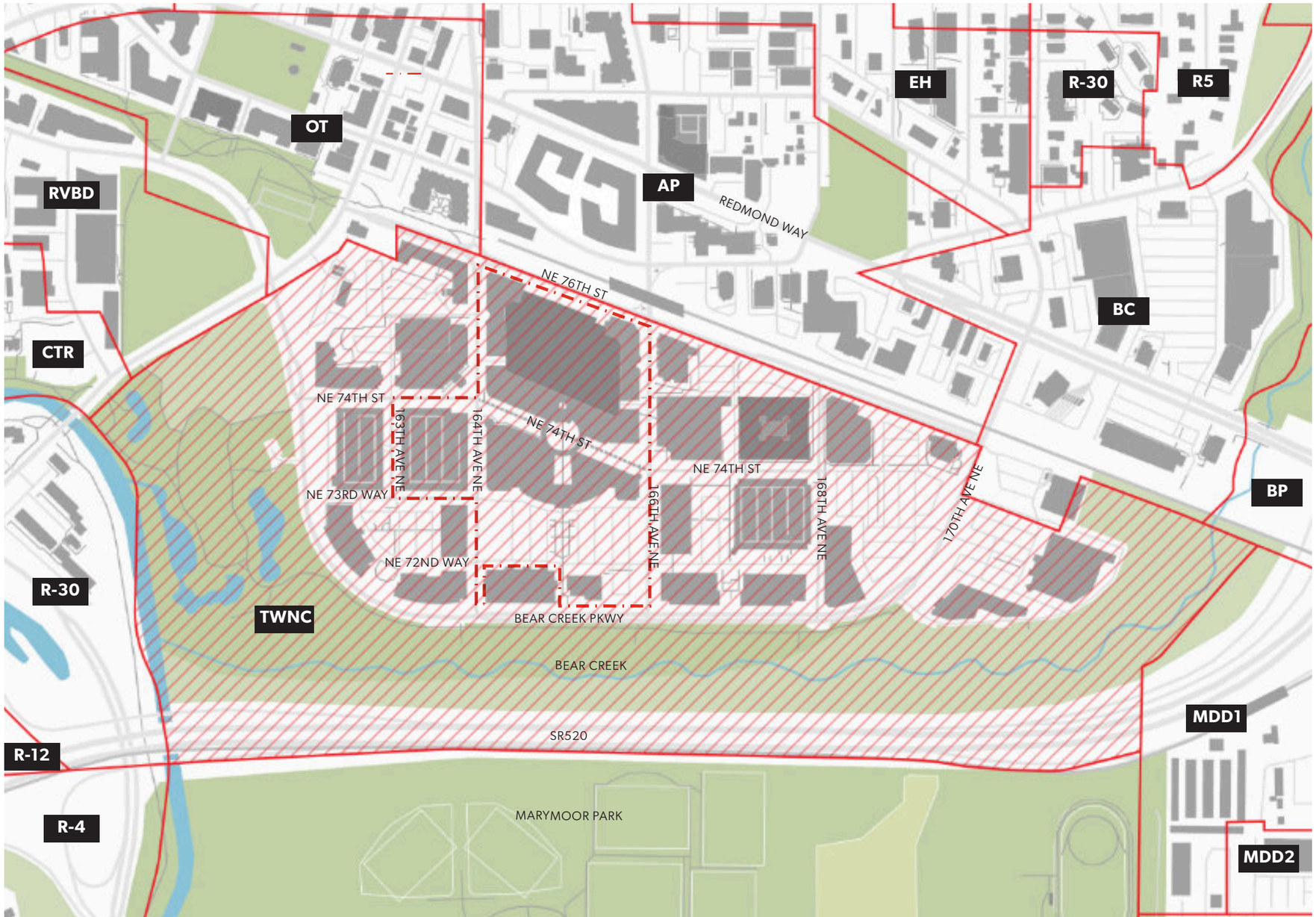
BUILDING		NON-PEDESTRIAN GENERATING LEASABLE SF	PEDESTRIAN GENERATING LEASABLE SF	TOTAL LEASABLE SF	% PEDESTRIAN GENERATING
BUILDING A	LEVEL 1	12,040	11,381	23,421	48.59%
	LEVEL 2	25,764	0	25,764	0.00%
	BUILDING TOTAL	37,804	11,381	49,185	23.14%
BUILDING B	LEVEL 1	0	25,210	25,210	100.00%
	LEVEL 2	5,526	18,208	23,734	76.72%
	BUILDING TOTAL	5,526	43,418	48,944	88.71%
BUILDING C	LEVEL 1	8,831	14,999	23,830	62.94%
	LEVEL 2	0	22,780	22,780	100.00%
	BUILDING TOTAL	8,831	37,779	46,610	81.05%
BUILDING D	LEVEL 1	0	20,264	20,264	100.00%
	LEVEL 2	19,695	0	19,695	0.00%
	BUILDING TOTAL	19,695	20,264	39,959	50.71%
BUILDING E	LEVEL 1	13,878	44,231	58,109	76.12%
	LEVEL 2	3,001	51,871	54,872	94.53%
	BUILDING TOTAL	16,879	96,102	112,981	85.06%
BUILDING 4B	LEVEL 1	0	8,738	8,738	100.00%
BUILDING F	LEVEL 1	11,082	21,742	32,824	66.24%
	LEVEL 2	6,992	20,387	27,379	74.46%
	BUILDING TOTAL	18,074	42,129	60,203	69.98%
BUILDING I	LEVEL 1	18,645	8,147	26,792	30.41%
EXISTING CENTER TOTAL		**125,454**	**267,958**	**393,412**	**68.11%**

DEVELOPMENT AGREEMENT MINIMUM PEDESTRIAN GENERATING USE TO BE MAINTAINED	**170,000**

NOTE:

1) The square footage areas in table above are based on current leaseable square footage, while the table on the previous page are based on early as-built drawing, which has lead to a slight discrepancy between the data.

TOWN CENTER ZONE



LEGEND

PROJECT BOUNDARY

ZONE BOUNDARY

TOWN CENTER ZONE MAP

NTS

ZONING SUMMARY

ZONING SUMMARY

GENERAL PROJECT INFO

ZONING: TOWN CENTER (TWNC)
OVERLAY: N/A
CRITICAL AREAS:
- 100 year Floodplain
- CARA Zone 1

EASEMENTS: SEE SURVEY
PARCELS: 720241-0010-00; 720241-0010-91; 720241-0020-08; 720241-0050-01
SITE AREA: 841,913SQUARE FEET (19.33 ACRES)

21.10.050 TOWN CENTER (TWNC) ZONE

A. PURPOSE:
Town Center is one of the City's primary gathering places. Its mix of shops and restaurants, offices, hotel rooms and conference facilities, and eventually residences in the heart of the City is intended to bring people together during the day and evening for planned or casual meetings. The design of the buildings, street patterns, and public plazas are modern yet reflect the historic district in adjacent Old Town. Improvements in walking connections between the two districts will help both areas thrive. The long-term vision for Town Center is that it will continue to develop as a major gathering and entertainment place within the community, that its trails will be connected to Marymoor Park by a grade-separated connection across SR 520, and that transit service to and from the center will provide a choice equal in attractiveness to automobiles, walking, and biking. The design and development of this zone seeks to ensure that development here integrates with and positively influences future redevelopment of the greater Downtown area, and retains traditional building styles, street patterns, variety of uses, and public amenities.



B. TABLE 21.10.050A: MAXIMUM DEVELOPMENT YIELD
- Height: 5 stories base; max 12 stories
- Max. Lot Coverage: 100 percent

C. TABLE 21.10.050B: REGULATIONS COMMON TO ALL USES
- Setbacks
  - Side Commercial: 0 feet
  - Rear Commercial: 0 feet
  - Side Residential: 0 feet
  - Rear Residential: 10 feet
- Other Standards
  - Min. Height: n/a
  - Max. Building Height without TDRS, GBP, or EAAH
    - Mixed-use area: 4 stories
    - Hotel and conference center: 8 stories
    - Other Hotel: 6 stories
    - Residential: 5 stories
    - With 2nd floor setbacks and bulk and mass mitigation: 6 stories
  - Max. Building Height with TDRS and GBP
    - TDRs: 1 additional floor
    - GBPs: 1 additional floor
    - Not more than 8 stories max
  - Max. Building Height with EAAH
    - 12 stories
  - Max. Height Within Shorelines
    - 35 feet
  - Max. Lot Coverage
    - 100 percent
  - Base FAR Without TDRs
    - Must retain or replace existing pedestrian generating and retail sales uses. Development may modify areas allocated to pedestrian generating and retail sales uses, subject to a minimum floor area to be negotiated as a condition to any Development Agreement.
  - Allowed Residential Density
    - Floor area for residential uses is exempt from TDR requirements. The ground floor level shall include a mix of pedestrian-oriented uses.

D. EXCEPTIONAL AMENITIES FOR ADDITIONAL HEIGHT
- Requirements:
  - Must be entirely located within the Town Center Mixed-Use subarea
  - A development agreement is required
  - A master plan is required
  - The City may require the applicant to pay for an independent technical review
- Limitations:
  - May not be used with TDRS or GBP to increase height.
  - Max. 12 stories
  - Max. 9 stories of usable floor area
  - Max. 3 additional stories above-grade parking with no more than one story of subterranean parking, and the following additional requirements are met:
    - .75 stalls per unit
    - 2 stalls per 1000 SF office / business
    - 3.5 stalls per 1000 SF retail / food and bev
    - Must be fully dedicated stalls
    - May replace displaced existing retail parking
  - Subterranean parking can only replace existing retail surface parking; limited to a max. 1 story below grade. Associated dewatering shall not create adverse impacts. A conceptual model including dewatering radius of influence will be submitted during site plan entitlement to demonstrate dewatering feasibility and no adverse impacts to City

Table 21.10.050C - Exceptional Amenities for Additional Height

	Priority Technique	Incentive
1	Affordable housing and larger units: • Min. 20% of units affordable at 60% AMI. There is no requirement to also provide 10% designated for 80% AMI that would ordinarily be required under RZC Chapter 21.20. And One of the following thresholds is met: • A. Min. 10% two bedrooms units and min. 5% three bedrooms. • B. The greater of 35% or 15 of affordable units have two bedrooms and the greater of 15% or 10 units have three bedrooms. And • All affordable units shall be electric-ready	4 Stories
2	Small and Local Businesses: 10% of new ground level commercial space or a total of 7,000 sf of total commercial space dedicated to local commercial.	1 story
3	Small and Local Businesses: The lesser of 25% or 4,000 sf of new commercial space no larger than 1,000 sf to encourage and support startup and new businesses.	1 story
4	Sustainable Development	
	A. ILFI Zero Energy certification or register and achieve verification through the New Buildings Institute (NBI) Zero Energy, or equivalent, for all new buildings.	3 stories (not combinable with options B, C, or D)
	B. 100% of the new buildings are ILFI Living Building Challenge (LBC) 4.0 certified, or equivalent.	2 stories (combinable with option C)
	C. Purchase green power for 100% of the new buildings for 5 years.	1 story (must be combined with either option B or option D)
	D. LEED Platinum, or equivalent, for all new buildings.	1 story (combinable with option C)

supply wells.
- Additional Height Requirements:
  - Techniques and incentives in Table 21.10.050C shall apply across the D.A. project limit.
  - Provide priority techniques first.
  - Each phase shall provide a proportionate installation of amenities and may not depend on future phases.
  - Sustainable development equivalent techniques shall be a condition of the D.A.
- Table 21.10.050C - Exceptional Amenities for Additional Height

E. GENERAL ALLOWED USES AND CROSS-REFERENCES
- As Shown in Table 21.10.050.1 and 21.10.050.1
- Proposed uses are classified as Permitted uses.

F. ALLOWED USES AND BASIC DEVELOPMENT STANDARDS
- Parking Requirements as Shown in Table 21.10.050D
  - 4 - Multifamily Residential
    - Min. 1 / unit; Max 2.25 / unit
    - Plus .25 spaces / unit for guest parking
    - Curbside parking can meet up to 25% of required
  - 8 - Retail Sales
    - Min. 3.5 / 1,000 gfa; Max 5 / 1,000 gsa
    - Min. 1 / unit; Max 2.25 / unit plus .25 spaces / unit for guest parking
  - Sit-down Restaurants
    - Min. 9 / 1,000 gsa; Max 9 / 1,000 gsa
  - Take-out Restaurants
    - Min. 10 / 1,000 gsa; Max 10 / 1,000 gsa

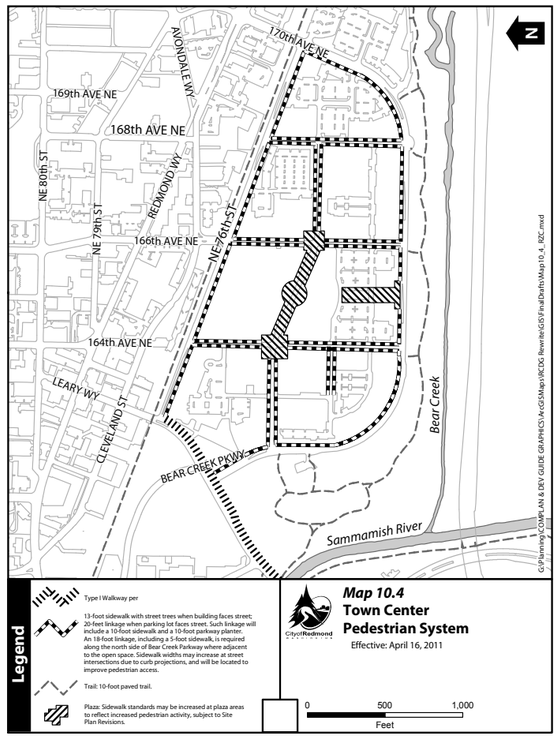
21.10.130 DOWNTOWN RESIDENTIAL SITE REQUIREMENTS

B. DOWNTOWN RESIDENTIAL DENSITIES TABLE 21.10.130A
- Min. Site Area per table
- Max. Dwelling Units per net acres
  - N/A - regulated by bulk, height, parking, open space, and other development standards.
    - Min. 1 / unit; Max 2.25 / unit
    - Plus .25 spaces / unit for guest parking
    - Curbside parking can meet up to 25% of required
- Max. Lot Coverage - N/A
  - 12,000 SF

C. RESIDENTIAL LOT COVERAGE
Not Applicable

D. RESIDENTIAL SETBACK REQUIREMENTS
Not Applicable

E. RESIDENTIAL USABLE OPEN SPACE
General - Provide residents a place, to relax, and/or recreate without the need to leave their building. Common open space includes: plazas, rooftop gardens, and recreation rooms.
- Common Usable Open Space
  - Min. 100 SF per unit
  - Max. 20% of the project site
- Size Requirements
  - 12' min. length and width
  - Min. 200 sf area
  - Min. 18' area width to be combined with pedestrian access paths



21.10.150 PEDESTRIAN SYSTEM

C. Pedestrian System Description

21.10.160 USING TRANSFER OF DEVELOPMENT RIGHTS

D. 1.25 MAXIMUM NONRESIDENTIAL FAR
- Additional Commercial FAR allowed by purchasing TDRs or with the FAR bonus under the Green Building Program (GBP)
- TDRs or compliance with the GBP is not required for residential floor area within the maximum building height
- Parking area is excluded is excluded from FAR

21.20.030 AFFORDABLE HOUSING GENERAL REQUIREMENTS AND INCENTIVES

- Min. 10 % of units to be affordable at 80% AMI
- 50% AMI Low-Cost Affordable units count as 2 Affordable units

21.40.10 VEHICLE PARKING STANDARDS

D. REQUIRED OFF-STREET PARKING
- Administrator may approve alternative minimum parking requirements for specific uses on specific.
- Parking Near Frequent Transit
  - Multifamily structures
    - Min. 0 / unit, Max 1 / unit
  - General Retail
    - Min. 0 / 1,000 gfa, Max 3 / 1,000 gfa
  - Business and Service
    - Min. 0 / 1,000 gfa, Max 3 / 1,000 gfa
  - Food and Beverage
    - Min. 0 / 1,000 gfa, Max 5 space / 1,000 gfa

21.40.20 BICYCLE PARKING REQUIREMENTS

TABLE 21.40.020 BICYCLE PARKING REQUIREMENTS
- Multifamily structures
  - Long Term 1 / unit
  - Short Term 1 / 20 units
- General sales and services
  - Long Term 1 / 12,000 sf gfa
  - Short Term 1 / 2,000 sf gfa
- Eating and drinking establishments
  - Long Term 1 / 12,000 sf gfa
  - Short Term 1 / 2,000 sf gfa
- Offices
  - Long Term 1 / 4,000 sf gfa
  - Short Term 1 / 40,000 sf gfa

21.62.020 DOWNTOWN DESIGN STANDARDS

D. CORNER LOTS - BUILDING DESIGN
- Encourage pedestrian activity
- Traditional Downtown "main street" character
- Orient pedestrian entrances toward the corner

E. OPEN SPACE
- Residential Usable Open Space - See 21.10.130
- On-Site Recreational Amenities
  - Irrigated planters with seating
  - At least one on-site amenity, such as a recreation room of 300 or more square feet

F. RESIDENTIAL STANDARDS
- Minimum Residential Courtyard Dimensions
  - 55' min. width
- If 50 % is open to the street, the area that is contiguous with the courtyard, in the setback area, can be counted as usable open space
- Residential Access Building
  - Orientation - ensure primary entry orientation toward the street or front yard and covered
  - Min. 8' wide
  - Connect to the pedestrian system
  - Locate ground floor units and ground floor foyers/ lobbies 2'-4' above adjoining pedestrian system grade
- Required Residential Facade Modulation
  - Street facades shall be modulated every 40'
  - 4' min. modulation depth, may be reduced to 2' with balconies
  - 5' min. modulation depth
    30' max. width
  - 120' max building width except for ground floor commercial portions
- Residential Parking and Access
  - Via alley or private streets is preferred
  - 20' min garage door setback from curb

I. TOWN CENTER ZONE
Emphasize uses along street frontages and sidewalk designs integrated into building architecture

- Design Criteria
  - Site buildings to enclose common space or provide enclosure to the street
  - Encourage varieties of shapes, angles, and reliefs in the upper stories of structures over four stories
  - Avoid large buildings and continuous flat facades
  - Ground floor - provide pedestrian interest and activity
  - Arcades, colonnades, and awnings are encouraged
  - Provide easy and open access to the external public areas or plazas
  - Scale of structures should relate to each other
  - Orient building entrances to the street
  - Uses should be oriented externally as well as internally
  - Buildings should abut the sidewalks on at least one side and orient the primary entrance toward the street
  - Outdoor pedestrian areas shall include special paving treatments, landscaping, and seating areas.
  - Encourage pedestrian circulation from the project to the Cleveland Street Retail area.
  - Link proposed development to walkways, trails, and bicycle systems in the surrounding area

21.72.080 TREE REPLACEMENT REQUIREMENTS

- A minimum 35% of significant trees shall be retained.
- Significant trees - replace by 1 new tree
- Landmark trees - replaced by 3 new trees
- Exceptions
  - No replacement required for hazardous, dead, diseased, injured, or declining trees
  -

PROPOSED EXCEPTIONAL AMENITIES FOR ADDITIONAL HEIGHT

The proposal intends to provide the following exceptional amenities to allow for an additional height increase beyond the baseline code height limit. The exceptional amenities and additional height increase would apply to all applicable development phases.

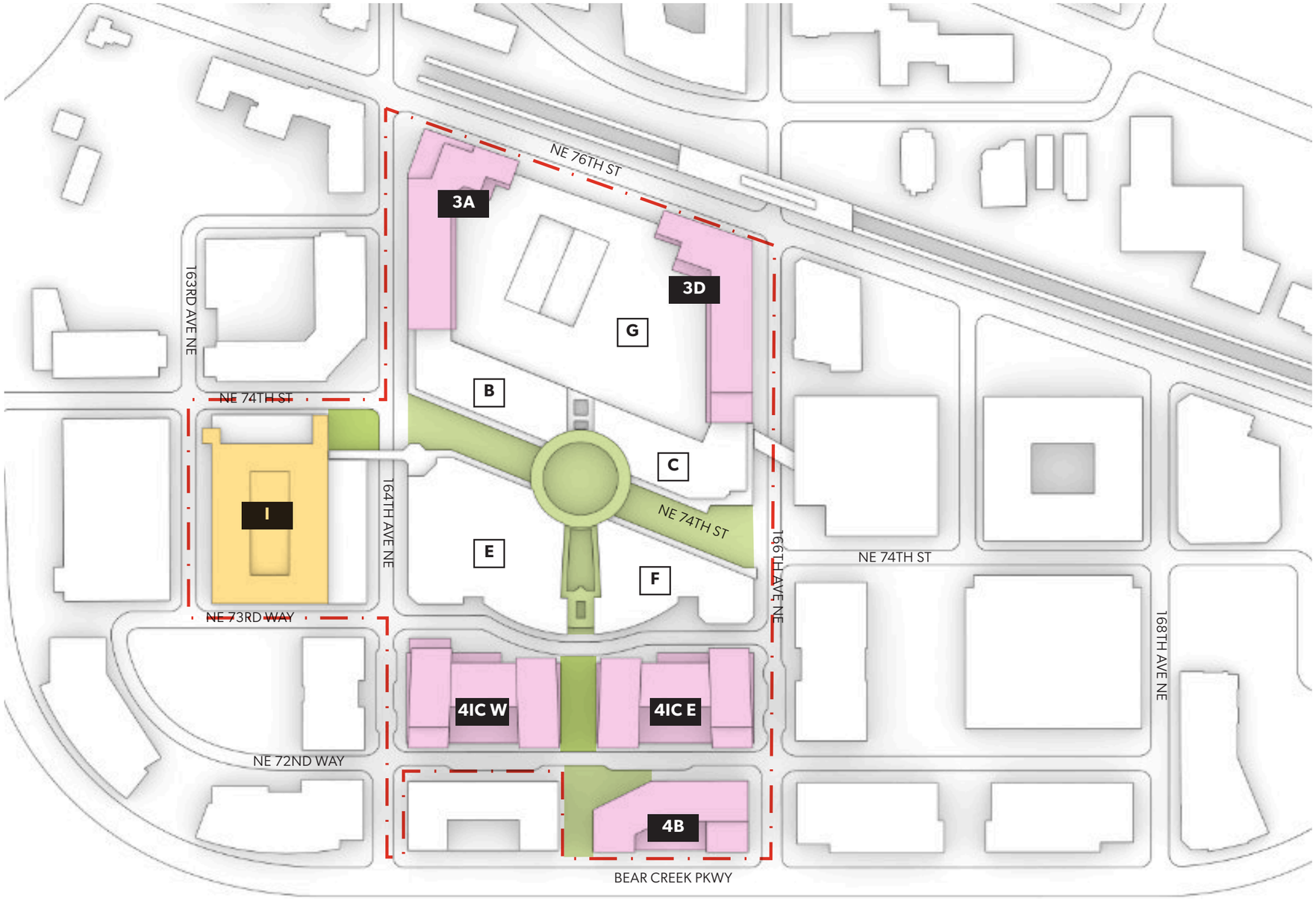
	TECHNIQUE	STORIES
	Allowable Base Height	5 Stories
1	Affordable housing and larger units: • Min. 20% of units affordable at 60% AMI. There is no requirement to also provide 10% designated for 80% AMI that would ordinarily be required under RZC Chapter 21.20. • A. Min. 10% two bedrooms units and min. 5% three bedrooms. • All affordable units shall be electric-ready	4 Stories
2	Small and Local Businesses: 10% of new ground level commercial space or a total of 7,000 sf of total commercial space dedicated to local commercial.	1 story
3	Small and Local Businesses: The lesser of 25% or 4,000 sf of new commercial space no larger than 1,000 sf to encourage and support startup and new businesses.	1 story
4	Sustainable Development	
	D. LEED Platinum, or equivalent, for all new buildings.	1 story
	Allowable Height with Incentives	12 stories

NOTES

- Specific equivalency compliance path to be determined at SPE application for each Phase.
- Alternative paths to be approved by the Director and will not require a revision to the MPD, See pp 10 of the D.A.

SECTION 2 - DESIGN CONCEPT

PROPOSED MASTERPLAN - ALL RESIDENTIAL OPTION



PROPOSED MASTERPLAN
NTS

LEGEND

- PROPOSED MPD BOUNDARY
  SITE AREA: 934,915 SQUARE FEET OR 21,4627 ACRES
- **3A** NEW BUILDING 3A
  - 7 STORY MIXED-USE RESIDENTIAL
- **3D** NEW BUILDING 3D
  - 7 STORY MIXED-USE RESIDENTIAL
- **4IC** NEW BUILDINGS 4IC
  - TWO NEW 12 STORY MIXED-USE RESIDENTIAL
  OR
  - (1) 12 STORY MIXED-USE RESIDENTIAL AND (1) 12 STORY MIXED-USE OFFICE
- **4B** NEW BUILDING 4B
  - 7 STORY RESIDENTIAL
- **I** EXISTING I GARAGE ADDITION
  - 2 STORY ADDITION TO EXISTING 2 STORY PARKING GARAGE
  74TH STREET
  - FUTURE STREET AND PLAZA IMPROVEMENTS
- NEW BUILDINGS ADDED OR MODIFIED
- **#** EXISTING BUILDINGS
- NEW/MODIFIED GROUND LEVEL PUBLIC OPEN SPACE

BUILDING DATA MATRIX AND UNIT TYPE

DEVELOPMENT AREA NOTES:

- Square Footage and Unit Count numbers in this table below are approximate and based on conceptual level of design. Maximum "Not-To-Exceed" density shall apply to the metrics used in the Transportation Impact Analysis (TIA) for the project. TIA numbers took the below approximate figures, grossed up by 5 - 10%, and then rounded them to create a conservative estimate of the total development impact and allow for appropriate flexibility as design is completed. See table 1 and 2 of the TIA for analyzed assumptions.
- Pedestrian Generating and Retail Sales Uses are provided, per RZC Section 21.10.050B.
- New Mixed-use Residential buildings include a mix of Pedestrian Oriented Uses as depicted on the plans on page 15 of the MPD, and in the appendix.
- Unit Type and Counts are estimates only, and subject to change at SPE, subject to EAAH requirements and the maximum density thresholds established by this MPD and the TIA.
- Phasing may not be sequential per the numerical order as defined in the DA.

PHASE	BLDG	COMMERCIAL RETAIL	OFFICE		RESIDENTIAL			AMENITY	SERVICES	CIRC	TERRACE	TOTAL BLDG AREA	PARKING		
		AREA	LOBBY AREA	OFFICE AREA	UNITS	AREA	LEASING AREA	AREA	AREA	AREA	AREA	LESS PARKING AND TERRACE	STALLS	AREA	RESI/OFFICE RATIO
PHASE 01	I GARAGE	-	-	-	-	-	-	-	-	1,440	-	0	284	107,060	-
PHASE 02 ALL RESIDENTIAL OPTION	4IC - RESI (WEST)	11,820	-	-	252	201,350	2,570	11,020	21,720	44,020	12,060	292,500	189	86,320	0.75/UNIT
	4IC - RESI (EAST)	11,810	-	-	252	201,350	2,570	21,590	21,780	44,020	12,060	303,050	189	86,300	0.75/UNIT
PHASE 02 RESIDENTIAL AND OFFICE OPTION	4IC - OFFICE (WEST)	10,530	4,410	245,530	-	-	-	6,970	28,900	24,440	15,240	320,780	255	107,110	1.04/ 1,000 SF
	4IC - RESI (EAST)	11,810	-	-	252	201,350	2,570	21,590	21,780	44,020	12,060	303,050	189	86,300	0.75/UNIT
PHASE 03	4B - RESI	2,690	-	-	136	110,570	1,870	9,070	7,620	18,820	9,820	150,640	102	48,330	0.75/UNIT
PHASE 04	3A - RESI	16,070	-	-	148	119,830	1,530	7,340	9,360	21,340	6,860	175,470	110	28,090	0.74/UNIT
PHASE 05	3D - RESI	14,800	-	-	140	113,300	1,670	7,600	7,330	18,980	7,670	163,680	104	25,600	0.74/UNIT
TOTAL RESIDENTIAL OPTION		**57,190**	**-**	**-**	**928**	**746,400**	**10,210**	**56,620**	**67,810**	**148,620**	**48,470**	**1,072,930**	**978**	**381,700**	
TOTAL RESIDENTIAL AND OFFICE OPTION		**55,900**	**4,410**	**245,530**	**676**	**545,050**	**7,640**	**52,570**	**74,990**	**129,040**	**51,650**	**1,101,210**	**1,044**	**402,490**	

UNIT TYPE AND COUNT | ALL RESIDENTIAL OPTION

UNIT TYPE	4IC All RESI		4B		3A		3D	
	COUNT	PERCENT	COUNT	PERCENT	COUNT	PERCENT	COUNT	PERCENT
STUDIO/OPEN 1	174	34.5	46	33.8%	48	32.4%	47	33.6%
1 BED/1 BED+	228	45.2	62	45.6%	68	45.9%	65	46.4%
2 BEDS/2 BEDS+	72	14.3	19	14.0%	24	16.2%	20	14.3%
3 BEDS	30	6.0	9	6.6%	8	5.4%	8	5.7%
TOTAL	504	100%	136	100%	148	100%	140	100%

UNIT TYPE AND COUNT | RESIDENTIAL AND OFFICE OPTION

UNIT TYPE	4IC RESI+OFFICE		4B		3A		3D	
	COUNT	PERCENT	COUNT	PERCENT	COUNT	PERCENT	COUNT	PERCENT
STUDIO/OPEN 1	87	34.5	46	33.8%	48	32.4%	47	33.6%
1 BED/1 BED+	114	45.2	62	45.6%	68	45.9%	65	46.4%
2 BEDS/2 BEDS+	36	14.3%	19	14.0%	24	16.2%	20	14.3%
3 BEDS	15	6.0	9	6.6%	8	5.4%	8	5.7%
TOTAL	252	100%	136	100%	148	100%	140	100%

OPEN SPACE

GROUND LEVEL PUBLIC OPEN SPACE

PHASE	BLDG	EXISTING GROUND LEVEL PUBLIC OPEN SPACE	NEW/MODIFIED GROUND LEVEL PUBLIC OPEN SPACE
PHASE 01	I GARAGE	7,030 SF	0 SF
PHASE 02	4IC - RESI (WEST)	7,401 SF	20,566 SF
	4IC - RESI (EAST)	0 SF	0 SF
PHASE 03	4B - RESI	7,260 SF	11,510 SF
PHASE 04	3A - RESI	71,731 SF	71,731 SF
PHASE 05	3D - RESI	0 SF	0 SF
	TOTAL	**93,422 SF**	**103,807 SF**
			(10,385 SF and 11.1 % increase)

NOTE:

1) The ground level public open space for the Resi and Office options are the same.

2) See Spaces Highlighted on the Masterplan on Page 25.

MULTIFAMILY OPEN SPACE ACCESSIBLE ONLY TO BUILDING TENANTS

PHASE	BLDG	PROPOSED MULTIFAMILY OPEN SPACE
PHASE 01	I GARAGE	-
PHASE 02 ALL RESIDENTIAL OPTION	4IC - RESI (WEST)	23,080 SF
	4IC - RESI (EAST)	21,870 SF
PHASE 02 RESIDENTIAL AND OFFICE OPTION	4IC - OFFICE (WEST)	-
	4IC - RESI (EAST)	21,870 SF
PHASE 03	4B - RESI	18,890 SF
PHASE 04	3A - RESI	14,200 SF
PHASE 05	3D - RESI	15,270 SF

NOTE:

See Section 5 for Multi-family Open Space Areas.

MULTIFAMILY OPEN SPACE:

21.10.120.E.1.A

At least 100 square feet per residential unit of open space retail shall be provided, up to a maximum area of 20 percent of the site.

PARKING SUMMARY - FULL BUILD-OUT

PROPOSED ALL RESIDENTIAL SCHEME

AS IS COMMERCIAL RATIOS		
SUMMARY		
TOTAL EXISTING COMMERCIAL SF	393,993	

COMMERCIAL PARKING SUMMARY

TOTAL OWNED PARKING STALLS	1,914	
LESS MSFT, LWSD, AMZN, ATT ENCUMBRANCES*	(505)	
NET DEDICATED PARKING	***1,409***	***3.58 / 1,000 SF***

PHASE 1 & 2 COMMERCIAL RATIOS - I GARAGE AND 4IC DEV		
SUMMARY		
TOTAL EXISTING COMMERCIAL SF	393,993	
SF COMMERCIAL ADDED	23,630	
NEW TOTAL COMMERCIAL SF	417,623	

COMMERCIAL PARKING SUMMARY

EXISTING TOTAL OWNED STALLS	1,914	
4-IC SURFACE STALLS REMOVED	(297)	
I GARAGE STALLS ADDED	284	
TOTAL OWNED PARKING STALLS	1,901	
LESS MSFT, LWSD, AMZN, ATT ENCUMBRANCES*	(505)	
NET DEDICATED PARKING	***1,396***	***3.34 / 1000 SF***

PHASE 1 & 2 RESI RATIOS		
SUMMARY		
TOTAL RESI UNITS 4IC	504	
TOTAL PARKING COUNT (3 LEVELS ABOVE)	***378***	***.75 / UNIT***

PHASE 3 COMMERCIAL RATIOS - BJ'S LOT DEV		
SUMMARY		
TOTAL EXISTING COMMERCIAL SF	417,623	
NET SF COMMERCIAL ADDED	(6,048)	
NEW TOTAL COMMERCIAL SF	411,575	

COMMERCIAL PARKING SUMMARY

EXISTING TOTAL OWNED STALLS	1,901	
4-IC SURFACE STALLS REMOVED	(63)	
TOTAL OWNED PARKING STALLS	1,838	
LESS MSFT, LWSD, AMZN, ATT ENCUMBRANCES*	(505)	
NET DEDICATED PARKING	***1,333***	***3.24 / 1000 SF***

PHASE 3 RESI RATIOS		
SUMMARY		
RESI UNITS 4IC	504	
RESI UNITS 4B	136	
TOTAL RESI UNITS	640	
4IC PARKING COUNT	***378***	***.75 / UNIT***
4B PARKING COUNT	***102***	***.75 / UNIT***
TOTAL PARKING COUNT	***480***	***.75 / UNIT***

PHASE 4 & 5 COMMERCIAL RATIOS - 3A & D RESI DEV		
SUMMARY		
TOTAL EXISTING COMMERCIAL SF	411,575	
NET SF COMMERCIAL ADDED	(58,216)	
NEW TOTAL COMMERCIAL SF	353,359	

COMMERCIAL PARKING SUMMARY

EXISTING TOTAL OWNED STALLS	1,838	
G GARAGE, LESS STALLS DEDICATED TO NEW RESIDENTIAL	(80)	
TOTAL OWNED PARKING STALLS (INCLUDES 70 EXISTING STALLS DEDICATED TO RESI)	1,758	
LESS MSFT, LWSD, AMZN, ATT ENCUMBRANCES*	(575)	
NET DEDICATED PARKING	***1,183***	***3.35 / 1000 SF***

PHASE 4 & 5 RESI RATIOS		
SUMMARY		
RESI UNITS 4IC	504	
RESI UNITS 4B	136	
RESI UNITS 3A & 3D	288	
TOTAL RESI UNITS	928	
4IC PARKING COUNT	***378***	***.75/ UNIT***
4B PARKING COUNT	***102***	***.75/ UNIT***
3A & 3D PARKING COUNT	***214***	***.75/ UNIT***
TOTAL PARKING COUNT	***694***	***.75/ UNIT***

NOTES:

- Commercial Square Footage are approximate and will shift over time given changing BOMA standards, etc. See table 1 and 2 of the TIA for analyzed assumptions.
- Encumbered stalls are those that are dedicated per existing lease agreements.
- Parking figures are approximate and based on schematic level of design. Exact parking numbers may shift at SPE per the maximums established by the TIA, this Master Plan, and the Code.

ENCUMBRANCES FOOTNOTES:

- MSFT: 55 G Garage Stalls *(Operation and Easement Agreement Section 4.7)*
- LWSD: 97 I Garage Stalls *(LWSD Easement Agreement Recital #2)*
- Amazon: 183 I Garage Stalls *(First Amendment to Easement Agreement Section 1b)*
- Amazon: 73 G Garage Stalls *(First Amendment to Easement Agreement Section 1a) & (Second Amendment to Easement Agreement Section 1)*
- AT&T: 97 I Garage Stalls *(Operation and Easement Agreement Section 4.5)*

PARKING SUMMARY - FULL BUILD-OUT

PROPOSED RESIDENTIAL AND OFFICE SCHEME

AS IS COMMERCIAL RATIOS		
SUMMARY		
TOTAL EXISTING COMMERCIAL SF	393,993	

COMMERCIAL PARKING SUMMARY

TOTAL OWNED PARKING STALLS	1,914	
LESS MSFT, LWSD, AMZN, ATT ENCUMBRANCES*	(505)	
NET DEDICATED PARKING	***1,409***	***3.58 / 1,000 SF***

PHASE 1 & 2 COMMERCIAL RATIOS - I GARAGE AND 4IC DEV		
SUMMARY		
TOTAL EXISTING COMMERCIAL SF	393,993	
SF COMMERCIAL ADDED	22,340	
NEW TOTAL COMMERCIAL SF	416,333	

COMMERCIAL PARKING SUMMARY

EXISTING TOTAL OWNED STALLS	1,914	
4-IC SURFACE STALLS REMOVED	(297)	
I GARAGE STALLS ADDED	284	
TOTAL OWNED PARKING STALLS	1,901	
LESS MSFT, LWSD, AMZN, ATT ENCUMBRANCES*	(505)	
NET DEDICATED PARKING	***1,396***	***3.35 / 1,000 SF***

PHASE 1 & 2 OFFICE RATIOS		
SUMMARY		
TOTAL OFFICE SF	245,530	
RESI UNITS 4IC	252	
TOTAL RESI UNITS	252	
4IC OFFICE PARKING COUNT	***255***	***1.04 / 1,000 SF***
4IC RESI PARKING COUNT	***189***	***.75 / UNIT***

PHASE 3 COMMERCIAL RATIOS - BJ'S LOT DEV		
SUMMARY		
TOTAL EXISTING COMMERCIAL SF	416,333	
NET SF COMMERCIAL ADDED	(6,048)	
NEW TOTAL COMMERCIAL SF	410,285	

COMMERCIAL PARKING SUMMARY

EXISTING TOTAL OWNED STALLS	1,901	
4-IC SURFACE STALLS REMOVED	(63)	
TOTAL OWNED PARKING STALLS	1,838	
LESS MSFT, LWSD, AMZN, ATT ENCUMBRANCES*	(505)	
NET DEDICATED PARKING	***1,333***	***3.25 / 1,000 SF***

PHASE 3 RESI AND OFFICE RATIOS		
SUMMARY		
TOTAL OFFICE SF	245,530	
RESI UNITS 4IC	252	
RESI UNITS 4B	136	
TOTAL RESI UNITS	388	
4IC OFFICE PARKING COUNT	***255***	***1.04 / 1,000 SF***
4IC RESI PARKING COUNT	***189***	***.75 / UNIT***
4B PARKING COUNT	***102***	***.75 / UNIT***

PHASE 4 & 5 COMMERCIAL RATIOS - 3A & D RESI DEV		
SUMMARY		
TOTAL EXISTING COMMERCIAL SF	410,285	
NET SF COMMERCIAL ADDED	(58,216)	
NEW TOTAL COMMERCIAL SF	352,069	

COMMERCIAL PARKING SUMMARY

EXISTING TOTAL OWNED STALLS	1,838	
G GARAGE, LESS STALLS DEDICATED TO NEW RESIDENTIAL	(80)	
TOTAL OWNED PARKING STALLS (INCLUDES 70 EXISTING STALLS DEDICATED TO RESI)	1,758	
LESS MSFT, LWSD, AMZN, ATT ENCUMBRANCES*	(575)	
NET DEDICATED PARKING	***1,183***	***3.36 / 1,000 SF***

PHASE 4 & 5 RESI AND OFFICE RATIOS		
SUMMARY		
TOTAL OFFICE SF	245,530	
RESI UNITS 4IC	252	
RESI UNITS 4B	136	
RESI UNITS 3A & 3D	288	
TOTAL RESI UNITS	676	
4IC OFFICE PARKING COUNT	***255***	***1.04 / 1,000 SF***
4IC RESI PARKING COUNT	***189***	***.75 / UNIT***
4B PARKING COUNT	***102***	***.75 / UNIT***
3A & 3D PARKING COUNT	***214***	***.74 / UNIT***

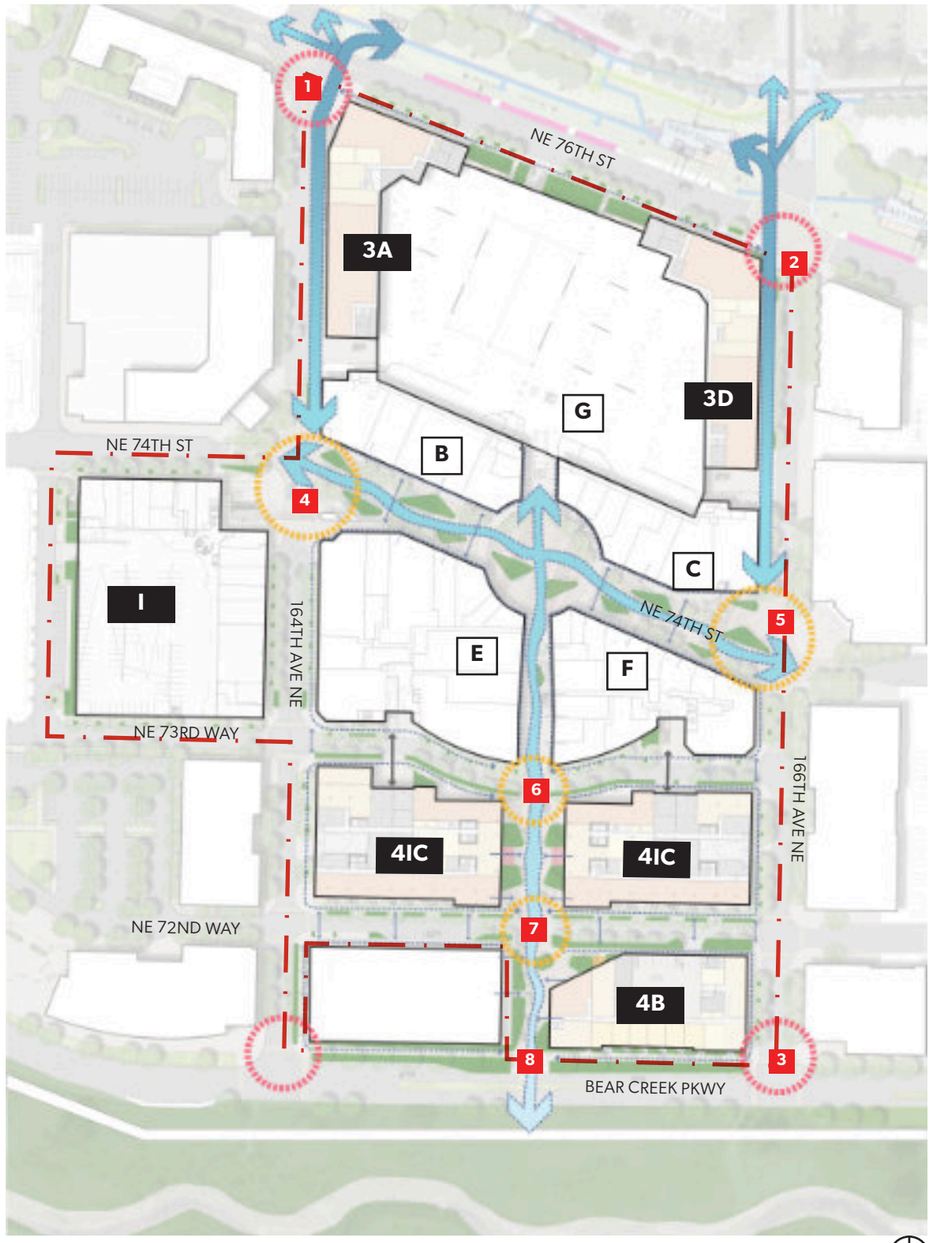
NOTES:

- Commercial Square Footage are approximate and will shift over time given changing BOMA standards, etc. See table 1 and 2 of the TIA for analyzed assumptions.
- Encumbered stalls are those that are dedicated per existing lease agreements.

ENCUMBRANCES FOOTNOTES:

- MSFT: 55 G Garage Stalls *(Operation and Easement Agreement Section 4.7)*
- LWSD: 97 I Garage Stalls *(LWSD Easement Agreement Recital #2)*
- Amazon: 183 I Garage Stalls *(First Amendment to Easement Agreement Section 1b)*
- Amazon: 73 G Garage Stalls *(First Amendment to Easement Agreement Section 1a) & (Second Amendment to Easement Agreement Section 1)*
- AT&T: 97 I Garage Stalls *(Operation and Easement Agreement Section 4.5)*

URBAN DESIGN DIAGRAM



OPEN SPACE DIAGRAM

0' 100' 200'

LEGEND

- PROJECT BOUNDARY
- AMENITY SPACE
- LOBBY ENTRY
- GREEN SPACE
- PEDESTRIAN CIRCULATION
- PEDESTRIAN ACCESS
- LOADING ZONE ALIGNMENT
- CENTRAL PEDESTRIAN PATHWAY
- VEHICLE AND PEDESTRIAN GATEWAY
- BICYCLE AND PEDESTRIAN GATEWAY
- 1 DOWNTOWN REDMOND GATEWAY
- 2 LIGHT RAIL STATION GATEWAY
- 3 BEAR CREEK PARKWAY GATEWAY - EAST
- 4 74TH PEDESTRIAN ZONE GATEWAY - WEST
- 5 74TH PEDESTRIAN ZONE GATEWAY - EAST
- 6 RETAIL GATEWAY
- 7 BEAR CREEK PARKWAY & 72ND WAY GATEWAY
- 8 BEAR CREEK PARKWAY GATEWAY
- # EXISTING BUILDING
- # PROPOSED NEW OR MODIFIED EXISTING BUILDING

Town Center Mixed Use Subarea Gateways

As described in the Downtown Design Standards, the project subarea should emphasize pedestrian connections similar to the Old Town Zone while providing a transition to the neighboring Bear Creek and adjacent office zones.

A primary design objective was to increase the porosity at site gateways to draw pedestrians into the site. Gateways 1 and 2 adjacency to Downtown and the Light Rail Station are the primary pedestrian entries and act as the site's front door. Gateways 3 and 8 provide improved multi-modal gateways while creating new connections to the existing Bear Creek Open Space.

The design team has identified key internal and external site gateways that are of special importance to the project design. Development at these gateways should celebrate the urban edge condition and incorporate Architectural and Landscape character guidelines as described in the following pages. In addition to the provided guidelines, precedent imagery identifies a vision for the character of these locations. While the final future design will differ some from the precedent imagery, it should reflect the character of the images along with the guidelines. The provided gateway design guidelines are intended to be used conjunction with the existing City of Redmond Design Guidelines. The development of these guidelines was a collaborative effort with City staff and the Design Review Board during the MPD review.

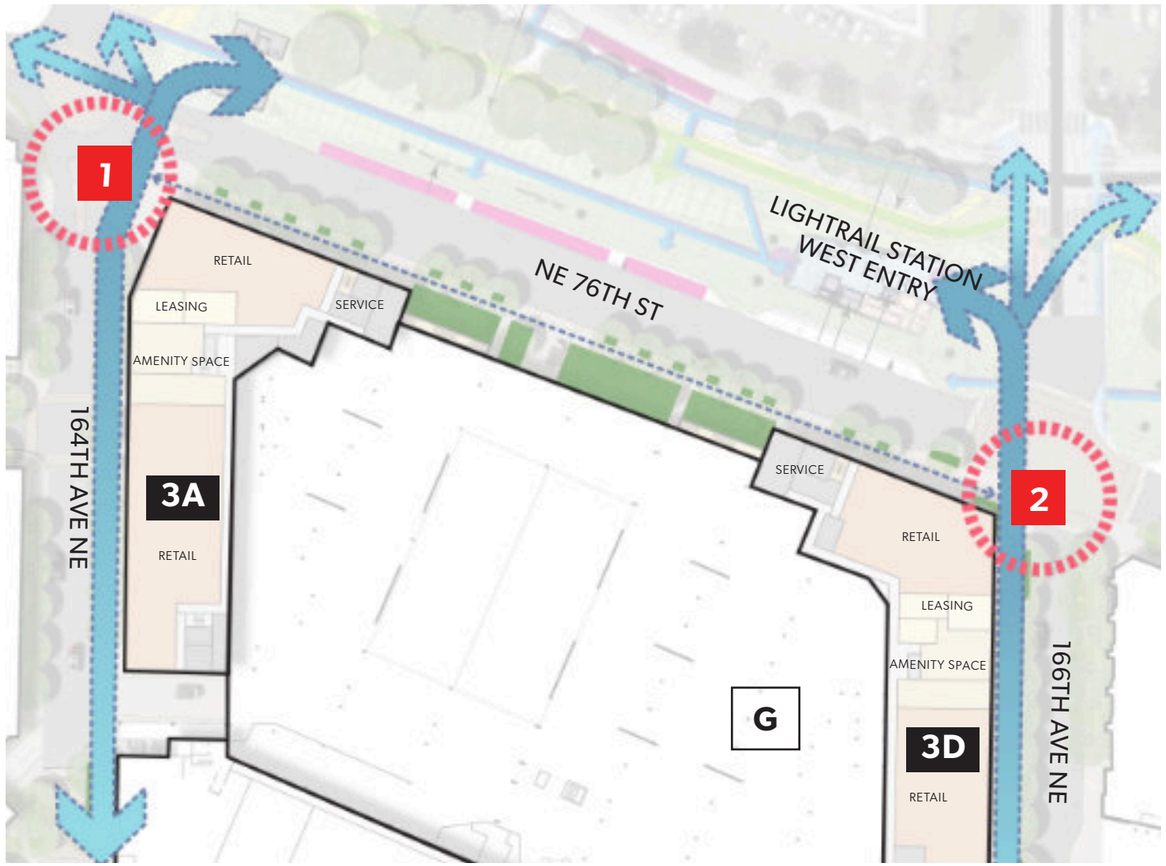
Creating open space connections is vital within the re-imagined Redmond Town Center. Safe and generous crossings at the new light rail access will serve a new influx of residents and visitors alike. Clear and defined bicycle circulation from Bear Creek Parkway into and around the site will provide easy access to all retail and residential frontages, as well as bike parking locations throughout. A defined central pedestrian spine will form a strong pathway into the heart of the retail core, while connecting to the entry and amenity spaces.

Proposed precedent imagery represents a design approach to showcase the movement of people, emphasize verticality, and create a playful active facade in place of horizontal concrete screening. While the final future design will differ some from the precedent imagery, it should reflect these goals.

The landscape design character throughout the site is intended to highlight the transition from urban at the north to more natural planting and landscape features as a visitor gets closer to Bear Creek.

NORTHERN MULTI-MODAL SITE ENTRY GATEWAYS

GATEWAY MAP



GATEWAY MAP
0' 50' 100'

NORTH 1 AND 2 GATEWAY

Most site visitors will approach and enter the site along the northern gateways either from downtown Redmond or from the new light rail station. These corner gateways create an urban edge and represent the primary front doors to Redmond Town Center. New table topped intersection improvements.

SUPPLEMENTAL DESIGN GUIDELINES

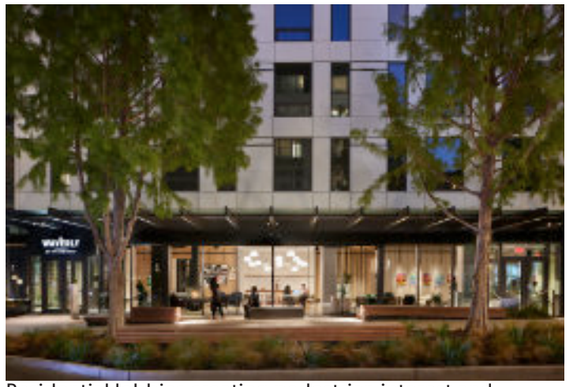
- Arrival - Entry for light rail passengers and from downtown;
- Prominent urban edge at street corner;
- Glazed storefront for ground level retail uses - encourage food and beverage tenants;
- Weather protection at face of building;
- Signage, lighting and potential art elements that enhance sense of arrival and site identity;
- Enhanced pedestrian crossing at Gateway 2;
- Bike lanes extend into site.
- Reinforce and celebrate the street corner by providing pedestrian entrances that orient toward the corner.

NOTE: Gateway design and precedent imagery intended to demonstrate design intent, not final design. Final design shall be included in SPE and shall meet the intent demonstrated in the above schematic design.

PRECEDENT IMAGES



Activated Public Realm & Corner Retail



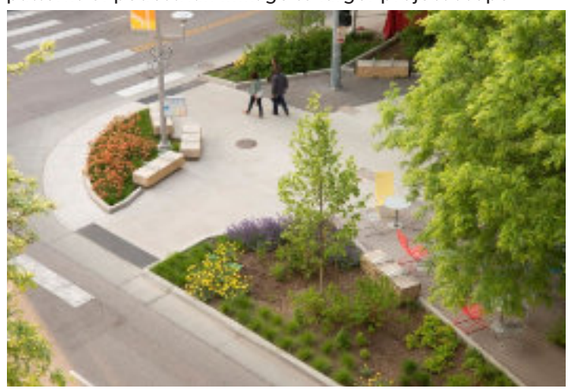
Residential lobbies creating pedestrian interest and contributing to experience of public realm



Overhead weather protection, street trees reinforced patterns of pedestrian linkage to larger project scope



Public Stair Works in concert with signage to create inviting frintage at 76th facade.



Landscape Buffer Planting at Intersection creates protected pedestrian space for retail



Food and Beverage Seating activates right of way areas

NORTHERN MULTI-MODAL SITE ENTRY GATEWAYS

GATEWAY 2 APPROACH, LOOKING SOUTH



NOTE: Gateway design and precedent imagery intended to demonstrate design intent, not final design. Final design shall be included in SPE and shall meet the intent demonstrated in the above schematic design.

HARDSCAPE

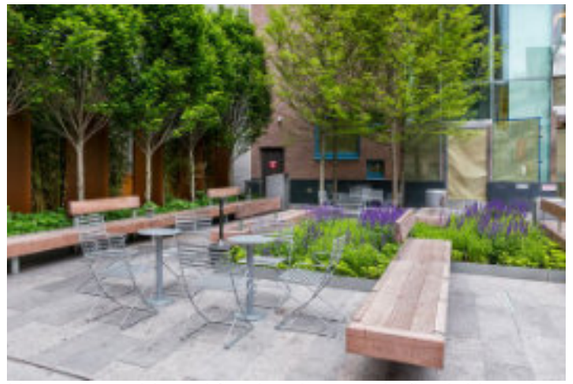


Raised intersection promotes safe crossing and prioritizes pedestrians



Varied pavement creates dynamic spaces with integrated planting and lighting

FURNISHINGS



Mixing moveable and fixed seating create flexibility and variety of seating types.



Lining circulation spaces with seating and low level lighting helps to define space and clarify travel routes.

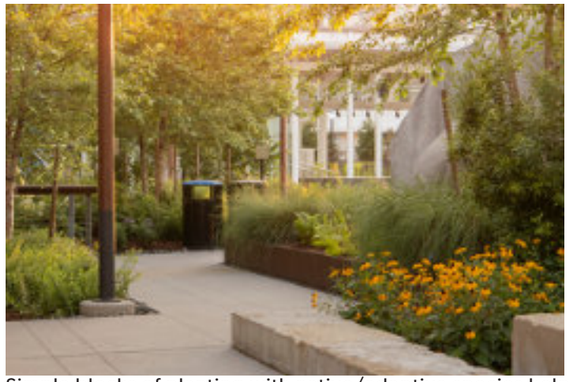


Flexible and bold furnishings create vibrant hubs for activity and gathering

PLANTING/ LIGHTING



Linear seating arrangements create strong edges and protect planting areas



Simple blocks of planting with native/adaptive species help lower maintenance needs



Sculptural pedestrian fixtures provides area lighting and create identity for urban spaces

SOUTHERN MULTI-MODAL SITE ENTRY GATEWAYS

GATEWAY MAP



GATEWAY MAP

0' 50' 100'

166TH AND BEAR CREEK

The new mixed-use residential building 4B replaces existing surface parking and holds the street corner to signify multi-modal entry form Bear Creek parkway. The gateway will need to relate to both the pedestrian at the ground level while also serving as a vertical focal point with visibility from Hwy 520.

SUPPLEMENTAL DESIGN GUIDELINES

- Arrival - Entry from Bear Creek Parkway/166th Avenue;
- Large glazing for visibility to ground level uses;
- Landscape edge condition/buffer at Bear Creek Parkway;
- Weather protection at building entries;
- Signage and lighting that enhance site identity, safety and connection to Bear Creek Parkway and Marymoor Park.

NOTE: Gateway design and precedent imagery intended to demonstrate design intent, not final design. Final design shall be included in SPE and shall meet the intent demonstrated in the above schematic design.

PRECEDENT IMAGES



Residential Lobby presence at corner



Transparency, residential lobby and amenity that engages with pedestrian realm



Overhead Weather Protection, Streetscape Planting



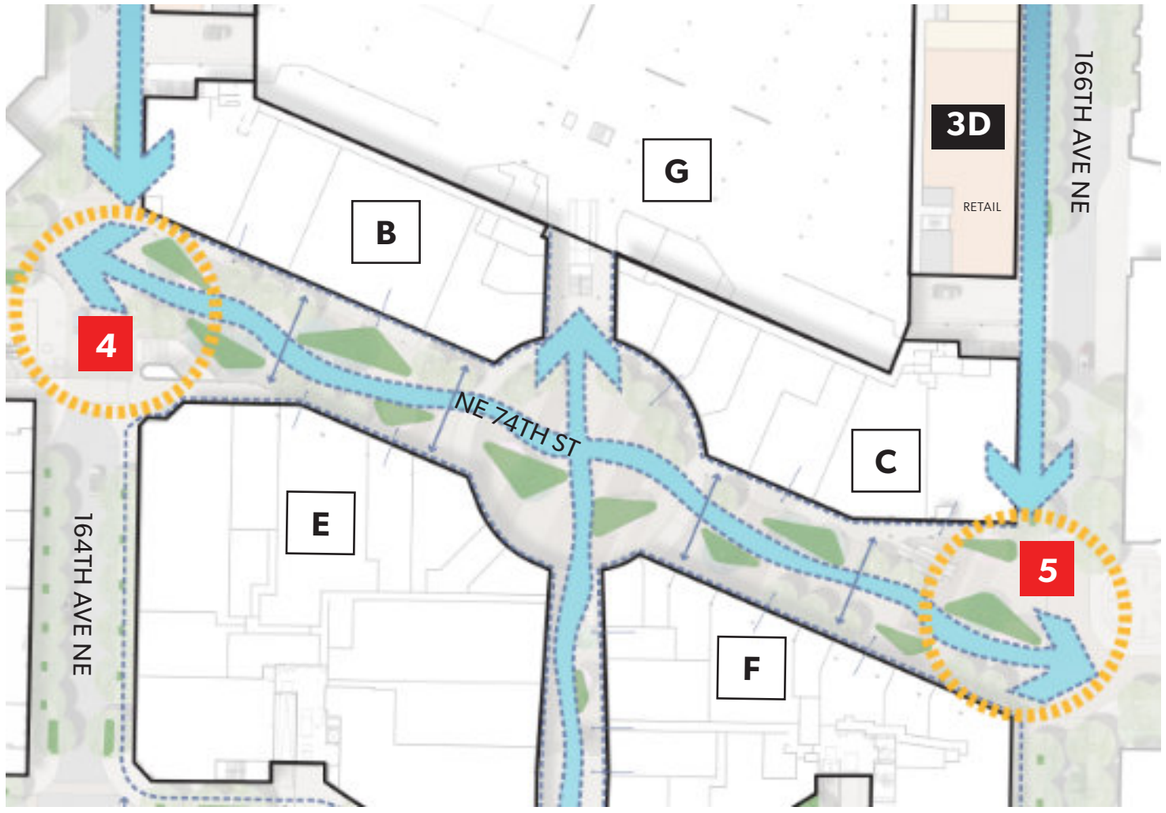
Native Planting Buffer at Bear Creek Parkway



Indentity Art Features in Pavement

74TH STREET GATEWAYS

GATEWAY MAP



GATEWAY MAP
0' 50' 100'

INTERNAL 74TH 5 AND 6 GATEWAY

Pedestrian focused streetscape and intersection improvements at 74th will pull the character of the pedestrian plaza across 164th and 166th to draw visitors into the heart of the site. The idea is to improve the visibility of 74th St from the northern gateways and signify the entry of a pedestrian first and vehicle second intersection.

SUPPLEMENTAL DESIGN GUIDELINES

- Entry to Pedestrian focus at NE 74th Street;
- Glazed storefront for ground level retail uses food and beverage tenants encouraged. Provide areas for potential outdoor dinning.
- Weather protection at building entrances;
- Signage, lighting and art elements that enhance site identity;
- Ground Level Planting and pavement patterns that limit the vehicular traffic and encourage pedestrian use. Table-topped intersections for traffic calming and enhanced pedestrian crossing;
- Visibility of vertical circulation;
- Pedestrian focused corridor - no vehicular use.

NOTE: Gateway design and precedent imagery intended to demonstrate design intent, not final design. Final design shall be included in SPE and shall meet the intent demonstrated in the above schematic design.

PRECEDENT IMAGES



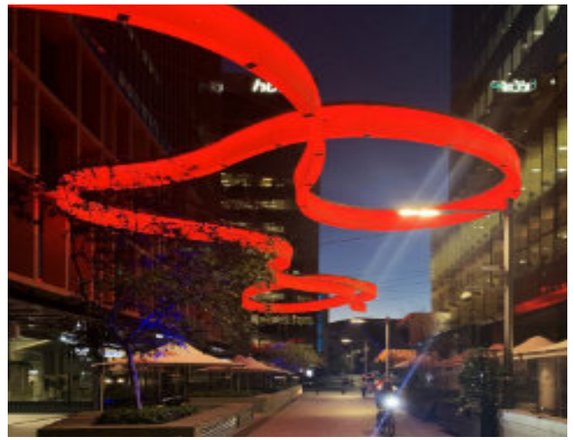
Gateway 5: Vision for refreshed Retail Center, active pedestrian uses, enhanced landscape, public circulation



Landscape islands with integral seating help direct circulation and provide greenspace and respite.



Retail Seating to activate and create inviting atmosphere



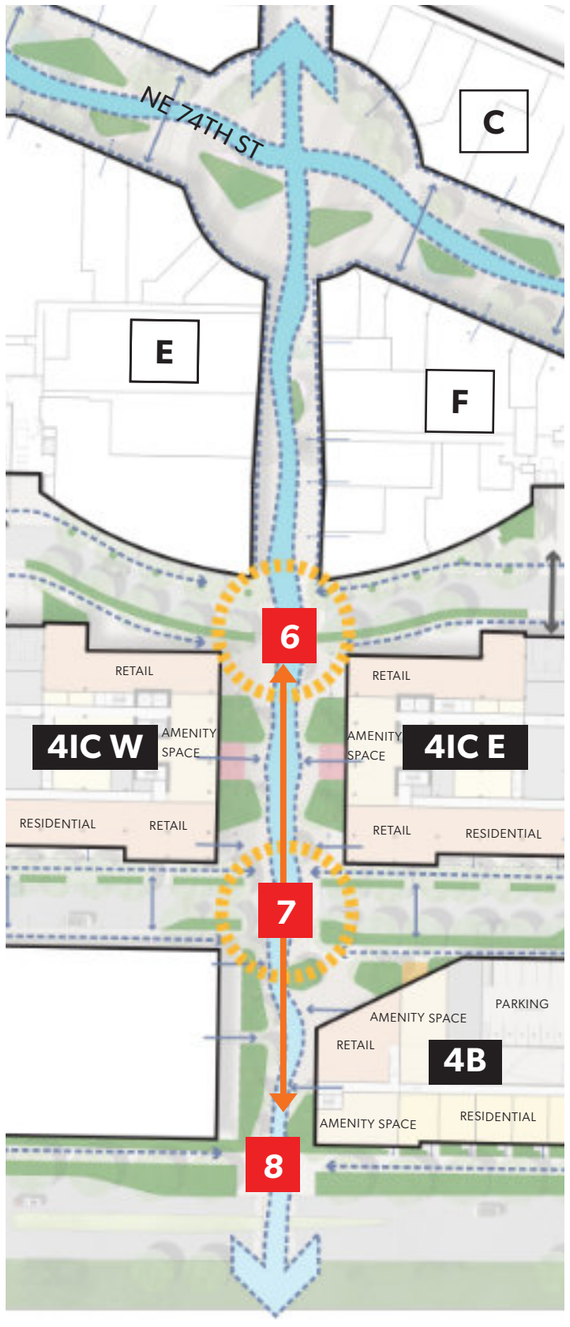
Sculptural lighting elements



Specialty Paving

INTERNAL PEDESTRIAN ORIENTED GATEWAYS

GATEWAY MAP



GATEWAY MAP

0' 50' 100'

PEDESTRIAN GATEWAYS

The internal north-south gateways are primarily pedestrian focused to extend the pedestrian only plazas across the internal private streets. The plaza and active frontages at each of these gateways act as stepping stones to provide interest and pull visitors through the site.

SUPPLEMENTAL DESIGN GUIDELINES

- North/ South Connection - focus on pedestrian-oriented uses;
- Extension of existing RTC Plaza Space at retail core. Building setback from sidewalk to provide shared public open space;
- Glazed storefront for ground level uses - retail proposed;
- Weather Protection at building entries;
- Signage, lighting and art elements that enhance site identity and pedestrian experience;
- Enhanced Planting mimicking natural systems and providing educational value;
- Pedestrian focused corridor - no vehicular use.

NOTE: Gateway design and precedent imagery intended to demonstrate design intent, not final design. Final design shall be included in SPE and shall meet the intent demonstrated in the above schematic design.

PRECEDENT IMAGES



Overhead weather protection. Ground floor activated by lobbies, retail and amenities



Enhanced plaza and planting with ample seating



Creative lighting that aids in safety and wayfinding



Enhance gather spaces with ample seating and art



Sprecialty paving that reinforces a sense of place



Shared multi-modal access within woonerf space

PROPOSED GROUND LEVEL



PROPOSED GROUND LEVEL - ALL RESIDENTIAL SCHEME

0' 100' 200'



PROPOSED GROUND LEVEL - RESIDENTIAL AND OFFICE SCHEME

0' 100' 200'

LEGEND

- PROJECT BOUNDARY
- # EXISTING BUILDING
- # PROPOSED NEW OR MODIFIED EXISTING BUILDING
- PARKING ENTRY
- LOADING ENTRY
- PEDESTRIAN ENTRY
- COMMERCIAL
- COMMON RESI/OFFICE AMENITY
- RESIDENTIAL
- LEASING / MAIL
- CIRCULATION
- PARKING
- SERVICE
- OFFICE

PROPOSED LEVEL 2 - PARKING LEVEL



PROPOSED LEVEL 2 - ALL RESIDENTIAL SCHEME

0' 100' 200'



PROPOSED LEVEL 2 - RESIDENTIAL AND OFFICE SCHEME

0' 100' 200'

LEGEND

- PROJECT BOUNDARY
- # EXISTING BUILDING
- # PROPOSED NEW OR MODIFIED EXISTING BUILDING
- COMMERCIAL
- COMMON RESI/OFFICE AMENITY
- RESIDENTIAL
- LEASING / MAIL
- CIRCULATION
- PARKING
- SERVICE

PROPOSED ROOF LEVEL



PROPOSED ROOF LEVEL - ALL RESIDENTIAL SCHEME

0' 100' 200'



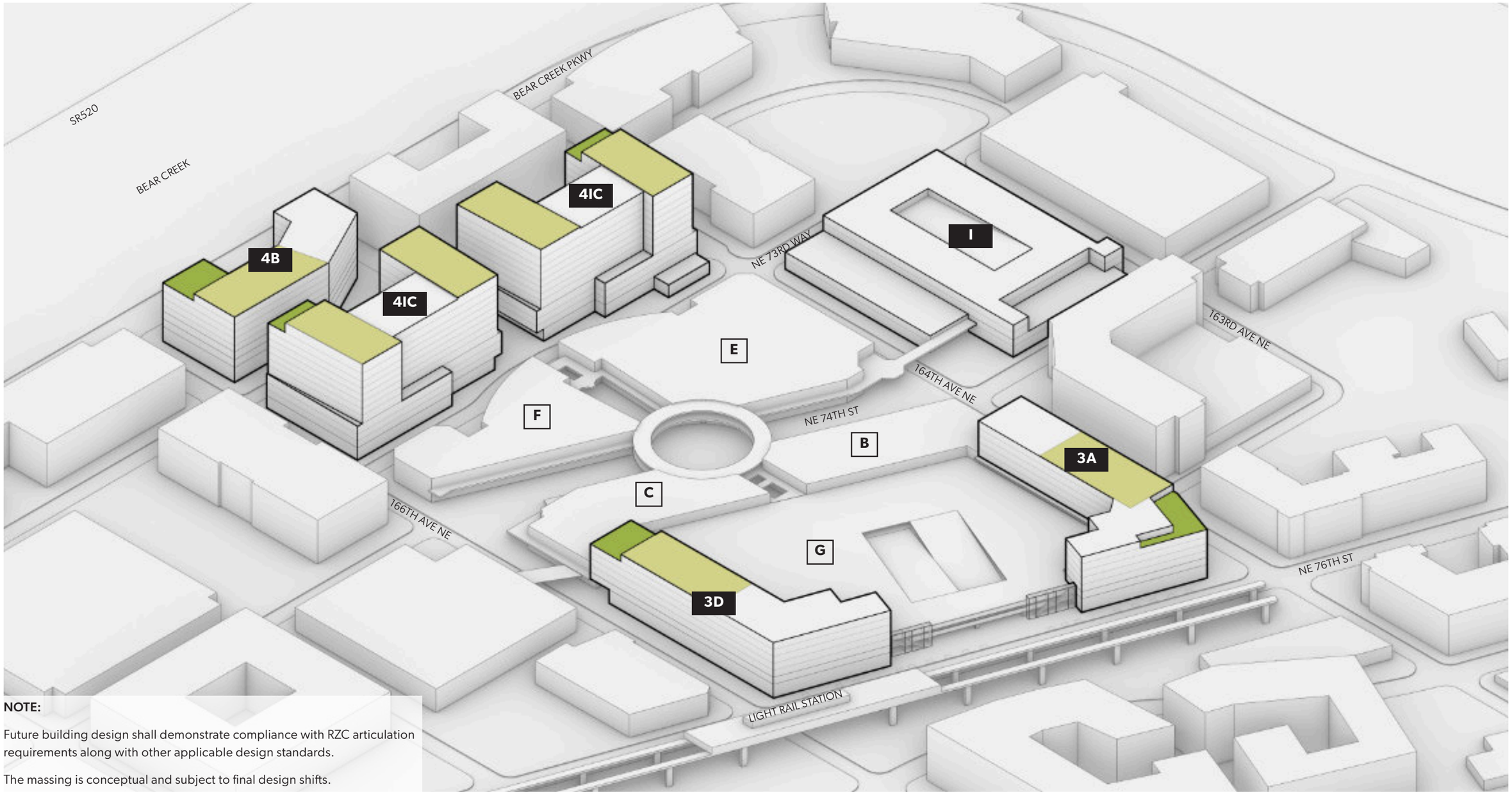
PROPOSED ROOF LEVEL - RESIDENTIAL AND OFFICE SCHEME

0' 100' 200'

LEGEND

- PROJECT BOUNDARY
- # EXISTING BUILDING
- # PROPOSED NEW OR MODIFIED EXISTING BUILDING
- UNOCCUPIED GREEN ROOF
- BUILDING OPEN SPACE
- INTENDED NOT TO BE VEGETATED

OVERALL MASSING VIEWS - NORTHEAST PERSPECTIVE (4IC RESIDENTIAL SCHEME)



NOTE:

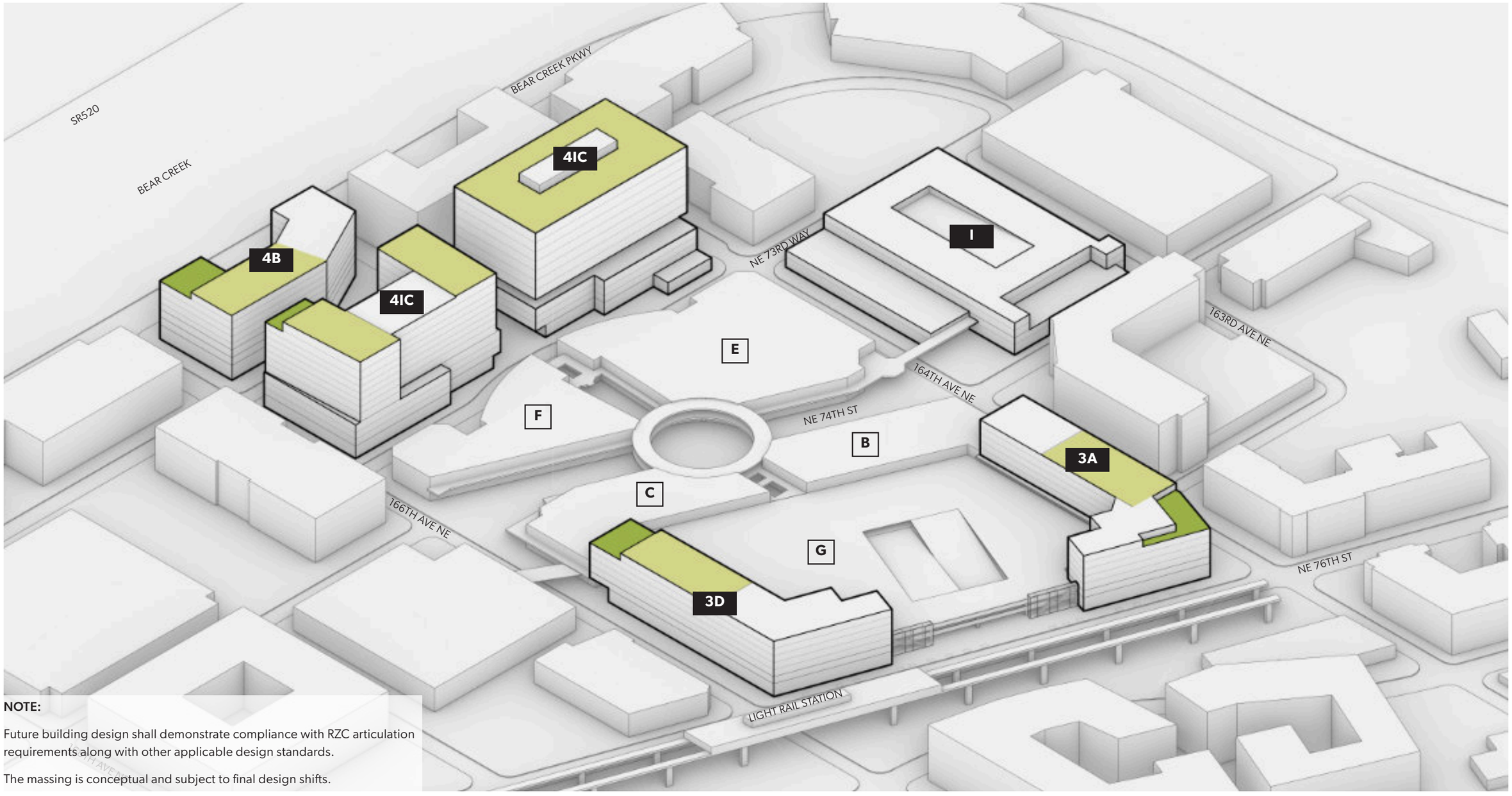
Future building design shall demonstrate compliance with RZC articulation requirements along with other applicable design standards.

The massing is conceptual and subject to final design shifts.

OVERALL MASSING VIEWS - NORTHEAST PERSPECTIVE (ALL RESIDENTIAL SCHEME)

NTS

OVERALL MASSING VIEWS - NORTHEAST PERSPECTIVE (4IC OFFICE SCHEME)



NOTE:

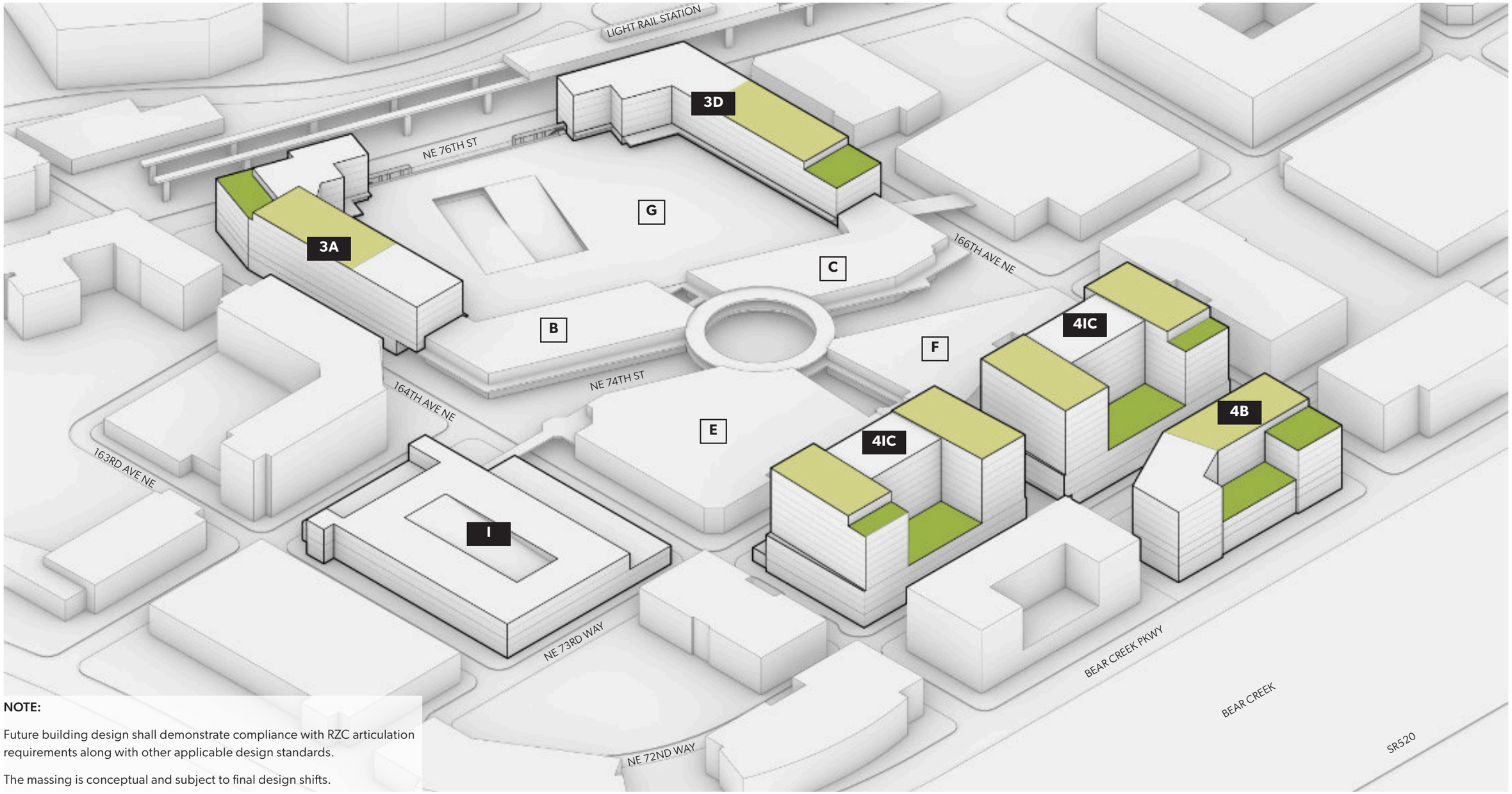
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The massing is conceptual and subject to final design shifts.

OVERALL MASSING VIEWS - NORTHEAST PERSPECTIVE (RESIDENTIAL AND OFFICE SCHEME)

NTS

OVERALL MASSING VIEWS - SOUTHWEST PERSPECTIVE (4IC RESIDENTIAL SCHEME)



NOTE:

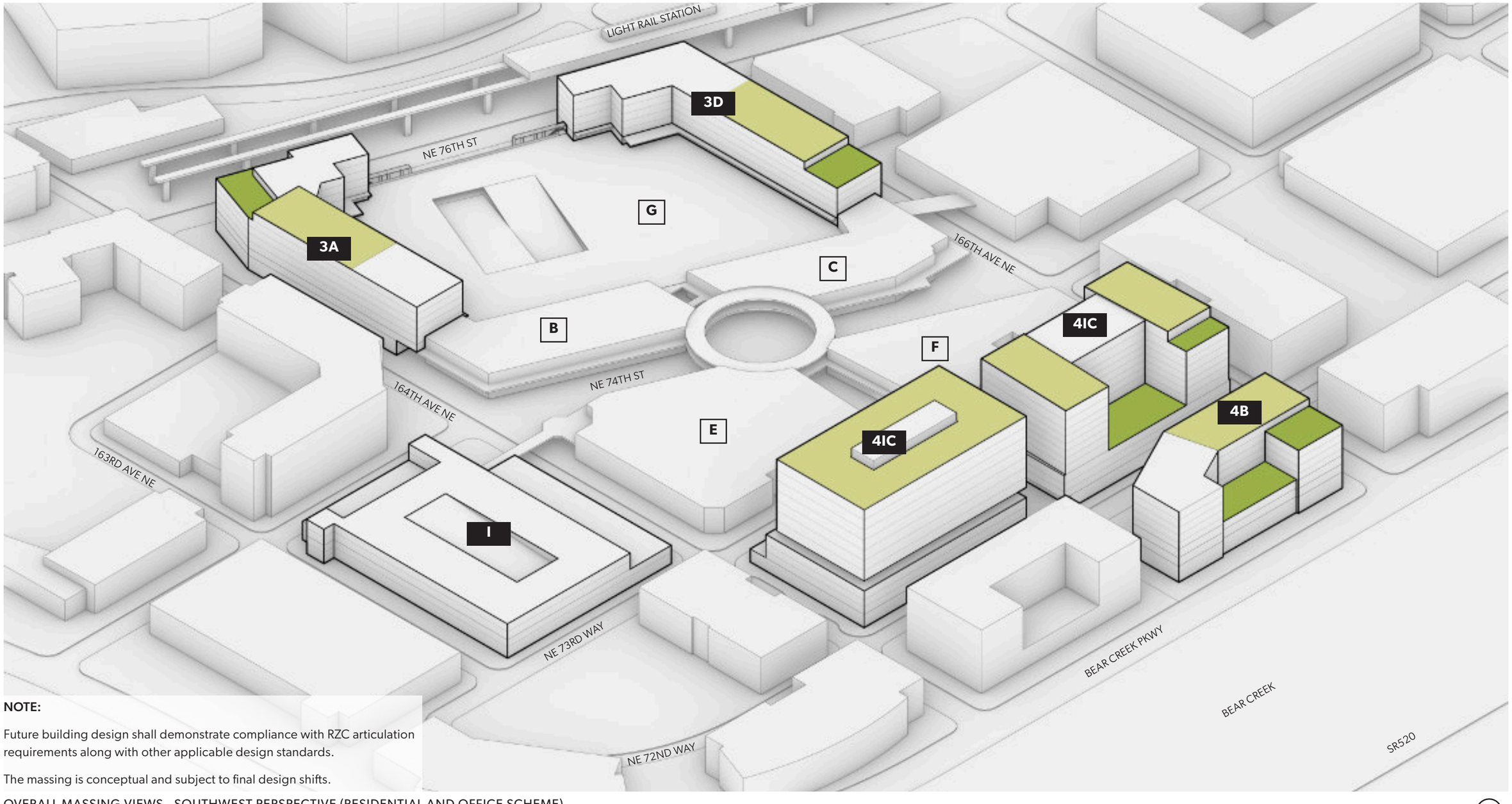
Future building design shall demonstrate compliance with RZC articulation requirements along with other applicable design standards.

The massing is conceptual and subject to final design shifts.

OVERALL MASSING VIEWS - SOUTHWEST PERSPECTIVE (ALL RESIDENTIAL SCHEME)

NTS

OVERALL MASSING VIEWS - SOUTHWEST PERSPECTIVE (4IC OFFICE SCHEME)



NOTE:

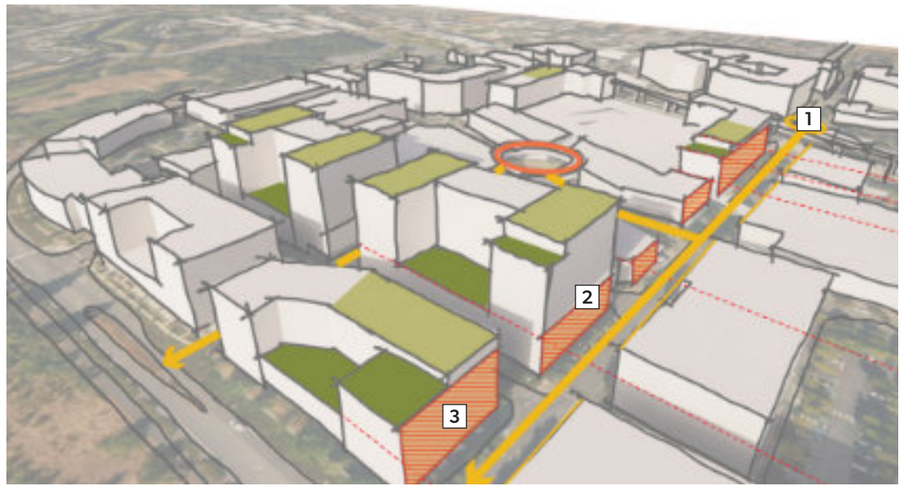
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The massing is conceptual and subject to final design shifts.

OVERALL MASSING VIEWS - SOUTHWEST PERSPECTIVE (RESIDENTIAL AND OFFICE SCHEME)

NTS

BULK AND SCALE DIAGRAMS (4IC ALL RESIDENTIAL SCHEME)



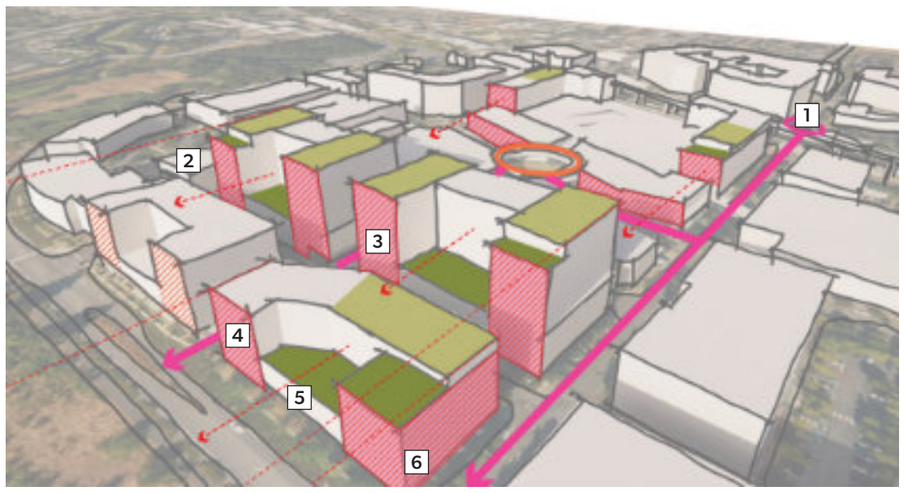
1 LIGHT RAIL STATION

2 RELIEF AT PODIUM

3 GROUND LEVEL ACTIVATION AND REGISTRATION OF PODIUM WITH MASSING ACROSS 166TH AVE NE

BULK AND SCALE DIAGRAMS (4IC ALL RESIDENTIAL SCHEME) - VIEW FROM SE

NTS



1 LIGHT RAIL STATION

2 EXISTING DEVELOPMENT

3 TERRACED MASSING AT SOUTH ORIENTATION

4 VERTICAL VARIATION OF MASSING AT LONG FACADE, REPETITION OF URBAN FORM

5 RELIEF AT BEAR CREEK PARKWAY

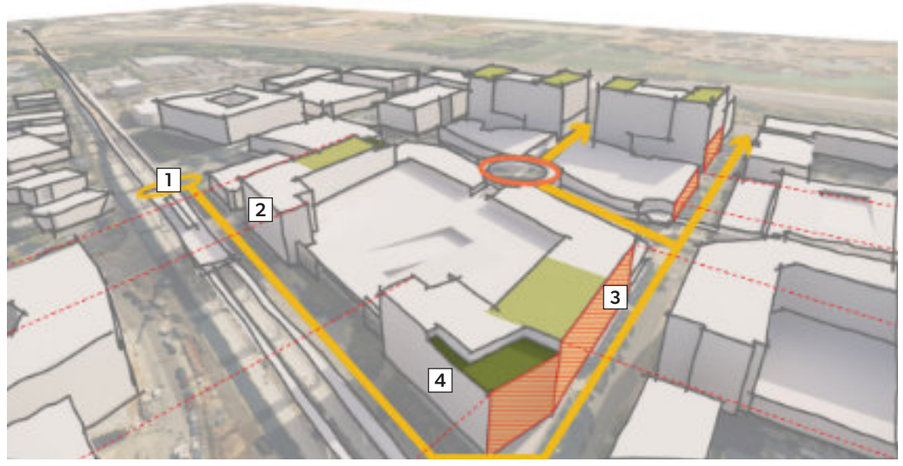
6 GATEWAY CORNER

BULK AND SCALE DIAGRAMS (4IC ALL RESIDENTIAL SCHEME) - VIEW FROM SE

NTS

NOTE:

1).Note - conceptual massing design, buildings will go through additional design review to show compliance with modulation standards as part of an overall design composition.



1 LIGHT RAIL STATION

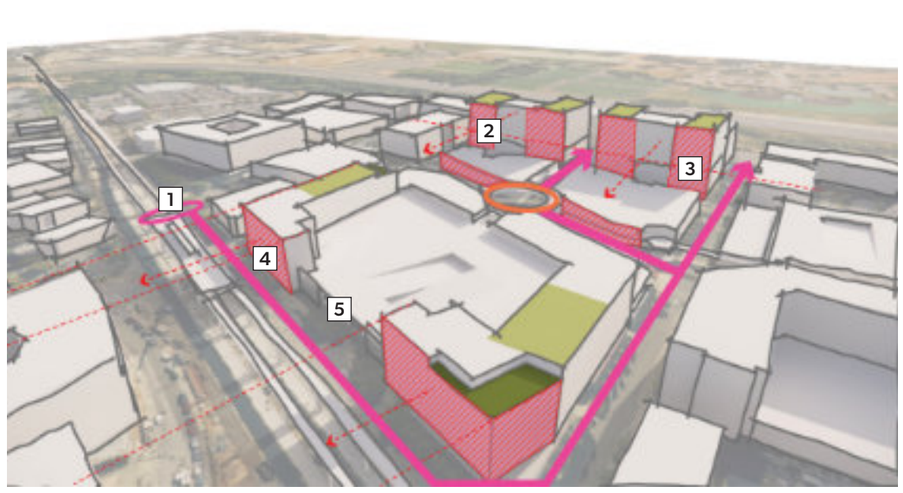
2 PROPOSED DEVELOPMENT SCALED TO MATCH ADJACENT EXISTING DEVELOPMENT

3 GROUND LEVEL ACTIVATION AND REGISTRATION OF PODIUM WITH MASSING ACROSS 164TH AVE NE

4 FACADE ORIENTED TO LIGHT RAIL

BULK AND SCALE DIAGRAMS (4IC ALL RESIDENTIAL SCHEME) - VIEW FROM NW

NTS



1 LIGHT RAIL STATION

2 VERTICAL VARIATION OF MASSING AT LONG FACADE, REPETITION OF URBAN FORM

3 TERRACED MASSING AT NORTH ORIENTATION

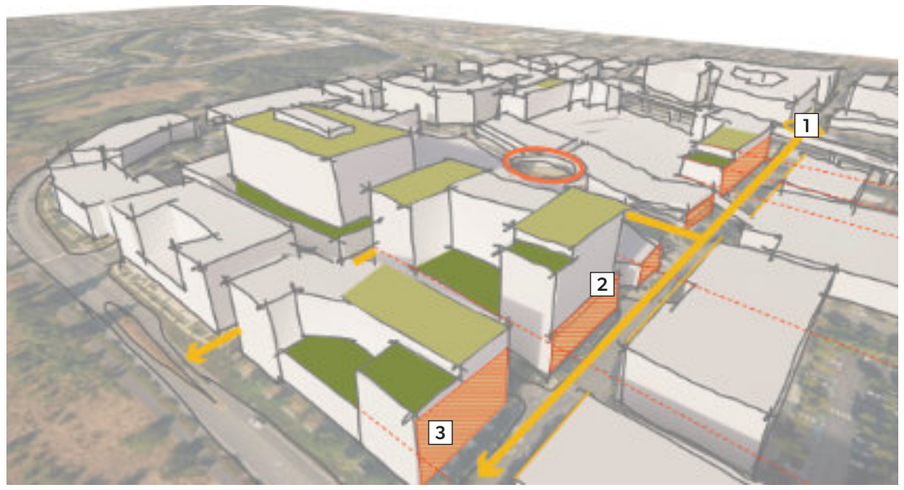
4 PROPOSED DEVELOPMENT SCALED TO MATCH ADJACENT EXISTING DEVELOPMENT

5 RELIEF AT METRO ORIENTED FACADES

BULK AND SCALE DIAGRAMS (4IC ALL RESIDENTIAL SCHEME) - VIEW FROM NW

NTS

BULK AND SCALE DIAGRAMS (4IC RESIDENTIAL AND OFFICE SCHEME)

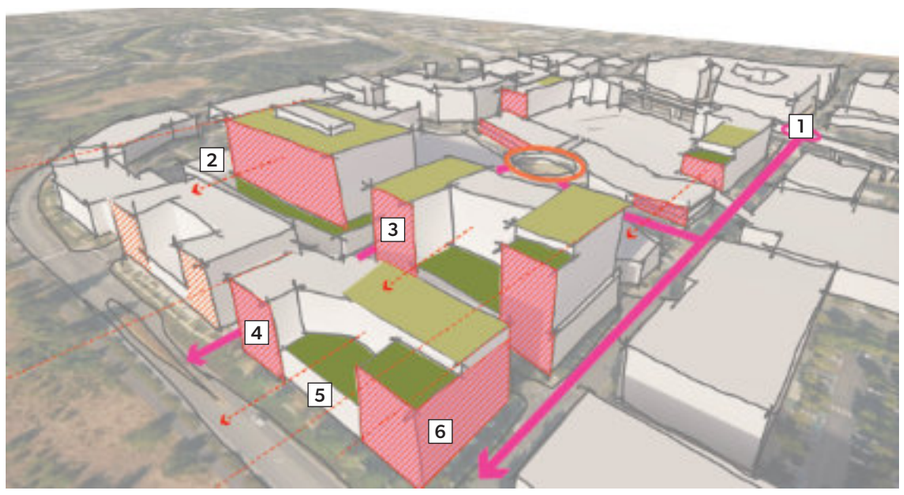


1 LIGHT RAIL STATION

2 RELIEF AT PODIUM

3 GROUND LEVEL ACTIVATION AND REGISTRATION OF PODIUM WITH MASSING ACROSS 166TH AVE NE

BULK AND SCALE DIAGRAMS (4IC RESIDENTIAL AND OFFICE SCHEME) - VIEW FROM SE
NTS



1 LIGHT RAIL STATION

2 EXISTING DEVELOPMENT

3 TERRACED MASSING AT SOUTH ORIENTATION

4 VERTICAL VARIATION OF MASSING AT LONG FACADE, REPETITION OF URBAN FORM

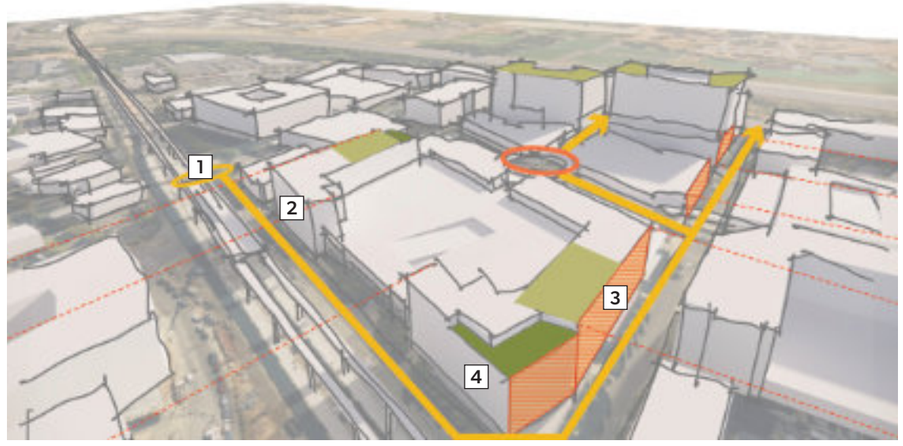
5 RELIEF AT BEAR CREEK PARKWAY

6 GATEWAY CORNER

BULK AND SCALE DIAGRAMS (4IC RESIDENTIAL AND OFFICE SCHEME) - VIEW FROM SE
NTS

NOTE:

1).Note - conceptual massing design, buildings will go through additional design review to show compliance with modulation standards as part of an overall design composition.



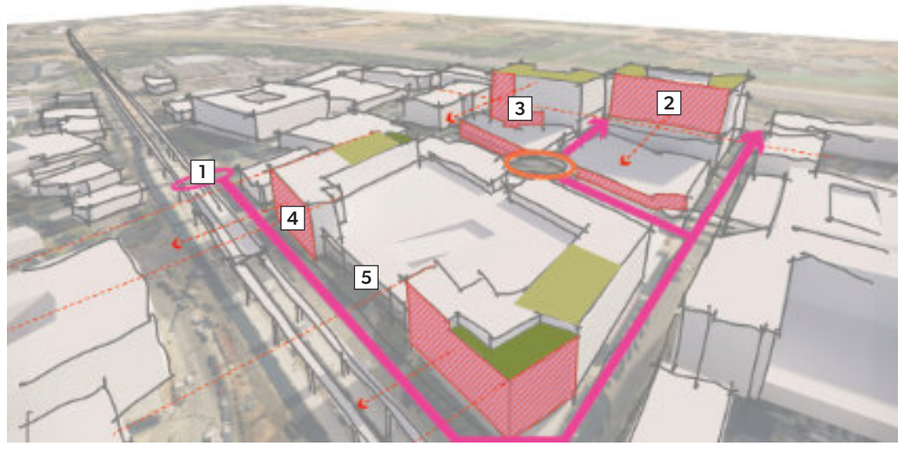
1 LIGHT RAIL STATION

2 PROPOSED DEVELOPMENT SCALED TO MATCH ADJACENT EXISTING DEVELOPMENT

3 GROUND LEVEL ACTIVATION AND REGISTRATION OF PODIUM WITH MASSING ACROSS 164TH AVE NE

4 FACADE ORIENTED TO LIGHT RAIL

BULK AND SCALE DIAGRAMS (4IC RESIDENTIAL AND OFFICE SCHEME) - VIEW FROM NW
NTS



1 LIGHT RAIL STATION

2 VERTICAL VARIATION OF MASSING AT LONG FACADE, REPETITION OF URBAN FORM

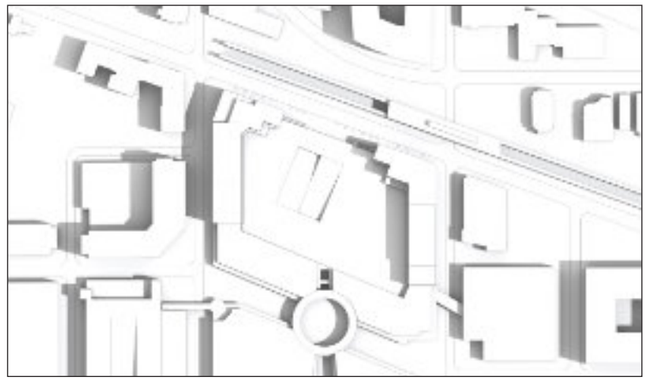
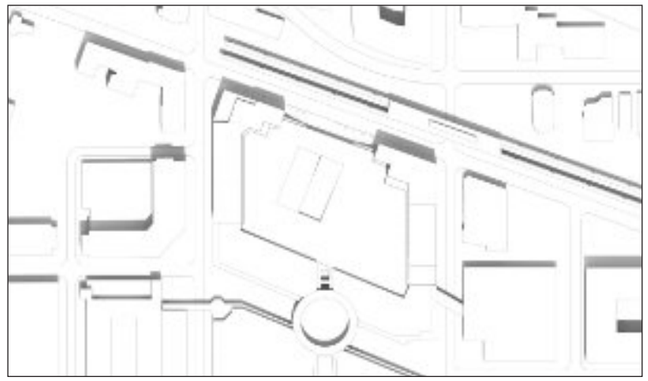
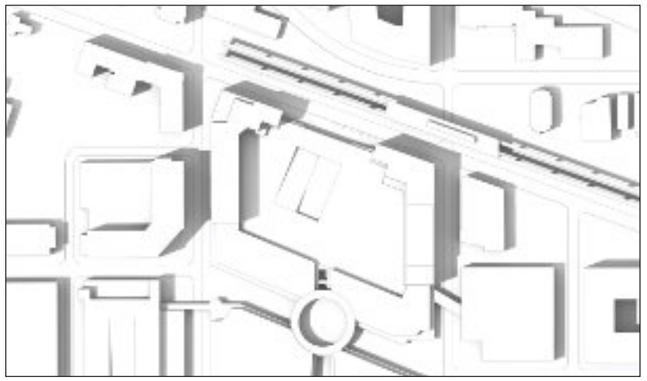
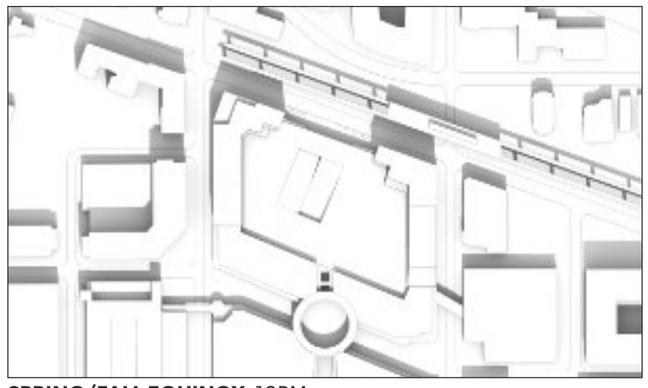
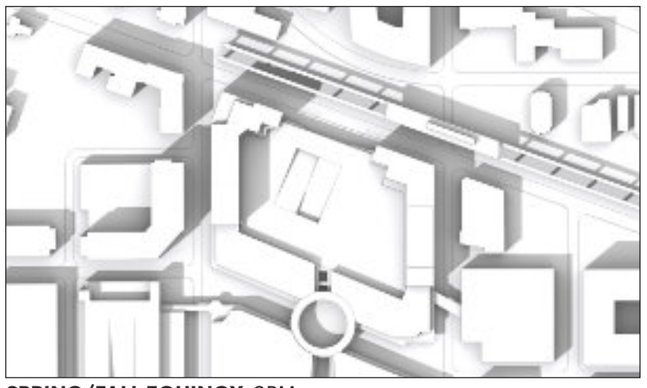
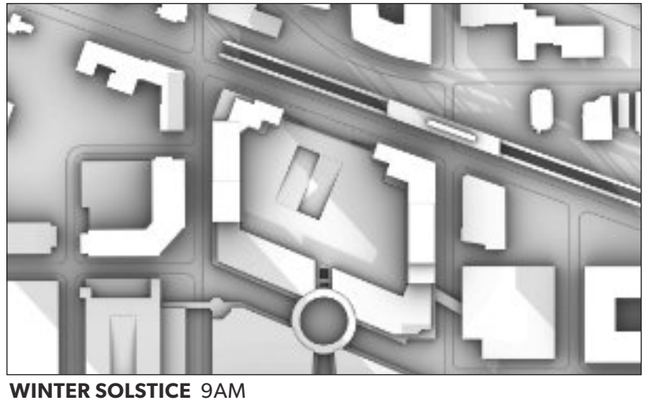
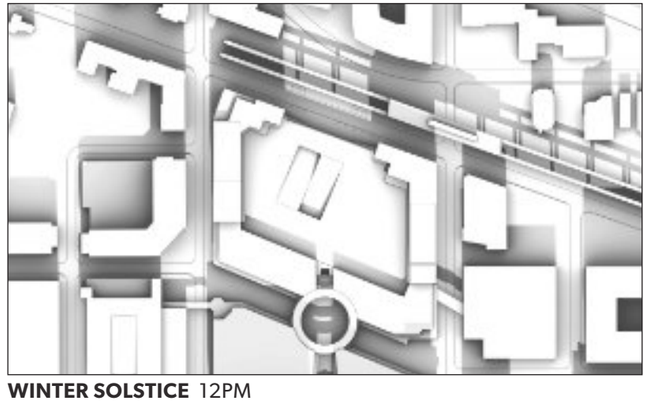
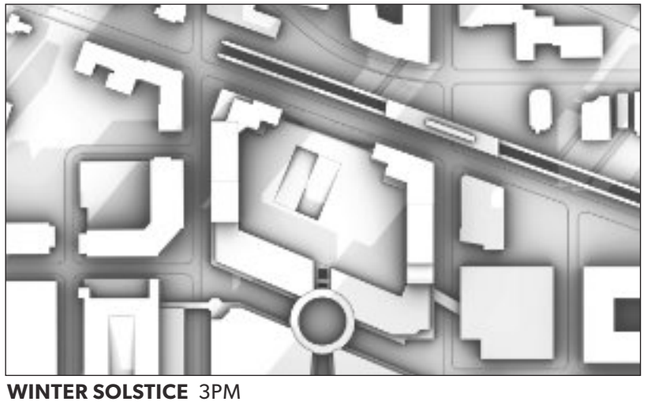
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4 PROPOSED DEVELOPMENT SCALED TO MATCH ADJACENT EXISTING DEVELOPMENT

5 RELIEF AT METRO ORIENTED FACADES

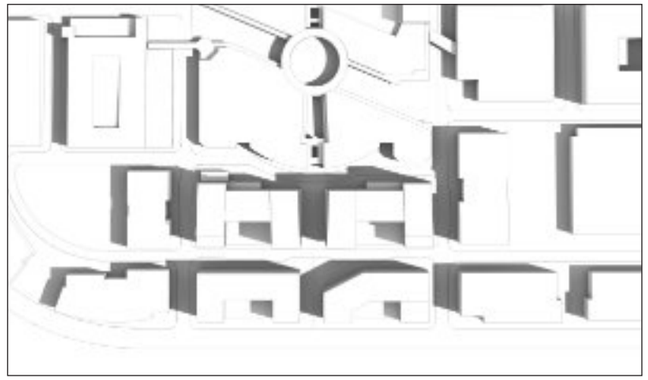
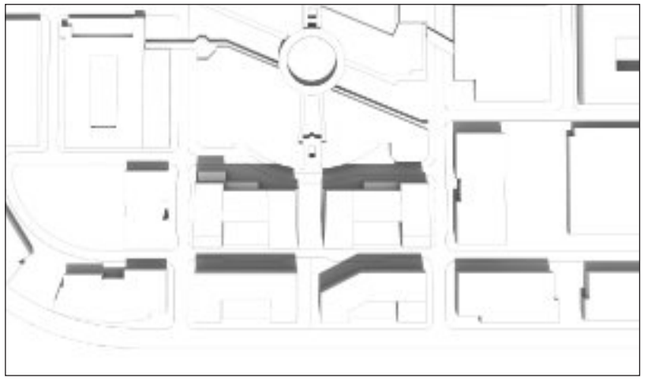
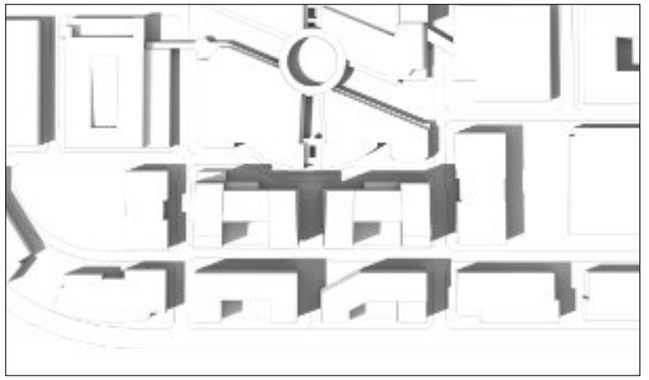
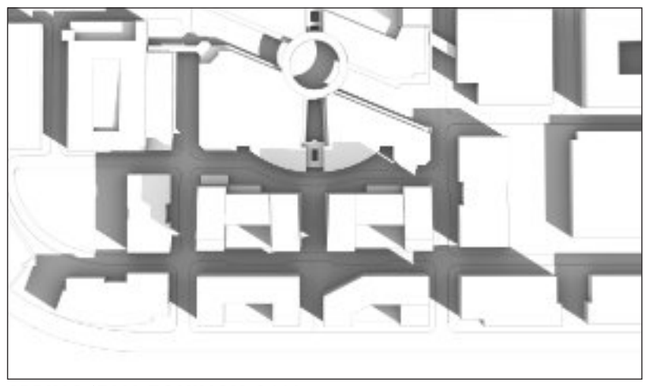
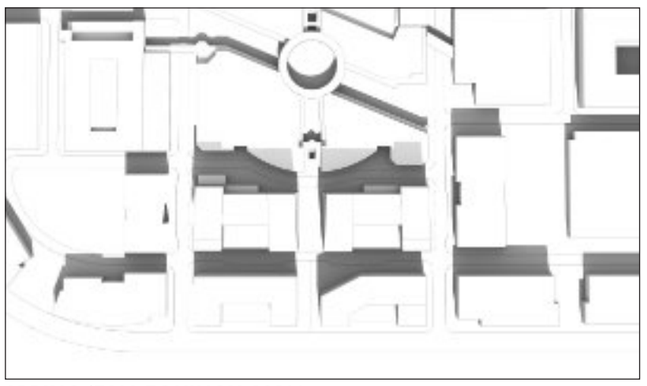
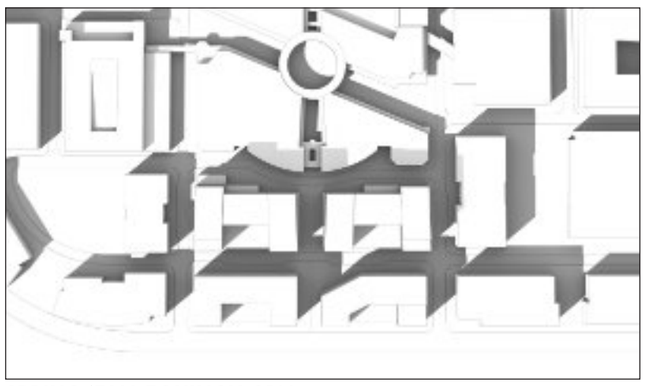
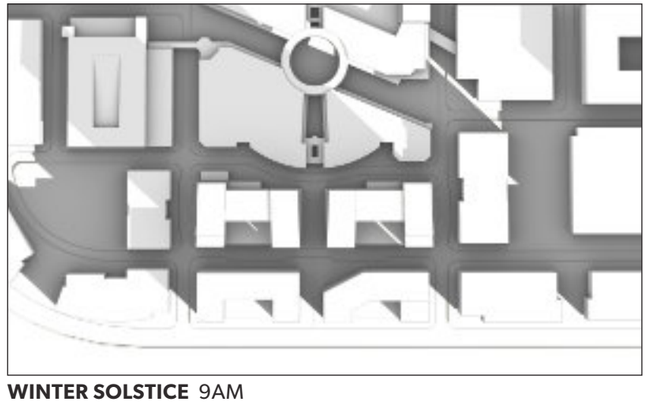
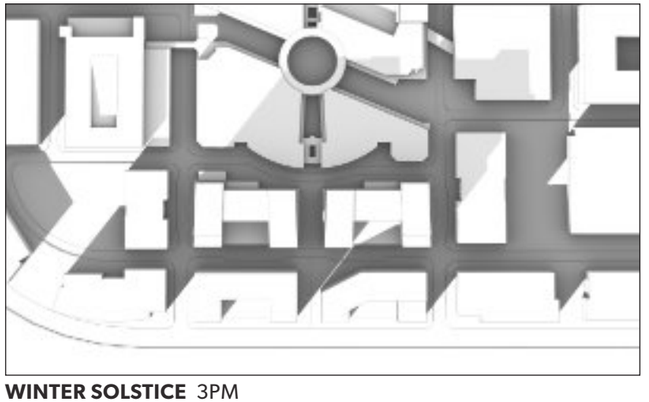
BULK AND SCALE DIAGRAMS (4IC RESIDENTIAL AND OFFICE SCHEME) - VIEW FROM NW
NTS

SHADOW STUDIES (NORTH)

	9AM	12PM	3PM
SUMMER SOLSTICE	 **SUMMER SOLSTICE** 9AM	 **SUMMER SOLSTICE** 12PM	 **SUMMER SOLSTICE** 3PM
SPRING/FALL EQUINOX	 **SPRING/FALL EQUINOX** 9AM	 **SPRING/FALL EQUINOX** 12PM	 **SPRING/FALL EQUINOX** 3PM
WINTER SOLSTICE	 **WINTER SOLSTICE** 9AM	 **WINTER SOLSTICE** 12PM	 **WINTER SOLSTICE** 3PM

SHADOW STUDIES (NORTH)
NTS

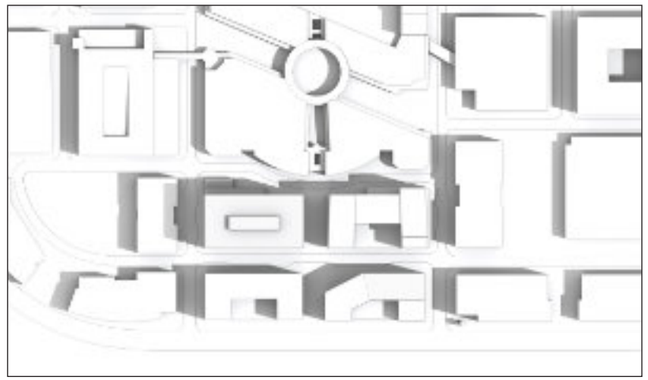
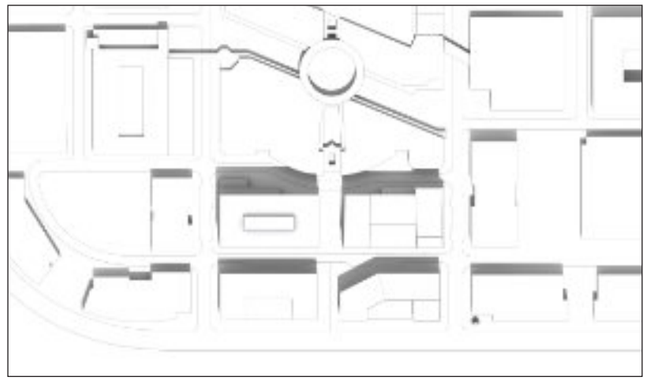
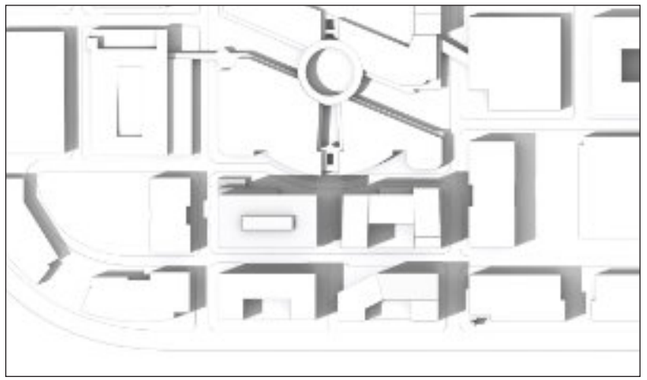
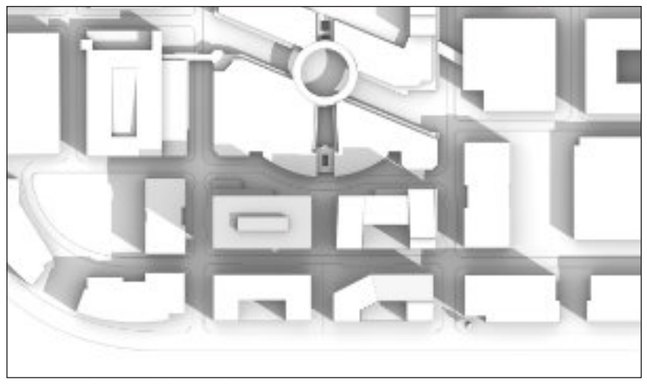
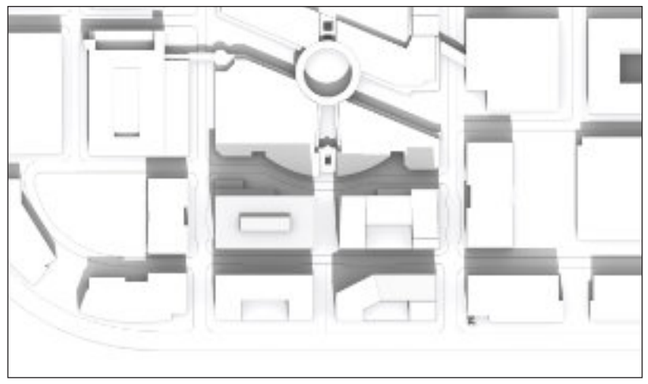
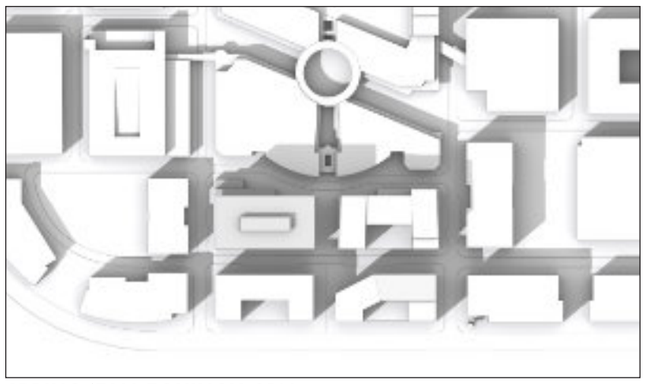
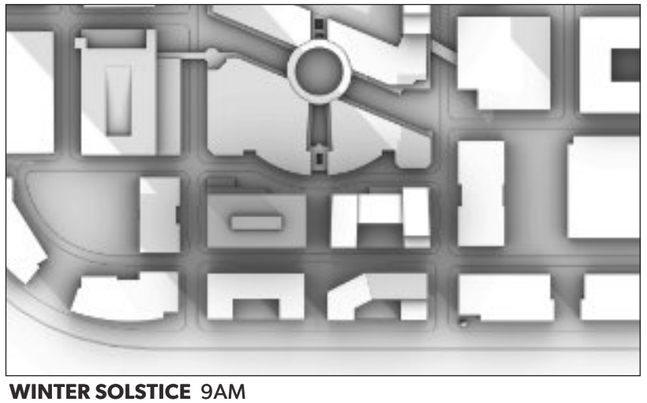
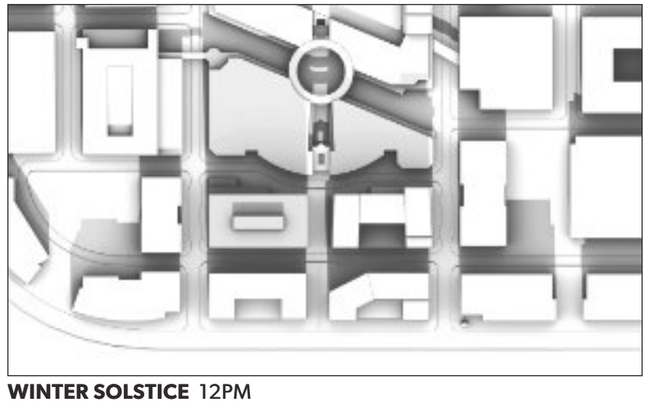
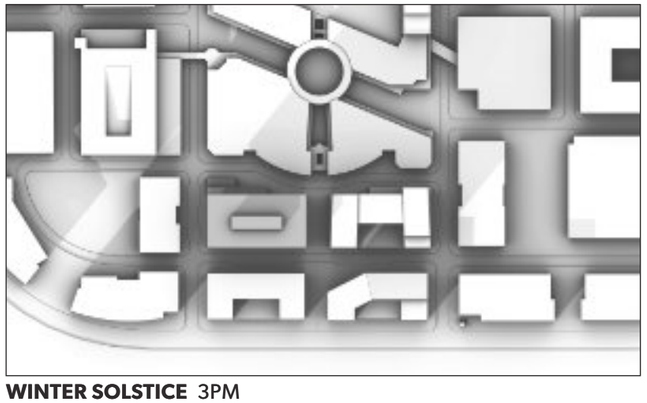
SHADOW STUDIES (SOUTH - ALL RESIDENTIAL SCHEME)

	9AM	12PM	3PM
SUMMER SOLSTICE	 **SUMMER SOLSTICE** 9AM	 **SUMMER SOLSTICE** 12PM	 **SUMMER SOLSTICE** 3PM
SPRING/FALL EQUINOX	 **SPRING/FALL EQUINOX** 9AM	 **SPRING/FALL EQUINOX** 12PM	 **SPRING/FALL EQUINOX** 3PM
WINTER SOLSTICE	 **WINTER SOLSTICE** 9AM	 **WINTER SOLSTICE** 12PM	 **WINTER SOLSTICE** 3PM

SHADOW STUDIES (SOUTH - 4IC RESIDENTIAL SCHEME)

NTS

SHADOW STUDIES (SOUTH - 4IC RESIDENTIAL AND OFFICE SCHEME)

	9AM	12PM	3PM
SUMMER SOLSTICE	 **SUMMER SOLSTICE** 9AM	 **SUMMER SOLSTICE** 12PM	 **SUMMER SOLSTICE** 3PM
SPRING/FALL EQUINOX	 **SPRING/FALL EQUINOX** 9AM		 **SPRING/FALL EQUINOX** 3PM
WINTER SOLSTICE	 **WINTER SOLSTICE** 9AM	 **WINTER SOLSTICE** 12PM	 **WINTER SOLSTICE** 3PM

SHADOW STUDIES (SOUTH - 4IC OFFICE SCHEME)

NTS

CONCEPT RENDER VIEWS - GROUND LEVEL (ALL RESIDENTIAL SCHEME)





CONCEPT RENDER VIEWS (ALL RESIDENTIAL SCHEME)

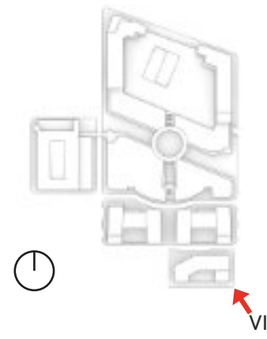


View from NW Corner of Proposed Development, NE 76th St and future Light Rail Station



View from SE Corner of Proposed Development, Bear Creek Parkway





CONCEPT RENDER VIEWS (RESIDENTIAL AND OFFICE SCHEME)



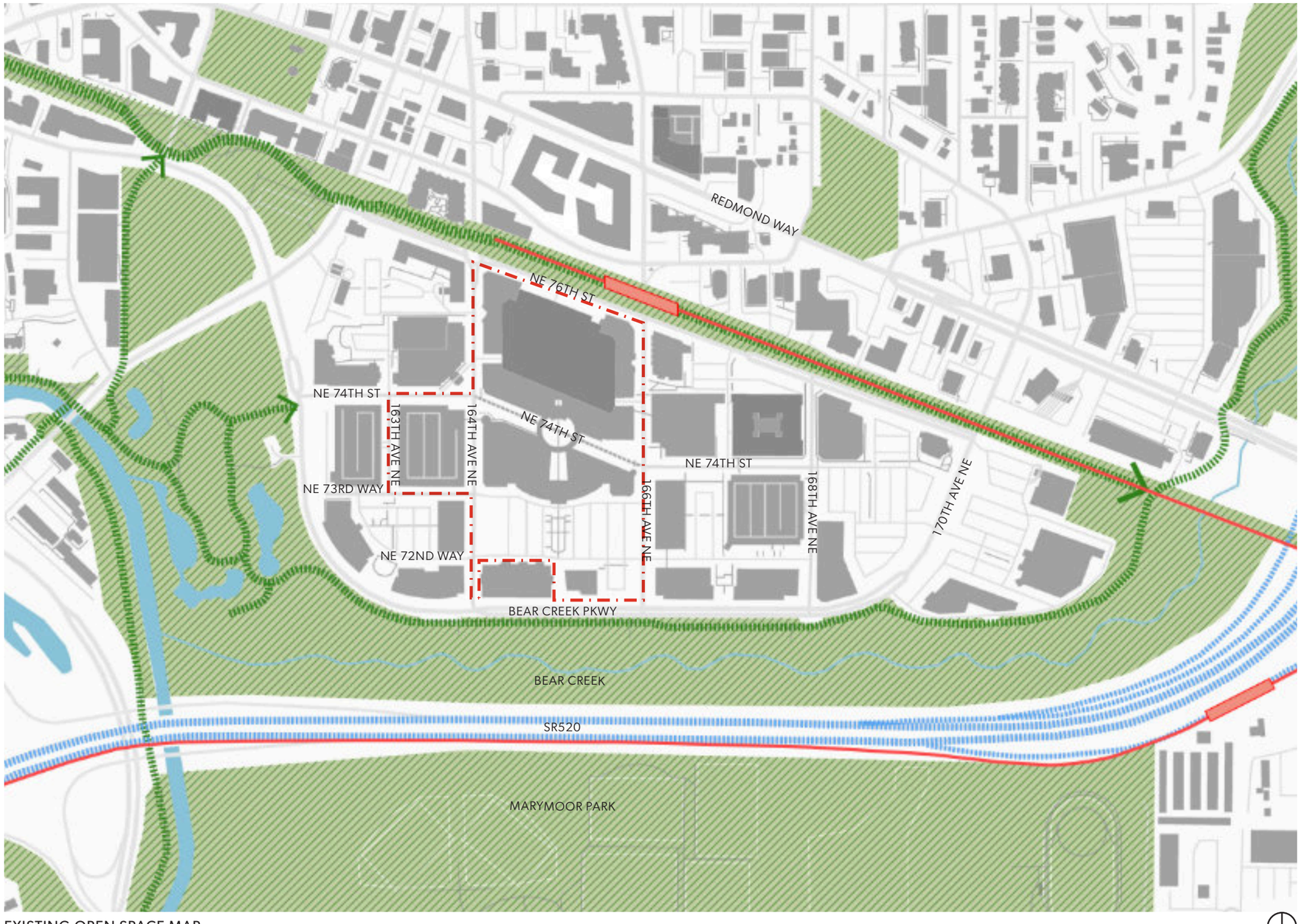
View from NW Corner of Proposed Development, NE 76th St and future Light Rail Station

VIEW



SECTION 3 - OPEN SPACE PLAN

EXISTING OPEN SPACE



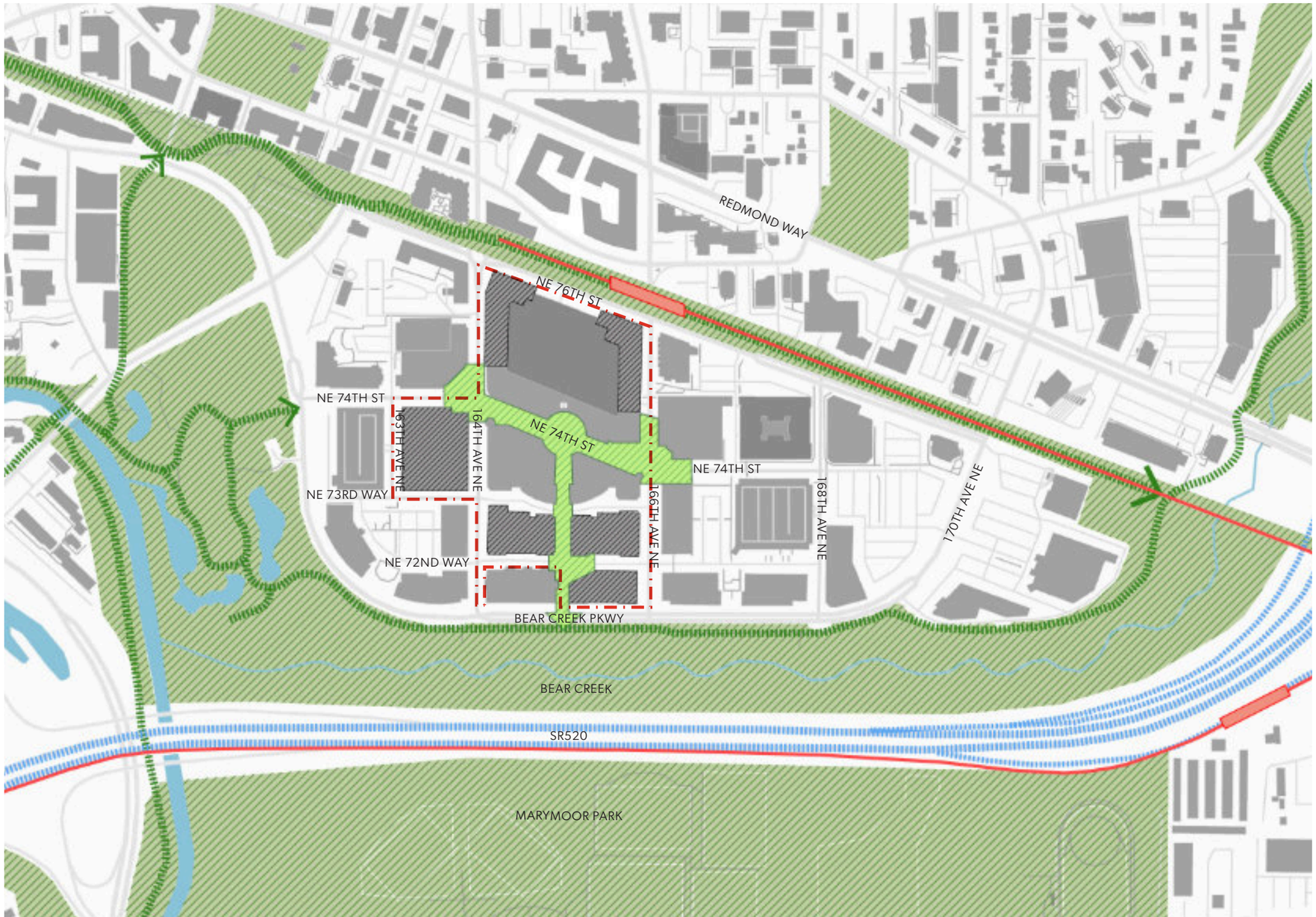
LEGEND

- PROPERTY LINE
- LIGHT RAIL
- SOUND TRANSIT STATION
- SR520
- EXISTING MULTI-USE TRAIL (PAVED)
- OPEN SPACE, NATURAL LANDSCAPE AND PARKS

EXISTING OPEN SPACE MAP

NTS

PROPOSED OPEN SPACE



LEGEND

- PROPERTY LINE
- LIGHT RAIL
- SOUND TRANSIT STATION
- SR520
- EXISTING MULTI-USE TRAIL (PAVED)
- OPEN SPACE, NATURAL LANDSCAPE AND PARKS
- PROPOSED OPEN SPACE AND PLAZAS
- PROPOSED BUILDINGS

PROPOSED OPEN SPACE MAP

NTS

PROPOSED BIKE ROUTE AND PEDESTRIAN



LEGEND

- PROJECT BOUNDARY
- LIGHT RAIL
- SOUND TRANSIT STATION
- SR520
- EXISTING MULTI-USE TRAIL (PAVED)
- EXISTING BIKE LANES
- PROPOSED BIKE LANES
- PROPOSED PEDESTRIAN ROUTE
- WALK RADIUS
- PROPOSED BUILDINGS
- PROPOSED BIKE ROOMS

PROPOSED BIKE ROUTE AND PEDESTRIAN MAP

NTS

OPEN SPACE CHARACTER PRECEDENT IMAGES



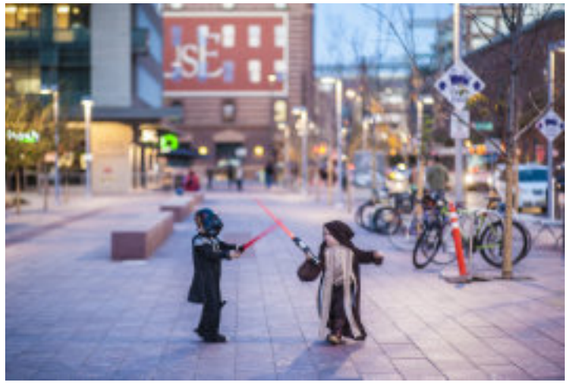
Informal gathering spaces



Informal gathering spaces



Pedestrian streetscape



Flexible plaza spaces



Informal gathering spaces



Pedestrian streetscape



Opportunities for dining spill-out



Informal gathering spaces



Event programming opportunities

PROPOSED GROUND LEVEL

GROUND LEVEL MASTER PLAN - ALL RESIDENTIAL SCHEME



PROPOSED GROUND LEVEL - ALL RESIDENTIAL SCHEME

0' 100' 200'

GROUND LEVEL MASTER PLAN - RESIDENTIAL AND OFFICE SCHEME



PROPOSED GROUND LEVEL - RESIDENTIAL AND OFFICE SCHEME

0' 100' 200'

LEGEND

- PROJECT BOUNDARY
- # EXISTING BUILDING
- # PROPOSED NEW OR MODIFIED EXISTING BUILDING
- PARKING ENTRY
- LOADING ENTRY
- PEDESTRIAN ENTRY

ROOF LEVEL PLAN

ROOF LEVEL PLAN - ALL RESIDENTIAL SCHEME



PROPOSED ROOF LEVEL - ALL RESIDENTIAL SCHEME

0' 100' 200'

ROOF LEVEL PLAN - RESIDENTIAL AND OFFICE SCHEME



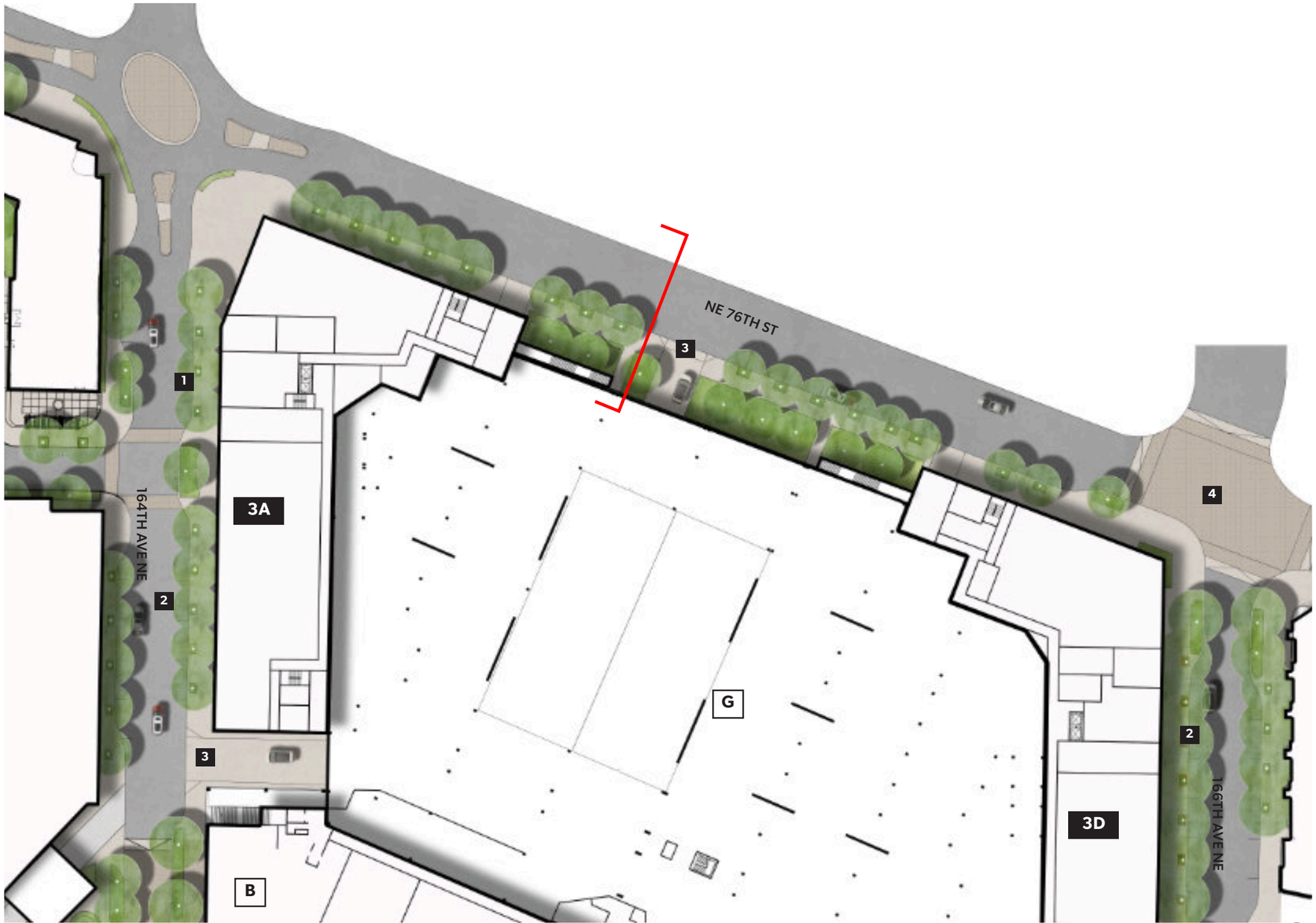
PROPOSED ROOF LEVEL - RESIDENTIAL AND OFFICE SCHEME

0' 100' 200'

LEGEND

- PROJECT BOUNDARY
- # EXISTING BUILDING
- # PROPOSED NEW OR MODIFIED EXISTING BUILDING
- UNOCCUPIED GREEN ROOF
- BUILDING OPEN SPACE
- INTENDED NOT TO BE VEGETATED

CONCEPTUAL LANDSCAPE PLAN - NORTH



LEGEND

- 1 STREET TREES TO REMAIN
- 2 STREET PARKING
- 3 GARAGE ENTRY
- 4 ENHANCED CROSSWALK
- # EXISTING BUILDING
- # PROPOSED NEW OR MODIFIED EXISTING BUILDING

CONCEPTUAL LANDSCAPE PLAN - NORTH

0' 35' 70'

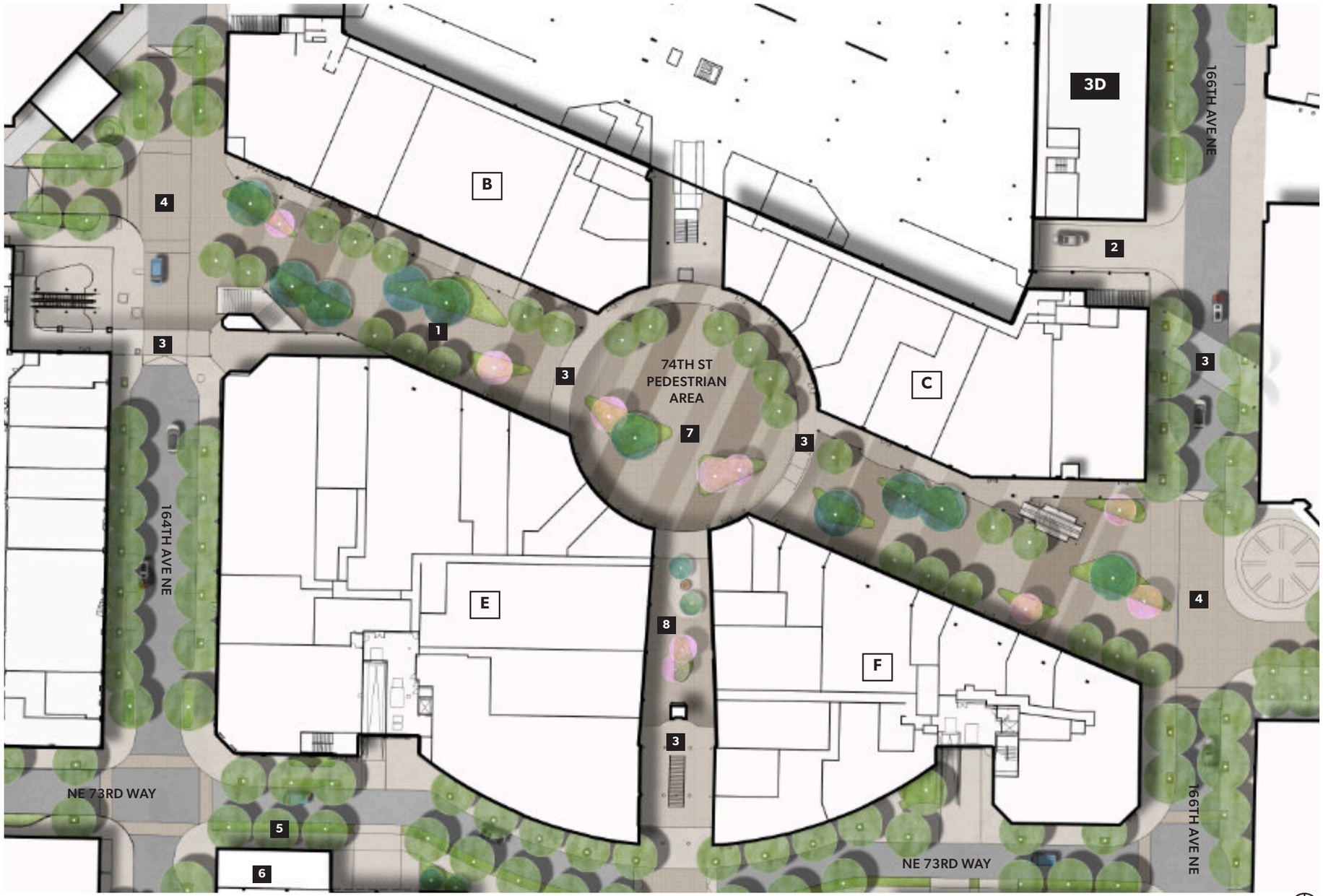
NE 76TH STREET CONCEPTUAL STREET FRONTAGE SECTION



NE 76TH STREET SECTION

0' 4' 8'

CONCEPTUAL LANDSCAPE PLAN - CENTRAL



LEGEND

1. 74TH STREET ENHANCEMENTS (FUTURE PHASE)
2. GARAGE ENTRY
3. PEDESTRIAN BRIDGE
4. RAISED ENHANCED INTERSECTION
5. PROPOSED STREET TREES
6. BIKE ROOM ACCESS
7. CENTRAL COURT
8. PEDESTRIAN SPINE AT COMMERCIAL

EXISTING BUILDING

PROPOSED NEW OR MODIFIED EXISTING BUILDING

CONCEPTUAL LANDSCAPE PLAN - CENTRAL

0′ 35′ 70′

Exhibit C

CONCEPTUAL LANDSCAPE PLAN - SOUTH (ALL RESIDENTIAL SCHEME)



CONCEPTUAL LANDSCAPE PLAN - SOUTH

0' 35' 70'

LEGEND

1 BIKE ROOM ACCESS
2 TRASH/LOADING
3 COMMERCIAL SPILLOUT
4 ENHANCED CROSSING
5 STREET TREES TO REMAIN
6 GARAGE ENTRY
7 LOBBY ENTRY
8 AMENITY TERRACE
9 GROUND RELATED UNITS WITH STOOPS
10 NEW STREETSCAPE
11 NEW STREET TREES
12 PEDESTRIAN CORRIDOR / OPEN SPACE

EXISTING BUILDING

PROPOSED NEW OR MODIFIED EXISTING BUILDING

CONCEPTUAL LANDSCAPE PLAN - SOUTH (RESIDENTIAL AND OFFICE SCHEME)



CONCEPTUAL LANDSCAPE PLAN - SOUTH

0' 35' 70'

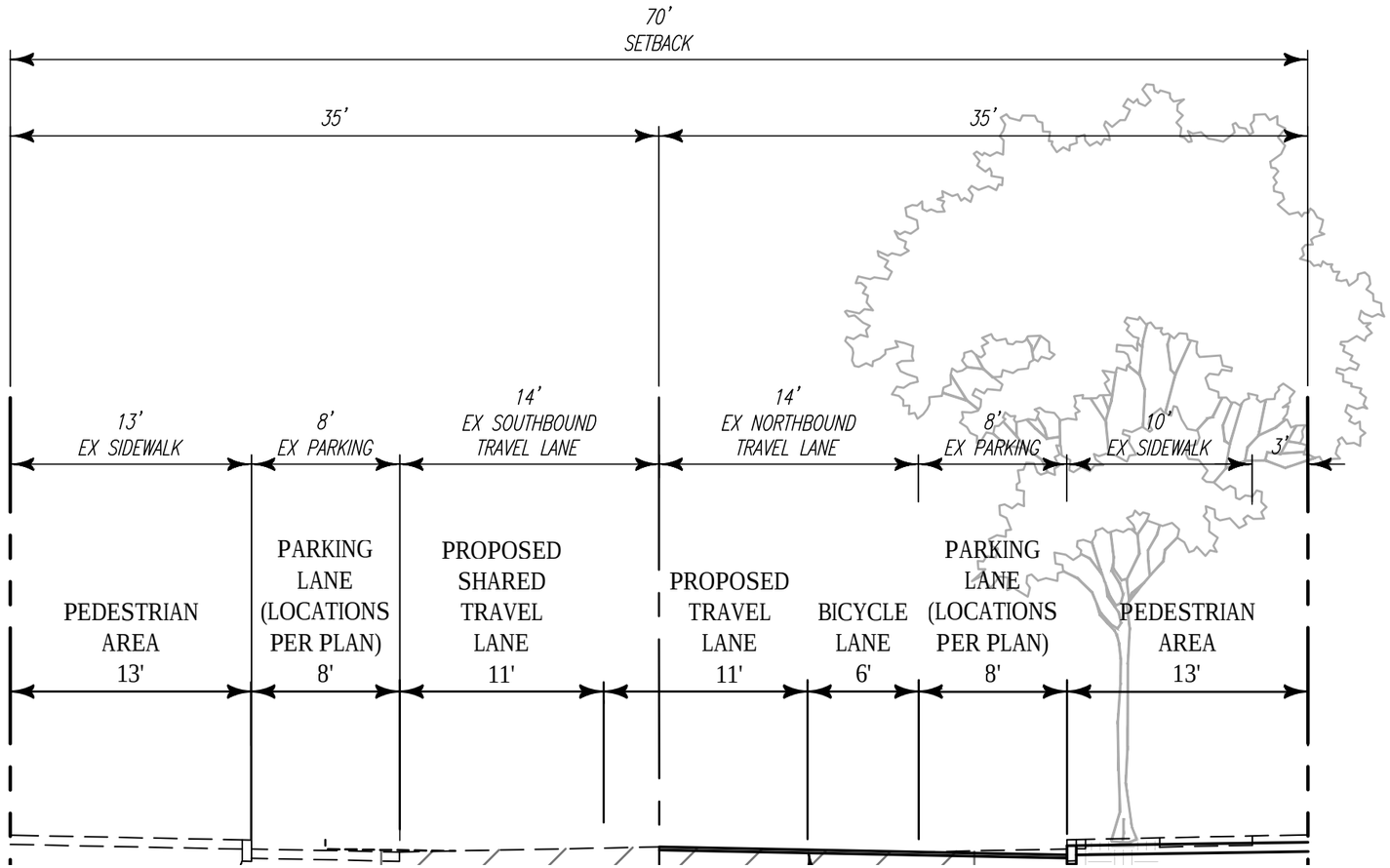
LEGEND

1 RETAIL
2 TRASH/LOADING
3 COMMERCIAL SPILLOUT
4 ENHANCED CROSSING
5 STREET TREES TO REMAIN
6 GARAGE ENTRY
7 LOBBY ENTRY
8 AMENITY TERRACE
9 GROUND RELATED UNITS WITH STOOPS
10 NEW STREETSCAPE
11 NEW STREET TREES
12 PEDESTRIAN CORRIDOR / OPEN SPACE

EXISTING BUILDING

PROPOSED NEW OR MODIFIED EXISTING BUILDING

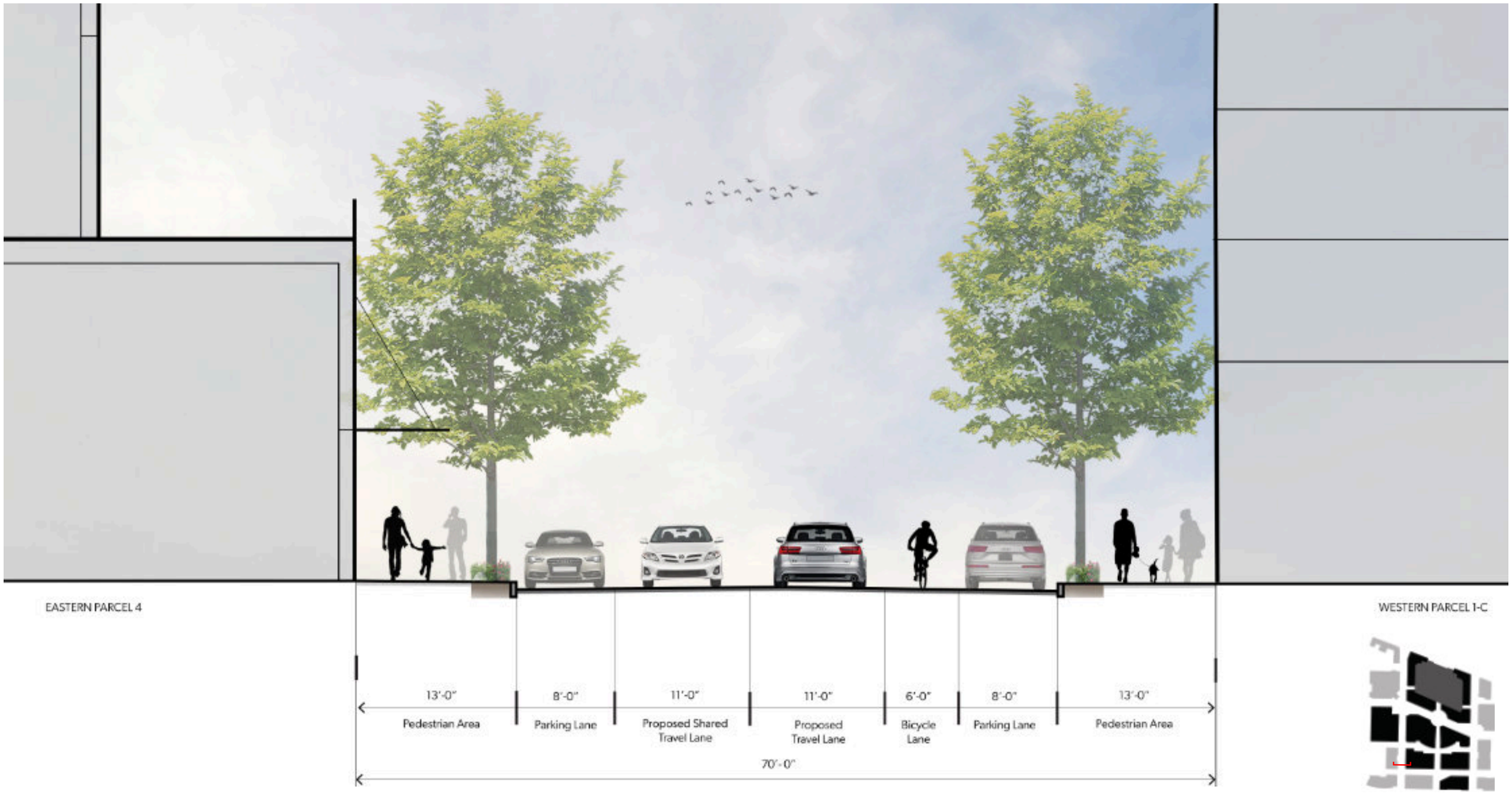
EXISTING 164TH AVE NE STREET SECTION (PRIVATE)





164TH AVE NE CIVIL STREET SECTION
NOT TO SCALE

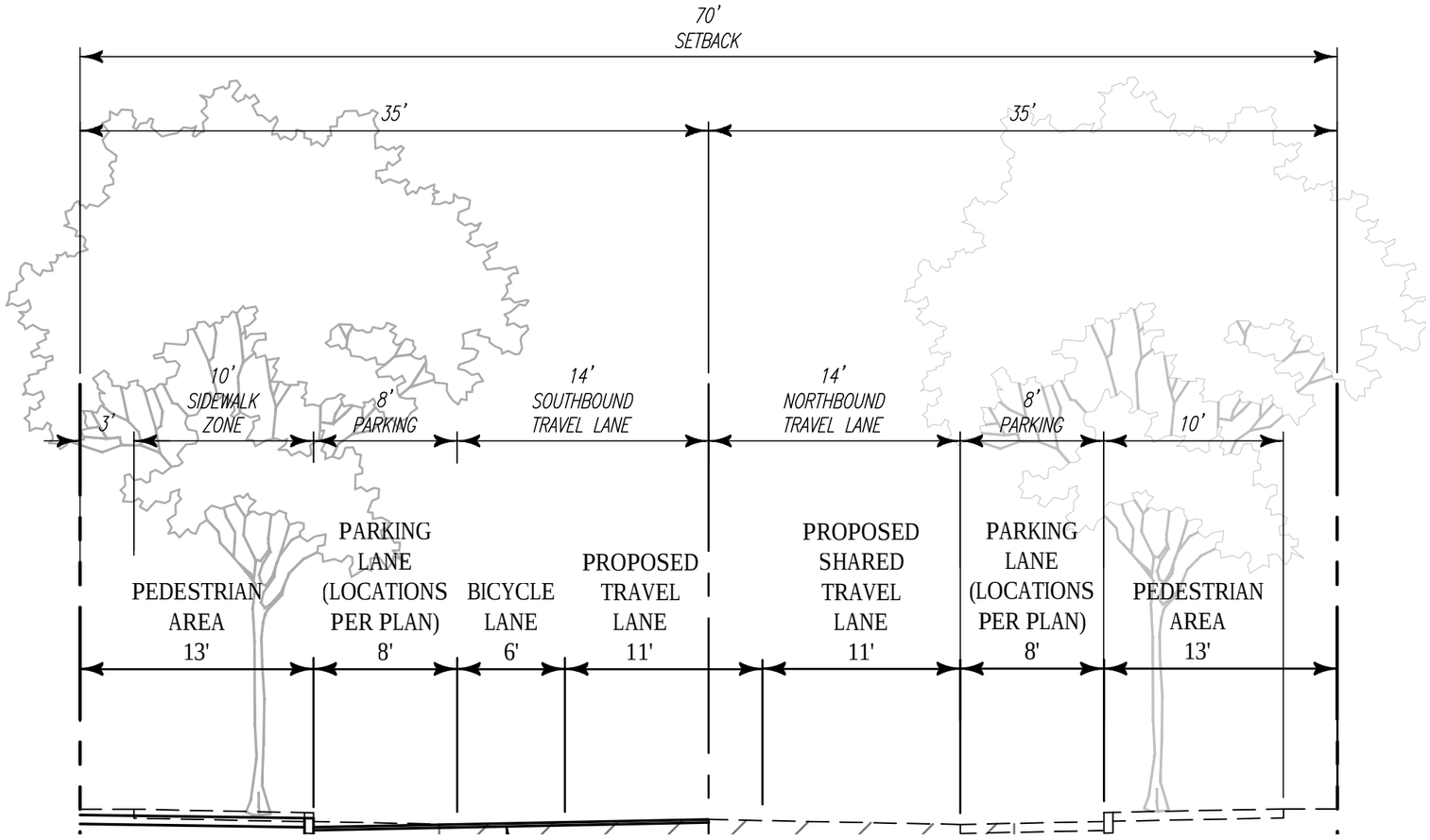
PROPOSED 164TH AVE NE STREET SECTION (PRIVATE)



PROPOSED 164TH AVE NE STREET SECTION

0' 4' 8'

EXISTING 166TH AVE NE STREET SECTION (PRIVATE)

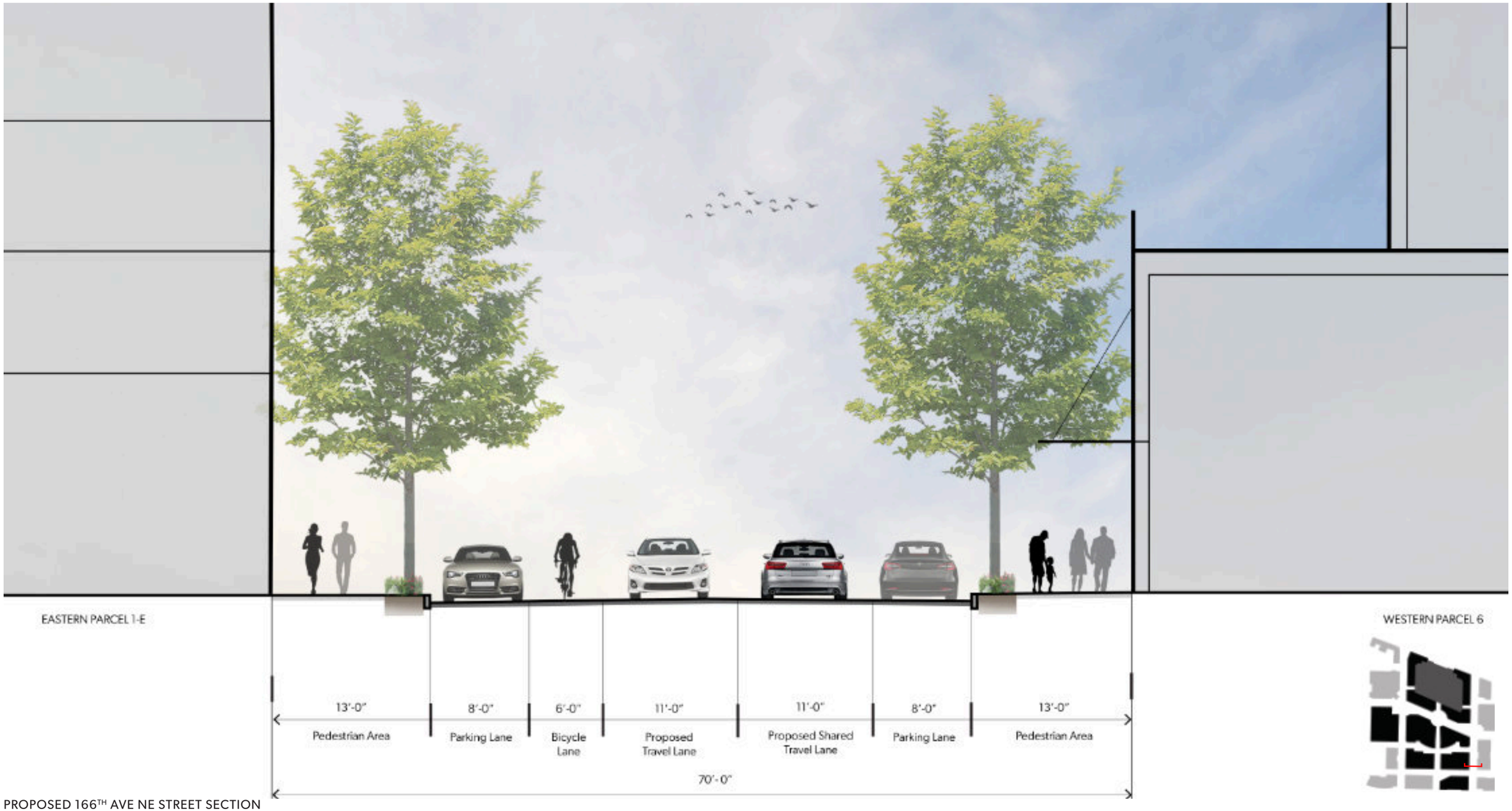


166TH AVE NE CIVIL STREET SECTION

NOT TO SCALE



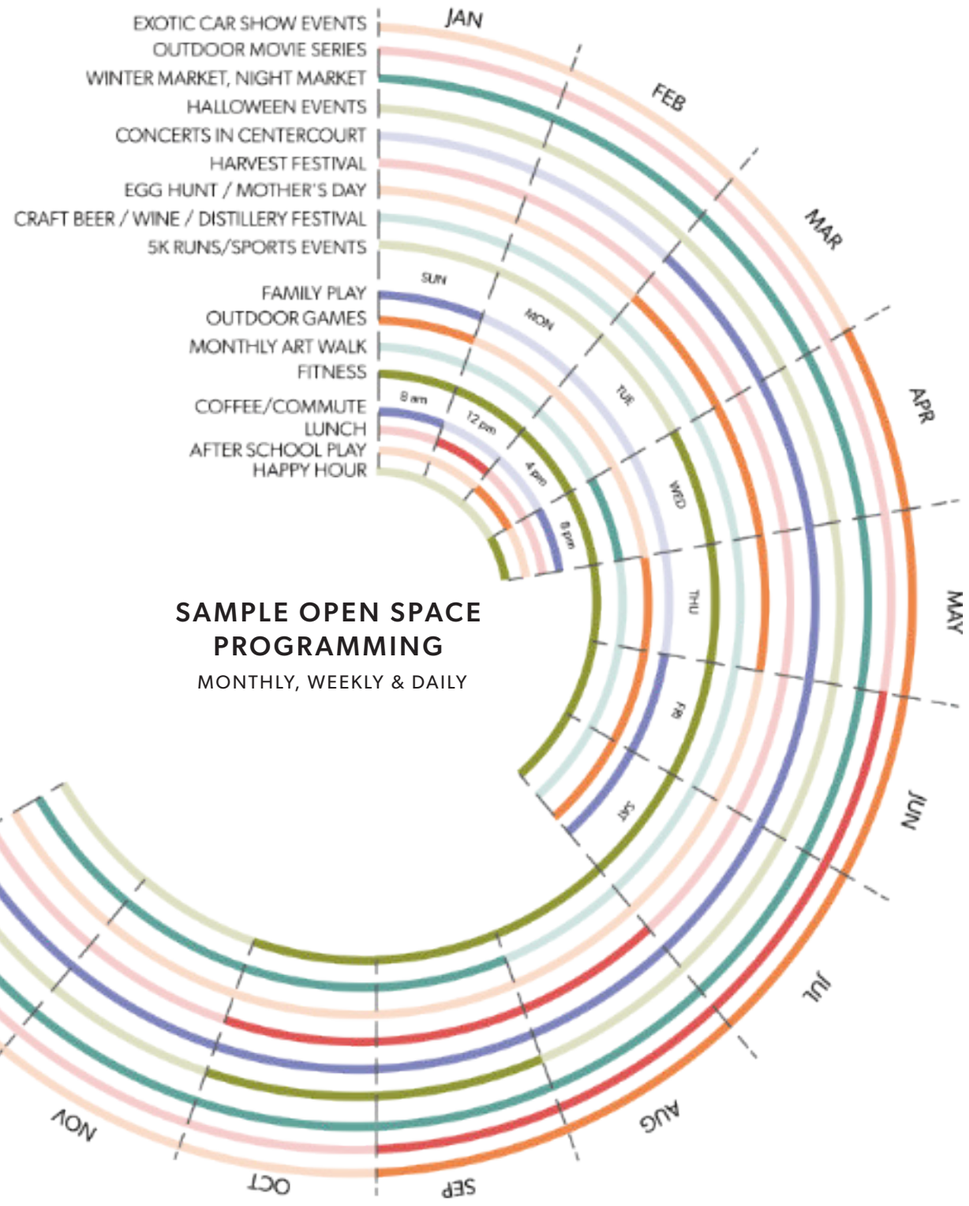
PROPOSED 166TH AVE NE STREET SECTION (PRIVATE)



PROPOSED 166TH AVE NE STREET SECTION

0' 4' 8'

OPEN SPACE PROGRAM



SAMPLE OPEN SPACE PROGRAMMING

MONTHLY, WEEKLY & DAILY

CENTER COURT EVENT SPACE

- CONCERTS
- OUTDOOR MOVIES
- PERFORMANCES AT CENTER COURT
- EXOTIC CAR SHOWS
- HOLIDAY TREE
- FLAGPOLE
- HOLIDAY MARKET
- HARVEST FESTIVAL
- HALLOWEEN EVENT
- SPRING EVENT/EASTER
- SUMMER EVENT/4TH OF JULY
- CHINESE NEW YEAR/ LUNAR NEW YEAR
- DIWALI FESTIVAL/ LIGHTING FESTIVAL
- ART WALK
- NIGHT MARKET
- CARNIVAL
- CRAFT BEER/WINE/DISTILLERY FESTIVAL

ACTIVE USES

- FIREPIT AREAS
- BIKE AMENITIES
- WALKING LOOPS
- OUTDOOR GAMES
- YOGA/TAI-CHI
- DOG AMENITIES

NEIGHBORHOOD COMPONENTS

- BULLETIN BOARD KIOSK
- BATHROOM ACCESS
- BOOK CART/LIBRARY
- DRINKING/ PET FOUNTAIN
- CURBSIDE PICK UP ZONES
- RIDESHARE ZONES

ICONIC ELEMENTS

- WATER FEATURE
- ICONIC ART
- LED CENTENARY LIGHTING
- SEASONAL LIGHT DISPLAYS
- STORMWATER SWALES
- GREEN ROOFS & WALLS

MOVABLE TABLE & CHAIRS

- SWINGS
- PICNIC
- HARVEST TABLE
- LOUNGE SEATING
- BUILT-IN PLATFORMS
- HAMMOCKS

RETAIL OPPORTUNITIES

- FOOD KIOSKS
- RETAIL KIOSKS/POP-UPS
- GEAR/GAME RENTAL

THEMES

- CRAFT/ARTISAN
- FARM TO TABLE
- RAINWATER
- BEAR CREEK/WATERSHED

WOONERF/EASEMENTS PRECEDENT IMAGES



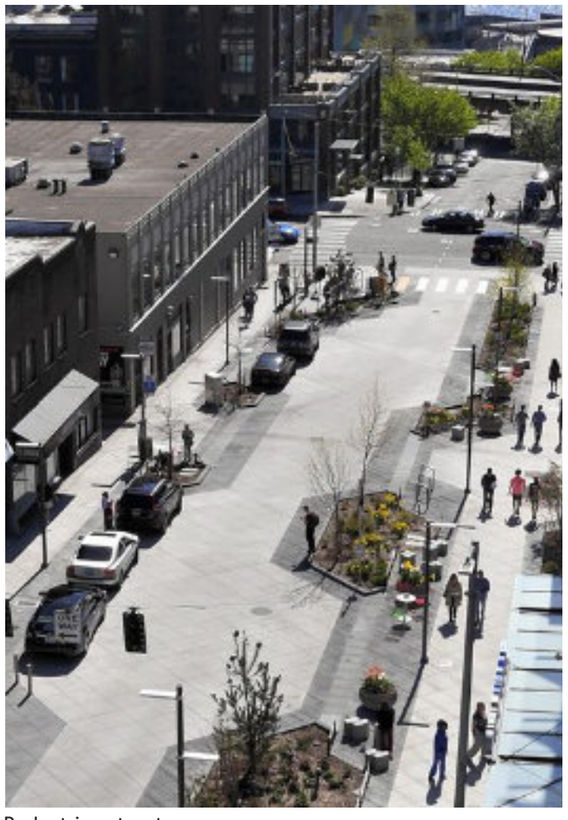
Pedestrian plaza



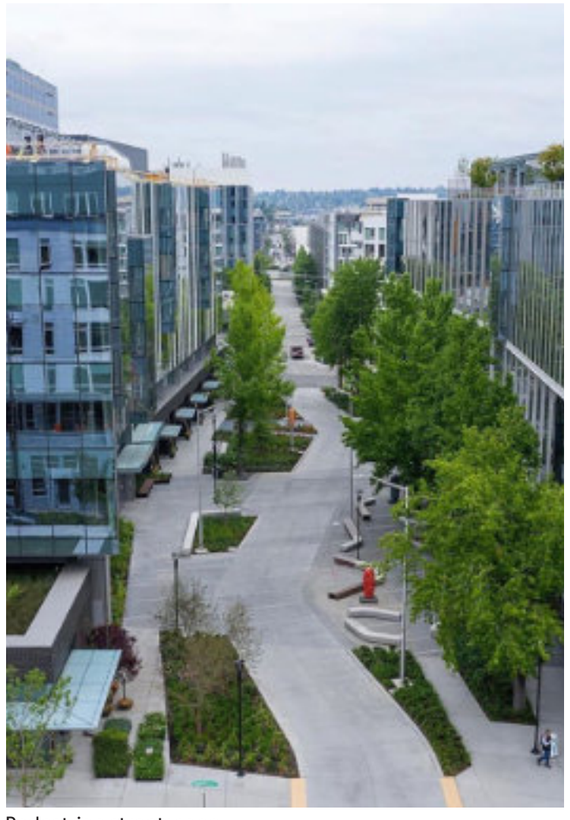
Pedestrian streetscape



Pedestrian streetscape



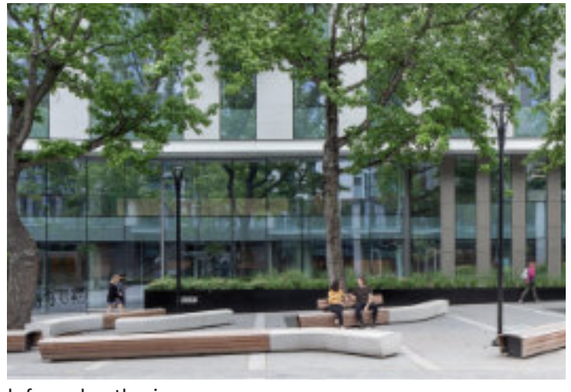
Pedestrian streetscape



Pedestrian streetscape



Informal gathering spaces

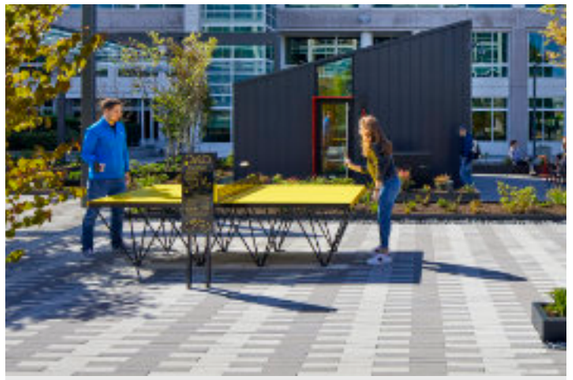


Informal gathering spaces

PUBLIC AMENITIES/OUTDOOR PLAZAS PRECEDENT IMAGES



Informal gathering spaces



Urban recreation opportunities



Informal gathering spaces



Spill out dining areas



Informal gathering spaces



Informal gathering spaces



Pedestrian streetscape



Bicycle street furniture



Bicycle street furniture

CULTURAL FACILITIES PRECEDENT IMAGES



Event programming opportunities



Community Events



Urban recreation opportunities



Flexible plaza spaces



Informal gathering spaces



Spill out dining areas



Community Events



Urban recreation opportunities



Event programming opportunities

TREE PRESERVATION PLAN



TREE PRESERVATION PLAN
NTS

LEGEND

- PROPERTY LINE
- SIGNIFICANT TREES TO BE REMOVED
- SIGNIFICANT TREES TO REMAIN
- UNREGULATED TREES TO BE REMOVED
- UNREGULATED TREES TO REMAIN
- OFF-SITE TREES

SUMMARY:

Existing Trees on Site: 191 Total
165 Significant

Significant Trees to Remain: 95

Landmark Trees on Site: N/A

Req Significant Tree Retention = 35%
Actual Significant Tree Retention = 59.4%

Replacement Trees Requires
Significant Trees (1:1) = 65 on-site,
4 R.O.W

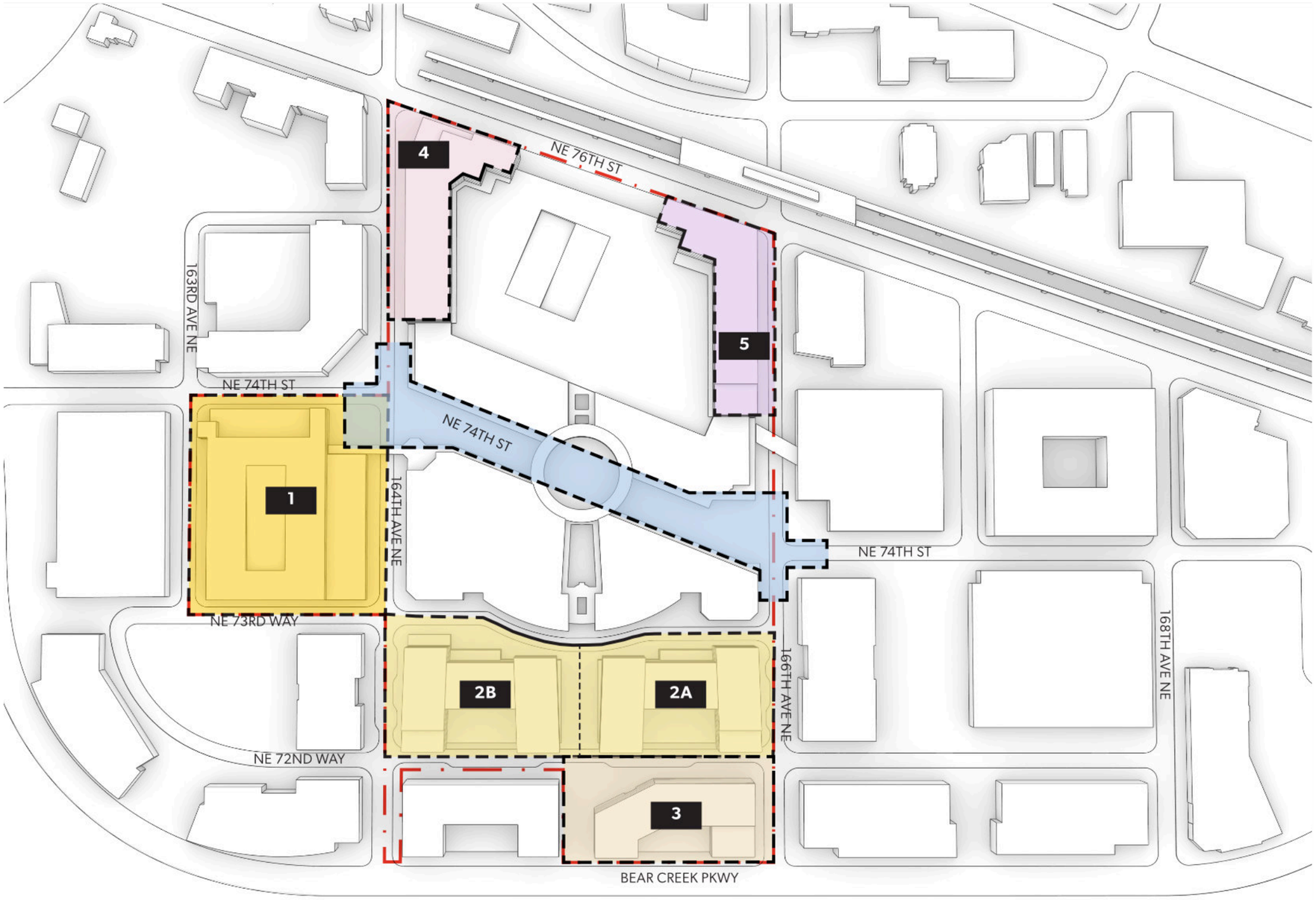
Landmark Tree (3:1) = N/A

Total Tree Required = 82

Actual Trees Provided = 82

SECTION 4 - SITE DEVELOPMENT

OVERALL PHASING PLAN



PHASING PLAN
NTS

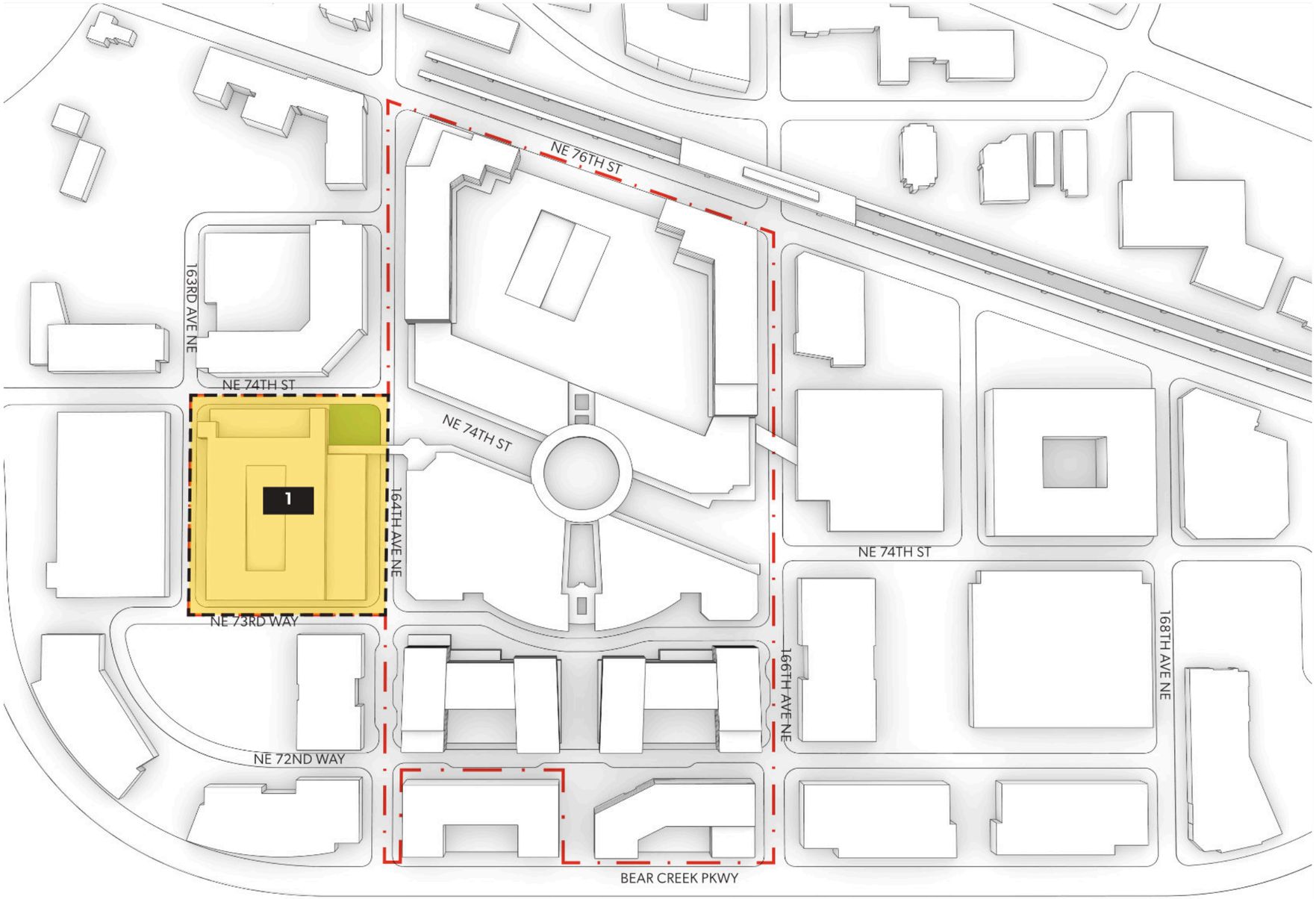
LEGEND

- PROJECT BOUNDARY
- **PHASE 1**
  EXISTING PARKING GARAGE ADDITION
  AREA: 123,430 SF (2.83 Acres)
- **PHASE 2**
  MIXED-USE RESIDENTIAL OR OFFICE
  AREA: 141,554 SF (3.25 Acres)
- **PHASE 3**
  RESIDENTIAL
  AREA: 50,894 SF (1.17 Acres)
- **PHASE 4**
  MIXED-USE RESIDENTIAL
  AREA: 39,210 SF (0.90 Acres)
- **PHASE 5**
  MIXED-USE RESIDENTIAL
  AREA: 35,922 SF (0.82 Acres)
- 74TH STREET PLAZA AND INTERSECTION IMPROVEMENTS TO BE COMPLETED WITH THE EARLY OF PHASE 4 OR PHASE 5 MIXED-USE RESIDENTIAL.

PHASING NOTES:

- Phasing may occur be out of numbered sequence.
- Public benefits will be provided with associated phase per this document and the development agreement.
- See Open Space Section 3, for precedent images of proposed Enhanced Pedestrian-Oriented Design, landscape areas, and streetscape improvements.

PHASING PLAN - PHASE 1



PHASING PLAN - PHASE 1
NTS

LEGEND

PROPOSED MPD BOUNDARY

PHASE 1
PARKING GARAGE

PHASE 1
NEW/MODIFIED GROUND LEVEL PUBLIC OPEN SPACE

(For Summary of New/Modified Public Open Space, Please see Section 2 Open Space page)

SUMMARY:

PROPOSED DEVELOPMENT

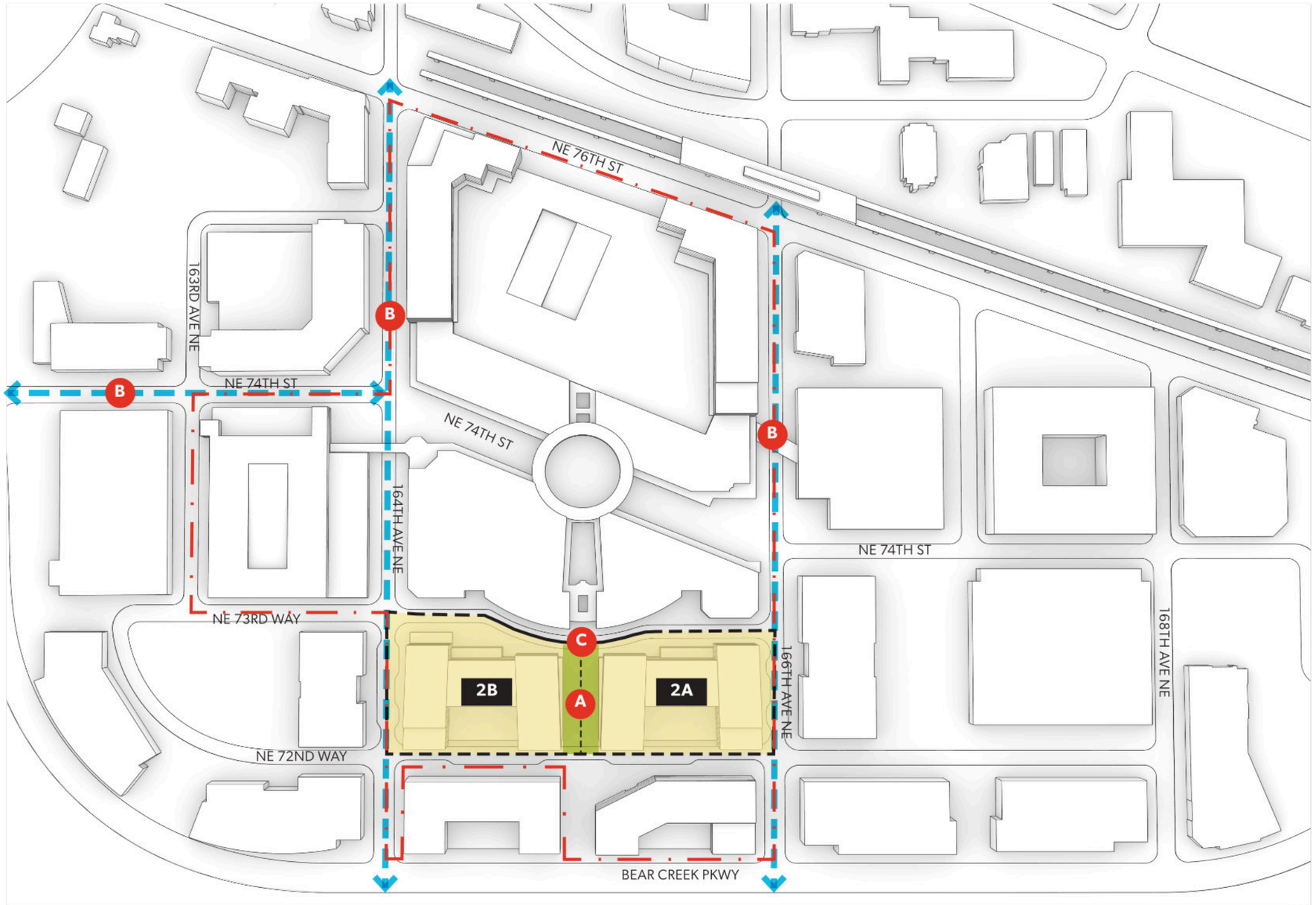
Two Story Addition to existing mixed-use parking garage with approximately 316 new parking stalls to replace existing allocated surface level parking and allow for new development.

MITIGATION AND PUBLIC BENEFITS

Ground water aquifer impact mitigation

Note: see public benefits scorecard for full description.

PHASING PLAN - PHASE 2



PHASING PLAN - PHASE 2
NTS

LEGEND

- PROPOSED MPD BOUNDARY
- PROPOSED BIKE LANES
- **PHASE 2** RESIDENTIAL/OFFICE
- **PHASE 2** PROPOSED GROUND LEVEL PUBLIC OPEN SPACE

(For Summary of New/Modified Public Open Space, Please see Section 2 Open Space page)

SUMMARY:

PROPOSED DEVELOPMENT

Two new 12 story mixed use building containing either residential units or office.

MITIGATION AND PUBLIC BENEFITS

Affordable Housing

Small and Local Retail

Sustainability

Ground water aquifer impact mitigation

Additional Trees Provided - in excess of min. required

Building Green Roofs

Enhanced Pedestrian-Oriented Design

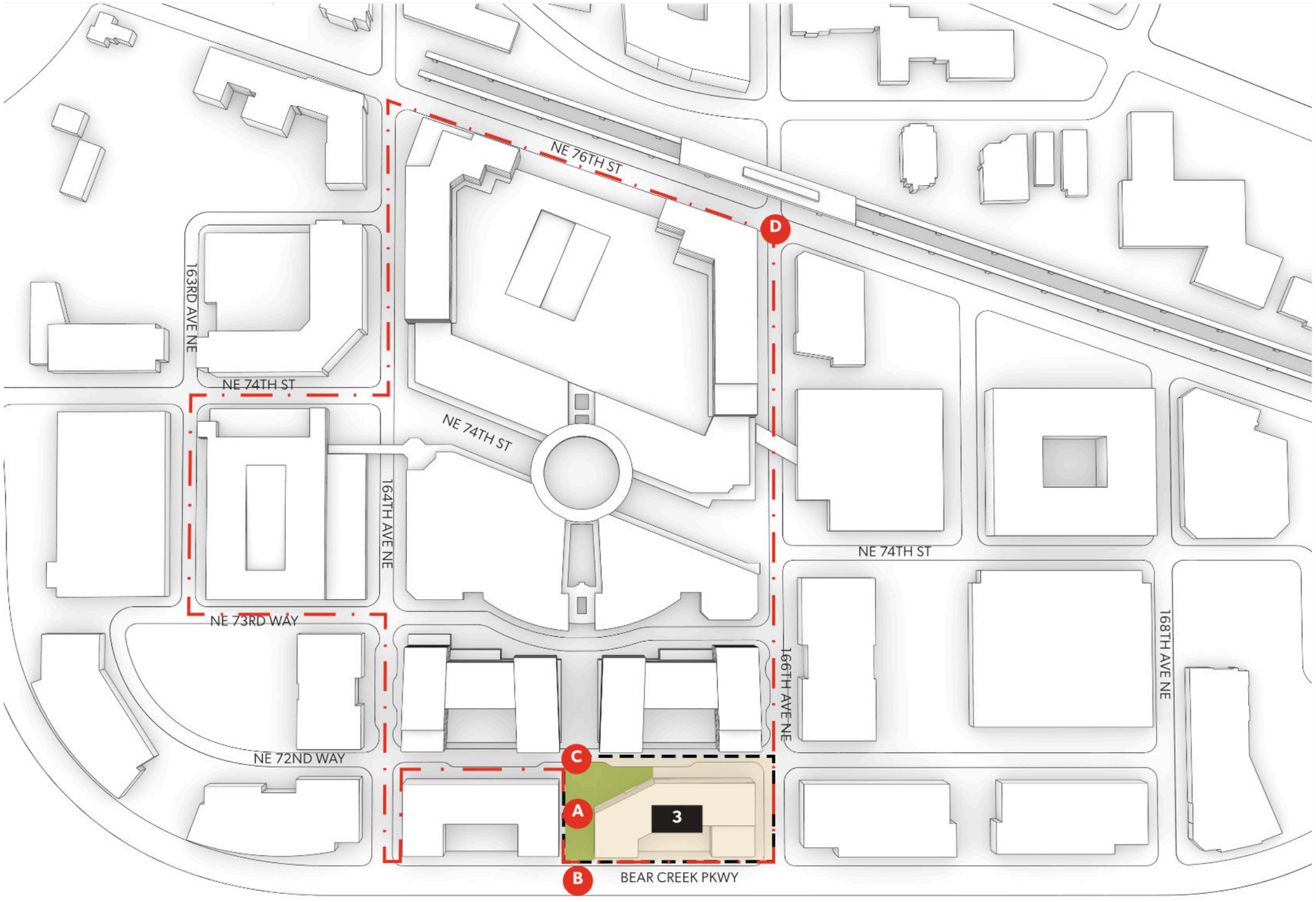
A Publicly accessible linear plaza open space connecting NE 74th St with Bear Creek Parkway

B Bike infrastructure and traffic calming at 164th and 166th and 74th St to connect to existing bike lanes.

C Pedestrian crossing and intersection improvements

Note: see public benefits scorecard for full description.

PHASING PLAN - PHASE 3



PHASING PLAN - PHASE 3
NTS

LEGEND

PROPOSED MPD BOUNDARY

PHASE 3
RESIDENTIAL

PHASE 3
NEW/MODIFIED GROUND LEVEL PUBLIC OPEN SPACE
(For Summary of New/Modified Public Open Space, Please see Section 2 Open Space page)

SUMMARY:

PROPOSED DEVELOPMENT

New seven story residential building

MITIGATION AND PUBLIC BENEFITS

Affordable Housing

Small and Local Retail

Sustainability

Ground water aquifer impact mitigation

Additional Trees Provided - in excess of min. required

Building Green Roofs

Enhanced Pedestrian-Oriented Design

A Publicly accessible linear plaza open space connecting NE 74th St with Bear Creek Parkway

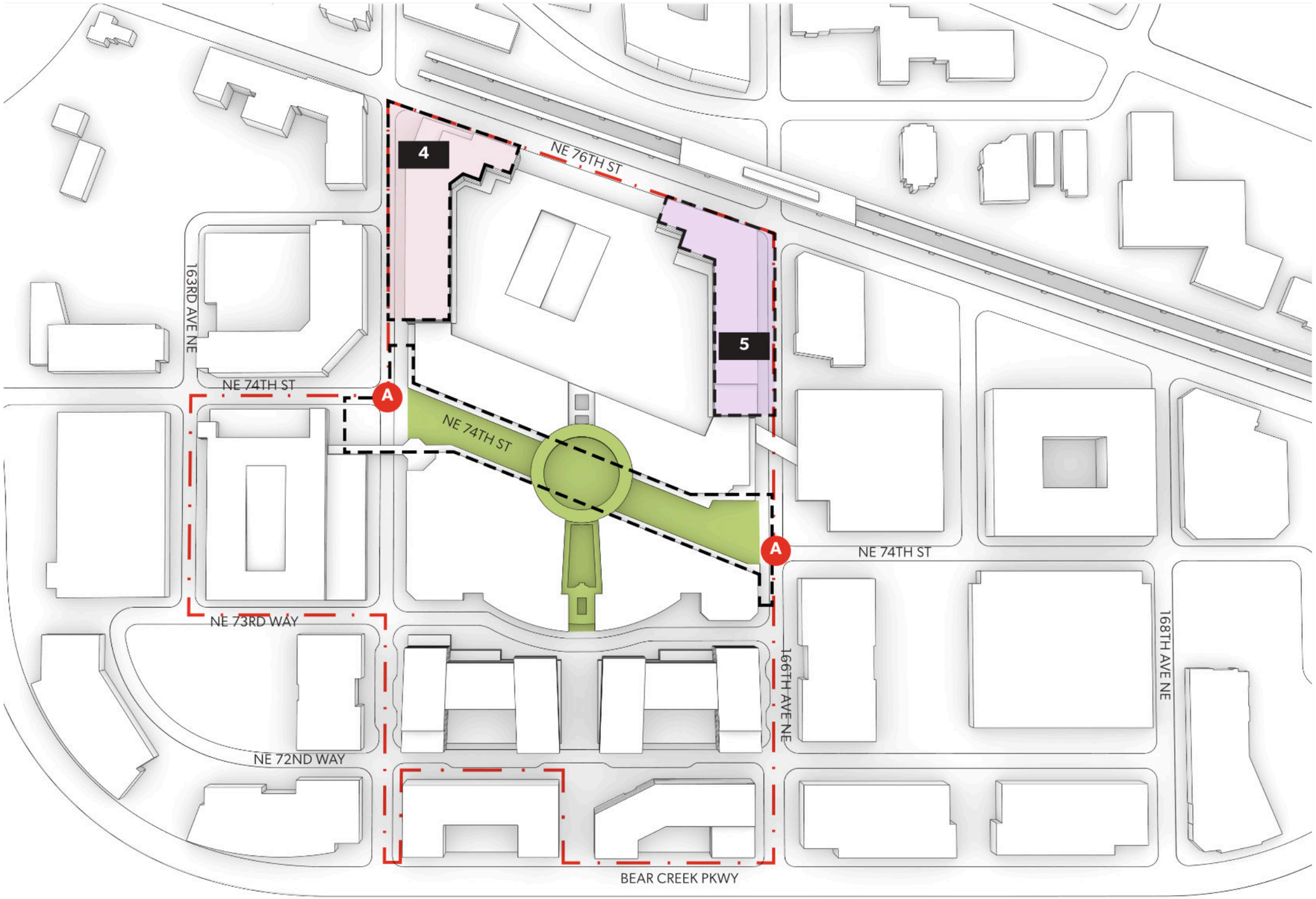
B Bear Creek Parkway Mid-block Crossing

C Pedestrian crossing and intersection improvements

D Pedestrian crossing and intersection improvements at 76th and 166th Street

Note: see public benefits scorecard for full description.

PHASING PLAN - PHASE 4 AND 5



PHASING PLAN - PHASE 4 AND 5
NTS

LEGEND

PROPOSED MPD BOUNDARY

PHASE 4
RESIDENTIAL

PHASE 5
RESIDENTIAL

NEW/MODIFIED GROUND LEVEL PUBLIC OPEN SPACE

(For Summary of New/Modified Public Open Space, Please see Section 2 Open Space page)

74TH STREET PLAZA AND INTERSECTION IMPROVEMENTS TO BE COMPLETED WITH PHASE

SUMMARY:

PROPOSED DEVELOPMENT

Two seven story mixed-use residential buildings with ground floor commercial. New streetscape and pedestrian plaza at 74th St.

MITIGATION AND PUBLIC BENEFITS

Affordable Housing

Small and Local Retail

Sustainability

Ground water aquifer impact mitigation

74th Street Improvements Plaza and Pedestrian improvements

Additional Trees Provided - in excess of min. required

Building Green Roofs

Enhanced Pedestrian-Oriented Design

A Pedestrian crossing and intersection improvements

Note: see public benefits scorecard for full description.

CONCEPTUAL TRANSPORTATION PLAN | PHASE 1



LEGEND

- PROPERTY LINE
- EXISTING/PROPOSED BUILDING
- EXISTING/PROPOSED ROAD
- EXISTING/PROPOSED WALKWAY
- EXISTING/PROPOSED LANDSCAPING
- GARAGE INGRESS ROUTE
- GARAGE EGRESS ROUTE
- GARAGE ENTRY POINT
- ROAD CROSS SECTION
- SIGHT TRIANGLE

CONCEPTUAL TRANSPORTATION PLAN | PHASE 1

NOT TO SCALE - PLANS INCLUDED FOR REFERENCE ONLY, SEE CIVIL IMPROVEMENT PLANS FOR SCALED DRAWINGS

CONCEPTUAL GRADING PLAN | PHASE 1



LEGEND

- PROPERTY LINE
- EXISTING/PROPOSED BUILDING
- EXISTING/PROPOSED ROAD
- EXISTING/PROPOSED WALKWAY
- EXISTING/PROPOSED LANDSCAPING
- 337 PROPOSED GRADES
- 320 EXISTING GRADES
- 7.3% PROPOSED SLOPE

NOTE:
All Sidewalk Cross Slopes Shall Target 1.5%, with 2.0% MAX for ADA Compliance

CONCEPTUAL GRADING PLAN | PHASE 1

NOT TO SCALE - PLANS INCLUDED FOR REFERENCE ONLY, SEE CIVIL IMPROVEMENT PLANS FOR SCALED DRAWINGS

CONCEPTUAL STORMWATER PLAN | PHASE 1



LEGEND

- PROPERTY LINE
- EXISTING/PROPOSED BUILDING
- EXISTING/PROPOSED ROAD
- EXISTING/PROPOSED WALKWAY
- EXISTING/PROPOSED LANDSCAPING
- EXISTING STORM TO REMAIN
- EXISTING STORM TO REMOVE
- PROPOSED STORM
- NEW/PROPOSED
- DIAMETER
- PIPE MATERIAL

EX 12'' PVC

* Pollution Generating Impervious Surface:
Provided Enhanced Water Quality, Direct Discharge to Smmamish River via Existing Stormwater Ponds

** Non-pollution generating impervious surface (ie roof areas) to infiltrated to maximum extent feasible. Overflow to Direct Discharge to Sammamish River via Existing Stormwater Ponds

CONCEPTUAL STORMWATER PLAN | PHASE 1

NOT TO SCALE - PLANS INCLUDED FOR REFERENCE ONLY, SEE CIVIL IMPROVEMENT PLANS FOR SCALED DRAWINGS

CONCEPTUAL SEWER PLAN | PHASE 1



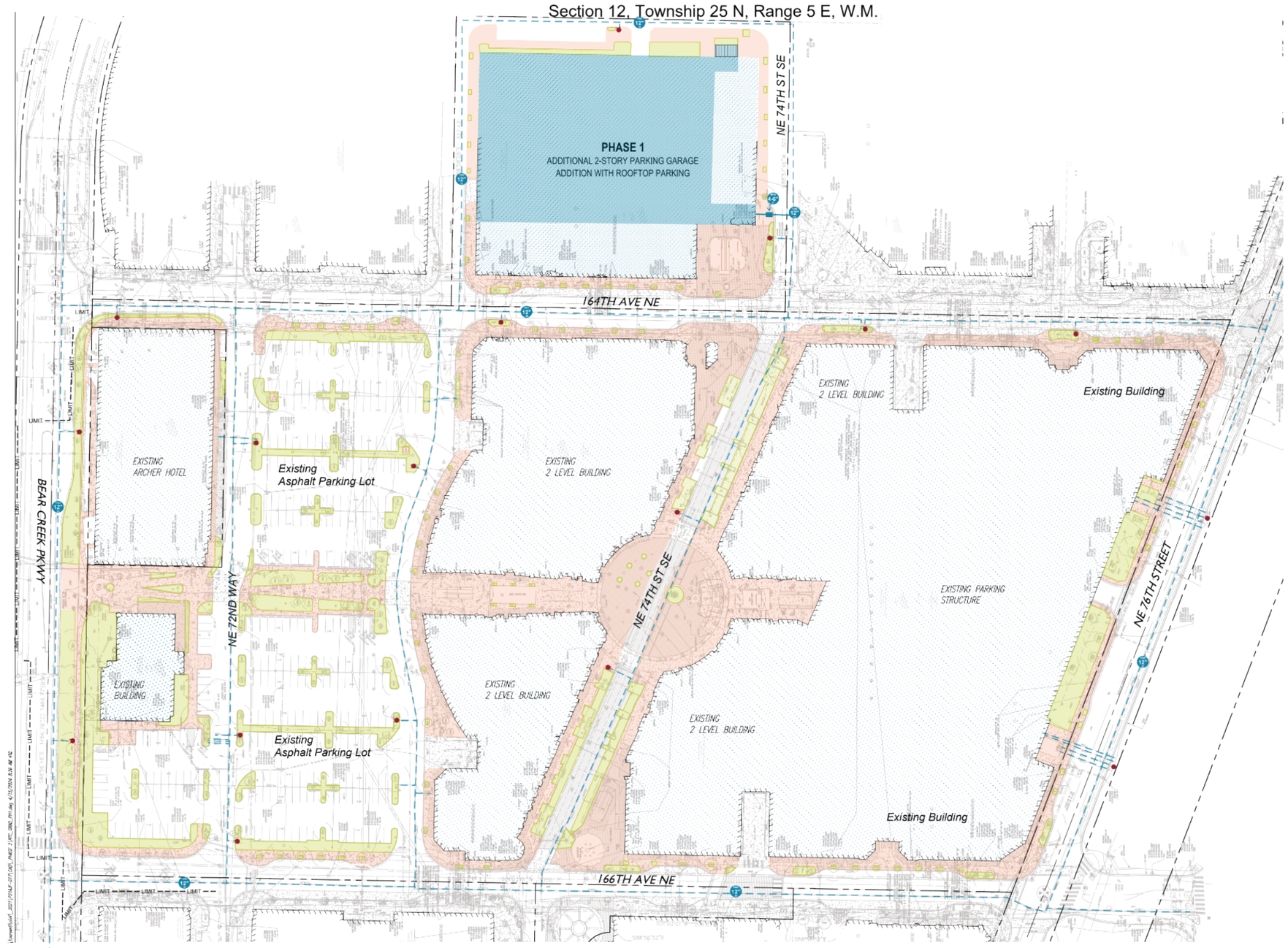
LEGEND

- PROPERTY LINE
- EXISTING/PROPOSED BUILDING
- EXISTING/PROPOSED ROAD
- EXISTING/PROPOSED WALKWAY
- EXISTING/PROPOSED LANDSCAPING
- EXISTING SEWER TO REMAIN
- EXISTING SEWER TO REMOVE
- PROPOSED SEWER
- EX 8'' PVC — NEW/PROPOSED DIAMETER PIPE MATERIAL

CONCEPTUAL SEWER PLAN | PHASE 1

NOT TO SCALE - PLANS INCLUDED FOR REFERENCE ONLY, SEE CIVIL IMPROVEMENT PLANS FOR SCALED DRAWINGS

CONCEPTUAL WATER PLAN | PHASE 1



LEGEND

- PROPERTY LINE
- EXISTING/PROPOSED BUILDING
- EXISTING/PROPOSED ROAD
- EXISTING/PROPOSED WALKWAY
- EXISTING/PROPOSED LANDSCAPING
- EXISTING WATER TO REMAIN
- EXISTING WATER TO REMOVE
- PROPOSED WATER
- FIRE INFRASTRUCTURE
- INSTALLATION YEAR/PHASE (2000 / 12'' / DI)
- PIPE MATERIAL

CONCEPTUAL WATER PLAN | PHASE 1

NOT TO SCALE - PLANS INCLUDED FOR REFERENCE ONLY, SEE CIVIL IMPROVEMENT PLANS FOR SCALED DRAWINGS

FIRE ACCESS PLAN | PHASE 1



LEGEND

- PROPERTY LINE
- EXISTING/PROPOSED BUILDING
- EXISTING/PROPOSED ROAD
- EXISTING/PROPOSED WALKWAY
- EXISTING/PROPOSED LANDSCAPING
- EXISTING FIRE HYDRANT
- PROPOSED FIRE HYDRANT
- REMOVED FIRE HYDRANT
- EMERGENCY VEHICLE ACCESS (SEE ROW & EASEMENT PLAN)
- EXISTING FIRE HYDRANT 150' RADIUS
- PROPOSED FIRE HYDRANT 150' RADIUS

FIRE ACCESS PLAN | PHASE 1

NOT TO SCALE - PLANS INCLUDED FOR REFERENCE ONLY, SEE CIVIL IMPROVEMENT PLANS FOR SCALED DRAWINGS

CONCEPTUAL TRANSPORTATION PLAN | PHASE 2

Section 12, Township 25 N, Range 5 E, W.M.



LEGEND

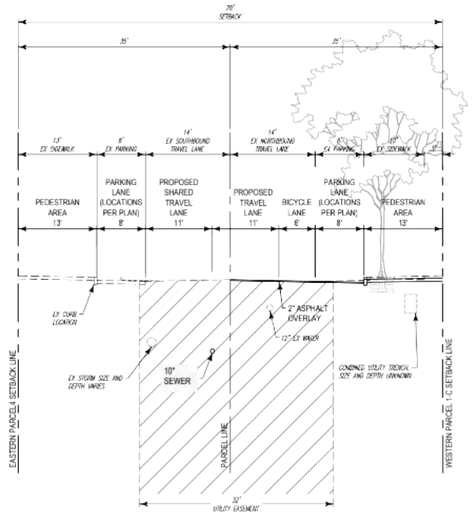
- PROPERTY LINE
- EXISTING/PROPOSED BUILDING
- EXISTING/PROPOSED ROAD
- EXISTING/PROPOSED WALKWAY
- EXISTING/PROPOSED LANDSCAPING
- GARAGE INGRESS ROUTE
- GARAGE EGRESS ROUTE
- GARAGE ENTRY POINT
- ROAD CROSS SECTION
- SIGHT TRIANGLE

CONCEPTUAL TRANSPORTATION PLAN | PHASE 2

NOT TO SCALE - PLANS INCLUDED FOR REFERENCE ONLY, SEE CIVIL IMPROVEMENT PLANS FOR SCALED DRAWINGS

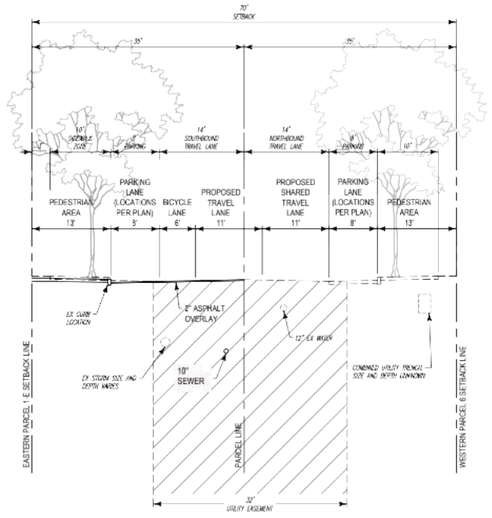
CONCEPTUAL ROADWAY SECTIONS | PHASE 2

Section 12, Township 25 N, Range 5 E, W.M.



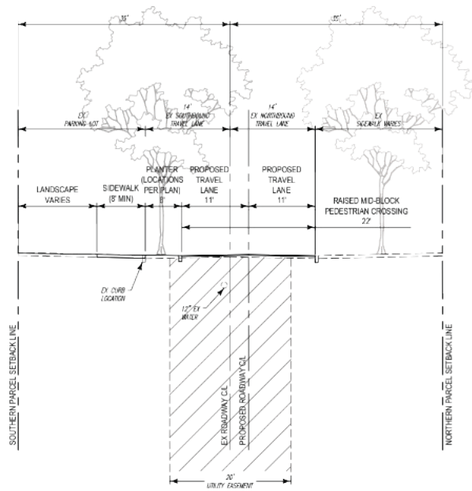
Section A-A: 164th Ave NE Section (Between NE 72nd Way and NE 73rd Way)

Scale 1"=10'



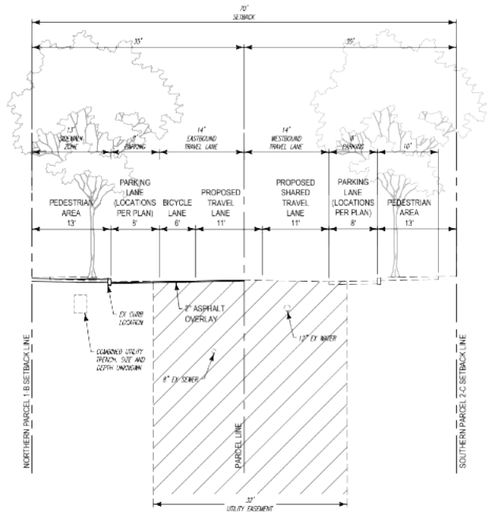
Section B-B: 166th Ave NE Section (Between NE 72nd Way and NE 76th Street)

Scale 1"=10'



Section C-C: NE 73rd Way Section (At Raised Mid-Block Crossing)

Scale 1"=10'



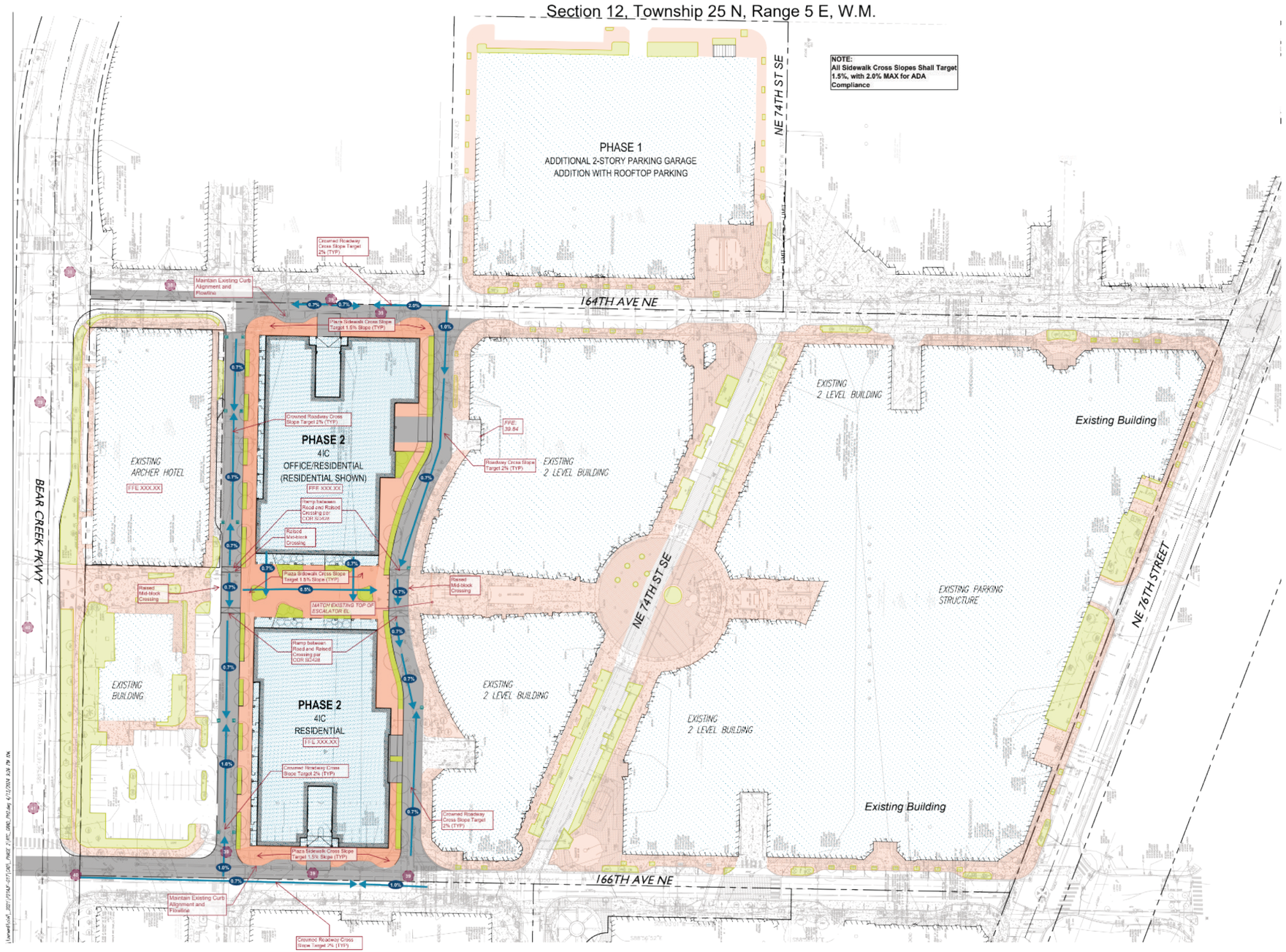
Section D-D: NE 74th Street SE (Between 164th Ave NE and Bear Creek Parkway)

Scale 1"=10'

CONCEPTUAL ROADWAY SECTIONS | PHASE 2

NOT TO SCALE - PLANS INCLUDED FOR REFERENCE ONLY, SEE CIVIL IMPROVEMENT PLANS FOR SCALED DRAWINGS

CONCEPTUAL GRADING PLAN | PHASE 2



LEGEND

- PROPERTY LINE
- EXISTING/PROPOSED BUILDING
- EXISTING/PROPOSED ROAD
- EXISTING/PROPOSED WALKWAY
- EXISTING/PROPOSED LANDSCAPING
- 337 PROPOSED GRADES
- 320 EXISTING GRADES
- 7.3% PROPOSED SLOPE

NOTE:
All Sidewalk Cross Slopes Shall Target 1.5%, with 2.0% MAX for ADA Compliance

CONCEPTUAL GRADING PLAN | PHASE 2

NOT TO SCALE - PLANS INCLUDED FOR REFERENCE ONLY, SEE CIVIL IMPROVEMENT PLANS FOR SCALED DRAWINGS

CONCEPTUAL STORMWATER PLAN | PHASE 2



LEGEND

- PROPERTY LINE
- EXISTING/PROPOSED BUILDING
- EXISTING/PROPOSED ROAD
- EXISTING/PROPOSED WALKWAY
- EXISTING/PROPOSED LANDSCAPING
- EXISTING STORM TO REMAIN
- EXISTING STORM TO REMOVE
- PROPOSED STORM
- NEW/PROPOSED
- DIAMETER
- PIPE MATERIAL

EX 12" PVC

* Pollution Generating Impervious Surface:
Provided Enhanced Water Quality, Direct Discharge to Smmamish River via Existing Stormwater Ponds

** Non-pollution generating impervious surface (ie roof areas) to infiltrated to maximum extent feasible. Overflow to Direct Discharge to Sammamish River via Existing Stormwater Ponds

CONCEPTUAL STORMWATER PLAN | PHASE 2

NOT TO SCALE - PLANS INCLUDED FOR REFERENCE ONLY, SEE CIVIL IMPROVEMENT PLANS FOR SCALED DRAWINGS

CONCEPTUAL SEWER PLAN | PHASE 2



LEGEND

- PROPERTY LINE
- EXISTING/PROPOSED BUILDING
- EXISTING/PROPOSED ROAD
- EXISTING/PROPOSED WALKWAY
- EXISTING/PROPOSED LANDSCAPING
- EXISTING SEWER TO REMAIN
- EXISTING SEWER TO REMOVE
- PROPOSED SEWER
- NEW/PROPOSED
- DIAMETER
- PIPE MATERIAL

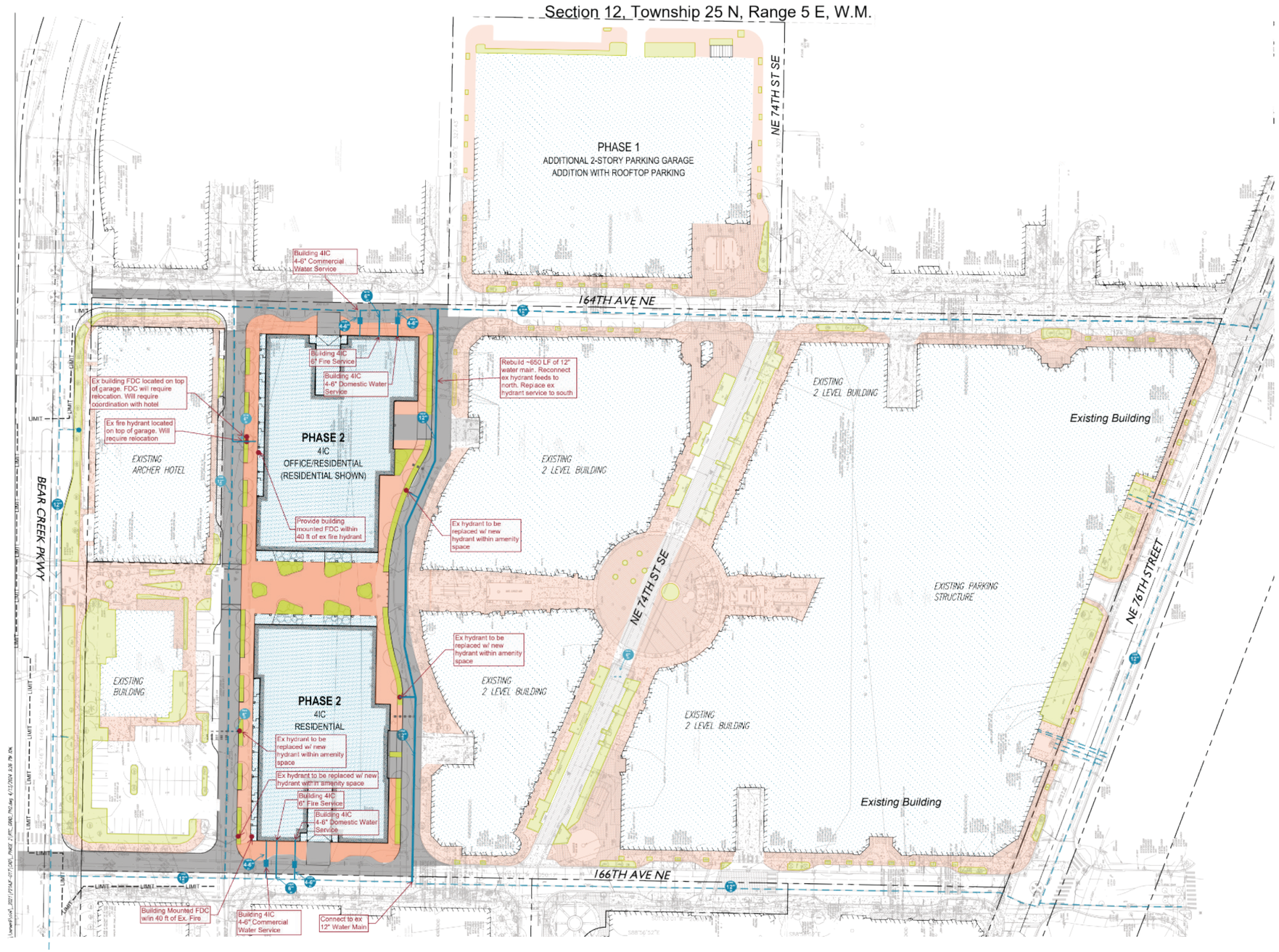
EX 8'' PVC

Note: Sewer Additional Connection Charges, in accordance with City of Redmond Resolution No. [insert number], must be paid to the City prior to connecting any new buildings to the water or sewer system.

CONCEPTUAL SEWER PLAN | PHASE 2

NOT TO SCALE - PLANS INCLUDED FOR REFERENCE ONLY, SEE CIVIL IMPROVEMENT PLANS FOR SCALED DRAWINGS

CONCEPTUAL WATER PLAN | PHASE 2



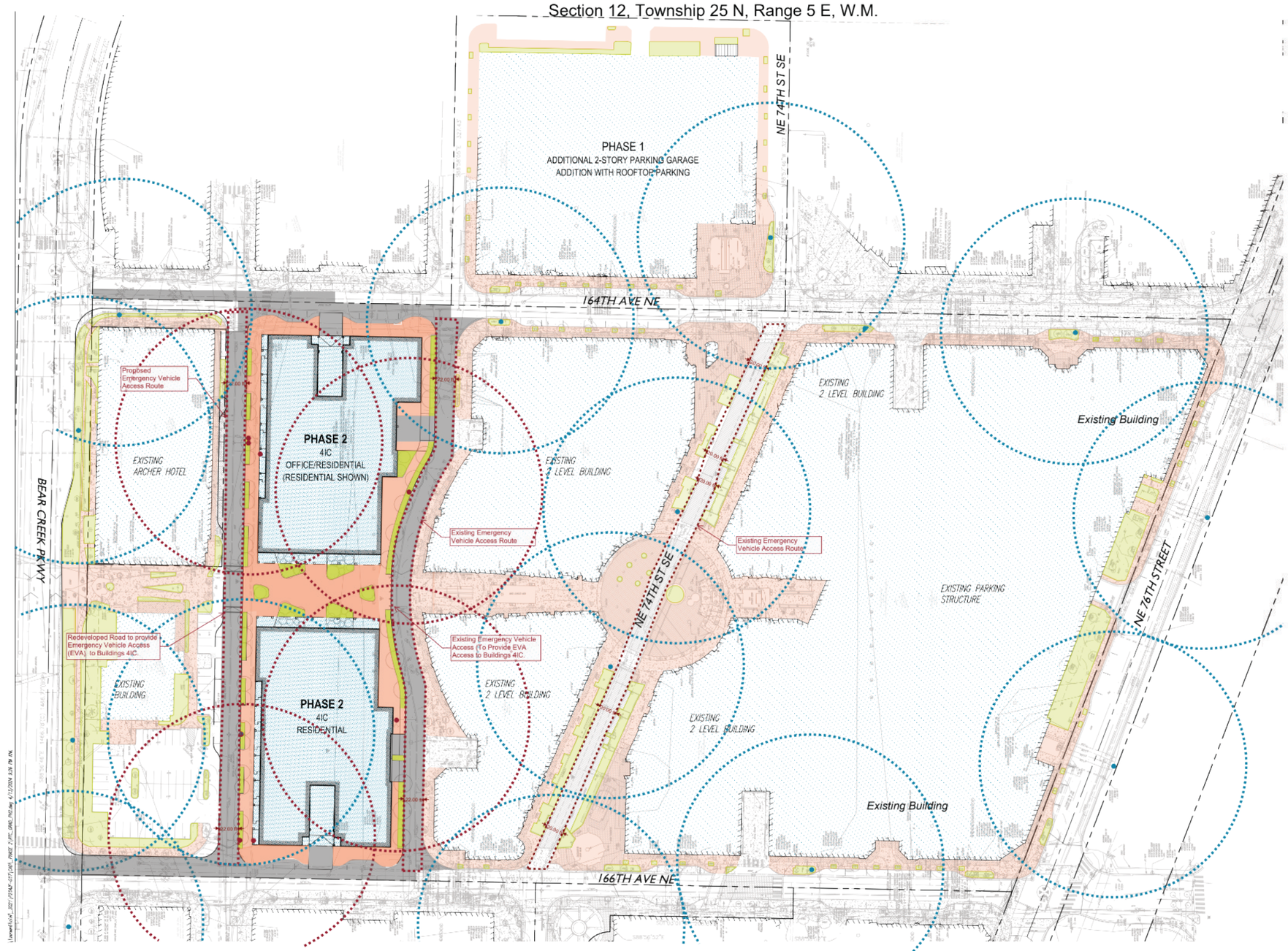
LEGEND

- PROPERTY LINE
- EXISTING/PROPOSED BUILDING
- EXISTING/PROPOSED ROAD
- EXISTING/PROPOSED WALKWAY
- EXISTING/PROPOSED LANDSCAPING
- EXISTING WATER TO REMAIN
- EXISTING WATER TO REMOVE
- PROPOSED WATER
- FIRE INFRASTRUCTURE
- INSTALLATION YEAR/PHASE (2000)
- PIPE MATERIAL (12" DI)

CONCEPTUAL WATER PLAN | PHASE 2

NOT TO SCALE - PLANS INCLUDED FOR REFERENCE ONLY, SEE CIVIL IMPROVEMENT PLANS FOR SCALED DRAWINGS

FIRE ACCESS PLAN | PHASE 2



LEGEND

- PROPERTY LINE
- EXISTING/PROPOSED BUILDING
- EXISTING/PROPOSED ROAD
- EXISTING/PROPOSED WALKWAY
- EXISTING/PROPOSED LANDSCAPING
- EXISTING FIRE HYDRANT
- PROPOSED FIRE HYDRANT
- REMOVED FIRE HYDRANT
- EMERGENCY VEHICLE ACCESS (SEE ROW & EASEMENT PLAN)
- EXISTING FIRE HYDRANT 150' RADIUS
- PROPOSED FIRE HYDRANT 150' RADIUS

FIRE ACCESS PLAN | PHASE 2

NOT TO SCALE - PLANS INCLUDED FOR REFERENCE ONLY, SEE CIVIL IMPROVEMENT PLANS FOR SCALED DRAWINGS

CONCEPTUAL TRANSPORTATION PLAN | PHASE 3



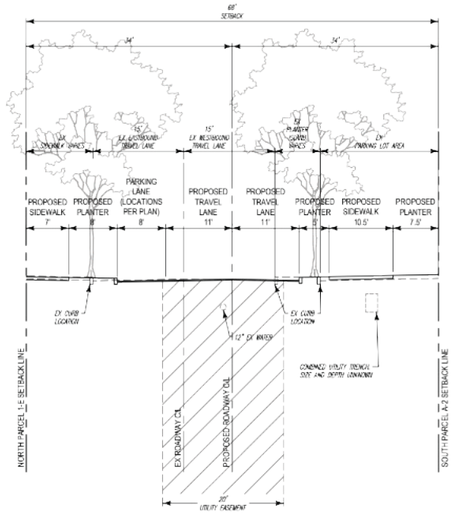
LEGEND

- PROPERTY LINE
- EXISTING/PROPOSED BUILDING
- EXISTING/PROPOSED ROAD
- EXISTING/PROPOSED WALKWAY
- EXISTING/PROPOSED LANDSCAPING
- GARAGE INGRESS ROUTE
- GARAGE EGRESS ROUTE
- GARAGE ENTRY POINT
- ROAD CROSS SECTION
- SIGHT TRIANGLE

CONCEPTUAL TRANSPORTATION PLAN | PHASE 3

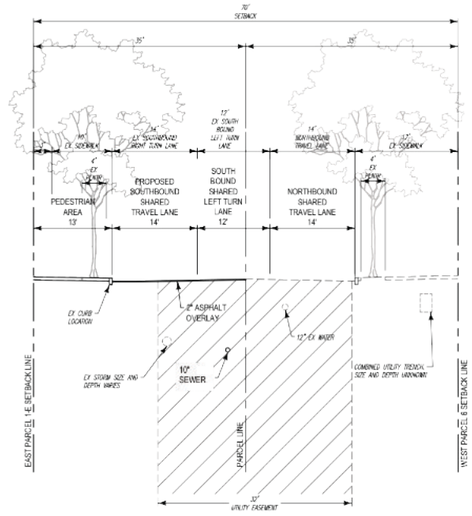
NOT TO SCALE - PLANS INCLUDED FOR REFERENCE ONLY, SEE CIVIL IMPROVEMENT PLANS FOR SCALED DRAWINGS

CONCEPTUAL ROADWAY SECTIONS | PHASE 3



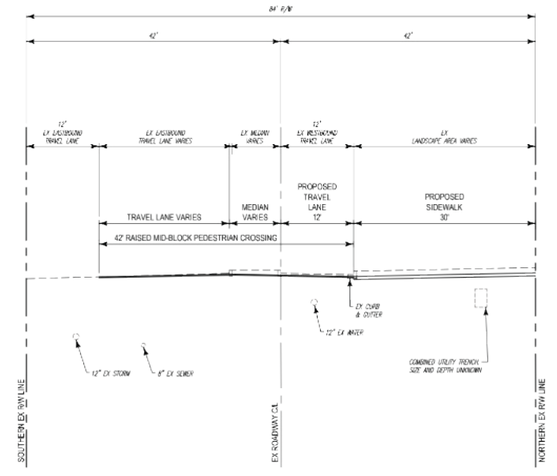
Section A-A: NE 72nd Way Section

Scale 1"=10'



Section B-B: 166th Ave NE Section (South of NE 72nd Way)

Scale 1"=10'



Section C-C: Bear Creek Parkway Crossing Section

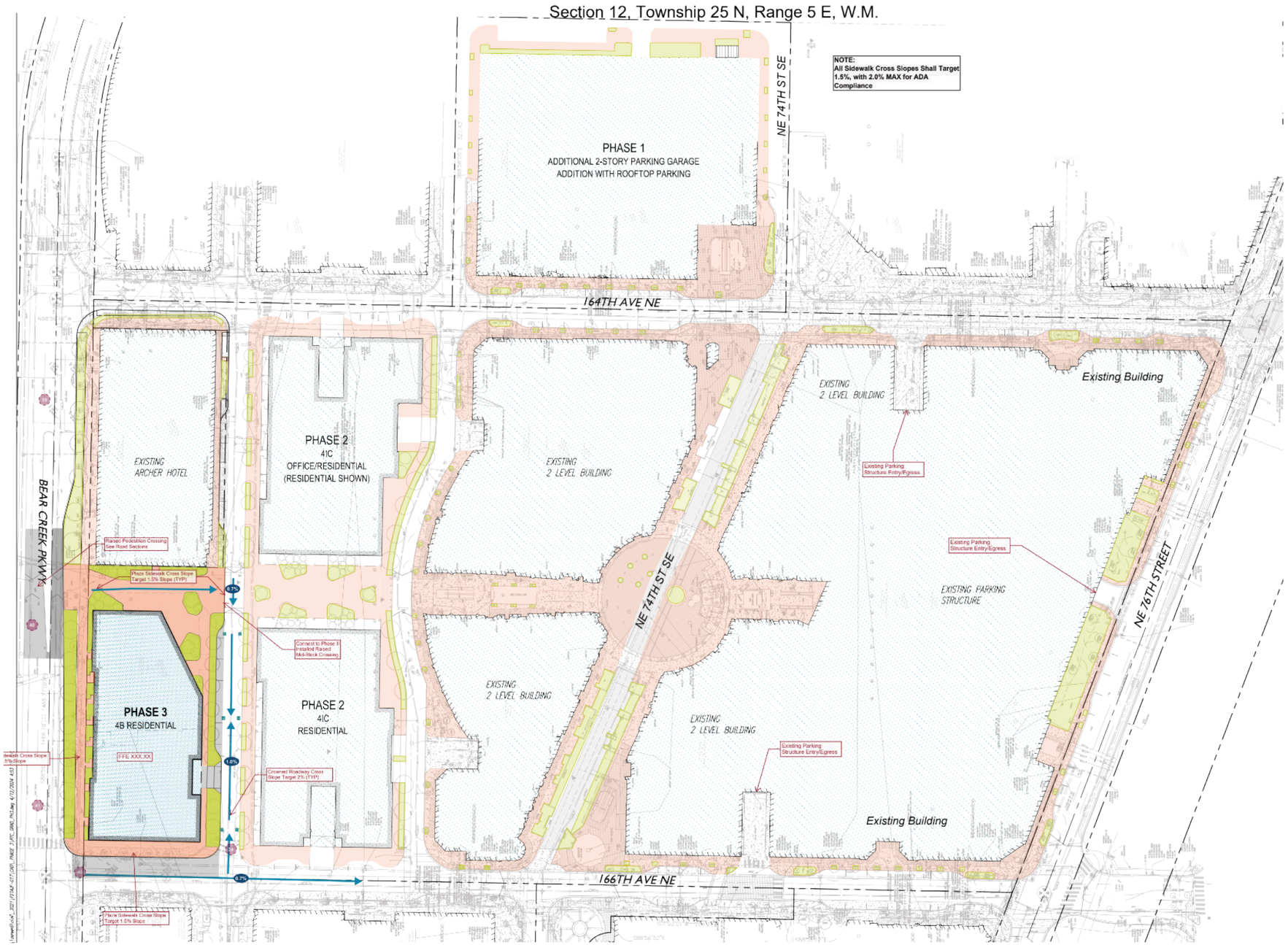
Scale 1"=10'

CONCEPTUAL ROADWAY SECTIONS | PHASE 3

NOT TO SCALE - PLANS INCLUDED FOR REFERENCE ONLY, SEE CIVIL IMPROVEMENT PLANS FOR SCALED DRAWINGS

Exhibit C

CONCEPTUAL GRADING PLAN | PHASE 3



LEGEND

- PROPERTY LINE
- EXISTING/PROPOSED BUILDING
- EXISTING/PROPOSED ROAD
- EXISTING/PROPOSED WALKWAY
- EXISTING/PROPOSED LANDSCAPING
- 337 PROPOSED GRADES
- 320 EXISTING GRADES
- 7.3% PROPOSED SLOPE

NOTE:
All Sidewalk Cross Slopes Shall Target 1.5%, with 2.0% MAX for ADA Compliance

CONCEPTUAL GRADING PLAN | PHASE 3

NOT TO SCALE - PLANS INCLUDED FOR REFERENCE ONLY, SEE CIVIL IMPROVEMENT PLANS FOR SCALED DRAWINGS

CONCEPTUAL STORMWATER PLAN | PHASE 3



LEGEND

- PROPERTY LINE
- EXISTING/PROPOSED BUILDING
- EXISTING/PROPOSED ROAD
- EXISTING/PROPOSED WALKWAY
- EXISTING/PROPOSED LANDSCAPING
- EXISTING STORM TO REMAIN
- EXISTING STORM TO REMOVE
- PROPOSED STORM
- NEW/PROPOSED
- DIAMETER
- PIPE MATERIAL

EX 12'' PVC

* Pollution Generating Impervious Surface:
Provided Enhanced Water Quality, Direct Discharge to Smmamish River via Existing Stormwater Ponds

** Non-pollution generating impervious surface (ie roof areas) to infiltrated to maximum extent feasible. Overflow to Direct Discharge to Sammamish River via Existing Stormwater Ponds

CONCEPTUAL STORMWATER PLAN | PHASE 3

NOT TO SCALE - PLANS INCLUDED FOR REFERENCE ONLY, SEE CIVIL IMPROVEMENT PLANS FOR SCALED DRAWINGS

Exhibit C

CONCEPTUAL SEWER PLAN | PHASE 3



LEGEND

- PROPERTY LINE
- EXISTING/PROPOSED BUILDING
- EXISTING/PROPOSED ROAD
- EXISTING/PROPOSED WALKWAY
- EXISTING/PROPOSED LANDSCAPING
- EXISTING SEWER TO REMAIN
- EXISTING SEWER TO REMOVE
- PROPOSED SEWER
- NEW/PROPOSED
- DIAMETER
- PIPE MATERIAL

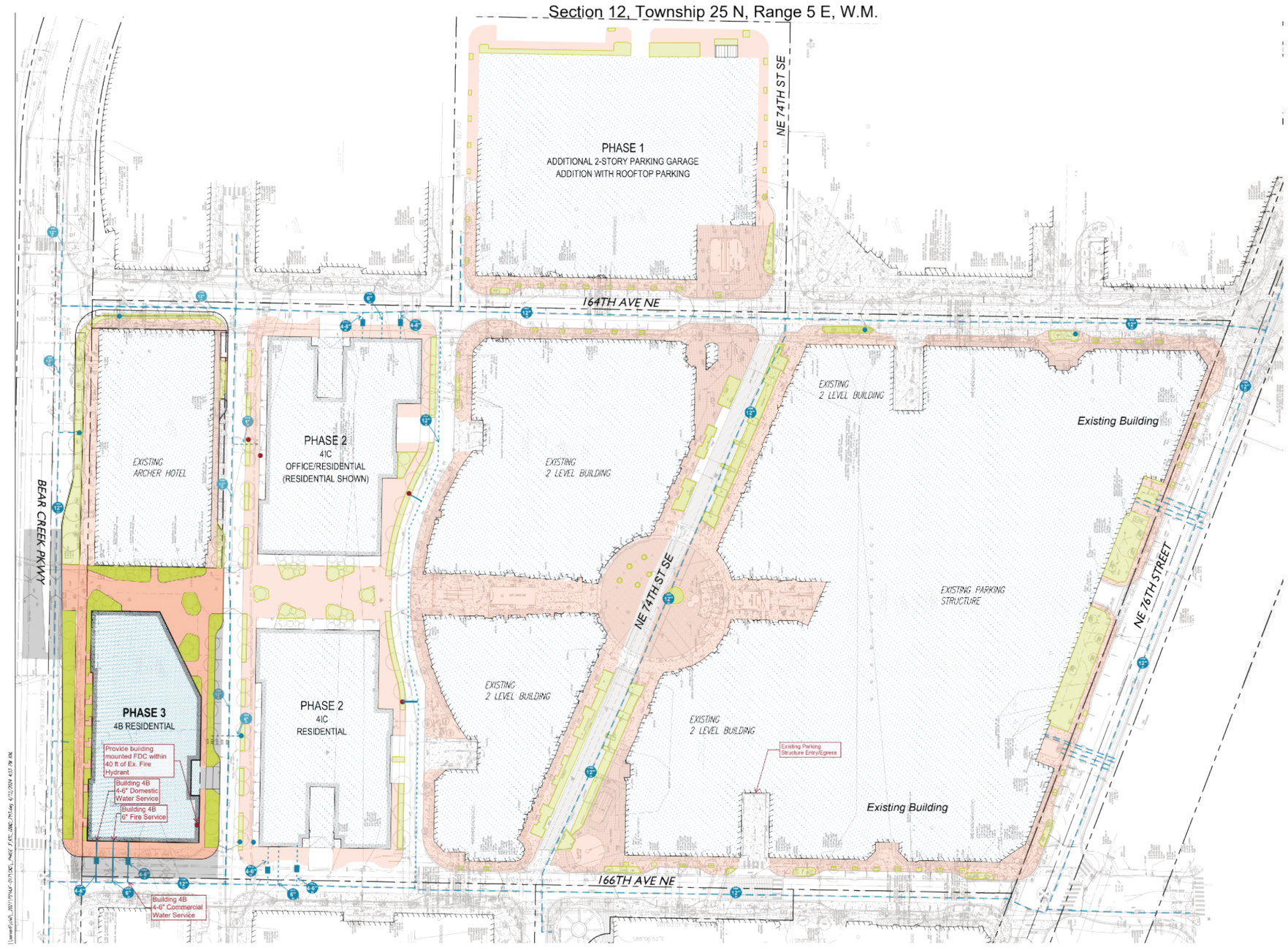
EX 8'' PVC

Note: Sewer Additional Connection Charges, in accordance with City of Redmond Resolution No. [insert number], must be paid to the City prior to connecting any new buildings to the water or sewer system.

CONCEPTUAL SEWER PLAN | PHASE 3

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CONCEPTUAL WATER PLAN | PHASE 3



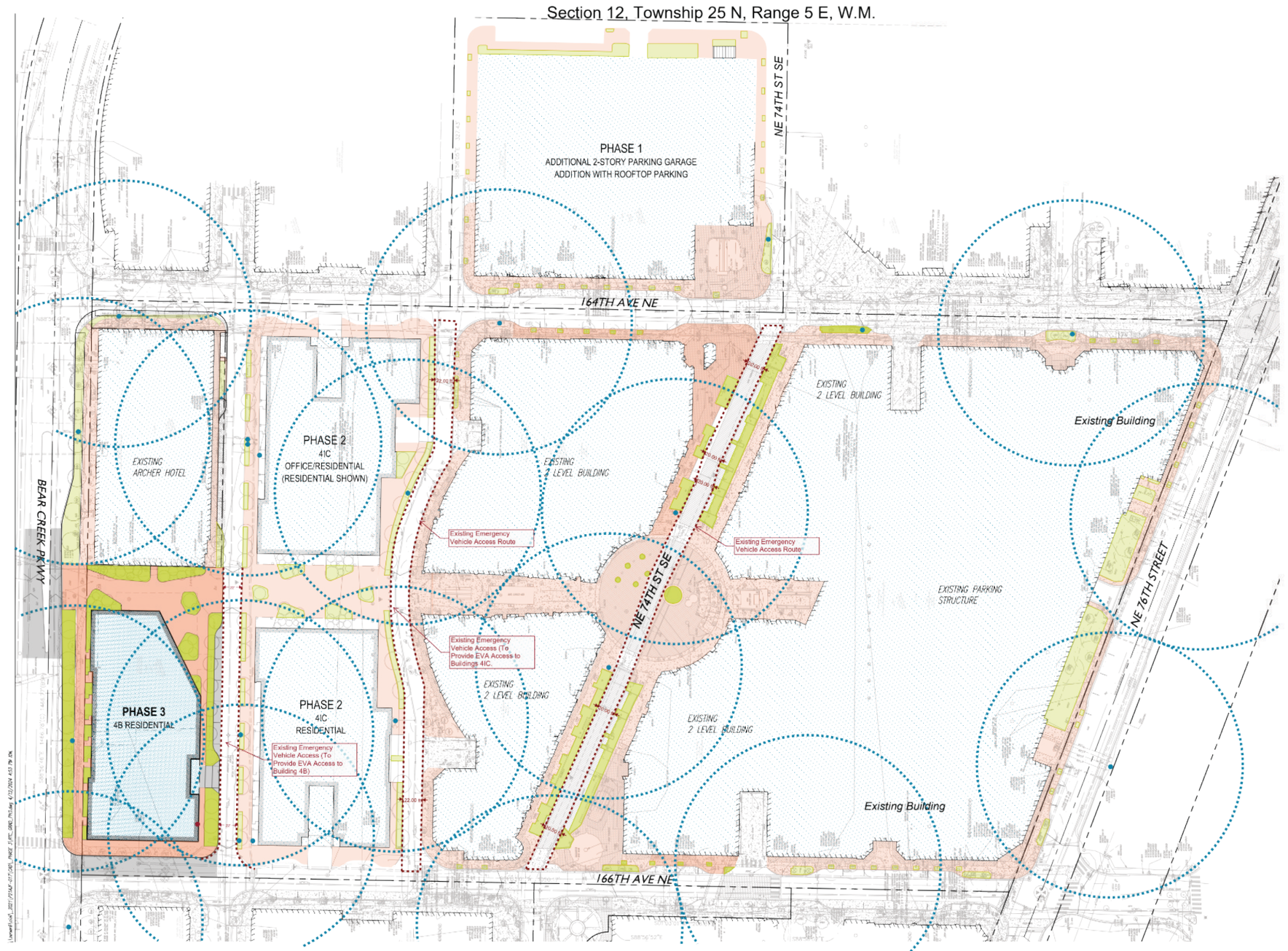
LEGEND

- PROPERTY LINE
- EXISTING/PROPOSED BUILDING
- EXISTING/PROPOSED ROAD
- EXISTING/PROPOSED WALKWAY
- EXISTING/PROPOSED LANDSCAPING
- EXISTING WATER TO REMAIN
- EXISTING WATER TO REMOVE
- PROPOSED WATER
- FIRE INFRASTRUCTURE
- INSTALLATION YEAR/PHASE (2000 / 12'' / DI)
- PIPE MATERIAL

CONCEPTUAL WATER PLAN | PHASE 3

NOT TO SCALE - PLANS INCLUDED FOR REFERENCE ONLY, SEE CIVIL IMPROVEMENT PLANS FOR SCALED DRAWINGS

FIRE ACCESS PLAN | PHASE 3



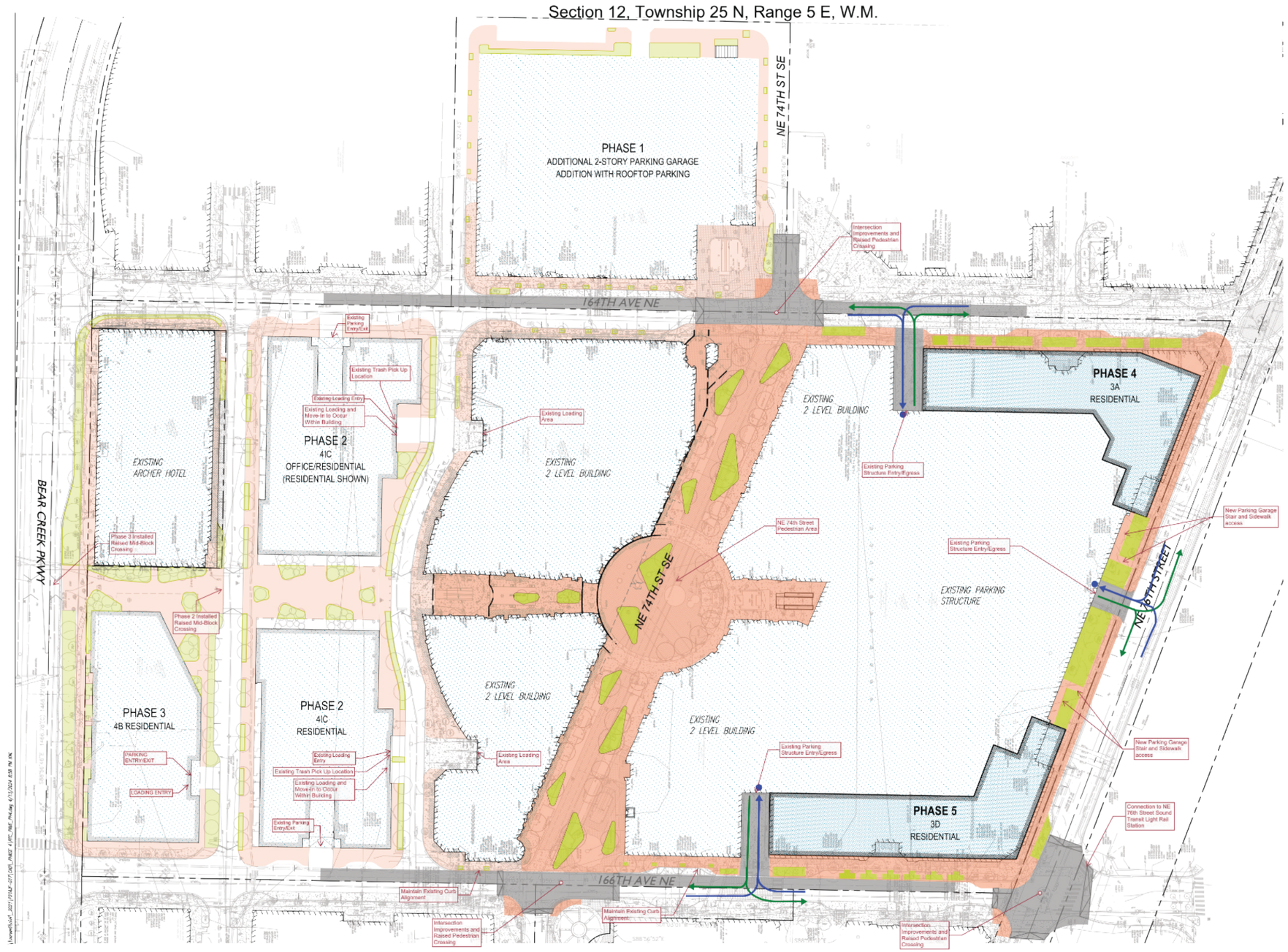
LEGEND

- PROPERTY LINE
- EXISTING/PROPOSED BUILDING
- EXISTING/PROPOSED ROAD
- EXISTING/PROPOSED WALKWAY
- EXISTING/PROPOSED LANDSCAPING
- EXISTING FIRE HYDRANT
- PROPOSED FIRE HYDRANT
- REMOVED FIRE HYDRANT
- EMERGENCY VEHICLE ACCESS (SEE ROW & EASEMENT PLAN)
- EXISTING FIRE HYDRANT 150' RADIUS
- PROPOSED FIRE HYDRANT 150' RADIUS

FIRE ACCESS PLAN | PHASE 3

NOT TO SCALE - PLANS INCLUDED FOR REFERENCE ONLY, SEE CIVIL IMPROVEMENT PLANS FOR SCALED DRAWINGS

CONCEPTUAL TRANSPORTATION PLAN | PHASE 4 AND 5



LEGEND

- PROPERTY LINE
- EXISTING/PROPOSED BUILDING
- EXISTING/PROPOSED ROAD
- EXISTING/PROPOSED WALKWAY
- EXISTING/PROPOSED LANDSCAPING
- GARAGE INGRESS ROUTE
- GARAGE EGRESS ROUTE
- GARAGE ENTRY POINT
- ROAD CROSS SECTION
- SIGHT TRIANGLE

CONCEPTUAL TRANSPORTATION PLAN | PHASE 4 AND 5

NOT TO SCALE - PLANS INCLUDED FOR REFERENCE ONLY, SEE CIVIL IMPROVEMENT PLANS FOR SCALED DRAWINGS

CONCEPTUAL GRADING AND DRAINAGE PLAN | PHASE 4 AND 5



LEGEND

- PROPERTY LINE
- EXISTING/PROPOSED BUILDING
- EXISTING/PROPOSED ROAD
- EXISTING/PROPOSED WALKWAY
- EXISTING/PROPOSED LANDSCAPING
- 337 PROPOSED GRADES
- 320 EXISTING GRADES
- 7.3% PROPOSED SLOPE

NOTE:
All Sidewalk Cross Slopes Shall Target 1.5%, with 2.0% MAX for ADA Compliance

CONCEPTUAL GRADING PLAN | PHASE 4 AND 5

NOT TO SCALE - PLANS INCLUDED FOR REFERENCE ONLY, SEE CIVIL IMPROVEMENT PLANS FOR SCALED DRAWINGS

CONCEPTUAL STORMWATER PLAN | PHASE 4 AND 5



LEGEND

- PROPERTY LINE
- EXISTING/PROPOSED BUILDING
- EXISTING/PROPOSED ROAD
- EXISTING/PROPOSED WALKWAY
- EXISTING/PROPOSED LANDSCAPING
- EXISTING STORM TO REMAIN
- EXISTING STORM TO REMOVE
- PROPOSED STORM
- EX 12" PVC
  - NEW/PROPOSED
  - DIAMETER
  - PIPE MATERIAL

* Pollution Generating Impervious Surface:
Provided Enhanced Water Quality, Direct Discharge to Smmamish River via Existing Stormwater Ponds

** Non-pollution generating impervious surface (ie roof areas) to infiltrated to maximum extent feasible. Overflow to Direct Discharge to Sammamish River via Existing Stormwater Ponds

CONCEPTUAL STORMWATER PLAN | PHASE 4 AND 5
NOT TO SCALE - PLANS INCLUDED FOR REFERENCE ONLY, SEE CIVIL IMPROVEMENT PLANS FOR SCALED DRAWINGS

Exhibit C

CONCEPTUAL SEWER PLAN | PHASE 4 AND 5



LEGEND

- PROPERTY LINE
- EXISTING/PROPOSED BUILDING
- EXISTING/PROPOSED ROAD
- EXISTING/PROPOSED WALKWAY
- EXISTING/PROPOSED LANDSCAPING
- EXISTING SEWER TO REMAIN
- EXISTING SEWER TO REMOVE
- PROPOSED SEWER
- NEW/PROPOSED
- DIAMETER
- PIPE MATERIAL

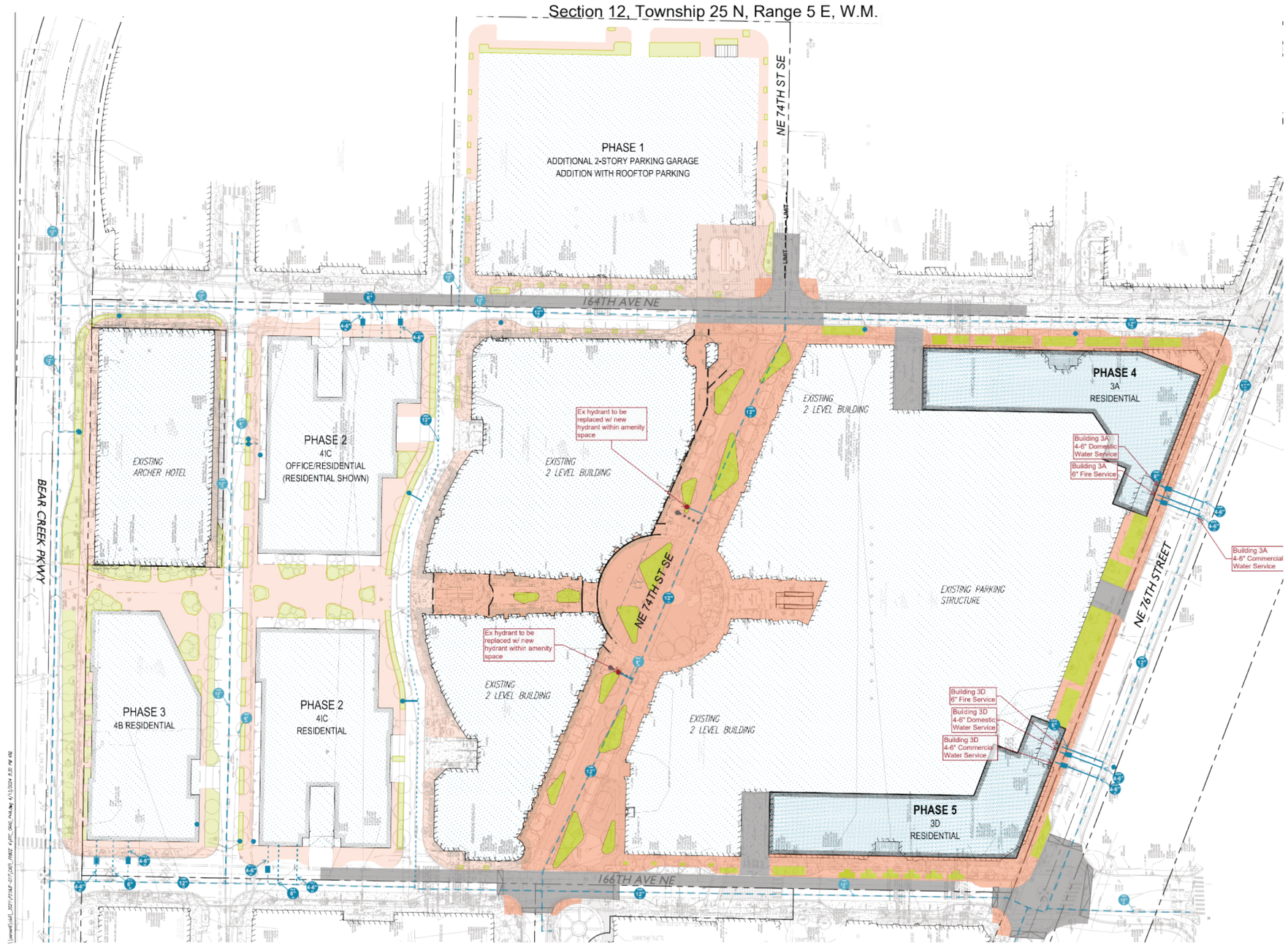
EX 8'' PVC

Note: Sewer Additional Connection Charges, in accordance with City of Redmond Resolution No. [insert number], must be paid to the City prior to connecting any new buildings to the water or sewer system.

CONCEPTUAL SEWER PLAN | PHASE 4 AND 5

NOT TO SCALE - PLANS INCLUDED FOR REFERENCE ONLY, SEE CIVIL IMPROVEMENT PLANS FOR SCALED DRAWINGS

CONCEPTUAL WATER PLAN | PHASE 4 AND 5



LEGEND

- PROPERTY LINE
- EXISTING/PROPOSED BUILDING
- EXISTING/PROPOSED ROAD
- EXISTING/PROPOSED WALKWAY
- EXISTING/PROPOSED LANDSCAPING
- EXISTING WATER TO REMAIN
- EXISTING WATER TO REMOVE
- PROPOSED WATER
- FIRE INFRASTRUCTURE
- INSTALLATION YEAR/PHASE (2000 / 12'' / DI)
- PIPE MATERIAL

CONCEPTUAL WATER PLAN | PHASE 4 AND 5

NOT TO SCALE - PLANS INCLUDED FOR REFERENCE ONLY, SEE CIVIL IMPROVEMENT PLANS FOR SCALED DRAWINGS

FIRE ACCESS PLAN | PHASE 4 AND 5



LEGEND

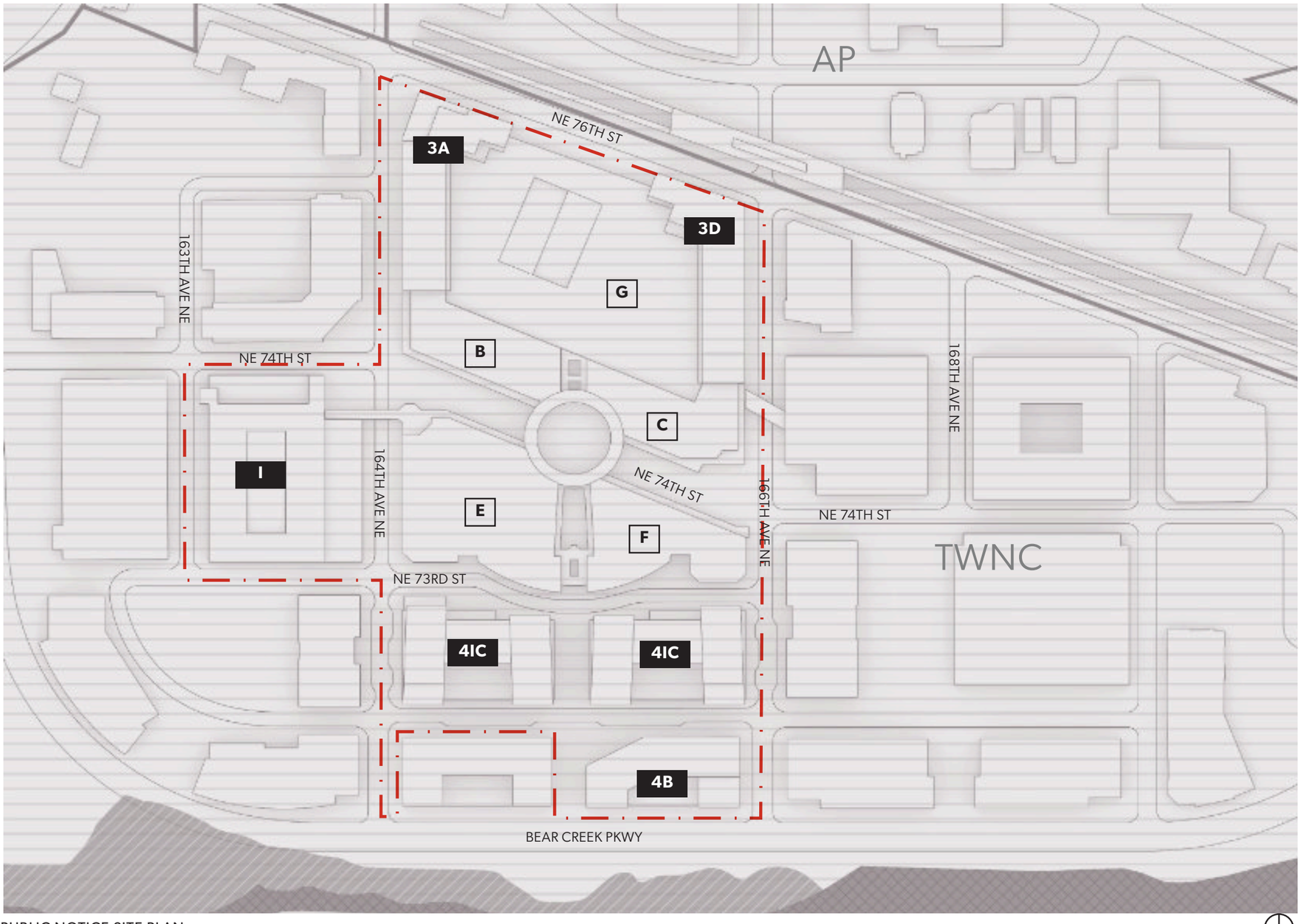
- PROPERTY LINE
- EXISTING/PROPOSED BUILDING
- EXISTING/PROPOSED ROAD
- EXISTING/PROPOSED WALKWAY
- EXISTING/PROPOSED LANDSCAPING
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- PROPOSED FIRE HYDRANT
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- EMERGENCY VEHICLE ACCESS (SEE ROW & EASEMENT PLAN)
- EXISTING FIRE HYDRANT 150' RADIUS
- PROPOSED FIRE HYDRANT 150' RADIUS

FIRE ACCESS PLAN | PHASE 4 AND 5

NOT TO SCALE - PLANS INCLUDED FOR REFERENCE ONLY, SEE CIVIL IMPROVEMENT PLANS FOR SCALED DRAWINGS

SECTION 5 - APPENDIX

PUBLIC NOTICE SITE PLAN - REDMOND TOWN CENTER MPD



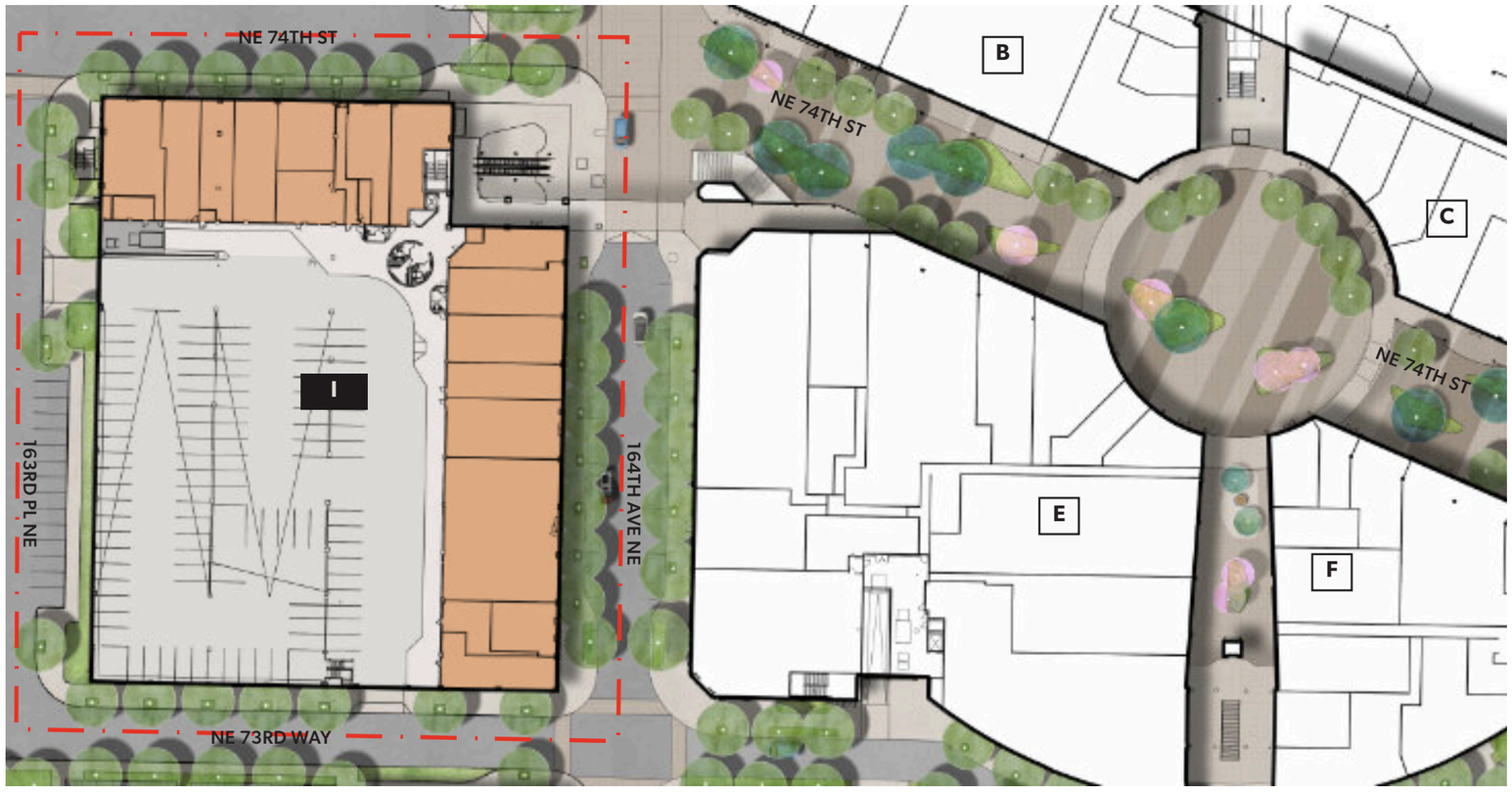
PUBLIC NOTICE SITE PLAN
NTS

LEGEND

- PROPOSED MPD BOUNDARY
  SITE AREA: 934,915 SQUARE FEET OR 21,4627 ACRES
- **3A** NEW BUILDING 3A
  - 7 STORY MIXED-USE RESIDENTIAL
- **3D** NEW BUILDING 3D
  - 7 STORY MIXED-USE RESIDENTIAL
- **4IC** NEW BUILDINGS 4IC
  - TWO NEW 12 STORY MIXED-USE RESIDENTIAL
  OR
  - TWO NEW 12 STORY MIXED-USE OFFICE
- **4B** NEW BUILDING 4B
  - 7 STORY RESIDENTIAL
- **I** EXISTING I GARAGE ADDITION
  - 2 STORY ADDITION TO EXISTING 2 STORY PARKING GARAGE
  74TH STREET
  - FUTURE STREET AND PLAZA IMPROVEMENTS
- ZONE X - 0.2% ANNUAL CHANCE FLOOD HAZARD
- ZONE AE - 1% ANNUAL CHANCE FLOOD HAZARD
- CARA I
- **#** EXISTING BUILDING

I GARAGE

BUILDING I - GARAGE



BUILDING I - GARAGE GROUND LEVEL SITE PLAN

0' 40' 80'

LEVEL	LEASING AREA	RESIDENTIAL UNITS	RESIDENTIAL AREA	COMMON RESI AMENITY AREA	TERRACE AREA
R					
04					
03					
02					
01					
Total	0	0	0	0	0

LEVEL	SERVICES AREA	PARKING UNITS	PARKING AREA	CIRC AREA	COMMERCIAL AREA
R		142	53,530	720	
04		142	53,530	720	
03		224	80,308		
02		224	80,308		
01		119	53,530		26,458
Total	0	851	321,206	1,440	0

SUMMARY

Phase Area: 123,430 SF (2.83 Acres)

Number of Floors: 4 levels above ground,
1 level underground

Existing Parking Count: 567
Parking Count: 284
Total Parking Count: 851

MULTIFAMILY OPEN SPACE

None

NOTE

- Future building design shall demonstrate compliance with RZC articulation requirements.
- Future building design shall provide screening from BOH spaces in compliance with RZC design standards, including, but not limited to transparency, ornamental screening, or landscape screening.
- Square footage, unit counts, and space allocations are approximate, and subject to change within the limits of the TIA and Development Agreement.

LEGEND

- LEASING / MAIL
- RESIDENTIAL
- COMMON RESI AMENITY
- COMMERCIAL
- SERVICES
- PARKING
- CIRCULATION
- OUTDOOR AMENITY
- # EXISTING BUILDING
- # PROPOSED NEW OR MODIFIED EXISTING BUILDING

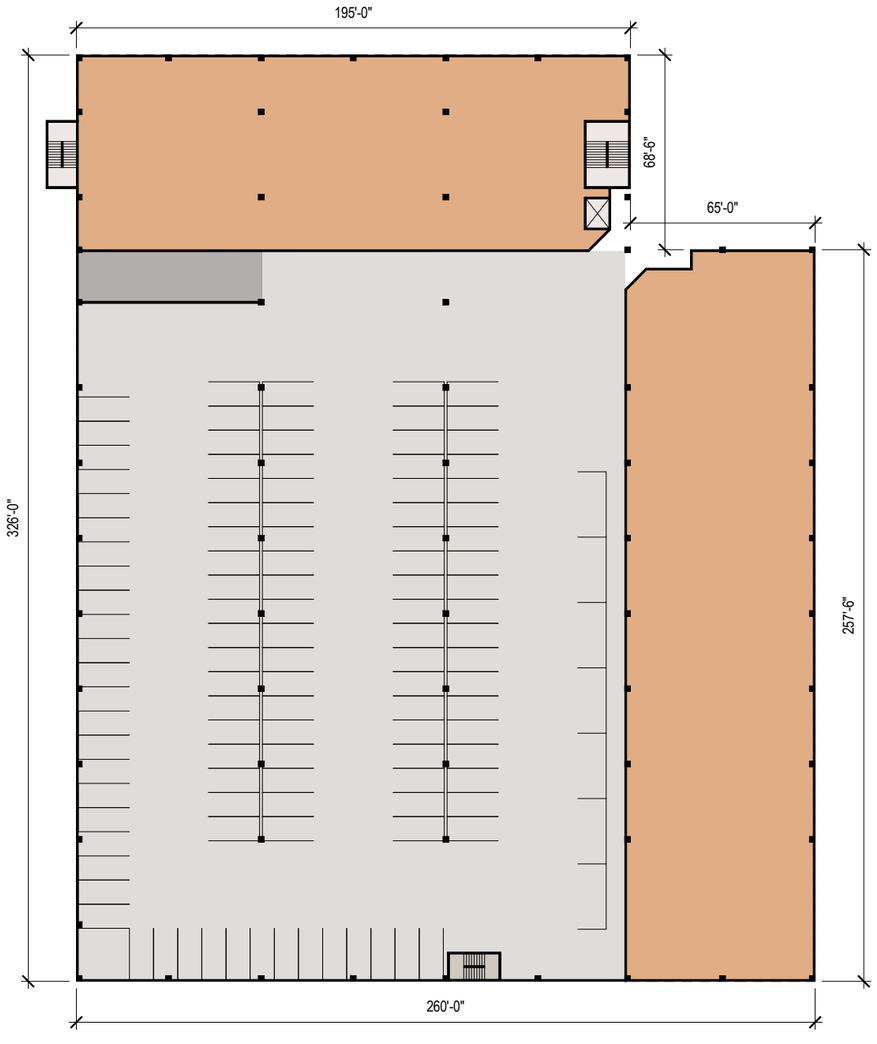
BUILDING I - GARAGE



BUILDING I - GARAGE GROUND LEVEL SITE PLAN

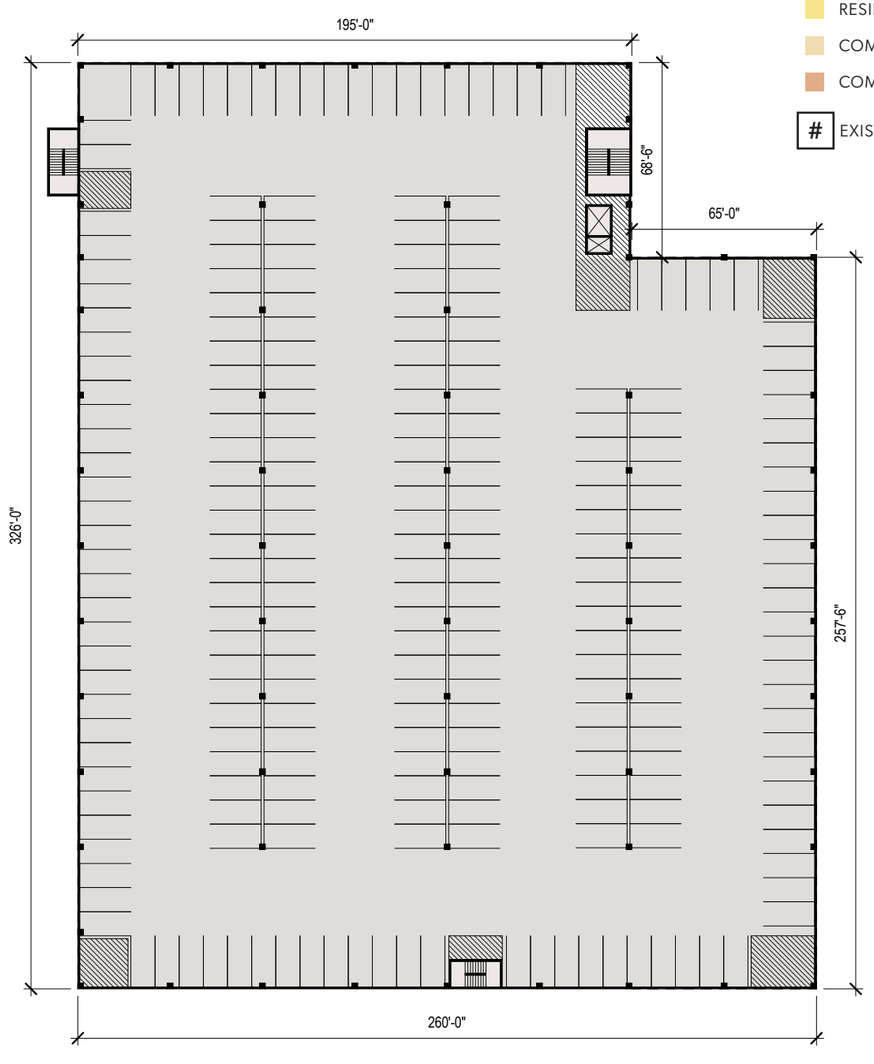
0' 25' 50'

BUILDING I - GARAGE



EXISTING LEVEL 01 FLOOR PLAN

0' 30' 60'



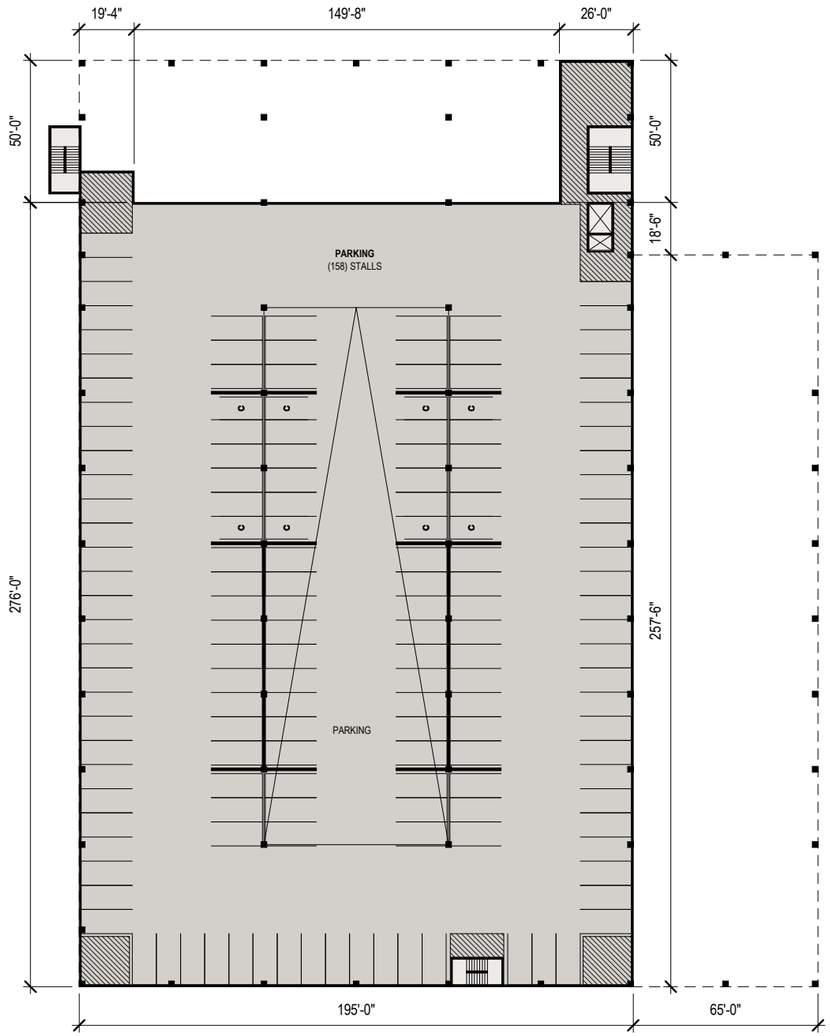
EXISTING LEVEL 02 - 03 FLOOR PLAN

0' 30' 60'

LEGEND

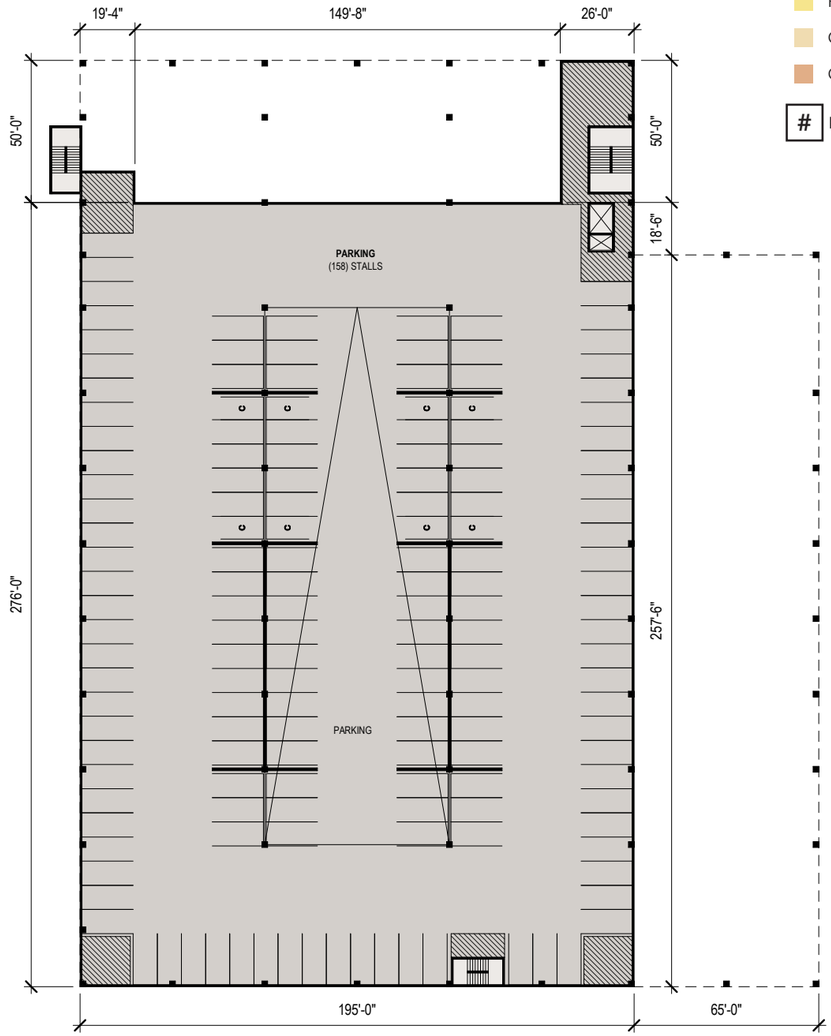
- LEASING / MAIL
- RESIDENTIAL
- COMMON RESI AMENITY
- COMMERCIAL
- # EXISTING BUILDING
- SERVICES
- PARKING
- CIRCULATION
- OUTDOOR AMENITY
- # PROPOSED NEW OR MODIFIED EXISTING BUILDING

BUILDING I - GARAGE



NEW LEVEL 04 FLOOR PLAN

0' 30' 60'



NEW LEVEL ROOF PLAN

0' 30' 60'

LEGEND

- LEASING / MAIL
- RESIDENTIAL
- COMMON RESI AMENITY
- COMMERCIAL
- # EXISTING BUILDING
- SERVICES
- PARKING
- CIRCULATION
- OUTDOOR AMENITY
- # PROPOSED NEW OR MODIFIED EXISTING BUILDING

4IC W RESIDENTIAL

BUILDING 4IC W - RESIDENTIAL



BUILDING 4IC - RESIDENTIAL GROUND LEVEL SITE PLAN

0' 40' 80'

LEVEL	LEASING AREA	RESIDENTIAL UNITS	RESIDENTIAL AREA	COMMON RESI AMENITY AREA	TERRACE AREA
12		26	20,210	1,710	2,000
11		30	23,930		
10		30	23,930		
09		30	23,930		
08		30	23,930		
07		30	23,930		
06		30	23,930		
05		27	21,860	2,070	10,060
04		19	15,700		
03					
02					
01	2,570			7,240	
Total	2,570	252	201,350	11,020	12,060

LEVEL	SERVICES AREA	PARKING UNITS	PARKING AREA	CIRC AREA	COMMERCIAL AREA
12	860			3,700	
11	860			3,700	
10	860			3,700	
09	860			3,700	
08	860			3,700	
07	860			3,700	
06	860			3,700	
05	860			3,700	
04	3,170	31	15,150	4,530	
03	1,760	79	34,520	2,270	
02	1,760	79	34,520	2,270	
01	8,150		2,130	5,350	11,820
Total	21,720	189	86,320	44,020	11,820

LEGEND

- LEASING / MAIL
- RESIDENTIAL
- COMMON RESI AMENITY
- COMMERCIAL
- SERVICES
- PARKING
- CIRCULATION
- OUTDOOR AMENITY

EXISTING BUILDING

PROPOSED NEW OR MODIFIED EXISTING BUILDING

SUMMARY

Phase Area: 76,168 SF (1.75 Acres)

Number of Floors: 12

NOTE

- Future building design shall demonstrate compliance with RZC articulation requirements.
- Future building design shall provide screening from BOH spaces in compliance with RZC design standards, including, but not limited to transparency, ornamental screening, or landscape screening.
- Square footage, unit counts, and space allocations are approximate, and subject to change within the limits of the TIA and Development Agreement.
- New Mixed-use Residential buildings include a mix of Pedestrian Generating Uses as depicted on the plans.
- Per City Pre-app Guidance a floor shall not be counted as a usable floor if less than 50% gfa is usable.

MULTIFAMILY OPEN SPACE

21.10.120.E.1.A
At least 100 square feet per residential unit of open space shall be provided, up to a maximum area of 20 percent of the site.

Required: 25,200 SF
(100 square feet per unit)

Maximum Required: 15,233 SF
(20 percent of phase area)

Provided:
Terrace: 12,060 SF
Amenity: 11,020 SF
Total Multifamily Open Space: 23,080 SF = 12,060 SF (Terrace) + 11,020 SF (Amenity)

NOTE

Ground level plaza areas are not included in the residential open space calculations.

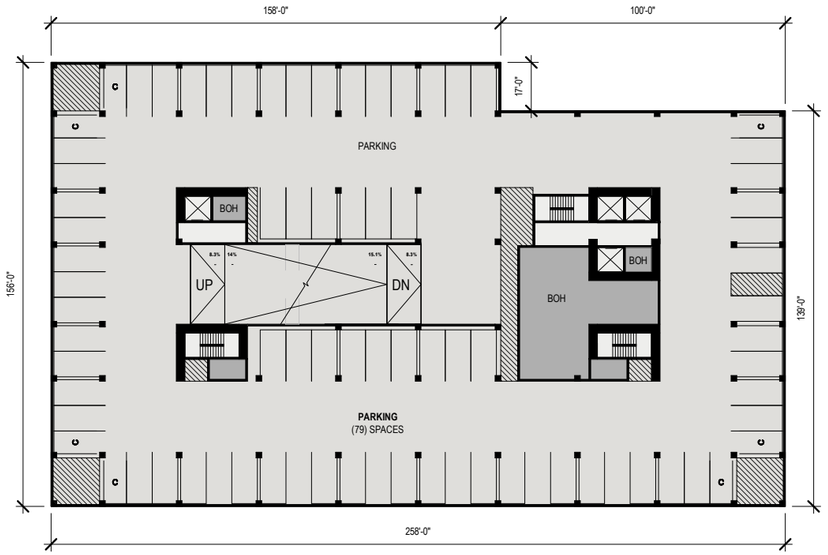
BUILDING 4IC W - RESIDENTIAL



BUILDING 4IC - RESIDENTIAL GROUND LEVEL SITE PLAN

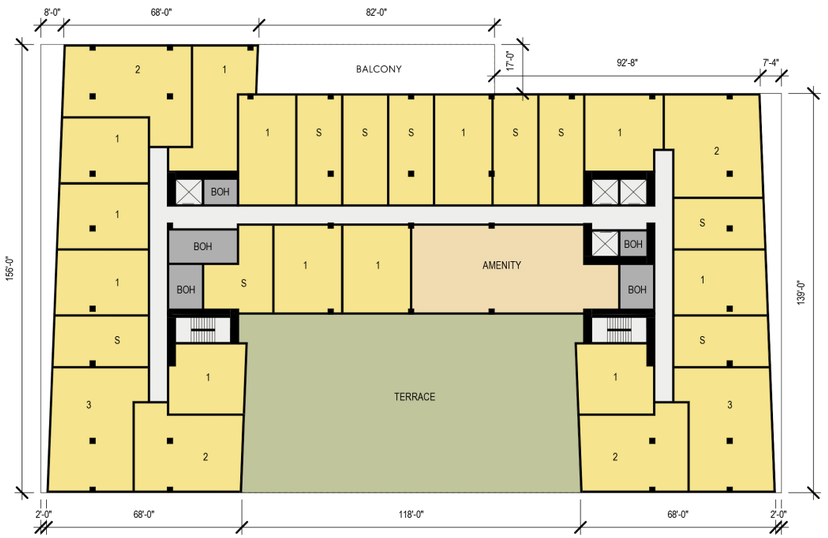
0' 25' 50'

BUILDING 4IC W - RESIDENTIAL



LEVEL 02 - 03 FLOOR PLAN

0' 30' 60'

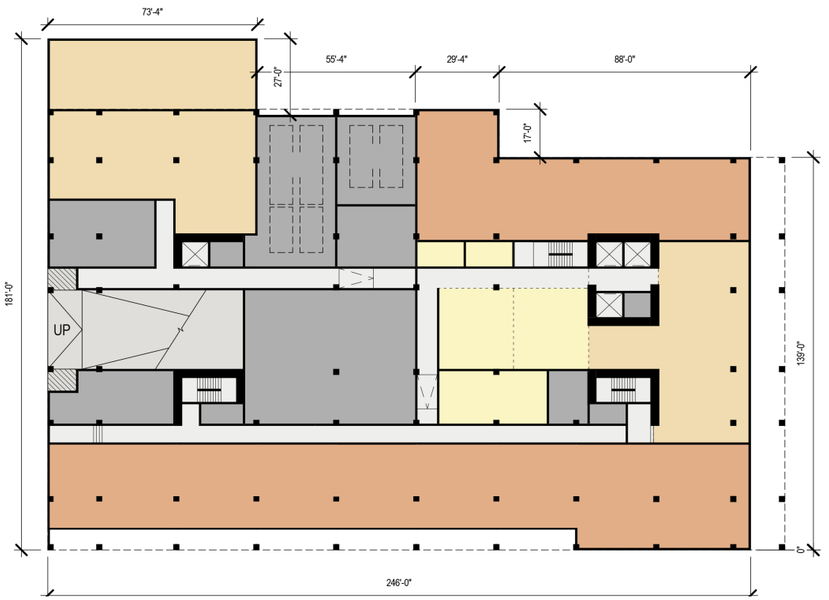


LEVEL 05 FLOOR PLAN

0' 30' 60'

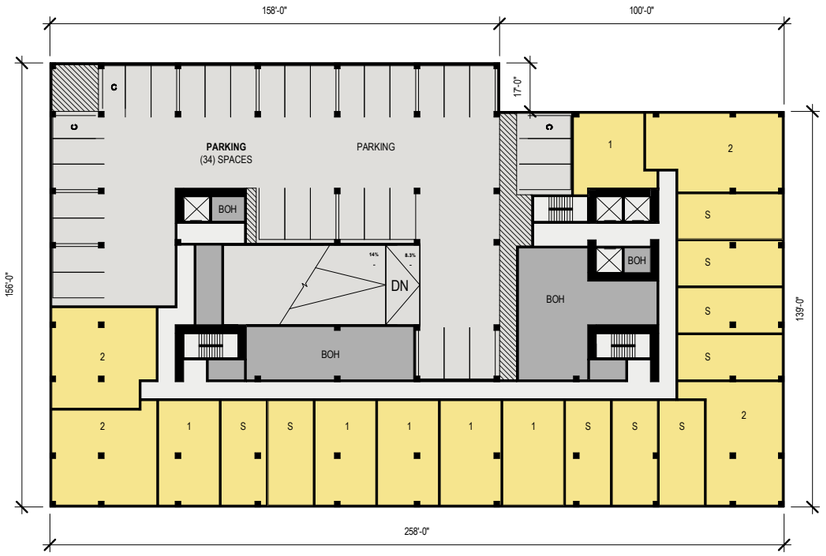
LEGEND

- LEASING / MAIL
- RESIDENTIAL
- COMMON RESI AMENITY
- COMMERCIAL
- # EXISTING BUILDING
- SERVICES
- PARKING
- CIRCULATION
- OUTDOOR AMENITY
- # PROPOSED NEW OR MODIFIED EXISTING BUILDING



LEVEL 01 FLOOR PLAN

0' 30' 60'



LEVEL 04 FLOOR PLAN

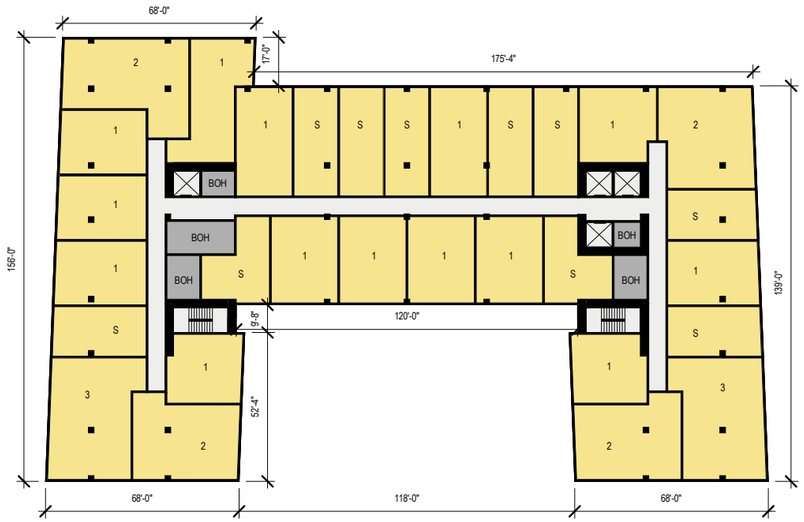
0' 30' 60'

BUILDING 4IC W - RESIDENTIAL



LEVEL 12 FLOOR PLAN

0' 30' 60'



LEVEL 06-11 FLOOR PLAN

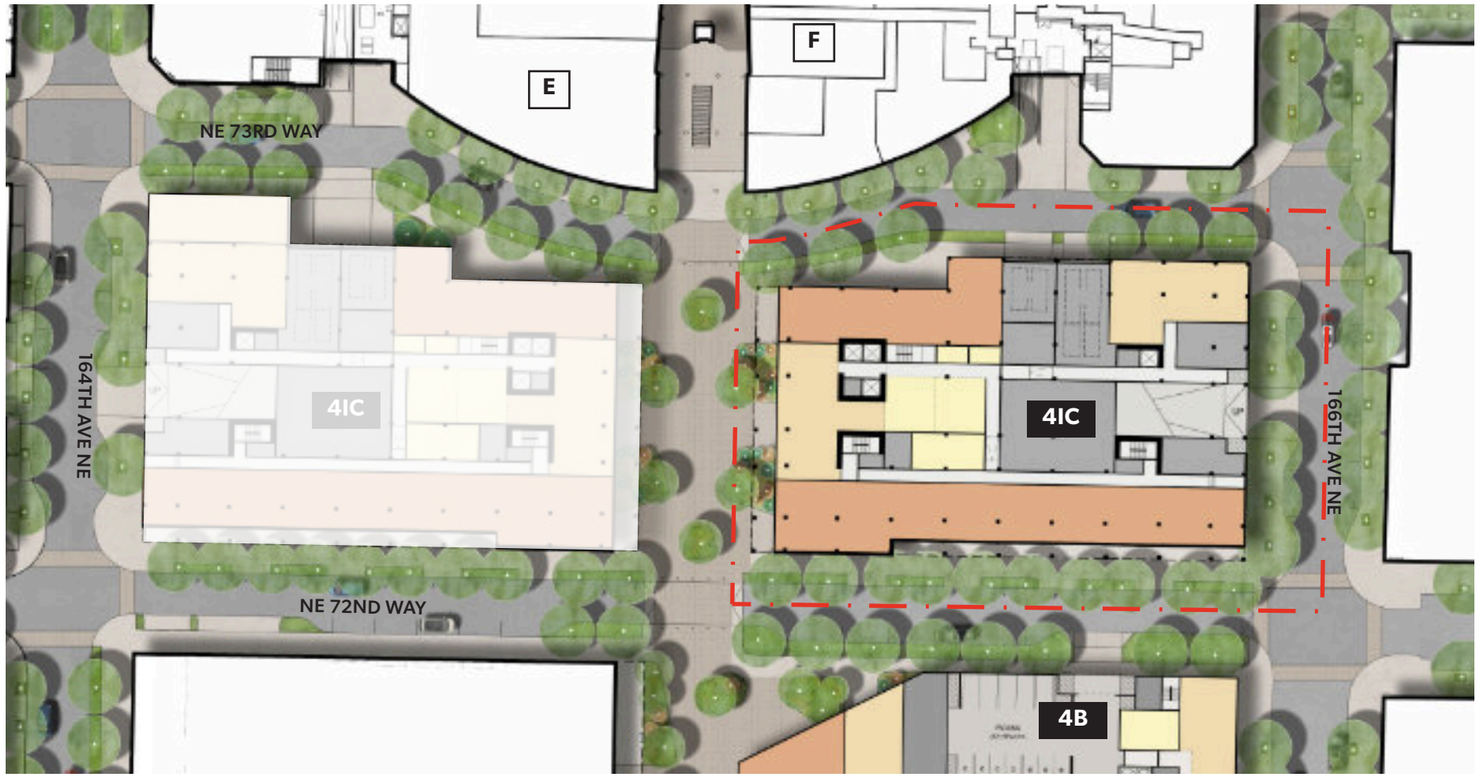
0' 30' 60'

LEGEND

- LEASING / MAIL
- RESIDENTIAL
- COMMON RESI AMENITY
- COMMERCIAL
- # EXISTING BUILDING
- SERVICES
- PARKING
- CIRCULATION
- OUTDOOR AMENITY
- # PROPOSED NEW OR MODIFIED EXISTING BUILDING

4IC E RESIDENTIAL

BUILDING 4IC E - RESIDENTIAL



BUILDING 4IC - RESIDENTIAL GROUND LEVEL SITE PLAN

0' 40' 80'

LEVEL	LEASING	RESIDENTIAL		COMMON RESI AMENITY	TERRACE
	AREA	UNITS	AREA	AREA	AREA
12		26	20,210	1,710	2,000
11		30	23,920		
10		30	23,920		
09		30	23,920		
08		30	23,920		
07		30	23,920		
06		30	23,920		
05		27	21,850	2,070	10,060
04		19	15,700		
03					
02					
01	2,570			5,400	
Total	2,570	252	201,350	9,180	12,060

LEVEL	SERVICES	PARKING		CIRC	COMMERCIAL
	AREA	UNITS	AREA	AREA	AREA
12	870			3,700	
11	870			3,700	
10	870			3,700	
09	870			3,700	
08	870			3,700	
07	870			3,700	
06	870			3,700	
05	870			3,700	
04	3,170	31	15,140	4,540	
03	1,760	79	34,520	2,270	
02	1,760	79	34,520	2,270	
01	8,150		2,120	5,340	11,810
Total	21,780	189	86,320	44,020	11,810

LEGEND

- LEASING / MAIL
- RESIDENTIAL
- COMMON RESI AMENITY
- COMMERCIAL
- SERVICES
- PARKING
- CIRCULATION
- OUTDOOR AMENITY

EXISTING BUILDING

PROPOSED NEW OR MODIFIED EXISTING BUILDING

SUMMARY

Phase Area: 63,200 SF (1.45 Acres)

Number of Floors: 12

NOTE

- Future building design shall demonstrate compliance with RZC articulation requirements.
- Future building design shall provide screening from BOH spaces in compliance with RZC design standards, including, but not limited to transparency, ornamental screening, or landscape screening.
- Square footage, unit counts, and space allocations are approximate, and subject to change within the limits of the TIA and Development Agreement.
- New Mixed-use Residential buildings include a mix of Pedestrian Generating Uses as depicted on the plans.
- Per City Pre-app Guidance a floor shall not be counted as a usable floor if less than 50% gfa is usable.

MULTIFAMILY OPEN SPACE

21.10.120.E.1.A
At least 100 square feet per residential unit of open space shall be provided, up to a maximum area of 20 percent of the site.

Required: 25,200 SF
(100 square feet per unit)

Maximum Required: 12,640 SF
(20 percent of phase area)

Provided:
Terrace: 12,060 SF
Amenity: 9,810 SF
Total Multifamily Open Space: 21,870 SF = 12,060 SF (Terrace) + 9,810 SF (Amenity)

NOTE

Ground level plaza areas are not included in the residential open space calculations.

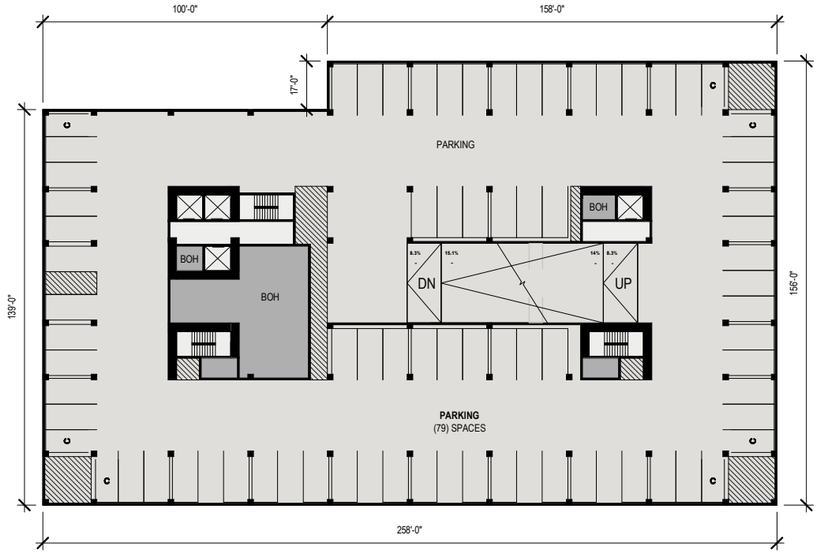
BUILDING 4IC E - RESIDENTIAL



BUILDING 4IC - RESIDENTIAL GROUND LEVEL SITE PLAN

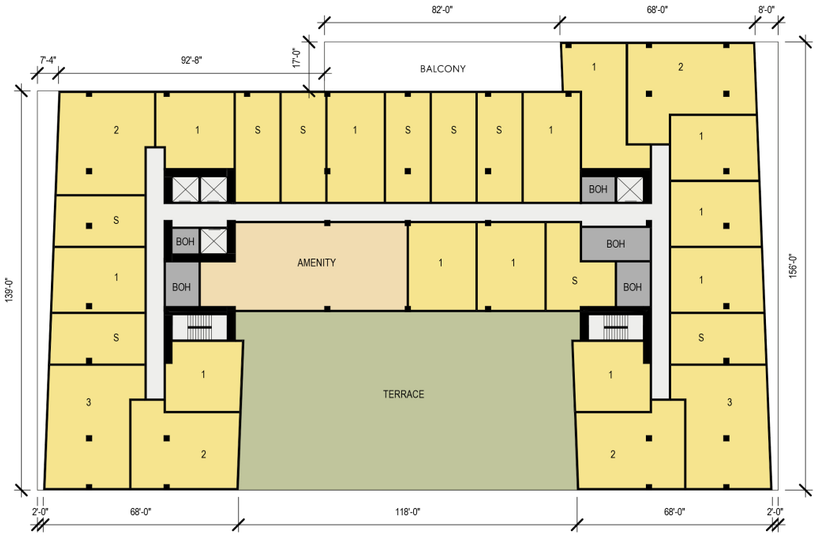
0' 25' 50'

BUILDING 4IC E - RESIDENTIAL



LEVEL 02 - 03 FLOOR PLAN

0' 30' 60'

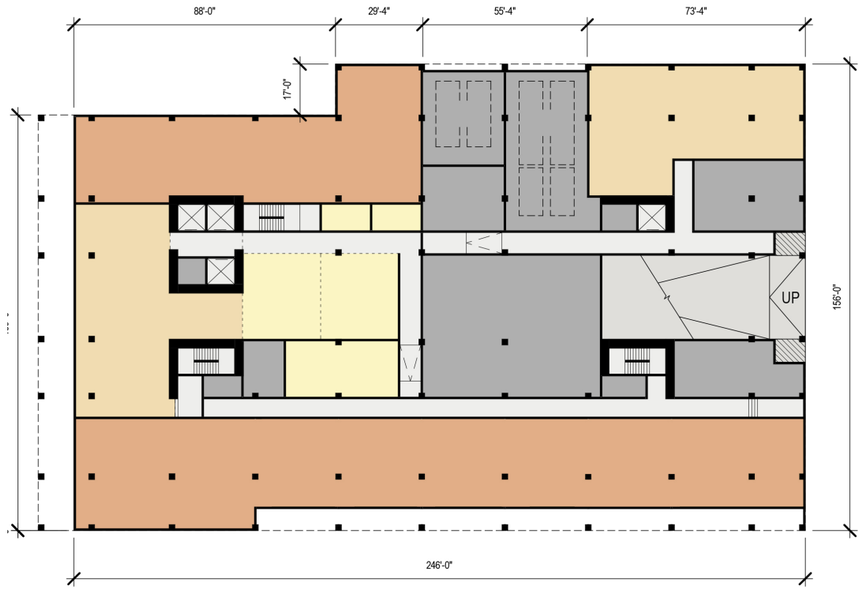


LEVEL 05 FLOOR PLAN

0' 30' 60'

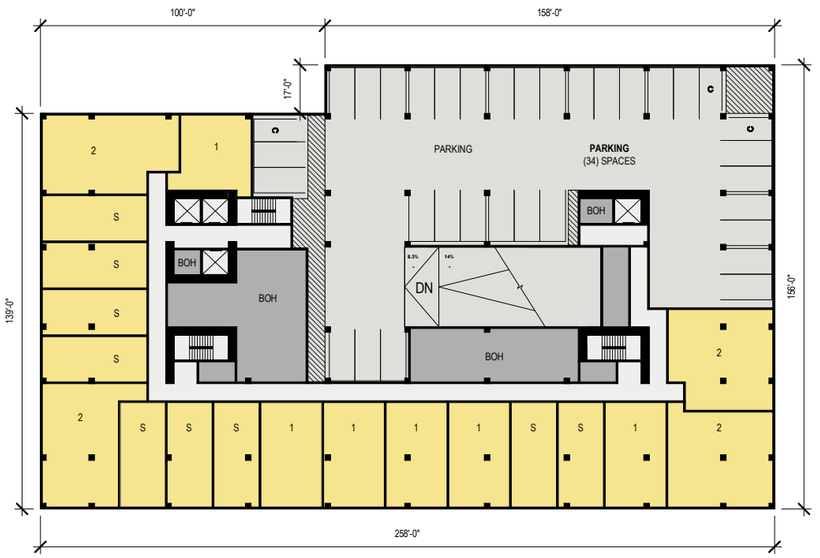
LEGEND

- LEASING / MAIL
- RESIDENTIAL
- COMMON RESI AMENITY
- COMMERCIAL
- # EXISTING BUILDING
- SERVICES
- PARKING
- CIRCULATION
- OUTDOOR AMENITY
- # PROPOSED NEW OR MODIFIED EXISTING BUILDING



LEVEL 01 FLOOR PLAN

0' 30' 60'



LEVEL 04 FLOOR PLAN

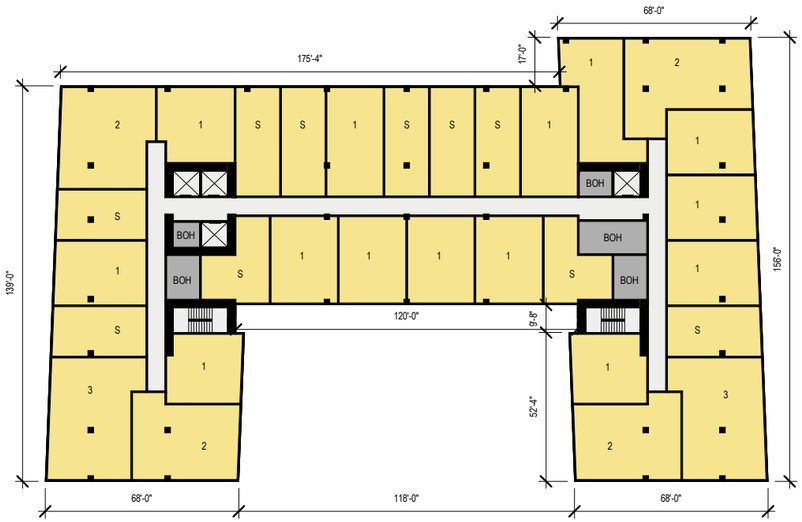
0' 30' 60'

BUILDING 4IC E - RESIDENTIAL



LEVEL 12 FLOOR PLAN

0' 30' 60'



LEVEL 06-11 FLOOR PLAN

0' 30' 60'

LEGEND

- LEASING / MAIL
- RESIDENTIAL
- COMMON RESI AMENITY
- COMMERCIAL
- # EXISTING BUILDING
- SERVICES
- PARKING
- CIRCULATION
- OUTDOOR AMENITY
- # PROPOSED NEW OR MODIFIED EXISTING BUILDING

4ICW OFFICE

BUILDING 4ICW - OFFICE



BUILDING 4IC - RESIDENTIAL AND OFFICE GROUND LEVEL SITE PLAN

0′ 40′ 80′

SUMMARY

Phase Area: 76,168 SF (1.75 Acres)

Number of Floors: 12

NOTE

- Future building design shall demonstrate compliance with RZC articulation requirements.
- Future building design shall provide screening from BOH spaces in compliance with RZC design standards, including, but not limited to transparency, ornamental screening, or landscape screening.
- Square footage, unit counts, and space allocations are approximate, and subject to change within the limits of the TIA and Development Agreement.
- Per City Pre-app Guidance a floor shall not be counted as a usable floor if less than 50% gfa is usable.

LEVEL	LOBBY AREA	OFFICE AREA	COMMON OFFICE AMENITY AREA	TERRACE AREA
12		32,260		
11		32,260		
10		32,260		
09		32,260		
08		32,260		
07		32,260		
06		32,260		
05		19,710		15,240
04				
03				
02				
01	4,410		6,970	
Total	4,410	245,530	6,970	15,240

LEVEL	SERVICES AREA	PARKING UNITS	PARKING AREA	CIRC AREA	COMMERCIAL AREA
12	1,910			1,690	
11	1,910			1,690	
10	1,910			1,690	
09	1,910			1,690	
08	1,910			1,690	
07	1,910			1,690	
06	1,910			1,690	
05	1,910			1,690	
04	1,260	87	35,070	2,220	
03	1,260	84	35,070	2,220	
02	1,260	84	35,070	2,220	
01	9,840		1,900	4,260	10,530
Total	21,780	255	107,110	24,440	10,530

LEGEND

- LEASING / MAIL
- RESIDENTIAL
- COMMON OFFICE AMENITY
- COMMERCIAL
- SERVICES
- PARKING
- CIRCULATION
- OUTDOOR AMENITY
- # EXISTING BUILDING
- # PROPOSED NEW OR MODIFIED EXISTING BUILDING

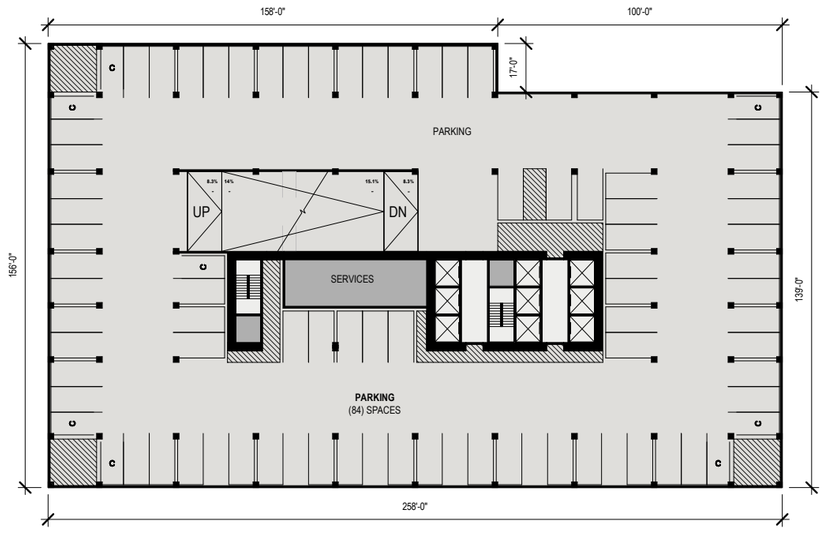
BUILDING 4ICW - OFFICE



BUILDING 4IC - RESIDENTIAL AND OFFICE GROUND LEVEL SITE PLAN

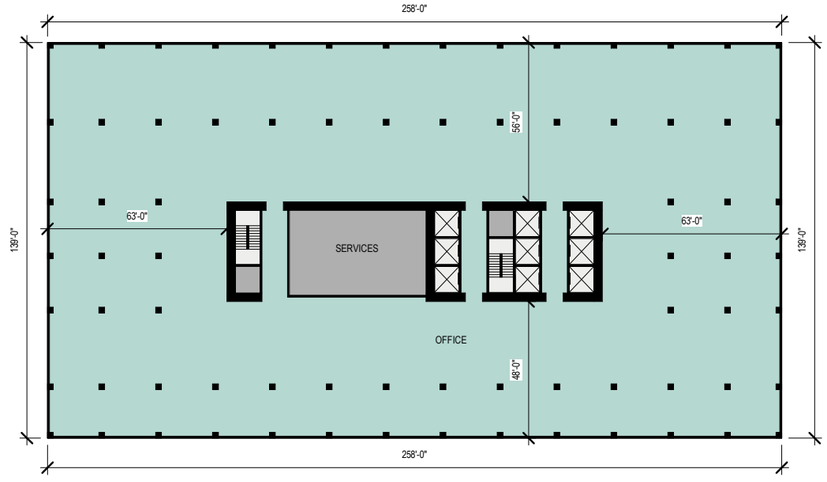
0' 25' 50'

BUILDING 4ICW - OFFICE



LEVEL 02 - 04 FLOOR PLAN

0' 30' 60'



LEVEL 06 - 12 FLOOR PLAN

0' 30' 60'

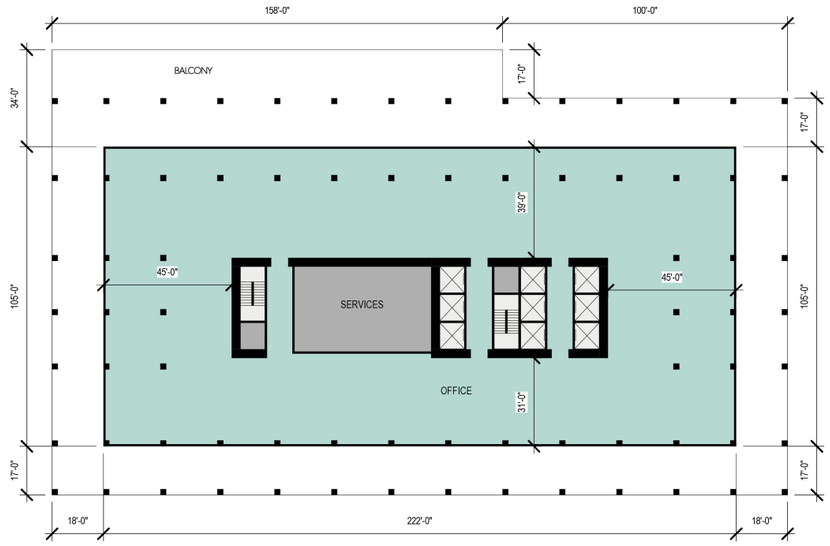
LEGEND

- LEASING / MAIL
- RESIDENTIAL
- COMMON OFFICE AMENITY
- COMMERCIAL
- # EXISTING BUILDING
- SERVICES
- PARKING
- CIRCULATION
- OUTDOOR AMENITY
- # PROPOSED NEW OR MODIFIED EXISTING BUILDING



LEVEL 01 FLOOR PLAN

0' 30' 60'



LEVEL 05 FLOOR PLAN

0' 30' 60'

4B RESIDENTIAL

BUILDING 4B - RESIDENTIAL



BUILDING 4B - RESIDENTIAL GROUND LEVEL SITE PLAN

0' 40' 80'

LEVEL	LEASING	RESIDENTIAL		COMMON RESI AMENITY	TERRACE
	AREA	UNITS	AREA	AREA	AREA
08		20	16,170	1,120	3,920
07		26	21,160		
06		26	21,160		
05		26	21,160		
04		25	19,880	710	5,900
03					
02		7	5,990		
01	1,870	6	5,050	7,240	
Total	1,870	136	110,570	9,070	9,820

LEVEL	SERVICES	PARKING		CIRC	COMMERCIAL
	AREA	UNITS	AREA	AREA	AREA
08	510			2,450	
07	440			2,570	
06	440			2,570	
05	440			2,570	
04	840			2,750	
03	480	70	29,110	490	
02	1,640	20	11,570	2,680	
01	2,830	12	7,650	2,740	2,690
Total	7,620	102	48,330	18,820	2,690

SUMMARY

Phase Area: 50,894 SF (1.17 Acres)

Number of Floors: 8

NOTE

- Future building design shall demonstrate compliance with RZC articulation requirements.
- Future building design shall provide screening from BOH spaces in compliance with RZC design standards, including, but not limited to transparency, ornamental screening, or landscape screening.
- Square footage, unit counts, and space allocations are approximate, and subject to change within the limits of the TIA and Development Agreement.
- New Mixed-use Residential buildings include a mix of Pedestrian Generating Uses as depicted on the plans.

MULTIFAMILY OPEN SPACE

21.10.120.E.1.A
At least 100 square feet per residential unit of open space shall be provided, up to a maximum area of 20 percent of the site.

Required: 13,600 SF
(100 square feet per unit)

Maximum Required: 10,179 SF
(20 percent of phase area)

Provided:
Terrace: 9,820 SF
Amenity: 9,070 SF
Total Multifamily Open Space: 18,890 SF = 9,820 SF (Terrace) + 9,070 SF (Amenity)

NOTE

Ground level plaza areas are not included in the residential open space calculations.

LEGEND

- LEASING / MAIL
- RESIDENTIAL
- COMMON RESI AMENITY
- COMMERCIAL
- SERVICES
- PARKING
- CIRCULATION
- OUTDOOR AMENITY
- # EXISTING BUILDING
- # PROPOSED NEW OR MODIFIED EXISTING BUILDING

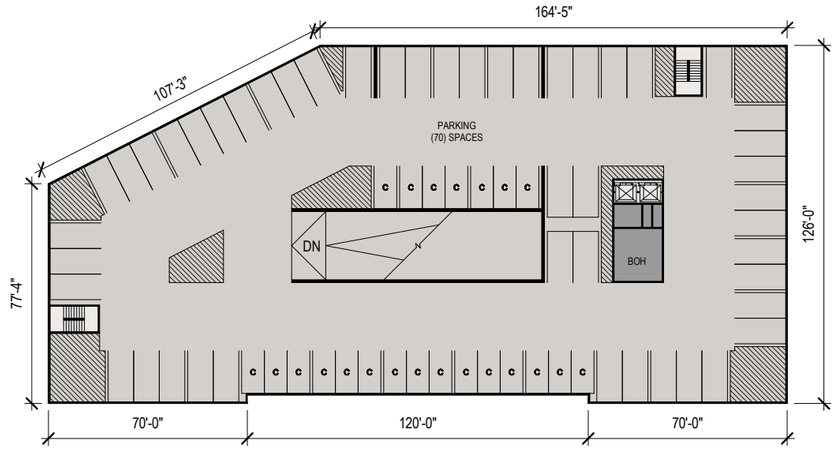
BUILDING 4B - RESIDENTIAL



BUILDING B - RESIDENTIAL GROUND LEVEL SITE PLAN

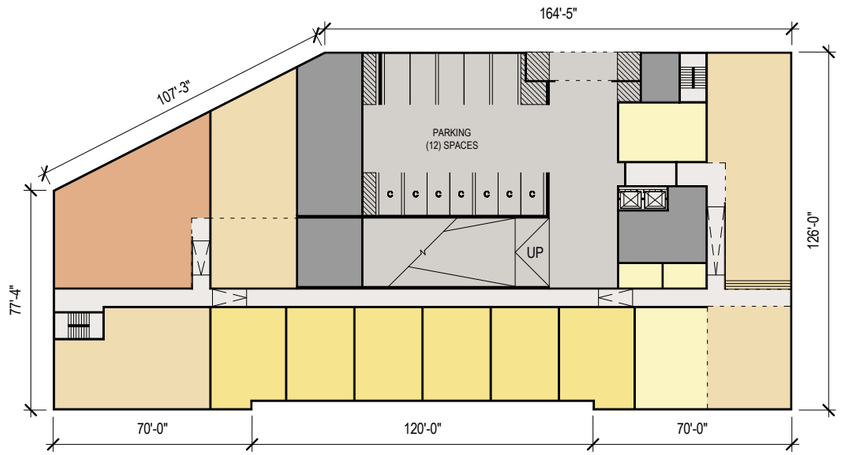
0' 15' 30'

BUILDING 4B - RESIDENTIAL



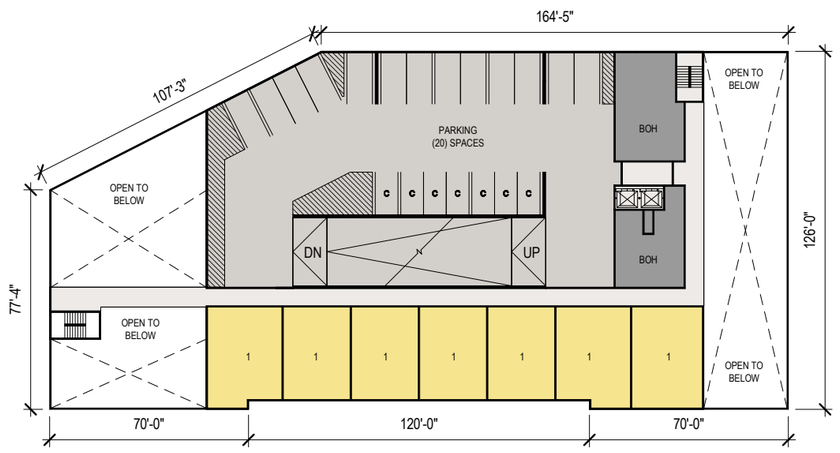
LEVEL 03 FLOOR PLAN

0' 30' 60'



LEVEL 01 FLOOR PLAN

0' 30' 60'



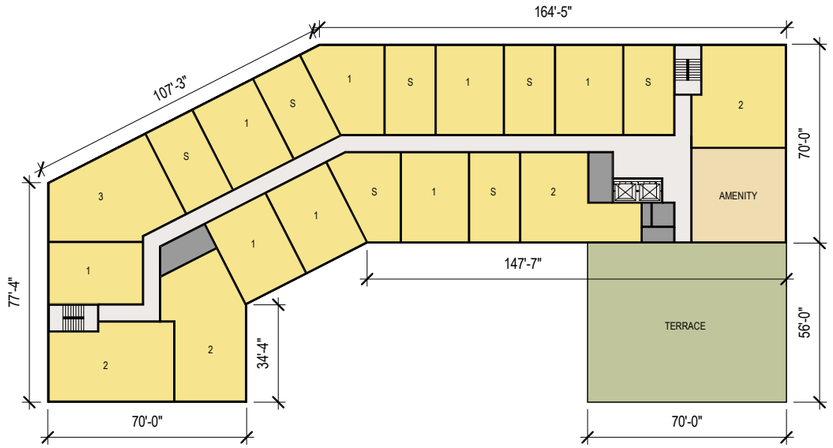
LEVEL 02 FLOOR PLAN

0' 30' 60'

LEGEND

- LEASING / MAIL
- RESIDENTIAL
- COMMON RESI AMENITY
- COMMERCIAL
- # EXISTING BUILDING
- SERVICES
- PARKING
- CIRCULATION
- OUTDOOR AMENITY
- # PROPOSED NEW OR MODIFIED EXISTING BUILDING

BUILDING 4B - RESIDENTIAL

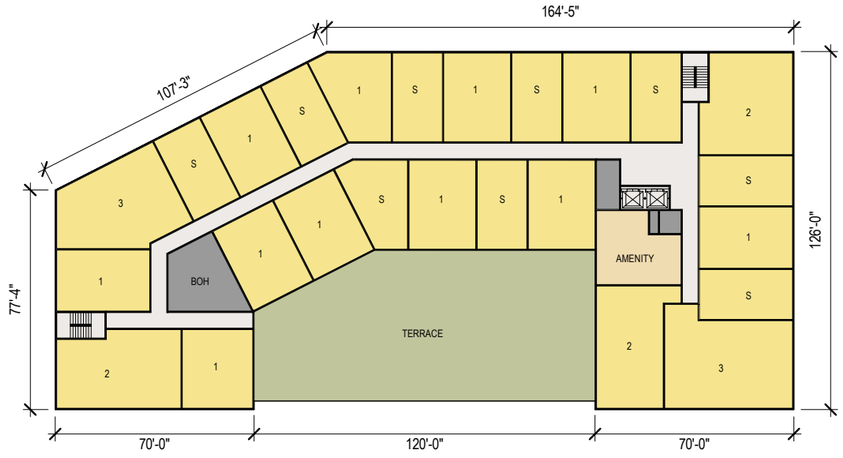


LEVEL 08 FLOOR PLAN

0' 30' 60'

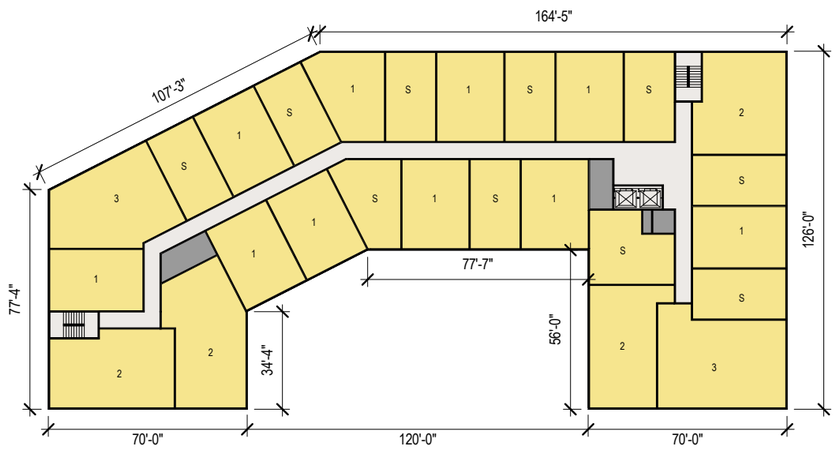
LEGEND

- LEASING / MAIL
- RESIDENTIAL
- COMMON RESI AMENITY
- COMMERCIAL
- # EXISTING BUILDING
- SERVICES
- PARKING
- CIRCULATION
- OUTDOOR AMENITY
- # PROPOSED NEW OR MODIFIED EXISTING BUILDING



LEVEL 04 FLOOR PLAN

0' 30' 60'



LEVEL 05 - 07 FLOOR PLAN

0' 30' 60'

3A RESIDENTIAL

BUILDING 3A - RESIDENTIAL



BUILDING 3A - RESIDENTIAL GROUND LEVEL SITE PLAN

0' 50' 100'

LEVEL	LEASING	RESIDENTIAL		COMMON RESI AMENITY	TERRACE
	AREA	UNITS	AREA	AREA	AREA
07		26	20,830	2,130	3,730
06		31	25,340		
05		31	25,340		
04		31	25,340		
03		29	22,980	2,360	3,130
02					
01	1,530			2,850	
Total	1,530	148	119,830	7,340	6,860

LEVEL	SERVICES	PARKING		CIRC	COMMERCIAL
	AREA	UNITS	AREA	AREA	AREA
07	200			3,040	
06	1,070			3,530	
05	1,070			3,530	
04	1,070			3,530	
03	1,070	110	28,090	3,530	
02	1,150			690	
01	3,730			3,490	16,070
Total	9,360	10	28,090	21,340	16,070

SUMMARY

Phase Area: 42,682 SF (0.98 Acres)

Number of Floors: 7

NOTE

- Future building design shall demonstrate compliance with RZC articulation requirements.
- Future building design shall provide screening from BOH spaces in compliance with RZC design standards, including, but not limited to transparency, ornamental screening, or landscape screening.
- Square footage, unit counts, and space allocations are approximate, and subject to change within the limits of the TIA and Development Agreement.
- New Mixed-use Residential buildings include a mix of Pedestrian Generating Uses as depicted on the plans.

MULTIFAMILY OPEN SPACE

21.10.120.E.1.A
At least 100 square feet per residential unit of open space shall be provided, up to a maximum area of 20 percent of the site.

Required: 14,800 SF
(100 square feet per unit)

Maximum Required: 8,537 SF
(20 percent of phase area)

Provided:
Terrace: 6,860 SF
Amenity: 7,340 SF
Total Multifamily Open Space: 14,200 SF = 6,860 SF (Terrace) + 7,340 SF (Amenity)

NOTE

Ground level plaza areas are not included in the residential open space calculations.

LEGEND

- LEASING / MAIL
- RESIDENTIAL
- COMMON RESI AMENITY
- COMMERCIAL
- SERVICES
- PARKING
- CIRCULATION
- OUTDOOR AMENITY
- # EXISTING BUILDING
- # PROPOSED NEW OR MODIFIED EXISTING BUILDING

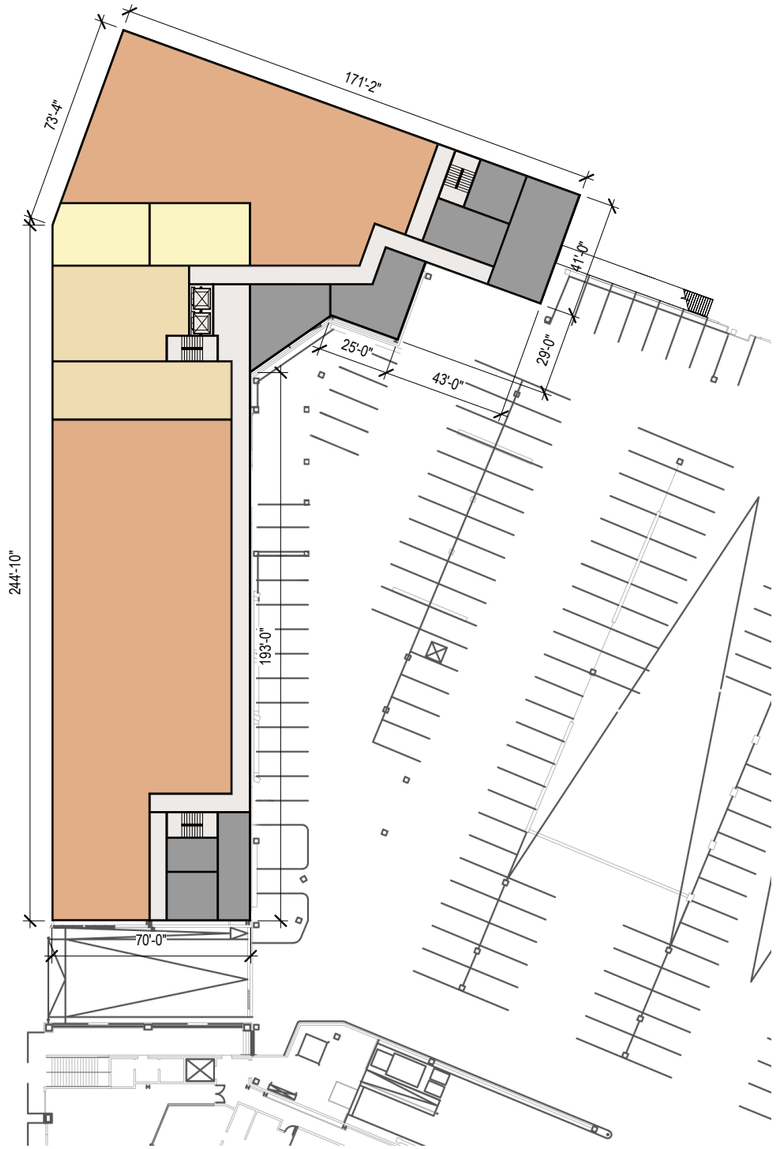
BUILDING 3A - RESIDENTIAL



BUILDING 3A - RESIDENTIAL GROUND LEVEL SITE PLAN

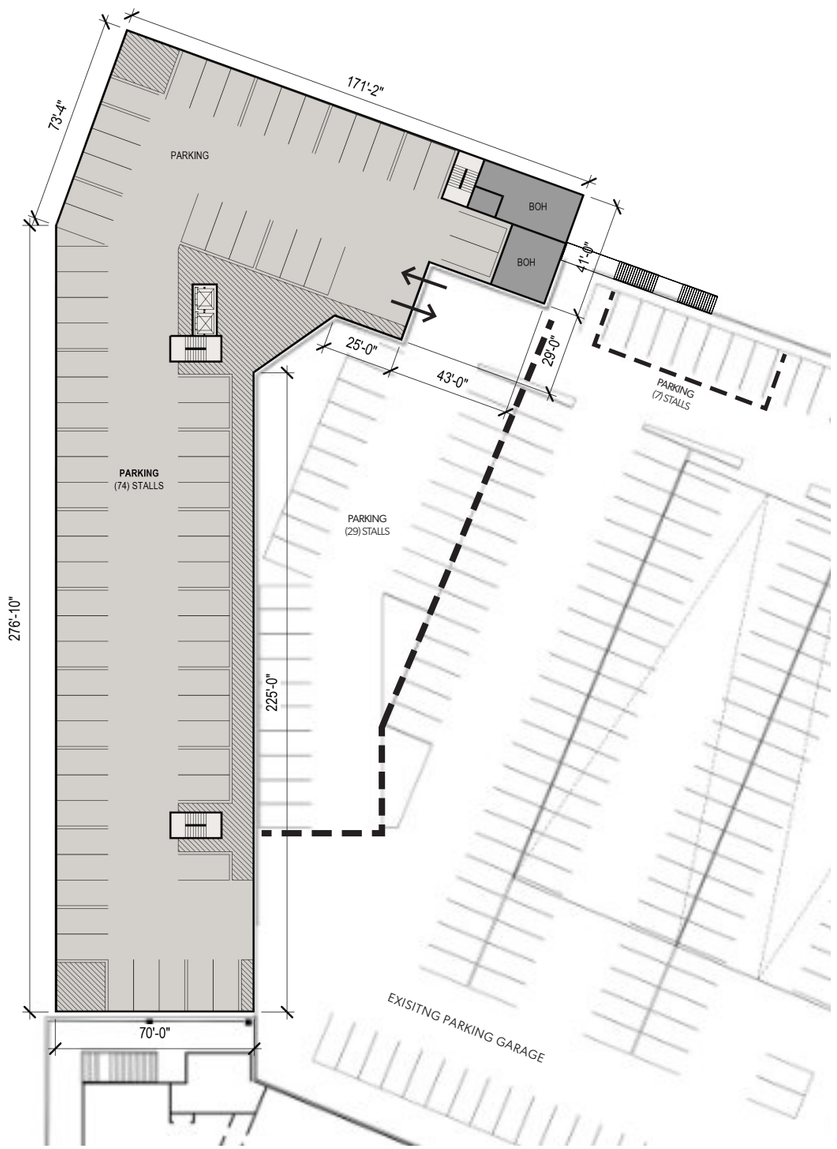
0' 30' 60'

BUILDING 3A - RESIDENTIAL



LEVEL 01 FLOOR PLAN

0' 30' 60'



LEVEL 02 FLOOR PLAN

0' 30' 60'

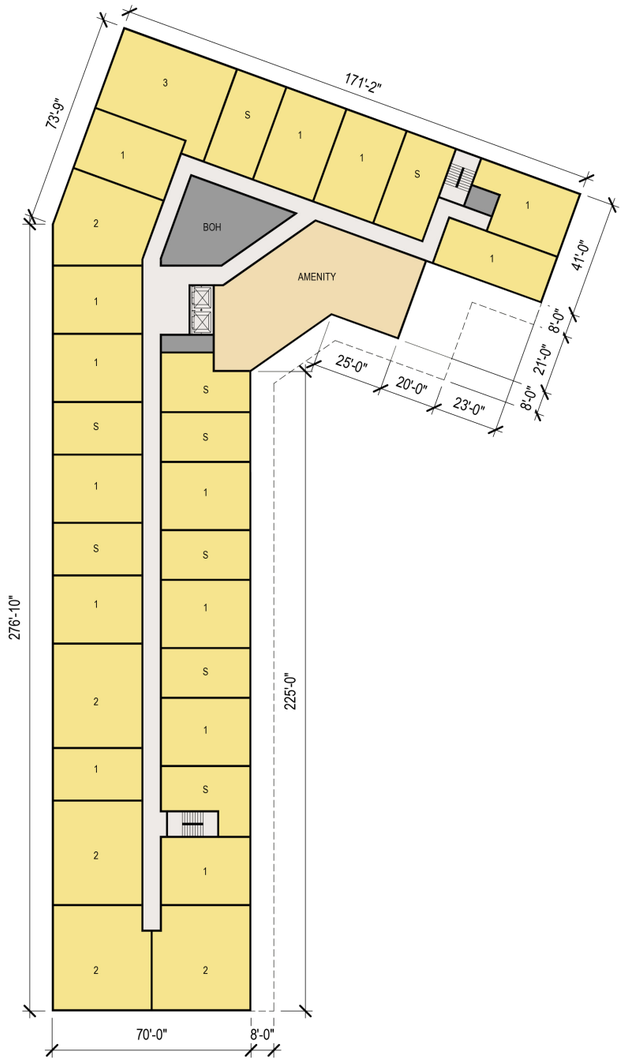
LEGEND

- LEASING / MAIL
- RESIDENTIAL
- COMMON RESI AMENITY
- COMMERCIAL
- # EXISTING BUILDING
- SERVICES
- PARKING
- CIRCULATION
- OUTDOOR AMENITY
- # PROPOSED NEW OR MODIFIED EXISTING BUILDING

BUILDING 3A - RESIDENTIAL

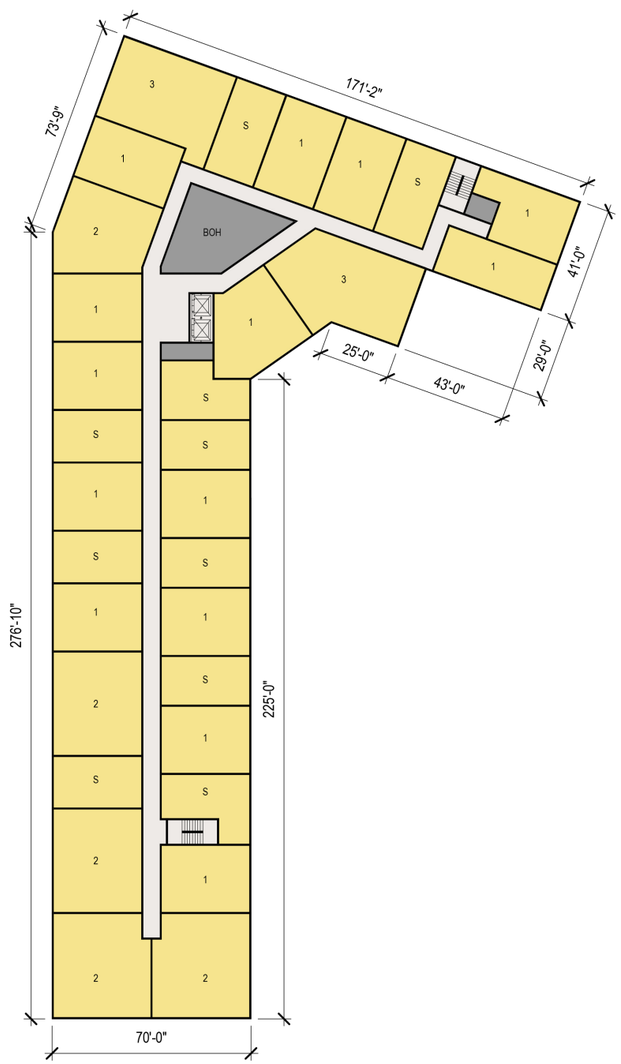
LEGEND

- LEASING / MAIL
- RESIDENTIAL
- COMMON RESI AMENITY
- COMMERCIAL
- # EXISTING BUILDING
- SERVICES
- PARKING
- CIRCULATION
- OUTDOOR AMENITY
- # PROPOSED NEW OR MODIFIED EXISTING BUILDING



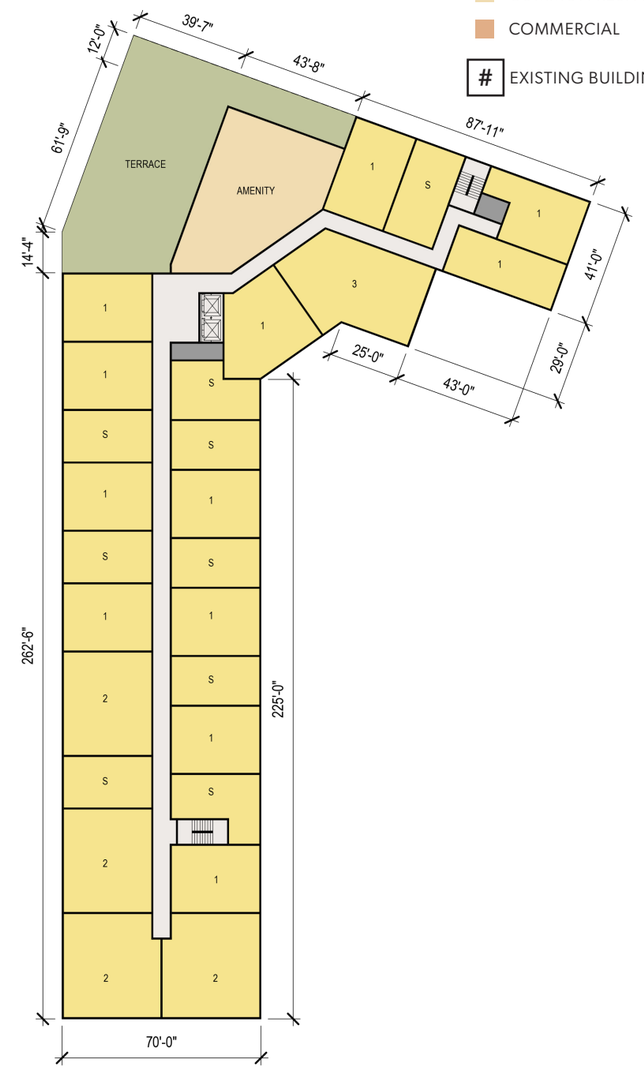
LEVEL 03 FLOOR PLAN

0' 30' 60'



LEVEL 04 - 06 TYPICAL FLOOR PLANS

0' 30' 60'

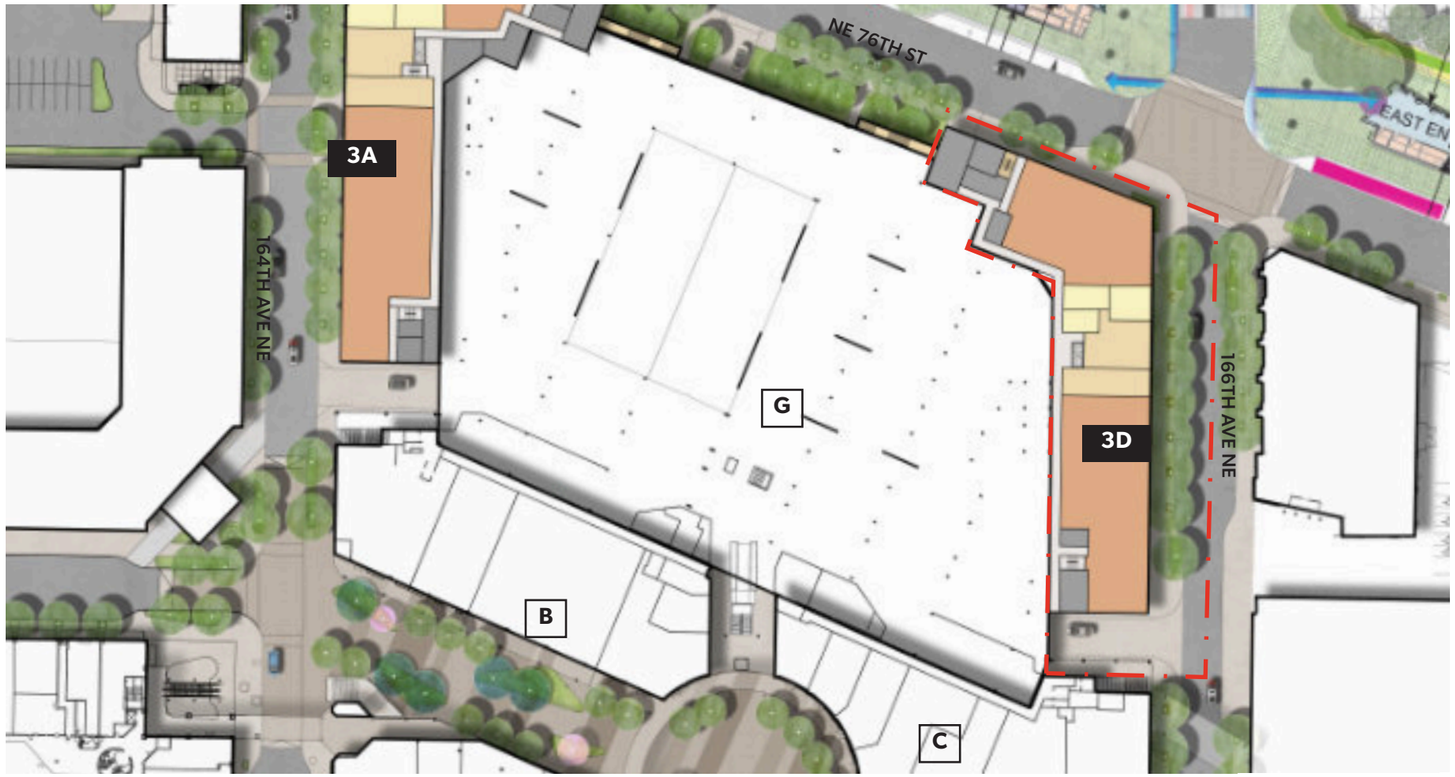


LEVEL 07 FLOOR PLAN

0' 30' 60'

3D RESIDENTIAL

BUILDING 3D - RESIDENTIAL



BUILDING 3D - RESIDENTIAL GROUND LEVEL SITE PLAN

0' 50' 100'

LEVEL	LEASING	RESIDENTIAL		COMMON RESI AMENITY	TERRACE
	AREA	UNITS	AREA	AREA	AREA
07		23	18,110	2,310	4,000
06		30	24,310		
05		30	24,310		
04		30	24,310		
03		27	22,260	2,560	3,670
02					
01	1,670			2,730	
Total	1,670	140	113,300	7,600	7,670

LEVEL	SERVICES	PARKING		CIRC	COMMERCIAL
	AREA	UNITS	AREA	AREA	AREA
07	590			2,890	
06	590			3,000	
05	590			3,000	
04	590			3,000	
03	90	104	25,600	3,000	
02	1,870			490	
01	3,010			3,600	14,800
Total	7,330	104	25,600	18,980	14,800

SUMMARY

Phase Area: 39,303 SF (0.9 Acres)

Number of Floors: 7

NOTE

- Future building design shall demonstrate compliance with RZC articulation requirements.
- Future building design shall provide screening from BOH spaces in compliance with RZC design standards, including, but not limited to transparency, ornamental screening, or landscape screening.
- Square footage, unit counts, and space allocations are approximate, and subject to change within the limits of the TIA and Development Agreement.
- New Mixed-use Residential buildings include a mix of Pedestrian Generating Uses as depicted on the plans.

MULTIFAMILY OPEN SPACE

21.10.120.E.1.A
At least 100 square feet per residential unit of open space shall be provided, up to a maximum area of 20 percent of the site.

Required: 14,000 SF
(100 square feet per unit)

Maximum Required: 7,861 SF
(20 percent of phase area)

Provided:
Terrace: 7,670 SF
Amenity: 7,600 SF
Total Multifamily Open Space: 15,270 SF = 7,670 SF (Terrace) + 7,600 SF (Amenity)

NOTE

Ground level plaza areas are not included in the residential open space calculations.

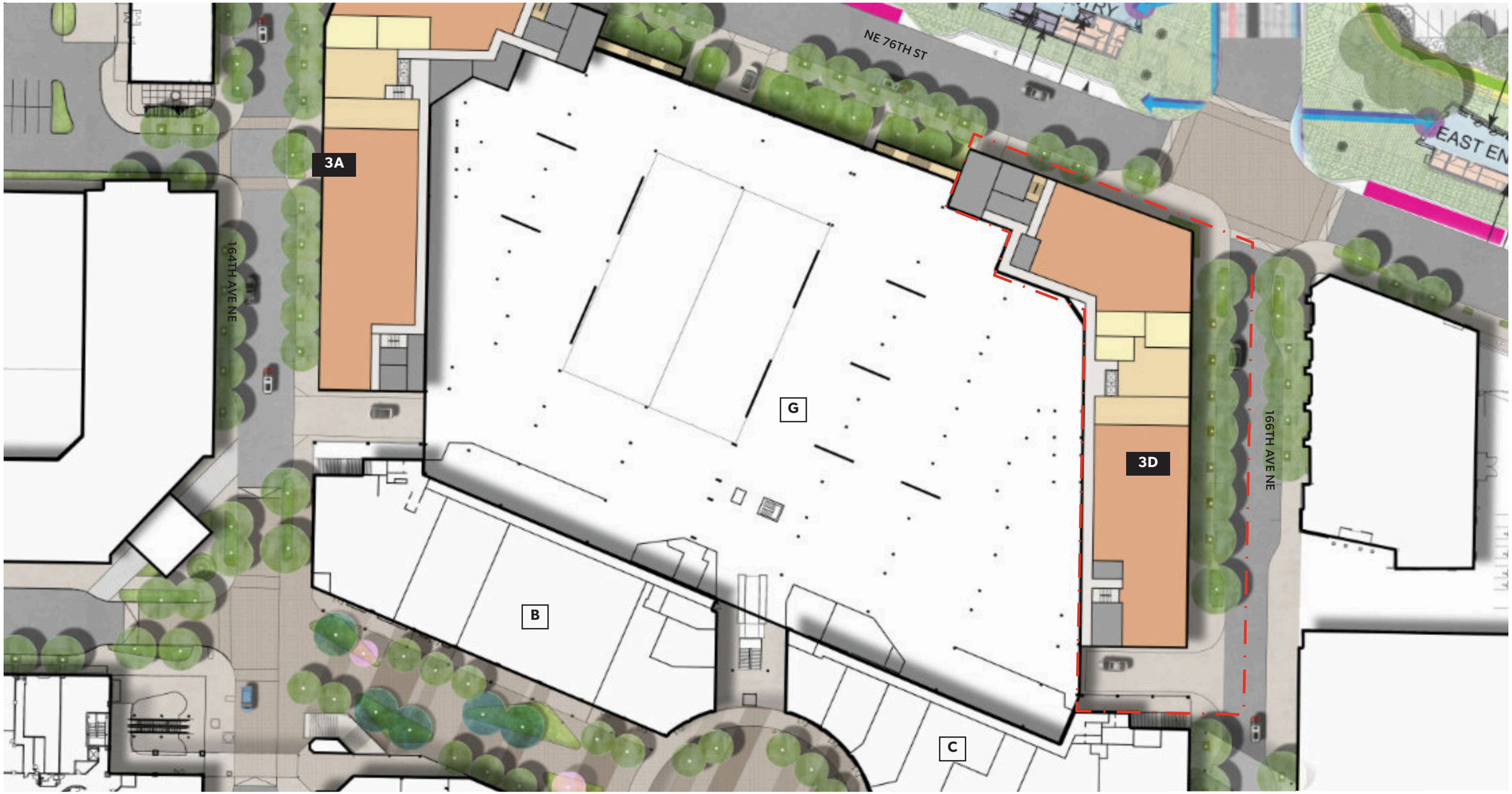
LEGEND

- LEASING / MAIL
- RESIDENTIAL
- COMMON RESI AMENITY
- COMMERCIAL
- SERVICES
- PARKING
- CIRCULATION
- OUTDOOR AMENITY

EXISTING BUILDING

PROPOSED NEW OR MODIFIED EXISTING BUILDING

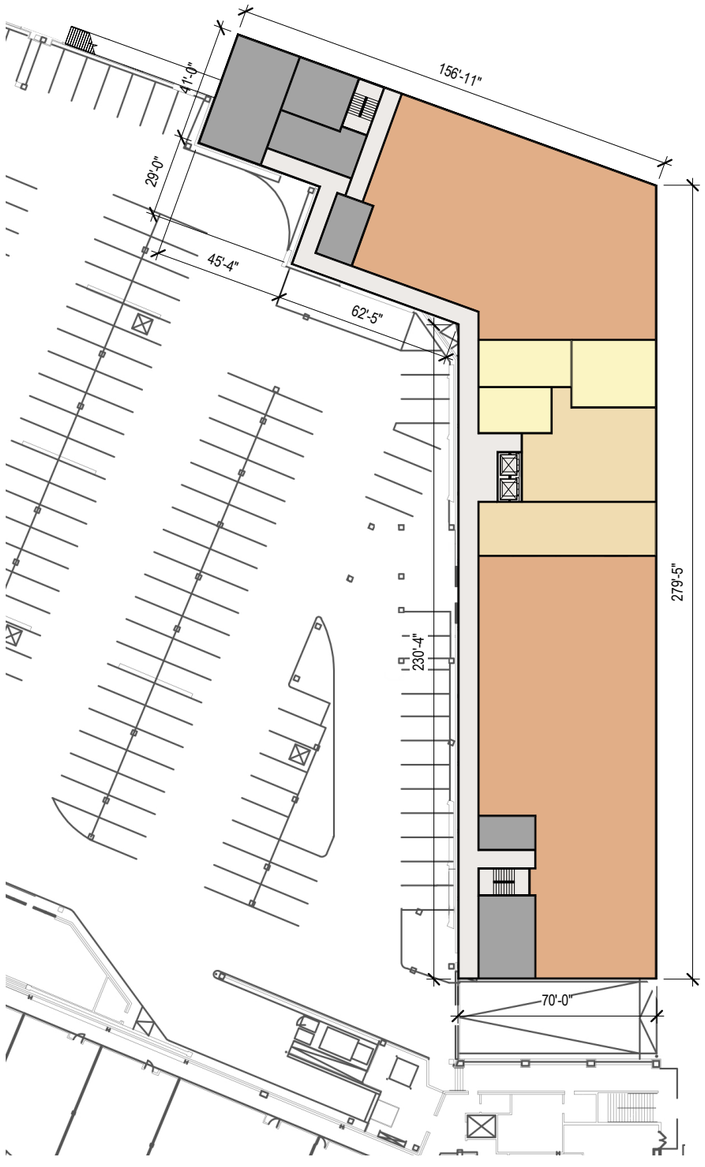
BUILDING 3D - RESIDENTIAL



BUILDING 3D - RESIDENTIAL GROUND LEVEL SITE PLAN

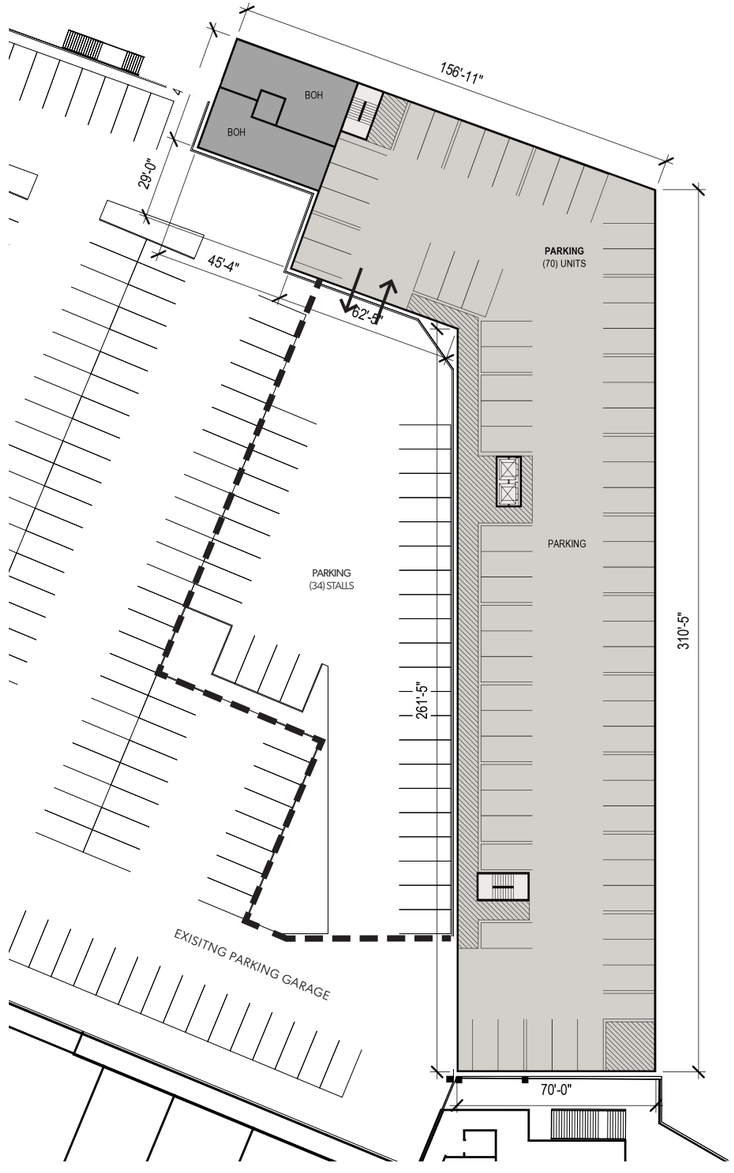
0' 30' 60'

BUILDING 3D - RESIDENTIAL



LEVEL 01 FLOOR PLAN

0' 30' 60'



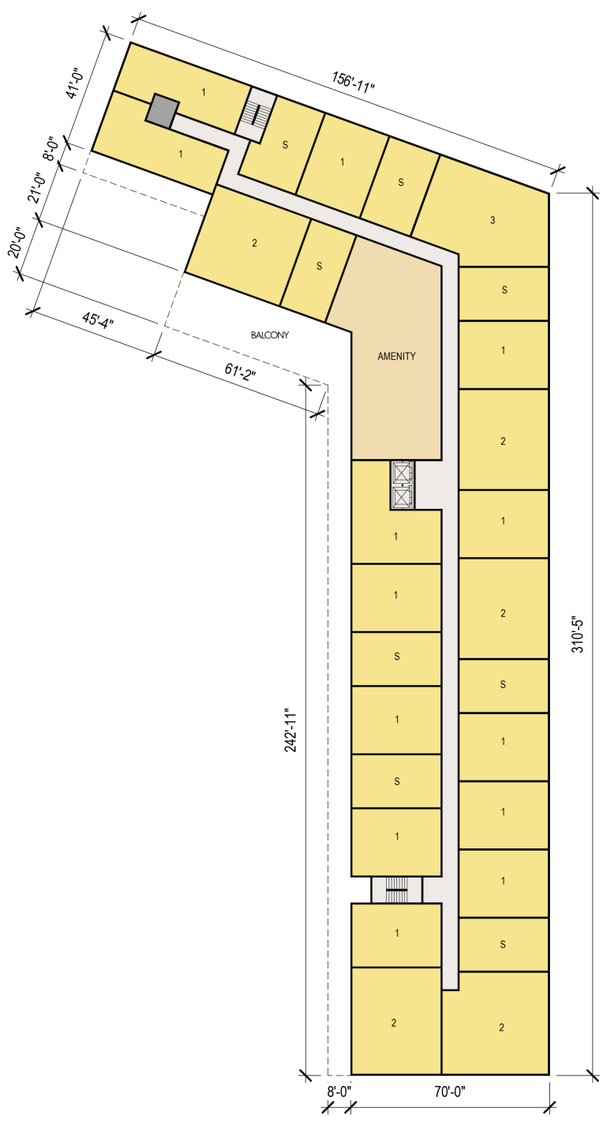
LEVEL 02 FLOOR PLAN

0' 30' 60'

LEGEND

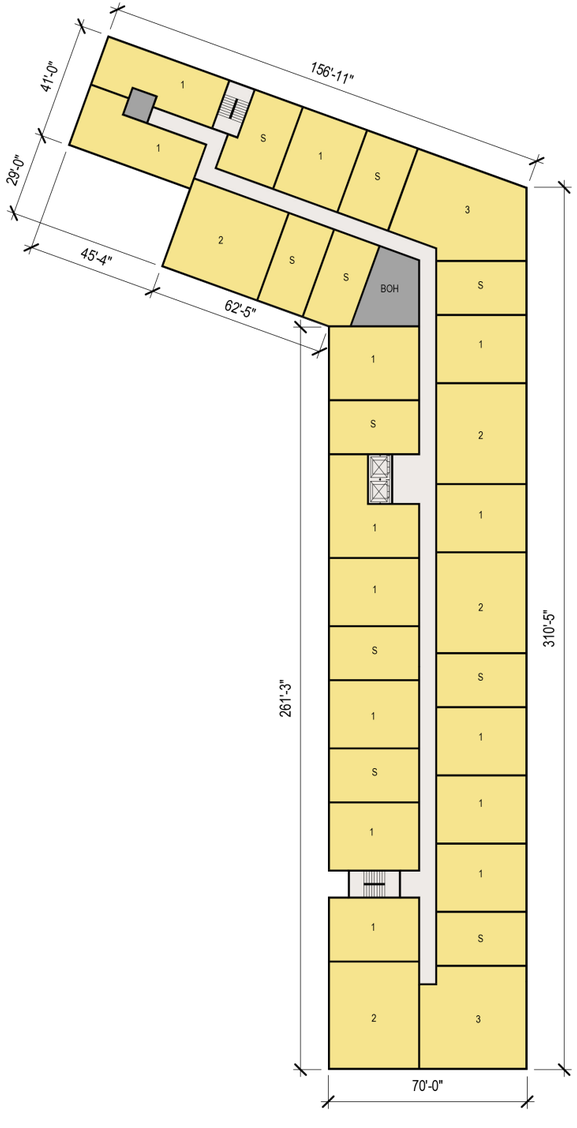
- LEASING / MAIL
- RESIDENTIAL
- COMMON RESI AMENITY
- COMMERCIAL
- # EXISTING BUILDING
- SERVICES
- PARKING
- CIRCULATION
- OUTDOOR AMENITY
- # PROPOSED NEW OR MODIFIED EXISTING BUILDING

BUILDING 3D - RESIDENTIAL



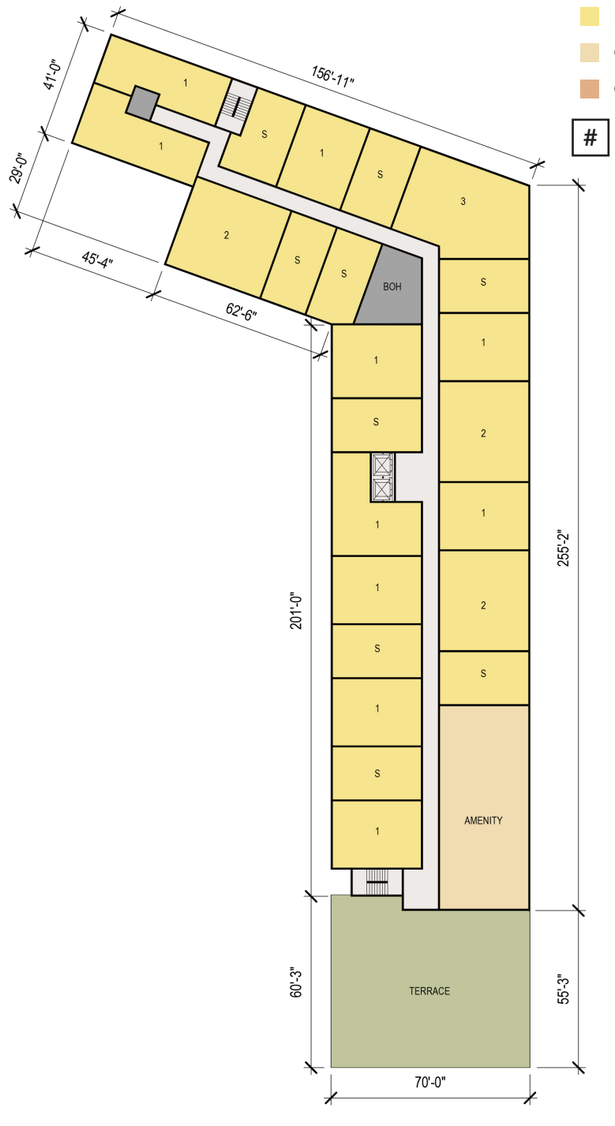
LEVEL 03 FLOOR PLAN

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LEVEL 04 - 06 TYPICAL FLOOR PLANS

0' 30' 60'



LEVEL 07 FLOOR PLAN

0' 30' 60'

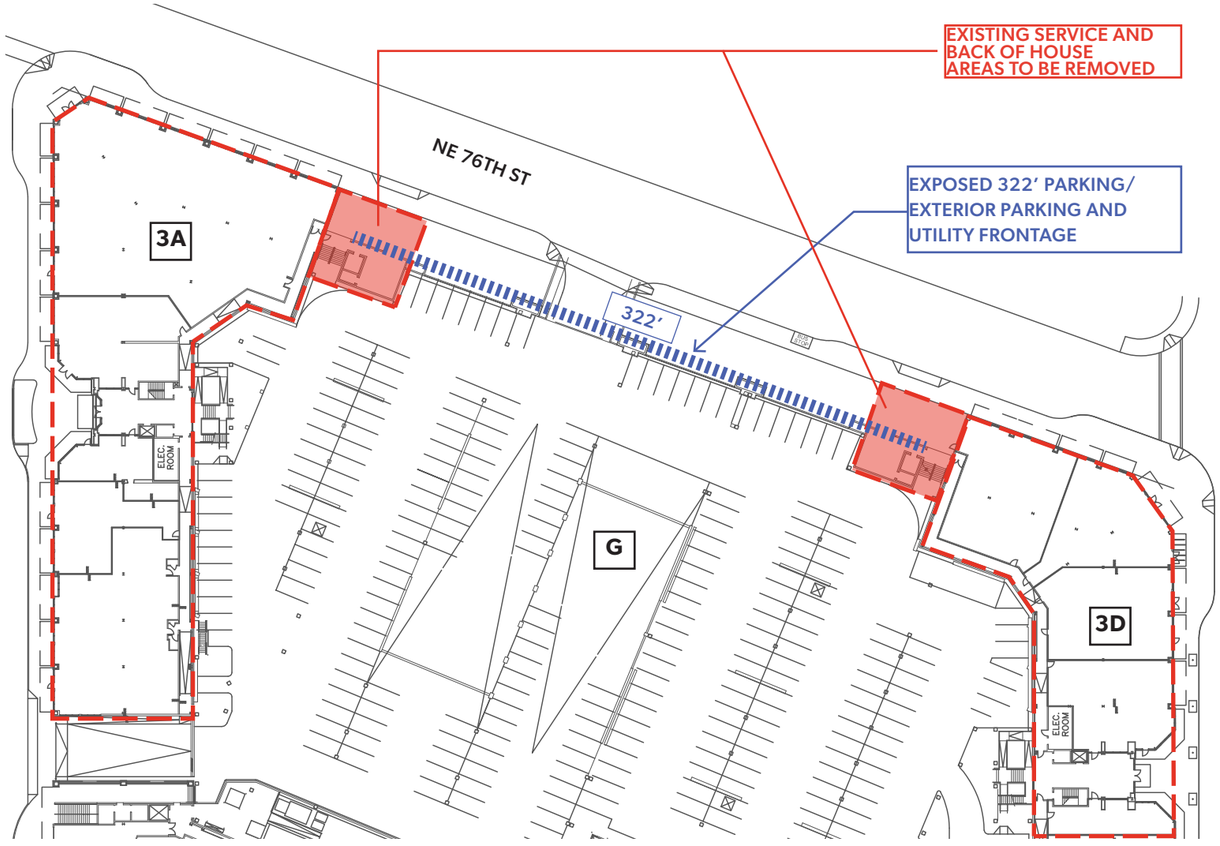
LEGEND

- LEASING / MAIL
- RESIDENTIAL
- COMMON RESI AMENITY
- COMMERCIAL
- # EXISTING BUILDING
- SERVICES
- PARKING
- CIRCULATION
- OUTDOOR AMENITY
- # PROPOSED NEW OR MODIFIED EXISTING BUILDING

EXISTING G GARAGE MODIFICATIONS

BUILDING G - GARAGE

EXISTING



BUILDING G - GARAGE EXISTING GROUND LEVEL SITE PLAN

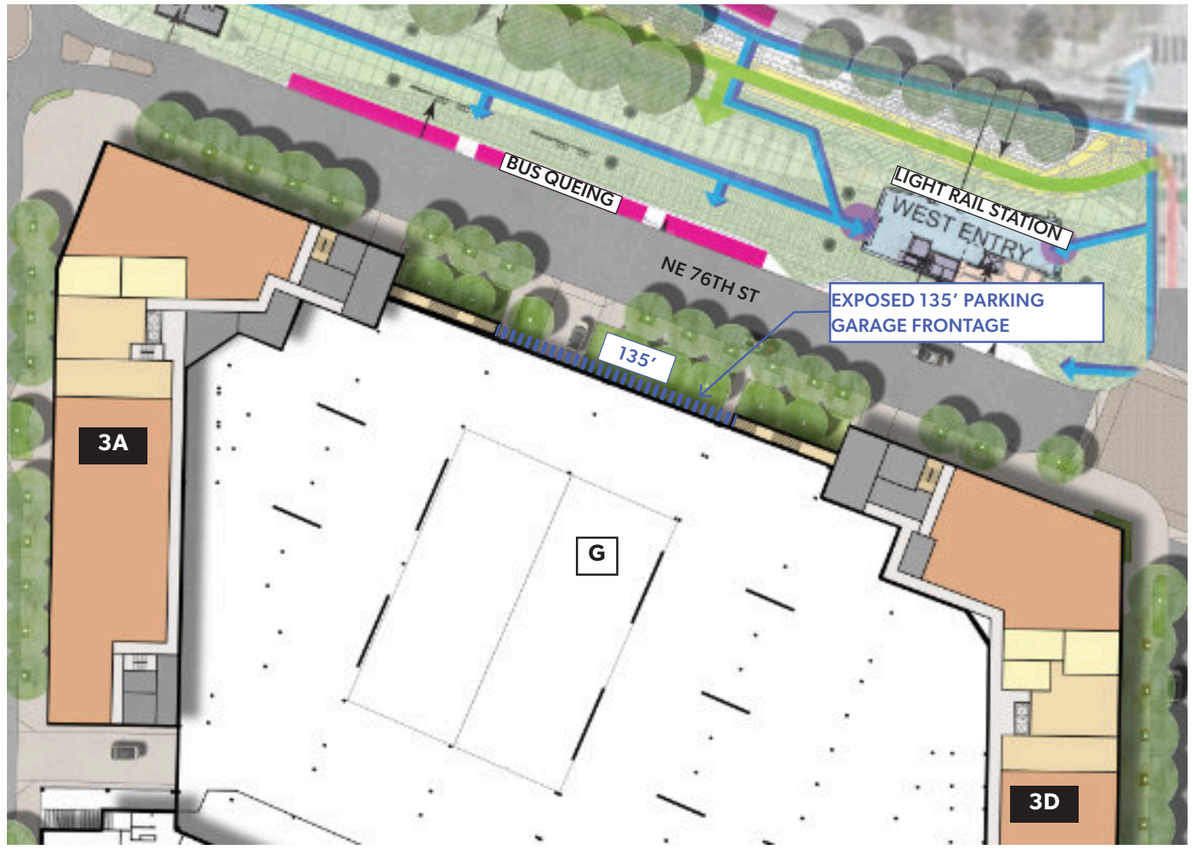
0' 40' 80'

The original Town Center Design located pedestrian frontages at the corners of 166th and 76th Streets and 164th and 176th Streets to reinforce the connection to downtown while placing the less prominent parking garage frontage oriented toward a previous freight rail line. While the future condition of an elevated rail line and planned bus queuing continue to make this frontage a challenge to activate, the design approach attempts to mitigate the existing garage.

Exterior trash enclosures and transformers are relocated into the base level of the proposed new buildings with residential units above. The existing exit stairs have been relocated to the face of the parking garage to act to provide a sense of transparency and act as an active screening element. Where the exposed garage remains, the existing 27' wide landscape buffer will be replanted per. RZC 21.32

Pedestrian-Oriented street frontage is maintained along 76th Streets near the site entry corners and along the building extents facing both 164th and 166th Streets.

PROPOSED



BUILDING G - GARAGE PROPOSED GROUND LEVEL SITE PLAN

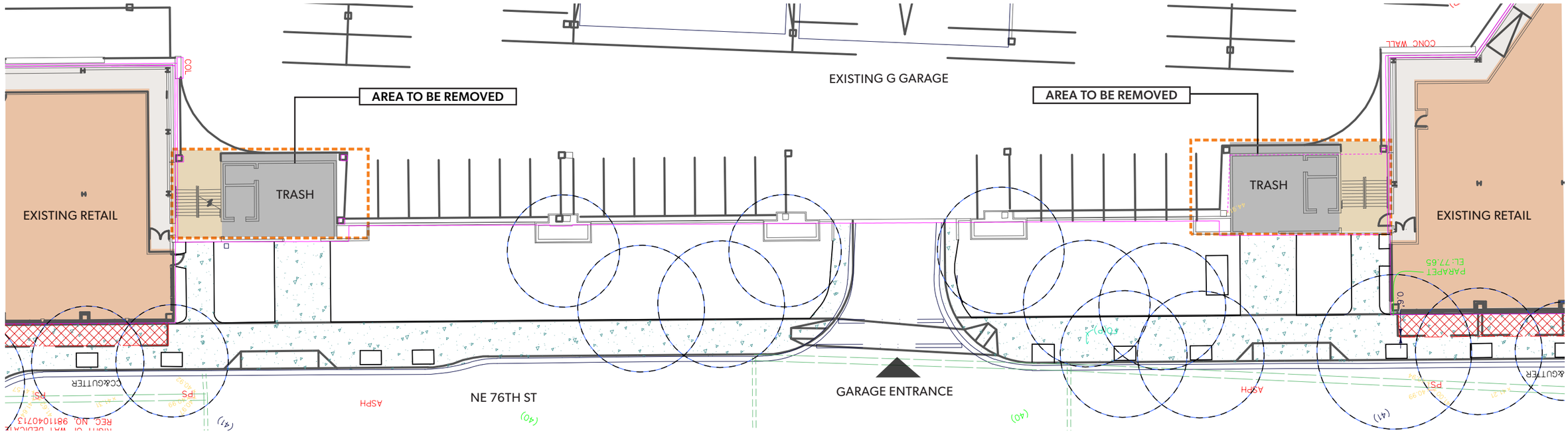
0' 40' 80'

New or relocated trash and back of house spaces will need to comply with current transparency and blank wall standards per. RZC 21.62.020.I. Street facing garage openings shall be designed to soften their appearance per. RZC 21.62.020.F.

LEGEND

- COMMERCIAL
- COMMON RESI AMENITY
- SERVICES
- CIRCULATION

EXISTING



EXISTING G GARAGE FLOOR PLAN
NTS

LEGEND

- COMMERCIAL
- COMMON RESI AMENITY
- SERVICES
- CIRCULATION

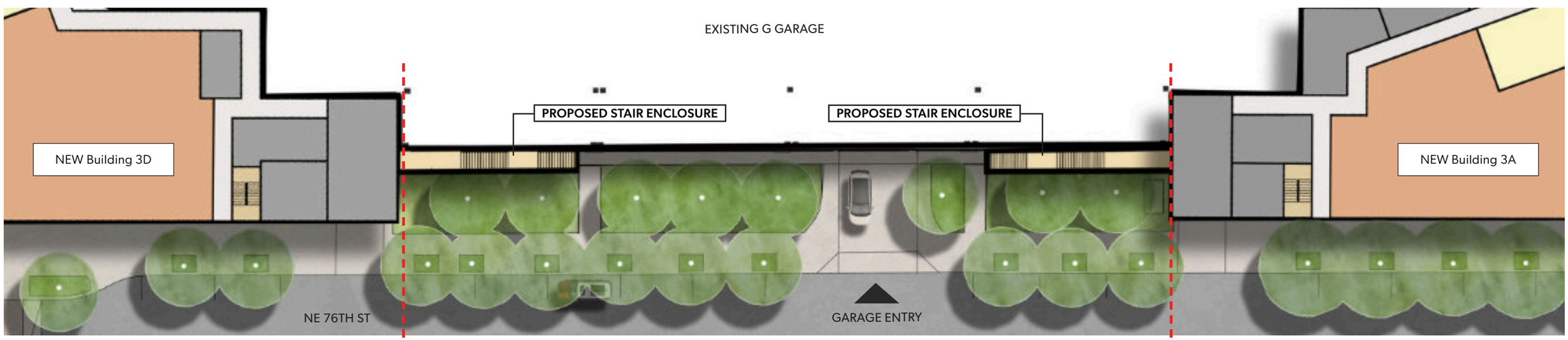
EXTERIOR UNSCREENED TRANSFORMER TO BE RELOCATED INTO THE NEW BUILDING.



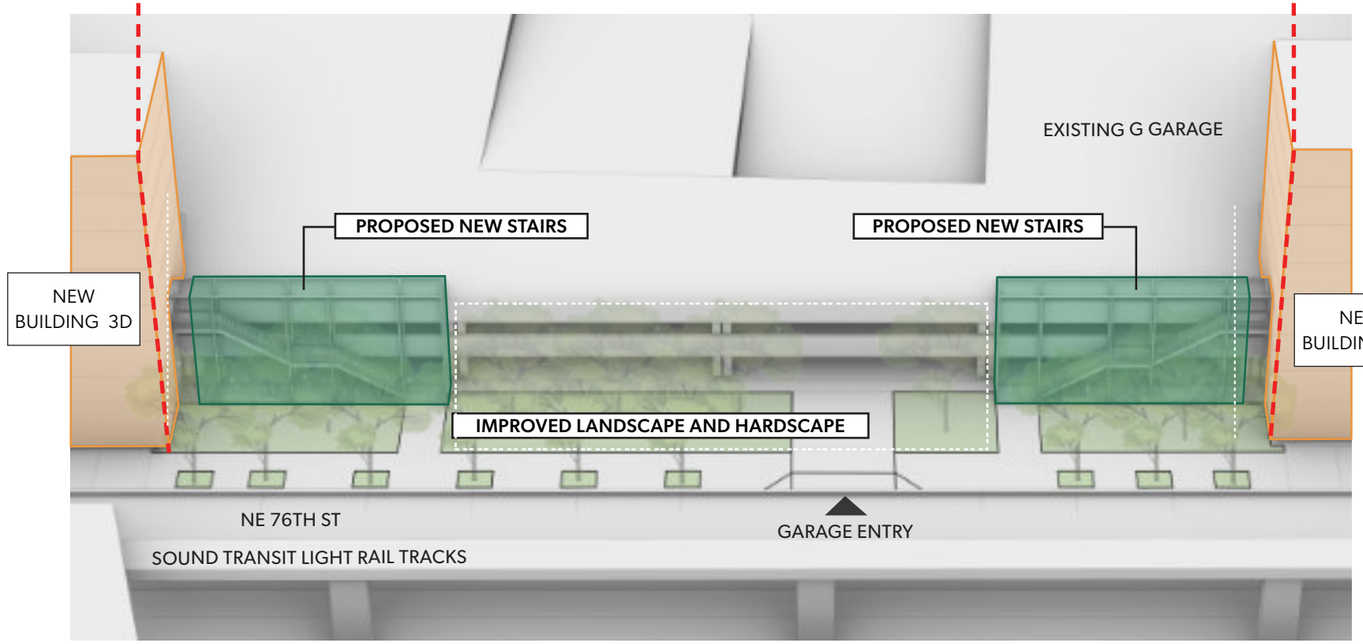
EXTERIOR TRASH ROOM AND BACK OF HOUSE SPACE TO BE RELOCATED INTO THE NEW BUILDING.

EXISTING G GARAGE NORTH FACADE
NTS

PROPOSED



PROPOSED G GARAGE FLOOR PLAN
NTS



PROPOSED G GARAGE NORTH FACADE
NTS

LEGEND

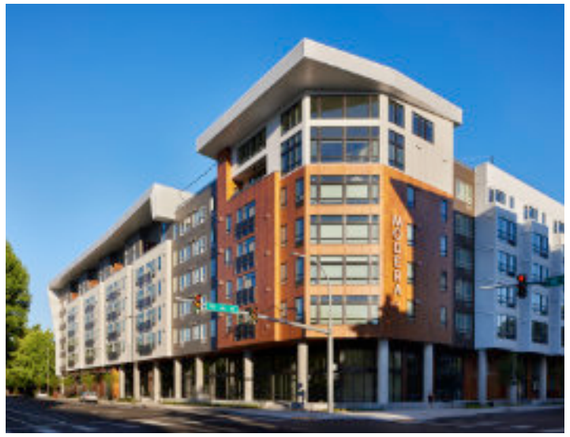
- COMMERCIAL
- COMMON RESI AMENITY
- SERVICES
- CIRCULATION

Extending the massing of buildings 3A and 3D along with exit stair enclosures and landscaping screening will screen most of the existing parking garage from the pedestrian realm.

See next page for Stair enclosure and landscape precedent imagery.

BUILDING G - GARAGE NORTH FACADE

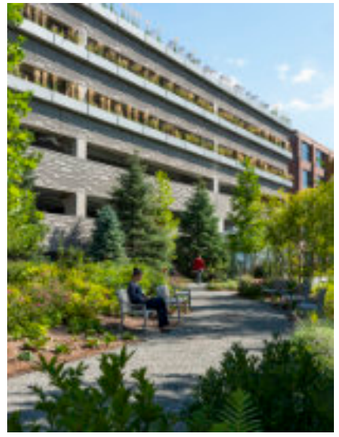
GARAGE SCREENING AND LANDSCAPE PRECEDENT IMAGES



1 Multifamily Residential bookends existing parking garage and defines site gateway



2 New stair towers help to conceal existing garage while encouraging active use and contributing to Station Identity

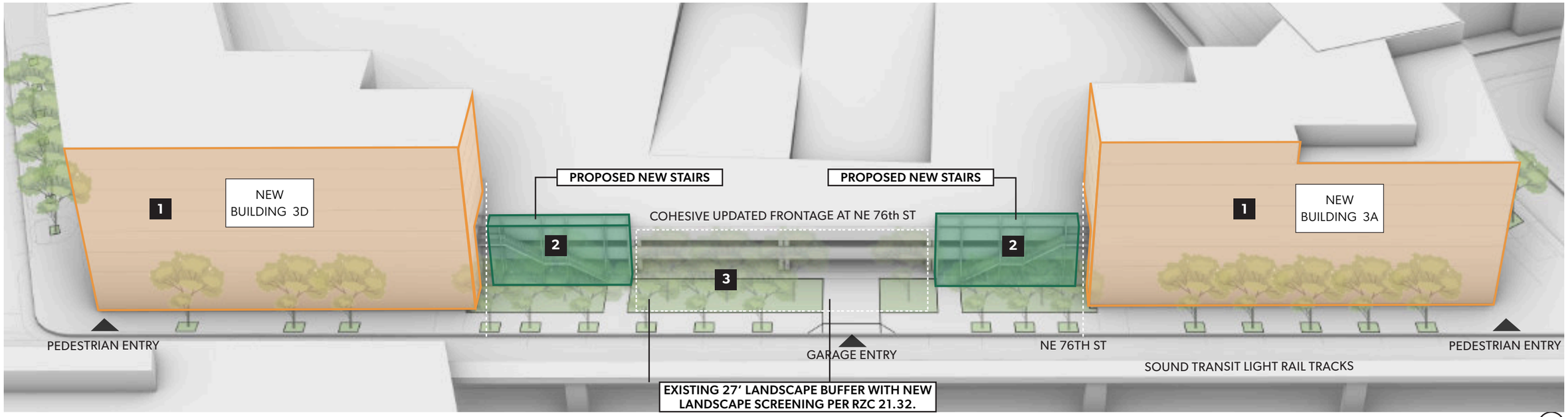






3 New landscape design screens existing parking garage while contributing to a cohesive experience of the pedestrian realm on site

Proposed precedent imagery represents a design approach to showcase the movement of people, emphasize verticality, and create a playful active facade in place of horizontal concrete screening. Landscape precedent imagery include a layering of planting types and scales to soften and screen the existing exposed parking garage. While the final future design will differ some from the precedent imagery, it should reflect these goals. New development will need to show compliance with RZC requirements for transparency, blank walls, and parking garage landscape screening requirements.



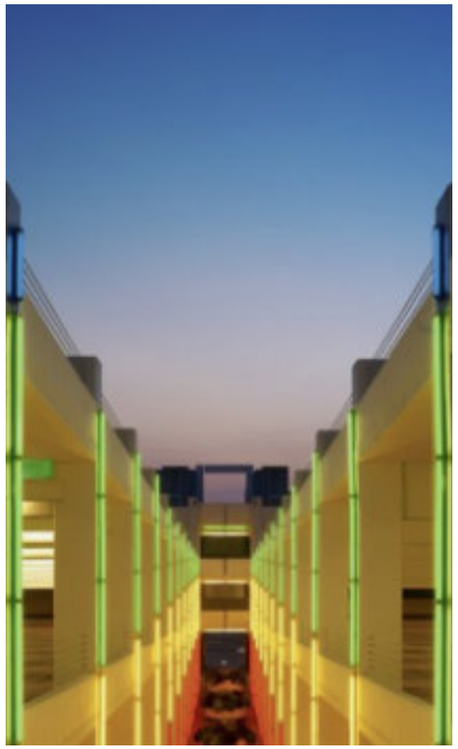
PROPOSED NE 76TH ST. ELEVATION WITH EXPANDED BUILDINGS AND STAIR ENCLOSURE

NTS

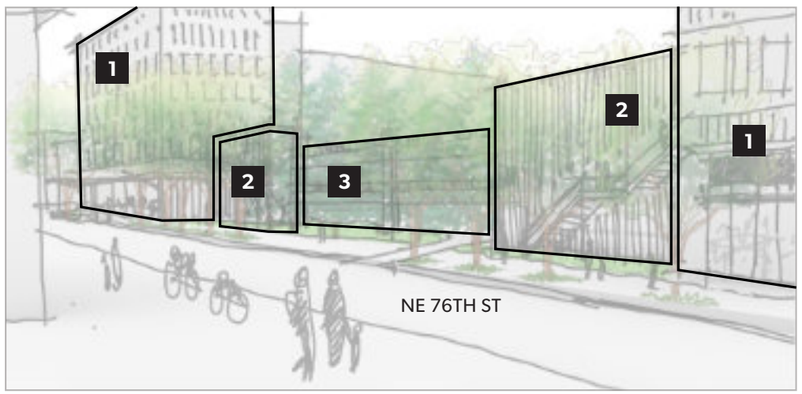
BUILDING G - PEDESTRIAN REALM AT NE 76TH STREET, DESIGN APPROACH







BALANCE OF ARCHITECTURE AND LANDSCAPE EXPRESSION



3 distinct zones that encourage movement through site

1 MULTIFAMILY RESIDENTIAL BUILDINGS BOOKEND THE BLOCK CREATING A STRONG INDICATION OF THE GATEWAY TO REDMOND TOWNCENTER. RETAIL AT THE BASE PULLS PEDESTRIANS TO THE CORNER AND INTO THE NEIGHBORHOOD.

2 STAIR TOWERS UTILIZE TRANSPARENCY, LIGHTING AND SIGNAGE TO PROVIDE SAFE PUBLIC ACCESS TO EXISTING GARAGE AND ENCOURAGE USE OF PEDESTRIAN PATH CONNECTING USERS TO GATEWAYS. FLOWERING TREES FILTER LIGHT, CREATING A BALANCE BETWEEN ARCHITECTURE AND LANDSCAPE.

3 EVERGREEN TREES AND NATIVE GROUND COVER ARE DENSELY PLANTED TO BOTH SCREEN EXISTING PARKING GARAGE AND EMPHASIZE PATHS FOR PEDESTRIAN AND VEHICULAR TRAVEL.

BUILDING G - PEDESTRIAN REALM AT NE 76TH STREET, LANDSCAPE DESIGN

PLANTING AT MATURITY (12-15 YEARS)



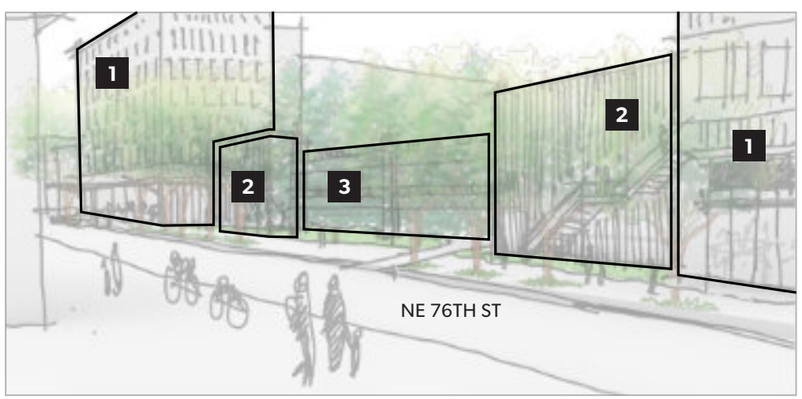


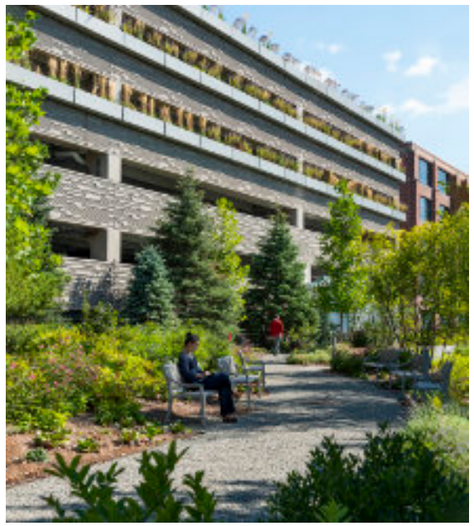
1 Street Trees and Enhanced streetscape



2 Open habit native trees and dappled visibility to architectural features

PLANTING AT INSTALLATION







3 Dense evergreen screening and dense planting helps hide the parking garage structure and minimize the scale.

Exhibit D - Fee-in-Lieu Calculation

RTC Future Residential

Undelivered Affordable Units on Lot 4 if Office Goes First		
Total Units	**Market Rate**	**60% AMI**
258	206	52

Affordable Undelivered by Unit Type		
Unit Type	**Avg Unit Size**	**60 % AMI Count**
Studio	600	18
1 Bed	760	24
2 Bed	1150	7
3 Bed	1400	3
Total		**52**

Payment	
Fee in Lieu (per unit)	$288,700
Fee in Lieu (total)	**$15,012,389**

Payment - Average	
Fee in Lieu (per unit)	$288,700
Fee in Lieu (total)	**$15,012,389**

Other/Calcs

Market Rent	$3.50

Market Rate		
	Qty	Rent
Studio	18	$2,100
1BR	24	$2,660
2BR	7	$4,025
3BR	3	$4,900
Total	**52**	**$2,779**

Affordable		
	Qty	Rent
Studio	18	$1,548
1BR	24	$1,658
2BR	7	$1,990
3BR	3	$2,299
Total	**52**	**$1,702**

Delta			
	Qty	Rent	Utility Allowance
Studio	18	$552	$3,042
1BR	24	$1,002	$4,824
2BR	7	$2,035	$1,729
3BR	3	$2,601	$909
Total	**52**	**$1,078**	$10,504

RENT LIMITS--determined by bedrooms
LAND USE & MFTE PROJECTS EXECUTED AFTER MAY 1, 2019

Percentage of AMI	Studio	1-Bedroom	2-Bedroom	3-Bedroom	4-Bedroom
30%	$ 774	$ 829	$ 995	$ 1,150	$ 1,282
35%	$ 903	$ 967	$ 1,161	$ 1,341	$ 1,496
40%	$ 1,032	$ 1,106	$ 1,327	$ 1,533	$ 1,710
45%	$ 1,161	$ 1,244	$ 1,492	$ 1,725	$ 1,924
50%	$ 1,290	$ 1,382	$ 1,658	$ 1,916	$ 2,137
55%	$ 1,419	$ 1,520	$ 1,824	$ 2,108	$ 2,351
60%	$ 1,548	$ 1,658	$ 1,990	$ 2,299	$ 2,565
65%	$ 1,677	$ 1,796	$ 2,156	$ 2,491	$ 2,778
70%	$ 1,806	$ 1,935	$ 2,322	$ 2,683	$ 2,992
75%	$ 1,935	$ 2,073	$ 2,487	$ 2,874	$ 3,206
80%	$ 2,064	$ 2,211	$ 2,653	$ 3,066	$ 3,420
85%	$ 2,193	$ 2,349	$ 2,819	$ 3,258	$ 3,633
90%	$ 2,322	$ 2,487	$ 2,985	$ 3,449	$ 3,847
95%	$ 2,451	$ 2,626	$ 3,151	$ 3,641	$ 4,061
100%	$ 2,580	$ 2,764	$ 3,317	$ 3,832	$ 4,275
105%	$ 2,708	$ 2,902	$ 3,482	$ 4,024	$ 4,488
110%	$ 2,837	$ 3,040	$ 3,648	$ 4,216	$ 4,702
120%	$ 3,095	$ 3,317	$ 3,980	$ 4,599	$ 5,130

1-person	1.5-person	3-person	4.5-person	6-person
0.7	0.75	0.9	1.04	1.16

Bellevue10, Broadstone Savoie, Ondina, and Vicino Apartments rent increases capped at 3%.

*Per 2021 Bellevue MFTE Rent Stabilization Policy

Income Delta - Rents	$672,384
Income Delta - Uilities	$126,048
Income Delta - Parking ($150/space)	$31,200
Vacancy@5%	($41,482)
Subtotal	**$788,150**
Capitalization	5.25%
Subtotal	**$15,012,389**

Per Unit	**$288,700**	**at Permit Issuance**
Per Unit	**$288,700**	**Average**

Redmond Town Center Master Planned Development

Redmond, WA

Traffic Impact Analysis

March 28, 2025

Prepared for:

Hines
10885 NE 4th Street, Suite 320
Bellevue, WA 98004



03/28/25

Prepared by:

520 Kirkland Way, Suite 100
Kirkland, WA 98033
(425) 889-6747

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FINDINGS/CONCLUSIONS

This traffic impact analysis has been prepared for the proposed *Redmond Town Center Master Planned Development* project ("*RTC Master Plan*") in Redmond, WA.

Project Proposal. The proposed *RTC Master Plan* project includes the redevelopment of the portion of Redmond Town Center owned by Fairbourne Properties generally located north of Bear Creek Parkway and south of NE 76th Street between 166th Ave NE and 164th Ave NE.

The *RTC Master Plan* project is planned to be developed in five (5) phases. Phases 1 to 3 include a 2-story addition to an existing 2-story parking garage located on the west side of 164th Ave NE between NE 74th Street and NE 73rd Street as well as the redevelopment of the surface parking areas generally located on the south side of the site. Phases 4 and 5 include the conversion of the retail area generally located on the north side of the site to mixed-use development adjacent to 164th Ave NE and 166th Ave NE. The proposed project may be developed in one of two scenarios as summarized in the tables below, with the variable being redevelopment on Lot 4 (all residential vs. residential and office mix). The land use totals used in this analysis are "not to exceed" numbers that are intended to be conservative and account for any minor changes to land use totals that may occur as the project design progresses.

Land Use Summary – Scenario 1 (All Residential Option)

Land Use Category [1]	Phases 1 to 3	Full Buildout (Phases 1 to 5)
Master Plan Scenario 1:		
Residential proposed (DU)	700	1,020
Retail to remain (GLA)	385,255	296,169
Retail proposed (GLA)	29,000	63,000
Less Existing Building Area:		
Retail (GLA)	- 393,993	- 393,993
Net Change by Land Use:		
Residential (DU)	700	1,020
Retail (GLA)	20,262	- 34,824

1) DU = dwelling unit, GLA = gross leasable area.

Land Use Summary – Scenario 2 (Residential and Office Option)

Land Use Category	Phases 1 to 3	Full Buildout (Phases 1 to 5)
Master Plan Scenario 2:		
Residential proposed (DU)	425	745
Retail to remain (GLA)	385,255	296,169
Retail proposed (GLA)	27,600	61,600
Office proposed (GFA)	270,100	270,100
Less Existing Building Area:		
Retail (GLA)	- 393,993	- 393,993
Net Change by Land Use:		
Residential (DU)	425	745
Retail (GLA)	18,862	- 36,224
Office (GFA)	270,100	270,100

1) DU = dwelling unit, GLA = gross leasable area, GFA = gross floor area.

Primary vehicular access to the site would be provided via 164th Ave NE, 166th Ave NE, and NE 76th Street. Driveway locations for each phase/building are listed below:

- Phase 1 vehicular access to the expanded parking garage will continue to be provided via the existing driveways on 163rd Ave NE and NE 73rd Street.
- Phase 2 vehicular access to the Building 4IC East residential parking garage will be provided via new driveways on 166th Ave NE (garage access) and NE 73rd Way (loading access); access to the Building 4IC West residential/office parking garage will be provided via new driveways on 164th Ave NE (garage access) and NE 73rd Way (loading access).
- Phase 3 vehicular access to the Building 4B residential parking garage will be provided via a new driveway on NE 72nd Way (garage and loading access).
- Phases 4 and 5 vehicular access will be provided via the existing central parking garage driveways on 164th Ave NE, 166th Ave NE, and NE 76th Street.

Trip Generation. Trip generation estimates for each scenario are summarized in the table below.

Trip Generation Summary

	Scenario 1 (All Residential Option) Net New Trips Generated			Scenario 2 (Residential & Office Option) Net New Trips Generated		
Weekday Time Period	In	Out	Total	In	Out	Total
Phases 1 to 3						
Daily	968	969	1,937	2,050	2,051	4,101
AM Peak Hour	32	152	184	201	106	307
PM Peak Hour	76	2	78	44	152	196
Phases 4 to 5						
Daily	-397	-397	-794	-397	-397	-794
AM Peak Hour	-9	54	45	-11	53	42
PM Peak Hour	-35	-74	-109	-37	-77	-114
Full Buildout (Phases 1 to 5)						
Daily	571	572	1,143	1,653	1,654	3,307
AM Peak Hour	23	206	229	190	159	349
PM Peak Hour	41	-72	-31	7	75	82

Transportation Concurrency. A concurrency application has been submitted to the City of Redmond based on the Master Plan scenario with the highest net new Mobility Unit (MU) demand. The concurrency application shows that the proposed *RTC Master Plan* project would generate a net new MU demand of 2,036 net new mobility units with Phases 1 to 3 of Scenario 2 (Residential & Office Option) of the proposed *RTC Master Plan* project. It is expected that the current MU supply will accommodate the additional MU demand created by the proposed *RTC Master Plan* project. Therefore, it is anticipated that a certificate of concurrency will be issued for the project.

Traffic Operations Analysis. A level of service (LOS) analysis was conducted at 27 off-site study intersections during the weekday PM peak hour. Phases 1 to 3 of Scenario 2 (Residential & Office Option) of the proposed *RTC Master Plan* project is estimated to generate the highest number of net new weekday PM peak hour and daily trips. This is higher than Scenario 1 due to the addition of the 270,100-SF of office space on Lot 4 (Building 4IC) in comparison to Scenario 1 which includes primarily residential uses on Lot 4. It is also higher than conditions with Full Buildout of the MDP due to the proposed net reduction in retail square footage of approximately 55,000 SF associated with Phases 4 and 5.

In order to evaluate the highest potential impact for the proposed *RTC Master Plan* project, this traffic analysis evaluates traffic impacts associated with Phases 1 to 3 of Scenario 2 (Residential & Office Option).

Based on the results, all study intersections are expected to operate at LOS D or better in 2030 and 2034 with or without Phases 1 to 3 of Scenario 2 (Residential & Office Option) of the proposed *RTC Master Plan* project during the weekday PM peak hour except for the following intersections.

- #2 – 148th Ave NE / Redmond Way (LOS E in 2034 only)
- #7 – West Lake Sammamish Pkwy / Leary Way (LOS E in 2030 and 2034)
- #18 – 170th Ave NE / Redmond Way (LOS E in 2030 and 2034)
- #19 – Bear Creek Crossing / Redmond Way (LOS E in 2034 only)
- #26 – 164th Ave NE / Bear Creek Parkway (LOS E in 2034 only)

Given the relatively low project impact from the *RTC Master Plan* project at these intersections, no project mitigation is proposed at these intersections.

Mitigation.

Frontage/Access/Multimodal Improvements. The proposed *RTC Master Plan* project would construct the following frontage/access/multimodal improvements:

- Phase 2
  - Re-channelization of 164th Ave NE and 166th Ave NE (between NE 76th Street and Bear Creek Parkway) to accommodate a new bike lane in one direction and shared lane markings in the other direction.
  - Re-channelization of NE 74th Street (between Bear Creek Parkway and 164th Ave NE) to accommodate a new bike lane in one direction and shared lane markings in the other direction.
  - Reconstruct existing parking lot drive aisle along the south side of Phase 2 to create a new NE 72nd Way private roadway (between 164th Ave NE and 166th Ave NE) including a raised mid-block pedestrian crossing.
  - Reconstruct existing parking lot drive aisle along the north side of Phase 2 to create a new NE 73rd Way private roadway (between 164th Ave NE and 166th Ave NE) including a raised mid-block pedestrian crossing.
  - Construct a publicly accessible linear plaza connecting NE 73rd Way with NE 72nd Way.
- Phase 3
  - Add on-street parking along a portion of NE 72nd Way.
  - Construct a new enhanced mid-block crossing on Bear Creek Parkway (mid-way between 164th Ave NE and 166th Ave NE).
  - Construct a publicly accessible linear plaza connecting NE 72nd Way with Bear Creek Parkway.
- Phases 4 and 5
  - Pedestrian/plaza improvements on NE 74th Street between 164th Ave NE and 166th Ave NE (pedestrian only street).
  - Intersection improvements (pedestrian improvements and potential raised intersection) at the following intersections:
    - 164th Ave NE / NE 74th Street
    - 166th Ave NE / NE 74th Street
    - 166th Ave NE / NE 76th Street

Off-Site Improvements. Based on the results of the analysis shown in this report, no project-specific off-site transportation mitigation is proposed for concurrency or SEPA purposes.

Transportation Impact Fees. Long-term traffic impacts in the City of Redmond are mitigated by the projects included in the City's Transportation Facilities Plan (TFP). The TFP projects are funded through the payment of City of Redmond transportation impact fees. Based on this process, a fee is assessed upon a development to pay for a proportionate share of the cost of public facilities needed to serve new growth and development. The final impact fee calculation will be based on the rates and project size in effect at the time of building permit issuance for each building within the Master Plan.

INTRODUCTION

This traffic impact analysis has been prepared for the proposed *Redmond Town Center Master Planned Development* project ("RTC Master Plan") in Redmond, WA. A vicinity map showing the location of the site and the surrounding area is included in Figure 1.

Project Description

The proposed *RTC Master Plan* project includes the redevelopment of the portion of Redmond Town Center owned by Fairbourne Properties generally located north of Bear Creek Parkway and south of NE 76th Street between 166th Ave NE and 164th Ave NE. The *RTC Master Plan* project is planned to be developed in five (5) phases. Phases 1 to 3 include a 2-story addition to an existing 2-story parking garage located on the west side of 164th Ave NE between NE 74th Street and NE 73rd Street as well as the redevelopment of the surface parking areas generally located on the south side of the site. Phases 4 and 5 include the conversion of the retail area generally located on the north side of the site to mixed-use development adjacent to 164th Ave NE and 166th Ave NE. The proposed project may be developed in one of two scenarios as summarized in the tables below, with the variable being redevelopment on Lot 4 (all residential vs. residential and office mix). The land use totals used in this analysis are "not to exceed" numbers that are intended to be conservative and account for any minor changes to land use totals that may occur as the project design progresses.

Land Use Summary – Scenario 1 (All Residential Option)

Land Use Category [1]	Phases 1 to 3	Full Buildout (Phases 1 to 5)
Master Plan Scenario 1:		
Residential proposed (DU)	700	1,020
Retail to remain (GLA)	385,255	296,169
Retail proposed (GLA)	29,000	63,000
Less Existing Building Area:		
Retail (GLA)	- 393,993	- 393,993
Net Change by Land Use:		
Residential (DU)	700	1,020
Retail (GLA)	20,262	- 34,824

1) DU = dwelling unit, GLA = gross leasable area.

Land Use Summary – Scenario 2 (Residential and Office Option)

Land Use Category	Phases 1 to 3	Full Buildout (Phases 1 to 5)
Master Plan Scenario 2:		
Residential proposed (DU)	425	745
Retail to remain (GLA)	385,255	296,169
Retail proposed (GLA)	27,600	61,600
Office proposed (GFA)	270,100	270,100
Less Existing Building Area:		
Retail (GLA)	- 393,993	- 393,993
Net Change by Land Use:		
Residential (DU)	425	745
Retail (GLA)	18,862	- 36,224
Office (GFA)	270,100	270,100

1) DU = dwelling unit, GLA = gross leasable area, GFA = gross floor area.

Primary vehicular access to the site would be provided via 164th Ave NE, 166th Ave NE, and NE 76th Street. Driveway locations for each phase/building are listed below:

- Phase 1 vehicular access to the expanded parking garage will continue to be provided via the existing driveways on 163rd Ave NE and NE 73rd Street.
- Phase 2 vehicular access to the Building 4IC East residential parking garage will be provided via new driveways on 166th Ave NE (garage access) and NE 73rd Way (loading access); access to the Building 4IC West residential/office parking garage will be provided via new driveways on 164th Ave NE (garage access) and NE 73rd Way (loading access).
- Phase 3 vehicular access to the Building 4B residential parking garage will be provided via a new driveway on NE 72nd Way (garage and loading access).
- Phases 4 and 5 vehicular access will be provided via the existing central parking garage driveways on 164th Ave NE, 166th Ave NE, and NE 76th Street.

For the purposes of this traffic study, Phases 1 to 3 of the proposed project are expected to be complete by 2030. Full project buildout is assumed to be complete by 2034.

Preliminary site plans from the Master Plan document are included in Appendix A. Appendix B includes a detailed breakdown of building area assumptions for each phase and scenario.



N

NOT TO SCALE

Figure 1: Project Site Vicinity

Project Approach

The specific scope items used in the evaluation of traffic impacts were discussed and confirmed by City staff. To analyze the traffic impacts from the *RTC Master Plan* project, the following tasks were undertaken:

- Assessed existing conditions through field reconnaissance and reviewed existing planning documents.
- Described existing roads, non-motorized facilities, and transit facilities in the project vicinity.
- Documented traffic crashes in the project vicinity.
- Documented existing traffic volumes and intersection LOS during the weekday PM peak hour.
- Documented future planned roadway improvements in the project vicinity.
- Developed weekday daily, AM, and PM peak hour trip generation estimates.
- Assigned weekday PM peak hour project-generated trips (Phases 1 to 3 of Scenario 2 (Residential & Office Option) of the proposed *RTC Master Plan* project).
- Analyzed weekday PM peak hour LOS for future conditions in 2030 and 2034 without and with the project at the following study intersections:
    1. 140th Ave NE / Redmond Way (signal)
    2. 148th Ave NE / Redmond Way (signal)
    3. Willows Road NE / Redmond Way (signal)
    4. West Lake Sammamish Pkwy NE / Redmond Way (signal)
    5. Bear Creek Pkwy / Redmond Way (signal)
    6. Bear Creek Pkwy / 161st Ave NE (signal)
    7. West Lake Sammamish Parkway NE / Leary Way (signal)
    8. 159th Place NE / Leary Way (signal)
    9. Bear Creek Pkwy / Leary Way (signal)
    10. Bear Creek Pkwy / NE 74th Street (signal)
    11. 164th Ave NE / NE 85th Street (signal)
    12. 164th Ave NE / NE 83rd Street (signal)
    13. 164th Ave NE / NE 80th Street (signal)
    14. 164th Ave NE / Redmond Way (signal)
    15. 164th Ave NE / Cleveland Street (signal)
    16. 166th Ave NE / Cleveland Street (signal)
    17. 170th Ave NE / NE 76th Street (signal)
    18. 170th Ave NE / Redmond Way (signal)
    19. Bear Creek Crossing / Redmond Way (signal)
    20. NE 76th Street / Redmond Way (signal)
    21. SR 520 Off Ramp / Redmond Way (signal)
    22. 164th Ave NE / NE 76th Street (roundabout)
    23. 166th Ave NE / NE 76th Street (all-way stop controlled)
    24. 164th Ave NE / NE 74th Street (all-way stop controlled)
    25. 166th Ave NE / NE 74th Street (all-way stop controlled)
    26. 164th Ave NE / Bear Creek Pkwy (two-way stop controlled)
    27. 166th Ave NE / Bear Creek Pkwy (two-way stop controlled)
- Documented proposed traffic mitigation including frontage/access/multimodal improvements, off-site improvements, and payment of transportation impact fees.

Primary Data and Information Sources

- Institute of Transportation Engineers (ITE), *Trip Generation Manual*, 11th Edition, 2021.
- Institute of Transportation Engineers (ITE), *Trip Generation Handbook*, 3rd Edition, 2017.
- WSDOT crash data, January 1, 2021 to December 31, 2023.
- 2023 and 2024 PM peak hour traffic counts, IDAX and ATD.
- City of Redmond 2025-2030 TIP, 2013-2030 TFP, and Transportation Master Plan.
- *Highway Capacity Manual (HCM),* 7th Edition, 2022.

EXISTING CONDITIONS

Study Area

Based on the results of scoping with the City of Redmond, the following 27 off-site study intersections are included in this traffic impact analysis:

1. 140th Ave NE / Redmond Way (signal)
2. 148th Ave NE / Redmond Way (signal)
3. Willows Road NE / Redmond Way (signal)
4. West Lake Sammamish Pkwy NE / Redmond Way (signal)
5. Bear Creek Pkwy / Redmond Way (signal)
6. Bear Creek Pkwy / 161st Ave NE (signal)
7. West Lake Sammamish Parkway NE / Leary Way (signal)
8. 159th Place NE / Leary Way (signal)
9. Bear Creek Pkwy / Leary Way (signal)
10. Bear Creek Pkwy / NE 74th Street (signal)
11. 164th Ave NE / NE 85th Street (signal)
12. 164th Ave NE / NE 83rd Street (signal)
13. 164th Ave NE / NE 80th Street (signal)
14. 164th Ave NE / Redmond Way (signal)
15. 164th Ave NE / Cleveland Street (signal)
16. 166th Ave NE / Cleveland Street (signal)
17. 170th Ave NE / NE 76th Street (signal)
18. 170th Ave NE / Redmond Way (signal)
19. Bear Creek Crossing / Redmond Way (signal)
20. NE 76th Street / Redmond Way (signal)
21. SR 520 Off Ramp / Redmond Way (signal)
22. 164th Ave NE / NE 76th Street (roundabout)
23. 166th Ave NE / NE 76th Street (all-way stop controlled)
24. 164th Ave NE / NE 74th Street (all-way stop controlled)
25. 166th Ave NE / NE 74th Street (all-way stop controlled)
26. 164th Ave NE / Bear Creek Pkwy (two-way stop controlled)
27. 166th Ave NE / Bear Creek Pkwy (two-way stop controlled)

Roadway Network

Table 1 describes the existing characteristics of the streets that would be used as primary routes to and from the site. Roadway characteristics are described in terms of orientation, arterial classification, posted speed limits, parking, sidewalks, and bicycle facilities. The relationship of these roadways to the project site is shown in Figure 1.

Table 1
Existing Roadway Network Summary

Roadway	Orientation	Arterial Classification[1]	# of Travel Lanes	Posted Speed Limit	Parking	Sidewalks	Bicycle Facilities
Redmond Way	E/W	Principal / Minor Arterial	3-5	30-45	Intermittent	Both Sides	None
Bear Creek Parkway	E/W	Principal Arterial	3	30	South Side	Both Sides	Bear Creek Trail
Cleveland Street	E/W	Collector Arterial	2	25	Both Sides	Both Sides	Sharrows
NE 74th Street	E/W	Private Local Street	2	10	Both Sides	Both Sides	None
NE 76th Street	E/W	Connector Street	2	25	South Side	South Side, Intermittent North Side	None
Leary Way NE	SW/NE	Minor Arterial	2-4	25	Between Cleveland and 80th	Both Sides	None
164th Ave NE	N/S	Minor Arterial (Private s/o 76th)	2-3	10-30	Intermittent (south of 76th)	Both Sides	Bike Lanes (north of 80th) Sharrows (south of 80th)
166th Ave NE	N/S	Collector Arterial (Private s/o 76th)	2-3	10-30	Intermittent (south of 76th)	Both Sides	Bike Lanes (north of 80th) Sharrows (south of 80th)

Transit Service

Transit service to and from the project vicinity is provided by King County Metro Transit and Sound Transit. The *Redmond Town Center* Master Plan Development project is located adjacent to the future Sound Transit Line 2 Light Rail elevated Downtown Redmond Station that is tentatively scheduled to open in 2025. Additionally, the *Redmond Town Center* Master Plan Development project is located approximately 0.5 miles south of the Redond Transit Center. Transit stops along Bear Creek Parkway, 166th Ave NE, and Redmond Way as well as the Redmond Transit Center are served by Sound Transit and King County Metro Routes listed below.

Sound Transit

- 545 (Overlake/Downtown Seattle & Bear Creek P&R)
- 542 (University District)

King County Metro

- 930 (Kingsgate P&R & Redmond Town Center)
- 250 (Avondale-Redmond TC-Kirkland TC-Bellevue TC)
- 224 (Duvall-Redmond TC)
- 221 (Education Hill and Eastgate P&R)

Non-Motorized Transportation Facilities

Pedestrian facilities in the immediate project vicinity include sidewalks along both sides of 164th Ave NE, 166th Ave NE, NE 74th Street, and NE 76th Street, and along the north side of Bear Creek Parkway. NE 74th Street is a pedestrian-only street between 164th Ave NE and 166th Ave NE. Other pedestrian facilities include curb ramps and crosswalks at signalized and unsignalized intersections. Bicycle facilities in the project vicinity include bike sharrows on the public section of 164th Ave NE (south of 80th) and bike lanes on the public section of 166th Ave NE (south of 80th). Additionally, the Redmond Central Connector/Eastrail trail (north side of the site) and Bear Creek multi-use trail (south side of the site) are located adjacent to the project site and provide a protected trail for pedestrians and bicycles.

Crash History

Crash history at the 27 off-site study intersections was analyzed for the 3-year period from 2021 to 2023 (the most recent 3-year period as provided by WSDOT). Summaries of the total and yearly average during this period are provided in Table 2. Summaries of crashes by type over the 3-year period are provided in Table 3. WSDOT crash data is included in Appendix C.

Table 2
Crash Data Summary by Type, January 1, 2021 to December 31, 2023

Study Intersection	2021	2022	2023	3-Year Total Crashes	Average Annual Crash Rate	Daily Entering Vehicles [1]	Crashes per MEV [2]
1. 140th Ave NE/Redmond Way	1	3	5	9	3.00	28,832	0.29
2. 148th Ave NE/Redmond Way	5	9	14	28	9.33	41,257	0.62
3. Willows Road NE/Redmond Way	2	5	5	12	4.00	29,663	0.37
4. West Lake Sammamish Pkwy NE/Redmond Way	7	6	2	15	5.00	32,782	0.42
5. Bear Creek Pkwy/Redmond Way	0	4	1	5	1.67	25,921	0.18
6. Bear Creek Pkwy/161st Ave NE	0	0	0	0	0.00	10,693	0.00
7. West Lake Sammamish Pkwy NE/Leary Way	6	7	10	23	7.67	45,792	0.46
8. 159th Place NE/Leary Way	0	1	0	1	0.33	20,604	0.04
9. Bear Creek Pkwy/Leary Way	2	2	3	7	2.33	26,257	0.24
10. Bear Creek Pkwy/NE 74th Street	1	0	0	1	0.33	16,683	0.05
11. 164th Ave NE/NE 85th Street	0	3	1	4	1.33	17,772	0.21
12. 164th Ave NE/NE 83rd Street	1	1	2	4	1.33	13,485	0.27
13. 164th Ave NE/NE 80th Street	3	2	1	6	2.00	13,168	0.42
14. 164th Ave NE/Redmond Way	3	5	5	13	4.33	18,762	0.63
15. 164th Ave NE/Cleveland Street	1	2	1	4	1.33	8,149	0.45
16. 166th Ave NE/Cleveland Street	1	1	0	2	0.67	7,752	0.24
17. 170th Ave NE/NE 67th Street	0	2	1	3	1.00	15,743	0.17
18. 170th Ave NE/Redmond Way	2	4	8	14	4.56	33,366	0.38
19. Bear Creek Crossing/Redmond Way	2	0	1	3	1.00	28,446	0.10
20. NE 76th Street/Redmond Way	5	0	6	11	3.67	33,416	0.30
21. SR 520 Off Ramp/Redmond Way	6	4	3	13	4.33	32,386	0.37
22. 164th Ave NE/NE 76th St	0	0	1	1	0.33	7,663	0.12
23. 166th Ave NE/NE 76th St	0	0	0	0	0.00	6,871	0.00
24. 164th Ave NE/NE 74th St	1	0	0	1	0.33	3,277	0.28
25. 166th Ave NE/NE 74th St	0	0	0	0	0.00	3,069	0.00
26. 164th Ave NE/Bear Creek Pkwy	0	0	0	0	0.00	14,545	0.00
27. 166th Ave NE/Bear Creek Pkwy	0	2	0	2	0.67	13,861	0.13

Source: WSDOT Crash Data.

[1] Estimated based on assumption that PM peak hour volumes = 10% of daily entering vehicles.

[2] MEV = Million Entering Vehicles.

Table 3
Crash Data Summary by Type, January 1, 2021 to December 31, 2023

Study Intersection	3-Year Total Crashes	Average Annual Crash Rate	Crash Type: Angle (Left/Right)	Angle (T)	Head-On	Other	Parked Veh/Fixed Object	Ped/Bike	Rear End	Sideswipe
1. 140th Ave NE/Redmond Way	9	3.00	0	1	0	0	0	0	0	0
2. 148th Ave NE/Redmond Way	28	9.33	1	5	0	0	0	0	3	0
3. Willows Road NE/Redmond Way	12	4.00	0	1	0	0	1	0	1	1
4. West Lake Sammamish Pkwy NE/Redmond Way	15	5.00	2	1	0	0	0	0	1	1
5. Bear Creek Pkwy/Redmond Way	5	1.67	1	1	0	0	0	0	0	0
6. Bear Creek Pkwy/161st Ave NE	0	0.00	0	0	0	0	0	0	0	0
7. West Lake Sammamish Pkwy NE/Leary Way	23	7.67	0	2	0	0	0	0	6	0
8. 159th Place NE/Leary Way	1	0.33	0	0	0	0	0	0	0	0
9. Bear Creek Pkwy/Leary Way	7	2.33	1	0	0	0	0	0	1	0
10. Bear Creek Pkwy/NE 74th Street	1	0.33	0	0	0	0	0	0	0	0
11. 164th Ave NE/NE 85th Street	4	1.33	0	1	0	0	0	0	0	0
12. 164th Ave NE/NE 83rd Street	4	1.33	0	1	0	0	0	0	0	0
13. 164th Ave NE/NE 80th Street	6	2.00	0	2	0	0	0	0	0	0
14. 164th Ave NE/Redmond Way	13	4.33	1	1	0	0	0	0	2	0
15. 164th Ave NE/Cleveland Street	4	1.33	0	1	0	0	0	0	0	0
16. 166th Ave NE/Cleveland Street	2	0.67	1	0	0	0	0	0	0	0
17. 170th Ave NE/NE 67th Street	3	1.00	0	0	0	0	0	0	0	0
18. 170th Ave NE/Redmond Way	14	4.56	1	2	0	0	0	0	1	0
19. Bear Creek Crossing/Redmond Way	3	1.00	0	0	0	0	0	0	0	0
20. NE 76th Street/Redmond Way	11	3.67	1	1	0	0	0	0	1	0
21. SR 520 Off Ramp/Redmond Way	13	4.33	0	2	0	0	0	0	2	0
22. 164th Ave NE/NE 76th St	1	0.33	0	0	0	0	0	0	0	0
23. 166th Ave NE/NE 76th St	0	0.00	0	0	0	0	0	0	0	0
24. 164th Ave NE/NE 74th St	1	0.33	0	0	0	0	0	0	0	0
25. 166th Ave NE/NE 74th St	0	0.00	0	0	0	0	0	0	0	0
26. 164th Ave NE/Bear Creek Pkwy	0	0.00	0	0	0	0	0	0	0	0
27. 166th Ave NE/Bear Creek Pkwy	2	0.67	0	1	0	0	0	0	0	0

Source: WSDOT Crash Data.

Traffic Volumes

Existing weekday PM peak hour traffic volumes at the study intersections were based on counts conducted in 2023 and 2024. To estimate existing 2025 traffic volumes, a 2 percent annual growth rate was applied to the 2023 and 2024 traffic volumes. Figure 2 illustrates the locations of the off-site study intersections included in this analysis, while Figure 3 illustrates the existing 2025 PM peak hour traffic volumes at the study intersections. The detailed PM peak hour turning movement count sheets are provided in Appendix D.

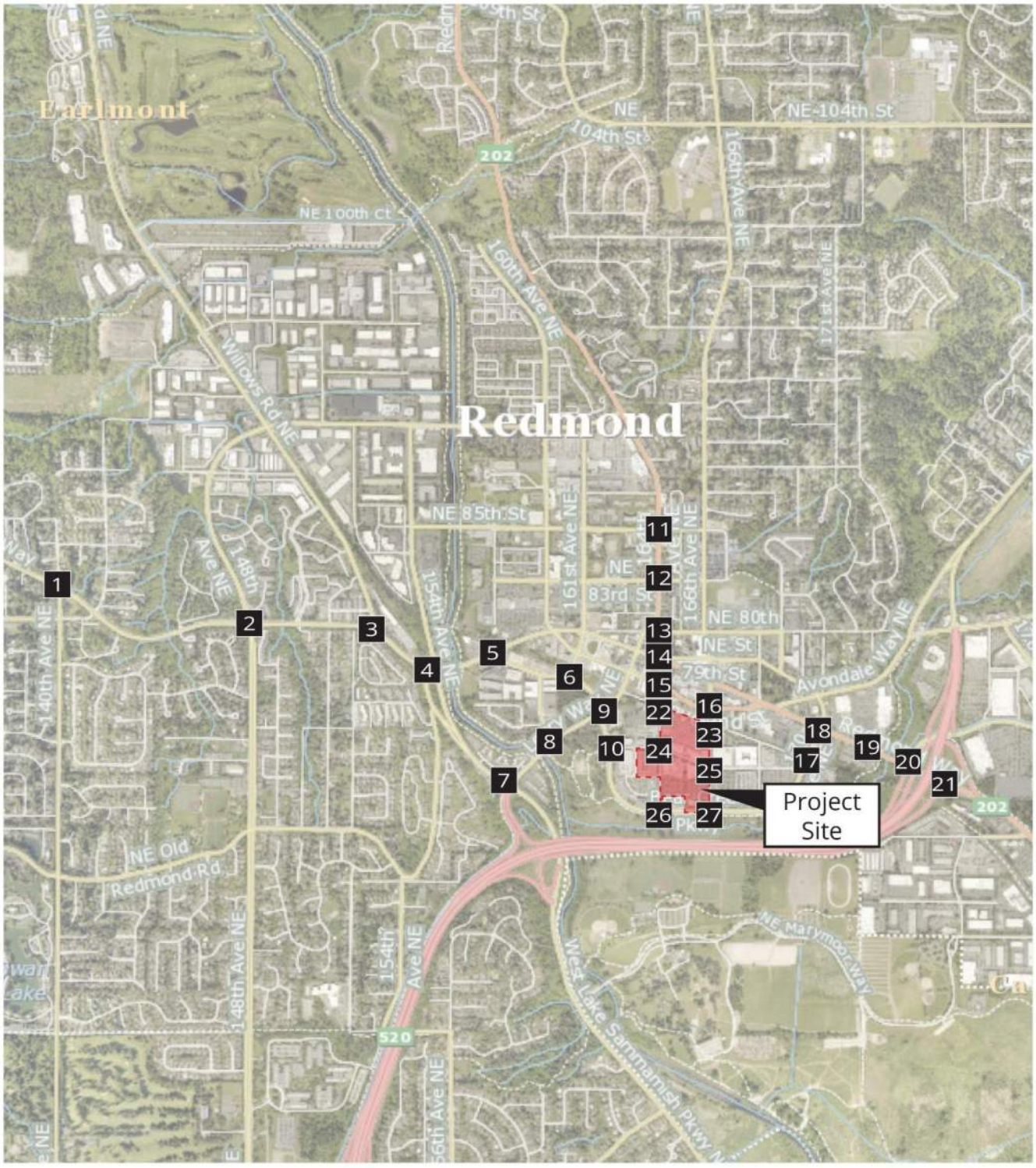


Figure 2: Study Intersections Map

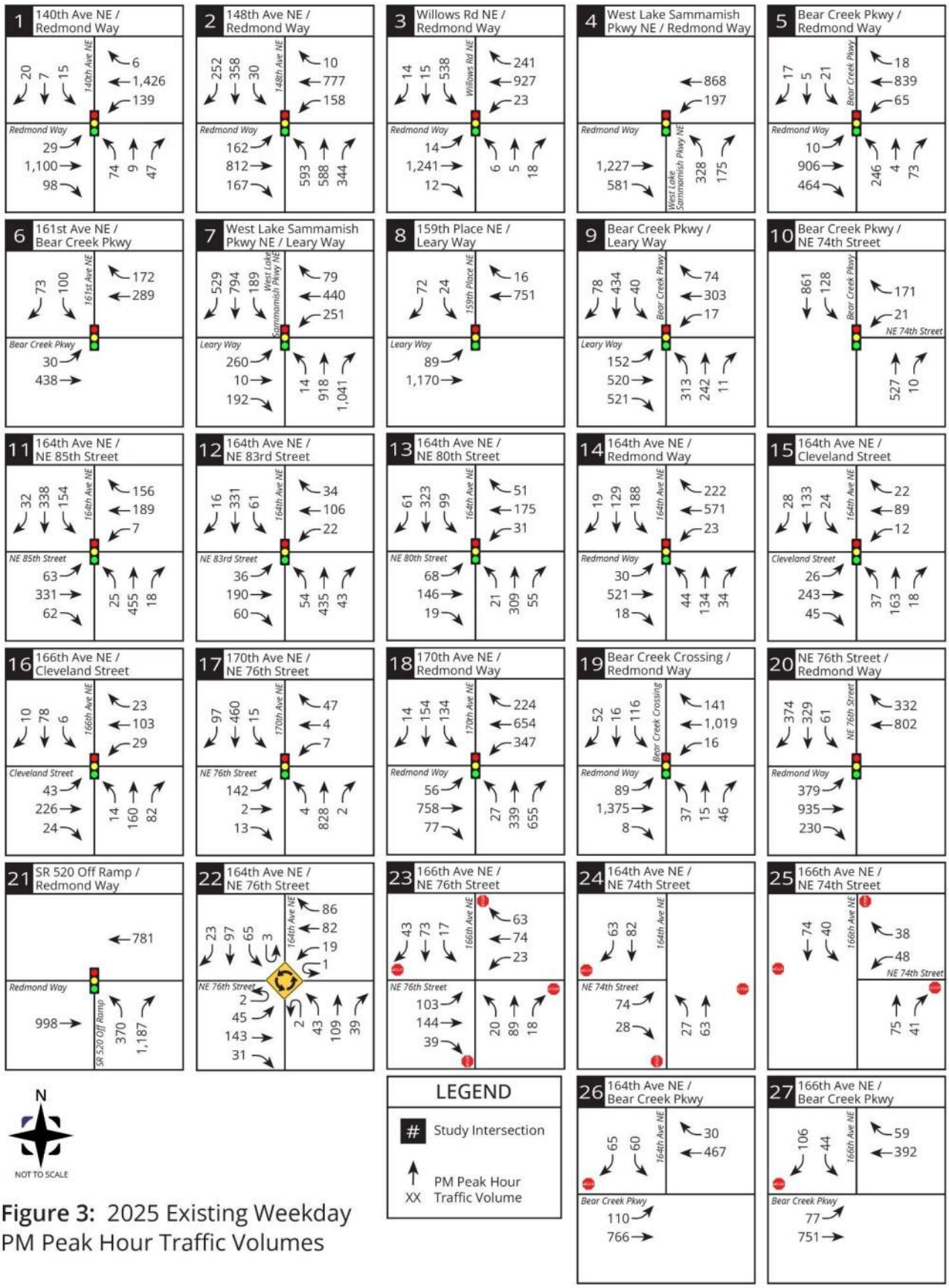


Figure 3: 2025 Existing Weekday PM Peak Hour Traffic Volumes

Intersection Levels of Service

An existing weekday PM peak hour level of service (LOS) analysis was conducted the study intersections. Level of service calculations for intersections were based on the use of *Synchro 12* traffic analysis software. LOS methodology is included in Appendix E. Existing signal timing used in the analysis was based on Synchro files provided by the City of Redmond. The 2025 existing weekday PM peak hour LOS analysis results at the study intersections are summarized in Table 4. The 2025 existing detailed LOS worksheets are included in Appendix E.

Table 4
Existing 2025 Weekday PM Peak Hour LOS Summary

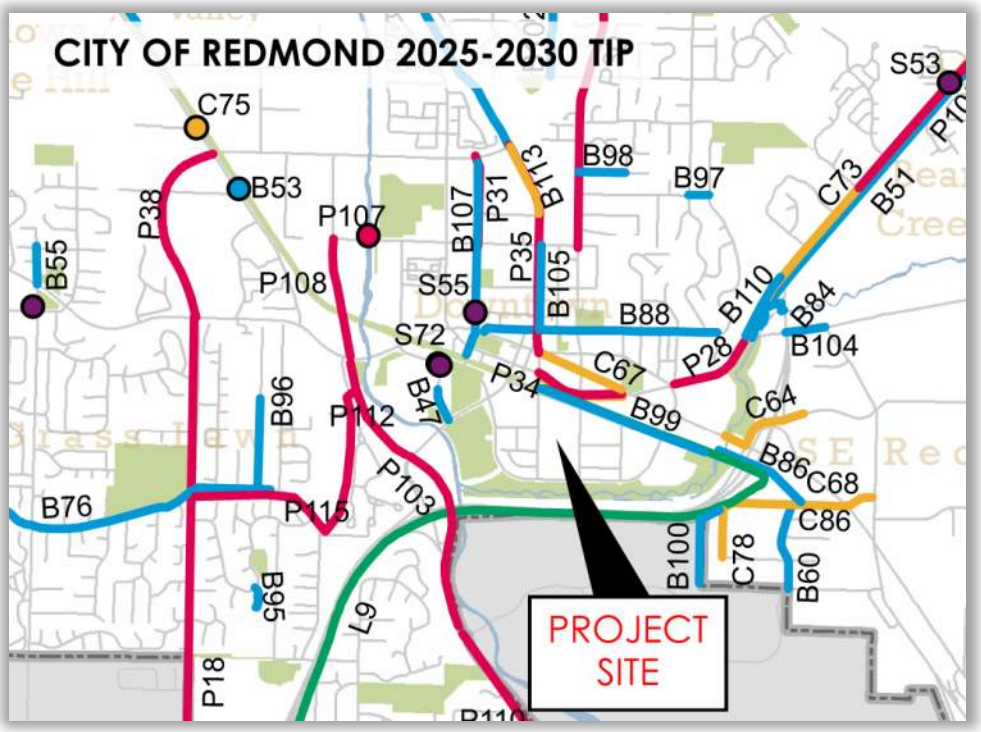
Study Intersection	LOS	Delay (sec)
Signalized Intersections:		
1. 140th Ave NE/Redmond Way	B	17.2
2. 148th Ave NE/Redmond Way	D	47.7
3. Willows Rd NE/Redmond Way	D	37.1
4. West Lake Sammamish Pkwy NE/Redmond Way	B	12.3
5. Bear Creek Pkwy/Redmond Way	B	12.4
6. Bear Creek Pkwy/161st Ave NE	B	16.7
7. West Lake Sammamish Pkwy NE/Leary Way	D	50.3
8. 159th Pl NE/Leary Way	B	14.2
9. Bear Creek Pkwy/Leary Way	D	41.0
10. Bear Creek Pkwy/NE 74th St	B	10.7
11. 164th Ave NE/NE 85th St	C	28.9
12. 164th Ave NE/NE 83rd St	B	15.8
13. 164th Ave NE/NE 80th St	B	18.8
14. 164th Ave NE/Redmond Way	C	20.4
15. 164th Ave NE/Cleveland St	B	18.5
16. 166th Ave NE/Cleveland St	B	11.7
17. 170th Ave NE/NE 76th St	B	10.4
18. 170th Ave NE/Redmond Way	D	45.4
19. Bear Creek Crossing/Redmond Way	C	33.8
20. NE 76th St/Redmond Way	B	13.2
21. SR 520 Off-Ramp/Redmond Way	C	20.6
Roundabout Intersections:		
22. 164th Ave NE/NE 76th St	A	5.5
All-Way Stop-Controlled Intersections:		
23. 166th Ave NE/NE 76th St	B	10.2
24. 164th Ave NE/NE 74th St	A	8.1
25. 166th Ave NE/NE 74th St	A	7.9
Two-Way Stop-Controlled Intersections:		
26. 164th Ave NE/Bear Creek Pkwy		
Eastbound Left-Turn	A	8.9
Southbound Left-Turn	D	25.3
Southbound Right-Turn	B	12.5
27. 166th Ave NE/Bear Creek Pkwy		
Eastbound Left-Turn	A	8.7
Southbound Left-Turn	C	20.5
Southbound Right-Turn	B	12.7

As shown in Table 4, all of the study intersections currently operate at LOS D or better during the weekday PM peak hour.

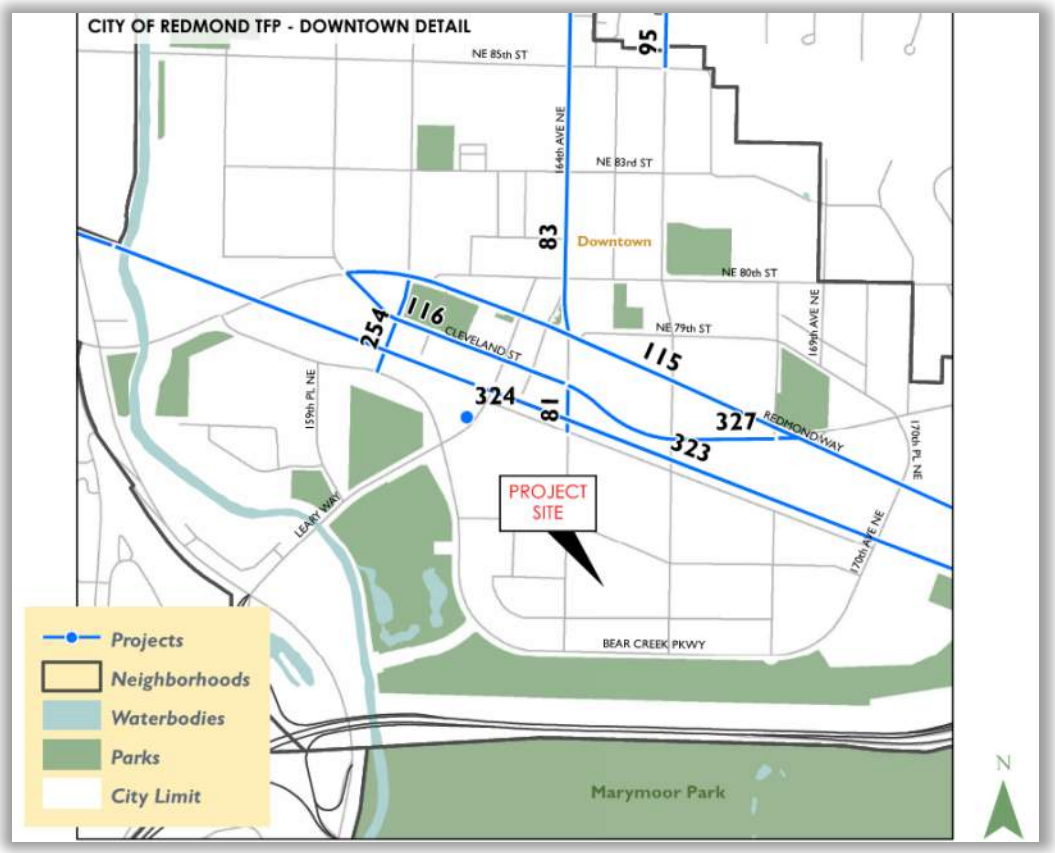
FUTURE CONDITIONS

Planned Transportation Improvements

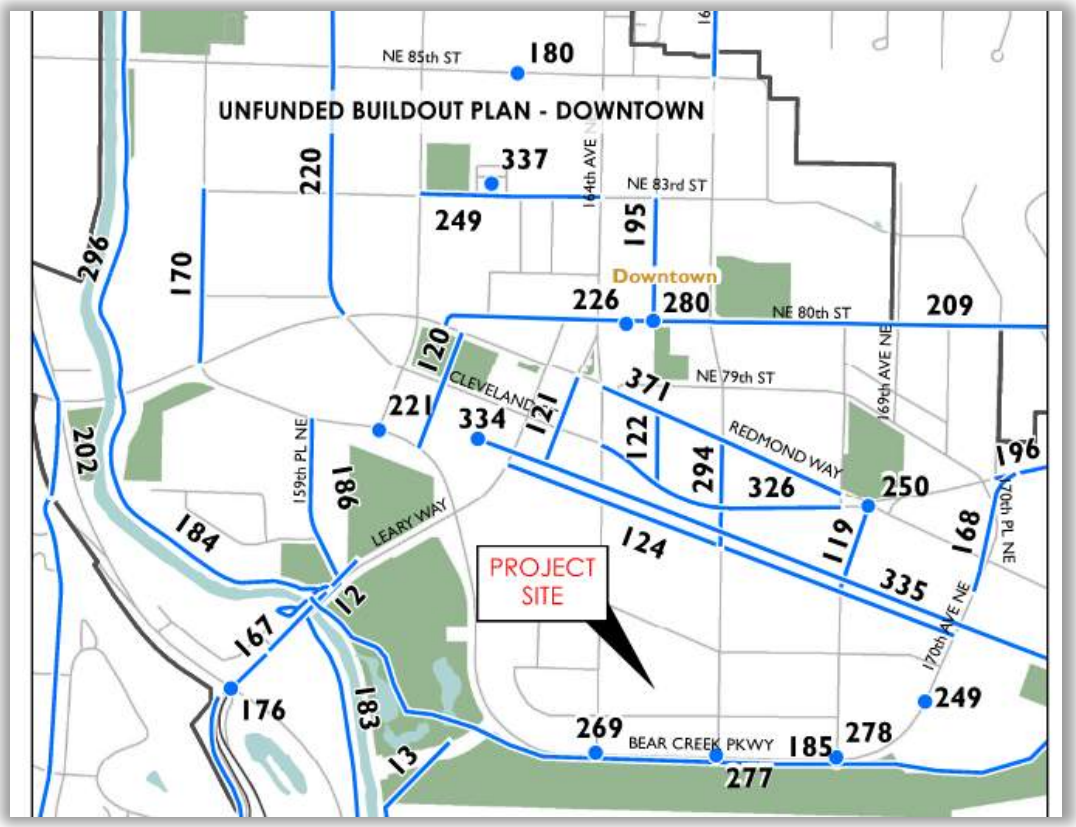
Based on a review of the currently proposed City of Redmond Six Year 2025-2030 Transportation Improvement Program (TIP) and the City of Redmond *Transportation Master Plan* (updated August 2017) including the *Transportation Facilities Plan (2013-2030)* and *Unfunded Buildout Plan*, the following section describes the transportation improvement projects that are planned in the immediate project vicinity. The project maps from the TIP, TFP, and Unfunded Buildout Plan are shown below. There are numerous planned projects in the Downtown area, so the list below only includes those most relevant to the *Redmond Town Center* Master Plan Development project.



- TIP Project B99 (Redmond Central Connector Improvements - Sound Transit Betterments) – This project would implement the ultimate design of the Redmond Central Connector between 164th Avenue NE and the Bear Creek Trail and connection trail to Redmond Way/SR202 at NE 76th St.
- TIP Project P34 (Cleveland Street Sidewalk Rehabilitation - 164th Ave NE to 168th Ave NE) – This project would replace broken and heaved sidewalk panels on Cleveland Street between 164th Avenue NE and 168th Avenue NE. This project will not be necessary if Project B43 (Cleveland Street East Main Street Improvements) is constructed.
- TIP Project P35 (164th Ave NE Sidewalk Rehabilitation - Redmond Way to NE 90th St) – This project would remove and replace sidewalk and street trees on both sides of 164th Ave NE between Redmond Way and NE 90th St.
- TIP Project C67 (Redmond Way Westbound Right Turn Lane) – This project would construct a second westbound lane on Redmond Way that transitions to right turn lane at 164th Ave NE where not completed by adjacent development.



- TFP Project 81 (164th Ave NE Extension) – Construct new 164th Ave NE from NE 76th St to Cleveland St (project complete).
- TFP Project 323 (Redmond Central Connector Segment 1) – This project would complete the Redmond Central Connector between the Bear Creek Trail and Sammamish River Trail.
- TFP Project 324 (Downtown Shared Parking Facility) – This project includes a shared parking facility at the intersection of Leary Wy and Bear Creek Parkway.
- TFP Project 327 (Cleveland Street Sidewalk Rehabilitation) – This project would replace sidewalks between 164th Avenue NE and 168th Avenue NE.



- Unfunded Buildout Plan Project 119 (Avondale Way Extension) – Construct new north/south connection between Redmond Way and NE 76th Street. Improvements include one lane in each direction, sidewalks, bicycle lanes, utilities, street lights, trees, signs, and stormwater treatments.
- Unfunded Buildout Plan Project 124 (NE 76th Street Ped Improvements) – This project would improve NE 76th St from Leary Way to 170th Ave NE to create a lively and active street.
- Unfunded Buildout Plan Project 185 (Bear Creek Trail Widening) – This project would provide an east west route through Downtown for through cyclists by widening the trail to 12 to 14 feet with good sight lines and limited curve radii.
- Unfunded Buildout Plan Project 249 (Flashing Beacon Upgrade) – This project would upgrade smart studs at four locations: (1) 161st Ave NE from NE 87th Street to NE 90th Street; (2) and (3) NE 83rd Street from 161st Ave NE to 164th Ave NE; (4) Bear Creek Pkwy at NE 75th Street.
- Unfunded Buildout Plan Project 269 (Bear Creek Parkway & 164th Ave NE Flashing Beacon) – This project would install flashing beacon at the existing pedestrian crossing from Bear Creek trail and include center median island on east side of intersection.
- Unfunded Buildout Plan Project 277 (Bear Creek Parkway & 166th Ave NE Crosswalk) – This project would install crosswalk on west leg, providing access to Bear Creek trail (project complete).
- Unfunded Buildout Plan Project 278 (Bear Creek Parkway & 168th Ave NE Crosswalk) – This project would install crosswalk on west leg, providing access to Bear Creek trail.
- Unfunded Buildout Plan Project 294 (166th Ave NE Bike Connection) – This project would construct bicycle lanes.

- Unfunded Buildout Plan Project 326 (Cleveland Street East) – This project would improve Cleveland Street to a pedestrian-friendly Main Street.
- Unfunded Buildout Plan Project 334 (Downtown Redmond Light Rail Station) – This project would Construct a light rail station on the East Link line, including station platforms and entryways, and amenities including art, high quality pedestrian access and bicycle parking.
- Unfunded Buildout Plan Project 335 (East Link Phase II) – Connect existing East Link light rail line from Overlake Transit Center Station to Downtown Redmond Station.

Project Trip Generation

Trip generation estimates for weekday daily, AM peak hour, and PM peak hour for the proposed and existing uses were based on methodology documented in the Institute of Transportation Engineers (ITE) *Trip Generation Manual*, 11th Edition for land use codes (LUC) 221 (Multifamily Housing (Mid Rise) - Close to Rail Transit), 820 (Shopping Center (>150k)), and 710 (General Office Building).

The 'Dense Multi-Use Urban' setting was used where applicable in the trip generation estimates. Given recent developments that have added more density to the downtown Redmond area along with new pedestrian facilities providing pedestrian connectivity and the imminent start of light rail service, downtown Redmond would fit within ITE's definition for 'Dense Multi-Use Urban' given below.

> **Dense Multi-Use Urban**—a fully-developed area (or nearly so), with diverse and interacting complementary land uses, good pedestrian connectivity, and convenient and frequent transit. This area type can be a well-developed urban area outside a major metropolitan downtown or a moderate size urban area downtown. The land use mix typically includes office, retail, residential, and often entertainment, hotel, and other commercial uses. The residential uses are typically multifamily or single-family on lots no larger than one-fourth acre. The commercial uses often have little or no setback from the sidewalk. Because the motor vehicle still represents the primary mode of travel to and from the area, there typically is on-street parking and often off-street public parking. The complementary land uses provide the opportunity for short trips within the Dense Multi-Use Urban area, made convenient by walking, biking, or transit. The area is served by significant transit (either rail or bus) that enables a high level of transit usage to and from area development.

Adjustments to the trip generation estimates were also made to account for pass-by trips and internal trips.

Pass-by trips are trips that are made by vehicles that are already on the adjacent streets and make intermediate stops at retail and restaurant uses enroute to a primary destination (e.g. on the way from work to home). Pass-by trips were calculated based on the methodology and studies documented in the ITE *Trip Generation Manual*, 11th Edition. The pass-by data from the ITE manual is included in Appendix F. Since the ITE *Trip Generation Manual* does not include pass-by trip rates for LUC 820 (Shopping Center (>150k)) for the weekday daily and AM peak hour time periods, no pass-by trip adjustments were made to the weekday daily and AM peak hour trip generation estimates which results in more conservative estimates.

Internal trips are made by people making multiple stops within a development without generating new trips onto the adjacent street system. The internal trip adjustments were based on the methodology established in the ITE *Trip Generation Handbook*, 3rd Edition, 2017. Since the ITE *Trip Generation Handbook* does not include a methodology to estimate daily internal trips, no internal trip adjustments were made to the weekday daily trip generation estimates which results in more conservative estimates.

The resulting net new weekday daily, AM peak hour, and PM peak hour vehicular trip generation estimates for Phases 1 to 3 and Full Buildout of the *RTC Master Plan* project are summarized in Table 5. Detailed trip generation estimates are included in Appendix G.

Table 5
Trip Generation Summary

	Scenario 1 (All Residential Option) Net New Trips Generated			Scenario 2 (Residential & Office Option) Net New Trips Generated		
Weekday Time Period	In	Out	Total	In	Out	Total
Phases 1 to 3						
Daily	968	969	1,937	2,050	2,051	4,101
AM Peak Hour	32	152	184	201	106	307
PM Peak Hour	76	2	78	44	152	196
Phases 4 to 5						
Daily	-397	-397	-794	-397	-397	-794
AM Peak Hour	-9	54	45	-11	53	42
PM Peak Hour	-35	-74	-109	-37	-77	-114
Full Buildout (Phases 1 to 5)						
Daily	571	572	1,143	1,653	1,654	3,307
AM Peak Hour	23	206	229	190	159	349
PM Peak Hour	41	-72	-31	7	75	82

As shown in Table 5, Phases 1 to 3 of Scenario 2 (Residential & Office Option) of the proposed *RTC Master Plan* project is estimated to generate the highest number of net new weekday PM peak hour and daily trips. This is higher than Scenario 1 due to the addition of the 270,100-SF of office space on Lot 4 (Building 4IC) in comparison to Scenario 1, which includes primarily residential uses on Lot 4. It is also higher than conditions with Full Buildout of the MDP due to the proposed net reduction in retail square footage of approximately 55,000 SF associated with Phases 4 and 5.

In order to evaluate the highest potential impact for the proposed *RTC Master Plan* project, this traffic analysis evaluates traffic impacts associated with Phases 1 to 3 of Scenario 2 (Residential & Office Option).

It should be noted that although the project trip generation is greater during the AM peak hour than during the PM peak hour, this traffic analysis only evaluates traffic operations during the PM peak hour because background traffic in Redmond has historically been greatest during the PM peak hour. For example, based on a review of historical traffic counts within close proximity to the *RTC Master Plan* site, traffic volumes during the AM peak hour are approximately 40 percent lower than traffic volumes during the PM peak hour.

Transportation Concurrency

A concurrency application was submitted to the City of Redmond for the *RTC Master Plan* project and is included in Appendix H for reference. The concurrency application was based on the Master Plan scenario with the highest net new Mobility Unit (MU) demand, and shows that the proposed *RTC Master Plan* project would generate a net new MU demand of 2,036 mobility units with Phases 1 to 3 of Scenario 2 (Residential & Office Option). The mobility unit demand rates used for the proposed and existing uses were based on MU rates for the Downtown Urban Center.

Using this information, the City will determine whether enough MUs from the six-year program and the Transportation Facility Plan (TFP) can be supplied to meet travel demand from the development at the

time of opening, or within six years. If the MU supply is available to serve the MU demand from the development, the City will issue a certificate of concurrency. It is expected that the current MU supply will accommodate the additional MU demand created by the proposed *RTC Master Plan* project. Therefore, it is anticipated that a certificate of concurrency will be issued for the project.

Project Trip Distribution and Assignment

The distribution of project trips associated with Phases 1 to 3 of Scenario 2 (Residential & Office Option) of the proposed *RTC Master Plan* project were estimated based on 2022 average weekday daily traffic (AWDT) volumes on streets surrounding the downtown area from the City of Redmond and is generally consistent with previously approved projects in the study area. The calculations for estimating trip distribution patterns are included in Appendix I.

The estimated *RTC Master Plan* project trip distribution is illustrated in Figure 4. The PM peak hour net new project trip assignment is shown in Figure 5 (Phases 1 to 3 of Scenario 2). The assignment of project trips was calculated by multiplying the distribution percentages of project traffic (shown in Figure 4) by the proposed trip generation estimates for each phase.

Future Traffic Operations

Future Traffic Volumes

To estimate the future 2030 and 2034 No Action PM peak hour traffic volumes, a 2 percent annual growth rate was applied to the 2025 existing traffic volumes.

Figures 6 and 8 illustrate the future 2030 and 2034 No Action PM peak hour traffic volumes, respectively. To determine the future With Project traffic volumes, the net new project-generated trips (Phases 1 to 3 of Scenario 2) which are shown in Figure 5 were added to the future No Action volumes. The resulting 2030 With Project (Phases 1 to 3 of Scenario 2) and 2034 With Project (Phases 1 to 3 of Scenario 2) PM peak hour traffic volumes at the study intersections are shown in Figures 7 and 9, respectively.

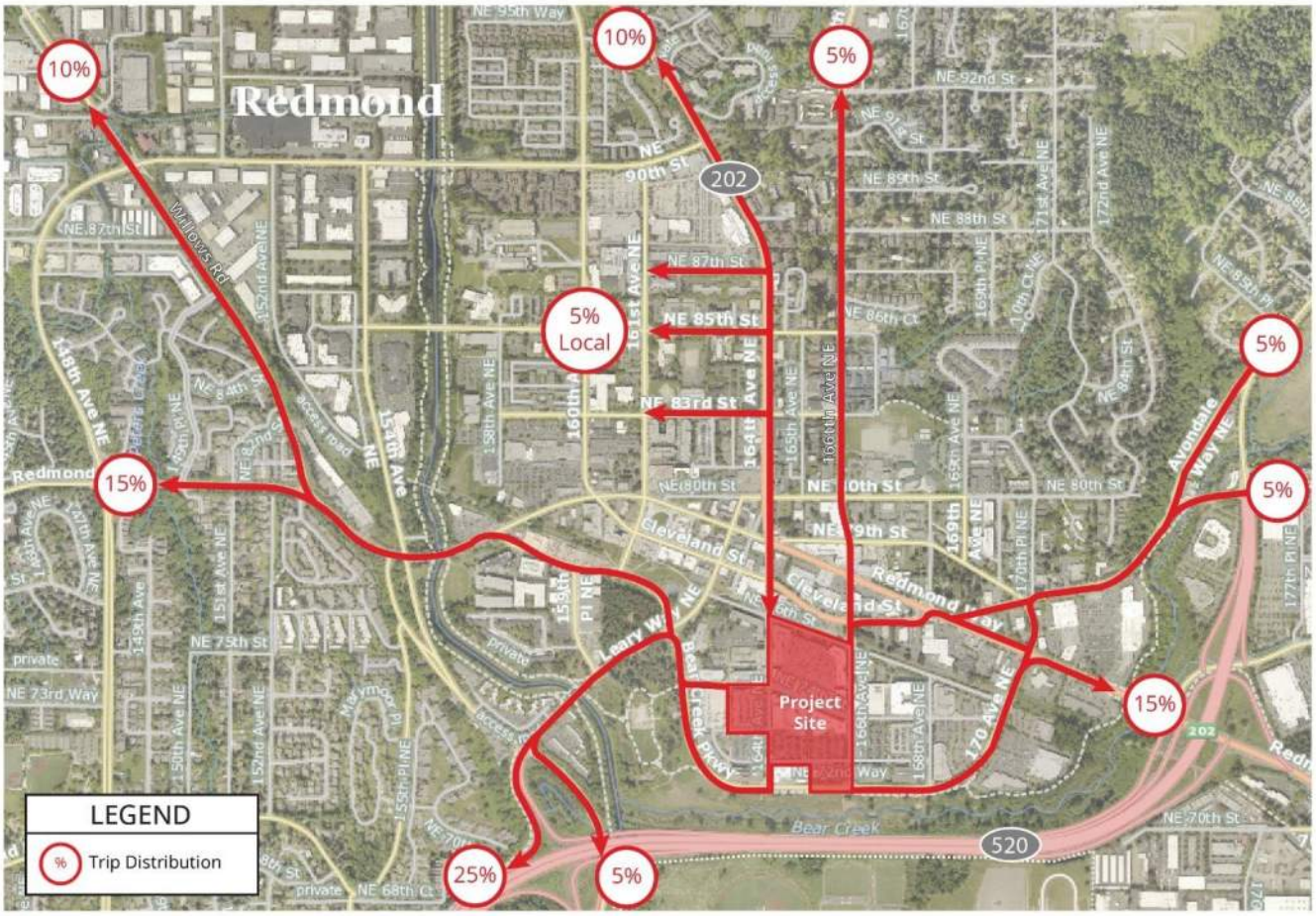


Figure 4: PM Peak Hour Project Trip Distribution

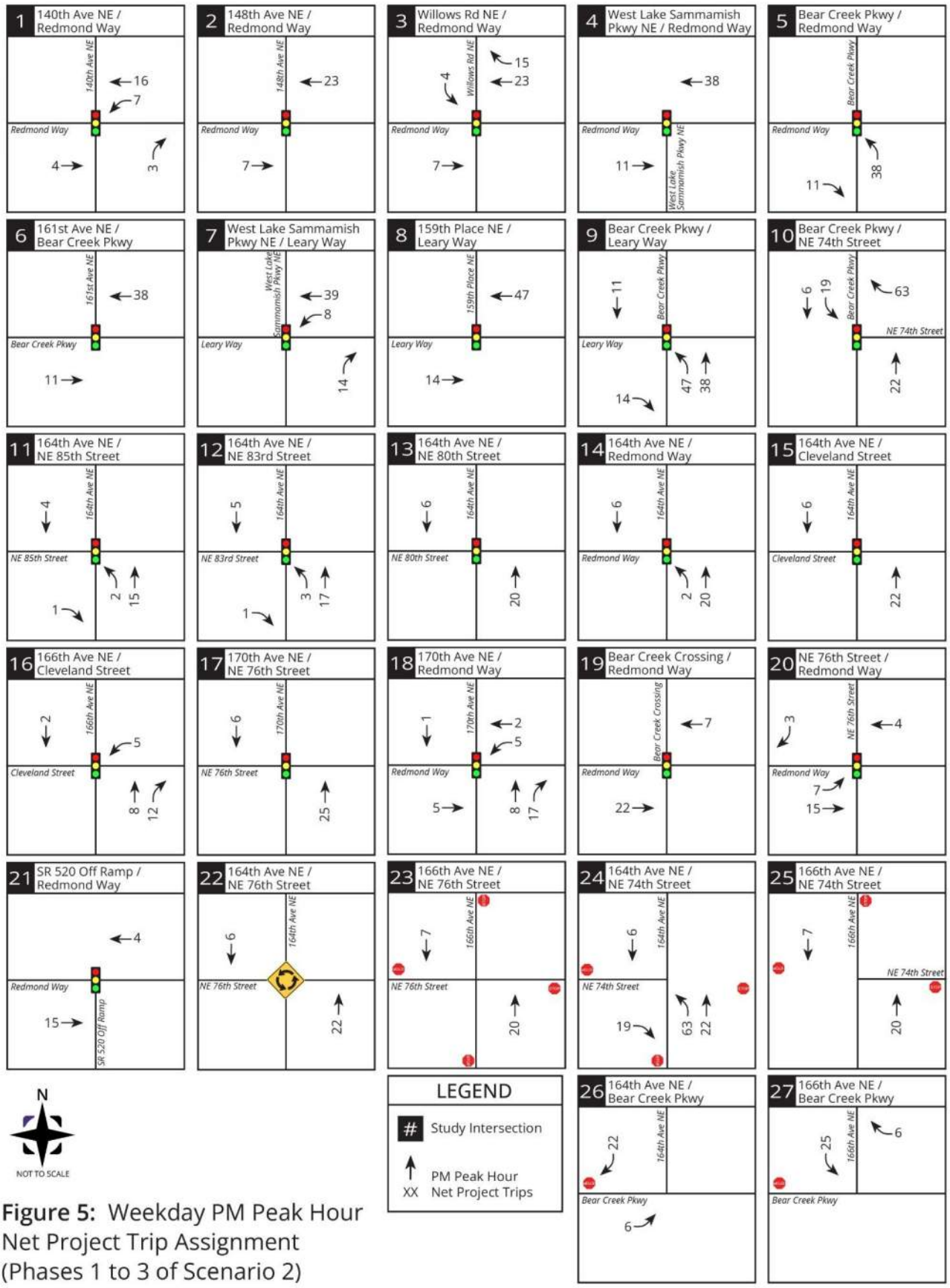


Figure 5: Weekday PM Peak Hour Net Project Trip Assignment (Phases 1 to 3 of Scenario 2)

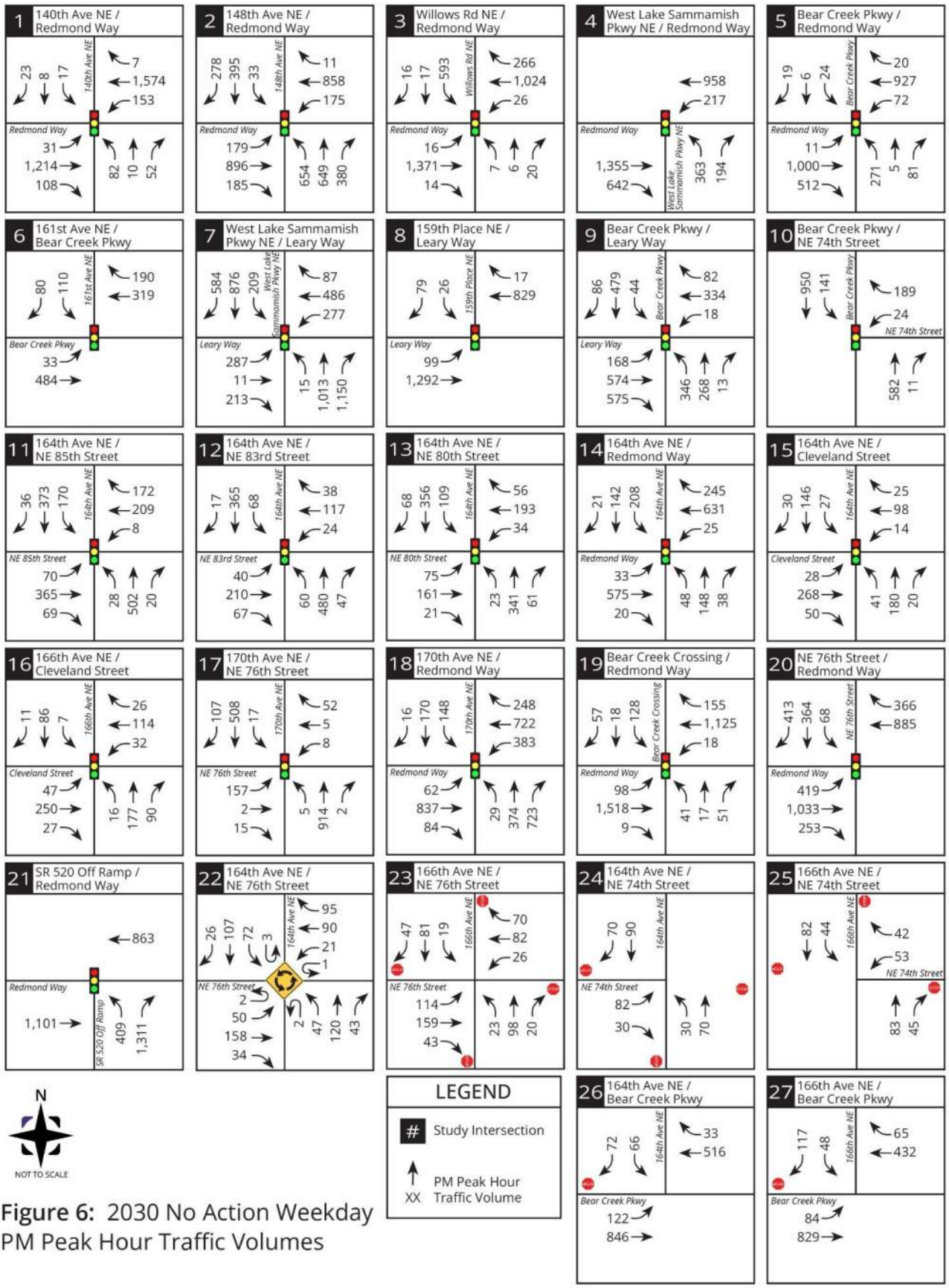


Figure 6: 2030 No Action Weekday PM Peak Hour Traffic Volumes

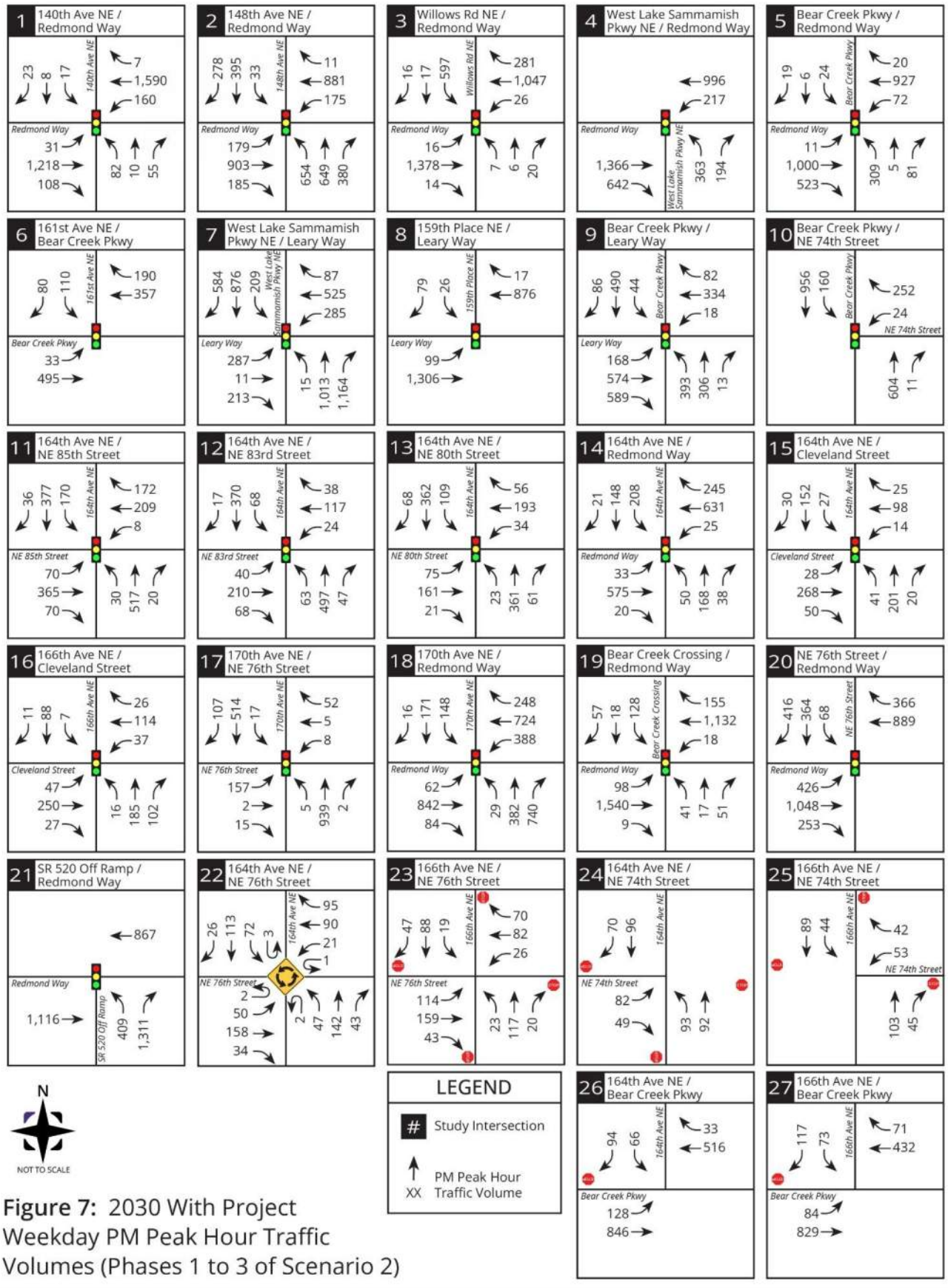


Figure 7: 2030 With Project Weekday PM Peak Hour Traffic Volumes (Phases 1 to 3 of Scenario 2)

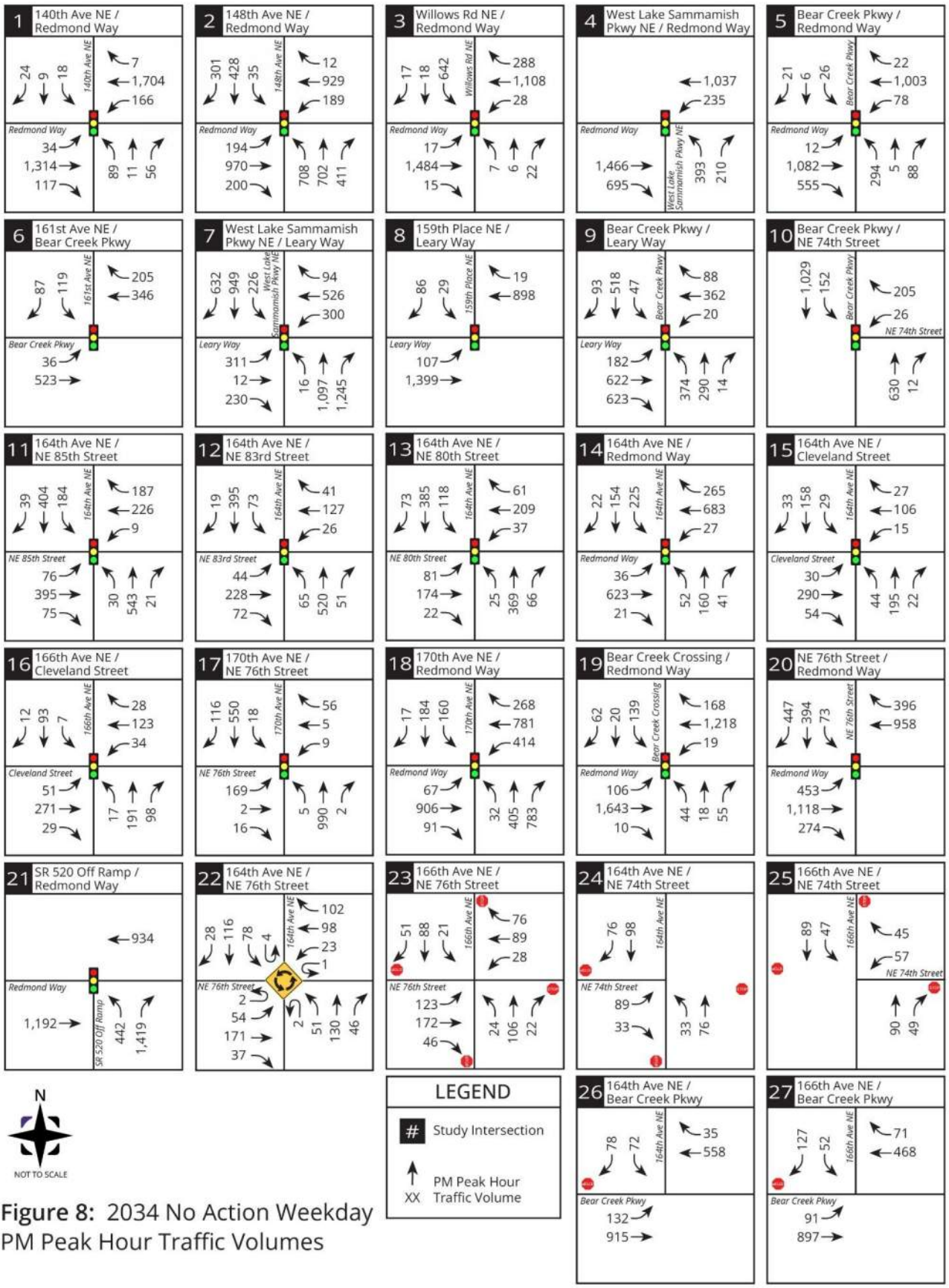


Figure 8: 2034 No Action Weekday PM Peak Hour Traffic Volumes

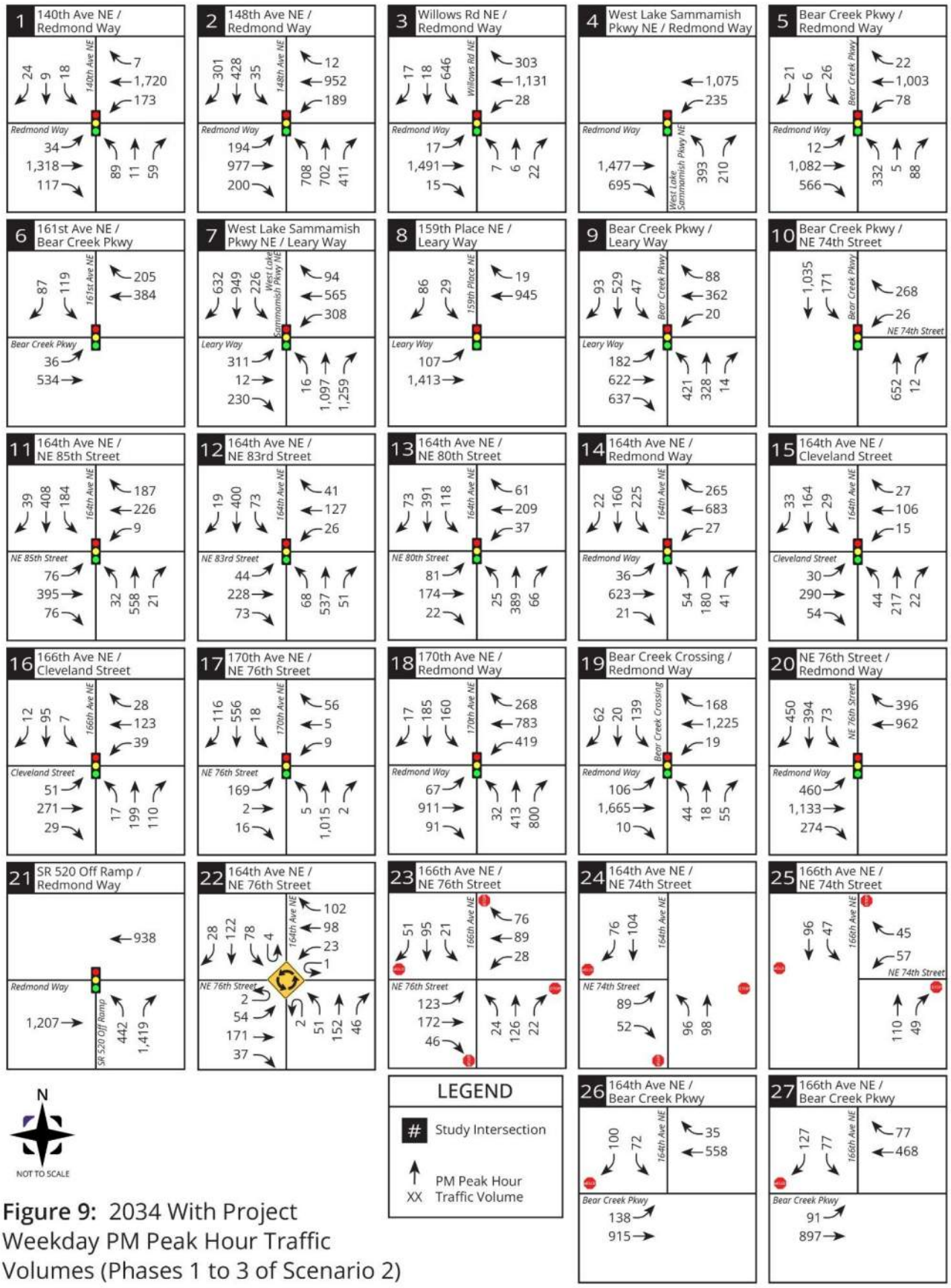


Figure 9: 2034 With Project Weekday PM Peak Hour Traffic Volumes (Phases 1 to 3 of Scenario 2)

Future Level of Service

A future Level of Service (LOS) analysis was conducted at the study intersections for weekday PM peak hour future 2030 and 2034 No Action conditions and for future 2030 and 2034 With Project conditions. Existing signal phasing and channelization at the study intersections were used in the future LOS analyses.

Additionally, splits were optimized at all intersections for the future 2030 and 2034 No Action conditions. The optimized signal timing splits were then used for the corresponding 2030 and 2034 With Project scenarios. The future weekday PM peak hour LOS results at the study intersections without and with the proposed *RTC Master Plan* project are summarized in Tables 6 and 7. The LOS worksheets are included in Appendix E.

Table 6
Future 2030 PM Peak Hour LOS Summary

Study Intersection	No Action LOS	No Action Delay (sec)	With Project Scenario 2 (Phases 1-3) LOS	With Project Scenario 2 (Phases 1-3) Delay (sec)
Signalized Intersections:				
1. 140th Ave NE/Redmond Way	B	19.1	B	19.5
2. 148th Ave NE/Redmond Way	D	53.4	D	52.8
3. Willows Rd NE/Redmond Way	D	40.0	D	40.0
4. West Lake Sammamish Pkwy NE/Redmond Way	B	13.6	B	13.5
5. Bear Creek Pkwy/Redmond Way	B	13.0	B	14.2
6. Bear Creek Pkwy/161st Ave NE	B	18.0	B	19.4
7. West Lake Sammamish Pkwy NE/Leary Way	E	59.0	E	59.3
8. 159th Pl NE/Leary Way	B	17.2	B	17.6
9. Bear Creek Pkwy/Leary Way	D	43.6	D	43.0
10. Bear Creek Pkwy/NE 74th St	B	12.2	B	12.6
11. 164th Ave NE/NE 85th St	C	31.1	C	31.6
12. 164th Ave NE/NE 83rd St	B	16.4	B	16.3
13. 164th Ave NE/NE 80th St	B	19.1	B	19.3
14. 164th Ave NE/Redmond Way	C	29.3	C	29.8
15. 164th Ave NE/Cleveland St	B	19.0	B	19.9
16. 166th Ave NE/Cleveland St	B	12.0	B	12.3
17. 170th Ave NE/NE 76th St	B	11.4	B	11.4
18. 170th Ave NE/Redmond Way	D	54.5	E	57.2
19. Bear Creek Crossing/Redmond Way	D	48.8	D	50.9
20. NE 76th St/Redmond Way	B	18.1	B	18.1
21. SR 520 Off-Ramp/Redmond Way	C	23.5	C	23.6
Roundabout Intersections:				
22. 164th Ave NE/NE 76th St	A	6.0	A	6.2
All-Way Stop-Controlled Intersections:				
23. 166th Ave NE/NE 76th St	B	11.1	B	11.3
24. 164th Ave NE/NE 74th St	A	8.2	A	8.9
25. 166th Ave NE/NE 74th St	A	8.0	A	8.2
Two-Way Stop-Controlled Intersections:				
26. 164th Ave NE/Bear Creek Pkwy				
Eastbound Left-Turn	A	9.2	A	9.2
Southbound Left-Turn	D	30.4	D	30.9
Southbound Right-Turn	B	13.3	B	13.7
27. 166th Ave NE/Bear Creek Pkwy				
Eastbound Left-Turn	A	8.9	A	8.9
Southbound Left-Turn	C	23.0	D	25.7
Southbound Right-Turn	B	13.4	B	13.4

Table 7
Future 2034 PM Peak Hour LOS Summary

Study Intersection	No Action LOS	No Action Delay (sec)	With Project Scenario 2 (Phases 1-3) LOS	With Project Scenario 2 (Phases 1-3) Delay (sec)
Signalized Intersections:				
1. 140th Ave NE/Redmond Way	C	21.8	C	22.3
2. 148th Ave NE/Redmond Way	E	61.2	E	62.4
3. Willows Rd NE/Redmond Way	D	46.3	D	46.7
4. West Lake Sammamish Pkwy NE/Redmond Way	B	13.5	B	13.4
5. Bear Creek Pkwy/Redmond Way	B	13.5	B	14.6
6. Bear Creek Pkwy/161st Ave NE	B	18.9	B	19.9
7. West Lake Sammamish Pkwy NE/Leary Way	E	67.9	E	68.3
8. 159th Pl NE/Leary Way	C	21.9	C	22.7
9. Bear Creek Pkwy/Leary Way	D	49.4	D	48.3
10. Bear Creek Pkwy/NE 74th St	B	13.6	B	14.3
11. 164th Ave NE/NE 85th St	C	34.4	C	35.0
12. 164th Ave NE/NE 83rd St	B	16.9	B	16.8
13. 164th Ave NE/NE 80th St	B	19.9	C	20.1
14. 164th Ave NE/Redmond Way	D	46.6	D	47.2
15. 164th Ave NE/Cleveland St	B	19.5	C	20.4
16. 166th Ave NE/Cleveland St	B	12.2	B	12.5
17. 170th Ave NE/NE 76th St	B	12.1	B	12.2
18. 170th Ave NE/Redmond Way	E	64.3	E	67.4
19. Bear Creek Crossing/Redmond Way	E	65.9	E	69.1
20. NE 76th St/Redmond Way	C	22.9	C	22.9
21. SR 520 Off-Ramp/Redmond Way	C	29.5	C	29.7
Roundabout Intersections:				
22. 164th Ave NE/NE 76th St	A	6.4	A	6.6
All-Way Stop-Controlled Intersections:				
23. 166th Ave NE/NE 76th St	B	11.8	B	12.2
24. 164th Ave NE/NE 74th St	A	8.4	A	9.0
25. 166th Ave NE/NE 74th St	A	8.2	A	8.3
Two-Way Stop-Controlled Intersections:				
26. 164th Ave NE/Bear Creek Pkwy				
Eastbound Left-Turn	A	9.4	A	9.5
Southbound Left-Turn	E	36.5	E	37.2
Southbound Right-Turn	B	14.0	B	14.5
27. 166th Ave NE/Bear Creek Pkwy				
Eastbound Left-Turn	A	9.1	A	9.1
Southbound Left-Turn	D	25.9	D	29.5
Southbound Right-Turn	B	14.2	B	14.2

The City of Redmond uses the following guidelines in determining whether mitigation is required at specific intersections:

- If the intersection will operate at LOS D or better in the forecasted year with the proposed project, no mitigation is required.
- If the intersection will operate at LOS E/F in the forecasted year with the proposed project, and the addition of the project traffic decreases the LOS, mitigation may be required to alleviate project impacts.

As shown in Table 6, all study intersections are expected to operate at LOS D or better in 2030 without or with the project (Phases 1 to 3 of Scenario 2) during the weekday PM peak hour except for intersections 7 and 18. A discussion of project impacts at these intersections is included below.

7. West Lake Sammamish Pkwy / Leary Way (LOS E with or without project) – The proposed project is anticipated to add 61 net new PM peak hour trips to the intersection with Phases 1 to 3 of Scenario 2 (Residential & Office Option) of the proposed *RTC Master Plan* project (1.2% of 5,269 total entering vehicular traffic at the intersection). Given the relatively low project impact (61 trips, + 0.3 seconds of delay, and 1.2% of total traffic), no project mitigation is proposed at this intersection.

18. 170th Ave NE / Redmond Way (LOS E with project) – The WSDOT LOS standard at this intersection is LOS E mitigated. Therefore, no mitigation is proposed.

As shown in Table 7, all study intersections are expected to operate at LOS D or better in 2034 without or with the project (Phases 1 to 3 of Scenario 2) during the weekday PM peak hour except for intersections 2, 7, 18, 19, and 26. A discussion of project impacts at these intersections is included below.

2. 148th Ave NE / Redmond Way (LOS E with or without project) – The proposed project is anticipated to add 30 net new PM peak hour trips to the intersection with Phases 1 to 3 of Scenario 2 (Residential & Office Option) of the proposed *RTC Master Plan* project (0.6% of 5,109 total entering vehicular traffic at the intersection). Given the relatively low project impact (30 trips, + 1.2 seconds of delay, and 0.6% of total traffic), no project mitigation is proposed at this intersection.

7. West Lake Sammamish Pkwy / Leary Way (LOS E with or without project) – The proposed project is anticipated to add 61 net new PM peak hour trips to the intersection with Phases 1 to 3 of Scenario 2 (Residential & Office Option) of the proposed *RTC Master Plan* project (1.1% of 5,699 total entering vehicular traffic at the intersection). Given the relatively low project impact (61 trips, + 0.4 seconds of delay, and 1.1% of total traffic), no project mitigation is proposed at this intersection.

18. 170th Ave NE / Redmond Way (LOS E with or without project) – The WSDOT LOS standard at this intersection is LOS E mitigated. Therefore, no mitigation is proposed.

19. Bear Creek Crossing / Redmond Way (LOS E with or without project) – The WSDOT LOS standard at this intersection is LOS E mitigated. Therefore, no mitigation is proposed.

26. 164th Ave NE / Bear Creek Parkway (Southbound Left-Turn is LOS E with or without project) – The proposed project is anticipated to add 28 net new PM peak hour trips to the intersection with Phases 1 to 3 of Scenario 2 (Residential & Office Option) of the proposed *RTC Master Plan* project (1.5% of 1,818 total entering vehicular traffic at the intersection). Given the relatively low project impact (28 trips, + 0.7 seconds of delay, and 1.5% of total traffic), no project mitigation is proposed at this intersection.

MITIGATION

The following measures are identified to mitigate the transportation impacts of the proposed *RTC Master Plan* project.

Frontage/Access/Multimodal Improvements. The proposed *RTC Master Plan* project would construct the following frontage/access/multimodal improvements:

- Phase 2
  - Re-channelization of 164th Ave NE and 166th Ave NE (between NE 76th Street and Bear Creek Parkway) to accommodate a new bike lane in one direction and shared lane markings in the other direction.
  - Re-channelization of NE 74th Street (between Bear Creek Parkway and 164th Ave NE) to accommodate a new bike lane in one direction and shared lane markings in the other direction.
  - Reconstruct existing parking lot drive aisle along the south side of Phase 2 to create a new NE 72nd Way private roadway (between 164th Ave NE and 166th Ave NE) including a raised mid-block pedestrian crossing.
  - Reconstruct existing parking lot drive aisle along the north side of Phase 2 to create a new NE 73rd Way private roadway (between 164th Ave NE and 166th Ave NE) including a raised mid-block pedestrian crossing.
  - Construct a publicly accessible linear plaza connecting NE 73rd Way with NE 72nd Way.
- Phase 3
  - Add on-street parking along a portion of NE 72nd Way.
  - Construct a new enhanced mid-block crossing on Bear Creek Parkway (mid-way between 164th Ave NE and 166th Ave NE).
  - Construct a publicly accessible linear plaza connecting NE 72nd Way with Bear Creek Parkway.
- Phases 4 and 5
  - Pedestrian/plaza improvements on NE 74th Street between 164th Ave NE and 166th Ave NE (pedestrian only street).
  - Intersection improvements (pedestrian improvements and potential raised intersection) at the following intersections:
    - 164th Ave NE / NE 74th Street
    - 166th Ave NE / NE 74th Street
    - 166th Ave NE / NE 76th Street

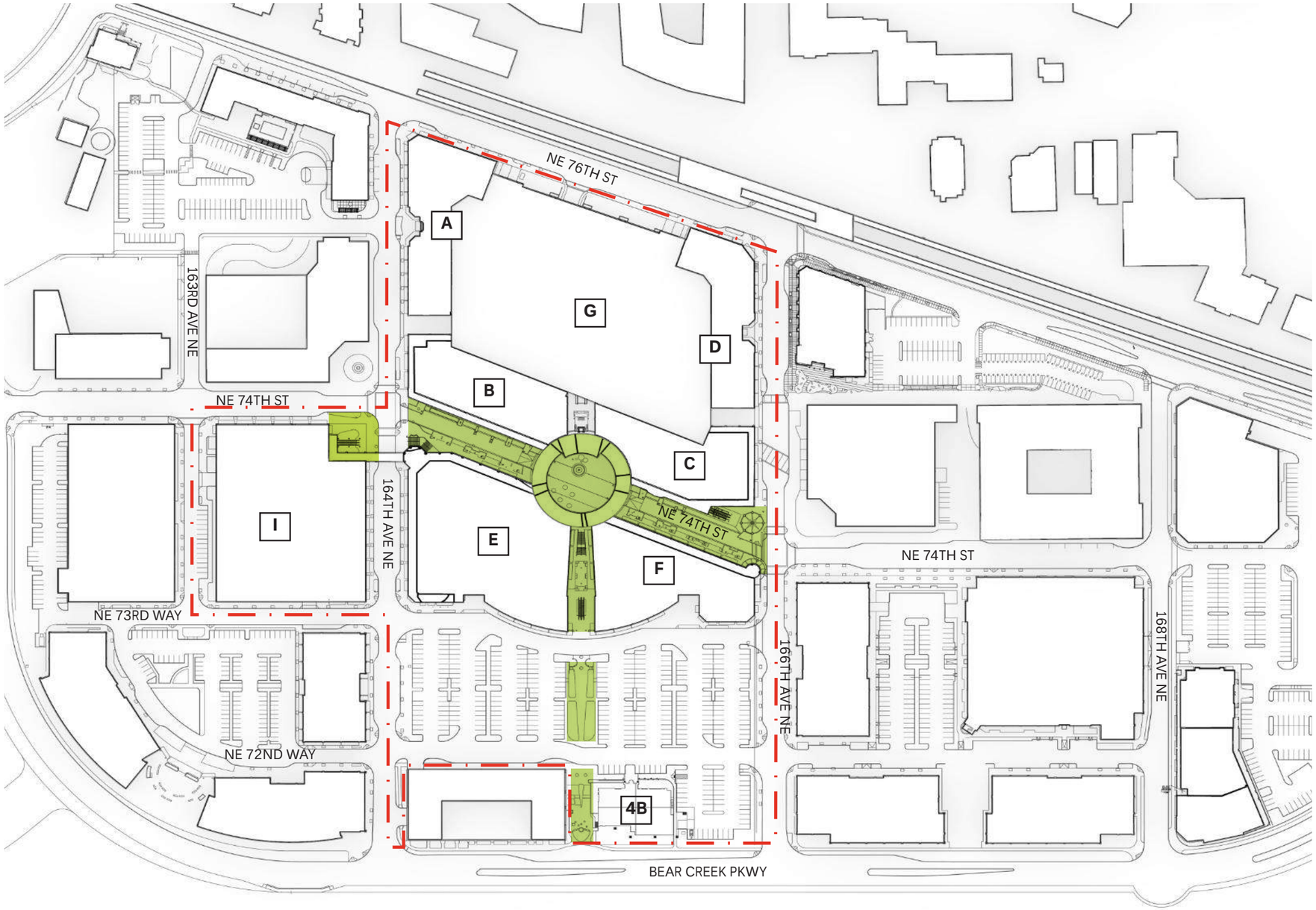
Off-Site Improvements. Based on the results of the analysis shown in this report, no project-specific off-site transportation mitigation is proposed for concurrency or SEPA purposes.

Transportation Impact Fees. Long-term traffic impacts in the City of Redmond are mitigated by the projects included in the City's Transportation Facilities Plan (TFP). The TFP projects are funded through the payment of City of Redmond transportation impact fees. Based on this process, a fee is assessed upon a development to pay for a proportionate share of the cost of public facilities needed to serve new growth and development. The final impact fee calculation will be based on the rates and project size in effect at the time of building permit issuance for each building within the Master Plan.

Appendix A

Site Plan

EXISTING PROJECT DATA SUMMARY



EXISTING MASTERPLAN
NTS

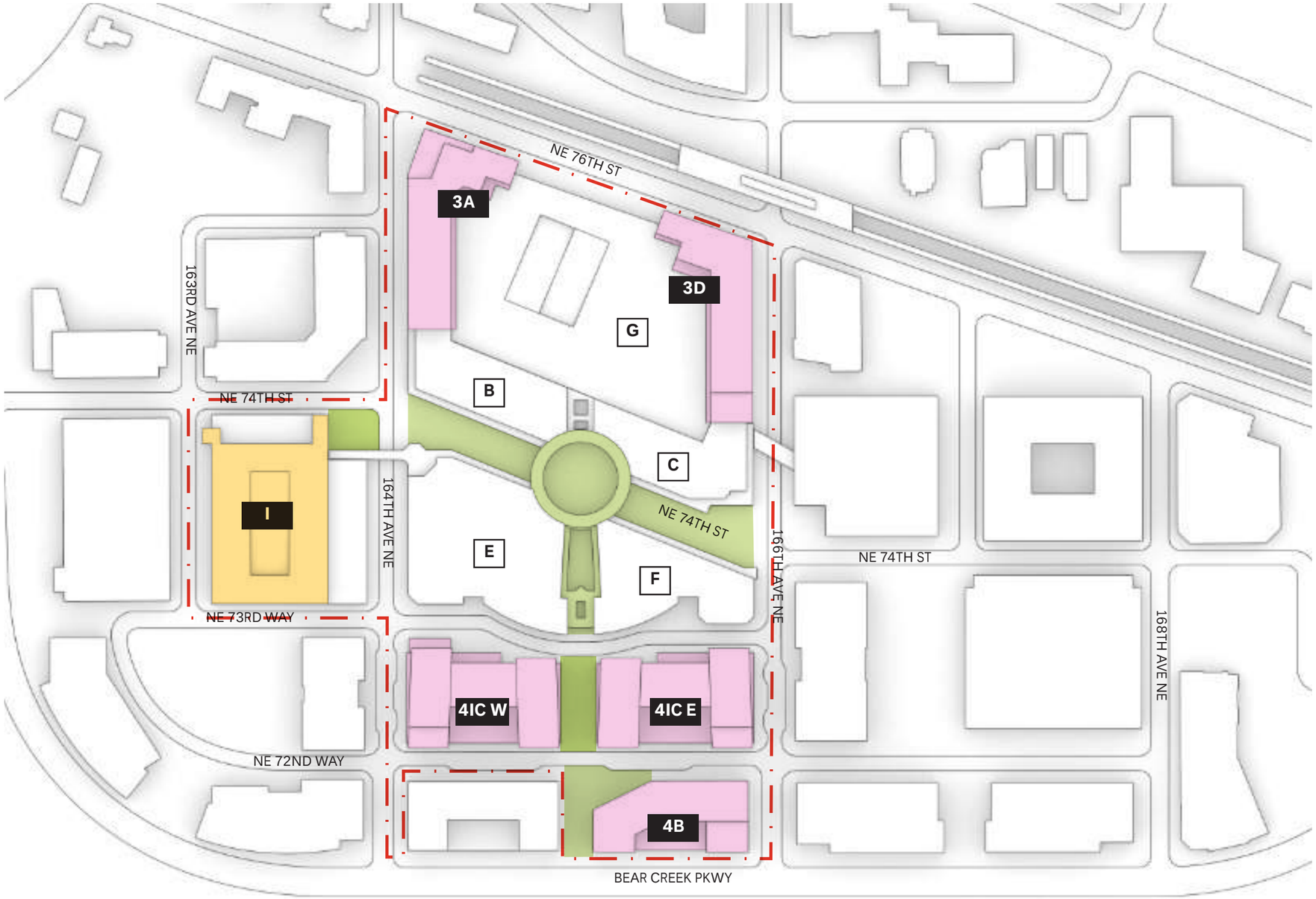
LEGEND

- PROJECT BOUNDARY
- # EXISTING BUILDING
- EXISTING GROUND LEVEL PUBLIC OPEN SPACE

BLDG	Ground Level		Upper Level	Total
	Pedestrian-Oriented Uses	Commercial Uses	Commercial Uses	
A	11,381 SF	12,070 SF	24,348 SF	47,799 SF
B	25,095 SF	0 SF	22,928 SF	48,023 SF
C	23,885 SF	0 SF	22,243 SF	46,128 SF
D	14,763 SF	5,501 SF	21,023 SF	41,287 SF
E	48,635 SF	11,237 SF	54,844 SF	114,716 SF
F	23,532 SF	7,848 SF	29,464 SF	60,844 SF
I	5,881 SF	20,577 SF	—	26,458 SF
4B	8,738 SF	0 SF	—	8,738 SF

Total = 393,993 SF

PROPOSED MASTERPLAN - ALL RESIDENTIAL OPTION



PROPOSED MASTERPLAN
NTS

LEGEND

- PROPOSED MPD BOUNDARY

SITE AREA: 934,915 SQUARE FEET OR 21,4627 ACRES

3A NEW BUILDING 3A
- 7 STORY MIXED-USE RESIDENTIAL

3D NEW BUILDING 3D
- 7 STORY MIXED-USE RESIDENTIAL

4IC NEW BUILDINGS 4IC
- TWO NEW 12 STORY MIXED-USE RESIDENTIAL

OR

- (1) 12 STORY MIXED-USE RESIDENTIAL AND (1) 12 STORY MIXED-USE OFFICE

4B NEW BUILDING 4B
- 7 STORY RESIDENTIAL

I EXISTING I GARAGE ADDITION
- 2 STORY ADDITION TO EXISTING 2 STORY PARKING GARAGE
74TH STREET
- FUTURE STREET AND PLAZA IMPROVEMENTS

NEW BUILDINGS ADDED OR MODIFIED

EXISTING BUILDINGS

NEW/ MODIFIED GROUND LEVEL PUBLIC OPEN SPACE

Exhibit E

BUILDING DATA MATRIX AND UNIT TYPE

DEVELOPMENT AREA NOTES:

- Square Footage and Unit Count numbers in this table below are approximate and based on the conceptual level of design. Maximum “Not-To-Exceed” density shall apply to the metrics used in the TIA for the project. TIA numbers took the above approximate figures, grossed them up by 5-10%, and then rounded them to create a conservative estimate of the total development impact and allow for appropriate flexibility as design is completed.
- Pedestrian Oriented Use Square footage requirements are outlined in the Development Agreement.
- New Mixed-use Residential buildings include a mix of Pedestrian Generating Uses as depicted on the plans on page 15 of the MPD, and in the appendix.
- Unit Type and Counts are estimates only, and subject to change at SPE, subject to EAAH requirements and the maximum density thresholds established by this MPD and the TIA.

PHASE	BLDG	COMMERCIAL RETAIL	OFFICE		RESIDENTIAL			AMENITY	SERVICES	CIRC	TERRACE	TOTAL BLDG AREA	PARKING		
		AREA	LOBBY AREA	OFFICE AREA	UNITS	AREA	LEASING AREA	AREA	AREA	AREA	AREA	LESS PARKING AND TERRACE	STALLS	AREA	RESI / OFFICE RATIO
PHASE 01	I GARAGE	-	-	-	-	-	-	-	-	1,440	-	0	284	107,060	-
PHASE 02 ALL RESIDENTIAL OPTION	4IC - RESI (WEST)	11,820	-	-	252	201,350	2,570	11,020	21,720	44,020	12,060	292,500	192	86,320	0.74 / UNIT
	4IC - RESI (EAST)	11,810	-	-	252	201,350	2,570	21,590	21,780	44,020	12,060	303,050	192	86,300	0.74 / UNIT
PHASE 02 RESIDENTIAL AND OFFICE OPTION	4IC - OFFICE (WEST)	10,530	4,410	245,530	-	-	-	6,970	28,900	24,440	15,240	320,780	255	107,110	1.04 / 1,000 SF
	4IC - RESI (EAST)	11,810	-	-	252	201,350	2,570	21,590	21,780	44,020	12,060	303,050	192	86,300	0.74 / UNIT
PHASE 03	4B - RESI	2,690	-	-	136	110,570	1,870	9,070	7,620	18,820	9,820	150,640	102	48,330	0.75 / UNIT
PHASE 04	3A - RESI	16,070	-	-	148	119,830	1,530	7,340	9,360	21,340	6,860	175,470	110	28,090	0.74 / UNIT
PHASE 05	3D - RESI	14,800	-	-	140	113,300	1,670	7,600	7,330	18,980	7,670	163,680	104	25,600	0.74 / UNIT
TOTAL RESIDENTIAL OPTION		57,190	-	-	928	746,400	10,210	56,620	67,810	148,620	48,470	1,072,930	984	381,700	
TOTAL RESIDENTIAL AND OFFICE OPTION		55,900	4,410	245,530	676	545,050	7,640	52,570	74,990	129,040	51,650	1,101,210	1,047	402,490	

UNIT TYPE AND COUNT | ALL RESIDENTIAL OPTION

UNIT TYPE	4IC All RESI		4B		3A		3D	
	COUNT	PERCENT	COUNT	PERCENT	COUNT	PERCENT	COUNT	PERCENT
STUDIO / OPEN 1	174	34.5	46	33.8%	48	32.4%	47	33.6%
1 BED / 1 BED+	228	45.2	62	45.6%	68	45.9%	65	46.4%
2 BEDS / 2 BEDS+	72	14.3	19	14.0%	24	16.2%	20	14.3%
3 BEDS	30	6.0	9	6.6%	8	5.4%	8	5.7%
TOTAL	504	100%	136	100%	148	100%	140	100%

UNIT TYPE AND COUNT | RESIDENTIAL AND OFFICE OPTION

UNIT TYPE	4IC RESI+OFFICE		4B		3A		3D	
	COUNT	PERCENT	COUNT	PERCENT	COUNT	PERCENT	COUNT	PERCENT
STUDIO / OPEN 1	87	34.5	46	33.8%	48	32.4%	47	33.6%
1 BED / 1 BED+	114	45.2	62	45.6%	68	45.9%	65	46.4%
2 BEDS / 2 BEDS+	36	14.3%	19	14.0%	24	16.2%	20	14.3%
3 BEDS	15	6.0	9	6.6%	8	5.4%	8	5.7%
TOTAL	252	100%	136	100%	148	100%	140	100%

PROPOSED GROUND LEVEL



PROPOSED GROUND LEVEL - ALL RESIDENTIAL SCHEME

0' 100' 200'



PROPOSED GROUND LEVEL - RESIDENTIAL AND OFFICE SCHEME

0' 100' 200'

LEGEND

- PROJECT BOUNDARY
- # EXISTING BUILDING
- # PROPOSED NEW OR MODIFIED EXISTING BUILDING
- PARKING ENTRY
- LOADING ENTRY
- PEDESTRIAN ENTRY
- COMMERCIAL RETAIL
- COMMON RESI/OFFICE AMENITY
- RESIDENTIAL
- LEASING / MAIL
- CIRCULATION
- PARKING
- SERVICE
- OFFICE

Appendix B

Building Area and Unit Count Assumptions by Phase

Exhibit E

RTC Master Plan
Land Use Assumptions for Traffic Analysis

Existing Land Uses to be Removed

Land Use	Existing	PHASE 1 DEMO	PHASE 2 DEMO	PHASE 3 DEMO	PHASE 4 DEMO	PHASE 5 DEMO	TOTAL EXISTING REMAINING
Retail - GLA	393,993	0	0	-8,738	-47,799	-41,287	**296,169**

Proposed Land Uses - Scenario 1 (All Residential Option)

	Actual Estimates						Rounded for Master Plan & TIA					
Land Use	**PHASE 1 [1]**	**PHASE 2**	**PHASE 3**	**PHASE 4**	**PHASE 5**	**TOTAL PROPOSED**	**PHASE 1 [1]**	**PHASE 2**	**PHASE 3**	**PHASE 4**	**PHASE 5**	**TOTAL PROPOSED**
Residential - DU												
Buildings 4IC West - Mixed-Use Residential		252				252	0	275	0	0	0	275
Buildings 4IC East - Mixed-Use Residential		252				252	0	275	0	0	0	275
Building 4B - Mixed-Use Residential			136			136	0	0	150	0	0	150
Building 3A - Mixed-Use Residential				148		148	0	0	0	165	0	165
Building 3D - Mixed-Use Residential					140	140	0	0	0	0	155	155
	0	504	136	148	140	**928**	0	550	150	165	155	**1,020**
Retail - GLA												
Buildings 4IC West - Mixed-Use Residential		11,820				11,820	0	13,000	0	0	0	13,000
Buildings 4IC East - Mixed-Use Residential		11,810				11,810	0	13,000	0	0	0	13,000
Building 4B - Mixed-Use Residential			2,690			2,690	0	0	3,000	0	0	3,000
Building 3A - Mixed-Use Residential				16,070		16,070	0	0	0	17,700	0	17,700
Building 3D - Mixed-Use Residential					14,800	14,800	0	0	0	0	16,300	16,300
	0	23,630	2,690	16,070	14,800	**57,190**	0	26,000	3,000	17,700	16,300	**63,000**

Sources:
1. Proposed Master Plan building areas based on Master Plan provided by GGLO on 3/12/25.
2. Existing uses to be demo'd provided by Patrick Woodruff (Hines) 9/14/23.

Notes:
[1] Phase 1 is parking addition to Building I only, no other new land uses are proposed.

Gross Floor Area (GFA). The area included within the surrounding exterior walls of a building or portion thereof, exclusive of vent shafts, elevator shafts, stairwells, courts, second-story atriums, and lobbies.

Effective on: 4/16/2011

Gross Leasable Area (GLA). The total floor area that is designated for a tenant's occupancy, exclusive of common areas shared with other tenants, such as utility rooms, stairwells, and malls.

(Ord. 2803)

Effective on: 10/17/2015

Cumulative Land Use Summary - Scenario 1 (All Residential Option)

	PHASE 1 [1]	PHASES 1-2	PHASES 1-3	PHASES 1-4	PHASES 1-5	TOTAL
Proposed:						
Residential - DU	0	550	700	865	1,020	1,020
Retail - GLA	0	26,000	29,000	46,700	63,000	63,000
Existing:						
Retail Demo'd - GLA	0	0	-8,738	-56,537	-97,824	-97,824
Total With Project:						
Residential - DU	0	550	700	865	1,020	1,020
Retail - GLA	0	26,000	20,262	-9,837	-34,824	-34,824

RETAIL AREA CALCULATIONS

Pre-Project (EXISTING CREDIT)	PHASE 1	PHASE 2	PHASE 3	PHASE 4	PHASE 5	Post-Project	
0	0	26,000	3,000			29,000	Retail (Added with project)
393,993	0	0	-8,738			385,255	Retail (to remain with project)
EXISTING USE CREDIT **393,993**	0	26,000	-5,738			**414,255**	**Phases 1-3 Total Retail Area**
0	0	26,000	3,000	17,700	16,300	63,000	Retail (Added with project)
393,993	0	0	-8,738	-47,799	-41,287	296,169	Retail (to remain with project)
EXISTING USE CREDIT **393,993**	0	26,000	-5,738	-30,099	-24,987	**359,169**	**Full Buildout Total Retail Area**

*yellow highlight = land use areas used for trip generation calculations

Exhibit E

RTC Master Plan
Land Use Assumptions for Traffic Analysis

Existing Land Uses to be Removed

Land Use	Existing	PHASE 1 DEMO	PHASE 2 DEMO	PHASE 3 DEMO	PHASE 4 DEMO	PHASE 5 DEMO	TOTAL EXISTING REMAINING
Retail - GLA	393,993	0	0	-8,738	-47,799	-41,287	**296,169**

Proposed Land Uses - Scenario 2 (Residential and Office Option)

	Actual Estimates						Rounded for Master Plan & TIA					
Land Use	**PHASE 1 [1]**	**PHASE 2**	**PHASE 3**	**PHASE 4**	**PHASE 5**	**TOTAL PROPOSED**	**PHASE 1 [1]**	**PHASE 2**	**PHASE 3**	**PHASE 4**	**PHASE 5**	**TOTAL PROPOSED**
Residential - DU												
Buildings 4IC East - Mixed-Use Residential		252				252	0	275	0	0	0	275
Building 4B - Mixed-Use Residential			136			136	0	0	150	0	0	150
Building 3A - Mixed-Use Residential				148		148	0	0	0	165	0	165
Building 3D - Mixed-Use Residential					140	140	0	0	0	0	155	155
	0	252	136	148	140	**676**	0	275	150	165	155	**745**
Retail - GLA												
Buildings 4IC East - Mixed-Use Residential		11,810				11,810	0	13,000	0	0	0	13,000
Buildings 4IC West - Mixed-Use Office		10,530				10,530	0	11,600	0	0	0	11,600
Building 4B - Mixed-Use Residential			2,690			2,690	0	0	3,000	0	0	3,000
Building 3A - Mixed-Use Residential				16,070		16,070	0	0	0	17,700	0	17,700
Building 3D - Mixed-Use Residential					14,800	14,800	0	0	0	0	16,300	16,300
	0	22,340	2,690	16,070	14,800	**55,900**	0	24,600	3,000	17,700	16,300	**61,600**
Office - GFA												
						0	0	0	0	0	0	**0**
Buildings 4IC West - Mixed-Use Office		245,530				**245,530**	0	270,100	0	0	0	**270,100**
	0	245,530	0	0	0	**245,530**	0	270,100	0	0	0	**270,100**

Sources:
1. Proposed Master Plan building areas based on Master Plan provided by GGLO on 3/12/25.
2. Existing uses to be demo'd provided by Patrick Woodruff (Hines) 9/14/23.

Notes:
[1] Phase 1 is parking addition to Building I only, no other new land uses are proposed.

Gross Floor Area (GFA). The area included within the surrounding exterior walls of a building or portion thereof, exclusive of vent shafts, elevator shafts, stairwells, courts, second-story atriums, and lobbies.

Effective on: 4/16/2011

Gross Leasable Area (GLA). The total floor area that is designated for a tenant's occupancy, exclusive of common areas shared with other tenants, such as utility rooms, stairwells, and malls.

(Ord. 2803)

Effective on: 10/17/2015

Cumulative Land Use Summary - Scenario 2 (Residential and Office Option)

	PHASE 1 [1]	PHASES 1-2	PHASES 1-3	PHASES 1-4	PHASES 1-5	TOTAL
Proposed:						
Residential - DU	0	275	425	590	745	745
Retail - GLA	0	24,600	27,600	45,300	61,600	61,600
Office - GFA	0	270,100	270,100	270,100	270,100	270,100
Existing:						
Retail Demo'd - GLA	0	0	-8,738	-56,537	-97,824	-97,824
Total With Project:						
Residential (proposed) - DU	0	275	425	590	745	745
Retail (proposed less demo'd) - GLA	0	24,600	18,862	-11,237	-36,224	-36,224
Office (proposed) - GFA	0	270,100	270,100	270,100	270,100	270,100

RETAIL AREA CALCULATIONS

Pre-Project (EXISTING CREDIT)	PHASE 1	PHASE 2	PHASE 3	PHASE 4	PHASE 5	Post-Project	
0	0	24,600	3,000			27,600	Retail (Added with project)
393,993	0	0	-8,738			385,255	Retail (to remain with project)
EXISTING USE CREDIT **393,993**	0	24,600	-5,738			**412,855**	**Phases 1-3 Total Retail Area**
0	0	24,600	3,000	17,700	16,300	61,600	Retail (Added with project)
393,993	0	0	-8,738	-47,799	-41,287	296,169	Retail (to remain with project)
EXISTING USE CREDIT **393,993**	0	24,600	-5,738	-30,099	-24,987	**357,769**	**Full Buildout Total Retail Area**

*yellow highlight = land use areas used for trip generation calculations

Appendix C

WSDOT Crash Data

Exhibit E

JURISDICTION	COUNTY	CITY	PRIMARY TRAFFICWAY	BLOCK NUMBER	INTERSECTING TRAFFICWAY	DIST FROM REF POINT	MI or FT	COMP DIR FROM REF POINT	REFERENCE POINT NAME	MILEPOST	REPORT NUMBER	DATE	TIME	MOST SEVERE INJURY TYPE	# INJ	# FAT	# VEH	# PEDS	# BIKES	FIRST COLLISION TYPE / OBJECT STRUCK	VEHICLE 1 ACTION	VEHICLE 2 ACTION	VEHICLE 1 COMPASS DIRECTION FROM	VEHICLE 1 COMPASS DIRECTION TO	VEHICLE 2 COMPASS DIRECTION FROM	VEHICLE 2 COMPASS DIRECTION TO
City Street	King	Redmond	140TH AVE NE		REDMOND WAY						EE23393	11/26/2023	12:04	Suspected Minor Injury	2	0	2	0	0	Entering at angle	Making Right Turn	Going Straight Ahead	South	East	West	East
City Street	King	Redmond	148TH AVE NE	7885	REDMOND WAY						ED58944	05/10/2023	12:26	No Apparent Injury	0	0	2	0	0	Same direction -- both turning right -- one stopped -- rear end	Making Right Turn	Stopped for Traffic	South	West	South	West
City Street	King	Redmond	148TH AVE NE	7885	REDMOND WAY						ED42928	03/16/2023	08:46	No Apparent Injury	0	0	2	0	0	Same direction -- both turning right -- one stopped -- rear end	Making Right Turn	Stopped for Traffic	South	East	South	Vehicle Stopped
City Street	King	Redmond	148TH AVE NE	7885	REDMOND WAY						ED27450	01/01/2023	01:03	Suspected Minor Injury	2	0	2	0	0	Entering at angle	Going Straight Ahead	Going Straight Ahead	West	East	South	North
City Street	King	Redmond	148TH AVE NE		REDMOND WAY						EB08655	02/15/2021	12:53	No Apparent Injury	0	0	2	0	0	Entering at angle	Going Straight Ahead	Going Straight Ahead	East	West	South	North
City Street	King	Redmond	148TH AVE NE	7885	REDMOND WAY						EC01518	12/09/2021	12:12	No Apparent Injury	0	0	2	0	0	Entering at angle	Making Left Turn	Stopped at Signal or Stop Sign	South	West	Vehicle Stopped	Vehicle Stopped
City Street	King	Redmond	148TH AVE NE	7900	REDMOND WAY						ED84487	07/14/2023	17:11	No Apparent Injury	0	0	2	0	0	Same direction -- both turning right -- one stopped -- rear end	Making Right Turn	Stopped for Traffic	South	East	South	East
City Street	King	Redmond	148TH AVE NE	7885	REDMOND WAY						ED61458	05/17/2022	11:05	No Apparent Injury	0	0	3	0	0	Entering at angle	Making Right Turn	Stopped at Signal or Stop Sign	West	South	Vehicle Stopped	Vehicle Stopped
City Street	King	Redmond	148TH AVE NE	7885	REDMOND WAY						ED47897	04/02/2023	21:44	Possible Injury	1	0	2	0	0	Entering at angle	Going Straight Ahead	Making Left Turn	West	East	South	West
City Street	King	Redmond	148TH AVE NE		REDMOND WAY						ED03128	10/25/2022	20:53	No Apparent Injury	0	0	2	0	0	Entering at angle	Making Right Turn	Going Straight Ahead	West	South	North	South
City Street	King	Redmond	148TH AVE NE	7885	REDMOND WAY						EE31490	12/16/2023	17:50	No Apparent Injury	0	0	2	0	0	Same direction -- both turning right -- both moving -- rear end	Making Right Turn	Making Right Turn	South	East	South	East
City Street	King	Redmond	148TH AVE NE	7885	REDMOND WAY						ED16514	12/20/2022	11:28	Possible Injury	1	0	2	0	0	From same direction - both going straight - one stopped - rear-end	Slowing	Stopped at Signal or Stop Sign	South	North	Vehicle Stopped	Vehicle Stopped
City Street	King	Redmond	148TH AVE NE	7885	REDMOND WAY						EE33980	12/21/2022	17:32	No Apparent Injury	0	0	2	0	0	From same direction - all others	Backing	Stopped at Signal or Stop Sign	Vehicle Backing	Vehicle Backing	Vehicle Stopped	Vehicle Stopped
City Street	King	Redmond	148TH AVE NE		REDMOND WAY						EE35404	12/28/2023	14:50	No Apparent Injury	0	0	2	0	0	Same direction -- both turning right -- both moving -- sideswipe	Making Right Turn	Making Right Turn	South	East	South	East
City Street	King	Redmond	164TH AVE NE	7731	CLEVELAND ST						EC75311	08/15/2022	16:13	No Apparent Injury	0	0	2	0	0	From opposite direction - one left turn - one straight	Making Left Turn	Going Straight Ahead	North	East	South	North
City Street	King	Redmond	164TH AVE NE	7731	CLEVELAND ST						EB79536	10/18/2021	07:42	No Apparent Injury	0	0	2	0	0	Entering at angle	Going Straight Ahead	Going Straight Ahead	East	West	South	North
City Street	King	Redmond	164TH AVE NE	7307	NE 74TH ST						EB31767	04/29/2021	11:37	Possible Injury	1	0	1	1	0	Vehicle turning left hits pedestrian	Making Left Turn		South	West		
City Street	King	Redmond	164TH AVE NE	7500	NE 76TH ST						EE11530	10/21/2023	10:20	Possible Injury	2	0	1	0	1	Vehicle Strikes Pedalcyclist	Going Straight Ahead		North	Northeast		
City Street	King	Redmond	166TH AVE NE	16400	BEAR CREEK PKWY						EC16790	01/20/2022	16:20	Possible Injury	1	0	2	0	0	Entering at angle	Making Left Turn	Going Straight Ahead	North	East	West	East
City Street	King	Redmond	166TH AVE NE		CLEVELAND ST						EC67085	07/19/2022	17:35	Possible Injury	1	0	2	0	0	From same direction - one right turn - one straight	Making Right Turn	Going Straight Ahead	South	East		
City Street	King	Redmond	170TH AVE NE	7448	NE 76TH ST						EC42393	04/26/2022	18:56	Possible Injury	1	0	1	1	0	Vehicle turning left hits pedestrian	Making Left Turn		East	South		
City Street	King	Redmond	BEAR CREEK PKWY	16488	166TH AVE NE						ED03127	10/28/2022	17:16	No Apparent Injury	0	0	2	0	0	Entering at angle	Making Left Turn	Going Straight Ahead	North	East	East	West
City Street	King	Redmond	BEAR CREEK PKWY	5225	NE 74TH ST						EB85066	10/20/2021	15:34	No Apparent Injury	0	0	2	0	0	From opposite direction - one left turn - one straight	Making Left Turn	Making Left Turn	North	East	North	East
City Street	King	Redmond	CLEVELAND ST	16400	164TH AVE NE						ED92245	05/06/2023	17:51	No Apparent Injury	0	0	2	0	0	Entering at angle	Going Straight Ahead	Going Straight Ahead	North	South	East	West
City Street	King	Redmond	CLEVELAND ST	16400	164TH AVE NE						EC12846	01/11/2022	15:05	No Apparent Injury	0	0	2	0	0	Entering at angle	Going Straight Ahead	Going Straight Ahead	West	East	North	South
City Street	King	Redmond	CLEVELAND ST	16700	166TH AVE NE						EB96444	12/01/2021	15:56	No Apparent Injury	0	0	2	0	0	From opposite direction - one left turn - one straight	Making Left Turn	Going Straight Ahead	West	North	East	West
City Street	King	Redmond	NE 76TH ST	16812	170TH AVE NE						EC64688	07/08/2022	16:53	No Apparent Injury	0	0	2	0	0	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped at Signal or Stop Sign	West	East	Vehicle Stopped	Vehicle Stopped
City Street	King	Redmond	NE 76TH ST	16812	170TH AVE NE						ED59038	05/09/2023	15:07	No Apparent Injury	0	0	2	0	0	From opposite direction - all others	Backing	Stopped at Signal or Stop Sign	Vehicle Backing	Vehicle Backing	Vehicle Stopped	Vehicle Stopped
City Street	King	Redmond	REDMOND WAY		140TH AVE NE						EC57809	06/16/2022	12:27	No Apparent Injury	0	0	2	0	0	Entering at angle	Going Straight Ahead	Going Straight Ahead	East	West	South	North
City Street	King	Redmond	REDMOND WAY		140TH AVE NE						EE16376	11/04/2023	07:40	Suspected Minor Injury	1	0	2	0	0	Entering at angle	Making Left Turn	Going Straight Ahead	East	South	West	East
City Street	King	Redmond	REDMOND WAY		140TH AVE NE						ED00098	10/26/2022	05:00	No Apparent Injury	0	0	1	0	0	Metal Sign Post	Going Straight Ahead		East	West		
City Street	King	Redmond	REDMOND WAY		140TH AVE NE						ED73038	06/30/2023	17:36	No Apparent Injury	0	0	2	0	0	From same direction - both going straight - both moving - sideswipe	Changing Lanes	Going Straight Ahead	East	West	East	West
City Street	King	Redmond	REDMOND WAY	1096	140TH AVE NE						ED71096	06/17/2023	18:20	No Apparent Injury	0	0	2	0	0	Entering at angle	Making Right Turn	Going Straight Ahead	North	West	East	West
City Street	King	Redmond	REDMOND WAY		140TH AVE NE						EB14321	03/15/2021	09:25	No Apparent Injury	0	0	2	0	0	Entering at angle	Going Straight Ahead	Going Straight Ahead	East	West	North	South
City Street	King	Redmond	REDMOND WAY		140TH AVE NE						EC68784	07/12/2022	11:45	Possible Injury	1	0	1	1	0	Vehicle turning right hits pedestrian	Making Right Turn		West	South		
City Street	King	Redmond	REDMOND WAY		140TH AVE NE						ED49636	04/08/2023	14:14	No Apparent Injury	0	0	2	0	0	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped at Signal or Stop Sign	West	East	Vehicle Stopped	Vehicle Stopped
City Street	King	Redmond	REDMOND WAY		148TH AVE NE						EC97128	10/25/2022	13:21	No Apparent Injury	0	0	2	0	0	Entering at angle	Going Straight Ahead	Going Straight Ahead	East	West	South	North
City Street	King	Redmond	REDMOND WAY	14794	148TH AVE NE						EC62927	07/03/2022	23:45	No Apparent Injury	0	0	2	0	0	Entering at angle	Going Straight Ahead	Going Straight Ahead	East	West		
City Street	King	Redmond	REDMOND WAY	14794	148TH AVE NE						EC67793	07/07/2022	20:20	Possible Injury	1	0	2	0	0	From same direction - one left turn - one straight	Making Left Turn	Going Straight Ahead	East	South	West	East
City Street	King	Redmond	REDMOND WAY	14794	148TH AVE NE						EC80390	09/01/2022	10:11	Possible Injury	1	0	2	0	0	Entering at angle	Making Right Turn	Stopped at Signal or Stop Sign	West	South	Vehicle Stopped	Vehicle Stopped
City Street	King	Redmond	REDMOND WAY	14794	148TH AVE NE						EC46485	05/14/2022	10:05	Possible Injury	1	0	2	0	0	Entering at angle	Going Straight Ahead	Making Left Turn	West	East	South	West
City Street	King	Redmond	REDMOND WAY	14794	148TH AVE NE						ED60832	12/30/2023	19:17	Possible Injury	1	0	2	0	0	Entering at angle	Going Straight Ahead	Making Left Turn	West	East	South	West
City Street	King	Redmond	REDMOND WAY	14794	148TH AVE NE						ED48467	03/27/2023	07:52	No Apparent Injury	0	0	2	0	0	From same direction - both going straight - both moving - rear-end	Going Straight Ahead	Starting in Traffic Lane	West	East	West	East
City Street	King	Redmond	REDMOND WAY	14794	148TH AVE NE						EE22197	11/12/2023	19:04	Possible Injury	1	0	2	0	0	From opposite direction - one left turn - one straight	Going Straight Ahead	Making Left Turn	West	East	East	South
City Street	King	Redmond	REDMOND WAY	14700	148TH AVE NE						EC76891	07/13/2022	13:45	No Apparent Injury	0	0	2	0	0	From same direction - both going straight - one stopped - rear-end	Changing Lanes	Stopped for Traffic	West	East	Vehicle Stopped	Vehicle Stopped
City Street	King	Redmond	REDMOND WAY	14794	148TH AVE NE						EA96620	01/03/2021	10:15	No Apparent Injury	0	0	2	0	0	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped at Signal or Stop Sign	West	East	Vehicle Stopped	Vehicle Stopped
City Street	King	Redmond	REDMOND WAY	14794	148TH AVE NE						EC96111	10/22/2022	20:35	No Apparent Injury	0	0	2	0	0	Entering at angle	Going Straight Ahead	Making Left Turn	East	West	North	East
City Street	King	Redmond	REDMOND WAY	14800	148TH AVE NE						EC23961	11/24/2022	20:00	No Apparent Injury	0	0	2	0	0	From same direction - one right turn - one straight	Going Straight Ahead	Making Right Turn	East	West	East	North
City Street	King	Redmond	REDMOND WAY	14794	148TH AVE NE						EC13227	12/30/2021	10:35	No Apparent Injury	0	0	2	0	0	Entering at angle	Going Straight Ahead	Going Straight Ahead	East	West	North	South
City Street	King	Redmond	REDMOND WAY	14794	148TH AVE NE						EB19959	03/31/2021	19:16	No Apparent Injury	0	0	2	0	0	Entering at angle	Going Straight Ahead	Making Left Turn	North	South	West	North
City Street	King	Redmond	REDMOND WAY	15553	W LAKE SAMMAMISH PKWY NE						EE16380	11/04/2023	08:01	No Apparent Injury	0	0	2	0	0	From opposite direction - one left turn - one right turn	Making Left Turn	Making Left Turn	West	South	East	South
City Street	King	Redmond	REDMOND WAY	15553	W LAKE SAMMAMISH PKWY NE						EB71984	09/26/2021	16:56	Possible Injury	2	0	2	0	0	Entering at angle	Making Right Turn	Going Straight Ahead	West	South	South	North
City Street	King	Redmond	REDMOND WAY	15553	W LAKE SAMMAMISH PKWY NE						EB58404	08/11/2021	14:05	Suspected Minor Injury	2	0	2	0	0	From opposite direction - one left turn - one right turn	Making Right Turn	Making Left Turn	West	South	East	South
City Street	King	Redmond	REDMOND WAY	15553	W LAKE SAMMAMISH PKWY NE						EB16871	03/12/2021	14:18	No Apparent Injury	0	0	2	0	0	From same direction - both going straight - both moving - rear-end	Going Straight Ahead	Slowing	West	East	West	East
City Street	King	Redmond	REDMOND WAY	15553	W LAKE SAMMAMISH PKWY NE						EE05874	12/14/2023	13:20	No Apparent Injury	0	0	2	0	0	Entering at angle	Making Left Turn	Starting in Traffic Lane	West	South	South	North
City Street	King	Redmond	REDMOND WAY	15553	W LAKE SAMMAMISH PKWY NE						EC67950	07/25/2022	17:06	No Apparent Injury	0	0	2	0	0	From opposite direction - one left turn - one straight	Going Straight Ahead	Making Left Turn	West	East	East	South
City Street	King	Redmond	REDMOND WAY	15553	W LAKE SAMMAMISH PKWY NE						EC40949	04/20/2022	07:01	Possible Injury	1	0	2	0	0	Entering at angle	Going Straight Ahead	Making Left Turn	West	East	South	West
City Street	King	Redmond	REDMOND WAY	15553	W LAKE SAMMAMISH PKWY NE						ED01305	01/14/2022	13:36	No Apparent Injury	0	0	2	0	0	Same direction -- both turning left -- both moving -- sideswipe	Making Left Turn	Making Left Turn	East	South	East	South
City Street	King	Redmond	REDMOND WAY	15553	W LAKE SAMMAMISH PKWY NE						EC38705	04/14/2022	08:55	No Apparent Injury	0	0	2	0	0	Same direction -- both turning left -- both moving -- sideswipe	Making Left Turn	Making Left Turn	East	South	East	South
City Street	King	Redmond	REDMOND WAY	15553	W LAKE SAMMAMISH PKWY NE						ED92902	08/24/2023	16:30	No Apparent Injury	0	0	2	0	0	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped at Signal or Stop Sign	West	East	Vehicle Stopped	Vehicle Stopped
City Street	King	Redmond	REDMOND WAY	15553	W LAKE SAMMAMISH PKWY NE						EC91369	10/09/2022	15:03	Possible Injury	1	0	2	0	0	From same direction - both going straight - both moving - rear-end	Going Straight Ahead	Slowing	West	East	West	East
City Street	King	Redmond	REDMOND WAY	15500	W LAKE SAMMAMISH PKWY NE						EB97352	12/05/2021	14:12	No Apparent Injury	0	0	2	0	0	From same direction - one right turn - one straight	Changing Lanes	Making Right Turn	West	East	West	South
City Street	King	Redmond	REDMOND WAY	15553	W LAKE SAMMAMISH PKWY NE						EB86535	11/06/2021	17:44	No Apparent Injury	0	0	2	0	0	From same direction - both going straight - both moving - sideswipe	Changing Lanes	Going Straight Ahead	East	West	East	West
City Street	King	Redmond	REDMOND WAY	15553	W LAKE SAMMAMISH PKWY NE						EC61310	06/24/2022	23:53	No Apparent Injury	0	0	2	0	0	From opposite direction - one left turn - one straight	Making Left Turn	Going Straight Ahead	Southeast	South	Northwest	Southeast
City Street	King	Redmond	REDMOND WAY	15286	WILLOWS RD NE						EB95322	11/17/2021	07:36	No Apparent Injury	0	0	2	0	0	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped at Signal or Stop Sign	West	East	Vehicle Stopped	Vehicle Stopped
City Street	King	Redmond	REDMOND WAY	15292	WILLOWS RD NE						ED89508	08/15/2023	10:15	Suspected Minor Injury	2	0	2	0	0	Entering at angle	Going Straight Ahead	Making Left Turn	East	West	North	East
City Street	King	Redmond	REDMOND WAY	7900	WILLOWS RD NE						EC13228	01/12/2022	07:44	No Apparent Injury	0	0	2	0	0	Same direction -- both turning left -- both moving -- sideswipe	Making Left Turn	Making Left Turn	South	East	North	East
City Street	King	Redmond	REDMOND WAY	15286	WILLOWS RD NE						EB90312	11/15/2021	12:35	No Apparent Injury	0	0	3	0	0	Entering at angle	Making Left Turn	Going Straight Ahead	North	East	East	West
City Street	King	Redmond	REDMOND WAY	15292	WILLOWS RD NE						EE14545	10/18/2023	09:10	No Apparent Injury	0	0	2	0	0	From same direction - both going straight - one stopped - sideswipe	Going Straight Ahead	Stopped for Traffic	West	East	Vehicle Stopped	Vehicle Stopped
City Street	King	Redmond	REDMOND WAY	15286	WILLOWS RD NE						EC51890	06/01/2022	17:44	Suspected Minor Injury	2	0	3	0	0	Entering at angle	Going Straight Ahead	Going Straight Ahead	South	East	South	West
City Street	King	Redmond	REDMOND WAY	15286	WILLOWS RD NE						EC95662	10/21/2022	10:48	No Apparent Injury	0	0	2	0	0	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Other*	West	East	West	Vehicle Stopped
City Street	King	Redmond	REDMOND WY		148TH AVE NE						ED56319	05/01/2023	17:11	No Apparent Injury	0	0	1	0	0	Guardrail - Face	Making Left Turn		West	North		
City Street	King	Redmond	W LAKE SAMMAMISH PKWY NE	7507	REDMOND WAY						EB65898	09/08/2021	13:01	No Apparent Injury	0	0	2	0	0	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped for Traffic	South	North	Vehicle Stopped	Vehicle Stopped
City Street	King	Redmond	WILLOWS RD NE		REDMOND WAY						EC40804	02/04/2022	12:30	No Apparent Injury	0	0	2	0	0	Entering at angle	Going Straight Ahead	Making Left Turn	East	West	North	East
City Street	King	Redmond	WILLOWS RD NE		REDMOND WAY						ED03305	11/08/2022	05:54	No Apparent Injury	0	0	2	0	0	Same direction -- both turning left -- both moving -- sideswipe	Making Left Turn	Making Left Turn	North	East	North	East
City Street	King	Redmond	WILLOWS RD NE	7901	REDMOND WAY						EC58296	05/13/2022	01:00	Unknown	0	0	1	0	0	Linear Curb	Going Straight Ahead		South	South		
City Street	King	Redmond	WILLOWS RD NE	7901	REDMOND WAY						ED81224	02/23/2023	01:54	No Apparent Injury	0	0	1	0	0	Boulder (stationary)	Making Left Turn		North	East		
City Street	King	Redmond	WILLOWS RD NE	7901	REDMOND WAY						EE34472	12/04/2023	08:13	No Apparent Injury	0	0	2	0	0	Same direction -- both turning left -- both moving -- sideswipe	Making Left Turn	Making Left Turn	North	East	North	East
State Route	King	Redmond	202							7.46	EE27962	11/24/2023	17:31	No Apparent Injury	0	0	2	0	0	From opposite direction - one left turn - one right turn	Making Right Turn	Making Left Turn	South	East	North	East
State Route	King	Redmond	202							7.47	EE17182	11/08/2023	15:39	No Apparent Injury	0	0	2	0	0	Entering at angle	Making Left Turn	Making Left Turn	East	South	North	East
State Route	King	Redmond	202							7.47	EE25535	11/26/2023	14:34	Unknown	0	0	2	0	0	From same direction - both going straight - one stopped - rear-end	Stopped at Signal or Stop Sign	Other*	Vehicle Stopped	Vehicle Stopped		
State Route	King	Redmond	202							7.47	EC92836	10/10/2022	14:16	Possible Injury	1	0	1	0	0	Tree or Stump (stationary)	Making Left Turn		East	South		
State Route	King	Redmond	202							7.47	EC84109	09/15/2022	21:31	No Apparent Injury	0	0	3	0	0	Entering at angle	Going Straight Ahead	Going Straight Ahead	East	West	South	North
State Route	King	Redmond	202							7.47	ED97847	09/05/2023	08:48	No Apparent Injury	0	0	2	0	0	Entering at angle	Going Straight Ahead	Going Straight Ahead	West	East	North	South
State Route	King	Redmond	202							7.47	EC95939	10/23/2022	12:43	Possible Injury	1	0	2	0	0	Entering at angle	Going Straight Ahead	Going Straight Ahead	East	West	South	North
State Route	King	Redmond	202							7.47	EB67019	09/01/2021	18:03	Possible Injury	1	0	2	0	0	From opposite direction - one left turn - one straight	Going Straight Ahead	Making Left Turn	East	West	West	North
State Route	King	Redmond	202							7.47	ED58942	06/09/2023	21:10	No Apparent Injury	0	0	2	0	0	From opposite direction - one left turn - one straight	Making Left Turn	Going Straight Ahead	South	West	North	South
State Route	King	Redmond	202							7.47	ED97606	09/09/2023	18:47	Possible Injury	1	0	2	0	0	Entering at angle	Going Straight Ahead	Going Straight Ahead	West	East	North	South
State Route	King	Redmond	202							7.47	EB24864	04/25/2021	20:55	No Apparent Injury	0	0	2	0	0	Entering at angle	Going Straight Ahead	Going Straight Ahead	West	East	North	South
State Route	King	Redmond	202							7.47	ED49480	04/01/2023	22:02	No Apparent Injury	0	0	2	0	0	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped for Traffic	East	West	Vehicle Stopped	Vehicle Stopped
State Route	King	Redmond	202							7.47	ED24507	01/10/2023	12:10	No Apparent Injury	0	0	2	0	0	From opposite direction - one left turn - one right turn	Making Left Turn	Making Right Turn	South	East	North	East
State Route	King	Redmond	202							7.47	EC89290	09/30/2022	06:35	No Apparent Injury	0	0	2	0	0	Entering at angle	Going Straight Ahead	Making Left Turn	West	East	North	East
State Route	King	Redmond	202							7.59	EB50134	07/20/2021	07:05	No Apparent Injury	0	0	3	0	0	From opposite direction - one stopped - head-on	Going Straight Ahead	Stopped at Signal or Stop Sign	East	West	Vehicle Stopped	Vehicle Stopped
State Route	King	Redmond	202							7.59	ED92137	08/18/2023	08:12	Possible Injury	1	0	1	0	1	Vehicle Strikes Pedalcyclist	Making Right Turn		North	West		
State Route	King	Redmond	202							7.59	ED01521	12/13/2021	13:20	No Apparent Injury	0	0	2	0	0	Entering at angle	Going Straight Ahead	Making Right Turn	East	West	North	West
State Route	King	Redmond	202							7.69	EB65894	09/07/2021	12:48	Possible Injury	4	0	2	0	0	Entering at angle	Going Straight Ahead	Going Straight Ahead	West	East	North	South
State Route	King	Redmond	202							7.69	ED50157	04/03/2023	18:11	No Apparent Injury	0	0	2	0	0	Entering at angle	Going Straight Ahead	Going Straight Ahead	West	East	North	South
State Route	King	Redmond	202							7.69	EE12796	10/24/2023	19:30	No Apparent Injury	0	0	2	0	0	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped at Signal or Stop Sign	East	West	Vehicle Stopped	Vehicle Stopped
State Route	King	Redmond	202							7.69	EB80057	07/16/2021	12:51	No Apparent Injury	0	0	2	0	0	From same direction - both going straight - both moving - sideswipe	Changing Lanes	Going Straight Ahead	East	West	East	East
State Route	King	Redmond	202							7.69	EB65286	08/14/2021	21:00	No Apparent Injury	0	0	2	0	0	Entering at angle	Going Straight Ahead	Going Straight Ahead	West	East	North	South
State Route	King	Redmond	202							7.69	ED73117	06/10/2023	21:54	Possible Injury	2	0	2	0	0	Entering at angle	Going Straight Ahead	Going Straight Ahead	East	West	North	South
State Route	King	Redmond	202							7.69	EB11874	02/28/2021	13:30	No Apparent Injury	0	0	2	0	0	From opposite direction - one left turn - one straight	Making Left Turn	Going Straight Ahead	West	North	East	West
State Route	King	Redmond	202							7.69	EB49635	07/16/2021	20:56	No Apparent Injury	0	0	2	0	0	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped in Roadway	East	West	Vehicle Stopped	Vehicle Stopped
State Route	King	Redmond	202							7.69	ED61880	05/19/2023	21:45	No Apparent Injury	0	0	2	0	0	From same direction - one right turn - one straight	Going Straight Ahead	Making Right Turn	East	West	East	North
State Route	King	Redmond	202							7.69	ED53009	04/18/2023	15:45	No Apparent Injury	0	0	2	0	0	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped at Signal or Stop Sign	East	West	Vehicle Stopped	Vehicle Stopped
State Route	King	Redmond	202							7.69	EB48538	07/14/2021	12:08	No Apparent Injury	0	0	2	0	0	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped at Signal or Stop Sign	East	East	Vehicle Stopped	Vehicle Stopped
State Route	King	Redmond	202							7.78	EC79517	08/22/2022	22:25	No Apparent Injury	0	0	2	0	0	Entering at angle	Going Straight Ahead	Making Left Turn	West	East	West	North
State Route	King	Redmond	202							7.78	EB84822	10/28/2021	20:19	No Apparent Injury	0	0	2	0	0	Entering at angle	Going Straight Ahead	Making Left Turn	West	East	South	North
State Route	King	Redmond	202							7.78	EB38001	11/27/2023	18:03	Possible Injury	1	0	2	0	0	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped at Signal or Stop Sign	East	West	West	Vehicle Stopped
State Route	King	Redmond	202							7.78	EB76025	10/01/2021	16:19	No Apparent Injury	0	0	2	0	0	Same direction -- both turning right -- one stopped -- rear end	Going Straight Ahead	Stopped at Signal or Stop Sign	West	East	West	Vehicle Stopped
State Route	King	Redmond	202							7.78	ED83939	07/18/2023	11:03	Possible Injury	1	0	2	0	0	Entering at angle	Making Left Turn	Going Straight Ahead	East	East	West	East
State Route	King	Redmond	202							7.78	EB17214	03/27/2021	10:26	No Apparent Injury	0	0	2	0	0	Entering at angle	Going Straight Ahead	Making Left Turn	West	East	South	West
State Route	King	Redmond	202							7.78	ED37494	02/24/2023	19:33	No Apparent Injury	0	0	2	0	0	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped at Signal or Stop Sign	East	West	Vehicle Stopped	Vehicle Stopped
State Route	King	Redmond	202							7.79	EC40684	04/20/2022	07:47	No Apparent Injury	0	0	2	0	0	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped at Signal or Stop Sign	East	West	Vehicle Stopped	Vehicle Stopped
State Route	King	Redmond	202							7.80	EB16343	03/06/2021	16:10	Possible Injury	1	0	2	0	0	Same direction -- both turning right -- one stopped -- rear end	Making Right Turn	Stopped at Signal or Stop Sign	West	East	West	Vehicle Stopped
State Route	King	Redmond	202							7.80	EB33744	05/16/2021	14:41	No Apparent Injury	0	0	2	0	0	Same direction -- both turning right -- one stopped -- rear end	Making Right Turn	Stopped at Signal or Stop Sign	East	South	East	Vehicle Stopped
State Route	King	Redmond	202							7.80	EC66916	07/16/2022	19:45	No Apparent Injury	0	0	2	0	0	Entering at angle	Making Right Turn	Going Straight Ahead	South	East	West	East
State Route	King	Redmond	202							7.80	EC53433	06/06/2022	07:43	Suspected Minor Injury	1	0	2	0	0	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped at Signal or Stop Sign	East	East	East	Vehicle Stopped
State Route	King	Redmond	202

Exhibit E

JURISDICTION	COUNTY	CITY	PRIMARY TRAFFICWAY	BLOCK NUMBER	INTERSECTING TRAFFICWAY	DIST FROM REF POINT	MI or FT	COMP DIR FROM REF POINT	REFERENCE POINT NAME	MILEPOST	REPORT NUMBER	DATE	TIME	MOST SEVERE INJURY TYPE	# INJ	# FAT	# VEH	# PEDS	# BIKES	FIRST COLLISION TYPE / OBJECT STRUCK	VEHICLE 1 ACTION	VEHICLE 2 ACTION	VEHICLE 1 COMPASS DIRECTION FROM	VEHICLE 1 COMPASS DIRECTION TO	VEHICLE 2 COMPASS DIRECTION FROM	VEHICLE 2 COMPASS DIRECTION TO
City Street	King	Redmond	BEAR CREEK PKWY	10700	LEARY WAY NE						EC20700	02/04/2022	22:18	Suspected Minor Injury	1	0	2	0	0	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped for Traffic	North	South	North	Vehicle Stopped
City Street	King	Redmond	LEARY WAY NE	15895	159TH PL NE						EC50709	05/27/2022	19:30	No Apparent Injury	0	0	2	0	0	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped for Traffic	West	East	West	East
City Street	King	Redmond	LEARY WAY NE	15999	BEAR CREEK PKWY						EC45834	05/11/2022	12:05	Possible Injury	1	0	2	0	0	Entering at angle	Going Straight Ahead	Making Left Turn	West	East	South	West
City Street	King	Redmond	LEARY WAY NE	15999	BEAR CREEK PKWY						EB26664	05/01/2021	13:29	Possible Injury	1	0	2	0	0	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped at Signal or Stop Sign	North	Southeast	Vehicle Stopped	Vehicle Stopped
City Street	King	Redmond	LEARY WAY NE	15999	BEAR CREEK PKWY						EB75105	09/30/2021	12:56	Suspected Minor Injury	2	0	2	0	0	From opposite direction - one left turn - one straight	Making Left Turn	Going Straight Ahead	West	North	East	West
City Street	King	Redmond	REDMOND WAY	15700	BEAR CREEK PKWY						EC77362	08/22/2022	10:29	No Apparent Injury	0	0	2	0	0	Entering at angle	Making Right Turn	Going Straight Ahead	South	East	West	East
City Street	King	Redmond	REDMOND WAY	15700	BEAR CREEK PKWY						EC52614	06/04/2022	21:05	No Apparent Injury	0	0	2	0	0	From opposite direction - one left turn - one straight	Making Left Turn	Going Straight Ahead	East	South	West	East
City Street	King	Redmond	REDMOND WAY	15700	BEAR CREEK PKWY						EC89289	09/25/2022	16:50	No Apparent Injury	0	0	2	0	0	From opposite direction - one left turn - one straight	Making Left Turn	Going Straight Ahead	Northeast	Southeast	Southwest	Northeast
City Street	King	Redmond	REDMOND WAY	15700	BEAR CREEK PKWY						EC92835	10/06/2022	12:40	No Apparent Injury	0	0	2	0	0	Entering at angle	Making Right Turn	Going Straight Ahead	Southeast	Northeast	West	East
State Route	King	Redmond	202							6.65	EC16271	01/29/2022	13:27	No Apparent Injury	0	0	2	0	0	Entering at angle	Going Straight Ahead	Going Straight Ahead	West	East	North	South
State Route	King	Redmond	202							6.65	ED10117	11/25/2022	13:54	No Apparent Injury	0	0	2	0	0	Entering at angle	Going Straight Ahead	Going Straight Ahead	North	South	East	West
State Route	King	Redmond	202							6.65	EC63510	07/07/2022	09:55	Possible Injury	1	0	2	0	0	Entering at angle	Going Straight Ahead	Going Straight Ahead	East	West	North	South
State Route	King	Redmond	202							6.77	EB98521	12/03/2021	08:15	No Apparent Injury	0	0	2	0	0	From same direction - all others	Backing	Stopped for Traffic	Vehicle Stopped	Vehicle Backing	Vehicle Stopped	Vehicle Stopped
State Route	King	Redmond	202							6.77	EC12558	01/13/2022	12:30	No Apparent Injury	0	0	2	0	0	Entering at angle	Going Straight Ahead	Going Straight Ahead	South	North	East	West
State Route	King	Redmond	202							6.90	EC61273	07/01/2022	23:10	No Apparent Injury	0	0	2	0	0	Entering at angle	Going Straight Ahead	Going Straight Ahead	East	West	North	South
State Route	King	Redmond	202							6.90	EB52194	07/12/2021	06:50	No Apparent Injury	0	0	2	0	0	Entering at angle	Going Straight Ahead	Making Left Turn	West	East	South	North
State Route	King	Redmond	202							6.90	ED04601	11/07/2022	10:12	Possible Injury	1	0	2	0	0	Entering at angle	Going Straight Ahead	Going Straight Ahead	West	East	South	North
State Route	King	Redmond	202							6.90	EB01808	01/27/2021	12:00	No Apparent Injury	0	0	2	0	0	Entering at angle	Going Straight Ahead	Going Straight Ahead	North	South	East	West
State Route	King	Redmond	202							6.90	EB60581	08/17/2021	16:15	Possible Injury	1	0	2	0	0	Entering at angle	Going Straight Ahead	Going Straight Ahead	West	East	North	South
State Route	King	Redmond	202							6.97	EB54263	07/27/2021	15:26	No Apparent Injury	0	0	2	0	0	From same direction - both going straight - one stopped - rear-end	Changing Lanes	Stopped for Traffic	West	East	West	East
State Route	King	Redmond	202							6.97	EC01517	12/10/2021	20:49	Suspected Minor Injury	1	0	2	0	0	Entering at angle	Going Straight Ahead	Going Straight Ahead	North	South	East	West
State Route	King	Redmond	202							6.97	EC83625	09/13/2022	14:30	No Apparent Injury	0	0	2	0	0	Entering at angle	Backing	Going Straight Ahead	Vehicle Backing	Vehicle Backing	North	South
State Route	King	Redmond	202							6.97	EC10933	01/03/2022	06:31	No Apparent Injury	0	0	2	0	0	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped at Signal or Stop Sign	East	West	Vehicle Stopped	Vehicle Stopped
State Route	King	Redmond	202							6.97	ED03257	11/11/2022	19:48	No Apparent Injury	0	0	2	0	0	From opposite direction - one left turn - one straight	Making Left Turn	Going Straight Ahead	North	East	South	North
State Route	King	Redmond	202							6.97	ED16512	12/20/2022	09:29	No Apparent Injury	0	0	2	0	0	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped for Traffic	West	East	Vehicle Stopped	Vehicle Stopped
State Route	King	Redmond	202							6.97	EC12848	01/17/2022	09:08	No Apparent Injury	0	0	2	0	0	Entering at angle	Going Straight Ahead	Going Straight Ahead	North	South	West	East
State Route	King	Redmond	202							6.97	EB58409	08/14/2021	13:16	No Apparent Injury	0	0	2	0	0	From opposite direction - one left turn - one straight	Making Left Turn	Going Straight Ahead	North	East	South	North
State Route	King	Redmond	520LX01180							0.00	EB11451	03/02/2021	09:27	No Apparent Injury	0	0	2	0	0	From same direction - both going straight - both moving - rear-end	Changing Lanes	Going Straight Ahead	West	Southwest	West	West
State Route	King	Redmond	520LX01180							0.00	EB81336	10/22/2021	21:30	No Apparent Injury	0	0	2	0	0	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped at Signal or Stop Sign	South	North	Vehicle Stopped	Vehicle Stopped
State Route	King	Redmond	520LX01180							0.00	EC41382	04/17/2022	16:54	No Apparent Injury	0	0	2	0	0	Same direction -- both turning right -- one stopped -- rear end	Making Right Turn	Stopped in Roadway	South	Northeast	Vehicle Stopped	Vehicle Stopped
State Route	King	Redmond	520LX01180							0.00	EB77185	10/07/2021	12:47	Possible Injury	3	0	2	0	0	Entering at angle	Going Straight Ahead	Going Straight Ahead	South	North	East	West
State Route	King	Redmond	520LX01180							0.00	EC64689	07/10/2022	16:19	Suspected Minor Injury	1	0	2	0	0	Strikes or Was Struck by Object from the Load of Another Vehicle	Going Straight Ahead	Stopped at Signal or Stop Sign	West	East	Vehicle Stopped	Vehicle Stopped
State Route	King	Redmond	520LX01180							0.00	EB89435	11/13/2021	19:18	No Apparent Injury	0	0	2	0	0	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped at Signal or Stop Sign	North	South	North	Vehicle Stopped
State Route	King	Redmond	520LX01180							0.00	EC74257	08/11/2022	08:21	No Apparent Injury	0	0	3	0	0	Entering at angle	Going Straight Ahead	Going Straight Ahead	South	North	East	West
State Route	King	Redmond	520LX01180							0.00	EB60580	08/16/2021	19:32	No Apparent Injury	0	0	2	0	0	Same direction -- both turning right -- one stopped -- rear end	Making Right Turn	Stopped for Traffic	South	East	South	Vehicle Stopped
State Route	King	Redmond	520LX01180							0.01	EC58297	06/22/2022	22:22	No Apparent Injury	0	0	2	0	0	Same direction -- both turning right -- one stopped -- rear end	Making Right Turn	Stopped for Traffic	South	East	South	East
State Route	King	Redmond	520LX01180							0.01	EC78752	08/29/2022	16:15	Unknown	0	0	2	0	0	Same direction -- both turning right -- one stopped -- rear end	Making Right Turn	Stopped at Signal or Stop Sign	South	East	Vehicle Stopped	Vehicle Stopped
State Route	King	Redmond	520LX01180							0.01	EB44707	06/25/2021	20:44	No Apparent Injury	0	0	2	0	0	Same direction -- both turning right -- one stopped -- rear end	Making Right Turn	Stopped for Traffic	South	East	Vehicle Stopped	Vehicle Stopped
State Route	King	Redmond	520LX01180							0.01	EC20140	01/26/2022	17:49	No Apparent Injury	0	0	2	0	0	Same direction -- both turning right -- one stopped -- rear end	Making Right Turn	Stopped for Traffic	South	East	South	East
State Route	King	Redmond	520LX01180							0.01	EC56465	05/22/2022	18:41	No Apparent Injury	0	0	3	0	0	Entering at angle	Going Straight Ahead	Starting in Traffic Lane	South	North	Vehicle Stopped	North
City Street	King	Redmond	BEAR CREEK PKWY	7427	LEARY WAY NE						EE25864	12/01/2023	17:53	Possible Injury	1	0	2	0	0	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped at Signal or Stop Sign	North	South	Vehicle Stopped	Vehicle Stopped
City Street	King	Redmond	BEAR CREEK PKWY	15709	REDMOND WAY						ED40400	02/21/2023	17:45	Possible Injury	2	0	2	0	0	From opposite direction - one left turn - one straight	Making Left Turn	Going Straight Ahead	North	East	South	North
City Street	King	Redmond	LEARY WAY NE	15999	BEAR CREEK PKWY						ED27541	01/18/2023	12:40	No Apparent Injury	0	0	2	0	0	From opposite direction - one left turn - one straight	Making Left Turn	Going Straight Ahead	West	North	East	West
City Street	King	Redmond	LEARY WAY NE	15999	BEAR CREEK PKWY						EE22948	11/22/2023	12:20	Suspected Minor Injury	2	0	2	0	0	From opposite direction - one left turn - one straight	Making Left Turn	Going Straight Ahead	East	South	West	East
State Route	King	Redmond	202							6.65	EE28384	12/08/2023	16:46	No Apparent Injury	0	0	2	0	0	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped at Signal or Stop Sign	South	North	Vehicle Stopped	Vehicle Stopped
State Route	King	Redmond	202							6.77	ED98934	09/12/2023	19:09	No Apparent Injury	0	0	2	0	0	Entering at angle	Going Straight Ahead	Going Straight Ahead	North	South	East	West
State Route	King	Redmond	202							6.77	ED55154	04/07/2023	20:05	Possible Injury	1	0	1	0	0	Signal Pole	Going Straight Ahead		West	East		
State Route	King	Redmond	202							6.90	ED91623	08/11/2023	16:43	No Apparent Injury	0	0	2	0	0	Entering at angle	Making Right Turn	Going Straight Ahead	North	West	East	West
State Route	King	Redmond	202							6.97	EE08711	10/04/2023	19:43	No Apparent Injury	0	0	2	0	0	Entering at angle	Making Left Turn	Stopped at Signal or Stop Sign	North	East	Vehicle Stopped	Vehicle Stopped
State Route	King	Redmond	202							6.97	ED88621	08/08/2023	17:36	No Apparent Injury	0	0	2	0	0	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped at Signal or Stop Sign	North	South	Vehicle Stopped	Vehicle Stopped
State Route	King	Redmond	202							6.97	EE31881	12/12/2023	20:40	Possible Injury	1	0	2	0	0	From opposite direction - one left turn - one straight	Making Left Turn	Going Straight Ahead	North	East	South	North
State Route	King	Redmond	202							6.97	ED97107	09/04/2023	16:10	No Apparent Injury	0	0	2	0	0	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped for Traffic	East	West	Vehicle Stopped	Vehicle Stopped
State Route	King	Redmond	202							6.97	ED76076	06/30/2023	06:33	Suspected Serious Injury	1	0	1	1	0	Vehicle turning left hits pedestrian	Making Left Turn		North	East		
State Route	King	Redmond	520LX01180							0.00	ED73681	06/22/2023	10:55	No Apparent Injury	0	0	2	0	0	Same direction -- both turning right -- one stopped -- rear end	Going Straight Ahead	Stopped for Traffic	South	East	Vehicle Stopped	Vehicle Stopped
State Route	King	Redmond	520LX01180							0.00	ED64501	05/26/2023	13:35	No Apparent Injury	0	0	2	0	0	Entering at angle	Making Left Turn	Stopped at Signal or Stop Sign	Southwest	Northwest	Vehicle Stopped	Vehicle Stopped
State Route	King	Redmond	520LX01180							0.00	ED39220	02/24/2023	10:17	No Apparent Injury	0	0	2	0	0	Entering at angle	Making Left Turn	Stopped for Traffic	North	West	Vehicle Stopped	Vehicle Stopped
State Route	King	Redmond	520LX01180							0.00	ED56795	05/02/2023	17:00	No Apparent Injury	0	0	2	0	0	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped at Signal or Stop Sign	East	West	Vehicle Stopped	Vehicle Stopped
State Route	King	Redmond	520LX01180							0.01	EE23390	11/22/2023	17:15	No Apparent Injury	0	0	2	0	0	Same direction -- both turning right -- both moving -- rear end	Making Right Turn	Making Right Turn	South	East	South	East
State Route	King	Redmond	520LX01180							0.01	EE16184	11/02/2023	18:50	No Apparent Injury	0	0	2	0	0	Same direction -- both turning right -- one stopped -- rear end	Making Right Turn	Stopped for Traffic	South	North	Vehicle Stopped	Vehicle Stopped
State Route	King	Redmond	520LX01180							0.01	EE01188	09/20/2023	16:44	No Apparent Injury	0	0	2	0	0	Same direction -- both turning right -- one stopped -- rear end	Making Right Turn	Stopped for Traffic	South	East	South	East
State Route	King	Redmond	520LX01180							0.01	EE27710	12/05/2023	17:21	No Apparent Injury	0	0	2	0	0	Same direction -- both turning right -- one stopped -- rear end	Making Right Turn	Stopped for Traffic	South	East	South	East
State Route	King	Redmond	520LX01180							0.01	ED93713	08/28/2023	17:20	Possible Injury	2	0	2	0	0	Same direction -- both turning right -- one stopped -- rear end	Going Straight Ahead	Stopped for Traffic	South	North	Vehicle Stopped	Vehicle Stopped
State Route	King	Redmond	520LX01180							0.02	EE35739	12/18/2023	18:57	No Apparent Injury	0	0	2	0	0	Same direction -- both turning right -- one stopped -- rear end	Making Right Turn	Stopped for Traffic	South	East	Vehicle Stopped	Vehicle Stopped

Appendix D

Existing Traffic Counts

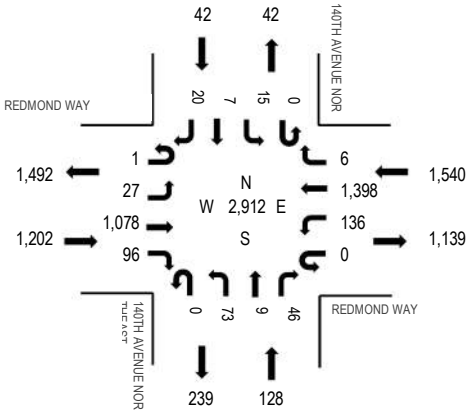
Exhibit E

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

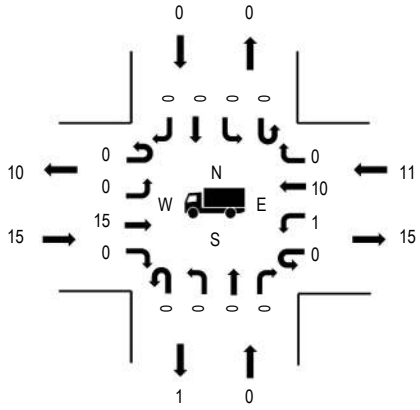
Location: 140TH AVENUE NORTHEAST & REDMOND WAY PM
Date: Tuesday, October 15, 2024
Peak Hour: 04:30 PM - 05:30 PM

Peak Hour

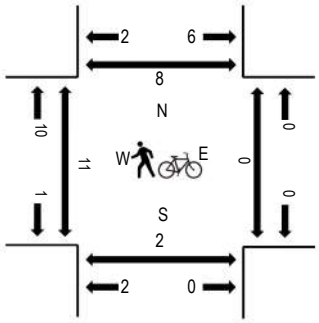
Motorized Vehicles



Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



	HV%	PHF
EB	1.2%	0.92
WB	0.7%	0.90
NB	0.0%	0.89
SB	0.0%	0.81
All	0.9%	0.92

Traffic Counts - Motorized Vehicles

Interval Start Time	REDMOND WAY Eastbound				REDMOND WAY Westbound				140TH AVENUE NORTHEAST Northbound				140TH AVENUE NORTHEAST Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
4:00 PM	0	1	283	30	0	33	297	0	0	8	4	21	0	1	2	8	688	2,834
4:15 PM	0	6	225	26	0	29	343	3	0	15	0	20	0	4	2	6	679	2,801
4:30 PM	1	5	253	14	0	29	362	2	0	14	5	9	0	5	2	3	704	2,912
4:45 PM	0	9	290	29	0	35	358	0	0	17	1	11	0	4	2	7	763	2,822
5:00 PM	0	10	247	25	0	35	288	4	0	18	2	15	0	3	3	5	655	2,765
5:15 PM	0	3	288	28	0	37	390	0	0	24	1	11	0	3	0	5	790	
5:30 PM	0	4	209	18	0	26	322	1	0	14	1	12	0	5	1	1	614	
5:45 PM	0	2	227	23	0	28	377	2	0	22	3	17	0	1	1	3	706	
Count Total	1	40	2,022	193	0	252	2,737	12	0	132	17	116	0	26	13	38	5,599	
Peak Hour	1	27	1,078	96	0	136	1,398	6	0	73	9	46	0	15	7	20	2,912	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles in Crosswalk

Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	10	2	5	1	18	4:00 PM	0	0	0	0	0	4:00 PM	4	0	0	1	5
4:15 PM	3	1	4	3	11	4:15 PM	0	0	0	0	0	4:15 PM	2	0	0	0	2
4:30 PM	8	0	3	0	11	4:30 PM	0	0	0	0	0	4:30 PM	7	2	0	4	13
4:45 PM	1	0	3	0	4	4:45 PM	0	0	0	0	0	4:45 PM	1	0	0	1	2
5:00 PM	2	0	4	0	6	5:00 PM	0	0	0	0	0	5:00 PM	3	0	0	2	5
5:15 PM	4	0	1	0	5	5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	1	1
5:30 PM	2	0	1	0	3	5:30 PM	0	1	0	0	1	5:30 PM	1	0	0	1	2
5:45 PM	7	0	0	0	7	5:45 PM	0	0	0	0	0	5:45 PM	1	0	0	1	2
Count Total	37	3	21	4	65	Count Total	0	1	0	0	1	Count Total	19	2	0	11	32
Peak Hour	15	0	11	0	26	Peak Hour	0	0	0	0	0	Peak Hour	11	2	0	8	21

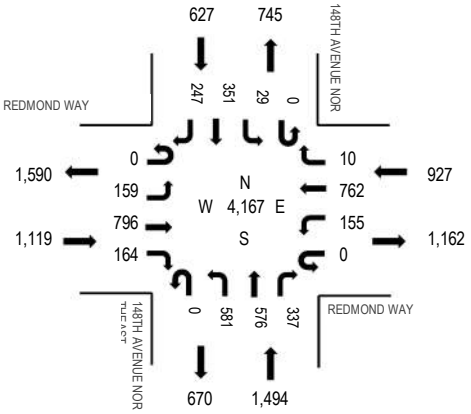
Exhibit E

ALL TRAFFIC DATA SERVICES
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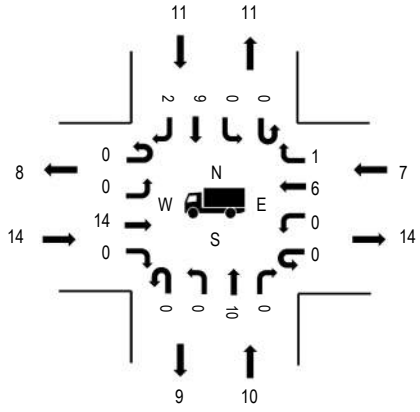
Location: 148TH AVENUE NORTHEAST & REDMOND WAY PM
Date: Tuesday, October 15, 2024
Peak Hour: 05:00 PM - 06:00 PM

Peak Hour

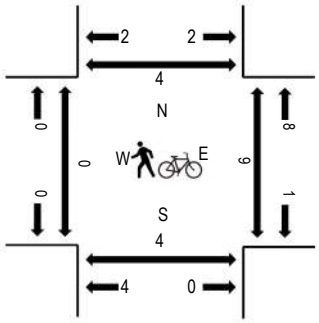
Motorized Vehicles



Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



	HV%	PHF
EB	1.3%	0.84
WB	0.8%	0.84
NB	0.7%	0.92
SB	1.8%	0.95
All	1.0%	0.93

Traffic Counts - Motorized Vehicles

Interval Start Time	REDMOND WAY Eastbound				REDMOND WAY Westbound				148TH AVENUE NORTHEAST Northbound				148TH AVENUE NORTHEAST Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
4:00 PM	0	67	205	41	0	43	162	2	0	108	142	63	0	10	60	59	962	4,048
4:15 PM	0	53	210	54	0	33	215	6	0	163	128	76	0	10	63	52	1,063	4,070
4:30 PM	0	48	210	42	0	38	199	4	0	152	127	75	0	13	80	54	1,042	4,125
4:45 PM	0	49	230	45	0	32	178	4	0	119	124	76	0	6	65	53	981	4,142
5:00 PM	0	42	194	36	0	33	143	0	0	133	140	98	0	10	81	74	984	4,167
5:15 PM	0	43	231	58	0	35	239	3	0	145	122	85	0	6	90	61	1,118	
5:30 PM	0	37	206	34	0	46	206	5	0	156	138	70	0	5	97	59	1,059	
5:45 PM	0	37	165	36	0	41	174	2	0	147	176	84	0	8	83	53	1,006	
Count Total	0	376	1,651	346	0	301	1,516	26	0	1,123	1,097	627	0	68	619	465	8,215	
Peak Hour	0	159	796	164	0	155	762	10	0	581	576	337	0	29	351	247	4,167	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles in Crosswalk

Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	8	3	4	2	17	4:00 PM	0	0	0	0	0	4:00 PM	3	5	5	2	15
4:15 PM	11	4	3	3	21	4:15 PM	0	0	0	0	0	4:15 PM	0	1	6	1	8
4:30 PM	8	8	2	3	21	4:30 PM	0	0	0	0	0	4:30 PM	5	0	1	5	11
4:45 PM	2	3	2	2	9	4:45 PM	0	0	0	0	0	4:45 PM	0	1	1	1	3
5:00 PM	2	4	2	4	12	5:00 PM	0	1	0	0	1	5:00 PM	0	1	4	0	5
5:15 PM	4	2	1	1	8	5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	2	2
5:30 PM	1	2	2	2	7	5:30 PM	0	0	0	0	0	5:30 PM	0	1	5	2	8
5:45 PM	7	2	2	4	15	5:45 PM	0	0	0	0	0	5:45 PM	0	2	0	0	2
Count Total	43	28	18	21	110	Count Total	0	1	0	0	1	Count Total	8	11	22	13	54
Peak Hour	14	10	7	11	42	Peak Hour	0	1	0	0	1	Peak Hour	0	4	9	4	17

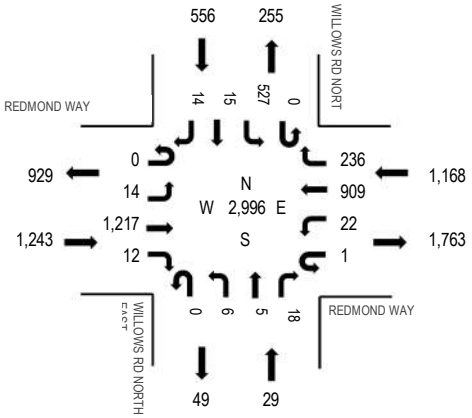
Exhibit E

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

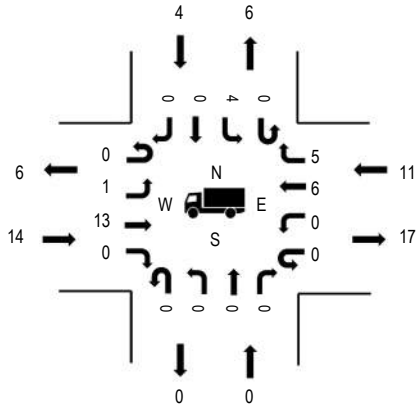
Location: WILLOWS RD NORTHEAST & REDMOND WAY PM
Date: Tuesday, October 15, 2024
Peak Hour: 04:30 PM - 05:30 PM

Peak Hour

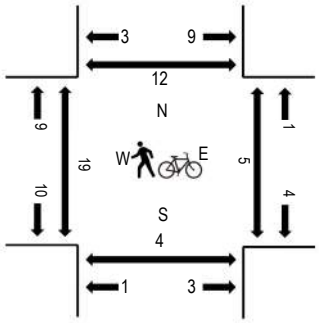
Motorized Vehicles



Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



	HV%	PHF
EB	1.1%	0.91
WB	0.9%	0.88
NB	0.0%	0.81
SB	0.7%	0.90
All	1.0%	0.93

Traffic Counts - Motorized Vehicles

Interval Start Time	REDMOND WAY Eastbound				REDMOND WAY Westbound				WILLOWS RD NORTHEAST Northbound				WILLOWS RD NORTHEAST Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
4:00 PM	0	4	257	2	0	3	204	79	0	3	4	3	0	116	0	7	682	2,875
4:15 PM	0	4	276	2	0	2	247	53	0	1	1	3	0	101	2	4	696	2,886
4:30 PM	0	4	274	1	1	8	241	65	0	1	1	4	0	146	3	5	754	2,996
4:45 PM	0	3	334	3	0	4	204	62	0	1	3	2	0	121	4	2	743	2,923
5:00 PM	0	2	278	4	0	6	188	57	0	1	0	7	0	144	3	3	693	2,819
5:15 PM	0	5	331	4	0	4	276	52	0	3	1	5	0	116	5	4	806	
5:30 PM	0	3	242	2	0	10	224	56	0	2	1	0	0	136	4	1	681	
5:45 PM	0	2	273	5	0	4	192	60	0	0	3	2	0	93	3	2	639	
Count Total	0	27	2,265	23	1	41	1,776	484	0	12	14	26	0	973	24	28	5,694	
Peak Hour	0	14	1,217	12	1	22	909	236	0	6	5	18	0	527	15	14	2,996	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles in Crosswalk

Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	2	0	3	5	10	4:00 PM	0	0	0	0	0	4:00 PM	3	2	0	2	7
4:15 PM	3	0	2	3	8	4:15 PM	0	0	0	0	0	4:15 PM	1	1	2	3	7
4:30 PM	7	0	3	2	12	4:30 PM	0	0	0	1	1	4:30 PM	5	1	3	5	14
4:45 PM	2	0	3	1	6	4:45 PM	0	0	0	0	0	4:45 PM	6	1	0	0	7
5:00 PM	2	0	3	0	5	5:00 PM	0	0	0	0	0	5:00 PM	3	1	2	3	9
5:15 PM	3	0	2	1	6	5:15 PM	0	0	0	0	0	5:15 PM	5	1	0	4	10
5:30 PM	3	0	1	4	8	5:30 PM	0	0	0	0	0	5:30 PM	5	1	1	3	10
5:45 PM	7	0	2	2	11	5:45 PM	0	0	0	0	0	5:45 PM	2	1	0	1	4
Count Total	29	0	19	18	66	Count Total	0	0	0	1	1	Count Total	30	9	8	21	68
Peak Hour	14	0	11	4	29	Peak Hour	0	0	0	1	1	Peak Hour	19	4	5	12	40

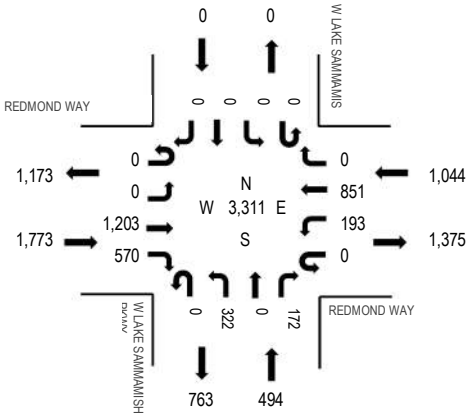
Exhibit E

ALL TRAFFIC DATA SERVICES
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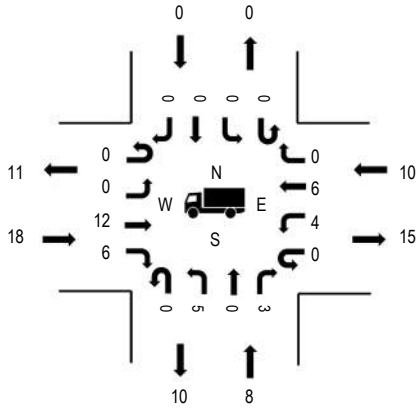
Location: W LAKE SAMMAMISH PKWY & REDMOND WAY PM
Date: Tuesday, October 15, 2024
Peak Hour: 04:30 PM - 05:30 PM

Peak Hour

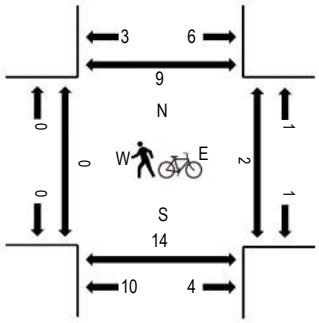
Motorized Vehicles



Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



	HV%	PHF
EB	1.0%	0.98
WB	1.0%	0.92
NB	1.6%	0.83
SB	0.0%	0.00
All	1.1%	0.99

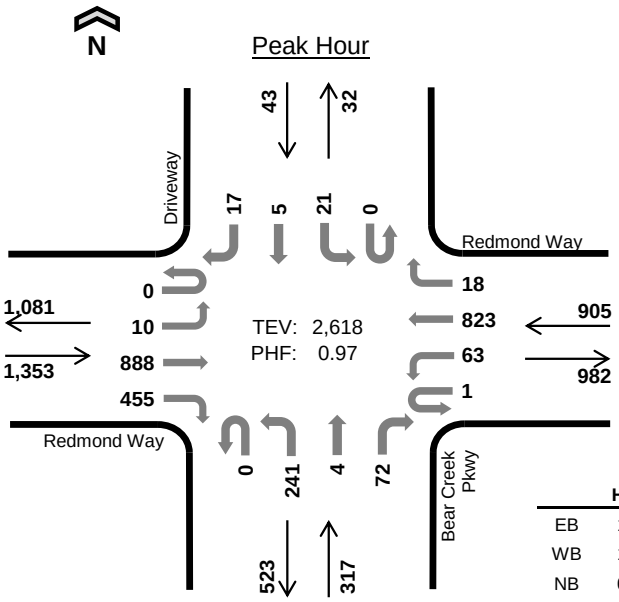
Traffic Counts - Motorized Vehicles

Interval Start Time	REDMOND WAY Eastbound				REDMOND WAY Westbound				W LAKE SAMMAMISH PKWY Northbound				W LAKE SAMMAMISH PKWY Southbound					Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	
4:00 PM	0	0	233	129	0	49	200	0	0	98	0	29	0	0	0	0	738	3,151
4:15 PM	0	0	260	122	0	46	214	0	0	96	0	39	0	0	0	0	777	3,251
4:30 PM	0	0	307	135	0	46	233	0	0	78	0	31	0	0	0	0	830	3,311
4:45 PM	0	0	311	142	0	39	191	0	0	80	0	43	0	0	0	0	806	3,300
5:00 PM	0	0	295	145	0	59	225	0	0	73	0	41	0	0	0	0	838	3,237
5:15 PM	0	0	290	148	0	49	202	0	0	91	0	57	0	0	0	0	837	
5:30 PM	0	0	286	112	0	50	230	0	0	87	0	54	0	0	0	0	819	
5:45 PM	0	0	261	86	0	63	195	0	0	91	0	47	0	0	0	0	743	
Count Total	0	0	2,243	1,019	0	401	1,690	0	0	694	0	341	0	0	0	0	6,388	
Peak Hour	0	0	1,203	570	0	193	851	0	0	322	0	172	0	0	0	0	3,311	

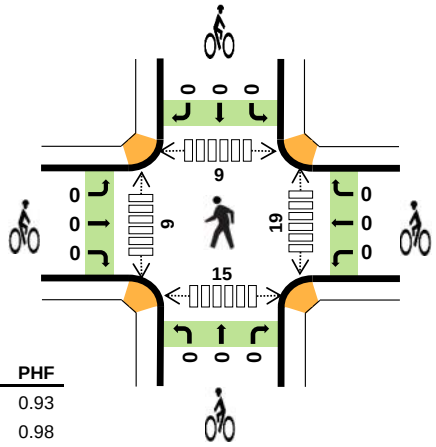
Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles in Crosswalk

Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	6	2	2	0	10	4:00 PM	0	0	0	0	0	4:00 PM	0	3	2	4	9
4:15 PM	2	0	4	0	6	4:15 PM	0	0	1	0	1	4:15 PM	0	5	0	1	6
4:30 PM	9	2	1	0	12	4:30 PM	0	0	0	0	0	4:30 PM	0	2	0	0	2
4:45 PM	3	1	4	0	8	4:45 PM	0	1	1	0	2	4:45 PM	0	7	1	1	9
5:00 PM	2	2	3	0	7	5:00 PM	0	0	0	0	0	5:00 PM	0	2	0	6	8
5:15 PM	4	3	2	0	9	5:15 PM	0	1	1	0	2	5:15 PM	0	3	1	2	6
5:30 PM	7	2	1	0	10	5:30 PM	0	0	0	0	0	5:30 PM	0	7	3	7	17
5:45 PM	7	2	3	0	12	5:45 PM	0	0	0	0	0	5:45 PM	0	5	0	2	7
Count Total	40	14	20	0	74	Count Total	0	2	3	0	5	Count Total	0	34	7	23	64
Peak Hour	18	8	10	0	36	Peak Hour	0	2	2	0	4	Peak Hour	0	14	2	9	25

Bear Creek Pkwy
Redmond Way



Date: 01/30/2024
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 5:00 PM to 6:00 PM



	HV %:	PHF
EB	1.4%	0.93
WB	1.3%	0.98
NB	0.0%	0.89
SB	0.0%	0.90
TOTAL	1.2%	0.97

Two-Hour Count Summaries

Interval Start		Redmond Way Eastbound				Redmond Way Westbound				Bear Creek Pkwy Northbound				Driveway Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	1	178	82	0	18	179	2	0	62	1	12	0	2	1	6	544	0
4:15 PM		0	5	184	104	0	16	221	4	0	56	0	19	0	4	1	2	616	0
4:30 PM		0	1	211	79	0	8	194	9	0	71	0	12	0	5	1	1	592	0
4:45 PM		0	3	219	84	1	22	213	2	0	65	0	16	0	1	1	4	631	2,383
5:00 PM		**0**	**4**	**215**	**108**	**0**	**18**	**203**	**4**	**0**	**63**	**0**	**18**	**0**	**6**	**1**	**4**	**644**	2,483
5:15 PM		**0**	**0**	**210**	**117**	**0**	**15**	**212**	**2**	**0**	**63**	**2**	**13**	**0**	**2**	**2**	**5**	**643**	2,510
5:30 PM		**0**	**2**	**213**	**121**	**1**	**12**	**198**	**10**	**0**	**66**	**2**	**21**	**0**	**8**	**1**	**2**	**657**	2,575
5:45 PM		**0**	**4**	**250**	**109**	**0**	**18**	**210**	**2**	**0**	**49**	**0**	**20**	**0**	**5**	**1**	**6**	**674**	**2,618**
Count Total		0	20	1,680	804	2	127	1,630	35	0	495	5	131	0	33	9	30	5,001	0
Peak Hour	**All**	**0**	**10**	**888**	**455**	**1**	**63**	**823**	**18**	**0**	**241**	**4**	**72**	**0**	**21**	**5**	**17**	**2,618**	**0**
	HV	**0**	**0**	**17**	**2**	**0**	**0**	**12**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**31**	**0**
	HV%	**-**	**0%**	**2%**	**0%**	**0%**	**0%**	**1%**	**0%**	**-**	**0%**	**0%**	**0%**	**-**	**0%**	**0%**	**0%**	**1%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
4:00 PM	7	6	1	0	*14*	0	0	0	0	*0*	3	0	2	4	*9*
4:15 PM	4	2	0	0	*6*	0	0	0	0	*0*	2	2	4	0	*8*
4:30 PM	7	6	0	0	*13*	0	0	0	0	*0*	3	1	4	2	*10*
4:45 PM	3	2	0	0	*5*	0	0	0	0	*0*	6	3	4	3	*16*
5:00 PM	**4**	**4**	**0**	**0**	***8***	**0**	**0**	**0**	**0**	***0***	**2**	**1**	**2**	**3**	*8*
5:15 PM	**3**	**4**	**0**	**0**	***7***	**0**	**0**	**0**	**0**	***0***	**6**	**4**	**4**	**8**	*22*
5:30 PM	**4**	**2**	**0**	**0**	***6***	**0**	**0**	**0**	**0**	***0***	**9**	**3**	**2**	**4**	*18*
5:45 PM	**8**	**2**	**0**	**0**	***10***	**0**	**0**	**0**	**0**	***0***	**2**	**1**	**1**	**0**	***4***
Count Total	40	28	1	0	*69*	0	0	0	0	*0*	33	15	23	24	*95*
Peak Hour	**19**	**12**	**0**	**0**	***31***	**0**	**0**	**0**	**0**	***0***	**19**	**9**	**9**	**15**	***52***

Two-Hour Count Summaries - Heavy Vehicles

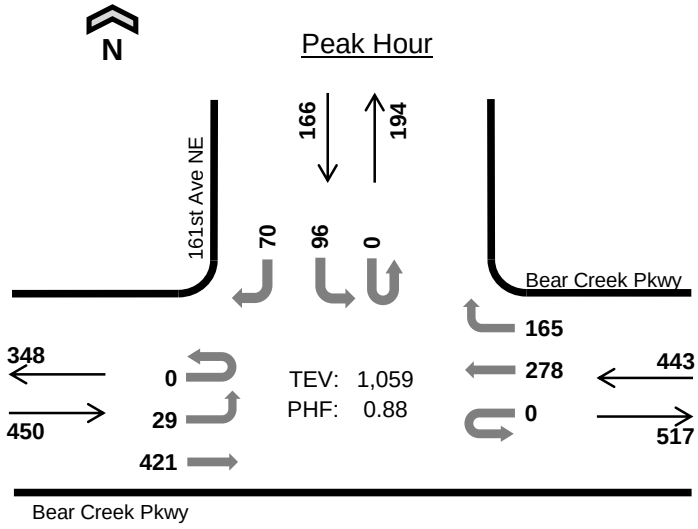
Interval Start	Redmond Way Eastbound				Redmond Way Westbound				Bear Creek Pkwy Northbound				Driveway Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	6	1	0	2	4	0	0	1	0	0	0	0	0	0	14	0
4:15 PM	0	0	3	1	0	0	2	0	0	0	0	0	0	0	0	0	6	0
4:30 PM	0	0	5	2	0	0	6	0	0	0	0	0	0	0	0	0	13	0
4:45 PM	0	0	3	0	0	0	2	0	0	0	0	0	0	0	0	0	5	38
5:00 PM	**0**	**0**	**4**	**0**	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**8**	32
5:15 PM	**0**	**0**	**3**	**0**	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**7**	33
5:30 PM	**0**	**0**	**3**	**1**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**6**	26
5:45 PM	**0**	**0**	**7**	**1**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**10**	**31**
Count Total	0	0	34	6	0	2	26	0	0	1	0	0	0	0	0	0	69	0
Peak Hour	**0**	**0**	**17**	**2**	**0**	**0**	**12**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**31**	**0**

Two-Hour Count Summaries - Bikes

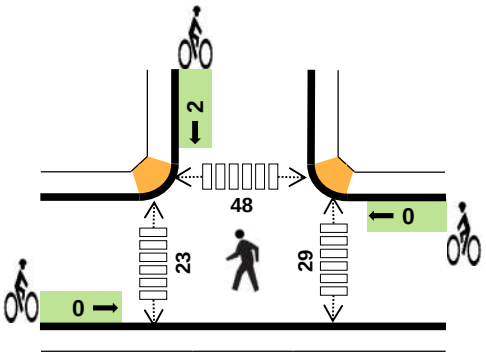
Interval Start	Redmond Way Eastbound			Redmond Way Westbound			Bear Creek Pkwy Northbound			Driveway Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
5:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
5:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

161st Ave NE
Bear Creek Pkwy



Date: Tue, Oct 17, 2023
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:45 PM to 5:45 PM



	HV %:	PHF
EB	1.3%	0.84
WB	0.5%	0.94
NB	-	-
SB	0.6%	0.85
TOTAL	0.8%	0.88

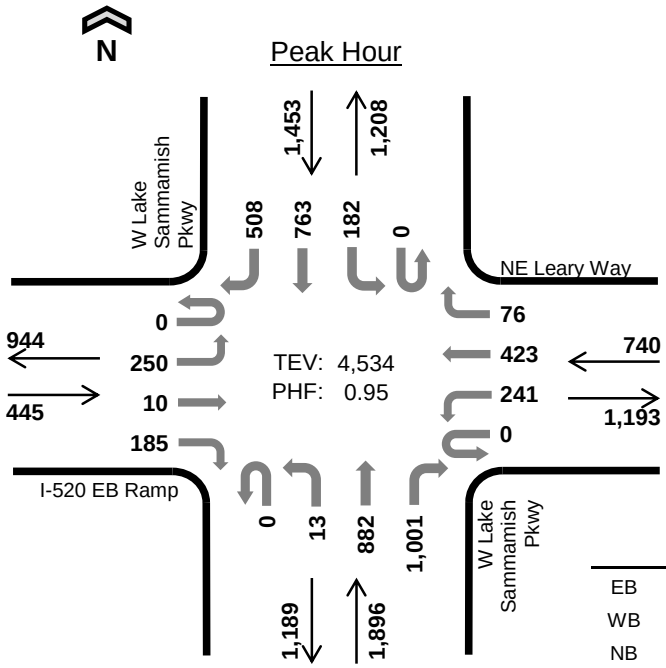
Two-Hour Count Summaries

Interval Start	Bear Creek Pkwy Eastbound				Bear Creek Pkwy Westbound				0 Northbound				161st Ave NE Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	12	58	0	0	0	74	21	0	0	0	0	0	31	0	10	206	0
4:15 PM	0	10	95	0	0	0	76	43	0	0	0	0	0	30	0	12	266	0
4:30 PM	0	12	80	0	0	0	65	38	0	0	0	0	0	28	0	8	231	0
4:45 PM	**0**	**5**	**108**	**0**	**0**	**0**	**69**	**44**	**0**	**0**	**0**	**0**	**0**	**23**	**0**	**12**	**261**	964
5:00 PM	**0**	**11**	**90**	**0**	**0**	**0**	**74**	**26**	**0**	**0**	**0**	**0**	**0**	**19**	**0**	**20**	**240**	998
5:15 PM	**0**	**6**	**96**	**0**	**0**	**0**	**69**	**43**	**0**	**0**	**0**	**0**	**0**	**30**	**0**	**13**	**257**	989
5:30 PM	**0**	**7**	**127**	**0**	**0**	**0**	**66**	**52**	**0**	**0**	**0**	**0**	**0**	**24**	**0**	**25**	**301**	**1,059**
5:45 PM	0	9	111	0	0	0	64	33	0	0	0	0	0	27	0	16	260	1,058
Count Total	0	72	765	0	0	0	557	300	0	0	0	0	0	212	0	116	2,022	0
Peak Hour	**0**	**29**	**421**	**0**	**0**	**0**	**278**	**165**	**0**	**0**	**0**	**0**	**0**	**96**	**0**	**70**	**1,059**	**0**

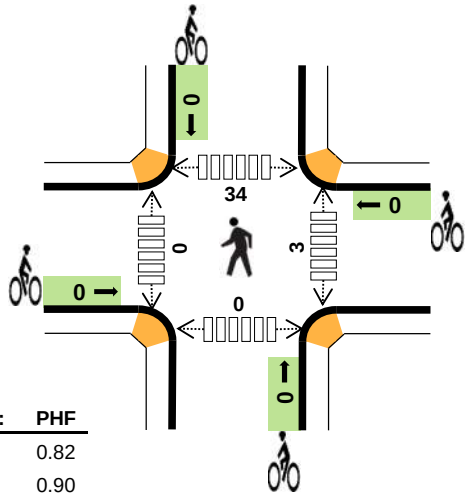
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	1	0	0	1	*2*	0	0	0	0	*0*	2	12	0	0	*14*
4:15 PM	0	0	0	1	*1*	0	0	0	0	*0*	6	4	9	0	*19*
4:30 PM	1	2	0	0	*3*	2	0	0	0	*2*	6	4	4	0	*14*
4:45 PM	**1**	**0**	**0**	**1**	***2***	**0**	**0**	**0**	**0**	***0***	**6**	**3**	**7**	**0**	*16*
5:00 PM	**1**	**2**	**0**	**0**	***3***	**0**	**0**	**0**	**2**	***2***	**2**	**6**	**12**	**0**	*20*
5:15 PM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***	**8**	**6**	**15**	**0**	*29*
5:30 PM	**4**	**0**	**0**	**0**	***4***	**0**	**0**	**0**	**0**	***0***	**13**	**8**	**14**	**0**	***35***
5:45 PM	0	2	0	1	*3*	0	0	0	0	*0*	9	10	15	0	*34*
Count Total	8	6	0	4	*18*	2	0	0	2	*4*	52	53	76	0	*181*
Peak Hr	**6**	**2**	**0**	**1**	***9***	**0**	**0**	**0**	**2**	***2***	**29**	**23**	**48**	**0**	***100***

W Lake Sammamish Pkwy
NE Leary Way



Date: Tue, Oct 17, 2023
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:45 PM to 5:45 PM



	HV %:	PHF
EB	4.0%	0.82
WB	1.9%	0.90
NB	2.3%	0.97
SB	1.7%	0.90
TOTAL	2.2%	0.95

Two-Hour Count Summaries

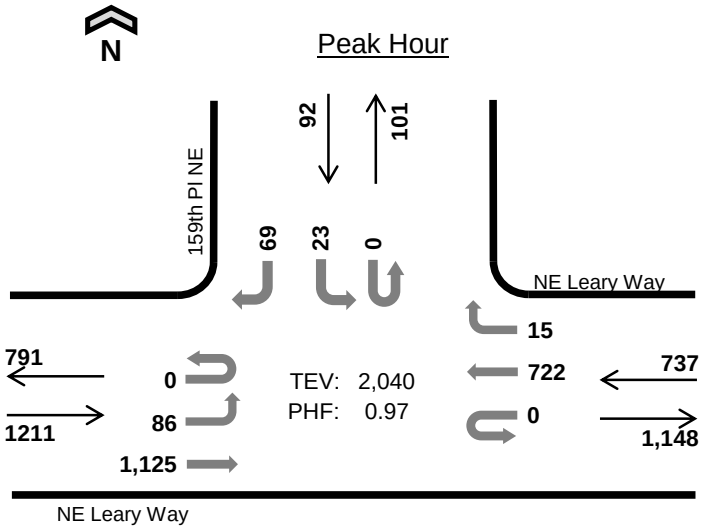
Interval Start	I-520 EB Ramp				NE Leary Way				W Lake Sammamish Pkwy				W Lake Sammamish Pkwy				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	67	4	45	0	70	103	25	0	8	233	226	0	43	268	121	1,213	0
4:15 PM	0	74	6	35	0	66	97	25	0	3	212	253	0	43	164	136	1,114	0
4:30 PM	0	59	4	41	0	67	72	19	0	4	223	220	1	46	172	139	1,067	0
4:45 PM	**0**	**73**	**3**	**33**	**0**	**52**	**98**	**21**	**0**	**0**	**228**	**251**	**0**	**38**	**181**	**132**	**1,110**	4,504
5:00 PM	**0**	**45**	**2**	**45**	**0**	**64**	**114**	**28**	**0**	**2**	**224**	**228**	**0**	**54**	**205**	**136**	**1,147**	4,438
5:15 PM	**0**	**62**	**1**	**46**	**0**	**70**	**99**	**20**	**0**	**5**	**221**	**263**	**0**	**45**	**222**	**136**	**1,190**	4,514
5:30 PM	**0**	**70**	**4**	**61**	**0**	**55**	**112**	**7**	**0**	**6**	**209**	**259**	**0**	**45**	**155**	**104**	**1,087**	**4,534**
5:45 PM	0	69	4	36	0	49	76	17	0	15	248	244	0	58	154	112	1,082	4,506
Count Total	0	519	28	342	0	493	771	162	0	43	1,798	1,944	1	372	1,521	1,016	9,010	0
Peak Hour	**0**	**250**	**10**	**185**	**0**	**241**	**423**	**76**	**0**	**13**	**882**	**1,001**	**0**	**182**	**763**	**508**	**4,534**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

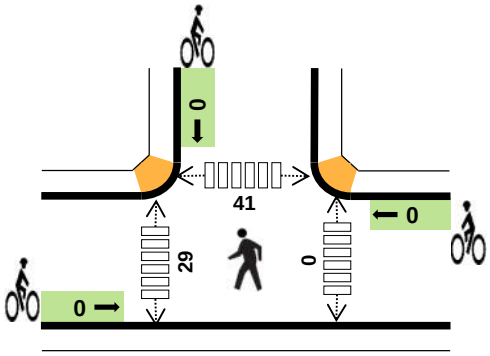
Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	4	5	20	10	*39*	0	0	0	0	*0*	0	0	14	0	*14*
4:15 PM	9	6	10	6	*31*	0	0	0	0	*0*	0	0	10	0	*10*
4:30 PM	16	3	12	4	*35*	0	0	0	0	*0*	0	0	10	0	*10*
4:45 PM	**12**	**5**	**20**	**5**	***42***	**0**	**0**	**0**	**0**	***0***	**1**	**0**	**9**	**0**	*10*
5:00 PM	**4**	**2**	**7**	**6**	***19***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**8**	**0**	*8*
5:15 PM	**2**	**5**	**9**	**7**	***23***	**0**	**0**	**0**	**0**	***0***	**2**	**0**	**7**	**0**	*9*
5:30 PM	**0**	**2**	**7**	**7**	***16***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**10**	**0**	***10***
5:45 PM	1	3	10	6	*20*	0	0	0	0	*0*	0	0	6	0	*6*
Count Total	48	31	95	51	*225*	0	0	0	0	*0*	3	0	74	0	*77*
Peak Hour	**18**	**14**	**43**	**25**	***100***	**0**	**0**	**0**	**0**	***0***	**3**	**0**	**34**	**0**	***37***

159th Pl NE
NE Leary Way

Peak Hour



Date: Thu, Oct 12, 2023
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 5:00 PM to 6:00 PM



	HV %:	PHF
EB	1.2%	0.94
WB	0.7%	0.89
NB	-	-
SB	0.0%	0.77
TOTAL	1.0%	0.97

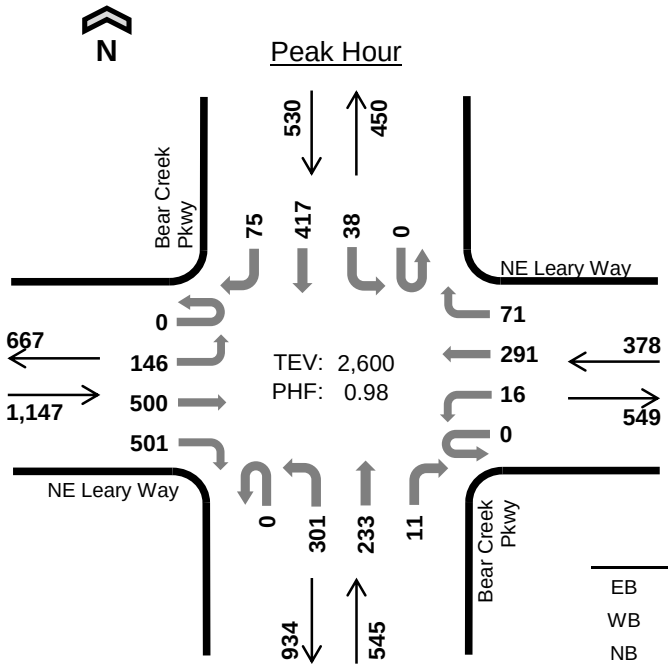
Two-Hour Count Summaries

Interval Start	NE Leary Way Eastbound				NE Leary Way Westbound				0 Northbound				159th Pl NE Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	22	244	0	0	0	203	4	0	0	0	0	0	3	0	15	491	0
4:15 PM	0	15	302	0	0	0	165	3	0	0	0	0	0	4	0	22	511	0
4:30 PM	0	25	239	0	0	0	142	5	0	0	0	0	0	5	0	22	438	0
4:45 PM	0	16	267	0	0	0	175	7	0	0	0	0	0	5	0	17	487	1,927
5:00 PM	**0**	**24**	**252**	**0**	**0**	**0**	**203**	**4**	**0**	**0**	**0**	**0**	**0**	**6**	**0**	**24**	**513**	1,949
5:15 PM	**0**	**24**	**291**	**0**	**0**	**0**	**182**	**1**	**0**	**0**	**0**	**0**	**0**	**4**	**0**	**13**	**515**	1,953
5:30 PM	**0**	**20**	**277**	**0**	**0**	**0**	**170**	**1**	**0**	**0**	**0**	**0**	**0**	**5**	**0**	**14**	**487**	2,002
5:45 PM	**0**	**18**	**305**	**0**	**0**	**0**	**167**	**9**	**0**	**0**	**0**	**0**	**0**	**8**	**0**	**18**	**525**	**2,040**
Count Total	0	164	2,177	0	0	0	1,407	34	0	0	0	0	0	40	0	145	3,967	0
Peak Hour	**0**	**86**	**1,125**	**0**	**0**	**0**	**722**	**15**	**0**	**0**	**0**	**0**	**0**	**23**	**0**	**69**	**2,040**	**0**

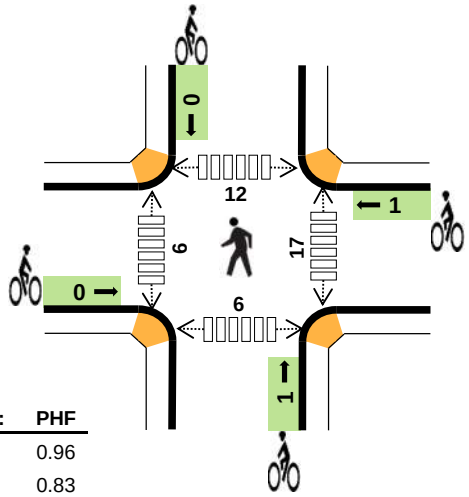
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	5	5	0	1	*11*	0	0	0	0	*0*	0	2	5	0	*7*
4:15 PM	5	2	0	1	*8*	2	0	0	0	*2*	0	0	8	0	*8*
4:30 PM	2	1	0	0	*3*	0	0	0	0	*0*	0	1	4	0	*5*
4:45 PM	4	2	0	1	*7*	0	0	0	0	*0*	0	3	4	0	*7*
5:00 PM	**3**	**0**	**0**	**0**	***3***	**0**	**0**	**0**	**0**	***0***	**0**	**8**	**12**	**0**	*20*
5:15 PM	**3**	**2**	**0**	**0**	***5***	**0**	**0**	**0**	**0**	***0***	**0**	**5**	**10**	**0**	*15*
5:30 PM	**3**	**1**	**0**	**0**	***4***	**0**	**0**	**0**	**0**	***0***	**0**	**9**	**7**	**0**	*16*
5:45 PM	**6**	**2**	**0**	**0**	***8***	**0**	**0**	**0**	**0**	***0***	**0**	**7**	**12**	**0**	***19***
Count Total	31	15	0	3	*49*	2	0	0	0	*2*	0	35	62	0	*97*
Peak Hr	**15**	**5**	**0**	**0**	***20***	**0**	**0**	**0**	**0**	***0***	**0**	**29**	**41**	**0**	***70***

Bear Creek Pkwy
NE Leary Way



Date: Tue, Oct 17, 2023
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 5:00 PM to 6:00 PM



	HV %:	PHF
EB	1.5%	0.96
WB	0.8%	0.83
NB	1.5%	0.89
SB	1.1%	0.85
TOTAL	1.3%	0.98

Two-Hour Count Summaries

Interval Start	NE Leary Way Eastbound				NE Leary Way Westbound				Bear Creek Pkwy Northbound				Bear Creek Pkwy Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	31	117	105	0	3	92	13	0	76	64	7	0	7	62	21	598	0
4:15 PM	0	42	116	129	0	2	67	15	0	76	62	3	0	6	96	24	638	0
4:30 PM	0	48	108	117	0	8	57	17	0	68	49	6	0	12	73	28	591	0
4:45 PM	0	45	92	93	0	4	75	11	0	74	60	7	0	6	92	21	580	2,407
5:00 PM	**0**	**20**	**118**	**133**	**0**	**7**	**85**	**22**	**0**	**81**	**59**	**4**	**0**	**7**	**103**	**18**	**657**	2,466
5:15 PM	**0**	**48**	**126**	**122**	**0**	**3**	**86**	**15**	**0**	**87**	**62**	**4**	**0**	**5**	**86**	**17**	**661**	2,489
5:30 PM	**0**	**40**	**125**	**117**	**0**	**1**	**55**	**23**	**0**	**59**	**60**	**1**	**0**	**13**	**122**	**21**	**637**	2,535
5:45 PM	**0**	**38**	**131**	**129**	**0**	**5**	**65**	**11**	**0**	**74**	**52**	**2**	**0**	**13**	**106**	**19**	**645**	**2,600**
Count Total	0	312	933	945	0	33	582	127	0	595	468	34	0	69	740	169	5,007	0
Peak Hour	**0**	**146**	**500**	**501**	**0**	**16**	**291**	**71**	**0**	**301**	**233**	**11**	**0**	**38**	**417**	**75**	**2,600**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	8	1	4	2	*15*	0	0	0	0	*0*	1	1	3	2	*7*
4:15 PM	1	1	5	1	*8*	1	0	0	0	*1*	4	0	4	2	*10*
4:30 PM	5	0	2	2	*9*	0	0	0	0	*0*	2	0	0	4	*6*
4:45 PM	4	2	4	2	*12*	0	0	0	0	*0*	1	2	2	1	*6*
5:00 PM	**3**	**0**	**2**	**1**	***6***	**0**	**1**	**1**	**0**	***2***	**6**	**0**	**0**	**0**	*6*
5:15 PM	**6**	**3**	**2**	**1**	***12***	**0**	**0**	**0**	**0**	***0***	**2**	**2**	**2**	**3**	*9*
5:30 PM	**4**	**0**	**2**	**2**	***8***	**0**	**0**	**0**	**0**	***0***	**3**	**2**	**3**	**0**	*8*
5:45 PM	**4**	**0**	**2**	**2**	***8***	**0**	**0**	**0**	**0**	***0***	**6**	**2**	**7**	**3**	***18***
Count Total	35	7	23	13	*78*	1	1	1	0	*3*	25	9	21	15	*70*
Peak Hour	**17**	**3**	**8**	**6**	***34***	**0**	**1**	**1**	**0**	***2***	**17**	**6**	**12**	**6**	***41***

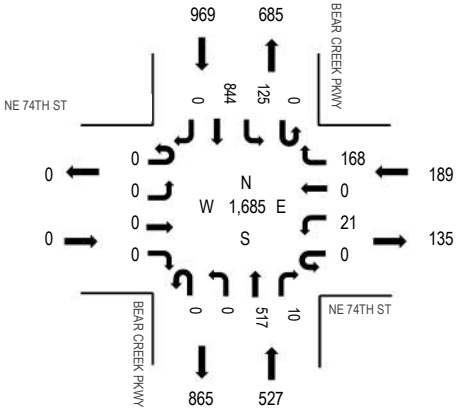
Exhibit E

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

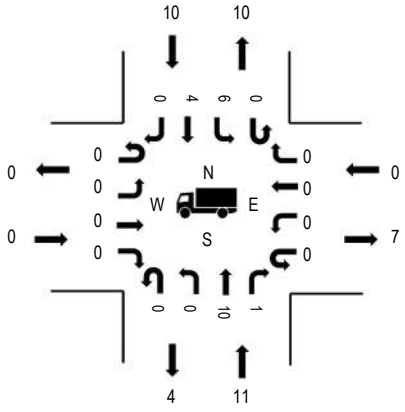
Location: BEAR CREEK PKWY & NE 74TH ST PM
Date: Tuesday, October 15, 2024
Peak Hour: 04:45 PM - 05:45 PM

Peak Hour

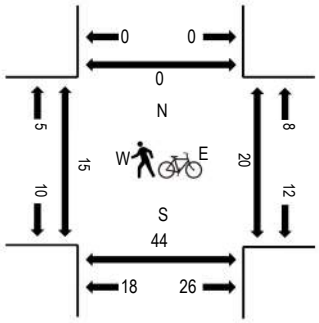
Motorized Vehicles



Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



	HV%	PHF
EB	0.0%	0.00
WB	0.0%	0.86
NB	2.1%	0.93
SB	1.0%	0.96
All	1.2%	0.98

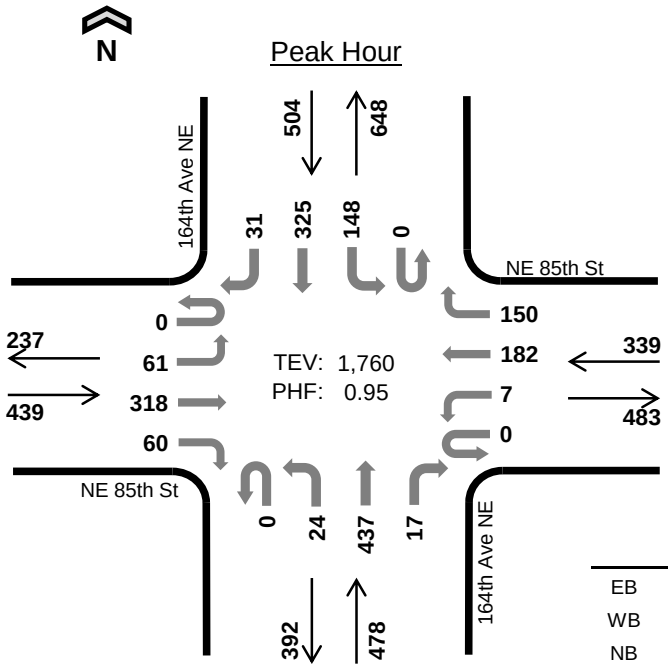
Traffic Counts - Motorized Vehicles

Interval Start Time	NE 74TH ST Eastbound				NE 74TH ST Westbound				BEAR CREEK PKWY Northbound				BEAR CREEK PKWY Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
4:00 PM	0	0	0	0	0	3	0	38	0	0	113	4	0	43	212	0	413	1,611
4:15 PM	0	0	0	0	0	4	0	33	0	0	118	2	0	28	211	0	396	1,630
4:30 PM	0	0	0	0	0	7	0	32	0	0	114	3	0	31	208	0	395	1,659
4:45 PM	0	0	0	0	0	5	0	42	0	0	105	2	0	31	222	0	407	1,685
5:00 PM	0	0	0	0	0	2	0	40	0	0	138	2	0	37	213	0	432	1,677
5:15 PM	0	0	0	0	0	7	0	38	0	0	134	4	0	27	215	0	425	
5:30 PM	0	0	0	0	0	7	0	48	0	0	140	2	0	30	194	0	421	
5:45 PM	0	0	0	0	0	2	0	50	0	0	104	1	1	32	209	0	399	
Count Total	0	0	0	0	0	37	0	321	0	0	966	20	1	259	1,684	0	3,288	
Peak Hour	0	0	0	0	0	21	0	168	0	0	517	10	0	125	844	0	1,685	

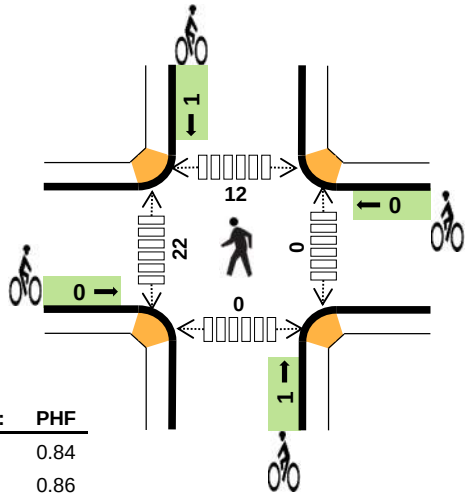
Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles in Crosswalk

Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	0	7	1	5	13	4:00 PM	0	0	0	0	0	4:00 PM	1	8	0	0	9
4:15 PM	0	2	1	4	7	4:15 PM	0	1	0	0	1	4:15 PM	0	6	3	0	9
4:30 PM	0	6	0	2	8	4:30 PM	0	0	0	0	0	4:30 PM	4	5	1	0	10
4:45 PM	0	1	0	4	5	4:45 PM	0	0	0	0	0	4:45 PM	3	9	1	0	13
5:00 PM	0	4	0	2	6	5:00 PM	0	0	0	0	0	5:00 PM	3	10	3	0	16
5:15 PM	0	3	0	3	6	5:15 PM	0	0	0	0	0	5:15 PM	3	10	9	0	22
5:30 PM	0	3	0	1	4	5:30 PM	0	0	0	0	0	5:30 PM	6	15	7	0	28
5:45 PM	0	2	0	2	4	5:45 PM	0	0	0	1	1	5:45 PM	1	7	7	0	15
Count Total	0	28	2	23	53	Count Total	0	1	0	1	2	Count Total	21	70	31	0	122
Peak Hour	0	11	0	10	21	Peak Hour	0	0	0	0	0	Peak Hour	15	44	20	0	79

164th Ave NE
NE 85th St



Date: Wed, Oct 11, 2023
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 5:00 PM to 6:00 PM



	HV %:	PHF
EB	0.0%	0.84
WB	0.0%	0.86
NB	0.6%	0.87
SB	1.2%	0.95
TOTAL	0.5%	0.95

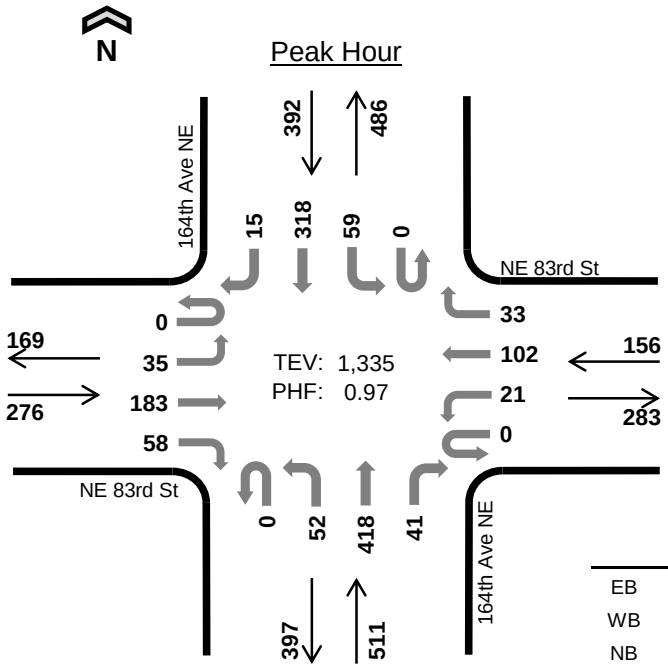
Two-Hour Count Summaries

Interval Start	NE 85th St Eastbound				NE 85th St Westbound				164th Ave NE Northbound				164th Ave NE Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	18	68	19	0	2	42	36	0	7	111	2	0	40	98	6	449	0
4:15 PM	0	12	66	11	0	3	63	19	0	11	90	1	0	27	75	14	392	0
4:30 PM	0	10	73	20	0	2	37	30	0	12	101	3	0	41	88	9	426	0
4:45 PM	0	17	61	18	0	4	53	36	0	11	85	2	0	31	77	5	400	1,667
5:00 PM	**0**	**16**	**100**	**15**	**0**	**4**	**36**	**44**	**0**	**8**	**105**	**4**	**0**	**34**	**78**	**6**	**450**	1,668
5:15 PM	**0**	**8**	**71**	**13**	**0**	**0**	**59**	**40**	**0**	**7**	**125**	**6**	**0**	**44**	**83**	**6**	**462**	1,738
5:30 PM	**0**	**21**	**71**	**20**	**0**	**1**	**40**	**40**	**0**	**6**	**102**	**2**	**0**	**34**	**78**	**9**	**424**	1,736
5:45 PM	**0**	**16**	**76**	**12**	**0**	**2**	**47**	**26**	**0**	**3**	**105**	**5**	**0**	**36**	**86**	**10**	**424**	**1,760**
Count Total	0	118	586	128	0	18	377	271	0	65	824	25	0	287	663	65	3,427	0
Peak Hour	**0**	**61**	**318**	**60**	**0**	**7**	**182**	**150**	**0**	**24**	**437**	**17**	**0**	**148**	**325**	**31**	**1,760**	**0**

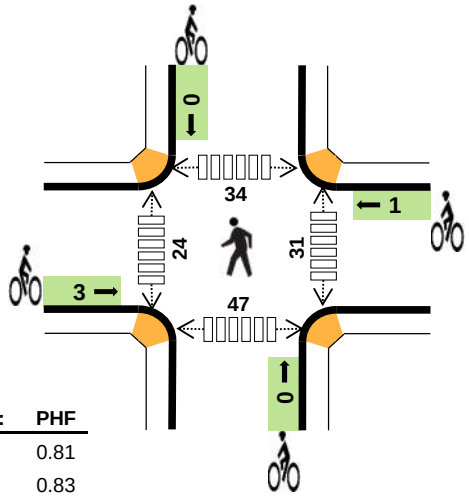
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	0	1	2	*3*	1	0	0	0	*1*	0	5	6	0	*11*
4:15 PM	0	0	2	0	*2*	0	1	1	0	*2*	5	2	9	1	*17*
4:30 PM	1	0	3	2	*6*	0	0	0	0	*0*	0	4	5	0	*9*
4:45 PM	0	0	1	1	*2*	0	0	1	0	*1*	0	5	2	0	*7*
5:00 PM	**0**	**0**	**2**	**1**	***3***	**0**	**0**	**0**	**0**	***0***	**0**	**3**	**6**	**0**	*9*
5:15 PM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***	**0**	**5**	**2**	**0**	*7*
5:30 PM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***	**0**	**11**	**3**	**0**	*14*
5:45 PM	**0**	**0**	**1**	**5**	***6***	**0**	**0**	**1**	**1**	***2***	**0**	**3**	**1**	**0**	***4***
Count Total	1	0	10	11	*22*	1	1	3	1	*6*	5	38	34	1	*78*
Peak Hour	**0**	**0**	**3**	**6**	***9***	**0**	**0**	**1**	**1**	***2***	**0**	**22**	**12**	**0**	***34***

164th Ave NE
NE 83rd St



Date: Wed, Oct 11, 2023
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 5:00 PM to 6:00 PM



	HV %:	PHF
EB	4.7%	0.81
WB	1.3%	0.83
NB	2.9%	0.88
SB	1.0%	0.96
TOTAL	2.5%	0.97

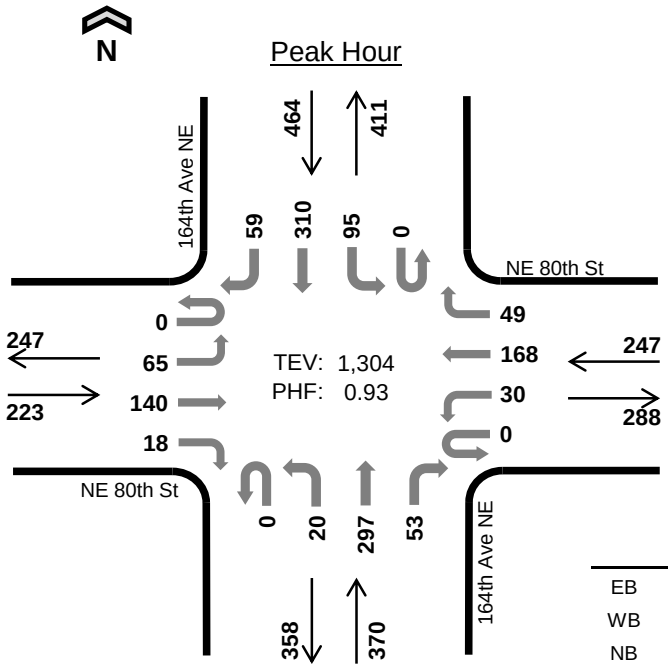
Two-Hour Count Summaries

Interval Start	NE 83rd St Eastbound				NE 83rd St Westbound				164th Ave NE Northbound				164th Ave NE Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	4	31	22	0	6	20	11	0	7	103	4	0	17	99	6	330	0
4:15 PM	0	8	32	10	0	4	22	8	0	18	91	3	0	11	70	3	280	0
4:30 PM	0	8	41	17	0	4	21	9	0	9	97	5	0	16	91	4	322	0
4:45 PM	0	7	46	16	0	4	25	9	0	14	80	11	0	13	77	3	305	1,237
5:00 PM	**0**	**13**	**56**	**16**	**0**	**5**	**21**	**12**	**0**	**11**	**95**	**9**	**0**	**9**	**82**	**4**	**333**	1,240
5:15 PM	**0**	**5**	**43**	**10**	**0**	**4**	**20**	**4**	**0**	**9**	**124**	**12**	**0**	**13**	**80**	**2**	**326**	1,286
5:30 PM	**0**	**10**	**42**	**21**	**0**	**6**	**30**	**7**	**0**	**17**	**98**	**11**	**0**	**23**	**72**	**7**	**344**	1,308
5:45 PM	**0**	**7**	**42**	**11**	**0**	**6**	**31**	**10**	**0**	**15**	**101**	**9**	**0**	**14**	**84**	**2**	**332**	**1,335**
Count Total	0	62	333	123	0	39	190	70	0	100	789	64	0	116	655	31	2,572	0
Peak Hour	**0**	**35**	**183**	**58**	**0**	**21**	**102**	**33**	**0**	**52**	**418**	**41**	**0**	**59**	**318**	**15**	**1,335**	**0**

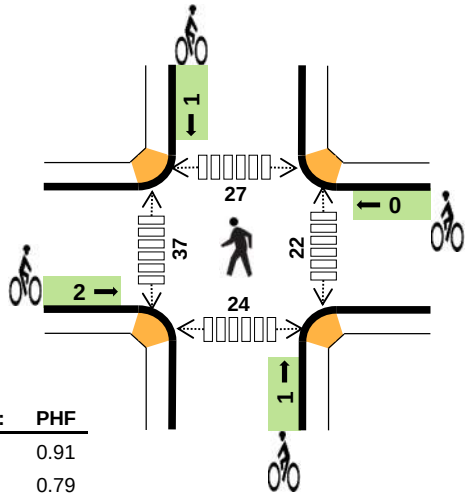
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	2	0	3	2	*7*	0	0	0	0	*0*	9	4	13	5	*31*
4:15 PM	3	3	4	0	*10*	0	0	0	0	*0*	3	3	4	9	*19*
4:30 PM	3	1	2	3	*9*	0	0	0	0	*0*	3	4	1	7	*15*
4:45 PM	4	0	3	1	*8*	0	0	1	0	*1*	3	6	4	11	*24*
5:00 PM	**4**	**1**	**5**	**1**	***11***	**2**	**0**	**0**	**0**	***2***	**6**	**2**	**8**	**17**	*33*
5:15 PM	**3**	**0**	**3**	**0**	***6***	**1**	**0**	**0**	**0**	***1***	**9**	**5**	**8**	**8**	*30*
5:30 PM	**4**	**1**	**3**	**0**	***8***	**0**	**1**	**0**	**0**	***1***	**7**	**12**	**7**	**13**	*39*
5:45 PM	**2**	**0**	**4**	**3**	***9***	**0**	**0**	**0**	**0**	***0***	**9**	**5**	**11**	**9**	***34***
Count Total	25	6	27	10	*68*	3	1	1	0	*5*	49	41	56	79	*225*
Peak Hour	**13**	**2**	**15**	**4**	***34***	**3**	**1**	**0**	**0**	***4***	**31**	**24**	**34**	**47**	***136***

164th Ave NE
NE 80th St



Date: Thu, Oct 12, 2023
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:00 PM to 5:00 PM



	HV %:	PHF
EB	1.3%	0.91
WB	0.8%	0.79
NB	3.0%	0.92
SB	3.2%	0.90
TOTAL	2.4%	0.93

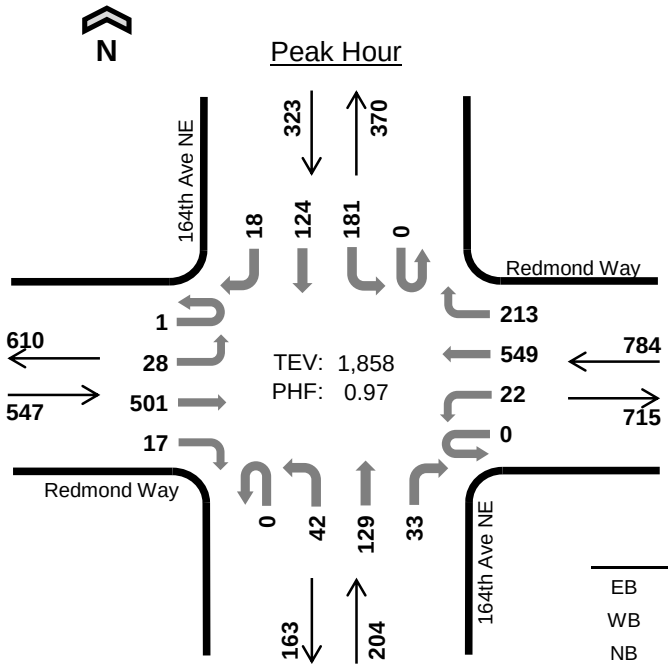
Two-Hour Count Summaries

Interval Start	NE 80th St Eastbound				NE 80th St Westbound				164th Ave NE Northbound				164th Ave NE Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	**0**	**20**	**27**	**6**	**0**	**11**	**53**	**14**	**0**	**9**	**70**	**11**	**0**	**22**	**88**	**19**	**350**	0
4:15 PM	**0**	**18**	**39**	**4**	**0**	**7**	**36**	**14**	**0**	**5**	**64**	**17**	**0**	**28**	**86**	**11**	**329**	0
4:30 PM	**0**	**11**	**43**	**5**	**0**	**7**	**35**	**10**	**0**	**2**	**78**	**13**	**0**	**20**	**70**	**18**	**312**	0
4:45 PM	**0**	**16**	**31**	**3**	**0**	**5**	**44**	**11**	**0**	**4**	**85**	**12**	**0**	**25**	**66**	**11**	**313**	**1,304**
5:00 PM	0	18	41	6	0	5	27	14	0	2	95	13	0	26	76	11	334	1,288
5:15 PM	0	21	50	5	0	6	27	22	0	6	64	15	0	26	56	5	303	1,262
5:30 PM	0	19	33	4	0	6	36	10	0	4	82	7	0	23	81	13	318	1,268
5:45 PM	0	14	49	3	0	7	35	23	0	3	69	14	0	27	63	11	318	1,273
Count Total	0	137	313	36	0	54	293	118	0	35	607	102	0	197	586	99	2,577	0
Peak Hour	**0**	**65**	**140**	**18**	**0**	**30**	**168**	**49**	**0**	**20**	**297**	**53**	**0**	**95**	**310**	**59**	**1,304**	**0**

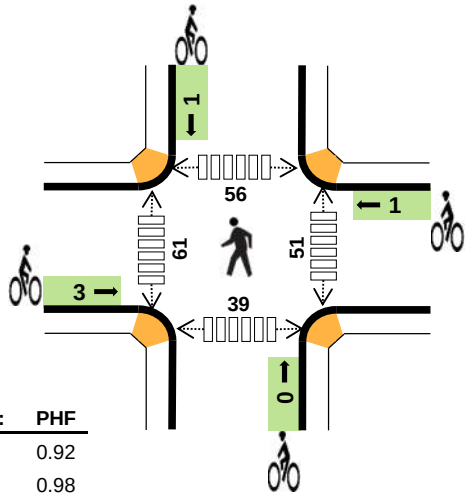
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	**1**	**1**	**4**	**3**	***9***	**1**	**0**	**0**	**1**	***2***	**5**	**7**	**17**	**1**	*30*
4:15 PM	**0**	**1**	**2**	**4**	***7***	**0**	**0**	**0**	**0**	***0***	**5**	**7**	**5**	**8**	*25*
4:30 PM	**1**	**0**	**3**	**5**	***9***	**0**	**0**	**0**	**0**	***0***	**7**	**8**	**4**	**10**	*29*
4:45 PM	**1**	**0**	**2**	**3**	***6***	**1**	**0**	**1**	**0**	***2***	**5**	**15**	**1**	**5**	***26***
5:00 PM	1	0	5	4	*10*	0	0	0	0	*0*	9	20	5	6	*40*
5:15 PM	0	1	3	4	*8*	1	0	0	0	*1*	4	7	7	6	*24*
5:30 PM	1	0	2	4	*7*	0	2	0	2	*4*	9	11	2	8	*30*
5:45 PM	0	1	4	2	*7*	1	1	0	0	*2*	10	7	7	6	*30*
Count Total	5	4	25	29	*63*	4	3	1	3	*11*	54	82	48	50	*234*
Peak Hour	**3**	**2**	**11**	**15**	***31***	**2**	**0**	**1**	**1**	***4***	**22**	**37**	**27**	**24**	***110***

164th Ave NE
Redmond Way



Date: Thu, Oct 12, 2023
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:00 PM to 5:00 PM



	HV %:	PHF
EB	2.2%	0.92
WB	2.6%	0.98
NB	0.5%	0.94
SB	5.0%	0.86
TOTAL	2.6%	0.97

Two-Hour Count Summaries

Interval Start	Redmond Way Eastbound				Redmond Way Westbound				164th Ave NE Northbound				164th Ave NE Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	**0**	**8**	**115**	**5**	**0**	**6**	**143**	**47**	**0**	**10**	**27**	**9**	**0**	**48**	**43**	**3**	**464**	0
4:15 PM	**0**	**4**	**127**	**4**	**0**	**7**	**136**	**54**	**0**	**11**	**35**	**7**	**0**	**50**	**37**	**7**	**479**	0
4:30 PM	**0**	**6**	**128**	**2**	**0**	**6**	**132**	**54**	**0**	**11**	**31**	**9**	**0**	**37**	**28**	**4**	**448**	0
4:45 PM	**1**	**10**	**131**	**6**	**0**	**3**	**138**	**58**	**0**	**10**	**36**	**8**	**0**	**46**	**16**	**4**	**467**	**1,858**
5:00 PM	0	10	99	3	0	7	125	57	0	13	41	7	0	47	33	5	447	1,841
5:15 PM	0	11	119	2	0	5	123	33	0	9	38	11	0	31	25	6	413	1,775
5:30 PM	0	10	105	10	0	6	141	44	0	7	42	6	0	39	34	8	452	1,779
5:45 PM	0	8	115	4	0	4	121	57	0	11	28	10	0	36	34	2	430	1,742
Count Total	1	67	939	36	0	44	1,059	404	0	82	278	67	0	334	250	39	3,600	0
Peak Hour	**1**	**28**	**501**	**17**	**0**	**22**	**549**	**213**	**0**	**42**	**129**	**33**	**0**	**181**	**124**	**18**	**1,858**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	**2**	**7**	**0**	**4**	***13***	**0**	**1**	**0**	**1**	***2***	**11**	**12**	**12**	**3**	*38*
4:15 PM	**4**	**6**	**0**	**5**	***15***	**1**	**0**	**0**	**0**	***1***	**13**	**5**	**17**	**5**	*40*
4:30 PM	**2**	**4**	**0**	**5**	***11***	**1**	**0**	**0**	**0**	***1***	**20**	**31**	**15**	**26**	*92*
4:45 PM	**4**	**3**	**1**	**2**	***10***	**1**	**0**	**0**	**0**	***1***	**7**	**13**	**12**	**5**	***37***
5:00 PM	0	8	0	5	*13*	0	0	0	0	*0*	13	9	15	2	*39*
5:15 PM	1	2	2	3	*8*	1	0	0	0	*1*	12	6	10	5	*33*
5:30 PM	1	3	0	5	*9*	0	0	0	0	*0*	7	10	9	0	*26*
5:45 PM	2	5	0	2	*9*	0	0	0	0	*0*	7	4	22	0	*33*
Count Total	16	38	3	31	*88*	4	1	0	1	*6*	90	90	112	46	*338*
Peak Hour	**12**	**20**	**1**	**16**	***49***	**3**	**1**	**0**	**1**	***5***	**51**	**61**	**56**	**39**	***207***

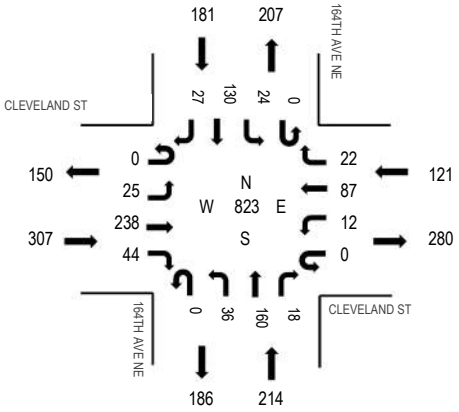
Exhibit E

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

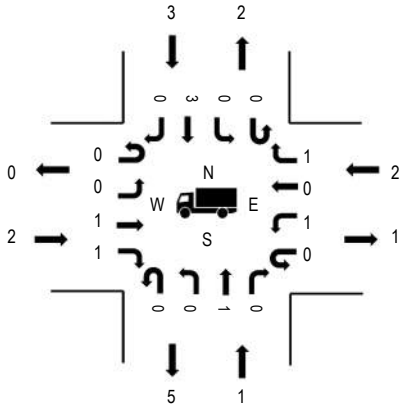
Location: 164TH AVE NE & CLEVELAND ST PM
Date: Tuesday, October 15, 2024
Peak Hour: 04:15 PM - 05:15 PM

Peak Hour

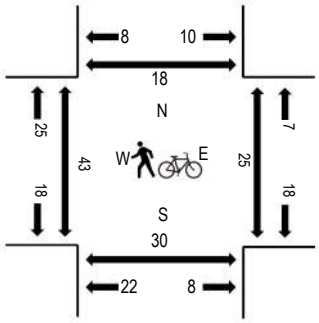
Motorized Vehicles



Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



	HV%	PHF
EB	0.7%	0.91
WB	1.7%	0.92
NB	0.5%	0.86
SB	1.7%	0.87
All	1.0%	0.93

Traffic Counts - Motorized Vehicles

Interval Start Time	CLEVELAND ST Eastbound				CLEVELAND ST Westbound				164TH AVE NE Northbound				164TH AVE NE Southbound					Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	
4:00 PM	0	10	25	13	0	5	17	2	0	13	47	11	0	4	26	5	178	801
4:15 PM	0	5	56	17	0	3	21	5	0	10	40	7	0	8	40	4	216	823
4:30 PM	0	6	50	12	0	1	21	8	0	3	39	3	0	6	26	10	185	788
4:45 PM	0	4	69	4	0	6	25	2	0	14	42	6	0	8	33	9	222	803
5:00 PM	0	10	63	11	0	2	20	7	0	9	39	2	0	2	31	4	200	760
5:15 PM	0	4	49	10	0	5	30	0	0	6	43	6	0	4	21	3	181	
5:30 PM	0	2	67	9	0	2	24	0	0	7	46	8	0	2	30	3	200	
5:45 PM	0	5	50	11	0	2	16	4	0	6	40	4	0	2	35	4	179	
Count Total	0	46	429	87	0	26	174	28	0	68	336	47	0	36	242	42	1,561	
Peak Hour	0	25	238	44	0	12	87	22	0	36	160	18	0	24	130	27	823	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles in Crosswalk

Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	1	0	0	1	2	4:00 PM	0	1	0	0	1	4:00 PM	13	2	4	3	22
4:15 PM	1	0	1	0	2	4:15 PM	1	0	0	0	1	4:15 PM	12	4	3	2	21
4:30 PM	1	1	0	2	4	4:30 PM	0	0	0	0	0	4:30 PM	6	5	5	3	19
4:45 PM	0	0	1	0	1	4:45 PM	0	0	0	0	0	4:45 PM	13	12	11	7	43
5:00 PM	0	0	0	1	1	5:00 PM	0	1	0	0	1	5:00 PM	12	9	6	6	33
5:15 PM	0	0	1	0	1	5:15 PM	0	0	0	0	0	5:15 PM	25	4	1	12	42
5:30 PM	0	0	0	2	2	5:30 PM	1	2	1	0	4	5:30 PM	12	8	6	8	34
5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0	5:45 PM	7	0	0	4	11
Count Total	3	1	3	6	13	Count Total	2	4	1	0	7	Count Total	100	44	36	45	225
Peak Hour	2	1	2	3	8	Peak Hour	1	1	0	0	2	Peak Hour	43	30	25	18	116

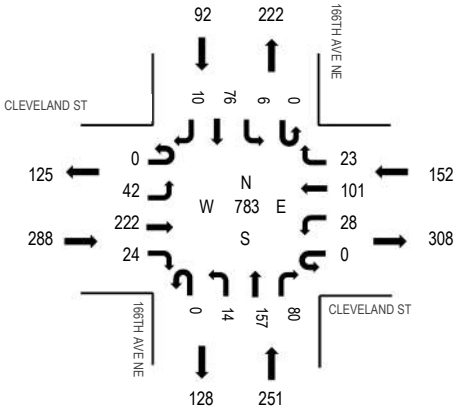
Exhibit E

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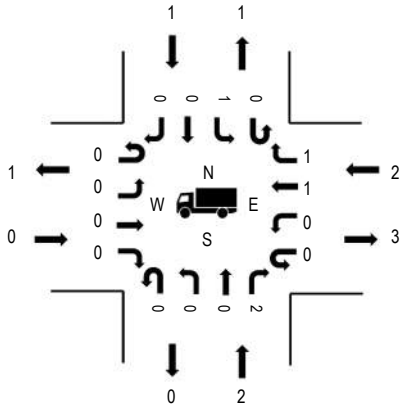
Location: 166TH AVE NE & CLEVELAND ST PM
Date: Tuesday, October 15, 2024
Peak Hour: 04:45 PM - 05:45 PM

Peak Hour

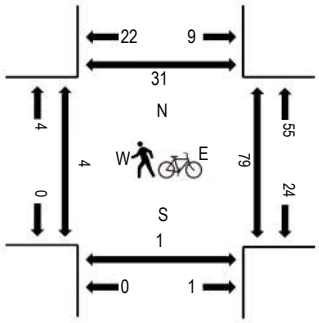
Motorized Vehicles



Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



	HV%	PHF
EB	0.0%	0.89
WB	1.3%	0.86
NB	0.8%	0.83
SB	1.1%	0.79
All	0.6%	0.95

Traffic Counts - Motorized Vehicles

Interval Start Time	CLEVELAND ST Eastbound				CLEVELAND ST Westbound				166TH AVE NE Northbound				166TH AVE NE Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
4:00 PM	0	4	30	4	0	8	16	7	0	2	40	17	0	2	21	6	157	695
4:15 PM	0	3	62	5	0	0	19	2	0	2	36	12	0	5	21	0	167	738
4:30 PM	0	5	44	2	0	6	25	5	0	3	37	12	0	2	17	8	166	759
4:45 PM	0	10	64	7	0	5	26	5	0	4	35	20	0	1	26	2	205	783
5:00 PM	0	6	61	2	0	5	21	6	0	8	48	20	0	0	19	4	200	760
5:15 PM	0	11	45	8	0	6	28	6	0	2	40	18	0	4	17	3	188	
5:30 PM	0	15	52	7	0	12	26	6	0	0	34	22	0	1	14	1	190	
5:45 PM	0	10	41	7	0	12	17	6	0	5	43	12	0	6	21	2	182	
Count Total	0	64	399	42	0	54	178	43	0	26	313	133	0	21	156	26	1,455	
Peak Hour	0	42	222	24	0	28	101	23	0	14	157	80	0	6	76	10	783	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles in Crosswalk

Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	0	2	0	0	2	4:00 PM	0	0	0	0	0	4:00 PM	1	0	15	4	20
4:15 PM	0	0	0	0	0	4:15 PM	1	0	0	0	1	4:15 PM	1	0	11	2	14
4:30 PM	1	0	0	0	1	4:30 PM	0	0	0	0	0	4:30 PM	0	0	19	5	24
4:45 PM	0	1	0	0	1	4:45 PM	0	0	0	0	0	4:45 PM	0	0	17	4	21
5:00 PM	0	0	0	0	0	5:00 PM	1	0	0	0	1	5:00 PM	1	1	24	7	33
5:15 PM	0	1	1	1	3	5:15 PM	0	1	0	0	1	5:15 PM	2	0	16	7	25
5:30 PM	0	0	1	0	1	5:30 PM	1	0	0	0	1	5:30 PM	1	0	22	13	36
5:45 PM	0	0	1	0	1	5:45 PM	0	0	0	0	0	5:45 PM	1	0	16	9	26
Count Total	1	4	3	1	9	Count Total	3	1	0	0	4	Count Total	7	1	140	51	199
Peak Hour	0	2	2	1	5	Peak Hour	2	1	0	0	3	Peak Hour	4	1	79	31	115

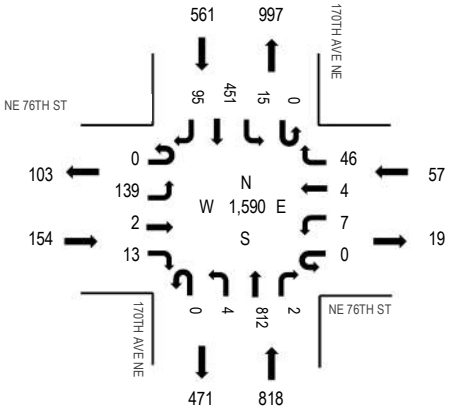
Exhibit E

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

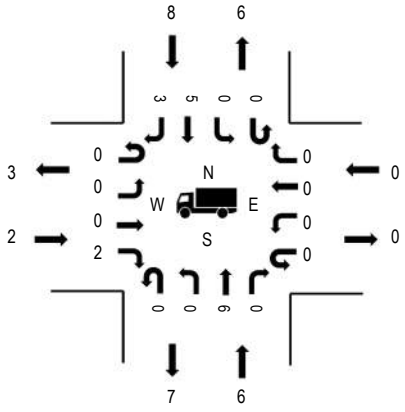
Location: 170TH AVE NE & NE 76TH ST PM
Date: Tuesday, October 15, 2024
Peak Hour: 04:15 PM - 05:15 PM

Peak Hour

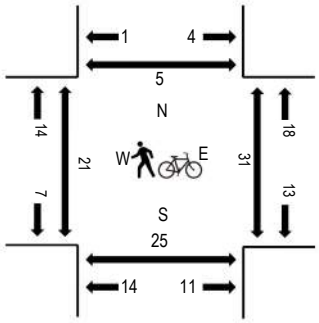
Motorized Vehicles



Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



	HV%	PHF
EB	1.3%	0.94
WB	0.0%	0.68
NB	0.7%	0.90
SB	1.4%	0.78
All	1.0%	0.96

Traffic Counts - Motorized Vehicles

Interval Start Time	NE 76TH ST Eastbound				NE 76TH ST Westbound				170TH AVE NE Northbound				170TH AVE NE Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
4:00 PM	0	32	0	2	0	1	0	6	0	2	206	0	0	3	93	24	369	1,568
4:15 PM	0	35	0	5	0	0	3	12	0	1	179	0	0	3	145	32	415	1,590
4:30 PM	0	33	1	7	0	1	0	8	0	1	226	1	0	5	94	17	394	1,557
4:45 PM	0	32	0	1	0	4	1	16	0	2	205	1	0	4	101	23	390	1,571
5:00 PM	0	39	1	0	0	2	0	10	0	0	202	0	0	3	111	23	391	1,556
5:15 PM	0	43	2	2	0	1	1	8	0	1	190	0	0	5	101	28	382	
5:30 PM	0	53	1	5	0	5	1	6	0	2	183	0	0	7	115	30	408	
5:45 PM	0	35	0	5	0	1	1	10	0	2	181	0	0	8	108	24	375	
Count Total	0	302	5	27	0	15	7	76	0	11	1,572	2	0	38	868	201	3,124	
Peak Hour	0	139	2	13	0	7	4	46	0	4	812	2	0	15	451	95	1,590	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles in Crosswalk

Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	0	4	0	1	5	4:00 PM	0	0	0	2	2	4:00 PM	5	5	5	1	16
4:15 PM	1	1	0	2	4	4:15 PM	0	0	0	1	1	4:15 PM	8	2	6	4	20
4:30 PM	1	2	0	2	5	4:30 PM	0	0	0	1	1	4:30 PM	9	8	10	1	28
4:45 PM	0	2	0	2	4	4:45 PM	0	0	0	0	0	4:45 PM	1	4	4	0	9
5:00 PM	0	1	0	2	3	5:00 PM	1	0	0	0	1	5:00 PM	3	11	11	0	25
5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	0	0	5:15 PM	2	3	6	0	11
5:30 PM	0	3	0	1	4	5:30 PM	0	0	0	0	0	5:30 PM	6	7	3	2	18
5:45 PM	0	3	0	0	3	5:45 PM	0	2	0	0	2	5:45 PM	5	0	1	0	6
Count Total	2	16	0	10	28	Count Total	1	2	0	4	7	Count Total	39	40	46	8	133
Peak Hour	2	6	0	8	16	Peak Hour	1	0	0	2	3	Peak Hour	21	25	31	5	82

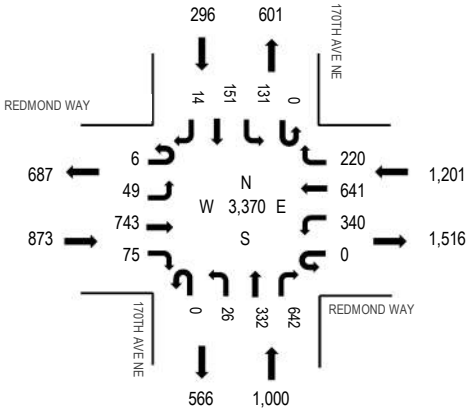
Exhibit E

ALL TRAFFIC DATA SERVICES
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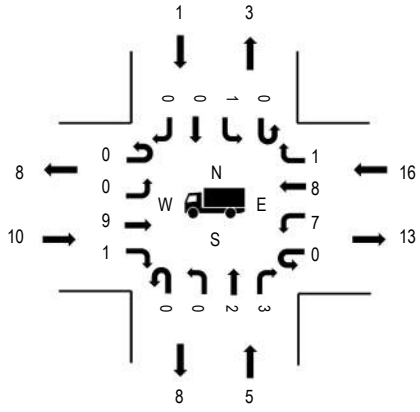
Location: 170TH AVE NE & REDMOND WAY PM
Date: Tuesday, October 15, 2024
Peak Hour: 04:15 PM - 05:15 PM

Peak Hour

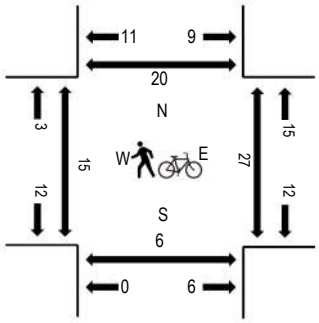
Motorized Vehicles



Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



	HV%	PHF
EB	1.1%	0.97
WB	1.3%	0.91
NB	0.5%	0.98
SB	0.3%	0.81
All	0.9%	0.95

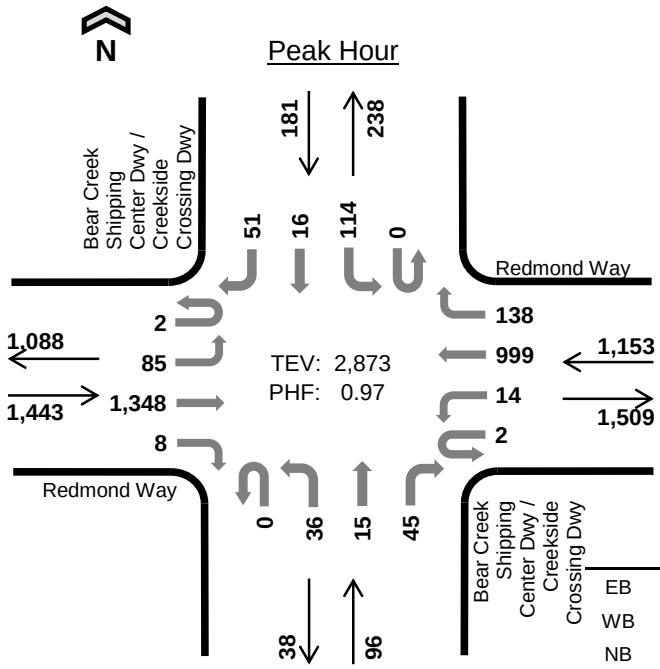
Traffic Counts - Motorized Vehicles

Interval Start Time	REDMOND WAY Eastbound				REDMOND WAY Westbound				170TH AVE NE Northbound				170TH AVE NE Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
4:00 PM	2	9	151	16	0	76	142	50	0	12	79	152	0	44	30	1	764	3,289
4:15 PM	3	11	185	24	0	109	176	46	0	5	81	153	0	40	44	7	884	3,370
4:30 PM	0	9	194	18	0	73	147	62	0	5	84	164	0	28	28	1	813	3,275
4:45 PM	3	13	172	17	0	77	150	63	0	12	81	159	0	36	42	3	828	3,286
5:00 PM	0	16	192	16	0	81	168	49	0	4	86	166	0	27	37	3	845	3,236
5:15 PM	0	11	182	13	0	85	136	51	0	4	82	151	0	37	35	2	789	
5:30 PM	3	9	170	17	0	92	148	59	0	10	68	157	0	39	49	3	824	
5:45 PM	1	10	173	19	0	81	137	43	0	6	74	153	0	33	42	6	778	
Count Total	12	88	1,419	140	0	674	1,204	423	0	58	635	1,255	0	284	307	26	6,525	
Peak Hour	6	49	743	75	0	340	641	220	0	26	332	642	0	131	151	14	3,370	

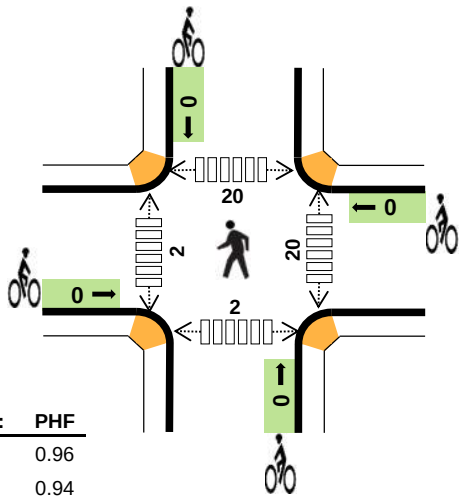
Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles in Crosswalk

Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	4	5	3	0	12	4:00 PM	0	0	0	0	0	4:00 PM	0	5	3	2	10
4:15 PM	4	1	5	0	10	4:15 PM	0	1	0	1	2	4:15 PM	8	0	7	13	28
4:30 PM	1	2	4	0	7	4:30 PM	0	0	0	0	0	4:30 PM	2	1	7	3	13
4:45 PM	3	2	2	1	8	4:45 PM	0	1	0	0	1	4:45 PM	2	2	5	2	11
5:00 PM	2	0	5	0	7	5:00 PM	0	1	0	0	1	5:00 PM	3	3	8	2	16
5:15 PM	3	0	2	1	6	5:15 PM	0	0	0	0	0	5:15 PM	3	4	8	6	21
5:30 PM	3	3	3	0	9	5:30 PM	0	0	0	0	0	5:30 PM	6	1	5	10	22
5:45 PM	1	3	1	0	5	5:45 PM	0	2	0	0	2	5:45 PM	9	1	4	9	23
Count Total	21	16	25	2	64	Count Total	0	5	0	1	6	Count Total	33	17	47	47	144
Peak Hour	10	5	16	1	32	Peak Hour	0	3	0	1	4	Peak Hour	15	6	27	20	68

Bear Creek Shipping Center Dwy / Redmond Way



Date: Tue, Sep 17, 2024
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:30 PM to 5:30 PM



	HV %:	PHF
EB	1.2%	0.96
WB	1.0%	0.94
NB	0.0%	0.96
SB	1.7%	0.89
TOTAL	1.1%	0.97

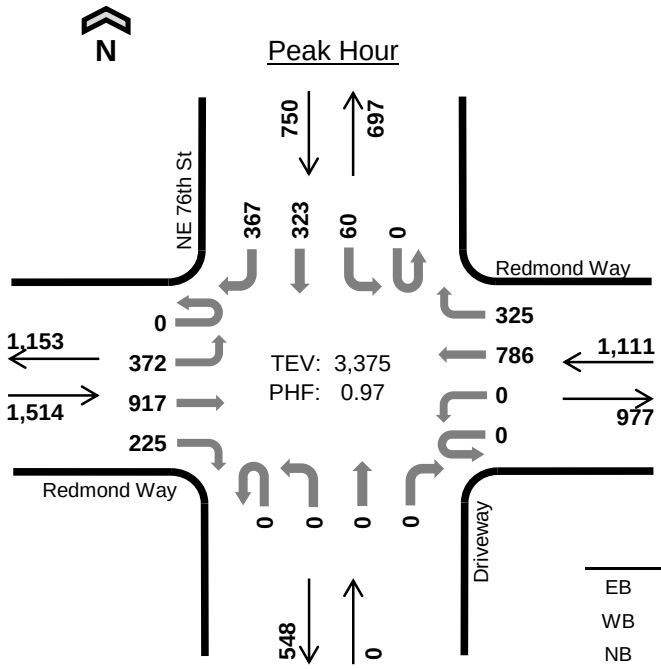
Two-Hour Count Summaries

Interval Start	Redmond Way Eastbound				Redmond Way Westbound				Bear Creek Shipping Center Dwy / Creekside Crossing Dwy Northbound				Bear Creek Shipping Center Dwy / Creekside Crossing Dwy Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	2	23	313	3	0	12	197	30	0	4	11	12	0	27	9	9	652	0
4:15 PM	0	16	291	3	0	8	219	22	0	10	2	18	0	34	6	11	640	0
4:30 PM	**1**	**27**	**339**	**3**	**0**	**3**	**231**	**38**	**0**	**10**	**3**	**11**	**0**	**17**	**6**	**18**	**707**	0
4:45 PM	**1**	**25**	**346**	**3**	**1**	**6**	**262**	**37**	**0**	**7**	**4**	**12**	**0**	**30**	**1**	**9**	**744**	2,743
5:00 PM	**0**	**17**	**338**	**1**	**0**	**2**	**251**	**32**	**0**	**10**	**4**	**10**	**0**	**36**	**3**	**12**	**716**	2,807
5:15 PM	**0**	**16**	**325**	**1**	**1**	**3**	**255**	**31**	**0**	**9**	**4**	**12**	**0**	**31**	**6**	**12**	**706**	**2,873**
5:30 PM	0	10	337	1	0	5	221	41	0	12	5	9	0	30	7	8	686	2,852
5:45 PM	0	20	314	0	0	6	222	26	0	4	5	10	0	29	0	10	646	2,754
Count Total	4	154	2,603	15	2	45	1,858	257	0	66	38	94	0	234	38	89	5,497	0
Peak Hour	**2**	**85**	**1,348**	**8**	**2**	**14**	**999**	**138**	**0**	**36**	**15**	**45**	**0**	**114**	**16**	**51**	**2,873**	**0**

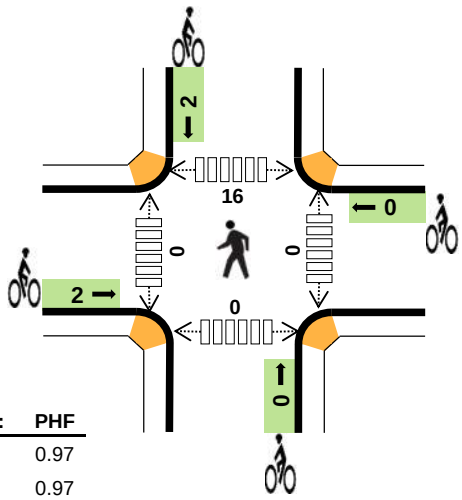
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	4	5	0	0	*9*	0	0	0	0	*0*	3	1	5	0	*9*
4:15 PM	3	3	0	0	*6*	0	0	0	0	*0*	5	1	6	0	*12*
4:30 PM	**4**	**3**	**0**	**1**	***8***	**0**	**0**	**0**	**0**	***0***	**5**	**0**	**5**	**1**	*11*
4:45 PM	**4**	**2**	**0**	**0**	***6***	**0**	**0**	**0**	**0**	***0***	**1**	**0**	**1**	**0**	*2*
5:00 PM	**7**	**5**	**0**	**1**	***13***	**0**	**0**	**0**	**0**	***0***	**6**	**0**	**8**	**0**	*14*
5:15 PM	**2**	**2**	**0**	**1**	***5***	**0**	**0**	**0**	**0**	***0***	**8**	**2**	**6**	**1**	***17***
5:30 PM	2	5	0	0	*7*	0	0	0	0	*0*	7	0	8	0	*15*
5:45 PM	6	2	0	0	*8*	0	0	0	0	*0*	2	0	5	0	*7*
Count Total	32	27	0	3	*62*	0	0	0	0	*0*	37	4	44	2	*87*
Peak Hour	**17**	**12**	**0**	**3**	***32***	**0**	**0**	**0**	**0**	***0***	**20**	**2**	**20**	**2**	***44***

NE 76th St
Redmond Way



Date: Tue, Sep 17, 2024
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:30 PM to 5:30 PM



	HV %:	PHF
EB	1.2%	0.97
WB	0.4%	0.97
NB	-	-
SB	2.4%	0.93
TOTAL	1.2%	0.97

Two-Hour Count Summaries

Interval Start	Redmond Way Eastbound				Redmond Way Westbound				Driveway Northbound				NE 76th St Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	96	200	57	0	0	158	98	0	0	0	0	0	8	81	80	778	0
4:15 PM	0	91	204	47	0	0	171	75	0	0	0	0	0	21	80	85	774	0
4:30 PM	**0**	**93**	**221**	**57**	**0**	**0**	**183**	**103**	**0**	**0**	**0**	**0**	**0**	**12**	**92**	**97**	**858**	0
4:45 PM	**0**	**102**	**238**	**52**	**0**	**0**	**193**	**93**	**0**	**0**	**0**	**0**	**0**	**19**	**79**	**98**	**874**	3,284
5:00 PM	**0**	**87**	**231**	**66**	**0**	**0**	**209**	**71**	**0**	**0**	**0**	**0**	**0**	**14**	**74**	**83**	**835**	3,341
5:15 PM	**0**	**90**	**227**	**50**	**0**	**0**	**201**	**58**	**0**	**0**	**0**	**0**	**0**	**15**	**78**	**89**	**808**	**3,375**
5:30 PM	0	76	256	44	0	0	192	68	0	0	0	0	0	13	65	78	792	3,309
5:45 PM	0	83	221	47	0	0	174	79	0	0	0	0	0	17	72	74	767	3,202
Count Total	0	718	1,798	420	0	0	1,481	645	0	0	0	0	0	119	621	684	6,486	0
Peak Hour	**0**	**372**	**917**	**225**	**0**	**0**	**786**	**325**	**0**	**0**	**0**	**0**	**0**	**60**	**323**	**367**	**3,375**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

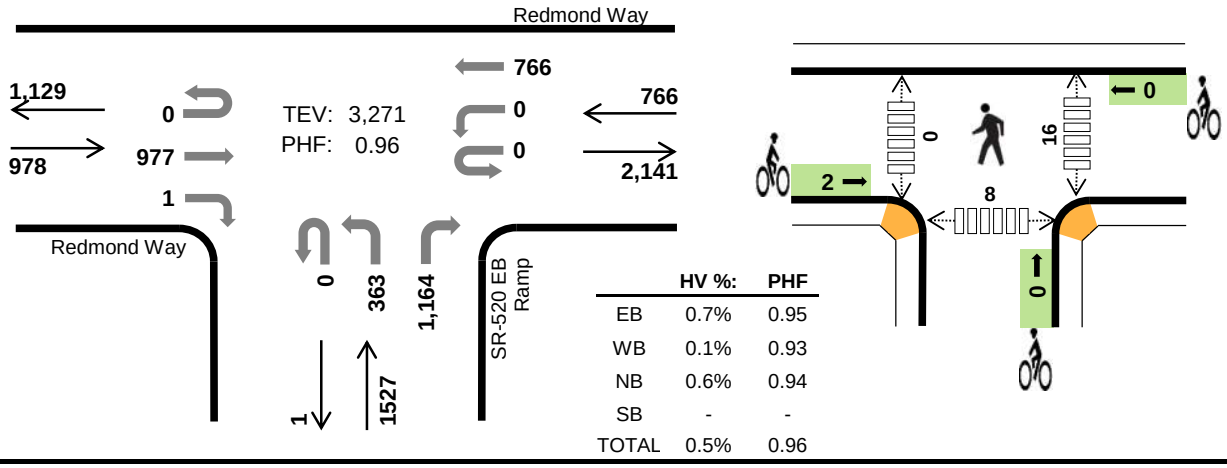
Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	4	1	0	9	*14*	0	0	0	0	*0*	0	0	3	0	*3*
4:15 PM	3	3	0	4	*10*	0	0	0	0	*0*	0	0	5	0	*5*
4:30 PM	**4**	**0**	**0**	**4**	***8***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**2**	**0**	*2*
4:45 PM	**4**	**1**	**0**	**6**	***11***	**2**	**0**	**0**	**0**	***2***	**0**	**0**	**4**	**0**	*4*
5:00 PM	**8**	**3**	**0**	**3**	***14***	**0**	**0**	**0**	**1**	***1***	**0**	**0**	**4**	**0**	*4*
5:15 PM	**2**	**0**	**0**	**5**	***7***	**0**	**0**	**0**	**1**	***1***	**0**	**0**	**6**	**0**	***6***
5:30 PM	2	2	0	3	*7*	0	1	0	0	*1*	0	0	4	0	*4*
5:45 PM	6	2	0	3	*11*	0	0	0	0	*0*	0	1	3	0	*4*
Count Total	33	12	0	37	*82*	2	1	0	2	*5*	0	1	31	0	*32*
Peak Hour	**18**	**4**	**0**	**18**	***40***	**2**	**0**	**0**	**2**	***4***	**0**	**0**	**16**	**0**	***16***

SR-520 EB Ramp
Redmond Way

N

Peak Hour

Date: Tue, Sep 17, 2024
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:30 PM to 5:30 PM



	HV %:	PHF
EB	0.7%	0.95
WB	0.1%	0.93
NB	0.6%	0.94
SB	-	-
TOTAL	0.5%	0.96

Two-Hour Count Summaries

Interval Start	Redmond Way Eastbound				Redmond Way Westbound				SR-520 EB Ramp Northbound				0 Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	218	0	0	0	142	0	0	109	0	311	0	0	0	0	780	0
4:15 PM	0	0	219	0	0	0	164	0	0	87	0	323	0	0	0	0	793	0
4:30 PM	**0**	**0**	**235**	**0**	**0**	**0**	**189**	**0**	**0**	**109**	**0**	**295**	**0**	**0**	**0**	**0**	**828**	0
4:45 PM	**0**	**0**	**256**	**1**	**0**	**0**	**198**	**0**	**0**	**103**	**0**	**298**	**0**	**0**	**0**	**0**	**856**	3,257
5:00 PM	**0**	**0**	**240**	**0**	**0**	**0**	**206**	**0**	**0**	**79**	**0**	**254**	**0**	**0**	**0**	**0**	**779**	3,256
5:15 PM	**0**	**0**	**246**	**0**	**0**	**0**	**173**	**0**	**0**	**72**	**0**	**317**	**0**	**0**	**0**	**0**	**808**	**3,271**
5:30 PM	0	0	259	0	0	0	181	0	0	74	0	281	0	0	0	0	795	3,238
5:45 PM	0	0	248	0	0	0	163	0	0	85	0	344	0	0	0	0	840	3,222
Count Total	0	0	1,921	1	0	0	1,416	0	0	718	0	2,423	0	0	0	0	6,479	0
Peak Hour	**0**	**0**	**977**	**1**	**0**	**0**	**766**	**0**	**0**	**363**	**0**	**1,164**	**0**	**0**	**0**	**0**	**3,271**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	1	1	2	0	*4*	0	0	0	0	*0*	1	0	0	0	*1*
4:15 PM	3	2	2	0	*7*	0	0	0	0	*0*	0	0	0	0	*0*
4:30 PM	**1**	**0**	**0**	**0**	***1***	**0**	**0**	**0**	**0**	***0***	**2**	**0**	**0**	**2**	*4*
4:45 PM	**0**	**0**	**4**	**0**	***4***	**2**	**0**	**0**	**0**	***2***	**5**	**0**	**0**	**1**	*6*
5:00 PM	**5**	**1**	**5**	**0**	***11***	**0**	**0**	**0**	**0**	***0***	**5**	**0**	**0**	**3**	*8*
5:15 PM	**1**	**0**	**0**	**0**	***1***	**0**	**0**	**0**	**0**	***0***	**4**	**0**	**0**	**2**	***6***
5:30 PM	0	2	2	0	*4*	0	0	0	0	*0*	4	0	0	4	*8*
5:45 PM	1	0	2	0	*3*	0	0	0	0	*0*	2	0	0	2	*4*
Count Total	12	6	17	0	*35*	2	0	0	0	*2*	23	0	0	14	*37*
Peak Hr	**7**	**1**	**9**	**0**	***17***	**2**	**0**	**0**	**0**	***2***	**16**	**0**	**0**	**8**	***24***

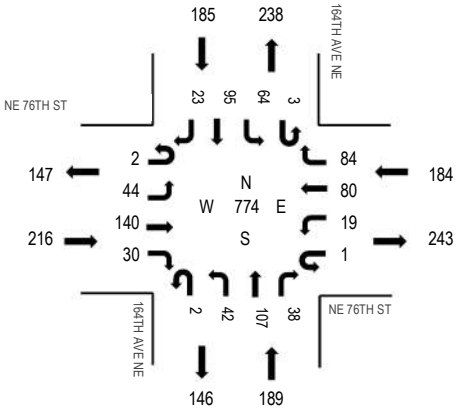
Exhibit E

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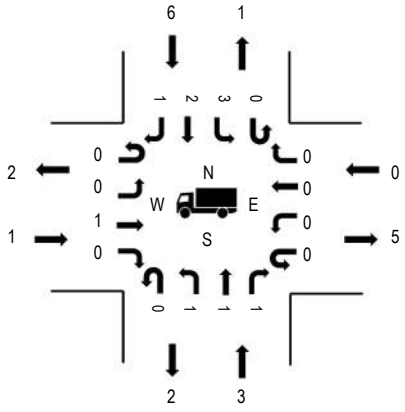
Location: 164TH AVE NE & NE 76TH ST PM
Date: Tuesday, October 15, 2024
Peak Hour: 04:00 PM - 05:00 PM

Peak Hour

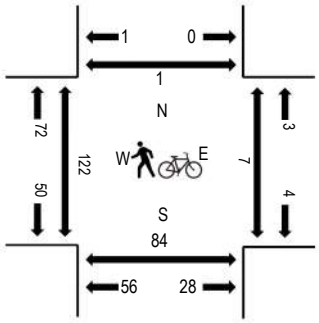
Motorized Vehicles



Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



	HV%	PHF
EB	0.5%	0.97
WB	0.0%	0.85
NB	1.6%	0.65
SB	3.2%	0.77
All	1.3%	0.84

Traffic Counts - Motorized Vehicles

Interval Start Time	NE 76TH ST Eastbound				NE 76TH ST Westbound				164TH AVE NE Northbound				164TH AVE NE Southbound					Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	
4:00 PM	1	11	36	13	0	3	29	22	1	17	38	17	1	11	26	4	230	774
4:15 PM	0	14	38	2	0	8	17	22	1	12	22	5	1	27	27	5	201	749
4:30 PM	0	9	28	9	1	5	19	14	0	8	24	6	1	12	21	6	163	729
4:45 PM	1	10	38	6	0	3	15	26	0	5	23	10	0	14	21	8	180	770
5:00 PM	1	8	42	10	0	3	27	13	1	10	29	18	0	14	21	8	205	774
5:15 PM	1	14	35	10	0	5	22	25	1	10	18	7	0	10	22	1	181	
5:30 PM	0	13	42	6	0	5	24	13	1	12	34	12	0	12	21	9	204	
5:45 PM	1	14	29	11	0	4	26	15	0	7	21	8	1	16	25	6	184	
Count Total	5	93	288	67	1	36	179	150	5	81	209	83	4	116	184	47	1,548	
Peak Hour	2	44	140	30	1	19	80	84	2	42	107	38	3	64	95	23	774	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles in Crosswalk

Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	0	2	0	2	4	4:00 PM	1	0	0	1	2	4:00 PM	29	21	3	0	53
4:15 PM	0	0	0	1	1	4:15 PM	0	0	0	0	0	4:15 PM	38	24	3	0	65
4:30 PM	1	1	0	2	4	4:30 PM	0	0	1	0	1	4:30 PM	22	18	0	1	41
4:45 PM	0	0	0	1	1	4:45 PM	0	0	0	0	0	4:45 PM	33	21	1	0	55
5:00 PM	0	0	0	1	1	5:00 PM	1	0	1	0	2	5:00 PM	36	22	0	0	58
5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	0	0	5:15 PM	38	28	1	1	68
5:30 PM	0	0	0	2	2	5:30 PM	0	1	0	0	1	5:30 PM	33	22	2	1	58
5:45 PM	1	0	0	0	1	5:45 PM	0	0	0	1	1	5:45 PM	39	39	0	0	78
Count Total	2	3	0	9	14	Count Total	2	1	2	2	7	Count Total	268	195	10	3	476
Peak Hour	1	3	0	6	10	Peak Hour	1	0	1	1	3	Peak Hour	122	84	7	1	214

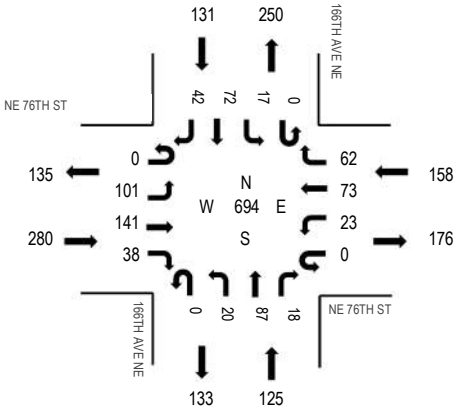
Exhibit E

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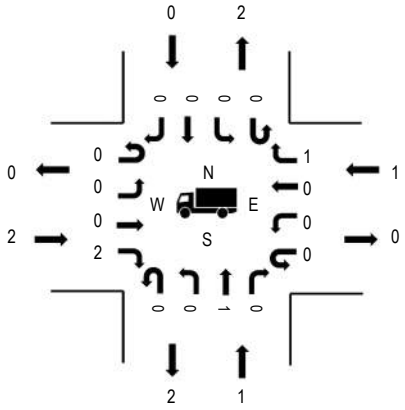
Location: 166TH AVE NE & NE 76TH ST PM
Date: Tuesday, October 15, 2024
Peak Hour: 04:45 PM - 05:45 PM

Peak Hour

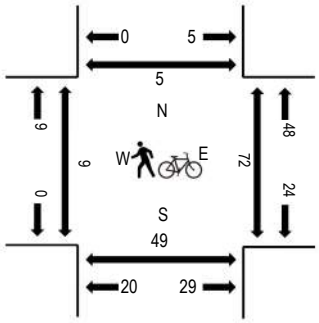
Motorized Vehicles



Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



	HV%	PHF
EB	0.7%	0.83
WB	0.6%	0.88
NB	0.8%	0.89
SB	0.0%	0.80
All	0.6%	0.94

Traffic Counts - Motorized Vehicles

Interval Start Time	NE 76TH ST Eastbound				NE 76TH ST Westbound				166TH AVE NE Northbound				166TH AVE NE Southbound					Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	
4:00 PM	0	26	29	6	0	6	24	12	1	13	24	8	0	2	19	11	181	664
4:15 PM	0	21	29	9	0	4	28	15	0	6	15	4	0	8	9	10	158	662
4:30 PM	0	19	25	9	0	4	17	10	0	9	22	4	0	3	12	7	141	664
4:45 PM	0	22	41	6	0	5	22	18	0	6	19	4	0	9	22	10	184	694
5:00 PM	0	34	40	10	0	6	14	17	0	3	26	3	0	1	12	13	179	675
5:15 PM	0	23	27	13	0	3	23	13	0	4	22	3	0	5	17	7	160	
5:30 PM	0	22	33	9	0	9	14	14	0	7	20	8	0	2	21	12	171	
5:45 PM	0	25	26	5	0	6	19	14	0	3	22	7	0	3	22	13	165	
Count Total	0	192	250	67	0	43	161	113	1	51	170	41	0	33	134	83	1,339	
Peak Hour	0	101	141	38	0	23	73	62	0	20	87	18	0	17	72	42	694	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles in Crosswalk

Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	2	1	0	0	3	4:00 PM	0	0	0	0	0	4:00 PM	1	13	12	0	26
4:15 PM	1	0	0	0	1	4:15 PM	0	0	0	0	0	4:15 PM	1	6	11	0	18
4:30 PM	2	0	0	0	2	4:30 PM	1	0	1	0	2	4:30 PM	8	4	10	8	30
4:45 PM	0	1	0	0	1	4:45 PM	0	0	0	0	0	4:45 PM	1	8	17	1	27
5:00 PM	1	0	0	0	1	5:00 PM	1	0	1	0	2	5:00 PM	4	23	21	2	50
5:15 PM	0	0	1	0	1	5:15 PM	0	0	1	0	1	5:15 PM	3	11	15	1	30
5:30 PM	1	0	0	0	1	5:30 PM	0	0	0	0	0	5:30 PM	1	7	19	1	28
5:45 PM	1	0	0	0	1	5:45 PM	0	0	0	0	0	5:45 PM	1	6	16	0	23
Count Total	8	2	1	0	11	Count Total	2	0	3	0	5	Count Total	20	78	121	13	232
Peak Hour	2	1	1	0	4	Peak Hour	1	0	2	0	3	Peak Hour	9	49	72	5	135

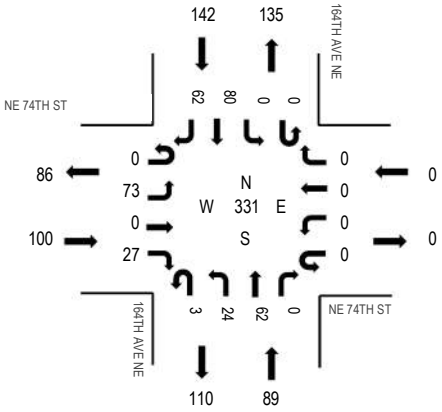
Exhibit E

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

Location: 164TH AVE NE & NE 74TH ST PM
Date: Tuesday, October 15, 2024
Peak Hour: 05:00 PM - 06:00 PM

Peak Hour

Motorized Vehicles



Heavy Vehicles

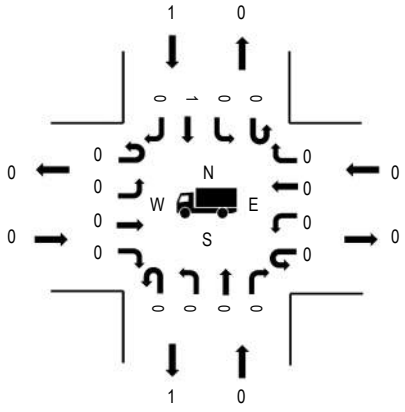

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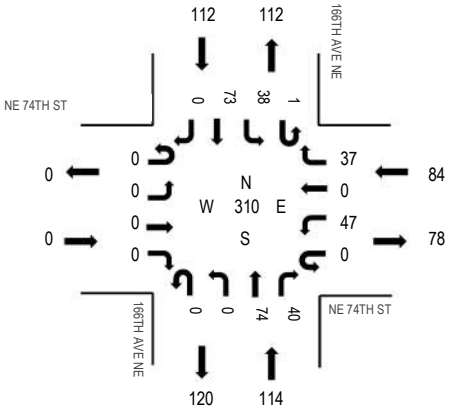
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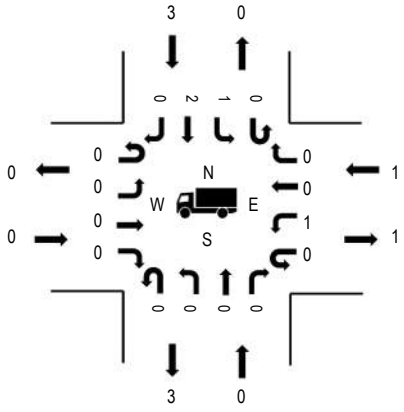
Location: 166TH AVE NE & NE 74TH ST PM
Date: Tuesday, October 15, 2024
Peak Hour: 05:00 PM - 06:00 PM

Peak Hour

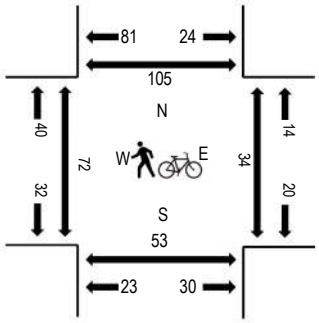
Motorized Vehicles



Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



	HV%	PHF
EB	0.0%	0.00
WB	1.2%	0.81
NB	0.0%	0.84
SB	2.7%	0.82
All	1.3%	0.92

Traffic Counts - Motorized Vehicles

Interval Start Time	NE 74TH ST Eastbound				NE 74TH ST Westbound				166TH AVE NE Northbound				166TH AVE NE Southbound					Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	
4:00 PM	0	0	0	0	0	12	0	16	0	0	25	13	1	5	20	0	92	280
4:15 PM	0	0	0	0	0	7	0	8	0	0	16	13	0	7	9	0	60	258
4:30 PM	0	0	0	0	0	6	0	13	1	0	17	5	0	4	15	0	61	282
4:45 PM	0	0	0	0	0	10	0	13	0	0	15	5	0	3	21	0	67	301
5:00 PM	0	0	0	0	0	11	0	6	0	0	21	8	0	9	15	0	70	310
5:15 PM	0	0	0	0	0	13	0	9	0	0	15	13	0	12	22	0	84	
5:30 PM	0	0	0	0	0	8	0	11	0	0	20	14	1	8	18	0	80	
5:45 PM	0	0	0	0	0	15	0	11	0	0	18	5	0	9	18	0	76	
Count Total	0	0	0	0	0	82	0	87	1	0	147	76	2	57	138	0	590	
Peak Hour	0	0	0	0	0	47	0	37	0	0	74	40	1	38	73	0	310	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles in Crosswalk

Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	0	1	3	1	5	4:00 PM	0	0	0	0	0	4:00 PM	13	22	3	20	58
4:15 PM	0	0	0	0	0	4:15 PM	2	0	0	0	2	4:15 PM	22	8	2	34	66
4:30 PM	0	0	0	1	1	4:30 PM	0	0	0	0	0	4:30 PM	21	4	4	16	45
4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	0	0	4:45 PM	14	15	7	27	63
5:00 PM	0	0	0	2	2	5:00 PM	0	0	0	0	0	5:00 PM	20	16	10	20	66
5:15 PM	0	0	1	0	1	5:15 PM	0	0	2	0	2	5:15 PM	17	8	7	24	56
5:30 PM	0	0	0	1	1	5:30 PM	0	0	0	0	0	5:30 PM	22	20	6	35	83
5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0	5:45 PM	13	9	11	26	59
Count Total	0	1	4	5	10	Count Total	2	0	2	0	4	Count Total	142	102	50	202	496
Peak Hour	0	0	1	3	4	Peak Hour	0	0	2	0	2	Peak Hour	72	53	34	105	264

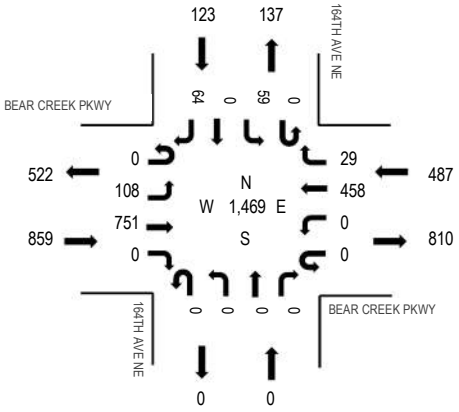
Exhibit E

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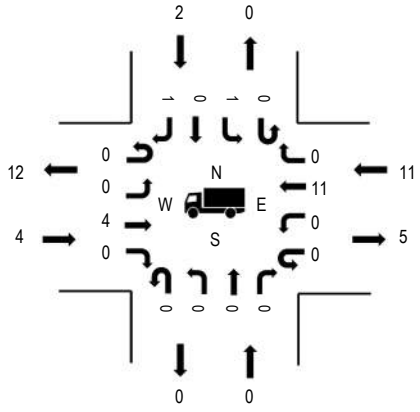
Location: 164TH AVE NE & BEAR CREEK PKWY PM
Date: Tuesday, October 15, 2024
Peak Hour: 04:45 PM - 05:45 PM

Peak Hour

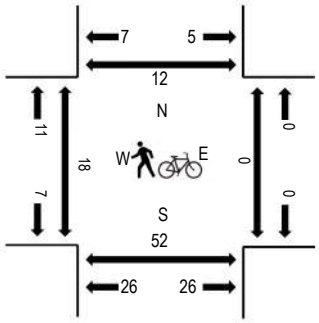
Motorized Vehicles



Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



	HV%	PHF
EB	0.5%	0.93
WB	2.3%	0.89
NB	0.0%	0.00
SB	1.6%	0.79
All	1.2%	0.96

Traffic Counts - Motorized Vehicles

Interval Start Time	BEAR CREEK PKWY Eastbound				BEAR CREEK PKWY Westbound				164TH AVE NE Northbound				164TH AVE NE Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
4:00 PM	0	18	196	0	0	0	100	5	0	0	0	0	0	13	0	24	356	1,396
4:15 PM	0	20	196	0	0	0	105	5	0	0	0	0	0	8	0	8	342	1,424
4:30 PM	0	12	199	0	0	0	95	5	0	0	0	0	0	12	0	24	347	1,454
4:45 PM	0	30	200	0	0	0	87	7	0	0	0	0	0	17	0	10	351	1,469
5:00 PM	0	29	191	0	0	0	119	6	0	0	0	0	0	15	0	24	384	1,449
5:15 PM	0	24	189	0	0	0	126	11	0	0	0	0	0	12	0	10	372	
5:30 PM	0	25	171	0	0	0	126	5	0	0	0	0	0	15	0	20	362	
5:45 PM	0	30	180	0	0	0	77	14	0	0	0	0	0	11	0	19	331	
Count Total	0	188	1,522	0	0	0	835	58	0	0	0	0	0	103	0	139	2,845	
Peak Hour	0	108	751	0	0	0	458	29	0	0	0	0	0	59	0	64	1,469	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles in Crosswalk

Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	4	0	6	1	11	4:00 PM	0	0	1	0	1	4:00 PM	2	7	0	0	9
4:15 PM	2	0	2	0	4	4:15 PM	0	0	0	0	0	4:15 PM	5	8	0	0	13
4:30 PM	1	0	6	0	7	4:30 PM	0	0	0	0	0	4:30 PM	1	8	0	2	11
4:45 PM	1	0	1	1	3	4:45 PM	0	0	0	0	0	4:45 PM	1	9	0	0	10
5:00 PM	1	0	4	0	5	5:00 PM	0	0	0	0	0	5:00 PM	2	11	0	5	18
5:15 PM	1	0	3	0	4	5:15 PM	0	0	0	0	0	5:15 PM	3	15	0	7	25
5:30 PM	1	0	3	1	5	5:30 PM	0	0	0	0	0	5:30 PM	12	17	0	0	29
5:45 PM	1	0	1	0	2	5:45 PM	1	0	1	0	2	5:45 PM	3	9	0	7	19
Count Total	12	0	26	3	41	Count Total	1	0	2	0	3	Count Total	29	84	0	21	134
Peak Hour	4	0	11	2	17	Peak Hour	0	0	0	0	0	Peak Hour	18	52	0	12	82

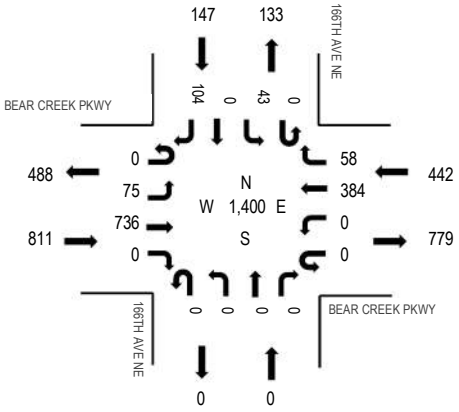
Exhibit E

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

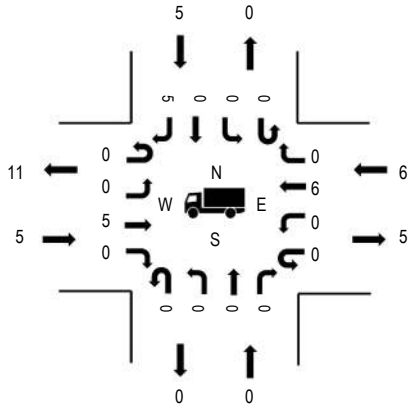
Location: 166TH AVE NE & BEAR CREEK PKWY PM
Date: Tuesday, October 15, 2024
Peak Hour: 04:45 PM - 05:45 PM

Peak Hour

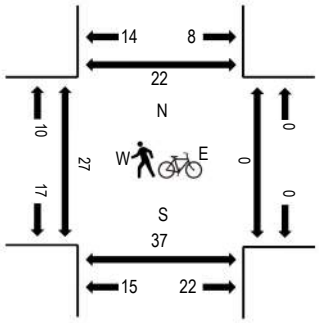
Motorized Vehicles



Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



	HV%	PHF
EB	0.6%	0.93
WB	1.4%	0.86
NB	0.0%	0.00
SB	3.4%	0.84
All	1.1%	0.95

Traffic Counts - Motorized Vehicles

Interval Start Time	BEAR CREEK PKWY Eastbound				BEAR CREEK PKWY Westbound				166TH AVE NE Northbound				166TH AVE NE Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
4:00 PM	0	21	194	0	0	0	84	22	0	0	0	0	0	9	0	22	352	1,359
4:15 PM	0	19	183	0	0	0	87	31	0	0	0	0	0	8	0	21	349	1,354
4:30 PM	0	10	201	0	0	0	78	6	0	0	0	0	0	13	0	22	330	1,372
4:45 PM	0	11	207	0	0	0	74	10	0	0	0	0	0	7	0	19	328	1,400
5:00 PM	0	19	183	0	0	0	97	14	0	0	0	0	0	6	0	28	347	1,388
5:15 PM	0	24	180	0	0	0	108	11	0	0	0	0	0	13	0	31	367	
5:30 PM	0	21	166	0	0	0	105	23	0	0	0	0	0	17	0	26	358	
5:45 PM	0	14	179	0	0	0	72	19	0	0	0	0	0	13	0	19	316	
Count Total	0	139	1,493	0	0	0	705	136	0	0	0	0	0	86	0	188	2,747	
Peak Hour	0	75	736	0	0	0	384	58	0	0	0	0	0	43	0	104	1,400	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles in Crosswalk

Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	4	0	2	4	10	4:00 PM	0	0	0	0	0	4:00 PM	8	8	0	4	20
4:15 PM	1	0	1	1	3	4:15 PM	0	0	0	0	0	4:15 PM	0	6	0	2	8
4:30 PM	1	0	3	3	7	4:30 PM	0	0	0	0	0	4:30 PM	1	9	0	3	13
4:45 PM	2	0	1	0	3	4:45 PM	0	0	0	0	0	4:45 PM	6	7	0	3	16
5:00 PM	1	0	2	2	5	5:00 PM	0	0	0	0	0	5:00 PM	10	10	0	11	31
5:15 PM	1	0	1	2	4	5:15 PM	0	0	0	0	0	5:15 PM	6	8	0	4	18
5:30 PM	1	0	2	1	4	5:30 PM	0	0	0	0	0	5:30 PM	5	12	0	4	21
5:45 PM	1	0	1	1	3	5:45 PM	1	0	0	0	1	5:45 PM	3	7	0	6	16
Count Total	12	0	13	14	39	Count Total	1	0	0	0	1	Count Total	39	67	0	37	143
Peak Hour	5	0	6	5	16	Peak Hour	0	0	0	0	0	Peak Hour	27	37	0	22	86

Appendix E

Level of Service (LOS) Methodology and Calculations

Level of Service Methodology

Level of Service (LOS) generally refers to the degree of congestion at an intersection. It is a measure of vehicle operating speed, travel time, travel delays, and driving comfort. A letter scale from A to F generally describes intersection LOS.

Signalized Intersection LOS represents the average control delay (sec/veh) and can be reported for the overall intersection, for each approach, and for each lane group (additional v/c ratio criteria apply to lane group LOS only). The table below outlines the HCM (7th Edition) LOS criteria for signalized intersections.

LOS Criteria for Signalized Intersections [1]

Control Delay (sec/veh)	Level of Service [2]	General Description [3]
≤ 10	A	Exceptionally Favorable Progression (or very short cycle lengths) – Most vehicles arrive during the green indication and travel through the intersection without stopping.
> 10 to ≤ 20	B	Highly Favorable Progression (or short cycle lengths) – While more vehicles than LOS A stop, most vehicles still pass through the intersection without stopping.
> 20 to ≤ 35	C	Favorable Progression (or moderate cycle lengths) – Individual cycle failures begin to appear, but many vehicles still pass through the intersection without stopping.
> 35 to ≤ 55	D	Ineffective Progression (or long cycle lengths) – Many vehicles stop and individual cycle failures are noticeable.
> 55 to ≤ 80	E	Unfavorable Progression (and long cycle lengths) – Individual cycle failures are frequent.
> 80	F	Very Poor Progression (and long cycle lengths) – Most cycles fail to clear the queue at this level.

1 Source: Highway Capacity Manual 7th Edition, Transportation Research Board, 2022.
2 If the volume-to-capacity (v/c) ratio for a lane group exceeds 1.0, LOS F is assigned to the individual lane group. For approach-based and intersection-wide assessments at signals, LOS is defined solely by control delay.
3 Individual cycle failures: one or more queued vehicles are not able to depart as a result of insufficient capacity during the cycle.

Synchro 12 and/or HCM 2000 LOS methodology may be used when HCM 7th Edition methodology is not supported at an intersection (i.e., intersection geometry and/or custom phasing) or jurisdictional standards require use of an alternative methodology.

Unsignalized Intersection LOS (two-way stop control, all-way stop control, and roundabouts) is based on the average control delay. For two-way stop-controlled intersections, the LOS criteria apply to each controlled minor-street approach, controlled minor-street lane group, and controlled major-street movement (additional v/c ratio criteria apply to lane group LOS only). LOS is not calculated for major-street approaches or for the intersection as a whole at two-way stop-controlled intersections. For all-way stop-controlled intersections and roundabouts, LOS can be reported for the overall intersection, for each approach, and for each lane group (additional v/c ratio criteria apply to lane group LOS only). The table below outlines the HCM (7th Edition) LOS criteria for unsignalized intersections based on these methodologies.

Note: LOS reported for WSDOT roundabouts use signalized intersection delay criteria, per *WSDOT Sidra Policy Settings*.

LOS Criteria for Unsignalized Intersections[1]

Control Delay (sec/veh)	Level of Service [2]
≤ 10	A
> 10 to ≤ 15	B
> 15 to ≤ 25	C
> 25 to ≤ 35	D
> 35 to ≤ 50	E
> 50	F

1 Source: Highway Capacity Manual 7th Edition, Transportation Research Board, 2022.
2 If the volume-to-capacity (v/c) ratio for a lane group exceeds 1.0, LOS F is assigned to the individual lane group. For approach-based and intersection-wide assessments at unsignalized intersections, LOS is defined solely by control delay.

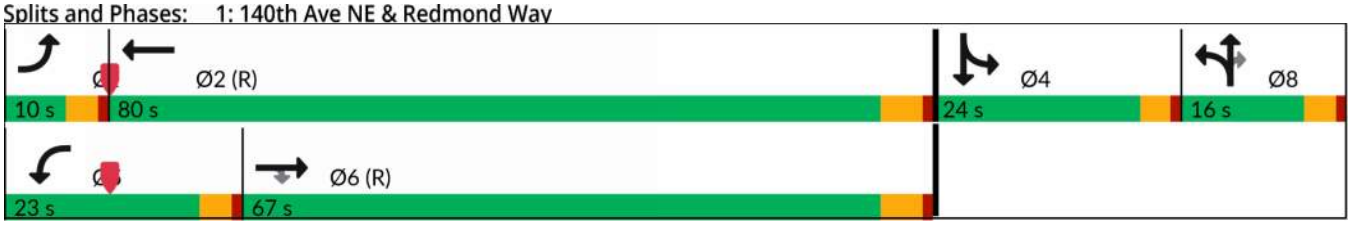
2025 Existing

Lanes, Volumes, Timings
1: 140th Ave NE & Redmond Way 03/21/2025

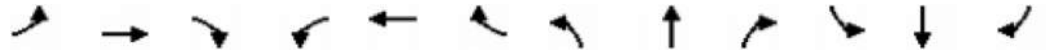
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	29	1100	98	139	1426	6	74	9	47	15	7	20
Future Volume (vph)	29	1100	98	139	1426	6	74	9	47	15	7	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-3%			4%			0%			7%	
Storage Length (ft)	125		250	250		0	0		200	0		30
Storage Lanes	1		1	1		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		40			40			35			25	
Link Distance (ft)		535			1832			797			317	
Travel Time (s)		9.1			31.2			15.5			8.6	
Confl. Peds. (#/hr)	8		2	2		8	11					11
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA	Perm	Split	NA	
Protected Phases	1	6		5	2		8	8		4	4	
Permitted Phases			6						8			
Detector Phase	1	6	6	5	2		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	5.0	12.0		5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	9.0	23.0	23.0	9.0	23.0		9.0	9.0	9.0	24.0	24.0	
Total Split (s)	10.0	67.0	67.0	23.0	80.0		16.0	16.0	16.0	24.0	24.0	
Total Split (%)	7.7%	51.5%	51.5%	17.7%	61.5%		12.3%	12.3%	12.3%	18.5%	18.5%	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)	4.0	5.0	5.0	4.0	5.0			4.0	4.0		4.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag							
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes							
Recall Mode	None	C-Max	C-Max	None	C-Max		None	None	None	None	None	

Intersection Summary
Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBT, Start of 1st Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 1: 140th Ave NE & Redmond Way



HCM 7th Signalized Intersection Summary
1: 140th Ave NE & Redmond Way 03/21/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	1100	98	139	1426	6	74	9	47	15	7	20
Future Volume (veh/h)	29	1100	98	139	1426	6	74	9	47	15	7	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	2003	2003	2003	1791	1791	1791	1900	1900	1900	1611	1611	1611
Adj Flow Rate, veh/h	32	1196	0	151	1550	7	80	10	0	16	8	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	1	1	1	1	1	0	0	0	0	0	0
Cap, veh/h	50	2500		177	2551	12	101	13		48	24	
Arrive On Green	0.03	0.66	0.00	0.10	0.73	0.73	0.06	0.06	0.00	0.05	0.05	0.00
Sat Flow, veh/h	1908	3806	1697	1706	3474	16	1617	202	1610	1040	520	0
Grp Volume(v), veh/h	32	1196	0	151	759	798	90	0	0	24	0	0
Grp Sat Flow(s),veh/h/ln	1908	1903	1697	1706	1701	1788	1819	0	1610	1559	0	0
Q Serve(g_s), s	2.2	20.4	0.0	11.3	27.8	27.9	6.3	0.0	0.0	1.9	0.0	0.0
Cycle Q Clear(g_c), s	2.2	20.4	0.0	11.3	27.8	27.9	6.3	0.0	0.0	1.9	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.01	0.89		1.00	0.67		0.00
Lane Grp Cap(c), veh/h	50	2500		177	1249	1313	113	0		72	0	
V/C Ratio(X)	0.64	0.48		0.85	0.61	0.61	0.80	0.00		0.33	0.00	
Avail Cap(c_a), veh/h	88	2500		249	1249	1313	168	0		240	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	62.7	11.2	0.0	57.3	8.3	8.3	60.1	0.0	0.0	60.0	0.0	0.0
Incr Delay (d2), s/veh	12.6	0.7	0.0	17.9	2.2	2.1	14.5	0.0	0.0	2.0	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	8.1	0.0	5.7	9.4	9.8	3.4	0.0	0.0	0.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	75.3	11.8	0.0	75.2	10.5	10.4	74.7	0.0	0.0	62.0	0.0	0.0
LnGrp LOS	E	B		E	B	B	E			E		
Approach Vol, veh/h		1228			1708			90			24	
Approach Delay, s/veh		13.5			16.2			74.7			62.0	
Approach LOS		B			B			E			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.4	100.5		10.0	17.5	90.4		12.1				
Change Period (Y+Rc), s	4.0	5.0		4.0	4.0	5.0		4.0				
Max Green Setting (Gmax), s	6.0	75.0		20.0	19.0	62.0		12.0				
Max Q Clear Time (g_c+I1), s	4.2	29.9		3.9	13.3	22.4		8.3				
Green Ext Time (p_c), s	0.0	24.2		0.0	0.2	16.3		0.1				

Intersection Summary	
HCM 7th Control Delay, s/veh	17.2
HCM 7th LOS	B

Notes

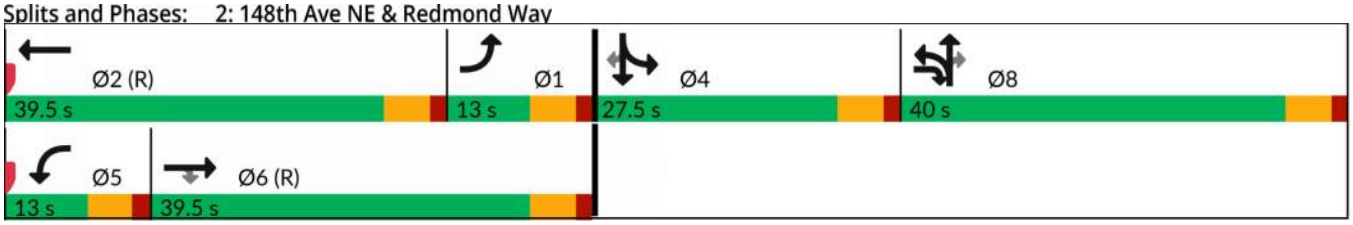
Unsignalized Delay for [NBR, EBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings
2: 148th Ave NE & Redmond Way 03/21/2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	162	812	167	158	777	10	593	588	344	30	358	252
Future Volume (vph)	162	812	167	158	777	10	593	588	344	30	358	252
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-3%			0%			-3%			3%	
Storage Length (ft)	375		150	250		0	275		200	200		250
Storage Lanes	2		1	2		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		40			40			40			40	
Link Distance (ft)		957			1580			2623			1894	
Travel Time (s)		16.3			26.9			44.7			32.3	
Confl. Peds. (#/hr)	4		4	4		4			9	9		
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	2%	2%	2%
Shared Lane Traffic (%)							35%					
Turn Type	Prot	NA	pm+ov	Prot	NA		Split	NA	Perm	Split	NA	Perm
Protected Phases	1	6	8	5	2		8	8		4	4	
Permitted Phases			6						8			4
Detector Phase	1	6	8	5	2		8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.5	27.5	24.5	10.5	25.5		24.5	24.5	24.5	27.5	27.5	27.5
Total Split (s)	13.0	39.5	40.0	13.0	39.5		40.0	40.0	40.0	27.5	27.5	27.5
Total Split (%)	10.8%	32.9%	33.3%	10.8%	32.9%		33.3%	33.3%	33.3%	22.9%	22.9%	22.9%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5		1.5	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5		5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lag	Lag		Lead	Lead							
Lead-Lag Optimize?		Yes		Yes								
Recall Mode	None	C-Max	None	None	C-Max		None	None	None	None	None	None

Intersection Summary
Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 87 (73%), Referenced to phase 2:WBT and 6:EBT, Start of 1st Green
Natural Cycle: 100
Control Type: Actuated-Coordinated

Splits and Phases: 2: 148th Ave NE & Redmond Way



HCM 7th Signalized Intersection Summary
2: 148th Ave NE & Redmond Way 03/21/2025

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	162	812	167	158	777	10	593	588	344	30	358	252
Future Volume (veh/h)	162	812	167	158	777	10	593	588	344	30	358	252
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	2003	2003	2003	1885	1885	1885	2003	2003	2003	1817	1817	1817
Adj Flow Rate, veh/h	174	873	180	170	835	11	710	531	0	32	385	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	2	2	2
Cap, veh/h	380	1231	1029	218	1026	14	1082	568		254	507	
Arrive On Green	0.10	0.32	0.32	0.02	0.09	0.09	0.28	0.28	0.00	0.05	0.05	0.00
Sat Flow, veh/h	3701	3806	1691	3483	3620	48	3815	2003	1697	1731	3453	1540
Grp Volume(v), veh/h	174	873	180	170	413	433	710	531	0	32	385	0
Grp Sat Flow(s),veh/h/ln	1850	1903	1691	1742	1791	1876	1908	2003	1697	1731	1726	1540
Q Serve(g_s), s	5.3	24.2	5.6	5.8	27.2	27.2	19.7	31.0	0.0	2.1	13.2	0.0
Cycle Q Clear(g_c), s	5.3	24.2	5.6	5.8	27.2	27.2	19.7	31.0	0.0	2.1	13.2	0.0
Prop In Lane	1.00		1.00	1.00		0.03	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	380	1231	1029	218	507	532	1082	568		254	507	
V/C Ratio(X)	0.46	0.71	0.17	0.78	0.81	0.81	0.66	0.93		0.13	0.76	
Avail Cap(c_a), veh/h	380	1231	1029	218	507	532	1097	576		317	633	
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	0.75	0.75	0.75	0.20	0.20	0.00	0.97	0.97	0.00
Uniform Delay (d), s/veh	50.7	35.6	10.4	57.9	51.3	51.3	37.8	41.9	0.0	49.7	55.0	0.0
Incr Delay (d2), s/veh	0.9	3.5	0.4	12.8	10.4	9.9	0.3	6.5	0.0	0.2	4.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	11.5	4.0	3.0	14.5	15.1	9.0	15.8	0.0	0.9	6.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	51.6	39.1	10.7	70.8	61.7	61.2	38.1	48.4	0.0	49.9	59.0	0.0
LnGrp LOS	D	D	B	E	E	E	D	D		D	E	
Approach Vol, veh/h		1227			1016			1241			417	
Approach Delay, s/veh		36.7			63.0			42.5			58.3	
Approach LOS		D			E			D			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	17.8	39.5		23.1	13.0	44.3		39.5				
Change Period (Y+Rc), s	5.5	5.5		5.5	5.5	5.5		5.5				
Max Green Setting (Gmax), s	7.5	34.0		22.0	7.5	34.0		34.5				
Max Q Clear Time (g_c+I1), s	7.3	29.2		15.2	7.8	26.2		33.0				
Green Ext Time (p_c), s	0.0	1.6		1.7	0.0	3.1		1.0				

Intersection Summary		
HCM 7th Control Delay, s/veh	47.7	
HCM 7th LOS	D	

Notes
User approved volume balancing among the lanes for turning movement.
Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings
3: Willows Rd NE & Redmond Way 03/21/2025

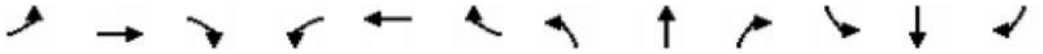
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	1241	12	23	927	241	6	5	18	538	15	14
Future Volume (vph)	14	1241	12	23	927	241	6	5	18	538	15	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-3%			0%			0%			5%	
Storage Length (ft)	150		0	125		30	0		0	275		0
Storage Lanes	1		0	1		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		40			40			25			35	
Link Distance (ft)		1580			850			188			922	
Travel Time (s)		26.9			14.5			5.1			18.0	
Confl. Peds. (#/hr)	12		4	4		12	19		5	5		19
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	1%	1%	1%
Shared Lane Traffic (%)										47%		
Turn Type	Prot	NA		Prot	NA		Split	NA		Split	NA	
Protected Phases	1	6		5	2		8	8		4	4	
Permitted Phases												
Detector Phase	1	6		5	2		8	8		4	4	
Switch Phase												
Minimum Initial (s)	6.0	12.0		5.0	12.0		5.0	5.0		6.0	6.0	
Minimum Split (s)	11.0	19.0		10.0	19.0		23.0	23.0		25.0	25.0	
Total Split (s)	11.0	55.0		10.0	54.0		23.0	23.0		32.0	32.0	
Total Split (%)	9.2%	45.8%		8.3%	45.0%		19.2%	19.2%		26.7%	26.7%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0		5.0	5.0	
Lead/Lag	Lead	Lead		Lag	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	

Intersection Summary
Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 31 (26%), Referenced to phase 2:WBT and 6:EBT, Start of 1st Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 3: Willows Rd NE & Redmond Way



HCM 7th Signalized Intersection Summary
3: Willows Rd NE & Redmond Way 03/21/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	1241	12	23	927	241	6	5	18	538	15	14
Future Volume (veh/h)	14	1241	12	23	927	241	6	5	18	538	15	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.91	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	2003	2003	2003	1885	1885	1885	1900	1900	1900	1738	1738	1738
Adj Flow Rate, veh/h	15	1334	13	25	997	0	6	5	19	603	0	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	1	1	1	1	1	0	0	0	1	1	1
Cap, veh/h	38	1609	16	269	1958		19	16	61	684	359	0
Arrive On Green	0.01	0.14	0.14	0.30	1.00	0.00	0.06	0.06	0.06	0.21	0.00	0.00
Sat Flow, veh/h	1908	3861	38	1795	3676	0	316	264	1001	3310	1738	0
Grp Volume(v), veh/h	15	657	690	25	997	0	30	0	0	603	0	0
Grp Sat Flow(s),veh/h/ln	1908	1903	1996	1795	1791	0	1581	0	0	1655	1738	0
Q Serve(g_s), s	0.9	40.4	40.4	1.2	0.0	0.0	2.2	0.0	0.0	21.2	0.0	0.0
Cycle Q Clear(g_c), s	0.9	40.4	40.4	1.2	0.0	0.0	2.2	0.0	0.0	21.2	0.0	0.0
Prop In Lane	1.00		0.02	1.00		0.00	0.20		0.63	1.00		0.00
Lane Grp Cap(c), veh/h	38	793	831	269	1958		96	0	0	684	359	0
V/C Ratio(X)	0.40	0.83	0.83	0.09	0.51		0.31	0.00	0.00	0.88	0.00	0.00
Avail Cap(c_a), veh/h	95	793	831	269	1958		237	0	0	745	391	0
HCM Platoon Ratio	0.33	0.33	0.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.62	0.62	0.62	0.78	0.78	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	58.9	47.6	47.6	36.2	0.0	0.0	54.0	0.0	0.0	46.2	0.0	0.0
Incr Delay (d2), s/veh	3.1	6.3	6.1	0.0	0.7	0.0	0.7	0.0	0.0	12.1	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	21.9	22.9	0.5	0.2	0.0	0.9	0.0	0.0	9.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	62.0	53.9	53.7	36.2	0.7	0.0	54.7	0.0	0.0	58.3	0.0	0.0
LnGrp LOS	E	D	D	D	A		D			E		
Approach Vol, veh/h		1362			1022			30			603	
Approach Delay, s/veh		53.9			1.6			54.7			58.3	
Approach LOS		D			A			D			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.4	70.6		29.8	22.9	55.0		12.3				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	6.0	49.0		27.0	5.0	50.0		18.0				
Max Q Clear Time (g_c+I1), s	2.9	2.0		23.2	3.2	42.4		4.2				
Green Ext Time (p_c), s	0.0	18.0		1.6	0.0	6.4		0.0				

Intersection Summary	
HCM 7th Control Delay, s/veh	37.1
HCM 7th LOS	D

Notes
User approved volume balancing among the lanes for turning movement.
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1227	581	197	868	328	175
Future Volume (vph)	1227	581	197	868	328	175
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	-3%			3%	-4%	
Storage Length (ft)		125	150		0	75
Storage Lanes		1	2		1	0
Taper Length (ft)			25		25	
Right Turn on Red		Yes				Yes
Link Speed (mph)	30			30	35	
Link Distance (ft)	850			951	587	
Travel Time (s)	19.3			21.6	11.4	
Confl. Peds. (#/hr)		14	14			2
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	1%	1%	1%	1%	2%	2%
Shared Lane Traffic (%)						
Turn Type	NA	pm+ov	Prot	NA	Prot	
Protected Phases	6	4	5	2	4	
Permitted Phases		6				
Detector Phase	6	4	5	2	4	
Switch Phase						
Minimum Initial (s)	8.0	6.0	5.0	20.0	6.0	
Minimum Split (s)	22.0	25.0	10.0	25.0	25.0	
Total Split (s)	57.0	48.0	15.0	72.0	48.0	
Total Split (%)	47.5%	40.0%	12.5%	60.0%	40.0%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Recall Mode	C-Max	None	None	C-Max	None	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 48 (40%), Referenced to phase 2:WBT and 6:EBT, Start of 1st Green
Natural Cycle: 65
Control Type: Actuated-Coordinated

Splits and Phases: 4: West Lake Sammamish Pkwy NE & Redmond Way



HCM 7th Signalized Intersection Summary
4: West Lake Sammamish Pkwy NE & Redmond Way 03/21/2025



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1227	581	197	868	328	175
Future Volume (veh/h)	1227	581	197	868	328	175
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)		0.98	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	2003	2003	1832	1832	2027	2027
Adj Flow Rate, veh/h	1239	587	199	877	331	0
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	1	1	1	1	2	2
Cap, veh/h	1649	724	837	2514	375	
Arrive On Green	0.87	0.87	0.49	1.00	0.19	0.00
Sat Flow, veh/h	3906	1670	3385	3573	1925	0
Grp Volume(v), veh/h	1239	587	199	877	332	0
Grp Sat Flow(s),veh/h/ln	1903	1670	1693	1741	1931	0
Q Serve(g_s), s	14.9	18.9	4.0	0.0	20.1	0.0
Cycle Q Clear(g_c), s	14.9	18.9	4.0	0.0	20.1	0.0
Prop In Lane		1.00	1.00		1.00	0.00
Lane Grp Cap(c), veh/h	1649	724	837	2514	376	
V/C Ratio(X)	0.75	0.81	0.24	0.35	0.88	
Avail Cap(c_a), veh/h	1649	724	837	2514	692	
HCM Platoon Ratio	2.00	2.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	0.67	0.67	0.91	0.91	0.93	0.00
Uniform Delay (d), s/veh	5.5	5.8	23.9	0.0	47.0	0.0
Incr Delay (d2), s/veh	2.2	6.6	0.1	0.3	6.5	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	3.7	1.6	0.1	10.2	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	7.7	12.4	24.0	0.3	53.5	0.0
LnGrp LOS	A	B	C	A	D	
Approach Vol, veh/h	1826			1076	332	
Approach Delay, s/veh	9.2			4.7	53.5	
Approach LOS	A			A	D	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		91.7		28.3	34.7	57.0
Change Period (Y+Rc), s		5.0		5.0	5.0	5.0
Max Green Setting (Gmax), s		67.0		43.0	10.0	52.0
Max Q Clear Time (g_c+I1), s		2.0		22.1	6.0	20.9
Green Ext Time (p_c), s		4.9		1.3	0.3	12.5

Intersection Summary	
HCM 7th Control Delay, s/veh	12.3
HCM 7th LOS	B

Notes

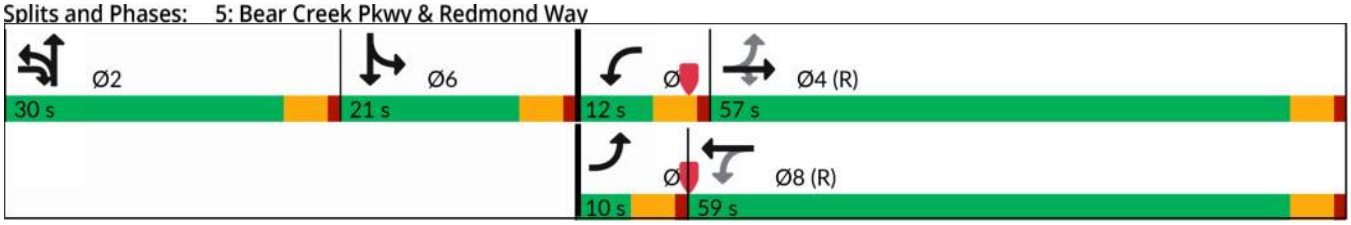
Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings
5: Bear Creek Pkwy & Redmond Way 03/21/2025

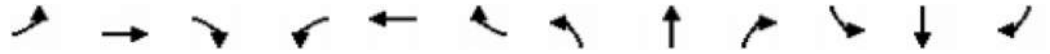
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	906	464	65	839	18	246	4	73	21	5	17
Future Volume (vph)	10	906	464	65	839	18	246	4	73	21	5	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-4%			0%			0%			0%	
Storage Length (ft)	150		175	150		0	125		0	0		0
Storage Lanes	1		1	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			25	
Link Distance (ft)		951			828			488			167	
Travel Time (s)		21.6			18.8			11.1			4.6	
Confl. Peds. (#/hr)	9		15	15		9	9		19	19		9
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)							33%					
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA		Split	NA		Split	NA	
Protected Phases	7	4	2	3	8		2	2		6	6	
Permitted Phases	4		4	8								
Detector Phase	7	4	2	3	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	8.0	6.0	5.0	8.0		6.0	6.0		5.0	5.0	
Minimum Split (s)	10.0	24.0	24.0	10.0	21.0		24.0	24.0		21.0	21.0	
Total Split (s)	10.0	57.0	30.0	12.0	59.0		30.0	30.0		21.0	21.0	
Total Split (%)	8.3%	47.5%	25.0%	10.0%	49.2%		25.0%	25.0%		17.5%	17.5%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag	Lead	Lead	Lag		Lead	Lead		Lag	Lag	
Lead-Lag Optimize?			Yes				Yes	Yes				
Recall Mode	None	C-Max	None	None	C-Max		None	None		None	None	

Intersection Summary
Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 68 (57%), Referenced to phase 4:EBTL and 8:WBTL, Start of 1st Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

Splits and Phases: 5: Bear Creek Pkwy & Redmond Way



HCM 7th Signalized Intersection Summary
5: Bear Creek Pkwy & Redmond Way 03/21/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	906	464	65	839	18	246	4	73	21	5	17
Future Volume (veh/h)	10	906	464	65	839	18	246	4	73	21	5	17
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.96	1.00		0.91
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	2042	2042	2042	1885	1885	1885	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	10	934	478	67	865	19	167	126	75	22	5	18
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	1	1	1	1	1	0	0	0	0	0	0
Cap, veh/h	425	2307	1261	355	2220	49	256	155	92	109	20	72
Arrive On Green	0.02	1.00	1.00	0.04	0.62	0.62	0.14	0.14	0.14	0.06	0.06	0.06
Sat Flow, veh/h	1945	3880	1709	1795	3582	79	1810	1097	653	1810	334	1202
Grp Volume(v), veh/h	10	934	478	67	432	452	167	0	201	22	0	23
Grp Sat Flow(s),veh/h/ln	1945	1940	1709	1795	1791	1870	1810	0	1750	1810	0	1535
Q Serve(g_s), s	0.2	0.0	0.0	1.7	14.5	14.5	10.5	0.0	13.4	1.4	0.0	1.7
Cycle Q Clear(g_c), s	0.2	0.0	0.0	1.7	14.5	14.5	10.5	0.0	13.4	1.4	0.0	1.7
Prop In Lane	1.00		1.00	1.00		0.04	1.00		0.37	1.00		0.78
Lane Grp Cap(c), veh/h	425	2307	1261	355	1110	1159	256	0	248	109	0	92
V/C Ratio(X)	0.02	0.40	0.38	0.19	0.39	0.39	0.65	0.00	0.81	0.20	0.00	0.25
Avail Cap(c_a), veh/h	483	2307	1261	392	1110	1159	377	0	365	241	0	205
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.61	0.61	0.61	0.75	0.75	0.75	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	9.8	0.0	0.0	8.4	11.4	11.4	48.7	0.0	50.0	53.6	0.0	53.8
Incr Delay (d2), s/veh	0.0	0.3	0.5	0.1	0.8	0.7	2.1	0.0	7.1	0.9	0.0	1.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.1	0.2	0.7	5.8	6.1	4.9	0.0	6.3	0.7	0.0	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	9.8	0.3	0.5	8.5	12.2	12.2	50.8	0.0	57.1	54.5	0.0	55.2
LnGrp LOS	A	A	A	A	B	B	D		E	D		E
Approach Vol, veh/h		1422			951			368			45	
Approach Delay, s/veh		0.5			11.9			54.2			54.9	
Approach LOS		A			B			D			D	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	22.0	9.5	76.3	12.2	6.4	79.4
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	25.0	7.0	52.0	16.0	5.0	54.0
Max Q Clear Time (g_c+I1), s	15.4	3.7	2.0	3.7	2.2	16.5
Green Ext Time (p_c), s	0.8	0.0	6.8	0.1	0.0	3.0

Intersection Summary	
HCM 7th Control Delay, s/veh	12.4
HCM 7th LOS	B

Notes

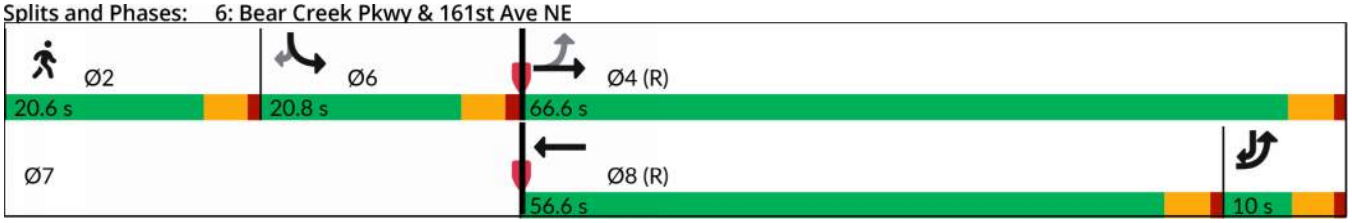
User approved volume balancing among the lanes for turning movement.

Lanes, Volumes, Timings
6: Bear Creek Pkwy & 161st Ave NE 03/21/2025

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø2
Lane Configurations							
Traffic Volume (vph)	30	438	289	172	100	73	
Future Volume (vph)	30	438	289	172	100	73	
Satd. Flow (prot)	1787	1693	1501	0	1787	1599	
Flt Permitted	0.375				0.950		
Satd. Flow (perm)	705	1693	1501	0	1612	1445	
Satd. Flow (RTOR)			38			83	
Confl. Peds. (#/hr)	48			48	29	23	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	
Parking (#/hr)		0	0	0			
Shared Lane Traffic (%)							
Lane Group Flow (vph)	34	498	523	0	114	83	
Turn Type	pm+pt	NA	NA		Prot	pm+ov	
Protected Phases	7	4	8		6	7	2
Permitted Phases	4					6	
Detector Phase	7	4	8		6	7	
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	9.4	9.6	20.6		20.6	9.4	20.6
Total Split (s)	10.0	66.6	56.6		20.8	10.0	20.6
Total Split (%)	9.3%	61.7%	52.4%		19.3%	9.3%	19%
Yellow Time (s)	3.4	3.6	3.6		3.6	3.4	3.6
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.4	4.6	4.6		4.6	4.4	
Lead/Lag	Lag		Lead		Lag	Lag	Lead
Lead-Lag Optimize?							
Recall Mode	None	C-Max	C-Max		None	None	None
Act Effct Green (s)	74.2	74.0	66.0		12.4	18.2	
Actuated g/C Ratio	0.69	0.69	0.61		0.11	0.17	
v/c Ratio	0.06	0.43	0.56		0.56	0.26	
Control Delay (s/veh)	9.7	11.7	15.1		54.8	6.7	
Queue Delay	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	9.7	11.7	15.1		54.8	6.7	
LOS	A	B	B		D	A	
Approach Delay (s/veh)		11.6	15.1		34.5		
Approach LOS		B	B		C		

Intersection Summary	
Cycle Length: 108	
Actuated Cycle Length: 108	
Offset: 11 (10%), Referenced to phase 4:EBTL and 8:WBT, Start of 1st Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.56	
Intersection Signal Delay (s/veh): 16.7	Intersection LOS: B
Intersection Capacity Utilization 44.5%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 6: Bear Creek Pkwy & 161st Ave NE

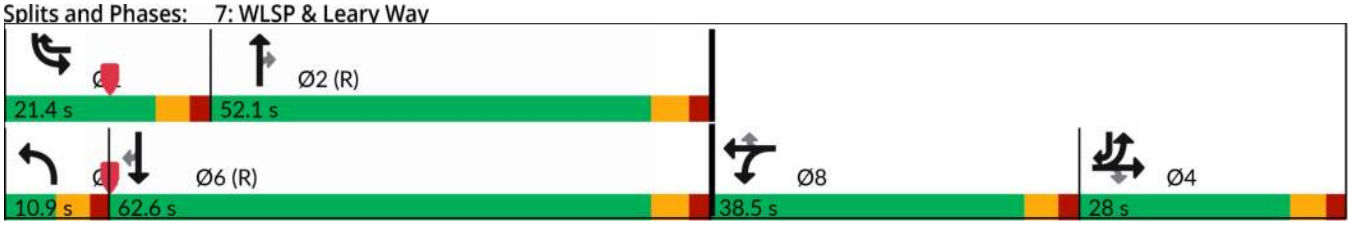


Lanes, Volumes, Timings
7: WLSP & Leary Way 03/21/2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	260	10	192	251	440	79	14	918	1041	189	794	529
Future Volume (vph)	260	10	192	251	440	79	14	918	1041	189	794	529
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-6%			3%			0%			0%	
Storage Length (ft)	0		175	200		150	200		275	175		0
Storage Lanes	0		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			No
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		718			834			1781			1175	
Travel Time (s)		16.3			19.0			30.4			20.0	
Confl. Peds. (#/hr)	34					34			3	3		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	4%	4%	4%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Shared Lane Traffic (%)				11%								
Turn Type	Split	NA	Perm	Split	NA	pm+ov	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	4	4		8	8	1	5	2		1	6	4
Permitted Phases			4			8			2			6
Detector Phase	4	4	4	8	8	1	5	2	2	1	6	4
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	7.0	7.0	7.0	5.0	10.0	10.0	7.0	10.0	5.0
Minimum Split (s)	10.9	10.9	10.9	38.5	38.5	12.5	10.5	33.9	33.9	12.5	15.9	10.9
Total Split (s)	28.0	28.0	28.0	38.5	38.5	21.4	10.9	52.1	52.1	21.4	62.6	28.0
Total Split (%)	20.0%	20.0%	20.0%	27.5%	27.5%	15.3%	7.8%	37.2%	37.2%	15.3%	44.7%	20.0%
Yellow Time (s)	3.9	3.9	3.9	3.5	3.5	3.5	3.5	3.9	3.9	3.5	3.9	3.9
All-Red 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
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.9	5.9	5.5	5.5	5.5	5.5	5.9	5.9	5.5	5.9	5.9
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?				Yes	Yes	Yes		Yes	Yes	Yes		
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	None

Intersection Summary
Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 92 (66%), Referenced to phase 2:NBT and 6:SBT, Start of 1st Green
Natural Cycle: 140
Control Type: Actuated-Coordinated

Splits and Phases: 7: WLSP & Leary Way



HCM 7th Signalized Intersection Summary
7: WLSP & Leary Way 03/21/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	260	10	192	251	440	79	14	918	1041	189	794	529
Future Volume (veh/h)	260	10	192	251	440	79	14	918	1041	189	794	529
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.93	1.00		0.95	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	2076	2076	2076	1817	1817	1817	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	274	11	202	242	493	83	15	966	0	199	836	557
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	4	4	4	2	2	2	2	2	2	2	2	2
Cap, veh/h	298	12	258	361	759	481	28	1273		202	1620	970
Arrive On Green	0.16	0.16	0.16	0.21	0.21	0.21	0.01	0.12	0.00	0.11	0.46	0.46
Sat Flow, veh/h	1904	76	1645	1731	3635	1465	1781	3554	1585	1781	3554	1582
Grp Volume(v), veh/h	285	0	202	242	493	83	15	966	0	199	836	557
Grp Sat Flow(s),veh/h/ln	1981	0	1645	1731	1817	1465	1781	1777	1585	1781	1777	1582
Q Serve(g_s), s	19.8	0.0	16.5	18.0	17.4	5.7	1.2	36.9	0.0	15.6	23.4	29.5
Cycle Q Clear(g_c), s	19.8	0.0	16.5	18.0	17.4	5.7	1.2	36.9	0.0	15.6	23.4	29.5
Prop In Lane	0.96		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	310	0	258	361	759	481	28	1273		202	1620	970
V/C Ratio(X)	0.92	0.00	0.78	0.67	0.65	0.17	0.53	0.76		0.98	0.52	0.57
Avail Cap(c_a), veh/h	313	0	260	408	857	520	69	1273		202	1620	970
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.95	0.95	0.95	0.31	0.31	0.00	0.90	0.90	0.90
Uniform Delay (d), s/veh	58.2	0.0	56.8	50.9	50.7	34.1	69.1	55.9	0.0	61.9	27.1	16.2
Incr Delay (d2), s/veh	30.7	0.0	14.4	4.1	1.7	0.2	4.8	1.4	0.0	55.2	1.1	2.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.6	0.0	7.9	8.3	8.1	2.1	0.6	17.9	0.0	10.1	10.0	15.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	88.8	0.0	71.2	55.0	52.4	34.3	73.9	57.2	0.0	117.1	28.2	18.4
LnGrp LOS	F		E	E	D	C	E	E		F	C	B
Approach Vol, veh/h		487			818			981			1592	
Approach Delay, s/veh		81.5			51.3			57.5			35.9	
Approach LOS		F			D			E			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	21.4	56.0		27.8	7.7	69.7		34.7				
Change Period (Y+Rc), s	5.5	5.9		5.9	5.5	5.9		5.5				
Max Green Setting (Gmax), s	15.9	46.2		22.1	5.4	56.7		33.0				
Max Q Clear Time (g_c+I1), s	17.6	38.9		21.8	3.2	31.5		20.0				
Green Ext Time (p_c), s	0.0	3.7		0.1	0.0	11.3		5.6				

Intersection Summary	
HCM 7th Control Delay, s/veh	50.3
HCM 7th LOS	D

Notes

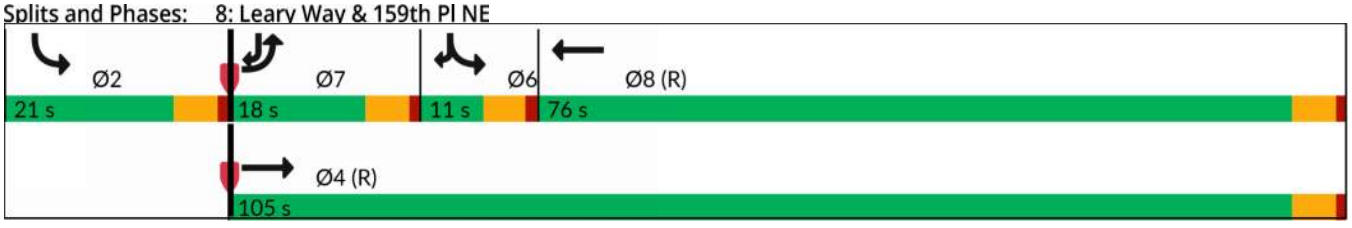
User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings
8: Leary Way & 159th Pl NE 03/21/2025

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø2	Ø6
Lane Configurations								
Traffic Volume (vph)	89	1170	751	16	24	72		
Future Volume (vph)	89	1170	751	16	24	72		
Satd. Flow (prot)	1787	1881	3550	0	1805	1615		
Flt Permitted	0.950				0.950			
Satd. Flow (perm)	1684	1881	3550	0	1805	1615		
Satd. Flow (RTOR)			3			74		
Confl. Peds. (#/hr)	41			41		29		
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97		
Heavy Vehicles (%)	1%	1%	1%	1%	0%	0%		
Mid-Block Traffic (%)		0%	0%		50%			
Shared Lane Traffic (%)								
Lane Group Flow (vph)	92	1206	790	0	25	74		
Turn Type	Prot	NA	NA		Prot	pt+ov		
Protected Phases	7	4!	8		2 6!	6 7	2	6
Permitted Phases								
Detector Phase	7	4	8		2 6	7		
Switch Phase								
Minimum Initial (s)	5.0	7.0	7.0				4.0	6.0
Minimum Split (s)	10.0	12.0	20.0				21.0	11.0
Total Split (s)	18.0	105.0	76.0				21.0	11.0
Total Split (%)	14.3%	83.3%	60.3%				17%	9%
Yellow Time (s)	4.0	4.0	4.0				4.0	4.0
All-Red Time (s)	1.0	1.0	1.0				1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0					
Total Lost Time (s)	5.0	5.0	5.0					
Lead/Lag	Lead							Lag
Lead-Lag Optimize?	Yes							Yes
Recall Mode	None	C-Max	C-Max				None	None
Act Effct Green (s)	10.4	107.4	84.4		17.5	17.0		
Actuated g/C Ratio	0.08	0.85	0.67		0.14	0.13		
v/c Ratio	0.63	0.75	0.33		0.10	0.26		
Control Delay (s/veh)	74.1	9.9	11.7		30.6	11.8		
Queue Delay	0.0	1.3	0.0		0.0	0.0		
Total Delay (s/veh)	74.1	11.2	11.7		30.6	11.8		
LOS	E	B	B		C	B		
Approach Delay (s/veh)		15.6	11.7		16.6			
Approach LOS		B	B		B			

Intersection Summary
Cycle Length: 126
Actuated Cycle Length: 126
Offset: 0 (0%), Referenced to phase 8:WBT and 4:EBT, Start of 1st Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.75
Intersection Signal Delay (s/veh): 14.2 Intersection LOS: B
Intersection Capacity Utilization 79.4% ICU Level of Service D
Analysis Period (min) 15
! Phase conflict between lane groups.

Splits and Phases: 8: Leary Way & 159th Pl NE



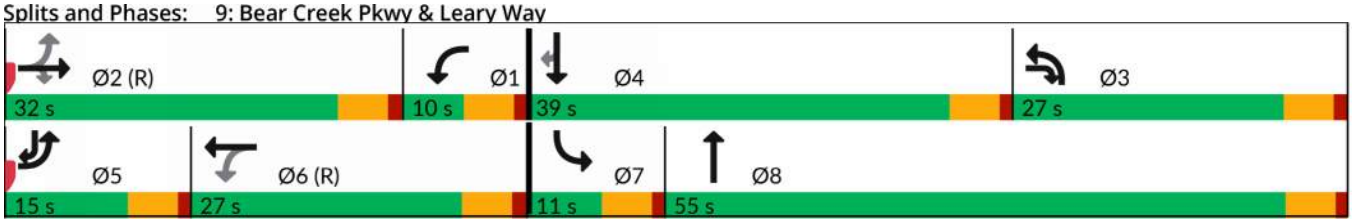
Lanes, Volumes, Timings
9: Bear Creek Pkwy & Leary Way 03/21/2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	152	520	521	17	303	74	313	242	11	40	434	78
Future Volume (vph)	152	520	521	17	303	74	313	242	11	40	434	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		225	175		0	190		0	275		100
Storage Lanes	1		1	1		0	2		0	1		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		664			421			452			692	
Travel Time (s)		15.1			9.6			10.3			15.7	
Confl. Peds. (#/hr)	12		6	6		12	6		17	17		6
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	2%	2%	2%	1%	1%	1%	2%	2%	2%	1%	1%	1%
Shared Lane Traffic (%)												
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA		Prot	NA		Prot	NA	pm+ov
Protected Phases	5	2	3	1	6		3	8		7	4	5
Permitted Phases	2		2	6								4
Detector Phase	5	2	3	1	6		3	8		7	4	4
Switch Phase												
Minimum Initial (s)	5.0	8.0	6.0	5.0	8.0		6.0	6.0		5.0	5.0	5.0
Minimum Split (s)	10.0	26.2	11.2	10.0	24.2		11.2	28.0		10.0	26.0	10.0
Total Split (s)	15.0	32.0	27.0	10.0	27.0		27.0	55.0		11.0	39.0	15.0
Total Split (%)	13.9%	29.6%	25.0%	9.3%	25.0%		25.0%	50.9%		10.2%	36.1%	13.9%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.2	1.2	1.0	1.2		1.2	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0	5.2	5.2	5.0	5.2		5.2	5.0		5.0	5.0	5.0
Lead/Lag	Lead	Lead	Lag	Lag	Lag		Lag	Lag		Lead	Lead	Lead
Lead-Lag Optimize?												
Recall Mode	None	C-Max	None	None	C-Max		None	None		None	None	None

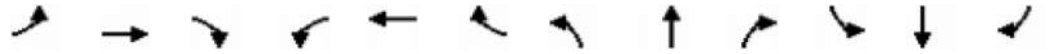
Intersection Summary

Area Type: Other
Cycle Length: 108
Actuated Cycle Length: 108
Offset: 88 (81%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green
Natural Cycle: 75
Control Type: Actuated-Coordinated

Splits and Phases: 9: Bear Creek Pkwy & Leary Way



HCM 7th Signalized Intersection Summary
9: Bear Creek Pkwy & Leary Way 03/21/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	152	520	521	17	303	74	313	242	11	40	434	78
Future Volume (veh/h)	152	520	521	17	303	74	313	242	11	40	434	78
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.98		0.98	0.99		0.98	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1885	1885	1885	1870	1870	1870	1885	1885	1885
Adj Flow Rate, veh/h	155	531	532	17	309	76	319	247	11	41	443	80
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	1	1	1	2	2	2	1	1	1
Cap, veh/h	258	882	571	446	975	236	407	611	27	59	488	553
Arrive On Green	0.09	0.25	0.25	0.18	0.34	0.34	0.12	0.34	0.34	0.03	0.26	0.26
Sat Flow, veh/h	1781	3554	1547	1795	2849	689	3456	1776	79	1795	1885	1566
Grp Volume(v), veh/h	155	531	532	17	192	193	319	0	258	41	443	80
Grp Sat Flow(s),veh/h/ln	1781	1777	1547	1795	1791	1747	1728	0	1855	1795	1885	1566
Q Serve(g_s), s	8.0	14.3	22.7	0.0	8.5	8.8	9.7	0.0	11.4	2.4	24.6	2.3
Cycle Q Clear(g_c), s	8.0	14.3	22.7	0.0	8.5	8.8	9.7	0.0	11.4	2.4	24.6	2.3
Prop In Lane	1.00		1.00	1.00		0.39	1.00		0.04	1.00		1.00
Lane Grp Cap(c), veh/h	258	882	571	446	613	598	407	0	638	59	488	553
V/C Ratio(X)	0.60	0.60	0.93	0.04	0.31	0.32	0.78	0.00	0.40	0.70	0.91	0.14
Avail Cap(c_a), veh/h	259	882	571	446	613	598	698	0	859	100	593	640
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.59	0.59	0.59	1.00	1.00	1.00	0.89	0.00	0.89	0.89	0.89	0.89
Uniform Delay (d), s/veh	36.6	35.9	32.8	29.3	26.2	26.3	46.3	0.0	27.0	51.7	38.8	10.2
Incr Delay (d2), s/veh	1.9	1.8	16.6	0.0	1.3	1.4	3.0	0.0	0.4	12.4	14.4	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	6.4	10.0	0.3	3.9	3.9	4.3	0.0	5.1	1.3	13.2	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	38.5	37.7	49.5	29.3	27.5	27.7	49.3	0.0	27.4	64.1	53.1	10.3
LnGrp LOS	D	D	D	C	C	C	D		C	E	D	B
Approach Vol, veh/h		1218			402			577			564	
Approach Delay, s/veh		42.9			27.7			39.5			47.9	
Approach LOS		D			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	25.1	32.0	17.9	33.0	14.9	42.2	8.5	42.4
Change Period (Y+Rc), s	5.2	* 5.2	5.2	5.0	5.0	5.2	5.0	* 5.2
Max Green Setting (Gmax), s	5.0	* 27	21.8	34.0	10.0	21.8	6.0	* 50
Max Q Clear Time (g_c+I1), s	2.0	24.7	11.7	26.6	10.0	10.8	4.4	13.4
Green Ext Time (p_c), s	0.0	1.2	1.0	1.4	0.0	1.2	0.0	1.0

Intersection Summary	
HCM 7th Control Delay, s/veh	41.0
HCM 7th LOS	D

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

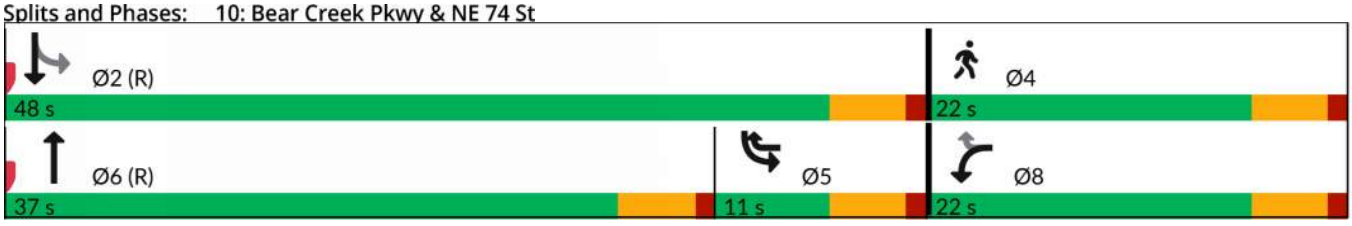
Lanes, Volumes, Timings
10: Bear Creek Pkwy & NE 74 St 03/21/2025

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø4
Lane Configurations							
Traffic Volume (vph)	21	171	527	10	128	861	
Future Volume (vph)	21	171	527	10	128	861	
Satd. Flow (prot)	1805	1615	1857	0	1787	1881	
Flt Permitted	0.950				0.369		
Satd. Flow (perm)	1641	1615	1857	0	686	1881	
Satd. Flow (RTOR)		174	2				
Confl. Peds. (#/hr)	44			20	20		
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	
Heavy Vehicles (%)	0%	0%	2%	2%	1%	1%	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	21	174	548	0	131	879	
Turn Type	Prot	pm+ov	NA		pm+pt	NA	
Protected Phases	8	5	6		5	2	4
Permitted Phases		8			2		
Detector Phase	8	5	6		5	2	
Switch Phase							
Minimum Initial (s)	7.0	4.0	8.0		4.0	5.0	8.0
Minimum Split (s)	12.0	9.0	23.0		9.0	10.0	22.0
Total Split (s)	22.0	11.0	37.0		11.0	48.0	22.0
Total Split (%)	31.4%	15.7%	52.9%		15.7%	68.6%	31%
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0		5.0	5.0	
Lead/Lag		Lag	Lead		Lag		
Lead-Lag Optimize?		Yes	Yes		Yes		
Recall Mode	None	None	C-Min		None	C-Min	None
Act Effct Green (s)	13.0	19.2	40.8		51.8	53.8	
Actuated g/C Ratio	0.19	0.27	0.58		0.74	0.77	
v/c Ratio	0.06	0.31	0.51		0.22	0.61	
Control Delay (s/veh)	21.2	4.0	13.9		6.9	9.9	
Queue Delay	0.0	0.0	0.0		0.0	0.5	
Total Delay (s/veh)	21.2	4.0	13.9		6.9	10.4	
LOS	C	A	B		A	B	
Approach Delay (s/veh)	5.9		13.9			9.9	
Approach LOS	A		B			A	

Intersection Summary

Cycle Length: 70
Actuated Cycle Length: 70
Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBT, Start of 1st Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.61
Intersection Signal Delay (s/veh): 10.7 Intersection LOS: B
Intersection Capacity Utilization 59.5% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 10: Bear Creek Pkwy & NE 74 St



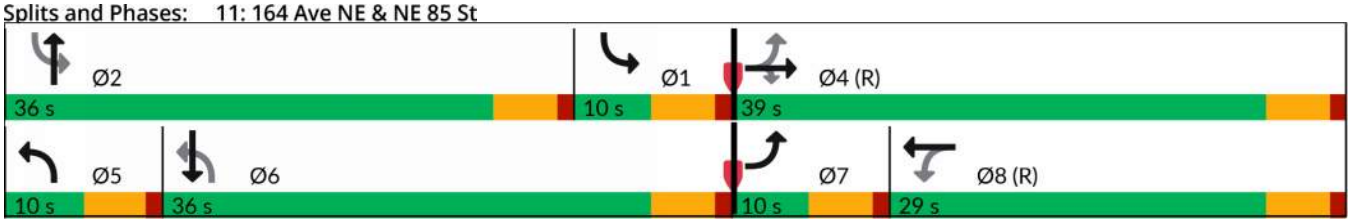
Lanes, Volumes, Timings
11: 164 Ave NE & NE 85 St 03/21/2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	63	331	62	7	189	156	25	455	18	154	338	32
Future Volume (vph)	63	331	62	7	189	156	25	455	18	154	338	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		150	200		0	250		0	240		0
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			28			30	
Link Distance (ft)		469			304			659			473	
Travel Time (s)		10.7			6.9			16.0			10.8	
Confl. Peds. (#/hr)	12					12	22					22
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Shared Lane Traffic (%)												
Turn Type	pm+pt	NA	Perm	Perm	NA		D.P+P	NA		D.P+P	NA	
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases	4		4	8			6			2		
Detector Phase	7	4	4	8	8		6 5	2		2 1	6	
Switch Phase												
Minimum Initial (s)	5.0	8.0	8.0	8.0	8.0		5.0	6.0		5.0	6.0	
Minimum Split (s)	10.0	20.0	20.0	20.0	20.0		10.0	22.0		10.0	27.0	
Total Split (s)	10.0	39.0	39.0	29.0	29.0		10.0	36.0		10.0	36.0	
Total Split (%)	11.8%	45.9%	45.9%	34.1%	34.1%		11.8%	42.4%		11.8%	42.4%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lead			Lag	Lag		Lead	Lead		Lag	Lag	
Lead-Lag Optimize?												
Recall Mode	None	C-Max	C-Max	C-Max	C-Max		None	None		None	None	

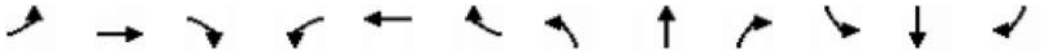
Intersection Summary

Area Type: Other
Cycle Length: 85
Actuated Cycle Length: 85
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of 1st Green
Natural Cycle: 70
Control Type: Actuated-Coordinated

Splits and Phases: 11: 164 Ave NE & NE 85 St



HCM 7th Signalized Intersection Summary
11: 164 Ave NE & NE 85 St 03/21/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	63	331	62	7	189	156	25	455	18	154	338	32
Future Volume (veh/h)	63	331	62	7	189	156	25	455	18	154	338	32
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.99	0.99		0.98	0.99		0.96	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	66	348	65	7	199	164	26	479	19	162	356	34
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	1	1	1	1	1	1
Cap, veh/h	380	903	756	435	354	291	272	522	21	218	542	52
Arrive On Green	0.05	0.48	0.48	0.37	0.37	0.37	0.03	0.29	0.29	0.06	0.32	0.32
Sat Flow, veh/h	1810	1900	1590	980	956	787	1795	1798	71	1795	1688	161
Grp Volume(v), veh/h	66	348	65	7	0	363	26	0	498	162	0	390
Grp Sat Flow(s),veh/h/ln	1810	1900	1590	980	0	1743	1795	0	1869	1795	0	1849
Q Serve(g_s), s	1.8	10.0	1.9	0.4	0.0	14.1	0.8	0.0	21.9	2.0	0.0	15.4
Cycle Q Clear(g_c), s	1.8	10.0	1.9	1.4	0.0	14.1	0.8	0.0	21.9	2.0	0.0	15.4
Prop In Lane	1.00		1.00	1.00		0.45	1.00		0.04	1.00		0.09
Lane Grp Cap(c), veh/h	380	903	756	435	0	645	272	0	543	218	0	594
V/C Ratio(X)	0.17	0.39	0.09	0.02	0.00	0.56	0.10	0.00	0.92	0.74	0.00	0.66
Avail Cap(c_a), veh/h	403	903	756	435	0	645	329	0	682	220	0	674
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	0.89	0.00	0.89	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.5	14.3	12.2	17.7	0.0	21.3	19.8	0.0	29.2	37.7	0.0	24.8
Incr Delay (d2), s/veh	0.1	1.2	0.2	0.1	0.0	3.5	0.0	0.0	12.3	11.2	0.0	1.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	4.4	0.7	0.1	0.0	6.1	0.3	0.0	11.3	3.9	0.0	6.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	15.5	15.6	12.4	17.7	0.0	24.8	19.8	0.0	41.5	48.9	0.0	26.1
LnGrp LOS	B	B	B	B		C	B		D	D		C
Approach Vol, veh/h		479			370			524			552	
Approach Delay, s/veh		15.1			24.7			40.4			32.8	
Approach LOS		B			C			D			C	

Timer - Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.9	29.7		45.4	7.3	32.3	8.9	36.5				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	5.0	31.0		34.0	5.0	31.0	5.0	24.0				
Max Q Clear Time (g_c+I1), s	4.0	23.9		12.0	2.8	17.4	3.8	16.1				
Green Ext Time (p_c), s	0.0	0.8		0.9	0.0	0.8	0.0	0.6				

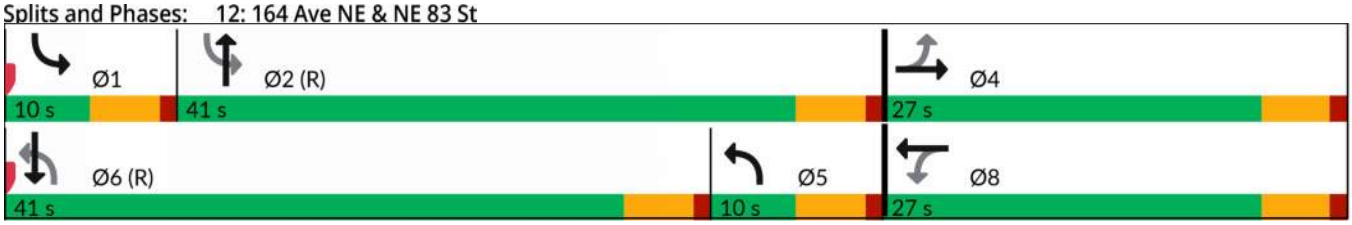
Intersection Summary	
HCM 7th Control Delay, s/veh	28.9
HCM 7th LOS	C

Lanes, Volumes, Timings
12: 164 Ave NE & NE 83 St 03/21/2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	190	60	22	106	34	54	435	43	61	331	16
Future Volume (vph)	36	190	60	22	106	34	54	435	43	61	331	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	200		0	200		0	200		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			28			28	
Link Distance (ft)		968			599			662			659	
Travel Time (s)		22.0			13.6			16.1			16.0	
Confl. Peds. (#/hr)	34		47	47		34	24		31	31		24
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	5%	5%	5%	1%	1%	1%	3%	3%	3%	1%	1%	1%
Mid-Block Traffic (%)		40%			20%			0%			0%	
Shared Lane Traffic (%)												
Turn Type	Perm	NA		Perm	NA		D.P+P	NA		D.P+P	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			6			2		
Detector Phase	4	4		8	8		6 5	2		2 1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	21.0	21.0		21.0	21.0		10.0	19.0		10.0	19.0	
Total Split (s)	27.0	27.0		27.0	27.0		10.0	41.0		10.0	41.0	
Total Split (%)	34.6%	34.6%		34.6%	34.6%		12.8%	52.6%		12.8%	52.6%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag							Lag	Lag		Lead	Lead	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	

Intersection Summary
Area Type: Other
Cycle Length: 78
Actuated Cycle Length: 78
Offset: 17 (22%), Referenced to phase 2:NBSB and 6:NBSB, Start of 1st Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 12: 164 Ave NE & NE 83 St



HCM 7th Signalized Intersection Summary
12: 164 Ave NE & NE 83 St 03/21/2025

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	36	190	60	22	106	34	54	435	43	61	331	16
Future Volume (veh/h)	36	190	60	22	106	34	54	435	43	61	331	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.92		0.88	0.95		0.88	0.99		0.97	0.99		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1826	1826	1885	1885	1885	1856	1856	1856	1885	1885	1885
Adj Flow Rate, veh/h	37	196	62	23	109	35	56	448	44	63	341	16
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	5	5	5	1	1	1	3	3	3	1	1	1
Cap, veh/h	239	261	82	149	268	86	683	924	91	679	823	39
Arrive On Green	0.07	0.07	0.07	0.20	0.20	0.20	0.29	1.00	1.00	0.05	0.46	0.46
Sat Flow, veh/h	1120	1284	406	1073	1320	424	1767	1658	163	1795	1783	84
Grp Volume(v), veh/h	37	0	258	23	0	144	56	0	492	63	0	357
Grp Sat Flow(s),veh/h/ln	1120	0	1690	1073	0	1743	1767	0	1821	1795	0	1867
Q Serve(g_s), s	2.5	0.0	11.7	1.6	0.0	5.6	0.0	0.0	0.0	1.1	0.0	9.9
Cycle Q Clear(g_c), s	8.1	0.0	11.7	13.3	0.0	5.6	0.0	0.0	0.0	1.1	0.0	9.9
Prop In Lane	1.00		0.24	1.00		0.24	1.00		0.09	1.00		0.04
Lane Grp Cap(c), veh/h	239	0	343	149	0	354	683	0	1014	679	0	862
V/C Ratio(X)	0.15	0.00	0.75	0.15	0.00	0.41	0.08	0.00	0.49	0.09	0.00	0.41
Avail Cap(c_a), veh/h	328	0	477	234	0	492	683	0	1014	708	0	862
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	0.91	0.00	0.91	0.99	0.00	0.99	0.90	0.00	0.90	0.79	0.00	0.79
Uniform Delay (d), s/veh	35.5	0.0	34.5	35.7	0.0	27.0	9.3	0.0	0.0	6.3	0.0	14.0
Incr Delay (d2), s/veh	0.1	0.0	2.2	0.2	0.0	0.3	0.0	0.0	1.5	0.0	0.0	1.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	5.4	0.4	0.0	2.3	0.4	0.0	0.4	0.4	0.0	4.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	35.6	0.0	36.7	35.9	0.0	27.3	9.3	0.0	1.5	6.3	0.0	15.1
LnGrp LOS	D		D	D		C	A		A	A		B
Approach Vol, veh/h		295			167			548			420	
Approach Delay, s/veh		36.5			28.5			2.3			13.8	
Approach LOS		D			C			A			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.7	48.4		20.8	16.2	41.0		20.8				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	5.0	36.0		22.0	5.0	36.0		22.0				
Max Q Clear Time (g_c+I1), s	3.1	2.0		13.7	2.0	11.9		15.3				
Green Ext Time (p_c), s	0.0	1.4		0.5	0.0	0.8		0.2				

Intersection Summary		
HCM 7th Control Delay, s/veh		15.8
HCM 7th LOS		B

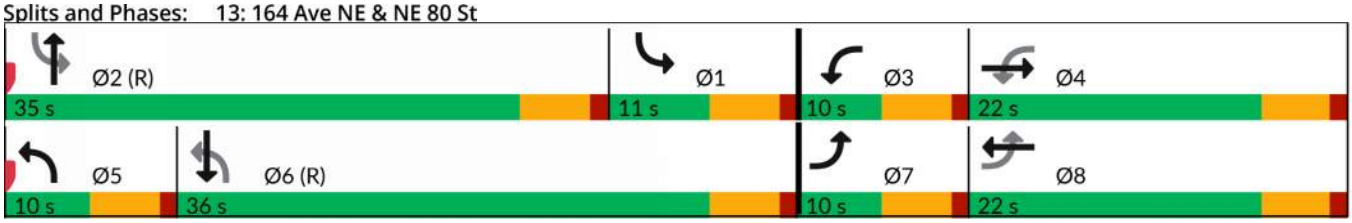
Lanes, Volumes, Timings
13: 164 Ave NE & NE 80 St 03/21/2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	68	146	19	31	175	51	21	309	55	99	323	61
Future Volume (vph)	68	146	19	31	175	51	21	309	55	99	323	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	140		0	150		0	100		0	200		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			28			28	
Link Distance (ft)		178			313			347			662	
Travel Time (s)		4.9			8.5			8.4			16.1	
Confl. Peds. (#/hr)	27		24	24		27	37		22	22		37
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	3%	3%	3%	3%	3%	3%
Shared Lane Traffic (%)												
Turn Type	D.P+P	NA		D.P+P	NA		D.P+P	NA		D.P+P	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	8			4			6			2		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	6.0		5.0	6.0	
Minimum Split (s)	10.0	17.0		10.0	18.0		10.0	18.0		10.0	19.0	
Total Split (s)	10.0	22.0		10.0	22.0		10.0	35.0		11.0	36.0	
Total Split (%)	12.8%	28.2%		12.8%	28.2%		12.8%	44.9%		14.1%	46.2%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lead		Lag	Lag	
Lead-Lag Optimize?	Yes	Yes			Yes			Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	

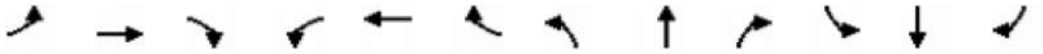
Intersection Summary

Area Type: Other
Cycle Length: 78
Actuated Cycle Length: 78
Offset: 17 (22%), Referenced to phase 2:NBSB and 6:NBSB, Start of 1st Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 13: 164 Ave NE & NE 80 St



HCM 7th Signalized Intersection Summary
13: 164 Ave NE & NE 80 St 03/21/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	68	146	19	31	175	51	21	309	55	99	323	61
Future Volume (veh/h)	68	146	19	31	175	51	21	309	55	99	323	61
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.97		0.93	0.97		0.92	0.98		0.95	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	73	157	20	33	188	55	23	332	59	106	347	66
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	1	1	1	1	1	3	3	3	3	3	3
Cap, veh/h	219	296	38	263	225	66	612	585	104	576	757	144
Arrive On Green	0.05	0.18	0.18	0.03	0.16	0.16	0.03	0.51	0.51	0.29	1.00	1.00
Sat Flow, veh/h	1795	1622	207	1795	1370	401	1767	1521	270	1767	1505	286
Grp Volume(v), veh/h	73	0	177	33	0	243	23	0	391	106	0	413
Grp Sat Flow(s),veh/h/ln	1795	0	1829	1795	0	1771	1767	0	1791	1767	0	1791
Q Serve(g_s), s	2.6	0.0	6.8	1.1	0.0	10.4	0.5	0.0	11.7	0.0	0.0	0.0
Cycle Q Clear(g_c), s	2.6	0.0	6.8	1.1	0.0	10.4	0.5	0.0	11.7	0.0	0.0	0.0
Prop In Lane	1.00		0.11	1.00		0.23	1.00		0.15	1.00		0.16
Lane Grp Cap(c), veh/h	219	0	334	263	0	291	612	0	689	576	0	901
V/C Ratio(X)	0.33	0.00	0.53	0.13	0.00	0.83	0.04	0.00	0.57	0.18	0.00	0.46
Avail Cap(c_a), veh/h	242	0	399	319	0	386	681	0	689	576	0	901
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.94	0.00	0.94	0.96	0.00	0.96
Uniform Delay (d), s/veh	25.8	0.0	28.8	24.8	0.0	31.6	8.7	0.0	14.6	13.8	0.0	0.0
Incr Delay (d2), s/veh	0.7	0.0	1.0	0.2	0.0	10.3	0.0	0.0	3.2	0.1	0.0	1.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	3.0	0.5	0.0	5.2	0.2	0.0	4.6	1.1	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	26.4	0.0	29.8	24.9	0.0	41.9	8.7	0.0	17.8	13.9	0.0	1.6
LnGrp LOS	C		C	C		D	A		B	B		A
Approach Vol, veh/h		250			276			414			519	
Approach Delay, s/veh		28.8			39.9			17.3			4.1	
Approach LOS		C			D			B			A	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.2	35.0	7.6	19.2	7.0	44.2	9.0	17.8
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	6.0	30.0	5.0	17.0	5.0	31.0	5.0	17.0
Max Q Clear Time (g_c+I1), s	2.0	13.7	3.1	8.8	2.5	2.0	4.6	12.4
Green Ext Time (p_c), s	0.1	1.2	0.0	0.3	0.0	1.4	0.0	0.3

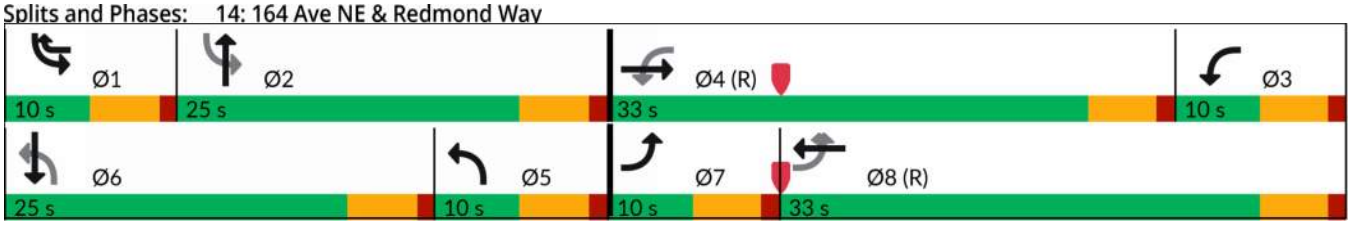
Intersection Summary	
HCM 7th Control Delay, s/veh	18.8
HCM 7th LOS	B

Lanes, Volumes, Timings
14: 164 Ave NE & Redmond Way 03/21/2025

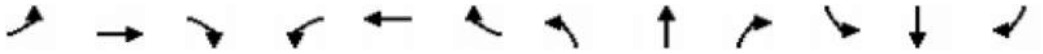
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	521	18	23	571	222	44	134	34	188	129	19
Future Volume (vph)	30	521	18	23	571	222	44	134	34	188	129	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125		0	250		0	70		0	150		150
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		314			714			325			347	
Travel Time (s)		7.1			16.2			7.4			7.9	
Confl. Peds. (#/hr)	56		39	39		56	61		51	51		61
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	2%	2%	2%	3%	3%	3%	1%	1%	1%	5%	5%	5%
Parking (#/hr)				0								
Shared Lane Traffic (%)												
Turn Type	D.P+P	NA		D.P+P	NA	pm+ov	D.P+P	NA		D.P+P	NA	
Protected Phases	7	4		3	8	1	5	2		1	6	
Permitted Phases	8			4		8	6			2		
Detector Phase	7	4		3	8	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	10.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	10.0	22.0		10.0	24.0	10.0	10.0	25.0		10.0	24.0	
Total Split (s)	10.0	33.0		10.0	33.0	10.0	10.0	25.0		10.0	25.0	
Total Split (%)	12.8%	42.3%		12.8%	42.3%	12.8%	12.8%	32.1%		12.8%	32.1%	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lead		Lag	Lag	Lead	Lag	Lag		Lead	Lead	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max		None	C-Max	None	None	None		None	None	

Intersection Summary
Area Type: CBD
Cycle Length: 78
Actuated Cycle Length: 78
Offset: 10 (13%), Referenced to phase 4:EBWB and 8:EBWB, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

Splits and Phases: 14: 164 Ave NE & Redmond Way



HCM 7th Signalized Intersection Summary
14: 164 Ave NE & Redmond Way 03/21/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	521	18	23	571	222	44	134	34	188	129	19
Future Volume (veh/h)	30	521	18	23	571	222	44	134	34	188	129	19
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.99		0.92	1.00		0.93	0.95		0.86	0.91		0.91
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1683	1683	1683	1670	1670	1670	1697	1697	1697	1643	1643	1643
Adj Flow Rate, veh/h	31	537	19	24	589	229	45	138	35	194	133	20
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	3	3	3	1	1	1	5	5	5
Cap, veh/h	297	578	20	311	716	658	334	276	70	329	293	44
Arrive On Green	0.06	0.72	0.72	0.20	0.86	0.86	0.14	0.44	0.44	0.02	0.07	0.07
Sat Flow, veh/h	1603	1610	57	1590	1670	1323	1616	1259	319	1565	1376	207
Grp Volume(v), veh/h	31	0	556	24	589	229	45	0	173	194	0	153
Grp Sat Flow(s),veh/h/ln	1603	0	1667	1590	1670	1323	1616	0	1578	1565	0	1583
Q Serve(g_s), s	0.8	0.0	22.0	0.0	13.3	2.6	0.0	0.0	6.1	5.0	0.0	7.2
Cycle Q Clear(g_c), s	0.8	0.0	22.0	0.0	13.3	2.6	0.0	0.0	6.1	5.0	0.0	7.2
Prop In Lane	1.00		0.03	1.00		1.00	1.00		0.20	1.00		0.13
Lane Grp Cap(c), veh/h	297	0	599	311	716	658	334	0	346	329	0	337
V/C Ratio(X)	0.10	0.00	0.93	0.08	0.82	0.35	0.13	0.00	0.50	0.59	0.00	0.45
Avail Cap(c_a), veh/h	349	0	599	311	716	658	334	0	405	329	0	406
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.33	0.33	0.33
Upstream Filter(I)	0.77	0.00	0.77	0.82	0.82	0.82	0.81	0.00	0.81	0.92	0.00	0.92
Uniform Delay (d), s/veh	12.4	0.0	10.2	24.1	4.1	2.7	24.6	0.0	18.8	26.4	0.0	31.9
Incr Delay (d2), s/veh	0.1	0.0	19.0	0.1	8.6	1.2	0.1	0.0	0.9	2.5	0.0	0.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	6.3	0.3	3.3	0.7	0.6	0.0	2.0	1.3	0.0	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	12.5	0.0	29.1	24.2	12.8	3.9	24.7	0.0	19.7	28.9	0.0	32.8
LnGrp LOS	B		C	C	B	A	C		B	C		C
Approach Vol, veh/h		587			842			218			347	
Approach Delay, s/veh		28.3			10.7			20.7			30.6	
Approach LOS		C			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	22.1	12.9	33.0	10.5	21.6	7.4	38.4
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	5.0	20.0	5.0	28.0	5.0	20.0	5.0	28.0
Max Q Clear Time (g_c+I1), s	7.0	8.1	2.0	24.0	2.0	9.2	2.8	15.3
Green Ext Time (p_c), s	0.0	0.8	0.0	1.0	0.0	0.6	0.0	3.0

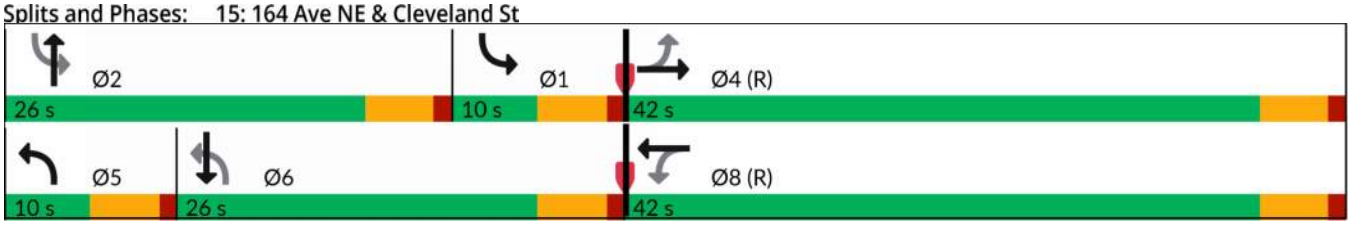
Intersection Summary	
HCM 7th Control Delay, s/veh	20.4
HCM 7th LOS	C

Lanes, Volumes, Timings
15: 164 Ave NE & Cleveland St 03/21/2025

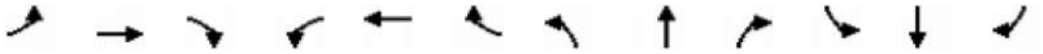
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	243	45	12	89	22	37	163	18	24	133	28
Future Volume (vph)	26	243	45	12	89	22	37	163	18	24	133	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	100		0	100		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		429			743			151			325	
Travel Time (s)		11.7			20.3			3.4			7.4	
Confl. Peds. (#/hr)	18		30	30		18	43		25	25		43
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	1%	1%	1%	2%	2%	2%
Parking (#/hr)	0	0	0									
Shared Lane Traffic (%)												
Turn Type	Perm	NA		Perm	NA		D.P+P	NA		D.P+P	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			6			2		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0		8.0	8.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	21.0	21.0		21.0	21.0		10.0	20.0		10.0	19.0	
Total Split (s)	42.0	42.0		42.0	42.0		10.0	26.0		10.0	26.0	
Total Split (%)	53.8%	53.8%		53.8%	53.8%		12.8%	33.3%		12.8%	33.3%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Lead/Lag							Lead	Lead		Lag	Lag	
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	

Intersection Summary
Area Type: CBD
Cycle Length: 78
Actuated Cycle Length: 78
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated

Splits and Phases: 15: 164 Ave NE & Cleveland St



HCM 7th Signalized Intersection Summary
15: 164 Ave NE & Cleveland St 03/21/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	26	243	45	12	89	22	37	163	18	24	133	28
Future Volume (veh/h)	26	243	45	12	89	22	37	163	18	24	133	28
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.98		0.98	0.99		0.98	0.92		0.87	0.93		0.86
Parking Bus, Adj	1.00	1.00	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1697	1697	1697	1683	1683	1683	1697	1697	1697	1683	1683	1683
Adj Flow Rate, veh/h	28	261	48	13	96	24	40	175	19	26	143	30
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	1	1	2	2	2	1	1	1	2	2	2
Cap, veh/h	94	725	128	110	728	173	207	238	26	185	198	42
Arrive On Green	0.62	0.62	0.62	1.00	1.00	1.00	0.04	0.16	0.16	0.06	0.30	0.30
Sat Flow, veh/h	71	1171	206	96	1176	280	1616	1478	160	1603	1306	274
Grp Volume(v), veh/h	337	0	0	133	0	0	40	0	194	26	0	173
Grp Sat Flow(s),veh/h/ln	1448	0	0	1552	0	0	1616	0	1639	1603	0	1581
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	1.6	0.0	8.8	0.0	0.0	7.6
Cycle Q Clear(g_c), s	8.7	0.0	0.0	0.0	0.0	0.0	1.6	0.0	8.8	0.0	0.0	7.6
Prop In Lane	0.08		0.14	0.10		0.18	1.00		0.10	1.00		0.17
Lane Grp Cap(c), veh/h	946	0	0	1011	0	0	207	0	264	185	0	240
V/C Ratio(X)	0.36	0.00	0.00	0.13	0.00	0.00	0.19	0.00	0.73	0.14	0.00	0.72
Avail Cap(c_a), veh/h	946	0	0	1011	0	0	251	0	441	244	0	426
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	0.97	0.00	0.00	0.99	0.00	0.00	1.00	0.00	1.00	0.95	0.00	0.95
Uniform Delay (d), s/veh	7.3	0.0	0.0	0.0	0.0	0.0	26.7	0.0	31.1	33.2	0.0	25.7
Incr Delay (d2), s/veh	1.0	0.0	0.0	0.3	0.0	0.0	0.4	0.0	3.9	0.3	0.0	3.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	0.0	0.0	0.1	0.0	0.0	0.6	0.0	3.7	0.5	0.0	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	8.3	0.0	0.0	0.3	0.0	0.0	27.1	0.0	35.1	33.5	0.0	29.6
LnGrp LOS	A			A			C		D	C		C
Approach Vol, veh/h		337			133			234			199	
Approach Delay, s/veh		8.3			0.3			33.7			30.1	
Approach LOS		A			A			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.2	17.6		53.3	7.9	16.8		53.3				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	5.0	21.0		37.0	5.0	21.0		37.0				
Max Q Clear Time (g_c+I1), s	2.0	10.8		10.7	3.6	9.6		2.0				
Green Ext Time (p_c), s	0.0	0.5		1.5	0.0	0.5		0.5				

Intersection Summary		
HCM 7th Control Delay, s/veh		18.5
HCM 7th LOS		B

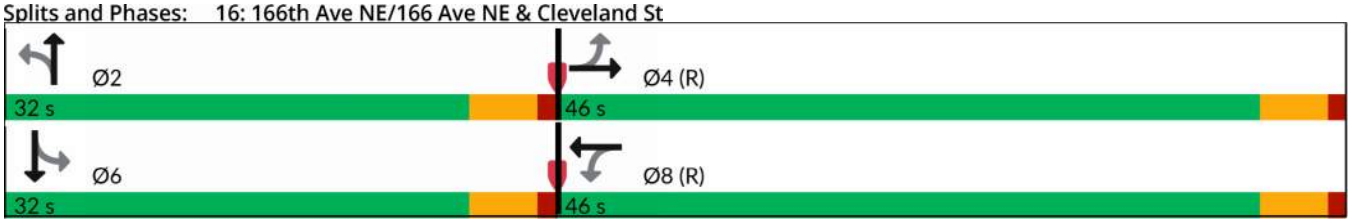
Lanes, Volumes, Timings
16: 166th Ave NE/166 Ave NE & Cleveland St 03/21/2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	43	226	24	29	103	23	14	160	82	6	78	10
Future Volume (vph)	43	226	24	29	103	23	14	160	82	6	78	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		200	0		0	100		125	160		0
Storage Lanes	0		0	0		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			25			30	
Link Distance (ft)		743			556			226			372	
Travel Time (s)		20.3			15.2			6.2			8.5	
Confl. Peds. (#/hr)	31		1	1		31	4		79	79		4
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Shared Lane Traffic (%)												
Turn Type	Perm	NA		Perm	NA		Perm	NA	Free	Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		Free	6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	22.0	22.0		22.0	22.0		22.0	22.0		22.0	22.0	
Total Split (s)	46.0	46.0		46.0	46.0		32.0	32.0		32.0	32.0	
Total Split (%)	59.0%	59.0%		59.0%	59.0%		41.0%	41.0%		41.0%	41.0%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max		C-Max	C-Max		Ped	Ped		Ped	Ped	

Intersection Summary

Area Type: CBD
Cycle Length: 78
Actuated Cycle Length: 78
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
Natural Cycle: 45
Control Type: Actuated-Coordinated

Splits and Phases: 16: 166th Ave NE/166 Ave NE & Cleveland St



HCM 7th Signalized Intersection Summary
16: 166th Ave NE/166 Ave NE & Cleveland St 03/21/2025

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	43	226	24	29	103	23	14	160	82	6	78	10
Future Volume (veh/h)	43	226	24	29	103	23	14	160	82	6	78	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.98		0.98	0.98		0.98	0.85		1.00	0.88		0.81
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1710	1710	1710	1697	1697	1697	1697	1697	1697	1697	1697	1697
Adj Flow Rate, veh/h	45	238	25	31	108	24	15	168	0	6	82	11
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	1	1	1	1	1	1	1	1	1
Cap, veh/h	172	858	86	210	693	146	257	345		205	288	39
Arrive On Green	1.00	1.00	1.00	0.67	0.67	0.67	0.20	0.20	0.00	0.41	0.41	0.41
Sat Flow, veh/h	178	1284	129	232	1037	219	1000	1697	1438	971	1418	190
Grp Volume(v), veh/h	308	0	0	163	0	0	15	168	0	6	0	93
Grp Sat Flow(s),veh/h/ln	1592	0	0	1488	0	0	1000	1697	1438	971	0	1608
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	1.0	6.8	0.0	0.4	0.0	3.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	2.8	0.0	0.0	4.0	6.8	0.0	7.2	0.0	3.0
Prop In Lane	0.15		0.08	0.19		0.15	1.00		1.00	1.00		0.12
Lane Grp Cap(c), veh/h	1117	0	0	1049	0	0	257	345		205	0	327
V/C Ratio(X)	0.28	0.00	0.00	0.16	0.00	0.00	0.06	0.49		0.03	0.00	0.28
Avail Cap(c_a), veh/h	1117	0	0	1049	0	0	400	587		343	0	557
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	0.94	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.98	0.00	0.98
Uniform Delay (d), s/veh	0.0	0.0	0.0	4.8	0.0	0.0	27.6	27.5	0.0	23.2	0.0	19.3
Incr Delay (d2), s/veh	0.6	0.0	0.0	0.3	0.0	0.0	0.3	3.8	0.0	0.2	0.0	1.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.0	0.9	0.0	0.0	0.3	3.1	0.0	0.1	0.0	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.6	0.0	0.0	5.1	0.0	0.0	28.0	31.3	0.0	23.4	0.0	21.0
LnGrp LOS	A			A			C	C		C		C
Approach Vol, veh/h		308			163			183			99	
Approach Delay, s/veh		0.6			5.1			31.0			21.1	
Approach LOS		A			A			C			C	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	20.9	57.1	20.9	57.1
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	27.0	41.0	27.0	41.0
Max Q Clear Time (g_c+I1), s	8.8	2.0	9.2	4.8
Green Ext Time (p_c), s	1.7	4.2	0.8	2.0

Intersection Summary	
HCM 7th Control Delay, s/veh	11.7
HCM 7th LOS	B

Notes

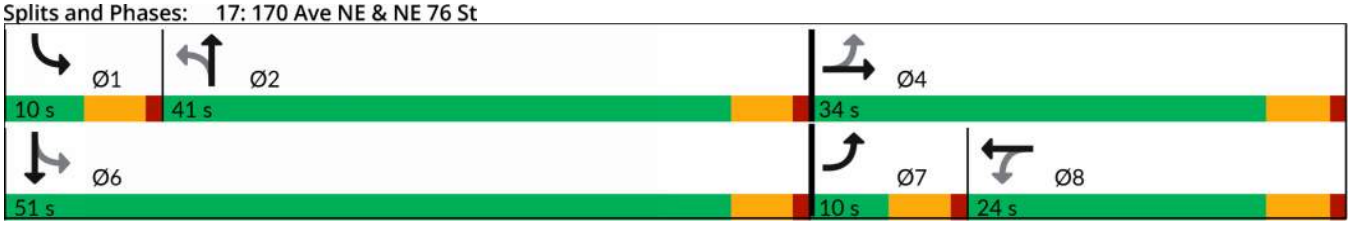
Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings
17: 170 Ave NE & NE 76 St 03/21/2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	142	2	13	7	4	47	4	828	2	15	460	97
Future Volume (vph)	142	2	13	7	4	47	4	828	2	15	460	97
Satd. Flow (prot)	0	1772	0	0	1655	0	1787	3573	0	1787	3431	0
Flt Permitted		0.704			0.960		0.434			0.212		
Satd. Flow (perm)	0	1297	0	0	1594	0	793	3573	0	399	3431	0
Satd. Flow (RTOR)		6			49						46	
Confl. Peds. (#/hr)	5		25	25		5	21		31	31		21
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	1%	1%	1%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	164	0	0	60	0	4	865	0	16	580	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases	7	4			8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		8	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		8.0	8.0		5.0	8.0	
Minimum Split (s)	10.0	24.0		24.0	24.0		18.0	18.0		10.0	19.0	
Total Split (s)	10.0	34.0		24.0	24.0		41.0	41.0		10.0	51.0	
Total Split (%)	11.8%	40.0%		28.2%	28.2%		48.2%	48.2%		11.8%	60.0%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lead			Lag	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		Min	Min		None	Min	
Act Effct Green (s)		12.5			12.5		22.0	22.0		23.3	23.3	
Actuated g/C Ratio		0.27			0.27		0.47	0.47		0.50	0.50	
v/c Ratio		0.47			0.13		0.01	0.51		0.04	0.33	
Control Delay (s/veh)		19.5			7.7		9.8	11.0		6.9	7.2	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		19.5			7.7		9.8	11.0		6.9	7.2	
LOS		B			A		A	B		A	A	
Approach Delay (s/veh)		19.5			7.7			11.0			7.2	
Approach LOS		B			A			B			A	

Intersection Summary	
Cycle Length: 85	
Actuated Cycle Length: 46.5	
Natural Cycle: 65	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.51	
Intersection Signal Delay (s/veh): 10.4	Intersection LOS: B
Intersection Capacity Utilization 47.0%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 17: 170 Ave NE & NE 76 St



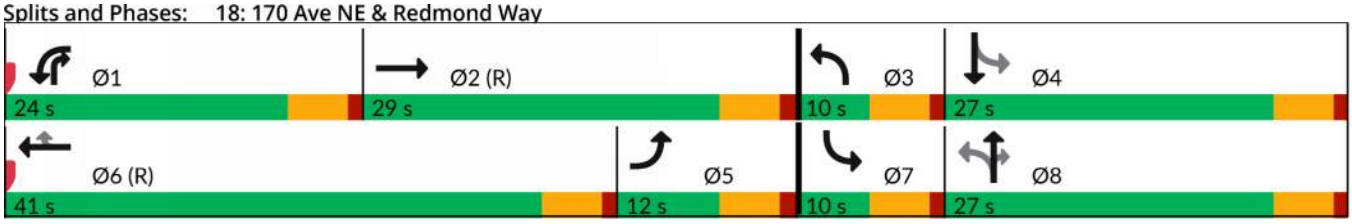
Lanes, Volumes, Timings
18: 170 Ave NE & Redmond Way 03/21/2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	758	77	347	654	224	27	339	655	134	154	14
Future Volume (vph)	56	758	77	347	654	224	27	339	655	134	154	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125		0	250		0	125		0	100		0
Storage Lanes	1		0	2		1	1		1	1		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		585			661			498			439	
Travel Time (s)		13.3			15.0			11.3			10.0	
Confl. Peds. (#/hr)	20		6	6		20	15		27	27		15
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Shared Lane Traffic (%)												
Turn Type	Prot	NA		Prot	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA	
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases						6	8		8	4		
Detector Phase	5	2		1	6	6	3 8	8	1	7 4	4	
Switch Phase												
Minimum Initial (s)	5.0	8.0		6.0	8.0	8.0	5.0	5.0	6.0	5.0	5.0	
Minimum Split (s)	10.0	24.0		11.0	23.0	23.0	10.0	27.0	11.0	10.0	27.0	
Total Split (s)	12.0	29.0		24.0	41.0	41.0	10.0	27.0	24.0	10.0	27.0	
Total Split (%)	13.3%	32.2%		26.7%	45.6%	45.6%	11.1%	30.0%	26.7%	11.1%	30.0%	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lag	Lag		Lead	Lead	Lead	Lead	Lag	Lead	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes			Yes			
Recall Mode	None	C-Max		None	C-Max	C-Max	None	None	None	None	None	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 58 (64%), Referenced to phase 2:EBT and 6:WBT, Start of 1st Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

Splits and Phases: 18: 170 Ave NE & Redmond Way



HCM 7th Signalized Intersection Summary
18: 170 Ave NE & Redmond Way 03/21/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	56	758	77	347	654	224	27	339	655	134	154	14
Future Volume (veh/h)	56	758	77	347	654	224	27	339	655	134	154	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	0.98		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	59	798	81	365	688	236	28	357	689	141	162	15
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	140	1129	115	464	1433	623	347	461	591	216	461	43
Arrive On Green	0.16	0.69	0.69	0.04	0.13	0.13	0.03	0.24	0.24	0.02	0.09	0.09
Sat Flow, veh/h	1795	3277	333	3483	3582	1558	1795	1885	1545	1795	1694	157
Grp Volume(v), veh/h	59	436	443	365	688	236	28	357	689	141	0	177
Grp Sat Flow(s),veh/h/ln	1795	1791	1818	1742	1791	1558	1795	1885	1545	1795	0	1851
Q Serve(g_s), s	2.7	13.3	13.3	9.3	16.0	9.0	1.0	15.9	22.0	5.0	0.0	8.1
Cycle Q Clear(g_c), s	2.7	13.3	13.3	9.3	16.0	9.0	1.0	15.9	22.0	5.0	0.0	8.1
Prop In Lane	1.00		0.18	1.00		1.00	1.00		1.00	1.00		0.08
Lane Grp Cap(c), veh/h	140	617	626	464	1433	623	347	461	591	216	0	504
V/C Ratio(X)	0.42	0.71	0.71	0.79	0.48	0.38	0.08	0.77	1.17	0.65	0.00	0.35
Avail Cap(c_a), veh/h	140	617	626	735	1433	623	396	461	591	216	0	504
HCM Platoon Ratio	2.00	2.00	2.00	0.33	0.33	0.33	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	0.97	0.97	0.97	0.66	0.66	0.66	0.85	0.85	0.85	0.43	0.00	0.43
Uniform Delay (d), s/veh	36.2	11.2	11.2	41.7	30.4	15.0	24.4	31.7	28.1	27.7	0.0	33.5
Incr Delay (d2), s/veh	0.7	6.5	6.4	0.7	0.8	1.2	0.0	6.3	90.1	2.4	0.0	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	4.3	4.3	4.3	7.8	3.7	0.4	7.8	26.8	2.5	0.0	3.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	36.9	17.8	17.7	42.5	31.2	16.2	24.4	38.0	118.2	30.0	0.0	33.6
LnGrp LOS	D	B	B	D	C	B	C	D	F	C		C
Approach Vol, veh/h		938			1289			1074			318	
Approach Delay, s/veh		18.9			31.6			89.1			32.0	
Approach LOS		B			C			F			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.0	36.0	7.5	29.5	12.0	41.0	10.0	27.0
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	19.0	24.0	5.0	22.0	7.0	36.0	5.0	22.0
Max Q Clear Time (g_c+I1), s	11.3	15.3	3.0	10.1	4.7	18.0	7.0	24.0
Green Ext Time (p_c), s	0.7	2.7	0.0	0.3	0.0	4.3	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	45.4
HCM 7th LOS	D

Lanes, Volumes, Timings
19: Bear Creek Crossing & Redmond Way 03/21/2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	89	1375	8	16	1019	141	37	15	46	116	16	52
Future Volume (vph)	89	1375	8	16	1019	141	37	15	46	116	16	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	175		150	0		0	0		0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		661			588			140			177	
Travel Time (s)		15.0			13.4			3.8			4.8	
Confl. Peds. (#/hr)	20		2	2		20	2		20	20		2
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	2%	2%	2%
Shared Lane Traffic (%)												
Turn Type	Prot	NA		Prot	NA	Perm	D.P+P	NA		D.P+P	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases						6	4			8		
Detector Phase	5	2		1	6	6	3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	8.0		6.0	8.0	8.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	10.0	24.0		11.0	23.0	23.0	10.0	27.0		10.0	27.0	
Total Split (s)	14.0	42.0		11.0	39.0	39.0	10.0	27.0		10.0	27.0	
Total Split (%)	15.6%	46.7%		12.2%	43.3%	43.3%	11.1%	30.0%		11.1%	30.0%	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lead		Lag	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes				Yes	Yes	
Recall Mode	None	C-Max		None	C-Max	C-Max	None	None		None	Max	

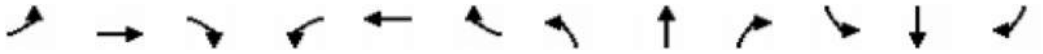
Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 19 (21%), Referenced to phase 2:EBT and 6:WBT, Start of 1st Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 19: Bear Creek Crossing & Redmond Way



HCM 7th Signalized Intersection Summary
19: Bear Creek Crossing & Redmond Way 03/21/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	89	1375	8	16	1019	141	37	15	46	116	16	52
Future Volume (veh/h)	89	1375	8	16	1019	141	37	15	46	116	16	52
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	0.98		0.97	0.98		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1900	1900	1900	1870	1870	1870
Adj Flow Rate, veh/h	92	1418	8	16	1051	145	38	15	47	120	16	54
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	1	1	1	1	1	0	0	0	2	2	2
Cap, veh/h	119	1501	8	158	1551	676	420	88	277	431	90	304
Arrive On Green	0.02	0.14	0.14	0.12	0.58	0.58	0.03	0.22	0.22	0.06	0.24	0.24
Sat Flow, veh/h	1795	3651	21	1795	3582	1561	1810	396	1240	1781	368	1242
Grp Volume(v), veh/h	92	695	731	16	1051	145	38	0	62	120	0	70
Grp Sat Flow(s),veh/h/ln	1795	1791	1881	1795	1791	1561	1810	0	1636	1781	0	1610
Q Serve(g_s), s	4.6	34.6	34.7	0.7	18.4	4.0	1.4	0.0	2.8	4.7	0.0	3.1
Cycle Q Clear(g_c), s	4.6	34.6	34.7	0.7	18.4	4.0	1.4	0.0	2.8	4.7	0.0	3.1
Prop In Lane	1.00		0.01	1.00		1.00	1.00		0.76	1.00		0.77
Lane Grp Cap(c), veh/h	119	736	773	158	1551	676	420	0	365	431	0	394
V/C Ratio(X)	0.77	0.94	0.94	0.10	0.68	0.21	0.09	0.00	0.17	0.28	0.00	0.18
Avail Cap(c_a), veh/h	180	736	773	158	1551	676	459	0	400	431	0	394
HCM Platoon Ratio	0.33	0.33	0.33	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.41	0.41	0.41	0.81	0.81	0.81	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	43.3	37.9	37.9	36.5	14.7	11.7	24.0	0.0	28.2	25.2	0.0	26.9
Incr Delay (d2), s/veh	3.7	11.6	11.3	0.2	2.0	0.6	0.1	0.0	0.2	0.3	0.0	1.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	18.9	19.7	0.3	6.3	1.4	0.6	0.0	1.1	2.0	0.0	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	47.0	49.5	49.1	36.7	16.7	12.3	24.1	0.0	28.4	25.4	0.0	27.8
LnGrp LOS	D	D	D	D	B	B	C		C	C		C
Approach Vol, veh/h		1518			1212			100			190	
Approach Delay, s/veh		49.2			16.4			26.8			26.3	
Approach LOS		D			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.9	42.0	8.1	27.0	11.0	44.0	10.0	25.1
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	6.0	37.0	5.0	22.0	9.0	34.0	5.0	22.0
Max Q Clear Time (g_c+I1), s	2.7	36.7	3.4	5.1	6.6	20.4	6.7	4.8
Green Ext Time (p_c), s	0.0	0.2	0.0	0.2	0.0	5.2	0.0	0.1

Intersection Summary	
HCM 7th Control Delay, s/veh	33.8
HCM 7th LOS	C

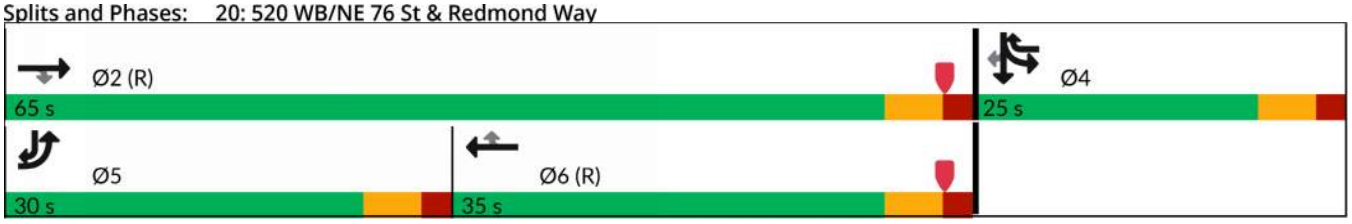
Lanes, Volumes, Timings
20: 520 WB/NE 76 St & Redmond Way 03/21/2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	379	935	230	0	802	332	0	0	0	61	329	374
Future Volume (vph)	379	935	230	0	802	332	0	0	0	61	329	374
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	220		110	0		0	0		0	400		350
Storage Lanes	2		1	1		1	0		0	1		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		45			45			25			25	
Link Distance (ft)		588			476			347			459	
Travel Time (s)		8.9			7.2			9.5			12.5	
Confl. Peds. (#/hr)	16					16						
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	2%	2%	2%
Shared Lane Traffic (%)												
Turn Type	Prot	NA	Perm		NA	pm+ov				Split	NA	pm+ov
Protected Phases	5	2			6	4				4	4	5
Permitted Phases			2			6						4
Detector Phase	5	2	2		6	4				4	4	5
Switch Phase												
Minimum Initial (s)	5.0	7.0	7.0		7.0	5.0				5.0	5.0	5.0
Minimum Split (s)	10.9	12.9	12.9		37.9	10.9				10.9	10.9	10.9
Total Split (s)	30.0	65.0	65.0		35.0	25.0				25.0	25.0	30.0
Total Split (%)	33.3%	72.2%	72.2%		38.9%	27.8%				27.8%	27.8%	33.3%
Yellow Time (s)	3.9	3.9	3.9		3.9	3.9				3.9	3.9	3.9
All-Red Time (s)	2.0	2.0	2.0		2.0	2.0				2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0				0.0	0.0	0.0
Total Lost Time (s)	5.9	5.9	5.9		5.9	5.9				5.9	5.9	5.9
Lead/Lag	Lead				Lag							Lead
Lead-Lag Optimize?												
Recall Mode	None	C-Min	C-Min		C-Min	None				None	None	None

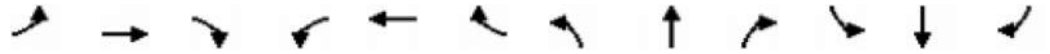
Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 69 (77%), Referenced to phase 2:EBT and 6:WBT, Start of Red
Natural Cycle: 80
Control Type: Actuated-Coordinated

Splits and Phases: 20: 520 WB/NE 76 St & Redmond Way



HCM 7th Signalized Intersection Summary
20: 520 WB/NE 76 St & Redmond Way 03/21/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	379	935	230	0	802	332	0	0	0	61	329	374
Future Volume (veh/h)	379	935	230	0	802	332	0	0	0	61	329	374
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	0	1885	1885				1870	1870	1870
Adj Flow Rate, veh/h	391	964	237	0	827	342				63	339	386
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97				0.97	0.97	0.97
Percent Heavy Veh, %	1	1	1	0	1	1				2	2	2
Cap, veh/h	492	2352	1041	0	1611	1045				378	397	560
Arrive On Green	0.28	1.00	1.00	0.00	0.90	0.90				0.21	0.21	0.21
Sat Flow, veh/h	3483	3582	1586	0	3676	1569				1781	1870	1585
Grp Volume(v), veh/h	391	964	237	0	827	342				63	339	386
Grp Sat Flow(s),veh/h/ln	1742	1791	1586	0	1791	1569				1781	1870	1585
Q Serve(g_s), s	9.3	0.0	0.0	0.0	3.9	2.1				2.6	15.7	18.7
Cycle Q Clear(g_c), s	9.3	0.0	0.0	0.0	3.9	2.1				2.6	15.7	18.7
Prop In Lane	1.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	492	2352	1041	0	1611	1045				378	397	560
V/C Ratio(X)	0.79	0.41	0.23	0.00	0.51	0.33				0.17	0.85	0.69
Avail Cap(c_a), veh/h	933	2352	1041	0	1611	1045				378	397	560
HCM Platoon Ratio	2.00	2.00	2.00	1.00	2.00	2.00				1.00	1.00	1.00
Upstream Filter(I)	0.59	0.59	0.59	0.00	0.87	0.87				1.00	1.00	1.00
Uniform Delay (d), s/veh	31.1	0.0	0.0	0.0	2.7	1.0				29.0	34.1	24.9
Incr Delay (d2), s/veh	1.8	0.3	0.3	0.0	1.0	0.7				0.2	16.4	3.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	0.1	0.1	0.0	1.0	0.9				1.1	8.8	16.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	32.8	0.3	0.3	0.0	3.7	1.7				29.2	50.5	28.4
LnGrp LOS	C	A	A		A	A				C	D	C
Approach Vol, veh/h		1592			1169						788	
Approach Delay, s/veh		8.3			3.1						38.0	
Approach LOS		A			A						D	

Timer - Assigned Phs		2		4	5	6						
Phs Duration (G+Y+Rc), s		65.0		25.0	18.6	46.4						
Change Period (Y+Rc), s		5.9		5.9	5.9	5.9						
Max Green Setting (Gmax), s		59.1		19.1	24.1	29.1						
Max Q Clear Time (g_c+I1), s		2.0		20.7	11.3	5.9						
Green Ext Time (p_c), s		11.1		0.0	1.4	8.6						

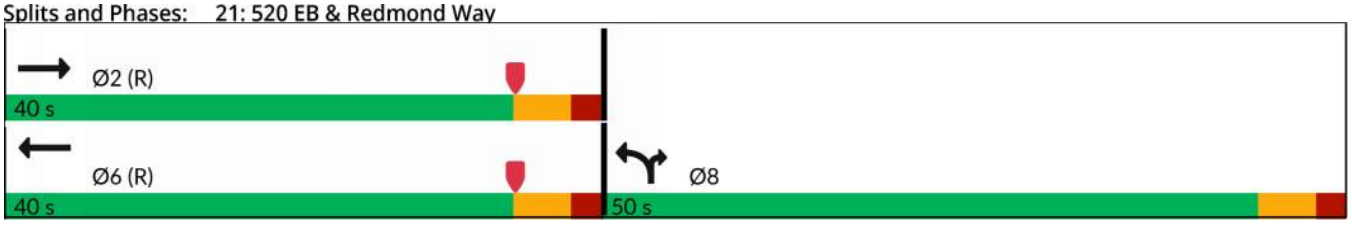
Intersection Summary												
HCM 7th Control Delay, s/veh			13.2									
HCM 7th LOS			B									

Notes
User approved pedestrian interval to be less than phase max green.
User approved changes to right turn type.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	998	0	0	781	370	1187
Future Volume (vph)	998	0	0	781	370	1187
Satd. Flow (prot)	5136	0	0	3574	3467	2814
Flt Permitted					0.950	
Satd. Flow (perm)	5136	0	0	3574	3467	2814
Satd. Flow (RTOR)						44
Confl. Peds. (#/hr)		8	8			16
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1040	0	0	814	385	1236
Turn Type	NA			NA	Prot	Prot
Protected Phases	2			6	8	8
Permitted Phases						
Detector Phase	2			6	8	8
Switch Phase						
Minimum Initial (s)	10.0			10.0	5.0	5.0
Minimum Split (s)	37.9			15.9	37.9	37.9
Total Split (s)	40.0			40.0	50.0	50.0
Total Split (%)	44.4%			44.4%	55.6%	55.6%
Yellow Time (s)	3.9			3.9	3.9	3.9
All-Red Time (s)	2.0			2.0	2.0	2.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	5.9			5.9	5.9	5.9
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Min			C-Min	None	None
Act Effct Green (s)	34.2			34.2	44.0	44.0
Actuated g/C Ratio	0.38			0.38	0.49	0.49
v/c Ratio	0.53			0.60	0.23	0.88
Control Delay (s/veh)	11.8			22.6	13.4	29.0
Queue Delay	0.0			0.0	0.0	0.0
Total Delay (s/veh)	11.8			22.6	13.4	29.0
LOS	B			C	B	C
Approach Delay (s/veh)	11.8			22.6	25.3	
Approach LOS	B			C	C	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 69 (77%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay (s/veh): 20.6	Intersection LOS: C
Intersection Capacity Utilization 79.6%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 21: 520 EB & Redmond Way



Lanes, Volumes, Timings
22: 164 Ave NE & NE 76 St 03/21/2025



Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Volume (vph)	2	45	143	31	1	19	82	86	2	43	109	39
Future Volume (vph)	2	45	143	31	1	19	82	86	2	43	109	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)			25				25				25	
Link Distance (ft)			539				724				311	
Travel Time (s)			14.7				19.7				8.5	
Confl. Peds. (#/hr)	122	1		84	7	84		1	84	122		7
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	1%	1%	1%	1%	0%	0%	0%	0%	2%	2%	2%	2%
Shared Lane Traffic (%)												
Sign Control			Yield				Yield				Yield	

Intersection Summary
Area Type: Other
Control Type: Roundabout



Lane Group	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Volume (vph)	3	65	97	23
Future Volume (vph)	3	65	97	23
Ideal Flow (vphpl)	1900	1900	1900	1900
Link Speed (mph)			25	
Link Distance (ft)			149	
Travel Time (s)			4.1	
Confl. Peds. (#/hr)	1	7		122
Peak Hour Factor	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	3%	3%	3%	3%
Shared Lane Traffic (%)				
Sign Control			Yield	

Intersection Summary

Intersection	
Intersection Delay, s/veh	5.5
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	263	224	229	223
Demand Flow Rate, veh/h	266	224	234	229
Vehicles Circulating, veh/h	227	248	313	178
Vehicles Exiting, veh/h	180	299	180	294
Ped Vol Crossing Leg, #/h	122	7	84	1
Ped Cap Adj	0.977	0.999	0.988	1.000
Approach Delay, s/veh	5.8	5.3	6.0	5.0
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
A (Intercept)	1380	1380	1380	1380
B (Slope)	1.02e-3	1.02e-3	1.02e-3	1.02e-3
Entry Flow, veh/h	266	224	234	229
Cap Entry Lane, veh/h	1095	1071	1003	1151
Entry HV Adj Factor	0.990	1.000	0.980	0.971
Flow Entry, veh/h	263	224	229	222
Cap Entry, veh/h	1058	1070	972	1118
V/C Ratio	0.249	0.209	0.236	0.199
Control Delay, s/veh	5.8	5.3	6.0	5.0
LOS	A	A	A	A
95th %tile Queue, veh	1	1	1	1

Lanes, Volumes, Timings
23: 166th Ave NE & NE 76 St 03/21/2025



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	103	144	39	23	74	63	20	89	18	17	73	43
Future Volume (vph)	103	144	39	23	74	63	20	89	18	17	73	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		0	0		50
Storage Lanes	0		0	0		0	0		0	0		1
Taper Length (ft)	25			25			25			25		
Link Speed (mph)		25			25			10			10	
Link Distance (ft)		724			1313			308			226	
Travel Time (s)		19.7			35.8			21.0			15.4	
Confl. Peds. (#/hr)	5		49	49		5	9		72	72		9
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	0%	0%	0%
Parking (#/hr)	0	0	0				0	0	0			
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Intersection Delay, s/veh	10.2
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	103	144	39	23	74	63	20	89	18	17	73	43
Future Vol, veh/h	103	144	39	23	74	63	20	89	18	17	73	43
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	0	0	0
Mvmt Flow	110	153	41	24	79	67	21	95	19	18	78	46
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	1
HCM Control Delay, s/veh	11.3	9.4	9.8	9.3
HCM LOS	B	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	16%	36%	14%	19%	0%
Vol Thru, %	70%	50%	46%	81%	0%
Vol Right, %	14%	14%	39%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	127	286	160	90	43
LT Vol	20	103	23	17	0
Through Vol	89	144	74	73	0
RT Vol	18	39	63	0	43
Lane Flow Rate	135	304	170	96	46
Geometry Grp	4a	2	2	5	5
Degree of Util (X)	0.203	0.409	0.233	0.159	0.066
Departure Headway (Hd)	5.408	4.839	4.923	5.99	5.185
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	666	733	734	601	693
Service Time	3.422	2.935	2.923	3.703	2.898
HCM Lane V/C Ratio	0.203	0.415	0.232	0.16	0.066
HCM Control Delay, s/veh	9.8	11.3	9.4	9.8	8.3
HCM Lane LOS	A	B	A	A	A
HCM 95th-tile Q	0.8	2	0.9	0.6	0.2

Lanes, Volumes, Timings
24: 164th Ave NE & NE 74th St 03/21/2025



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	74	28	28	63	82	63
Future Volume (vph)	74	28	28	63	82	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	10			10	10	
Link Distance (ft)	321			415	239	
Travel Time (s)	21.9			28.3	16.3	
Confl. Peds. (#/hr)	75	214	36			36
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	0%	0%	0%	0%	1%	1%
Parking (#/hr)	0	0	0	0		
Shared Lane Traffic (%)						
Sign Control	Stop			Stop	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Intersection Delay, s/veh	8.1
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	74	28	28	63	82	63
Future Vol, veh/h	74	28	28	63	82	63
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles, %	0	0	0	0	1	1
Mvmt Flow	83	31	31	71	92	71
Number of Lanes	1	0	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay, s/veh	8.2	8	8
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	31%	73%	0%
Vol Thru, %	69%	0%	57%
Vol Right, %	0%	27%	43%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	91	102	145
LT Vol	28	74	0
Through Vol	63	0	82
RT Vol	0	28	63
Lane Flow Rate	102	115	163
Geometry Grp	1	1	1
Degree of Util (X)	0.125	0.142	0.183
Departure Headway (Hd)	4.393	4.451	4.047
Convergence, Y/N	Yes	Yes	Yes
Cap	819	808	891
Service Time	2.405	2.466	2.047
HCM Lane V/C Ratio	0.125	0.142	0.183
HCM Control Delay, s/veh	8	8.2	8
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.4	0.5	0.7

Lanes, Volumes, Timings
25: 166th Ave NE/166th Ave NE & NE 74th St 03/21/2025



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	48	38	75	41	40	74
Future Volume (vph)	48	38	75	41	40	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	10		10			10
Link Distance (ft)	375		216			226
Travel Time (s)	25.6		14.7			15.4
Confl. Peds. (#/hr)	53	105		34	34	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	1%	0%	0%	3%	3%
Parking (#/hr)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Sign Control	Stop		Stop			Stop

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Intersection Delay, s/veh	7.9
Intersection LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	48	38	75	41	40	74
Future Vol, veh/h	48	38	75	41	40	74
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	1	1	0	0	3	3
Mvmt Flow	52	41	82	45	43	80
Number of Lanes	1	0	1	0	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay, s/veh	7.8	7.7	8.1
HCM LOS	A	A	A

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	56%	35%
Vol Thru, %	65%	0%	65%
Vol Right, %	35%	44%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	116	86	114
LT Vol	0	48	40
Through Vol	75	0	74
RT Vol	41	38	0
Lane Flow Rate	126	93	124
Geometry Grp	1	1	1
Degree of Util (X)	0.138	0.112	0.147
Departure Headway (Hd)	3.947	4.306	4.282
Convergence, Y/N	Yes	Yes	Yes
Cap	894	838	827
Service Time	2.037	2.306	2.364
HCM Lane V/C Ratio	0.141	0.111	0.15
HCM Control Delay, s/veh	7.7	7.8	8.1
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.5	0.4	0.5

Lanes, Volumes, Timings
26: Bear Creek Pkwy & 164th Ave NE 03/21/2025



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	110	766	467	30	60	65
Future Volume (vph)	110	766	467	30	60	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100			150	0	125
Storage Lanes	1			1	1	1
Taper Length (ft)	25				25	
Link Speed (mph)		30	30		10	
Link Distance (ft)		500	450		401	
Travel Time (s)		11.4	10.2		27.3	
Confl. Peds. (#/hr)	12			12		18
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	1%	1%	2%	2%	2%	2%
Parking (#/hr)		0				
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	110	766	467	30	60	65
Future Vol, veh/h	110	766	467	30	60	65
Conflicting Peds, #/hr	12	0	0	12	0	18
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	150	0	125
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	1	1	2	2	2	2
Mvmt Flow	115	798	486	31	63	68

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	530	0	-	0	1526	516
Stage 1	-	-	-	-	498	-
Stage 2	-	-	-	-	1027	-
Critical Hdwy	4.11	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.209	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1043	-	-	-	130	559
Stage 1	-	-	-	-	610	-
Stage 2	-	-	-	-	345	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1032	-	-	-	113	545
Mov Cap-2 Maneuver	-	-	-	-	239	-
Stage 1	-	-	-	-	537	-
Stage 2	-	-	-	-	342	-

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	1.12	0	18.68
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1032	-	-	-	239	545
HCM Lane V/C Ratio	0.111	-	-	-	0.262	0.124
HCM Ctrl Dly (s/v)	8.9	-	-	-	25.3	12.5
HCM Lane LOS	A	-	-	-	D	B
HCM 95th %tile Q(veh)	0.4	-	-	-	1	0.4

Lanes, Volumes, Timings
27: Bear Creek Pkwy & 166th Ave NE 03/21/2025



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	77	751	392	59	44	106
Future Volume (vph)	77	751	392	59	44	106
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)		-1%	1%		-1%	
Storage Length (ft)	200			150	0	150
Storage Lanes	1			1	1	1
Taper Length (ft)	25				25	
Link Speed (mph)		30	30		10	
Link Distance (ft)		220	462		360	
Travel Time (s)		5.0	10.5		24.5	
Confl. Peds. (#/hr)	22			22		27
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	1%	1%	1%	1%	3%	3%
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	77	751	392	59	44	106
Future Vol, veh/h	77	751	392	59	44	106
Conflicting Peds, #/hr	22	0	0	22	0	27
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	200	-	-	150	0	150
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	-1	1	-	-1	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	1	1	1	1	3	3
Mvmt Flow	81	791	413	62	46	112

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	497	0	-	0	1387	462
Stage 1	-	-	-	-	435	-
Stage 2	-	-	-	-	953	-
Critical Hdwy	4.11	-	-	-	6.23	6.13
Critical Hdwy Stg 1	-	-	-	-	5.23	-
Critical Hdwy Stg 2	-	-	-	-	5.23	-
Follow-up Hdwy	2.209	-	-	-	3.527	3.327
Pot Cap-1 Maneuver	1072	-	-	-	169	606
Stage 1	-	-	-	-	667	-
Stage 2	-	-	-	-	393	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1053	-	-	-	151	581
Mov Cap-2 Maneuver	-	-	-	-	279	-
Stage 1	-	-	-	-	604	-
Stage 2	-	-	-	-	386	-

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	0.81	0	14.95
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1053	-	-	-	279	581
HCM Lane V/C Ratio	0.077	-	-	-	0.166	0.192
HCM Ctrl Dly (s/v)	8.7	-	-	-	20.5	12.7
HCM Lane LOS	A	-	-	-	C	B
HCM 95th %tile Q(veh)	0.2	-	-	-	0.6	0.7

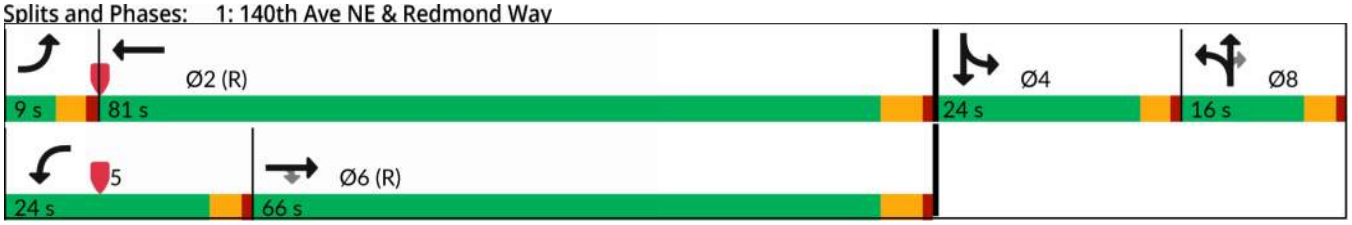
2030 No Action

Lanes, Volumes, Timings
1: 140th Ave NE & Redmond Way 03/21/2025

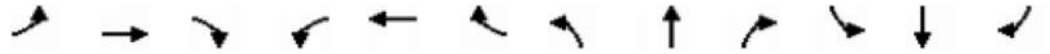
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	31	1214	108	153	1574	7	82	10	52	17	8	23
Future Volume (vph)	31	1214	108	153	1574	7	82	10	52	17	8	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-3%			4%			0%			7%	
Storage Length (ft)	125		250	250		0	0		200	0		30
Storage Lanes	1		1	1		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		40			40			35			25	
Link Distance (ft)		535			1832			797			317	
Travel Time (s)		9.1			31.2			15.5			8.6	
Confl. Peds. (#/hr)	8		2	2		8	11					11
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA	Perm	Split	NA	
Protected Phases	1	6		5	2		8	8		4	4	
Permitted Phases			6						8			
Detector Phase	1	6	6	5	2		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	5.0	12.0		5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	9.0	23.0	23.0	9.0	23.0		9.0	9.0	9.0	24.0	24.0	
Total Split (s)	9.0	66.0	66.0	24.0	81.0		16.0	16.0	16.0	24.0	24.0	
Total Split (%)	6.9%	50.8%	50.8%	18.5%	62.3%		12.3%	12.3%	12.3%	18.5%	18.5%	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)	4.0	5.0	5.0	4.0	5.0			4.0	4.0		4.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag							
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes							
Recall Mode	None	C-Max	C-Max	None	C-Max		None	None	None	None	None	

Intersection Summary
Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBT, Start of 1st Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 1: 140th Ave NE & Redmond Way



HCM 7th Signalized Intersection Summary
1: 140th Ave NE & Redmond Way 03/21/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	1214	108	153	1574	7	82	10	52	17	8	23
Future Volume (veh/h)	31	1214	108	153	1574	7	82	10	52	17	8	23
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	2003	2003	2003	1791	1791	1791	1900	1900	1900	1611	1611	1611
Adj Flow Rate, veh/h	34	1320	0	166	1711	8	89	11	0	18	9	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	1	1	1	1	1	0	0	0	0	0	0
Cap, veh/h	52	2438		192	2522	12	110	14		50	25	
Arrive On Green	0.03	0.64	0.00	0.11	0.73	0.73	0.07	0.07	0.00	0.05	0.05	0.00
Sat Flow, veh/h	1908	3806	1697	1706	3473	16	1619	200	1610	1040	520	0
Grp Volume(v), veh/h	34	1320	0	166	838	881	100	0	0	27	0	0
Grp Sat Flow(s),veh/h/ln	1908	1903	1697	1706	1701	1788	1819	0	1610	1559	0	0
Q Serve(g_s), s	2.3	24.8	0.0	12.4	34.5	34.6	7.0	0.0	0.0	2.2	0.0	0.0
Cycle Q Clear(g_c), s	2.3	24.8	0.0	12.4	34.5	34.6	7.0	0.0	0.0	2.2	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.01	0.89		1.00	0.67		0.00
Lane Grp Cap(c), veh/h	52	2438		192	1235	1298	124	0		74	0	
V/C Ratio(X)	0.66	0.54		0.86	0.68	0.68	0.81	0.00		0.36	0.00	
Avail Cap(c_a), veh/h	73	2438		262	1235	1298	168	0		240	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	62.6	12.9	0.0	56.7	9.6	9.6	59.7	0.0	0.0	60.0	0.0	0.0
Incr Delay (d2), s/veh	13.1	0.9	0.0	19.2	3.0	2.9	18.2	0.0	0.0	2.2	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	10.0	0.0	6.3	11.9	12.5	3.9	0.0	0.0	0.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	75.8	13.7	0.0	75.9	12.6	12.5	78.0	0.0	0.0	62.2	0.0	0.0
LnGrp LOS	E	B		E	B	B	E			E		
Approach Vol, veh/h		1354			1885			100			27	
Approach Delay, s/veh		15.3			18.1			78.0			62.2	
Approach LOS		B			B			E			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.5	99.4		10.2	18.6	88.3		12.9				
Change Period (Y+Rc), s	4.0	5.0		4.0	4.0	5.0		4.0				
Max Green Setting (Gmax), s	5.0	76.0		20.0	20.0	61.0		12.0				
Max Q Clear Time (g_c+I1), s	4.3	36.6		4.2	14.4	26.8		9.0				
Green Ext Time (p_c), s	0.0	25.9		0.0	0.2	17.4		0.1				

Intersection Summary	
HCM 7th Control Delay, s/veh	19.1
HCM 7th LOS	B

Notes

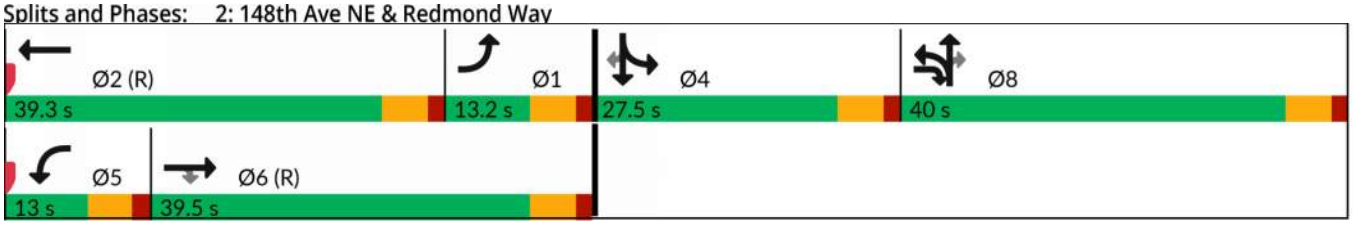
Unsignalized Delay for [NBR, EBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings
2: 148th Ave NE & Redmond Way 03/21/2025

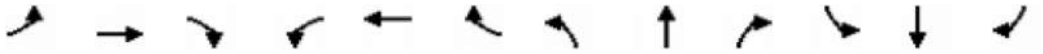
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	179	896	185	175	858	11	654	649	380	33	395	278
Future Volume (vph)	179	896	185	175	858	11	654	649	380	33	395	278
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-3%			0%			-3%			3%	
Storage Length (ft)	375		150	250		0	275		200	200		250
Storage Lanes	2		1	2		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		40			40			40			40	
Link Distance (ft)		957			1580			2623			1894	
Travel Time (s)		16.3			26.9			44.7			32.3	
Confl. Peds. (#/hr)	4		4	4		4			9	9		
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	2%	2%	2%
Shared Lane Traffic (%)							35%					
Turn Type	Prot	NA	pm+ov	Prot	NA		Split	NA	Perm	Split	NA	Perm
Protected Phases	1	6	8	5	2		8	8		4	4	
Permitted Phases			6						8			4
Detector Phase	1	6	8	5	2		8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.5	27.5	24.5	10.5	25.5		24.5	24.5	24.5	27.5	27.5	27.5
Total Split (s)	13.2	39.5	40.0	13.0	39.3		40.0	40.0	40.0	27.5	27.5	27.5
Total Split (%)	11.0%	32.9%	33.3%	10.8%	32.8%		33.3%	33.3%	33.3%	22.9%	22.9%	22.9%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5		1.5	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5		5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lag	Lag		Lead	Lead							
Lead-Lag Optimize?		Yes		Yes								
Recall Mode	None	C-Max	None	None	C-Max		None	None	None	None	None	None

Intersection Summary
Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 87 (73%), Referenced to phase 2:WBT and 6:EBT, Start of 1st Green
Natural Cycle: 110
Control Type: Actuated-Coordinated

Splits and Phases: 2: 148th Ave NE & Redmond Way



HCM 7th Signalized Intersection Summary
2: 148th Ave NE & Redmond Way 03/21/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	179	896	185	175	858	11	654	649	380	33	395	278
Future Volume (veh/h)	179	896	185	175	858	11	654	649	380	33	395	278
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	2003	2003	2003	1885	1885	1885	2003	2003	2003	1817	1817	1817
Adj Flow Rate, veh/h	192	963	199	188	923	12	784	585	0	35	425	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	2	2	2
Cap, veh/h	338	1182	1013	218	1020	13	1097	576		270	539	
Arrive On Green	0.09	0.31	0.31	0.02	0.09	0.09	0.29	0.29	0.00	0.05	0.05	0.00
Sat Flow, veh/h	3701	3806	1691	3483	3620	47	3815	2003	1697	1731	3453	1540
Grp Volume(v), veh/h	192	963	199	188	457	478	784	585	0	35	425	0
Grp Sat Flow(s),veh/h/ln	1850	1903	1691	1742	1791	1876	1908	2003	1697	1731	1726	1540
Q Serve(g_s), s	6.0	28.0	6.4	6.5	30.3	30.3	22.1	34.5	0.0	2.3	14.6	0.0
Cycle Q Clear(g_c), s	6.0	28.0	6.4	6.5	30.3	30.3	22.1	34.5	0.0	2.3	14.6	0.0
Prop In Lane	1.00		1.00	1.00		0.03	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	338	1182	1013	218	504	529	1097	576		270	539	
V/C Ratio(X)	0.57	0.81	0.20	0.86	0.91	0.91	0.71	1.02		0.13	0.79	
Avail Cap(c_a), veh/h	338	1182	1013	218	504	529	1097	576		317	633	
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	0.67	0.67	0.67	0.20	0.20	0.00	0.97	0.97	0.00
Uniform Delay (d), s/veh	52.2	38.2	11.0	58.3	52.8	52.8	38.3	42.8	0.0	49.1	55.0	0.0
Incr Delay (d2), s/veh	2.2	6.2	0.4	20.6	16.5	15.9	0.5	20.9	0.0	0.2	5.5	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	13.7	4.6	3.5	16.8	17.5	10.1	19.8	0.0	1.0	7.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	54.5	44.4	11.4	78.9	69.3	68.7	38.8	63.6	0.0	49.3	60.5	0.0
LnGrp LOS	D	D	B	E	E	E	D	F		D	E	
Approach Vol, veh/h		1354			1123			1369			460	
Approach Delay, s/veh		41.0			70.7			49.4			59.6	
Approach LOS		D			E			D			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	16.5	39.3		24.2	13.0	42.8		40.0				
Change Period (Y+Rc), s	5.5	5.5		5.5	5.5	5.5		5.5				
Max Green Setting (Gmax), s	7.7	33.8		22.0	7.5	34.0		34.5				
Max Q Clear Time (g_c+I1), s	8.0	32.3		16.6	8.5	30.0		36.5				
Green Ext Time (p_c), s	0.0	0.7		1.6	0.0	2.1		0.0				

Intersection Summary	
HCM 7th Control Delay, s/veh	53.4
HCM 7th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.
Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings
3: Willows Rd NE & Redmond Way 03/21/2025

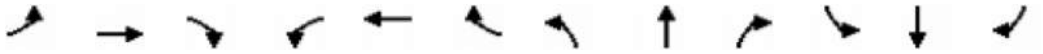
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	1371	14	26	1024	266	7	6	20	593	17	16
Future Volume (vph)	16	1371	14	26	1024	266	7	6	20	593	17	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-3%			0%			0%			5%	
Storage Length (ft)	150		0	125		30	0		0	275		0
Storage Lanes	1		0	1		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		40			40			25			35	
Link Distance (ft)		1580			850			188			922	
Travel Time (s)		26.9			14.5			5.1			18.0	
Confl. Peds. (#/hr)	12		4	4		12	19		5	5		19
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	1%	1%	1%
Shared Lane Traffic (%)										47%		
Turn Type	Prot	NA		Prot	NA		Split	NA		Split	NA	
Protected Phases	1	6		5	2		8	8		4	4	
Permitted Phases												
Detector Phase	1	6		5	2		8	8		4	4	
Switch Phase												
Minimum Initial (s)	6.0	12.0		5.0	12.0		5.0	5.0		6.0	6.0	
Minimum Split (s)	11.0	19.0		10.0	19.0		23.0	23.0		25.0	25.0	
Total Split (s)	11.0	56.0		10.0	55.0		23.0	23.0		31.0	31.0	
Total Split (%)	9.2%	46.7%		8.3%	45.8%		19.2%	19.2%		25.8%	25.8%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0		5.0	5.0	
Lead/Lag	Lead	Lead		Lag	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	

Intersection Summary
Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 32 (27%), Referenced to phase 2:WBT and 6:EBT, Start of 1st Green
Natural Cycle: 110
Control Type: Actuated-Coordinated

Splits and Phases: 3: Willows Rd NE & Redmond Way



HCM 7th Signalized Intersection Summary
3: Willows Rd NE & Redmond Way 03/21/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	1371	14	26	1024	266	7	6	20	593	17	16
Future Volume (veh/h)	16	1371	14	26	1024	266	7	6	20	593	17	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.91	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	2003	2003	2003	1885	1885	1885	1900	1900	1900	1738	1738	1738
Adj Flow Rate, veh/h	17	1474	15	28	1101	0	8	6	22	667	0	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	1	1	1	1	1	0	0	0	1	1	1
Cap, veh/h	41	1640	17	234	1911		22	17	61	714	375	0
Arrive On Green	0.01	0.14	0.14	0.26	1.00	0.00	0.06	0.06	0.06	0.22	0.00	0.00
Sat Flow, veh/h	1908	3859	39	1795	3676	0	354	265	973	3310	1738	0
Grp Volume(v), veh/h	17	726	763	28	1101	0	36	0	0	667	0	0
Grp Sat Flow(s),veh/h/ln	1908	1903	1995	1795	1791	0	1592	0	0	1655	1738	0
Q Serve(g_s), s	1.1	45.1	45.1	1.4	0.0	0.0	2.6	0.0	0.0	23.7	0.0	0.0
Cycle Q Clear(g_c), s	1.1	45.1	45.1	1.4	0.0	0.0	2.6	0.0	0.0	23.7	0.0	0.0
Prop In Lane	1.00		0.02	1.00		0.00	0.22		0.61	1.00		0.00
Lane Grp Cap(c), veh/h	41	809	848	234	1911		99	0	0	714	375	0
V/C Ratio(X)	0.41	0.90	0.90	0.12	0.58		0.36	0.00	0.00	0.93	0.00	0.00
Avail Cap(c_a), veh/h	95	809	848	234	1911		239	0	0	717	377	0
HCM Platoon Ratio	0.33	0.33	0.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.47	0.47	0.47	0.72	0.72	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	58.8	49.0	49.1	39.1	0.0	0.0	54.0	0.0	0.0	46.2	0.0	0.0
Incr Delay (d2), s/veh	2.3	7.9	7.6	0.1	0.9	0.0	0.8	0.0	0.0	19.6	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	24.6	25.8	0.6	0.2	0.0	1.1	0.0	0.0	11.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	61.1	56.9	56.7	39.2	0.9	0.0	54.8	0.0	0.0	65.9	0.0	0.0
LnGrp LOS	E	E	E	D	A		D			E		
Approach Vol, veh/h		1506			1129			36			667	
Approach Delay, s/veh		56.8			1.9			54.8			65.9	
Approach LOS		E			A			D			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.6	69.0		30.9	20.6	56.0		12.5				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	6.0	50.0		26.0	5.0	51.0		18.0				
Max Q Clear Time (g_c+I1), s	3.1	2.0		25.7	3.4	47.1		4.6				
Green Ext Time (p_c), s	0.0	20.8		0.1	0.0	3.5		0.0				

Intersection Summary		
HCM 7th Control Delay, s/veh	40.0	
HCM 7th LOS	D	

Notes

User approved volume balancing among the lanes for turning movement.
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings
4: West Lake Sammamish Pkwy NE & Redmond Way 03/21/2025

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1355	642	217	958	363	194
Future Volume (vph)	1355	642	217	958	363	194
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	-3%			3%	-4%	
Storage Length (ft)		125	150		0	75
Storage Lanes		1	2		1	0
Taper Length (ft)			25		25	
Right Turn on Red		Yes				Yes
Link Speed (mph)	30			30	35	
Link Distance (ft)	850			951	587	
Travel Time (s)	19.3			21.6	11.4	
Confl. Peds. (#/hr)		14	14			2
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	1%	1%	1%	1%	2%	2%
Shared Lane Traffic (%)						
Turn Type	NA	pm+ov	Prot	NA	Prot	
Protected Phases	6	4	5	2	4	
Permitted Phases		6				
Detector Phase	6	4	5	2	4	
Switch Phase						
Minimum Initial (s)	8.0	6.0	5.0	20.0	6.0	
Minimum Split (s)	22.0	25.0	10.0	25.0	25.0	
Total Split (s)	57.0	48.0	15.0	72.0	48.0	
Total Split (%)	47.5%	40.0%	12.5%	60.0%	40.0%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Recall Mode	C-Max	None	None	C-Max	None	

Intersection Summary
Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 47 (39%), Referenced to phase 2:WBT and 6:EBT, Start of 1st Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

Splits and Phases: 4: West Lake Sammamish Pkwy NE & Redmond Way



HCM 7th Signalized Intersection Summary
4: West Lake Sammamish Pkwy NE & Redmond Way 03/21/2025



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1355	642	217	958	363	194
Future Volume (veh/h)	1355	642	217	958	363	194
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)		0.98	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	2003	2003	1832	1832	2027	2027
Adj Flow Rate, veh/h	1369	648	219	968	367	0
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	1	1	1	1	2	2
Cap, veh/h	1649	724	772	2448	411	
Arrive On Green	0.87	0.87	0.46	1.00	0.21	0.00
Sat Flow, veh/h	3906	1670	3385	3573	1926	0
Grp Volume(v), veh/h	1369	648	219	968	368	0
Grp Sat Flow(s),veh/h/ln	1903	1670	1693	1741	1931	0
Q Serve(g_s), s	20.5	27.7	4.8	0.0	22.2	0.0
Cycle Q Clear(g_c), s	20.5	27.7	4.8	0.0	22.2	0.0
Prop In Lane		1.00	1.00		1.00	0.00
Lane Grp Cap(c), veh/h	1649	724	772	2448	412	
V/C Ratio(X)	0.83	0.90	0.28	0.40	0.89	
Avail Cap(c_a), veh/h	1649	724	772	2448	692	
HCM Platoon Ratio	2.00	2.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	0.57	0.57	0.88	0.88	0.93	0.00
Uniform Delay (d), s/veh	5.9	6.4	26.5	0.0	45.8	0.0
Incr Delay (d2), s/veh	2.9	10.0	0.2	0.4	7.7	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	4.7	1.9	0.1	11.4	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	8.8	16.4	26.7	0.4	53.6	0.0
LnGrp LOS	A	B	C	A	D	
Approach Vol, veh/h	2017			1187	368	
Approach Delay, s/veh	11.3			5.3	53.6	
Approach LOS	B			A	D	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		89.4		30.6	32.4	57.0
Change Period (Y+Rc), s		5.0		5.0	5.0	5.0
Max Green Setting (Gmax), s		67.0		43.0	10.0	52.0
Max Q Clear Time (g_c+I1), s		2.0		24.2	6.8	29.7
Green Ext Time (p_c), s		5.6		1.4	0.3	12.3

Intersection Summary	
HCM 7th Control Delay, s/veh	13.6
HCM 7th LOS	B

Notes

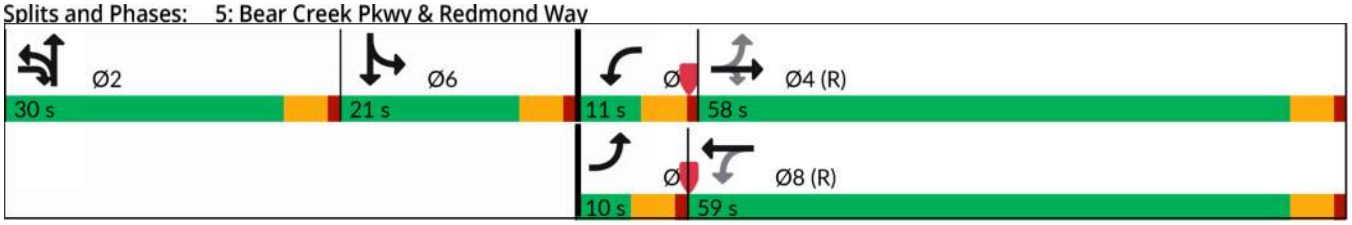
Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings
5: Bear Creek Pkwy & Redmond Way 03/21/2025

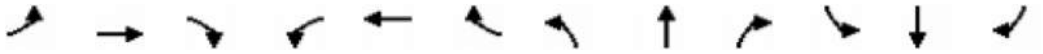
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	1000	512	72	927	20	271	5	81	24	6	19
Future Volume (vph)	11	1000	512	72	927	20	271	5	81	24	6	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-4%			0%			0%			0%	
Storage Length (ft)	150		175	150		0	125		0	0		0
Storage Lanes	1		1	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			25	
Link Distance (ft)		951			828			488			167	
Travel Time (s)		21.6			18.8			11.1			4.6	
Confl. Peds. (#/hr)	9		15	15		9	9		19	19		9
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)							32%					
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA		Split	NA		Split	NA	
Protected Phases	7	4	2	3	8		2	2		6	6	
Permitted Phases	4		4	8								
Detector Phase	7	4	2	3	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	8.0	6.0	5.0	8.0		6.0	6.0		5.0	5.0	
Minimum Split (s)	10.0	24.0	24.0	10.0	21.0		24.0	24.0		21.0	21.0	
Total Split (s)	10.0	58.0	30.0	11.0	59.0		30.0	30.0		21.0	21.0	
Total Split (%)	8.3%	48.3%	25.0%	9.2%	49.2%		25.0%	25.0%		17.5%	17.5%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag	Lead	Lead	Lag		Lead	Lead		Lag	Lag	
Lead-Lag Optimize?			Yes				Yes	Yes				
Recall Mode	None	C-Max	None	None	C-Max		None	None		None	None	

Intersection Summary
Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 66 (55%), Referenced to phase 4:EBTL and 8:WBTL, Start of 1st Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

Splits and Phases: 5: Bear Creek Pkwy & Redmond Way



HCM 7th Signalized Intersection Summary
5: Bear Creek Pkwy & Redmond Way 03/21/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	1000	512	72	927	20	271	5	81	24	6	19
Future Volume (veh/h)	11	1000	512	72	927	20	271	5	81	24	6	19
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.96	1.00		0.91
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	2042	2042	2042	1885	1885	1885	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	11	1031	528	74	956	21	184	138	84	25	6	20
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	1	1	1	1	1	0	0	0	0	0	0
Cap, veh/h	378	2264	1257	323	2181	48	272	164	100	111	22	73
Arrive On Green	0.03	1.00	1.00	0.04	0.61	0.61	0.15	0.15	0.15	0.06	0.06	0.06
Sat Flow, veh/h	1945	3880	1709	1795	3582	79	1810	1088	662	1810	356	1187
Grp Volume(v), veh/h	11	1031	528	74	478	499	184	0	222	25	0	26
Grp Sat Flow(s),veh/h/ln	1945	1940	1709	1795	1791	1870	1810	0	1750	1810	0	1543
Q Serve(g_s), s	0.3	0.0	0.0	2.0	17.1	17.1	11.5	0.0	14.8	1.6	0.0	1.9
Cycle Q Clear(g_c), s	0.3	0.0	0.0	2.0	17.1	17.1	11.5	0.0	14.8	1.6	0.0	1.9
Prop In Lane	1.00		1.00	1.00		0.04	1.00		0.38	1.00		0.77
Lane Grp Cap(c), veh/h	378	2264	1257	323	1090	1138	272	0	263	111	0	95
V/C Ratio(X)	0.03	0.46	0.42	0.23	0.44	0.44	0.68	0.00	0.84	0.22	0.00	0.27
Avail Cap(c_a), veh/h	434	2264	1257	344	1090	1138	377	0	365	241	0	206
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.43	0.43	0.43	0.75	0.75	0.75	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	10.5	0.0	0.0	8.9	12.5	12.5	48.2	0.0	49.6	53.6	0.0	53.8
Incr Delay (d2), s/veh	0.0	0.3	0.4	0.1	1.0	0.9	2.2	0.0	11.0	1.0	0.0	1.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.1	0.2	0.8	6.9	7.2	5.4	0.0	7.3	0.8	0.0	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	10.5	0.3	0.4	9.1	13.5	13.5	50.4	0.0	60.6	54.6	0.0	55.3
LnGrp LOS	B	A	A	A	B	B	D		E	D		E
Approach Vol, veh/h		1570			1051			406			51	
Approach Delay, s/veh		0.4			13.2			56.0			55.0	
Approach LOS		A			B			E			D	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	23.0	9.6	75.0	12.4	6.5	78.0
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	25.0	6.0	53.0	16.0	5.0	54.0
Max Q Clear Time (g_c+I1), s	16.8	4.0	2.0	3.9	2.3	19.1
Green Ext Time (p_c), s	0.9	0.0	7.9	0.1	0.0	3.4

Intersection Summary	
HCM 7th Control Delay, s/veh	13.0
HCM 7th LOS	B

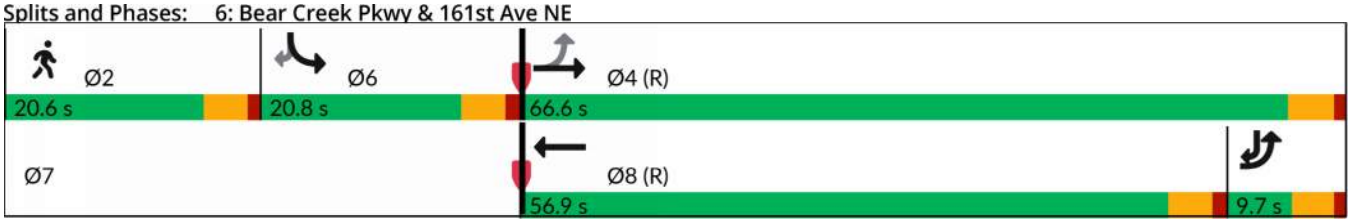
Notes
User approved volume balancing among the lanes for turning movement.

Lanes, Volumes, Timings
6: Bear Creek Pkwy & 161st Ave NE 03/21/2025

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø2
Lane Configurations							
Traffic Volume (vph)	33	484	319	190	110	80	
Future Volume (vph)	33	484	319	190	110	80	
Satd. Flow (prot)	1787	1693	1501	0	1787	1599	
Flt Permitted	0.337				0.950		
Satd. Flow (perm)	634	1693	1501	0	1612	1445	
Satd. Flow (RTOR)			38			91	
Confl. Peds. (#/hr)	48			48	29	23	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	
Parking (#/hr)		0	0	0			
Shared Lane Traffic (%)							
Lane Group Flow (vph)	38	550	579	0	125	91	
Turn Type	pm+pt	NA	NA		Prot	pm+ov	
Protected Phases	7	4	8		6	7	2
Permitted Phases	4					6	
Detector Phase	7	4	8		6	7	
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	9.4	9.6	20.6		20.6	9.4	20.6
Total Split (s)	9.7	66.6	56.9		20.8	9.7	20.6
Total Split (%)	9.0%	61.7%	52.7%		19.3%	9.0%	19%
Yellow Time (s)	3.4	3.6	3.6		3.6	3.4	3.6
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.4	4.6	4.6		4.6	4.4	
Lead/Lag	Lag		Lead		Lag	Lag	Lead
Lead-Lag Optimize?							
Recall Mode	None	C-Max	C-Max		None	None	None
Act Effct Green (s)	73.9	73.7	65.9		12.7	18.2	
Actuated g/C Ratio	0.68	0.68	0.61		0.12	0.17	
v/c Ratio	0.08	0.48	0.62		0.60	0.28	
Control Delay (s/veh)	10.0	12.5	17.3		56.3	6.8	
Queue Delay	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	10.0	12.5	17.3		56.3	6.8	
LOS	A	B	B		E	A	
Approach Delay (s/veh)		12.4	17.3		35.5		
Approach LOS		B	B		D		

Intersection Summary	
Cycle Length: 108	
Actuated Cycle Length: 108	
Offset: 6 (6%), Referenced to phase 4:EBTL and 8:WBT, Start of 1st Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.62	
Intersection Signal Delay (s/veh): 18.0	Intersection LOS: B
Intersection Capacity Utilization 47.5%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 6: Bear Creek Pkwy & 161st Ave NE

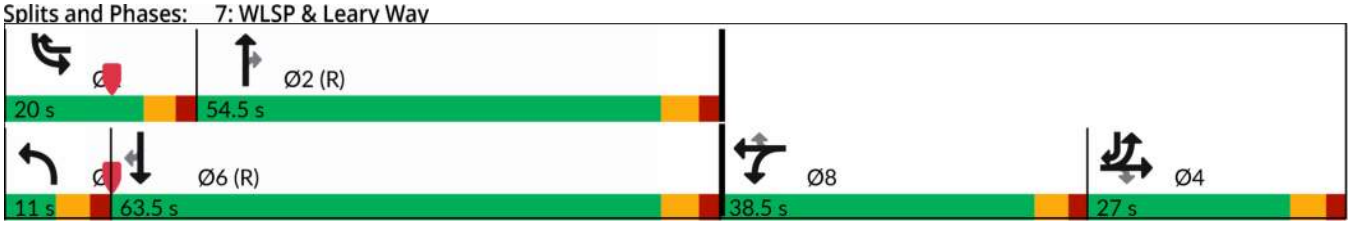


Lanes, Volumes, Timings
7: WLSP & Leary Way 03/21/2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	287	11	213	277	486	87	15	1013	1150	209	876	584
Future Volume (vph)	287	11	213	277	486	87	15	1013	1150	209	876	584
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-6%			3%			0%			0%	
Storage Length (ft)	0		175	200		150	200		275	175		0
Storage Lanes	0		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			No
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		718			834			1781			1175	
Travel Time (s)		16.3			19.0			30.4			20.0	
Confl. Peds. (#/hr)	34					34			3	3		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	4%	4%	4%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Shared Lane Traffic (%)				11%								
Turn Type	Split	NA	Perm	Split	NA	pm+ov	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	4	4		8	8	1	5	2		1	6	4
Permitted Phases			4			8			2			6
Detector Phase	4	4	4	8	8	1	5	2	2	1	6	4
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	7.0	7.0	7.0	5.0	10.0	10.0	7.0	10.0	5.0
Minimum Split (s)	10.9	10.9	10.9	38.5	38.5	12.5	10.5	33.9	33.9	12.5	15.9	10.9
Total Split (s)	27.0	27.0	27.0	38.5	38.5	20.0	11.0	54.5	54.5	20.0	63.5	27.0
Total Split (%)	19.3%	19.3%	19.3%	27.5%	27.5%	14.3%	7.9%	38.9%	38.9%	14.3%	45.4%	19.3%
Yellow Time (s)	3.9	3.9	3.9	3.5	3.5	3.5	3.5	3.9	3.9	3.5	3.9	3.9
All-Red 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
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.9	5.9	5.5	5.5	5.5	5.5	5.9	5.9	5.5	5.9	5.9
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?				Yes	Yes	Yes		Yes	Yes	Yes		
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	None

Intersection Summary
Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 92 (66%), Referenced to phase 2:NBT and 6:SBT, Start of 1st Green
Natural Cycle: 140
Control Type: Actuated-Coordinated

Splits and Phases: 7: WLSP & Leary Way



HCM 7th Signalized Intersection Summary
7: WLSP & Leary Way 03/21/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	287	11	213	277	486	87	15	1013	1150	209	876	584
Future Volume (veh/h)	287	11	213	277	486	87	15	1013	1150	209	876	584
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.93	1.00		0.95	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	2076	2076	2076	1817	1817	1817	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	302	12	224	268	546	92	16	1066	0	220	922	615
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	4	4	4	2	2	2	2	2	2	2	2	2
Cap, veh/h	287	11	247	374	785	476	29	1304		184	1613	957
Arrive On Green	0.15	0.15	0.15	0.22	0.22	0.22	0.01	0.12	0.00	0.10	0.45	0.45
Sat Flow, veh/h	1905	76	1640	1731	3635	1467	1781	3554	1585	1781	3554	1582
Grp Volume(v), veh/h	314	0	224	268	546	92	16	1066	0	220	922	615
Grp Sat Flow(s),veh/h/ln	1981	0	1640	1731	1817	1467	1781	1777	1585	1781	1777	1582
Q Serve(g_s), s	21.1	0.0	18.8	20.1	19.4	6.4	1.3	41.0	0.0	14.5	26.8	35.2
Cycle Q Clear(g_c), s	21.1	0.0	18.8	20.1	19.4	6.4	1.3	41.0	0.0	14.5	26.8	35.2
Prop In Lane	0.96		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	299	0	247	374	785	476	29	1304		184	1613	957
V/C Ratio(X)	1.05	0.00	0.91	0.72	0.70	0.19	0.54	0.82		1.19	0.57	0.64
Avail Cap(c_a), veh/h	299	0	247	408	857	505	70	1304		184	1613	957
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.94	0.94	0.94	0.31	0.31	0.00	0.90	0.90	0.90
Uniform Delay (d), s/veh	59.5	0.0	58.5	50.9	50.6	34.6	69.1	57.0	0.0	62.7	28.2	17.9
Incr Delay (d2), s/veh	66.4	0.0	33.5	5.8	2.4	0.3	4.7	1.9	0.0	124.5	1.3	3.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.1	0.0	10.1	9.4	9.1	2.3	0.6	19.9	0.0	12.9	11.4	18.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	125.8	0.0	91.9	56.7	53.0	34.8	73.8	58.8	0.0	187.2	29.5	20.9
LnGrp LOS	F		F	E	D	C	E	E		F	C	C
Approach Vol, veh/h		538			906			1082			1757	
Approach Delay, s/veh		111.7			52.3			59.1			46.2	
Approach LOS		F			D			E			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	20.0	57.3		27.0	7.8	69.4		35.7				
Change Period (Y+Rc), s	5.5	5.9		5.9	5.5	5.9		5.5				
Max Green Setting (Gmax), s	14.5	48.6		21.1	5.5	57.6		33.0				
Max Q Clear Time (g_c+I1), s	16.5	43.0		23.1	3.3	37.2		22.1				
Green Ext Time (p_c), s	0.0	3.3		0.0	0.0	11.3		5.5				

Intersection Summary	
HCM 7th Control Delay, s/veh	59.0
HCM 7th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

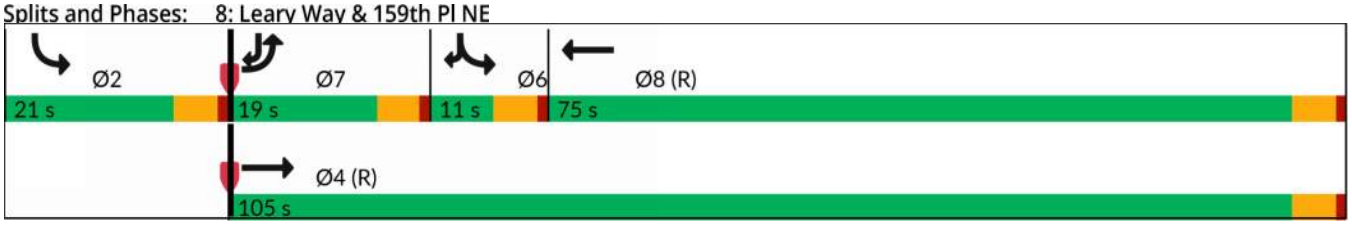
Lanes, Volumes, Timings
8: Leary Way & 159th Pl NE 03/21/2025

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø2	Ø6
Lane Configurations								
Traffic Volume (vph)	99	1292	829	17	26	79		
Future Volume (vph)	99	1292	829	17	26	79		
Satd. Flow (prot)	1787	1881	3550	0	1805	1615		
Flt Permitted	0.950				0.950			
Satd. Flow (perm)	1696	1881	3550	0	1805	1615		
Satd. Flow (RTOR)			3			81		
Confl. Peds. (#/hr)	41			41		29		
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97		
Heavy Vehicles (%)	1%	1%	1%	1%	0%	0%		
Mid-Block Traffic (%)		0%	0%		50%			
Shared Lane Traffic (%)								
Lane Group Flow (vph)	102	1332	873	0	27	81		
Turn Type	Prot	NA	NA		Prot	pt+ov		
Protected Phases	7	4!	8		2 6!	6 7	2	6
Permitted Phases								
Detector Phase	7	4	8		2 6	7		
Switch Phase								
Minimum Initial (s)	5.0	7.0	7.0				4.0	6.0
Minimum Split (s)	10.0	12.0	20.0				21.0	11.0
Total Split (s)	19.0	105.0	75.0				21.0	11.0
Total Split (%)	15.1%	83.3%	59.5%				17%	9%
Yellow Time (s)	4.0	4.0	4.0				4.0	4.0
All-Red Time (s)	1.0	1.0	1.0				1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0					
Total Lost Time (s)	5.0	5.0	5.0					
Lead/Lag	Lead							Lag
Lead-Lag Optimize?	Yes							Yes
Recall Mode	None	C-Max	C-Max				None	None
Act Effct Green (s)	11.1	107.3	83.7		17.6	17.7		
Actuated g/C Ratio	0.09	0.85	0.66		0.14	0.14		
v/c Ratio	0.65	0.83	0.37		0.11	0.27		
Control Delay (s/veh)	74.3	13.7	12.5		30.3	11.3		
Queue Delay	0.0	2.3	0.0		0.0	0.0		
Total Delay (s/veh)	74.3	16.0	12.5		30.3	11.3		
LOS	E	B	B		C	B		
Approach Delay (s/veh)		20.1	12.5		16.1			
Approach LOS		C	B		B			

Intersection Summary			
Cycle Length: 126			
Actuated Cycle Length: 126			
Offset: 0 (0%), Referenced to phase 8:WBT and 4:EBT, Start of 1st Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.83			
Intersection Signal Delay (s/veh): 17.2		Intersection LOS: B	
Intersection Capacity Utilization 85.9%		ICU Level of Service E	
Analysis Period (min) 15			

! Phase conflict between lane groups.

Splits and Phases: 8: Leary Way & 159th Pl NE



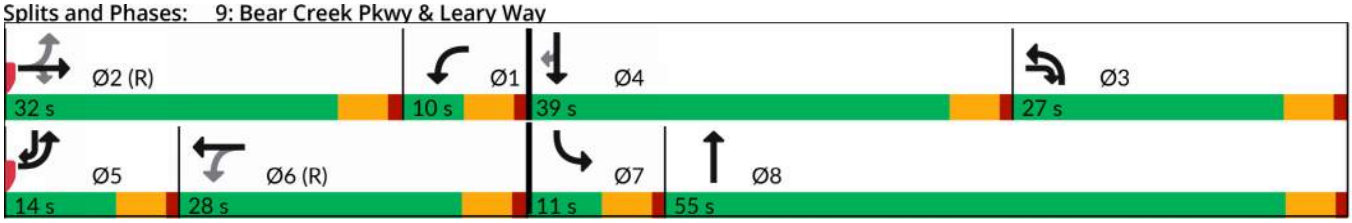
Lanes, Volumes, Timings
9: Bear Creek Pkwy & Leary Way 03/21/2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	168	574	575	18	334	82	346	268	13	44	479	86
Future Volume (vph)	168	574	575	18	334	82	346	268	13	44	479	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		225	175		0	190		0	275		100
Storage Lanes	1		1	1		0	2		0	1		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		664			421			452			692	
Travel Time (s)		15.1			9.6			10.3			15.7	
Confl. Peds. (#/hr)	12		6	6		12	6		17	17		6
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	2%	2%	2%	1%	1%	1%	2%	2%	2%	1%	1%	1%
Shared Lane Traffic (%)												
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA		Prot	NA		Prot	NA	pm+ov
Protected Phases	5	2	3	1	6		3	8		7	4	5
Permitted Phases	2		2	6								4
Detector Phase	5	2	3	1	6		3	8		7	4	4
Switch Phase												
Minimum Initial (s)	5.0	8.0	6.0	5.0	8.0		6.0	6.0		5.0	5.0	5.0
Minimum Split (s)	10.0	26.2	11.2	10.0	24.2		11.2	28.0		10.0	26.0	10.0
Total Split (s)	14.0	32.0	27.0	10.0	28.0		27.0	55.0		11.0	39.0	14.0
Total Split (%)	13.0%	29.6%	25.0%	9.3%	25.9%		25.0%	50.9%		10.2%	36.1%	13.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.2	1.2	1.0	1.2		1.2	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0	5.2	5.2	5.0	5.2		5.2	5.0		5.0	5.0	5.0
Lead/Lag	Lead	Lead	Lag	Lag	Lag		Lag	Lag		Lead	Lead	Lead
Lead-Lag Optimize?												
Recall Mode	None	C-Max	None	None	C-Max		None	None		None	None	None

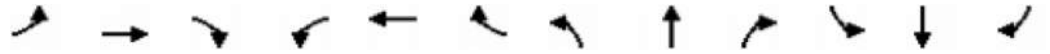
Intersection Summary

Area Type: Other
Cycle Length: 108
Actuated Cycle Length: 108
Offset: 84 (78%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

Splits and Phases: 9: Bear Creek Pkwy & Leary Way



HCM 7th Signalized Intersection Summary
9: Bear Creek Pkwy & Leary Way 03/21/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	168	574	575	18	334	82	346	268	13	44	479	86
Future Volume (veh/h)	168	574	575	18	334	82	346	268	13	44	479	86
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.99		0.98	0.99		0.98	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1885	1885	1885	1870	1870	1870	1885	1885	1885
Adj Flow Rate, veh/h	171	586	587	18	341	84	353	273	13	45	489	88
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	1	1	1	2	2	2	1	1	1
Cap, veh/h	238	882	587	378	907	220	442	663	32	62	530	574
Arrive On Green	0.08	0.25	0.25	0.15	0.32	0.32	0.13	0.37	0.37	0.03	0.28	0.28
Sat Flow, veh/h	1781	3554	1547	1795	2846	691	3456	1770	84	1795	1885	1569
Grp Volume(v), veh/h	171	586	587	18	213	212	353	0	286	45	489	88
Grp Sat Flow(s),veh/h/ln	1781	1777	1547	1795	1791	1745	1728	0	1854	1795	1885	1569
Q Serve(g_s), s	8.9	16.0	26.8	0.0	9.9	10.2	10.7	0.0	12.3	2.7	27.2	2.4
Cycle Q Clear(g_c), s	8.9	16.0	26.8	0.0	9.9	10.2	10.7	0.0	12.3	2.7	27.2	2.4
Prop In Lane	1.00		1.00	1.00		0.40	1.00		0.05	1.00		1.00
Lane Grp Cap(c), veh/h	238	882	587	378	571	556	442	0	695	62	530	574
V/C Ratio(X)	0.72	0.66	1.00	0.05	0.37	0.38	0.80	0.00	0.41	0.73	0.92	0.15
Avail Cap(c_a), veh/h	238	882	587	378	571	556	698	0	858	100	593	627
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.47	0.47	0.47	1.00	1.00	1.00	0.85	0.00	0.85	0.86	0.86	0.86
Uniform Delay (d), s/veh	37.1	36.6	33.6	33.0	28.4	28.5	45.7	0.0	25.0	51.7	37.7	9.5
Incr Delay (d2), s/veh	4.5	1.9	25.6	0.0	1.9	2.0	3.0	0.0	0.3	13.3	17.0	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	7.1	13.0	0.4	4.5	4.5	4.8	0.0	5.4	1.4	14.8	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	41.7	38.4	59.2	33.0	30.3	30.5	48.7	0.0	25.3	64.9	54.7	9.6
LnGrp LOS	D	D	F	C	C	C	D		C	E	D	A
Approach Vol, veh/h		1344			443			639			622	
Approach Delay, s/veh		47.9			30.5			38.2			49.0	
Approach LOS		D			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.6	32.0	19.0	35.4	14.0	39.6	8.7	45.7
Change Period (Y+Rc), s	5.2	* 5.2	5.2	5.0	5.0	5.2	5.0	* 5.2
Max Green Setting (Gmax), s	5.0	* 27	21.8	34.0	9.0	22.8	6.0	* 50
Max Q Clear Time (g_c+I1), s	2.0	28.8	12.7	29.2	10.9	12.2	4.7	14.3
Green Ext Time (p_c), s	0.0	0.0	1.1	1.2	0.0	1.3	0.0	1.2

Intersection Summary	
HCM 7th Control Delay, s/veh	43.6
HCM 7th LOS	D

Notes

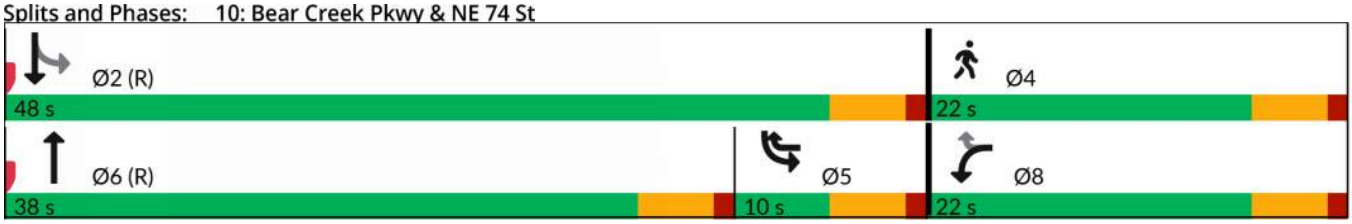
* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Lanes, Volumes, Timings
10: Bear Creek Pkwy & NE 74 St 03/21/2025

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø4
Lane Configurations							
Traffic Volume (vph)	24	189	582	11	141	950	
Future Volume (vph)	24	189	582	11	141	950	
Satd. Flow (prot)	1805	1615	1857	0	1787	1881	
Flt Permitted	0.950				0.328		
Satd. Flow (perm)	1641	1615	1857	0	611	1881	
Satd. Flow (RTOR)		187	2				
Confl. Peds. (#/hr)	44			20	20		
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	
Heavy Vehicles (%)	0%	0%	2%	2%	1%	1%	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	24	193	605	0	144	969	
Turn Type	Prot	pm+ov	NA		pm+pt	NA	
Protected Phases	8	5	6		5	2	4
Permitted Phases		8			2		
Detector Phase	8	5	6		5	2	
Switch Phase							
Minimum Initial (s)	7.0	4.0	8.0		4.0	5.0	8.0
Minimum Split (s)	12.0	9.0	23.0		9.0	10.0	22.0
Total Split (s)	22.0	10.0	38.0		10.0	48.0	22.0
Total Split (%)	31.4%	14.3%	54.3%		14.3%	68.6%	31%
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0		5.0	5.0	
Lead/Lag		Lag	Lead		Lag		
Lead-Lag Optimize?		Yes	Yes		Yes		
Recall Mode	None	None	C-Min		None	C-Min	None
Act Effct Green (s)	13.0	19.3	40.7		51.8	53.8	
Actuated g/C Ratio	0.19	0.28	0.58		0.74	0.77	
v/c Ratio	0.07	0.33	0.56		0.26	0.67	
Control Delay (s/veh)	21.4	4.4	14.8		7.7	11.8	
Queue Delay	0.0	0.0	0.0		0.0	0.7	
Total Delay (s/veh)	21.4	4.4	14.8		7.7	12.5	
LOS	C	A	B		A	B	
Approach Delay (s/veh)	6.3		14.8			11.9	
Approach LOS	A		B			B	

Intersection Summary	
Cycle Length: 70	
Actuated Cycle Length: 70	
Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBT, Start of 1st Green	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.67	
Intersection Signal Delay (s/veh): 12.2	Intersection LOS: B
Intersection Capacity Utilization 64.2%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 10: Bear Creek Pkwy & NE 74 St

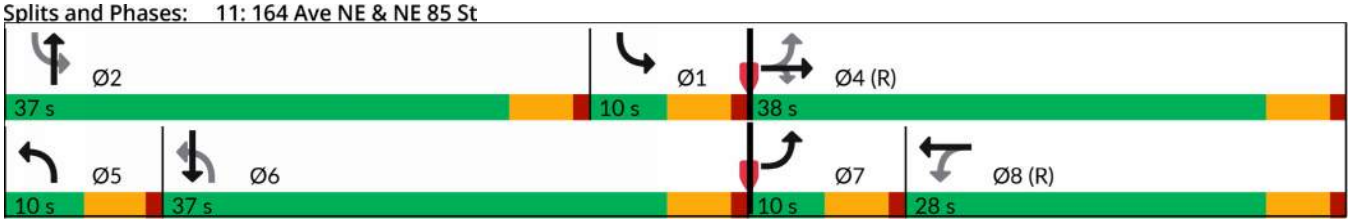


Lanes, Volumes, Timings
11: 164 Ave NE & NE 85 St 03/21/2025

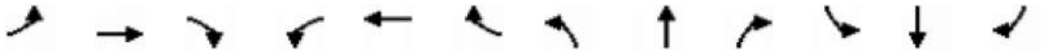
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	365	69	8	209	172	28	502	20	170	373	36
Future Volume (vph)	70	365	69	8	209	172	28	502	20	170	373	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		150	200		0	250		0	240		0
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			28			30	
Link Distance (ft)		469			304			659			473	
Travel Time (s)		10.7			6.9			16.0			10.8	
Confl. Peds. (#/hr)	12					12	22					22
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Shared Lane Traffic (%)												
Turn Type	pm+pt	NA	Perm	Perm	NA		D.P+P	NA		D.P+P	NA	
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases	4		4	8			6			2		
Detector Phase	7	4	4	8	8		6 5	2		2 1	6	
Switch Phase												
Minimum Initial (s)	5.0	8.0	8.0	8.0	8.0		5.0	6.0		5.0	6.0	
Minimum Split (s)	10.0	20.0	20.0	20.0	20.0		10.0	22.0		10.0	27.0	
Total Split (s)	10.0	38.0	38.0	28.0	28.0		10.0	37.0		10.0	37.0	
Total Split (%)	11.8%	44.7%	44.7%	32.9%	32.9%		11.8%	43.5%		11.8%	43.5%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lead			Lag	Lag		Lead	Lead		Lag	Lag	
Lead-Lag Optimize?												
Recall Mode	None	C-Max	C-Max	C-Max	C-Max		None	None		None	None	

Intersection Summary	
Area Type:	Other
Cycle Length: 85	
Actuated Cycle Length: 85	
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of 1st Green	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	

Splits and Phases: 11: 164 Ave NE & NE 85 St



HCM 7th Signalized Intersection Summary
11: 164 Ave NE & NE 85 St 03/21/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	365	69	8	209	172	28	502	20	170	373	36
Future Volume (veh/h)	70	365	69	8	209	172	28	502	20	170	373	36
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.99	0.99		0.98	0.99		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	74	384	73	8	220	181	29	528	21	179	393	38
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	1	1	1	1	1	1
Cap, veh/h	317	852	712	376	326	268	278	570	23	217	583	56
Arrive On Green	0.05	0.45	0.45	0.34	0.34	0.34	0.03	0.32	0.32	0.06	0.35	0.35
Sat Flow, veh/h	1810	1900	1589	942	956	786	1795	1798	72	1795	1686	163
Grp Volume(v), veh/h	74	384	73	8	0	401	29	0	549	179	0	431
Grp Sat Flow(s),veh/h/ln	1810	1900	1589	942	0	1742	1795	0	1869	1795	0	1850
Q Serve(g_s), s	2.1	11.9	2.3	0.5	0.0	16.7	0.9	0.0	24.1	2.9	0.0	16.9
Cycle Q Clear(g_c), s	2.1	11.9	2.3	3.2	0.0	16.7	0.9	0.0	24.1	2.9	0.0	16.9
Prop In Lane	1.00		1.00	1.00		0.45	1.00		0.04	1.00		0.09
Lane Grp Cap(c), veh/h	317	852	712	376	0	594	278	0	593	217	0	640
V/C Ratio(X)	0.23	0.45	0.10	0.02	0.00	0.67	0.10	0.00	0.93	0.82	0.00	0.67
Avail Cap(c_a), veh/h	335	852	712	376	0	594	331	0	704	219	0	696
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	0.85	0.00	0.85	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.5	16.2	13.5	20.5	0.0	24.0	18.6	0.0	28.1	37.9	0.0	23.7
Incr Delay (d2), s/veh	0.1	1.7	0.3	0.1	0.0	6.0	0.1	0.0	13.7	20.4	0.0	1.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	5.3	0.8	0.1	0.0	7.6	0.4	0.0	12.6	4.8	0.0	7.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	17.6	17.9	13.8	20.6	0.0	30.0	18.7	0.0	41.7	58.3	0.0	25.4
LnGrp LOS	B	B	B	C		C	B		D	E		C
Approach Vol, veh/h		531			409			578			610	
Approach Delay, s/veh		17.3			29.8			40.6			35.1	
Approach LOS		B			C			D			D	

Timer - Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.9	32.0		43.1	7.5	34.4	9.1	34.0				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	5.0	32.0		33.0	5.0	32.0	5.0	23.0				
Max Q Clear Time (g_c+I1), s	4.9	26.1		13.9	2.9	18.9	4.1	18.7				
Green Ext Time (p_c), s	0.0	0.8		1.0	0.0	0.9	0.0	0.5				

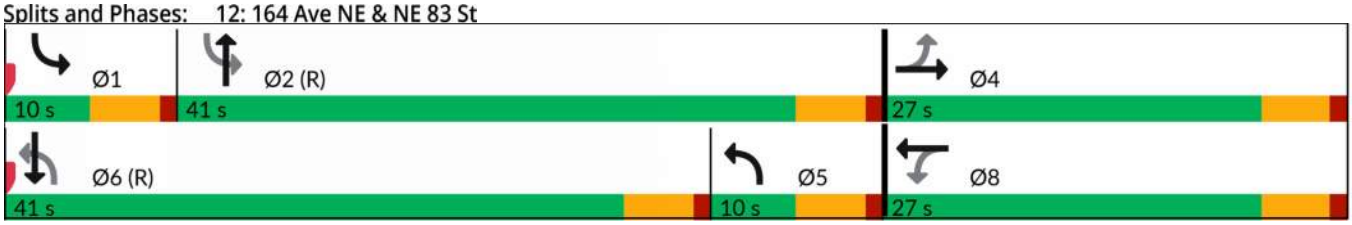
Intersection Summary		
HCM 7th Control Delay, s/veh	31.1	
HCM 7th LOS	C	

Lanes, Volumes, Timings
12: 164 Ave NE & NE 83 St 03/21/2025

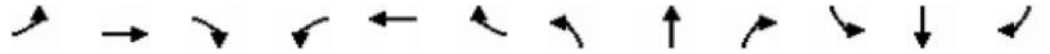
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	210	67	24	117	38	60	480	47	68	365	17
Future Volume (vph)	40	210	67	24	117	38	60	480	47	68	365	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	200		0	200		0	200		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			28			28	
Link Distance (ft)		968			599			662			659	
Travel Time (s)		22.0			13.6			16.1			16.0	
Confl. Peds. (#/hr)	34		47	47		34	24		31	31		24
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	5%	5%	5%	1%	1%	1%	3%	3%	3%	1%	1%	1%
Mid-Block Traffic (%)		40%			20%			0%			0%	
Shared Lane Traffic (%)												
Turn Type	Perm	NA		Perm	NA		D.P+P	NA		D.P+P	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			6			2		
Detector Phase	4	4		8	8		6 5	2		2 1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	21.0	21.0		21.0	21.0		10.0	19.0		10.0	19.0	
Total Split (s)	27.0	27.0		27.0	27.0		10.0	41.0		10.0	41.0	
Total Split (%)	34.6%	34.6%		34.6%	34.6%		12.8%	52.6%		12.8%	52.6%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag							Lag	Lag		Lead	Lead	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	

Intersection Summary
Area Type: Other
Cycle Length: 78
Actuated Cycle Length: 78
Offset: 17 (22%), Referenced to phase 2:NBSB and 6:NBSB, Start of 1st Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 12: 164 Ave NE & NE 83 St



HCM 7th Signalized Intersection Summary
12: 164 Ave NE & NE 83 St 03/21/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	210	67	24	117	38	60	480	47	68	365	17
Future Volume (veh/h)	40	210	67	24	117	38	60	480	47	68	365	17
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.93		0.89	0.96		0.89	1.00		0.97	0.99		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1826	1826	1885	1885	1885	1856	1856	1856	1885	1885	1885
Adj Flow Rate, veh/h	41	216	69	25	121	39	62	495	48	70	376	18
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	5	5	5	1	1	1	3	3	3	1	1	1
Cap, veh/h	246	278	89	146	286	92	632	898	87	647	822	39
Arrive On Green	0.07	0.07	0.07	0.22	0.22	0.22	0.26	1.00	1.00	0.05	0.46	0.46
Sat Flow, veh/h	1116	1283	410	1063	1321	426	1767	1660	161	1795	1781	85
Grp Volume(v), veh/h	41	0	285	25	0	160	62	0	543	70	0	394
Grp Sat Flow(s),veh/h/ln	1116	0	1693	1063	0	1747	1767	0	1821	1795	0	1866
Q Serve(g_s), s	2.8	0.0	12.9	1.8	0.0	6.2	0.0	0.0	0.0	1.3	0.0	11.2
Cycle Q Clear(g_c), s	8.9	0.0	12.9	14.7	0.0	6.2	0.0	0.0	0.0	1.3	0.0	11.2
Prop In Lane	1.00		0.24	1.00		0.24	1.00		0.09	1.00		0.05
Lane Grp Cap(c), veh/h	246	0	366	146	0	378	632	0	986	647	0	861
V/C Ratio(X)	0.17	0.00	0.78	0.17	0.00	0.42	0.10	0.00	0.55	0.11	0.00	0.46
Avail Cap(c_a), veh/h	319	0	478	216	0	493	632	0	986	672	0	861
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	0.91	0.00	0.91	0.99	0.00	0.99	0.87	0.00	0.87	0.78	0.00	0.78
Uniform Delay (d), s/veh	35.5	0.0	34.4	36.0	0.0	26.4	10.7	0.0	0.0	6.8	0.0	14.3
Incr Delay (d2), s/veh	0.1	0.0	3.9	0.2	0.0	0.3	0.0	0.0	1.9	0.0	0.0	1.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	6.2	0.5	0.0	2.5	0.5	0.0	0.5	0.4	0.0	4.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	35.6	0.0	38.3	36.2	0.0	26.6	10.8	0.0	1.9	6.8	0.0	15.7
LnGrp LOS	D		D	D		C	B		A	A		B
Approach Vol, veh/h		326			185			605			464	
Approach Delay, s/veh		37.9			27.9			2.8			14.4	
Approach LOS		D			C			A			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.9	47.2		21.9	15.1	41.0		21.9				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	5.0	36.0		22.0	5.0	36.0		22.0				
Max Q Clear Time (g_c+I1), s	3.3	2.0		14.9	2.0	13.2		16.7				
Green Ext Time (p_c), s	0.0	1.6		0.5	0.0	0.9		0.2				

Intersection Summary		
HCM 7th Control Delay, s/veh		16.4
HCM 7th LOS		B

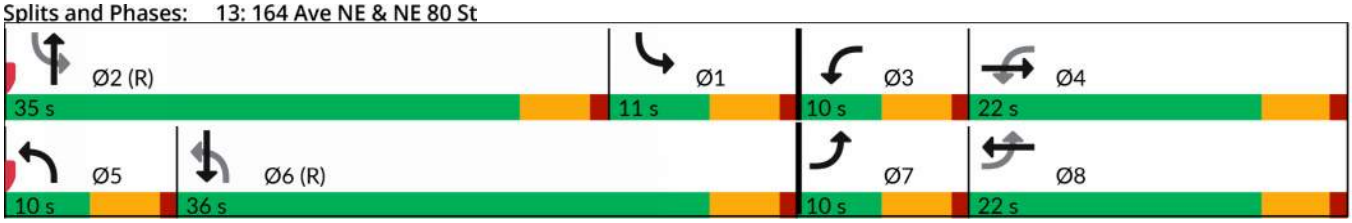
Lanes, Volumes, Timings
13: 164 Ave NE & NE 80 St 03/21/2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	75	161	21	34	193	56	23	341	61	109	356	68
Future Volume (vph)	75	161	21	34	193	56	23	341	61	109	356	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	140		0	150		0	100		0	200		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			28			28	
Link Distance (ft)		178			313			347			662	
Travel Time (s)		4.9			8.5			8.4			16.1	
Confl. Peds. (#/hr)	27		24	24		27	37		22	22		37
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	3%	3%	3%	3%	3%	3%
Shared Lane Traffic (%)												
Turn Type	D.P+P	NA		D.P+P	NA		D.P+P	NA		D.P+P	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	8			4			6			2		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	6.0		5.0	6.0	
Minimum Split (s)	10.0	17.0		10.0	18.0		10.0	18.0		10.0	19.0	
Total Split (s)	10.0	22.0		10.0	22.0		10.0	35.0		11.0	36.0	
Total Split (%)	12.8%	28.2%		12.8%	28.2%		12.8%	44.9%		14.1%	46.2%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lead		Lag	Lag	
Lead-Lag Optimize?	Yes	Yes			Yes			Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	

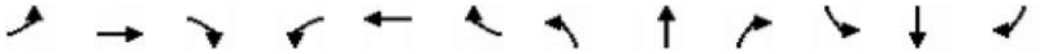
Intersection Summary

Area Type: Other
Cycle Length: 78
Actuated Cycle Length: 78
Offset: 18 (23%), Referenced to phase 2:NBSB and 6:NBSB, Start of 1st Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 13: 164 Ave NE & NE 80 St



HCM 7th Signalized Intersection Summary
13: 164 Ave NE & NE 80 St 03/21/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	75	161	21	34	193	56	23	341	61	109	356	68
Future Volume (veh/h)	75	161	21	34	193	56	23	341	61	109	356	68
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.98		0.93	0.97		0.92	0.98		0.95	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	81	173	23	37	208	60	25	367	66	117	383	73
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	1	1	1	1	1	3	3	3	3	3	3
Cap, veh/h	220	312	42	283	242	70	572	584	105	521	734	140
Arrive On Green	0.11	0.39	0.39	0.04	0.18	0.18	0.04	0.51	0.51	0.26	0.98	0.98
Sat Flow, veh/h	1795	1613	214	1795	1377	397	1767	1517	273	1767	1504	287
Grp Volume(v), veh/h	81	0	196	37	0	268	25	0	433	117	0	456
Grp Sat Flow(s),veh/h/ln	1795	0	1828	1795	0	1775	1767	0	1790	1767	0	1791
Q Serve(g_s), s	2.8	0.0	6.5	1.3	0.0	11.4	0.5	0.0	13.6	0.0	0.0	1.0
Cycle Q Clear(g_c), s	2.8	0.0	6.5	1.3	0.0	11.4	0.5	0.0	13.6	0.0	0.0	1.0
Prop In Lane	1.00		0.12	1.00		0.22	1.00		0.15	1.00		0.16
Lane Grp Cap(c), veh/h	220	0	354	283	0	312	572	0	689	521	0	873
V/C Ratio(X)	0.37	0.00	0.55	0.13	0.00	0.86	0.04	0.00	0.63	0.22	0.00	0.52
Avail Cap(c_a), veh/h	240	0	398	335	0	387	638	0	689	521	0	873
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.33	1.33	1.33	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.92	0.00	0.92	0.94	0.00	0.94
Uniform Delay (d), s/veh	23.8	0.0	21.3	24.0	0.0	31.2	9.2	0.0	15.0	16.1	0.0	0.5
Incr Delay (d2), s/veh	0.8	0.0	1.0	0.2	0.0	13.8	0.0	0.0	4.0	0.1	0.0	2.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	2.5	0.5	0.0	6.0	0.2	0.0	5.2	1.3	0.0	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	24.5	0.0	22.3	24.1	0.0	45.0	9.3	0.0	19.0	16.3	0.0	2.6
LnGrp LOS	C		C	C		D	A		B	B		A
Approach Vol, veh/h		277			305			458			573	
Approach Delay, s/veh		22.9			42.5			18.5			5.4	
Approach LOS		C			D			B			A	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.1	35.0	7.8	20.1	7.1	43.0	9.1	18.7
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	6.0	30.0	5.0	17.0	5.0	31.0	5.0	17.0
Max Q Clear Time (g_c+I1), s	2.0	15.6	3.3	8.5	2.5	3.0	4.8	13.4
Green Ext Time (p_c), s	0.1	1.3	0.0	0.4	0.0	1.6	0.0	0.3

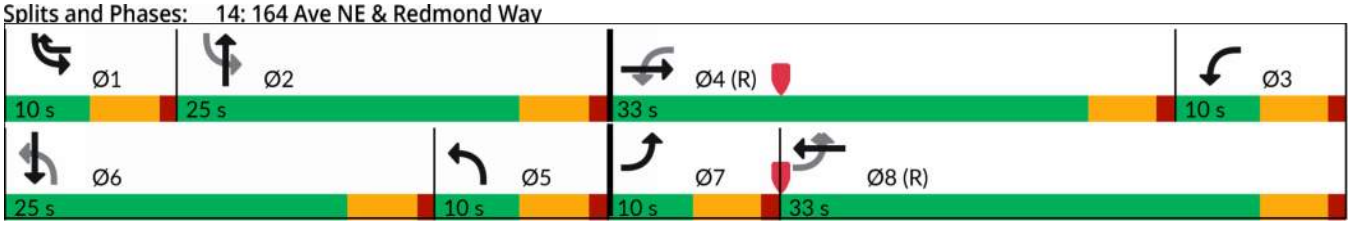
Intersection Summary	
HCM 7th Control Delay, s/veh	19.1
HCM 7th LOS	B

Lanes, Volumes, Timings
14: 164 Ave NE & Redmond Way 03/21/2025

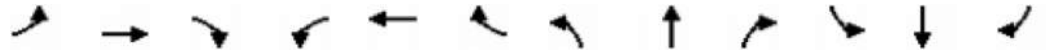
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	33	575	20	25	631	245	48	148	38	208	142	21
Future Volume (vph)	33	575	20	25	631	245	48	148	38	208	142	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125		0	250		0	70		0	150		150
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		314			714			325			347	
Travel Time (s)		7.1			16.2			7.4			7.9	
Confl. Peds. (#/hr)	56		39	39		56	61		51	51		61
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	2%	2%	2%	3%	3%	3%	1%	1%	1%	5%	5%	5%
Parking (#/hr)				0								
Shared Lane Traffic (%)												
Turn Type	D.P+P	NA		D.P+P	NA	pm+ov	D.P+P	NA		D.P+P	NA	
Protected Phases	7	4		3	8	1	5	2		1	6	
Permitted Phases	8			4		8	6			2		
Detector Phase	7	4		3	8	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	10.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	10.0	22.0		10.0	24.0	10.0	10.0	25.0		10.0	24.0	
Total Split (s)	10.0	33.0		10.0	33.0	10.0	10.0	25.0		10.0	25.0	
Total Split (%)	12.8%	42.3%		12.8%	42.3%	12.8%	12.8%	32.1%		12.8%	32.1%	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lead		Lag	Lag	Lead	Lag	Lag		Lead	Lead	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max		None	C-Max	None	None	None		None	None	

Intersection Summary
Area Type: CBD
Cycle Length: 78
Actuated Cycle Length: 78
Offset: 10 (13%), Referenced to phase 4:EBWB and 8:EBWB, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 14: 164 Ave NE & Redmond Way



HCM 7th Signalized Intersection Summary
14: 164 Ave NE & Redmond Way 03/21/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	33	575	20	25	631	245	48	148	38	208	142	21
Future Volume (veh/h)	33	575	20	25	631	245	48	148	38	208	142	21
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.92	1.00		0.93	0.95		0.86	0.92		0.92
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1683	1683	1683	1670	1670	1670	1697	1697	1697	1643	1643	1643
Adj Flow Rate, veh/h	34	593	21	26	651	253	49	153	39	214	146	22
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	3	3	3	1	1	1	5	5	5
Cap, veh/h	231	578	20	248	707	651	326	280	71	320	297	45
Arrive On Green	0.07	0.72	0.72	0.20	0.85	0.85	0.14	0.44	0.44	0.02	0.07	0.07
Sat Flow, veh/h	1603	1610	57	1590	1670	1322	1616	1258	321	1565	1376	207
Grp Volume(v), veh/h	34	0	614	26	651	253	49	0	192	214	0	168
Grp Sat Flow(s),veh/h/ln	1603	0	1667	1590	1670	1322	1616	0	1579	1565	0	1583
Q Serve(g_s), s	0.9	0.0	28.0	0.0	21.1	3.3	0.0	0.0	7.0	5.0	0.0	8.0
Cycle Q Clear(g_c), s	0.9	0.0	28.0	0.0	21.1	3.3	0.0	0.0	7.0	5.0	0.0	8.0
Prop In Lane	1.00		0.03	1.00		1.00	1.00		0.20	1.00		0.13
Lane Grp Cap(c), veh/h	231	0	599	248	707	651	326	0	351	320	0	342
V/C Ratio(X)	0.15	0.00	1.03	0.10	0.92	0.39	0.15	0.00	0.55	0.67	0.00	0.49
Avail Cap(c_a), veh/h	280	0	599	248	707	651	326	0	405	320	0	406
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.33	0.33	0.33
Upstream Filter(I)	0.77	0.00	0.77	0.82	0.82	0.82	0.77	0.00	0.77	0.89	0.00	0.89
Uniform Delay (d), s/veh	14.3	0.0	11.0	28.3	5.0	2.9	25.0	0.0	18.8	27.5	0.0	32.1
Incr Delay (d2), s/veh	0.2	0.0	39.0	0.2	16.5	1.4	0.2	0.0	1.0	4.7	0.0	1.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	9.9	0.4	5.1	0.8	0.7	0.0	2.2	1.9	0.0	3.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	14.5	0.0	50.0	28.4	21.5	4.4	25.2	0.0	19.8	32.2	0.0	33.1
LnGrp LOS	B		F	C	C	A	C		B	C		C
Approach Vol, veh/h		648			930			241			382	
Approach Delay, s/veh		48.2			17.1			20.9			32.6	
Approach LOS		D			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	22.4	12.6	33.0	10.5	21.8	7.6	38.0
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	5.0	20.0	5.0	28.0	5.0	20.0	5.0	28.0
Max Q Clear Time (g_c+I1), s	7.0	9.0	2.0	30.0	2.0	10.0	2.9	23.1
Green Ext Time (p_c), s	0.0	0.9	0.0	0.0	0.0	0.7	0.0	1.9

Intersection Summary	
HCM 7th Control Delay, s/veh	29.3
HCM 7th LOS	C

Lanes, Volumes, Timings
15: 164 Ave NE & Cleveland St 03/21/2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	268	50	14	98	25	41	180	20	27	146	30
Future Volume (vph)	28	268	50	14	98	25	41	180	20	27	146	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	100		0	100		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		429			743			151			325	
Travel Time (s)		11.7			20.3			3.4			7.4	
Confl. Peds. (#/hr)	18		30	30		18	43		25	25		43
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	1%	1%	1%	2%	2%	2%
Parking (#/hr)	0	0	0									
Shared Lane Traffic (%)												
Turn Type	Perm	NA		Perm	NA		D.P+P	NA		D.P+P	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			6			2		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0		8.0	8.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	21.0	21.0		21.0	21.0		10.0	20.0		10.0	19.0	
Total Split (s)	43.0	43.0		43.0	43.0		10.0	25.0		10.0	25.0	
Total Split (%)	55.1%	55.1%		55.1%	55.1%		12.8%	32.1%		12.8%	32.1%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Lead/Lag							Lead	Lead		Lag	Lag	
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	

Intersection Summary
Area Type: CBD
Cycle Length: 78
Actuated Cycle Length: 78
Offset: 77 (99%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated

Splits and Phases: 15: 164 Ave NE & Cleveland St



HCM 7th Signalized Intersection Summary
15: 164 Ave NE & Cleveland St 03/21/2025

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	28	268	50	14	98	25	41	180	20	27	146	30
Future Volume (veh/h)	28	268	50	14	98	25	41	180	20	27	146	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.98		0.98	1.00		0.98	0.93		0.87	0.94		0.87
Parking Bus, Adj	1.00	1.00	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1697	1697	1697	1683	1683	1683	1697	1697	1697	1683	1683	1683
Adj Flow Rate, veh/h	30	288	54	15	105	27	44	194	22	29	157	32
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	1	1	2	2	2	1	1	1	2	2	2
Cap, veh/h	91	712	128	112	704	172	211	250	28	184	211	43
Arrive On Green	0.61	0.61	0.61	1.00	1.00	1.00	0.04	0.17	0.17	0.06	0.32	0.32
Sat Flow, veh/h	67	1171	210	101	1158	283	1616	1471	167	1603	1317	269
Grp Volume(v), veh/h	372	0	0	147	0	0	44	0	216	29	0	189
Grp Sat Flow(s),veh/h/ln	1448	0	0	1542	0	0	1616	0	1638	1603	0	1586
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	1.7	0.0	9.8	0.0	0.0	8.3
Cycle Q Clear(g_c), s	10.3	0.0	0.0	0.0	0.0	0.0	1.7	0.0	9.8	0.0	0.0	8.3
Prop In Lane	0.08		0.15	0.10		0.18	1.00		0.10	1.00		0.17
Lane Grp Cap(c), veh/h	930	0	0	988	0	0	211	0	279	184	0	255
V/C Ratio(X)	0.40	0.00	0.00	0.15	0.00	0.00	0.21	0.00	0.78	0.16	0.00	0.74
Avail Cap(c_a), veh/h	930	0	0	988	0	0	251	0	420	238	0	407
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	0.97	0.00	0.00	0.99	0.00	0.00	1.00	0.00	1.00	0.93	0.00	0.93
Uniform Delay (d), s/veh	8.0	0.0	0.0	0.0	0.0	0.0	26.1	0.0	30.9	33.4	0.0	25.0
Incr Delay (d2), s/veh	1.2	0.0	0.0	0.3	0.0	0.0	0.5	0.0	5.1	0.4	0.0	4.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	0.0	0.0	0.1	0.0	0.0	0.7	0.0	4.1	0.5	0.0	2.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	9.3	0.0	0.0	0.3	0.0	0.0	26.6	0.0	36.0	33.7	0.0	29.0
LnGrp LOS	A			A			C		D	C		C
Approach Vol, veh/h		372			147			260			218	
Approach Delay, s/veh		9.3			0.3			34.4			29.6	
Approach LOS		A			A			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.3	18.3		52.4	8.1	17.5		52.4				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	5.0	20.0		38.0	5.0	20.0		38.0				
Max Q Clear Time (g_c+I1), s	2.0	11.8		12.3	3.7	10.3		2.0				
Green Ext Time (p_c), s	0.0	0.5		1.6	0.0	0.5		0.6				

Intersection Summary		
HCM 7th Control Delay, s/veh	19.0	
HCM 7th LOS	B	

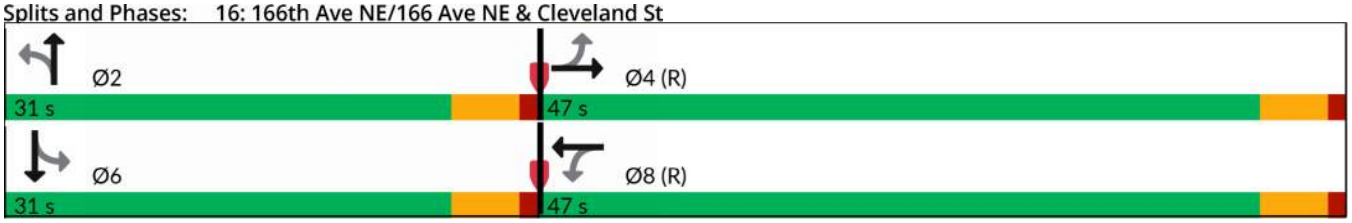
Lanes, Volumes, Timings
16: 166th Ave NE/166 Ave NE & Cleveland St 03/21/2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	47	250	27	32	114	26	16	177	90	7	86	11
Future Volume (vph)	47	250	27	32	114	26	16	177	90	7	86	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		200	0		0	100		125	160		0
Storage Lanes	0		0	0		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			25			30	
Link Distance (ft)		743			556			226			372	
Travel Time (s)		20.3			15.2			6.2			8.5	
Confl. Peds. (#/hr)	31		1	1		31	4		79	79		4
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Shared Lane Traffic (%)												
Turn Type	Perm	NA		Perm	NA		Perm	NA	Free	Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		Free	6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	22.0	22.0		22.0	22.0		22.0	22.0		22.0	22.0	
Total Split (s)	47.0	47.0		47.0	47.0		31.0	31.0		31.0	31.0	
Total Split (%)	60.3%	60.3%		60.3%	60.3%		39.7%	39.7%		39.7%	39.7%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max		C-Max	C-Max		Ped	Ped		Ped	Ped	

Intersection Summary

Area Type: CBD
Cycle Length: 78
Actuated Cycle Length: 78
Offset: 8 (10%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
Natural Cycle: 45
Control Type: Actuated-Coordinated

Splits and Phases: 16: 166th Ave NE/166 Ave NE & Cleveland St



HCM 7th Signalized Intersection Summary
16: 166th Ave NE/166 Ave NE & Cleveland St 03/21/2025

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	250	27	32	114	26	16	177	90	7	86	11
Future Volume (veh/h)	47	250	27	32	114	26	16	177	90	7	86	11
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.99		0.98	0.98		0.98	0.85		1.00	0.89		0.81
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1710	1710	1710	1697	1697	1697	1697	1697	1697	1697	1697	1697
Adj Flow Rate, veh/h	49	263	28	34	120	27	17	186	0	7	91	12
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	1	1	1	1	1	1	1	1	1
Cap, veh/h	169	856	87	206	688	147	254	349		196	292	39
Arrive On Green	1.00	1.00	1.00	0.67	0.67	0.67	0.21	0.21	0.00	0.41	0.41	0.41
Sat Flow, veh/h	175	1284	131	227	1033	221	997	1697	1438	963	1423	188
Grp Volume(v), veh/h	340	0	0	181	0	0	17	186	0	7	0	103
Grp Sat Flow(s),veh/h/ln	1590	0	0	1481	0	0	997	1697	1438	963	0	1610
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	1.1	7.6	0.0	0.5	0.0	3.4
Cycle Q Clear(g_c), s	0.0	0.0	0.0	3.2	0.0	0.0	4.5	7.6	0.0	8.1	0.0	3.4
Prop In Lane	0.14		0.08	0.19		0.15	1.00		1.00	1.00		0.12
Lane Grp Cap(c), veh/h	1112	0	0	1042	0	0	254	349		196	0	331
V/C Ratio(X)	0.31	0.00	0.00	0.17	0.00	0.00	0.07	0.53		0.04	0.00	0.31
Avail Cap(c_a), veh/h	1112	0	0	1042	0	0	382	566		319	0	537
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	0.92	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.98	0.00	0.98
Uniform Delay (d), s/veh	0.0	0.0	0.0	4.9	0.0	0.0	27.8	27.6	0.0	23.7	0.0	19.2
Incr Delay (d2), s/veh	0.7	0.0	0.0	0.4	0.0	0.0	0.4	4.5	0.0	0.3	0.0	1.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.0	1.0	0.0	0.0	0.3	3.5	0.0	0.1	0.0	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.7	0.0	0.0	5.2	0.0	0.0	28.2	32.2	0.0	23.9	0.0	21.1
LnGrp LOS	A			A			C	C		C		C
Approach Vol, veh/h		340			181			203			110	
Approach Delay, s/veh		0.7			5.2			31.9			21.3	
Approach LOS		A			A			C			C	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	21.0	57.0	21.0	57.0
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	26.0	42.0	26.0	42.0
Max Q Clear Time (g_c+I1), s	9.6	2.0	10.1	5.2
Green Ext Time (p_c), s	1.8	4.8	0.8	2.3

Intersection Summary	
HCM 7th Control Delay, s/veh	12.0
HCM 7th LOS	B

Notes

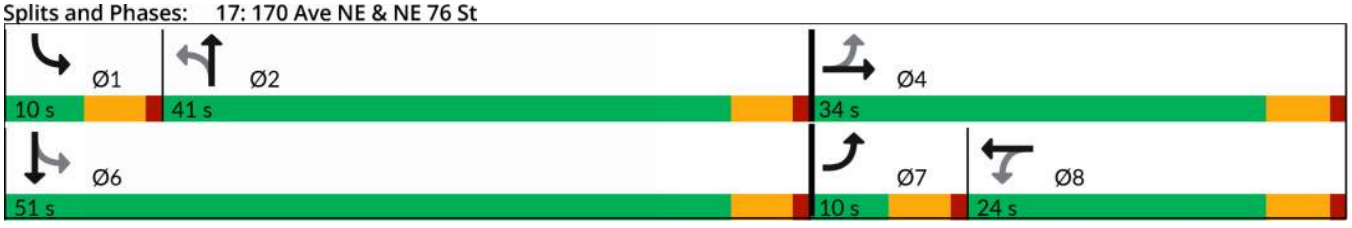
Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings
17: 170 Ave NE & NE 76 St 03/21/2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	157	2	15	8	5	52	5	914	2	17	508	107
Future Volume (vph)	157	2	15	8	5	52	5	914	2	17	508	107
Satd. Flow (prot)	0	1772	0	0	1658	0	1787	3573	0	1787	3432	0
Flt Permitted		0.699			0.959		0.409			0.185		
Satd. Flow (perm)	0	1288	0	0	1594	0	749	3573	0	348	3432	0
Satd. Flow (RTOR)		6			54						45	
Confl. Peds. (#/hr)	5		25	25		5	21		31	31		21
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	1%	1%	1%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	182	0	0	67	0	5	954	0	18	640	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases	7	4			8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		8	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		8.0	8.0		5.0	8.0	
Minimum Split (s)	10.0	24.0		24.0	24.0		18.0	18.0		10.0	19.0	
Total Split (s)	10.0	34.0		24.0	24.0		41.0	41.0		10.0	51.0	
Total Split (%)	11.8%	40.0%		28.2%	28.2%		48.2%	48.2%		11.8%	60.0%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lead			Lag	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		Min	Min		None	Min	
Act Effct Green (s)		14.6			14.6		25.7	25.7		27.0	27.0	
Actuated g/C Ratio		0.28			0.28		0.49	0.49		0.52	0.52	
v/c Ratio		0.50			0.14		0.01	0.54		0.06	0.36	
Control Delay (s/veh)		21.8			8.0		10.2	12.0		7.6	7.9	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		21.8			8.0		10.2	12.0		7.6	7.9	
LOS		C			A		B	B		A	A	
Approach Delay (s/veh)		21.8			8.0			12.0			7.9	
Approach LOS		C			A			B			A	

Intersection Summary	
Cycle Length: 85	
Actuated Cycle Length: 52.4	
Natural Cycle: 65	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.54	
Intersection Signal Delay (s/veh): 11.4	Intersection LOS: B
Intersection Capacity Utilization 50.3%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 17: 170 Ave NE & NE 76 St



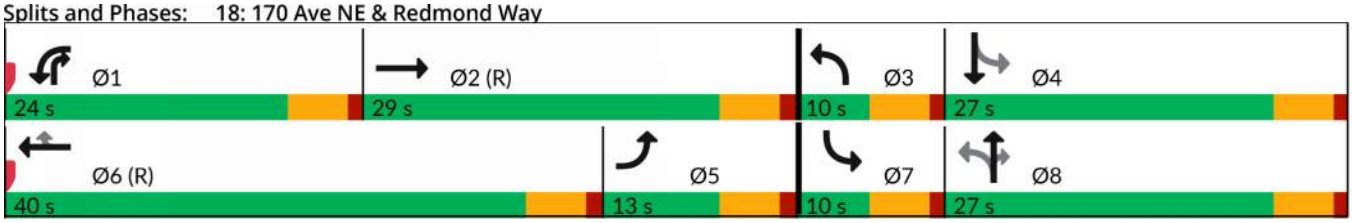
Lanes, Volumes, Timings
18: 170 Ave NE & Redmond Way 03/21/2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	62	837	84	383	722	248	29	374	723	148	170	16
Future Volume (vph)	62	837	84	383	722	248	29	374	723	148	170	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125		0	250		0	125		0	100		0
Storage Lanes	1		0	2		1	1		1	1		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		585			661			498			439	
Travel Time (s)		13.3			15.0			11.3			10.0	
Confl. Peds. (#/hr)	20		6	6		20	15		27	27		15
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Shared Lane Traffic (%)												
Turn Type	Prot	NA		Prot	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA	
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases						6	8		8	4		
Detector Phase	5	2		1	6	6	3 8	8	1	7 4	4	
Switch Phase												
Minimum Initial (s)	5.0	8.0		6.0	8.0	8.0	5.0	5.0	6.0	5.0	5.0	
Minimum Split (s)	10.0	24.0		11.0	23.0	23.0	10.0	27.0	11.0	10.0	27.0	
Total Split (s)	13.0	29.0		24.0	40.0	40.0	10.0	27.0	24.0	10.0	27.0	
Total Split (%)	14.4%	32.2%		26.7%	44.4%	44.4%	11.1%	30.0%	26.7%	11.1%	30.0%	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lag	Lag		Lead	Lead	Lead	Lead	Lag	Lead	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes			Yes			
Recall Mode	None	C-Max		None	C-Max	C-Max	None	None	None	None	None	

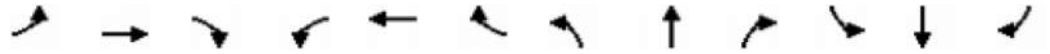
Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 54 (60%), Referenced to phase 2:EBT and 6:WBT, Start of 1st Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 18: 170 Ave NE & Redmond Way



HCM 7th Signalized Intersection Summary
18: 170 Ave NE & Redmond Way 03/21/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	62	837	84	383	722	248	29	374	723	148	170	16
Future Volume (veh/h)	62	837	84	383	722	248	29	374	723	148	170	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	0.98		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	65	881	88	403	760	261	31	394	761	156	179	17
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	160	1094	109	503	1393	605	333	461	608	202	456	43
Arrive On Green	0.18	0.67	0.67	0.05	0.13	0.13	0.03	0.24	0.24	0.02	0.09	0.09
Sat Flow, veh/h	1795	3282	328	3483	3582	1557	1795	1885	1545	1795	1690	160
Grp Volume(v), veh/h	65	481	488	403	760	261	31	394	761	156	0	196
Grp Sat Flow(s),veh/h/ln	1795	1791	1819	1742	1791	1557	1795	1885	1545	1795	0	1850
Q Serve(g_s), s	2.9	17.4	17.4	10.3	17.9	10.1	1.1	18.0	22.0	5.0	0.0	9.0
Cycle Q Clear(g_c), s	2.9	17.4	17.4	10.3	17.9	10.1	1.1	18.0	22.0	5.0	0.0	9.0
Prop In Lane	1.00		0.18	1.00		1.00	1.00		1.00	1.00		0.09
Lane Grp Cap(c), veh/h	160	597	606	503	1393	605	333	461	608	202	0	500
V/C Ratio(X)	0.41	0.81	0.81	0.80	0.55	0.43	0.09	0.85	1.25	0.77	0.00	0.39
Avail Cap(c_a), veh/h	160	597	606	735	1393	605	379	461	608	202	0	500
HCM Platoon Ratio	2.00	2.00	2.00	0.33	0.33	0.33	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	0.97	0.97	0.97	0.57	0.57	0.57	0.82	0.82	0.82	0.43	0.00	0.43
Uniform Delay (d), s/veh	34.9	12.9	12.9	41.6	31.8	15.9	24.4	32.5	27.6	29.9	0.0	34.0
Incr Delay (d2), s/veh	0.6	10.8	10.6	1.4	0.9	1.3	0.0	11.7	123.9	7.2	0.0	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	5.6	5.7	4.9	8.7	4.2	0.5	9.5	33.3	1.3	0.0	4.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	35.5	23.7	23.5	42.9	32.7	17.2	24.4	44.2	151.5	37.0	0.0	34.1
LnGrp LOS	D	C	C	D	C	B	C	D	F	D		C
Approach Vol, veh/h		1034			1424			1186			352	
Approach Delay, s/veh		24.3			32.7			112.6			35.4	
Approach LOS		C			C			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.0	35.0	7.7	29.3	13.0	40.0	10.0	27.0
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	19.0	24.0	5.0	22.0	8.0	35.0	5.0	22.0
Max Q Clear Time (g_c+I1), s	12.3	19.4	3.1	11.0	4.9	19.9	7.0	24.0
Green Ext Time (p_c), s	0.7	1.9	0.0	0.3	0.0	4.5	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	54.5
HCM 7th LOS	D

Lanes, Volumes, Timings
19: Bear Creek Crossing & Redmond Way 03/21/2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	98	1518	9	18	1125	155	41	17	51	128	18	57
Future Volume (vph)	98	1518	9	18	1125	155	41	17	51	128	18	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	175		150	0		0	0		0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		661			588			140			177	
Travel Time (s)		15.0			13.4			3.8			4.8	
Confl. Peds. (#/hr)	20		2	2		20	2		20	20		2
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	2%	2%	2%
Shared Lane Traffic (%)												
Turn Type	Prot	NA		Prot	NA	Perm	D.P+P	NA		D.P+P	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases						6	4			8		
Detector Phase	5	2		1	6	6	3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	8.0		6.0	8.0	8.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	10.0	24.0		11.0	23.0	23.0	10.0	27.0		10.0	27.0	
Total Split (s)	13.0	42.0		11.0	40.0	40.0	10.0	27.0		10.0	27.0	
Total Split (%)	14.4%	46.7%		12.2%	44.4%	44.4%	11.1%	30.0%		11.1%	30.0%	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lead		Lag	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes				Yes	Yes	
Recall Mode	None	C-Max		None	C-Max	C-Max	None	None		None	Max	

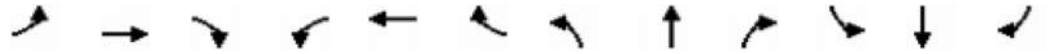
Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 14 (16%), Referenced to phase 2:EBT and 6:WBT, Start of 1st Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 19: Bear Creek Crossing & Redmond Way



HCM 7th Signalized Intersection Summary
19: Bear Creek Crossing & Redmond Way 03/21/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	98	1518	9	18	1125	155	41	17	51	128	18	57
Future Volume (veh/h)	98	1518	9	18	1125	155	41	17	51	128	18	57
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	0.98		0.97	0.98		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1900	1900	1900	1870	1870	1870
Adj Flow Rate, veh/h	101	1565	9	19	1160	160	42	18	53	132	19	59
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	1	1	1	1	1	0	0	0	2	2	2
Cap, veh/h	129	1501	9	155	1523	663	416	94	275	426	96	298
Arrive On Green	0.02	0.14	0.14	0.03	0.14	0.14	0.04	0.23	0.23	0.06	0.24	0.24
Sat Flow, veh/h	1795	3651	21	1795	3582	1560	1810	416	1224	1781	393	1221
Grp Volume(v), veh/h	101	767	807	19	1160	160	42	0	71	132	0	78
Grp Sat Flow(s),veh/h/ln	1795	1791	1881	1795	1791	1560	1810	0	1640	1781	0	1614
Q Serve(g_s), s	5.0	37.0	37.0	0.9	28.1	8.2	1.5	0.0	3.2	5.0	0.0	3.5
Cycle Q Clear(g_c), s	5.0	37.0	37.0	0.9	28.1	8.2	1.5	0.0	3.2	5.0	0.0	3.5
Prop In Lane	1.00		0.01	1.00		1.00	1.00		0.75	1.00		0.76
Lane Grp Cap(c), veh/h	129	736	773	155	1523	663	416	0	369	426	0	395
V/C Ratio(X)	0.78	1.04	1.04	0.12	0.76	0.24	0.10	0.00	0.19	0.31	0.00	0.20
Avail Cap(c_a), veh/h	160	736	773	155	1523	663	451	0	401	426	0	395
HCM Platoon Ratio	0.33	0.33	0.33	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.15	0.15	0.15	0.74	0.74	0.74	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	43.2	38.9	38.9	40.4	34.3	25.8	23.9	0.0	28.3	25.3	0.0	27.0
Incr Delay (d2), s/veh	2.8	25.7	25.8	0.2	2.7	0.6	0.1	0.0	0.2	0.3	0.0	1.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	22.8	24.0	0.4	13.9	3.4	0.7	0.0	1.3	2.2	0.0	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	46.0	64.6	64.7	40.6	37.0	26.4	24.0	0.0	28.4	25.6	0.0	28.1
LnGrp LOS	D	F	F	D	D	C	C		C	C		C
Approach Vol, veh/h		1675			1339			113			210	
Approach Delay, s/veh		63.5			35.8			26.8			26.5	
Approach LOS		E			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.7	42.0	8.3	27.0	11.5	43.3	10.0	25.3
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	6.0	37.0	5.0	22.0	8.0	35.0	5.0	22.0
Max Q Clear Time (g_c+I1), s	2.9	39.0	3.5	5.5	7.0	30.1	7.0	5.2
Green Ext Time (p_c), s	0.0	0.0	0.0	0.2	0.0	2.9	0.0	0.2

Intersection Summary	
HCM 7th Control Delay, s/veh	48.8
HCM 7th LOS	D

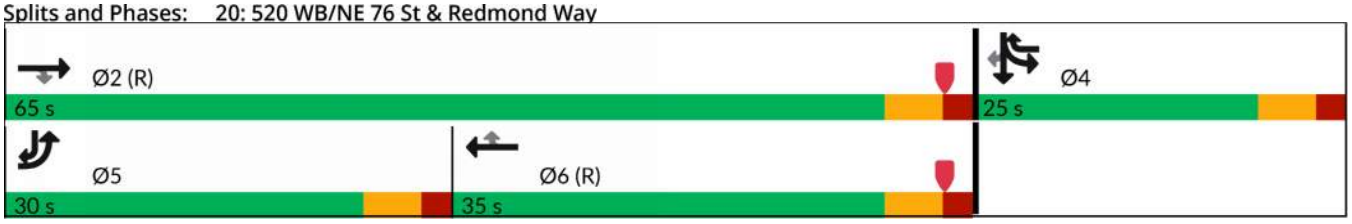
Lanes, Volumes, Timings
20: 520 WB/NE 76 St & Redmond Way 03/21/2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	419	1033	253	0	885	366	0	0	0	68	364	413
Future Volume (vph)	419	1033	253	0	885	366	0	0	0	68	364	413
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	220		110	0		0	0		0	400		350
Storage Lanes	2		1	1		1	0		0	1		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		45			45			25			25	
Link Distance (ft)		588			476			347			459	
Travel Time (s)		8.9			7.2			9.5			12.5	
Confl. Peds. (#/hr)	16					16						
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	2%	2%	2%
Shared Lane Traffic (%)												
Turn Type	Prot	NA	Perm		NA	pm+ov				Split	NA	pm+ov
Protected Phases	5	2			6	4				4	4	5
Permitted Phases			2			6						4
Detector Phase	5	2	2		6	4				4	4	5
Switch Phase												
Minimum Initial (s)	5.0	7.0	7.0		7.0	5.0				5.0	5.0	5.0
Minimum Split (s)	10.9	12.9	12.9		37.9	10.9				10.9	10.9	10.9
Total Split (s)	30.0	65.0	65.0		35.0	25.0				25.0	25.0	30.0
Total Split (%)	33.3%	72.2%	72.2%		38.9%	27.8%				27.8%	27.8%	33.3%
Yellow Time (s)	3.9	3.9	3.9		3.9	3.9				3.9	3.9	3.9
All-Red Time (s)	2.0	2.0	2.0		2.0	2.0				2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0				0.0	0.0	0.0
Total Lost Time (s)	5.9	5.9	5.9		5.9	5.9				5.9	5.9	5.9
Lead/Lag	Lead				Lag							Lead
Lead-Lag Optimize?												
Recall Mode	None	C-Min	C-Min		C-Min	None				None	None	None

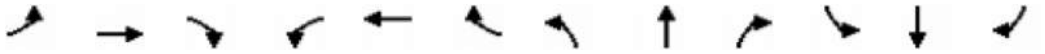
Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 61 (68%), Referenced to phase 2:EBT and 6:WBT, Start of Red
Natural Cycle: 80
Control Type: Actuated-Coordinated

Splits and Phases: 20: 520 WB/NE 76 St & Redmond Way



HCM 7th Signalized Intersection Summary
20: 520 WB/NE 76 St & Redmond Way 03/21/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	419	1033	253	0	885	366	0	0	0	68	364	413
Future Volume (veh/h)	419	1033	253	0	885	366	0	0	0	68	364	413
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	0	1885	1885				1870	1870	1870
Adj Flow Rate, veh/h	432	1065	261	0	912	377				70	375	426
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97				0.97	0.97	0.97
Percent Heavy Veh, %	1	1	1	0	1	1				2	2	2
Cap, veh/h	549	2352	1041	0	1552	1019				378	397	586
Arrive On Green	0.16	0.66	0.66	0.00	0.87	0.87				0.21	0.21	0.21
Sat Flow, veh/h	3483	3582	1586	0	3676	1568				1781	1870	1585
Grp Volume(v), veh/h	432	1065	261	0	912	377				70	375	426
Grp Sat Flow(s),veh/h/ln	1742	1791	1586	0	1791	1568				1781	1870	1585
Q Serve(g_s), s	10.7	13.1	6.1	0.0	6.2	3.5				2.9	17.8	19.1
Cycle Q Clear(g_c), s	10.7	13.1	6.1	0.0	6.2	3.5				2.9	17.8	19.1
Prop In Lane	1.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	549	2352	1041	0	1552	1019				378	397	586
V/C Ratio(X)	0.79	0.45	0.25	0.00	0.59	0.37				0.19	0.94	0.73
Avail Cap(c_a), veh/h	933	2352	1041	0	1552	1019				378	397	586
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00				1.00	1.00	1.00
Upstream Filter(I)	0.39	0.39	0.39	0.00	0.81	0.81				1.00	1.00	1.00
Uniform Delay (d), s/veh	36.4	7.5	6.3	0.0	3.8	1.5				29.1	34.9	24.4
Incr Delay (d2), s/veh	1.0	0.2	0.2	0.0	1.3	0.8				0.2	31.3	4.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	3.9	1.6	0.0	1.5	1.2				1.3	11.4	18.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	37.4	7.8	6.6	0.0	5.1	2.3				29.3	66.3	28.9
LnGrp LOS	D	A	A		A	A				C	E	C
Approach Vol, veh/h		1758			1289						871	
Approach Delay, s/veh		14.9			4.3						45.0	
Approach LOS		B			A						D	

Timer - Assigned Phs	2	4	5	6
Phs Duration (G+Y+Rc), s	65.0	25.0	20.1	44.9
Change Period (Y+Rc), s	5.9	5.9	5.9	5.9
Max Green Setting (Gmax), s	59.1	19.1	24.1	29.1
Max Q Clear Time (g_c+I1), s	15.1	21.1	12.7	8.2
Green Ext Time (p_c), s	12.4	0.0	1.5	9.2

Intersection Summary	
HCM 7th Control Delay, s/veh	18.1
HCM 7th LOS	B

Notes
User approved pedestrian interval to be less than phase max green.
User approved changes to right turn type.

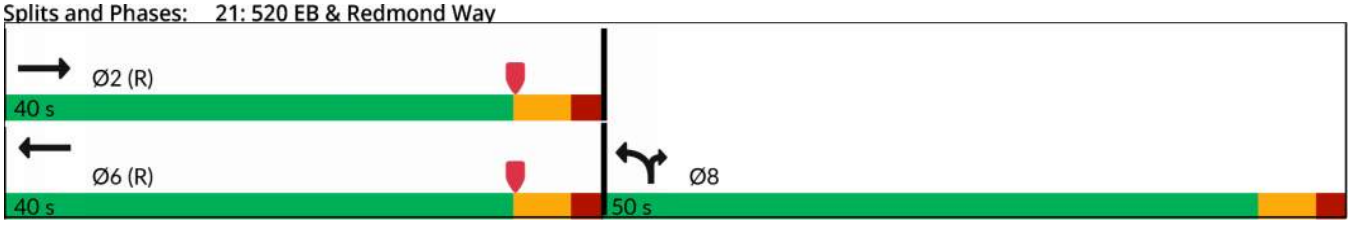
Lanes, Volumes, Timings
21: 520 EB & Redmond Way 03/21/2025

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1101	0	0	863	409	1311
Future Volume (vph)	1101	0	0	863	409	1311
Satd. Flow (prot)	5136	0	0	3574	3467	2814
Flt Permitted					0.950	
Satd. Flow (perm)	5136	0	0	3574	3467	2814
Satd. Flow (RTOR)						29
Confl. Peds. (#/hr)		8	8			16
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1147	0	0	899	426	1366
Turn Type	NA			NA	Prot	Prot
Protected Phases	2			6	8	8
Permitted Phases						
Detector Phase	2			6	8	8
Switch Phase						
Minimum Initial (s)	10.0			10.0	5.0	5.0
Minimum Split (s)	37.9			15.9	37.9	37.9
Total Split (s)	40.0			40.0	50.0	50.0
Total Split (%)	44.4%			44.4%	55.6%	55.6%
Yellow Time (s)	3.9			3.9	3.9	3.9
All-Red Time (s)	2.0			2.0	2.0	2.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	5.9			5.9	5.9	5.9
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Min			C-Min	None	None
Act Effct Green (s)	31.6			31.6	46.6	46.6
Actuated g/C Ratio	0.35			0.35	0.52	0.52
v/c Ratio	0.64			0.72	0.24	0.93
Control Delay (s/veh)	14.3			25.9	12.6	33.1
Queue Delay	0.0			0.0	0.0	0.0
Total Delay (s/veh)	14.3			25.9	12.6	33.1
LOS	B			C	B	C
Approach Delay (s/veh)	14.3			25.9	28.2	
Approach LOS	B			C	C	

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 61 (68%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.93
Intersection Signal Delay (s/veh): 23.5 Intersection LOS: C
Intersection Capacity Utilization 83.9% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 21: 520 EB & Redmond Way



Lanes, Volumes, Timings
22: 164 Ave NE & NE 76 St 03/21/2025



Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Volume (vph)	2	50	158	34	1	21	90	95	2	47	120	43
Future Volume (vph)	2	50	158	34	1	21	90	95	2	47	120	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)			25				25				25	
Link Distance (ft)			539				724				311	
Travel Time (s)			14.7				19.7				8.5	
Confl. Peds. (#/hr)	122	1		84	7	84		1	84	122		7
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	1%	1%	1%	1%	0%	0%	0%	0%	2%	2%	2%	2%
Shared Lane Traffic (%)												
Sign Control			Yield				Yield				Yield	

Intersection Summary	
Area Type:	Other
Control Type: Roundabout	



Lane Group	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Volume (vph)	3	72	107	26
Future Volume (vph)	3	72	107	26
Ideal Flow (vphpl)	1900	1900	1900	1900
Link Speed (mph)			25	
Link Distance (ft)			149	
Travel Time (s)			4.1	
Confl. Peds. (#/hr)	1	7		122
Peak Hour Factor	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	3%	3%	3%	3%
Shared Lane Traffic (%)				
Sign Control			Yield	

Intersection Summary

Intersection	
Intersection Delay, s/veh	6.0
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	290	246	252	248
Demand Flow Rate, veh/h	293	246	257	256
Vehicles Circulating, veh/h	252	272	347	194
Vehicles Exiting, veh/h	198	332	198	324
Ped Vol Crossing Leg, #/h	122	7	84	1
Ped Cap Adj	0.977	0.999	0.988	1.000
Approach Delay, s/veh	6.2	5.7	6.6	5.4
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
A (Intercept)	1380	1380	1380	1380
B (Slope)	1.02e-3	1.02e-3	1.02e-3	1.02e-3
Entry Flow, veh/h	293	246	257	256
Cap Entry Lane, veh/h	1067	1046	969	1132
Entry HV Adj Factor	0.990	1.000	0.981	0.969
Flow Entry, veh/h	290	246	252	248
Cap Entry, veh/h	1032	1045	939	1097
V/C Ratio	0.281	0.236	0.268	0.226
Control Delay, s/veh	6.2	5.7	6.6	5.4
LOS	A	A	A	A
95th %tile Queue, veh	1	1	1	1

Lanes, Volumes, Timings
23: 166th Ave NE & NE 76 St 03/21/2025



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	114	159	43	26	82	70	23	98	20	19	81	47
Future Volume (vph)	114	159	43	26	82	70	23	98	20	19	81	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		0	0		50
Storage Lanes	0		0	0		0	0		0	0		1
Taper Length (ft)	25			25			25			25		
Link Speed (mph)		25			25			10			10	
Link Distance (ft)		724			1313			308			226	
Travel Time (s)		19.7			35.8			21.0			15.4	
Confl. Peds. (#/hr)	5		49	49		5	9		72	72		9
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	0%	0%	0%
Parking (#/hr)	0	0	0				0	0	0			
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Intersection Delay, s/veh	11.1
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	114	159	43	26	82	70	23	98	20	19	81	47
Future Vol, veh/h	114	159	43	26	82	70	23	98	20	19	81	47
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	0	0	0
Mvmt Flow	121	169	46	28	87	74	24	104	21	20	86	50
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	1
HCM Control Delay, s/veh	12.6	10	10.4	9.8
HCM LOS	B	A	B	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	16%	36%	15%	19%	0%
Vol Thru, %	70%	50%	46%	81%	0%
Vol Right, %	14%	14%	39%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	141	316	178	100	47
LT Vol	23	114	26	19	0
Through Vol	98	159	82	81	0
RT Vol	20	43	70	0	47
Lane Flow Rate	150	336	189	106	50
Geometry Grp	4a	2	2	5	5
Degree of Util (X)	0.234	0.473	0.267	0.183	0.075
Departure Headway (Hd)	5.611	5.062	5.084	6.188	5.381
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	639	713	706	580	665
Service Time	3.649	3.091	3.119	3.926	3.118
HCM Lane V/C Ratio	0.235	0.471	0.268	0.183	0.075
HCM Control Delay, s/veh	10.4	12.6	10	10.3	8.6
HCM Lane LOS	B	B	A	B	A
HCM 95th-tile Q	0.9	2.6	1.1	0.7	0.2

Lanes, Volumes, Timings
24: 164th Ave NE & NE 74th St 03/21/2025



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	82	30	30	70	90	70
Future Volume (vph)	82	30	30	70	90	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	10			10	10	
Link Distance (ft)	321			415	239	
Travel Time (s)	21.9			28.3	16.3	
Confl. Peds. (#/hr)	75	214	36			36
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	0%	0%	0%	0%	1%	1%
Parking (#/hr)	0	0	0	0		
Shared Lane Traffic (%)						
Sign Control	Stop			Stop	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Intersection Delay, s/veh	8.2
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	82	30	30	70	90	70
Future Vol, veh/h	82	30	30	70	90	70
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles, %	0	0	0	0	1	1
Mvmt Flow	92	34	34	79	101	79
Number of Lanes	1	0	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay, s/veh	8.4	8.2	8.1
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	30%	73%	0%
Vol Thru, %	70%	0%	56%
Vol Right, %	0%	27%	44%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	100	112	160
LT Vol	30	82	0
Through Vol	70	0	90
RT Vol	0	30	70
Lane Flow Rate	112	126	180
Geometry Grp	1	1	1
Degree of Util (X)	0.139	0.158	0.204
Departure Headway (Hd)	4.44	4.518	4.076
Convergence, Y/N	Yes	Yes	Yes
Cap	810	795	883
Service Time	2.455	2.536	2.09
HCM Lane V/C Ratio	0.138	0.158	0.204
HCM Control Delay, s/veh	8.2	8.4	8.1
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.5	0.6	0.8

Lanes, Volumes, Timings
25: 166th Ave NE/166th Ave NE & NE 74th St 03/21/2025



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	53	42	83	45	44	82
Future Volume (vph)	53	42	83	45	44	82
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	10		10			10
Link Distance (ft)	375		216			226
Travel Time (s)	25.6		14.7			15.4
Confl. Peds. (#/hr)	53	105		34	34	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	1%	0%	0%	3%	3%
Parking (#/hr)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Sign Control	Stop		Stop			Stop

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Intersection Delay, s/veh	8
Intersection LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	53	42	83	45	44	82
Future Vol, veh/h	53	42	83	45	44	82
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	1	1	0	0	3	3
Mvmt Flow	58	46	90	49	48	89
Number of Lanes	1	0	1	0	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay, s/veh	8	7.8	8.3
HCM LOS	A	A	A

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	56%	35%
Vol Thru, %	65%	0%	65%
Vol Right, %	35%	44%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	128	95	126
LT Vol	0	53	44
Through Vol	83	0	82
RT Vol	45	42	0
Lane Flow Rate	139	103	137
Geometry Grp	1	1	1
Degree of Util (X)	0.158	0.125	0.164
Departure Headway (Hd)	4.08	4.366	4.311
Convergence, Y/N	Yes	Yes	Yes
Cap	885	825	819
Service Time	2.08	2.374	2.408
HCM Lane V/C Ratio	0.157	0.125	0.167
HCM Control Delay, s/veh	7.8	8	8.3
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.6	0.4	0.6

Lanes, Volumes, Timings
26: Bear Creek Pkwy & 164th Ave NE 03/21/2025



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	122	846	516	33	66	72
Future Volume (vph)	122	846	516	33	66	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100			150	0	125
Storage Lanes	1			1	1	1
Taper Length (ft)	25				25	
Link Speed (mph)		30	30		10	
Link Distance (ft)		500	450		401	
Travel Time (s)		11.4	10.2		27.3	
Confl. Peds. (#/hr)	12			12		18
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	1%	1%	2%	2%	2%	2%
Parking (#/hr)		0				
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	122	846	516	33	66	72
Future Vol, veh/h	122	846	516	33	66	72
Conflicting Peds, #/hr	12	0	0	12	0	18
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	150	0	125
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	1	1	2	2	2	2
Mvmt Flow	127	881	538	34	69	75

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	584	0	-	0	1685	568
Stage 1	-	-	-	-	550	-
Stage 2	-	-	-	-	1135	-
Critical Hdwy	4.11	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.209	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	996	-	-	-	103	523
Stage 1	-	-	-	-	578	-
Stage 2	-	-	-	-	307	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	986	-	-	-	88	510
Mov Cap-2 Maneuver	-	-	-	-	209	-
Stage 1	-	-	-	-	499	-
Stage 2	-	-	-	-	303	-

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	1.16	0	21.45
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	986	-	-	-	209	510
HCM Lane V/C Ratio	0.129	-	-	-	0.328	0.147
HCM Ctrl Dly (s/v)	9.2	-	-	-	30.4	13.3
HCM Lane LOS	A	-	-	-	D	B
HCM 95th %tile Q(veh)	0.4	-	-	-	1.4	0.5

Lanes, Volumes, Timings
27: Bear Creek Pkwy & 166th Ave NE 03/21/2025



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	84	829	432	65	48	117
Future Volume (vph)	84	829	432	65	48	117
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)		-1%	1%		-1%	
Storage Length (ft)	200			150	0	150
Storage Lanes	1			1	1	1
Taper Length (ft)	25				25	
Link Speed (mph)		30	30		10	
Link Distance (ft)		220	462		360	
Travel Time (s)		5.0	10.5		24.5	
Confl. Peds. (#/hr)	22			22		27
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	1%	1%	1%	1%	3%	3%
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	84	829	432	65	48	117
Future Vol, veh/h	84	829	432	65	48	117
Conflicting Peds, #/hr	22	0	0	22	0	27
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	200	-	-	150	0	150
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	-1	1	-	-1	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	1	1	1	1	3	3
Mvmt Flow	88	873	455	68	51	123

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	545	0	-	0	1526	504
Stage 1	-	-	-	-	477	-
Stage 2	-	-	-	-	1049	-
Critical Hdwy	4.11	-	-	-	6.23	6.13
Critical Hdwy Stg 1	-	-	-	-	5.23	-
Critical Hdwy Stg 2	-	-	-	-	5.23	-
Follow-up Hdwy	2.209	-	-	-	3.527	3.327
Pot Cap-1 Maneuver	1029	-	-	-	140	574
Stage 1	-	-	-	-	639	-
Stage 2	-	-	-	-	356	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1010	-	-	-	123	551
Mov Cap-2 Maneuver	-	-	-	-	250	-
Stage 1	-	-	-	-	572	-
Stage 2	-	-	-	-	349	-

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	0.82	0	16.21
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1010	-	-	-	250	551
HCM Lane V/C Ratio	0.088	-	-	-	0.202	0.224
HCM Ctrl Dly (s/v)	8.9	-	-	-	23	13.4
HCM Lane LOS	A	-	-	-	C	B
HCM 95th %tile Q(veh)	0.3	-	-	-	0.7	0.9

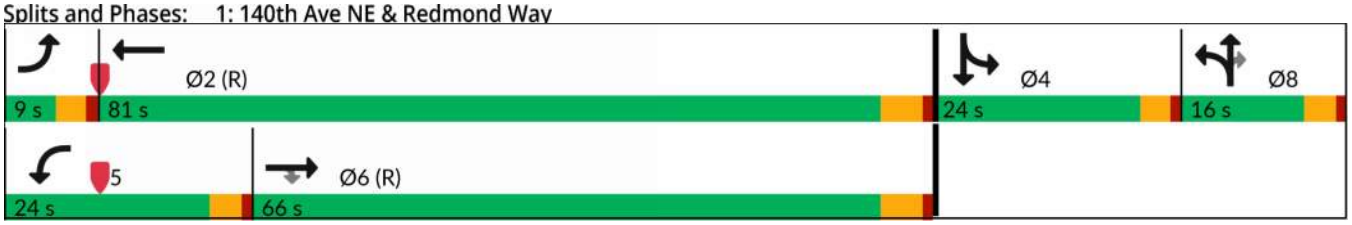
2030 With Project (Phases 1 to 3 of Scenario 2)

Lanes, Volumes, Timings
1: 140th Ave NE & Redmond Way 03/21/2025

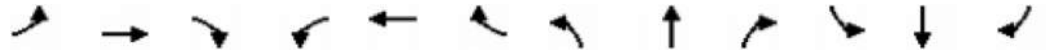
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	31	1218	108	160	1590	7	82	10	55	17	8	23
Future Volume (vph)	31	1218	108	160	1590	7	82	10	55	17	8	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-3%			4%			0%			7%	
Storage Length (ft)	125		250	250		0	0		200	0		30
Storage Lanes	1		1	1		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		40			40			35			25	
Link Distance (ft)		535			1832			797			317	
Travel Time (s)		9.1			31.2			15.5			8.6	
Confl. Peds. (#/hr)	8		2	2		8	11					11
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA	Perm	Split	NA	
Protected Phases	1	6		5	2		8	8		4	4	
Permitted Phases			6						8			
Detector Phase	1	6	6	5	2		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	5.0	12.0		5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	9.0	23.0	23.0	9.0	23.0		9.0	9.0	9.0	24.0	24.0	
Total Split (s)	9.0	66.0	66.0	24.0	81.0		16.0	16.0	16.0	24.0	24.0	
Total Split (%)	6.9%	50.8%	50.8%	18.5%	62.3%		12.3%	12.3%	12.3%	18.5%	18.5%	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)	4.0	5.0	5.0	4.0	5.0			4.0	4.0		4.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag							
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes							
Recall Mode	None	C-Max	C-Max	None	C-Max		None	None	None	None	None	

Intersection Summary
Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBT, Start of 1st Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 1: 140th Ave NE & Redmond Way



HCM 7th Signalized Intersection Summary
1: 140th Ave NE & Redmond Way 03/21/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	1218	108	160	1590	7	82	10	55	17	8	23
Future Volume (veh/h)	31	1218	108	160	1590	7	82	10	55	17	8	23
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	2003	2003	2003	1791	1791	1791	1900	1900	1900	1611	1611	1611
Adj Flow Rate, veh/h	34	1324	0	174	1728	8	89	11	0	18	9	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	1	1	1	1	1	0	0	0	0	0	0
Cap, veh/h	52	2420		200	2522	12	110	14		50	25	
Arrive On Green	0.03	0.64	0.00	0.12	0.73	0.73	0.07	0.07	0.00	0.05	0.05	0.00
Sat Flow, veh/h	1908	3806	1697	1706	3473	16	1619	200	1610	1040	520	0
Grp Volume(v), veh/h	34	1324	0	174	846	890	100	0	0	27	0	0
Grp Sat Flow(s),veh/h/ln	1908	1903	1697	1706	1701	1788	1819	0	1610	1559	0	0
Q Serve(g_s), s	2.3	25.2	0.0	13.0	35.2	35.3	7.0	0.0	0.0	2.2	0.0	0.0
Cycle Q Clear(g_c), s	2.3	25.2	0.0	13.0	35.2	35.3	7.0	0.0	0.0	2.2	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.01	0.89		1.00	0.67		0.00
Lane Grp Cap(c), veh/h	52	2420		200	1235	1298	124	0		74	0	
V/C Ratio(X)	0.66	0.55		0.87	0.68	0.69	0.81	0.00		0.36	0.00	
Avail Cap(c_a), veh/h	73	2420		262	1235	1298	168	0		240	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	62.6	13.2	0.0	56.4	9.7	9.7	59.7	0.0	0.0	60.0	0.0	0.0
Incr Delay (d2), s/veh	13.1	0.9	0.0	20.9	3.1	3.0	18.2	0.0	0.0	2.2	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	10.2	0.0	6.7	12.1	12.7	3.9	0.0	0.0	0.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	75.8	14.1	0.0	77.3	12.8	12.7	78.0	0.0	0.0	62.2	0.0	0.0
LnGrp LOS	E	B		E	B	B	E			E		
Approach Vol, veh/h		1358			1910			100			27	
Approach Delay, s/veh		15.6			18.6			78.0			62.2	
Approach LOS		B			B			E			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.5	99.4		10.2	19.2	87.7		12.9				
Change Period (Y+Rc), s	4.0	5.0		4.0	4.0	5.0		4.0				
Max Green Setting (Gmax), s	5.0	76.0		20.0	20.0	61.0		12.0				
Max Q Clear Time (g_c+I1), s	4.3	37.3		4.2	15.0	27.2		9.0				
Green Ext Time (p_c), s	0.0	25.9		0.0	0.2	17.3		0.1				

Intersection Summary	
HCM 7th Control Delay, s/veh	19.5
HCM 7th LOS	B

Notes

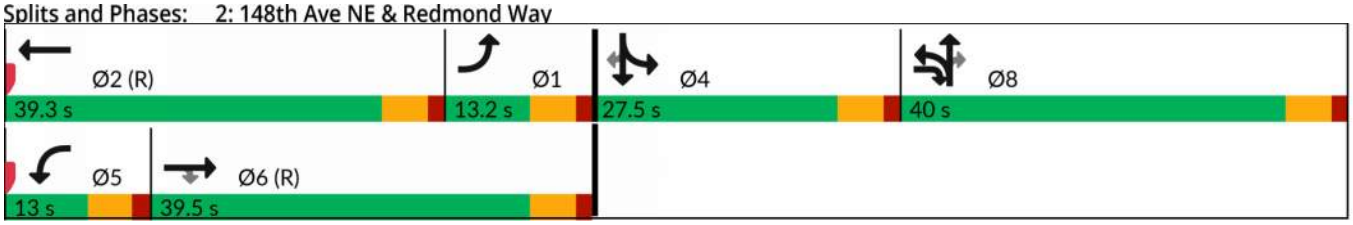
Unsignalized Delay for [NBR, EBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings
2: 148th Ave NE & Redmond Way 03/21/2025

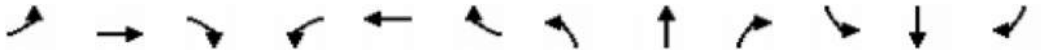
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	179	903	185	175	881	11	654	649	380	33	395	278
Future Volume (vph)	179	903	185	175	881	11	654	649	380	33	395	278
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-3%			0%			-3%			3%	
Storage Length (ft)	375		150	250		0	275		200	200		250
Storage Lanes	2		1	2		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		40			40			40			40	
Link Distance (ft)		957			1580			2623			1894	
Travel Time (s)		16.3			26.9			44.7			32.3	
Confl. Peds. (#/hr)	4		4	4		4			9	9		
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	2%	2%	2%
Shared Lane Traffic (%)							35%					
Turn Type	Prot	NA	pm+ov	Prot	NA		Split	NA	Perm	Split	NA	Perm
Protected Phases	1	6	8	5	2		8	8		4	4	
Permitted Phases			6						8			4
Detector Phase	1	6	8	5	2		8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.5	27.5	24.5	10.5	25.5		24.5	24.5	24.5	27.5	27.5	27.5
Total Split (s)	13.2	39.5	40.0	13.0	39.3		40.0	40.0	40.0	27.5	27.5	27.5
Total Split (%)	11.0%	32.9%	33.3%	10.8%	32.8%		33.3%	33.3%	33.3%	22.9%	22.9%	22.9%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5		1.5	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5		5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lag	Lag		Lead	Lead							
Lead-Lag Optimize?		Yes		Yes								
Recall Mode	None	C-Max	None	None	C-Max		None	None	None	None	None	None

Intersection Summary
Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 87 (73%), Referenced to phase 2:WBT and 6:EBT, Start of 1st Green
Natural Cycle: 110
Control Type: Actuated-Coordinated

Splits and Phases: 2: 148th Ave NE & Redmond Way



HCM 7th Signalized Intersection Summary
2: 148th Ave NE & Redmond Way 03/21/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	179	903	185	175	881	11	654	649	380	33	395	278
Future Volume (veh/h)	179	903	185	175	881	11	654	649	380	33	395	278
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	2003	2003	2003	1885	1885	1885	2003	2003	2003	1817	1817	1817
Adj Flow Rate, veh/h	192	971	199	188	947	12	784	585	0	35	425	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	2	2	2
Cap, veh/h	338	1182	1013	218	1020	13	1097	576		270	539	
Arrive On Green	0.09	0.31	0.31	0.04	0.19	0.19	0.29	0.29	0.00	0.05	0.05	0.00
Sat Flow, veh/h	3701	3806	1691	3483	3622	46	3815	2003	1697	1731	3453	1540
Grp Volume(v), veh/h	192	971	199	188	468	491	784	585	0	35	425	0
Grp Sat Flow(s),veh/h/ln	1850	1903	1691	1742	1791	1877	1908	2003	1697	1731	1726	1540
Q Serve(g_s), s	6.0	28.3	6.4	6.4	30.9	30.9	22.1	34.5	0.0	2.3	14.6	0.0
Cycle Q Clear(g_c), s	6.0	28.3	6.4	6.4	30.9	30.9	22.1	34.5	0.0	2.3	14.6	0.0
Prop In Lane	1.00		1.00	1.00		0.02	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	338	1182	1013	218	504	529	1097	576		270	539	
V/C Ratio(X)	0.57	0.82	0.20	0.86	0.93	0.93	0.71	1.02		0.13	0.79	
Avail Cap(c_a), veh/h	338	1182	1013	218	504	529	1097	576		317	633	
HCM Platoon Ratio	1.00	1.00	1.00	0.67	0.67	0.67	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	0.64	0.64	0.64	0.20	0.20	0.00	0.97	0.97	0.00
Uniform Delay (d), s/veh	52.2	38.3	11.0	57.0	47.5	47.5	38.3	42.8	0.0	49.1	55.0	0.0
Incr Delay (d2), s/veh	2.2	6.5	0.4	19.9	18.7	18.1	0.5	20.9	0.0	0.2	5.5	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	13.9	4.6	3.4	16.7	17.4	10.1	19.8	0.0	1.0	7.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	54.5	44.8	11.4	76.9	66.2	65.6	38.8	63.6	0.0	49.3	60.5	0.0
LnGrp LOS	D	D	B	E	E	E	D	F		D	E	
Approach Vol, veh/h		1362			1147			1369			460	
Approach Delay, s/veh		41.3			67.7			49.4			59.6	
Approach LOS		D			E			D			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	16.5	39.3		24.2	13.0	42.8		40.0				
Change Period (Y+Rc), s	5.5	5.5		5.5	5.5	5.5		5.5				
Max Green Setting (Gmax), s	7.7	33.8		22.0	7.5	34.0		34.5				
Max Q Clear Time (g_c+I1), s	8.0	32.9		16.6	8.4	30.3		36.5				
Green Ext Time (p_c), s	0.0	0.5		1.6	0.0	2.0		0.0				

Intersection Summary	
HCM 7th Control Delay, s/veh	52.8
HCM 7th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.
Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings
3: Willows Rd NE & Redmond Way 03/21/2025

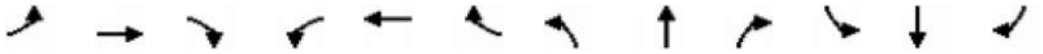
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	1378	14	26	1047	281	7	6	20	597	17	16
Future Volume (vph)	16	1378	14	26	1047	281	7	6	20	597	17	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-3%			0%			0%			5%	
Storage Length (ft)	150		0	125		30	0		0	275		0
Storage Lanes	1		0	1		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		40			40			25			35	
Link Distance (ft)		1580			850			188			922	
Travel Time (s)		26.9			14.5			5.1			18.0	
Confl. Peds. (#/hr)	12		4	4		12	19		5	5		19
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	1%	1%	1%
Shared Lane Traffic (%)										47%		
Turn Type	Prot	NA		Prot	NA		Split	NA		Split	NA	
Protected Phases	1	6		5	2		8	8		4	4	
Permitted Phases												
Detector Phase	1	6		5	2		8	8		4	4	
Switch Phase												
Minimum Initial (s)	6.0	12.0		5.0	12.0		5.0	5.0		6.0	6.0	
Minimum Split (s)	11.0	19.0		10.0	19.0		23.0	23.0		25.0	25.0	
Total Split (s)	11.0	56.0		10.0	55.0		23.0	23.0		31.0	31.0	
Total Split (%)	9.2%	46.7%		8.3%	45.8%		19.2%	19.2%		25.8%	25.8%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0		5.0	5.0	
Lead/Lag	Lead	Lead		Lag	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	

Intersection Summary
Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 32 (27%), Referenced to phase 2:WBT and 6:EBT, Start of 1st Green
Natural Cycle: 110
Control Type: Actuated-Coordinated

Splits and Phases: 3: Willows Rd NE & Redmond Way



HCM 7th Signalized Intersection Summary
3: Willows Rd NE & Redmond Way 03/21/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	1378	14	26	1047	281	7	6	20	597	17	16
Future Volume (veh/h)	16	1378	14	26	1047	281	7	6	20	597	17	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.91	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	2003	2003	2003	1885	1885	1885	1900	1900	1900	1738	1738	1738
Adj Flow Rate, veh/h	17	1482	15	28	1126	0	8	6	22	671	0	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	1	1	1	1	1	0	0	0	1	1	1
Cap, veh/h	41	1640	17	233	1909		22	17	61	716	376	0
Arrive On Green	0.01	0.14	0.14	0.26	1.00	0.00	0.06	0.06	0.06	0.22	0.00	0.00
Sat Flow, veh/h	1908	3859	39	1795	3676	0	354	265	973	3310	1738	0
Grp Volume(v), veh/h	17	730	767	28	1126	0	36	0	0	671	0	0
Grp Sat Flow(s),veh/h/ln	1908	1903	1995	1795	1791	0	1592	0	0	1655	1738	0
Q Serve(g_s), s	1.1	45.3	45.4	1.4	0.0	0.0	2.6	0.0	0.0	23.9	0.0	0.0
Cycle Q Clear(g_c), s	1.1	45.3	45.4	1.4	0.0	0.0	2.6	0.0	0.0	23.9	0.0	0.0
Prop In Lane	1.00		0.02	1.00		0.00	0.22		0.61	1.00		0.00
Lane Grp Cap(c), veh/h	41	809	848	233	1909		99	0	0	716	376	0
V/C Ratio(X)	0.41	0.90	0.90	0.12	0.59		0.36	0.00	0.00	0.94	0.00	0.00
Avail Cap(c_a), veh/h	95	809	848	233	1909		239	0	0	717	377	0
HCM Platoon Ratio	0.33	0.33	0.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.46	0.46	0.46	0.71	0.71	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	58.8	49.2	49.2	39.2	0.0	0.0	54.0	0.0	0.0	46.2	0.0	0.0
Incr Delay (d2), s/veh	2.2	8.1	7.8	0.1	1.0	0.0	0.8	0.0	0.0	20.1	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	24.8	26.0	0.6	0.3	0.0	1.1	0.0	0.0	11.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	61.0	57.2	57.0	39.3	1.0	0.0	54.8	0.0	0.0	66.3	0.0	0.0
LnGrp LOS	E	E	E	D	A		D			E		
Approach Vol, veh/h		1514			1154			36			671	
Approach Delay, s/veh		57.1			1.9			54.8			66.3	
Approach LOS		E			A			D			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.6	68.9		31.0	20.5	56.0		12.5				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	6.0	50.0		26.0	5.0	51.0		18.0				
Max Q Clear Time (g_c+I1), s	3.1	2.0		25.9	3.4	47.4		4.6				
Green Ext Time (p_c), s	0.0	21.5		0.0	0.0	3.3		0.0				

Intersection Summary		
HCM 7th Control Delay, s/veh	40.0	
HCM 7th LOS	D	

Notes

User approved volume balancing among the lanes for turning movement.
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1366	642	217	996	363	194
Future Volume (vph)	1366	642	217	996	363	194
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	-3%			3%	-4%	
Storage Length (ft)		125	150		0	75
Storage Lanes		1	2		1	0
Taper Length (ft)			25		25	
Right Turn on Red		Yes				Yes
Link Speed (mph)	30			30	35	
Link Distance (ft)	850			951	587	
Travel Time (s)	19.3			21.6	11.4	
Confl. Peds. (#/hr)		14	14			2
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	1%	1%	1%	1%	2%	2%
Shared Lane Traffic (%)						
Turn Type	NA	pm+ov	Prot	NA	Prot	
Protected Phases	6	4	5	2	4	
Permitted Phases		6				
Detector Phase	6	4	5	2	4	
Switch Phase						
Minimum Initial (s)	8.0	6.0	5.0	20.0	6.0	
Minimum Split (s)	22.0	25.0	10.0	25.0	25.0	
Total Split (s)	57.0	48.0	15.0	72.0	48.0	
Total Split (%)	47.5%	40.0%	12.5%	60.0%	40.0%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Recall Mode	C-Max	None	None	C-Max	None	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 47 (39%), Referenced to phase 2:WBT and 6:EBT, Start of 1st Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

Splits and Phases: 4: West Lake Sammamish Pkwy NE & Redmond Way



HCM 7th Signalized Intersection Summary
4: West Lake Sammamish Pkwy NE & Redmond Way 03/21/2025



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1366	642	217	996	363	194
Future Volume (veh/h)	1366	642	217	996	363	194
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)		0.98	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	2003	2003	1832	1832	2027	2027
Adj Flow Rate, veh/h	1380	648	219	1006	367	0
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	1	1	1	1	2	2
Cap, veh/h	1649	724	772	2448	411	
Arrive On Green	0.87	0.87	0.46	1.00	0.21	0.00
Sat Flow, veh/h	3906	1670	3385	3573	1926	0
Grp Volume(v), veh/h	1380	648	219	1006	368	0
Grp Sat Flow(s),veh/h/ln	1903	1670	1693	1741	1931	0
Q Serve(g_s), s	21.1	27.7	4.8	0.0	22.2	0.0
Cycle Q Clear(g_c), s	21.1	27.7	4.8	0.0	22.2	0.0
Prop In Lane		1.00	1.00		1.00	0.00
Lane Grp Cap(c), veh/h	1649	724	772	2448	412	
V/C Ratio(X)	0.84	0.90	0.28	0.41	0.89	
Avail Cap(c_a), veh/h	1649	724	772	2448	692	
HCM Platoon Ratio	2.00	2.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	0.56	0.56	0.87	0.87	0.93	0.00
Uniform Delay (d), s/veh	5.9	6.4	26.5	0.0	45.8	0.0
Incr Delay (d2), s/veh	3.0	9.9	0.2	0.4	7.7	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	4.7	1.9	0.2	11.4	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	9.0	16.2	26.7	0.4	53.6	0.0
LnGrp LOS	A	B	C	A	D	
Approach Vol, veh/h	2028			1225	368	
Approach Delay, s/veh	11.3			5.1	53.6	
Approach LOS	B			A	D	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		89.4		30.6	32.4	57.0
Change Period (Y+Rc), s		5.0		5.0	5.0	5.0
Max Green Setting (Gmax), s		67.0		43.0	10.0	52.0
Max Q Clear Time (g_c+I1), s		2.0		24.2	6.8	29.7
Green Ext Time (p_c), s		6.0		1.4	0.3	12.4

Intersection Summary	
HCM 7th Control Delay, s/veh	13.5
HCM 7th LOS	B

Notes

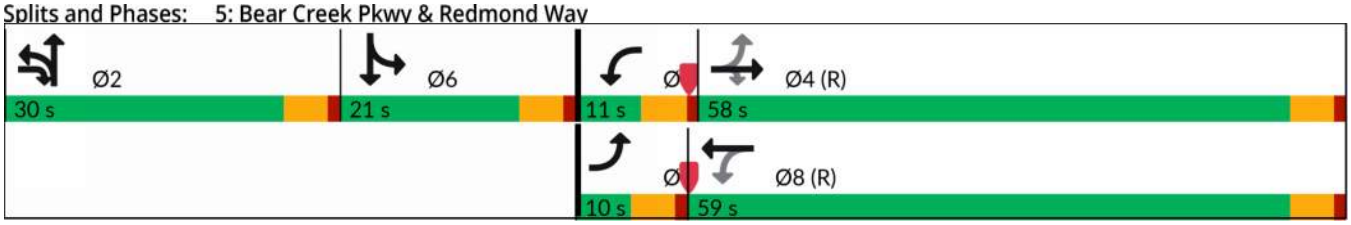
Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings
5: Bear Creek Pkwy & Redmond Way 03/21/2025

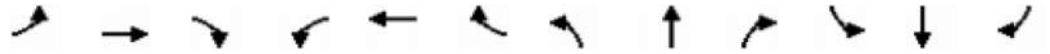
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	1000	523	72	927	20	309	5	81	24	6	19
Future Volume (vph)	11	1000	523	72	927	20	309	5	81	24	6	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-4%			0%			0%			0%	
Storage Length (ft)	150		175	150		0	125		0	0		0
Storage Lanes	1		1	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			25	
Link Distance (ft)		951			828			488			167	
Travel Time (s)		21.6			18.8			11.1			4.6	
Confl. Peds. (#/hr)	9		15	15		9	9		19	19		9
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)							35%					
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA		Split	NA		Split	NA	
Protected Phases	7	4	2	3	8		2	2		6	6	
Permitted Phases	4		4	8								
Detector Phase	7	4	2	3	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	8.0	6.0	5.0	8.0		6.0	6.0		5.0	5.0	
Minimum Split (s)	10.0	24.0	24.0	10.0	21.0		24.0	24.0		21.0	21.0	
Total Split (s)	10.0	58.0	30.0	11.0	59.0		30.0	30.0		21.0	21.0	
Total Split (%)	8.3%	48.3%	25.0%	9.2%	49.2%		25.0%	25.0%		17.5%	17.5%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag	Lead	Lead	Lag		Lead	Lead		Lag	Lag	
Lead-Lag Optimize?			Yes				Yes	Yes				
Recall Mode	None	C-Max	None	None	C-Max		None	None		None	None	

Intersection Summary
Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 66 (55%), Referenced to phase 4:EBTL and 8:WBTL, Start of 1st Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

Splits and Phases: 5: Bear Creek Pkwy & Redmond Way



HCM 7th Signalized Intersection Summary
5: Bear Creek Pkwy & Redmond Way 03/21/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	1000	523	72	927	20	309	5	81	24	6	19
Future Volume (veh/h)	11	1000	523	72	927	20	309	5	81	24	6	19
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.96	1.00		0.91
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	2042	2042	2042	1885	1885	1885	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	11	1031	539	74	956	21	204	166	84	25	6	20
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	1	1	1	1	1	0	0	0	0	0	0
Cap, veh/h	368	2219	1257	317	2139	47	293	190	96	111	22	73
Arrive On Green	0.03	1.00	1.00	0.04	0.60	0.60	0.16	0.16	0.16	0.06	0.06	0.06
Sat Flow, veh/h	1945	3880	1708	1795	3582	79	1810	1174	594	1810	356	1187
Grp Volume(v), veh/h	11	1031	539	74	478	499	204	0	250	25	0	26
Grp Sat Flow(s),veh/h/ln	1945	1940	1708	1795	1791	1870	1810	0	1768	1810	0	1543
Q Serve(g_s), s	0.3	0.0	0.0	2.0	17.6	17.6	12.8	0.0	16.6	1.6	0.0	1.9
Cycle Q Clear(g_c), s	0.3	0.0	0.0	2.0	17.6	17.6	12.8	0.0	16.6	1.6	0.0	1.9
Prop In Lane	1.00		1.00	1.00		0.04	1.00		0.34	1.00		0.77
Lane Grp Cap(c), veh/h	368	2219	1257	317	1070	1117	293	0	286	111	0	95
V/C Ratio(X)	0.03	0.46	0.43	0.23	0.45	0.45	0.70	0.00	0.87	0.22	0.00	0.27
Avail Cap(c_a), veh/h	424	2219	1257	338	1070	1117	377	0	368	241	0	206
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.42	0.42	0.42	0.75	0.75	0.75	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	11.2	0.0	0.0	9.5	13.3	13.3	47.5	0.0	49.1	53.6	0.0	53.8
Incr Delay (d2), s/veh	0.0	0.3	0.5	0.2	1.0	1.0	3.2	0.0	15.7	1.0	0.0	1.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.1	0.2	0.8	7.2	7.5	6.0	0.0	8.5	0.8	0.0	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	11.2	0.3	0.5	9.7	14.3	14.2	50.7	0.0	64.8	54.6	0.0	55.3
LnGrp LOS	B	A	A	A	B	B	D		E	D		E
Approach Vol, veh/h		1581			1051			454			51	
Approach Delay, s/veh		0.4			13.9			58.5			55.0	
Approach LOS		A			B			E			D	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	24.4	9.6	73.6	12.4	6.5	76.7
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	25.0	6.0	53.0	16.0	5.0	54.0
Max Q Clear Time (g_c+I1), s	18.6	4.0	2.0	3.9	2.3	19.6
Green Ext Time (p_c), s	0.9	0.0	8.0	0.1	0.0	3.4

Intersection Summary	
HCM 7th Control Delay, s/veh	14.2
HCM 7th LOS	B

Notes

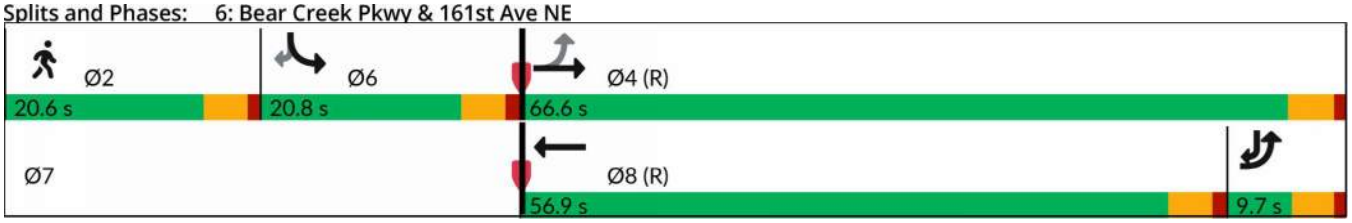
User approved volume balancing among the lanes for turning movement.

Lanes, Volumes, Timings
6: Bear Creek Pkwy & 161st Ave NE 03/21/2025

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø2
Lane Configurations							
Traffic Volume (vph)	33	495	357	190	110	80	
Future Volume (vph)	33	495	357	190	110	80	
Satd. Flow (prot)	1787	1693	1513	0	1787	1599	
Flt Permitted	0.309				0.950		
Satd. Flow (perm)	581	1693	1513	0	1612	1445	
Satd. Flow (RTOR)			34			91	
Confl. Peds. (#/hr)	48			48	29	23	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	
Parking (#/hr)		0	0	0			
Shared Lane Traffic (%)							
Lane Group Flow (vph)	38	563	622	0	125	91	
Turn Type	pm+pt	NA	NA		Prot	pm+ov	
Protected Phases	7	4	8		6	7	2
Permitted Phases	4					6	
Detector Phase	7	4	8		6	7	
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	9.4	9.6	20.6		20.6	9.4	20.6
Total Split (s)	9.7	66.6	56.9		20.8	9.7	20.6
Total Split (%)	9.0%	61.7%	52.7%		19.3%	9.0%	19%
Yellow Time (s)	3.4	3.6	3.6		3.6	3.4	3.6
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.4	4.6	4.6		4.6	4.4	
Lead/Lag	Lag		Lead		Lag	Lag	Lead
Lead-Lag Optimize?							
Recall Mode	None	C-Max	C-Max		None	None	None
Act Effct Green (s)	73.9	73.7	65.9		12.7	18.2	
Actuated g/C Ratio	0.68	0.68	0.61		0.12	0.17	
v/c Ratio	0.08	0.49	0.66		0.60	0.28	
Control Delay (s/veh)	10.1	12.7	20.4		56.3	6.8	
Queue Delay	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	10.1	12.7	20.4		56.3	6.8	
LOS	B	B	C		E	A	
Approach Delay (s/veh)		12.6	20.4		35.5		
Approach LOS		B	C		D		

Intersection Summary	
Cycle Length: 108	
Actuated Cycle Length: 108	
Offset: 6 (6%), Referenced to phase 4:EBTL and 8:WBT, Start of 1st Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.66	
Intersection Signal Delay (s/veh): 19.4	Intersection LOS: B
Intersection Capacity Utilization 49.3%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 6: Bear Creek Pkwy & 161st Ave NE

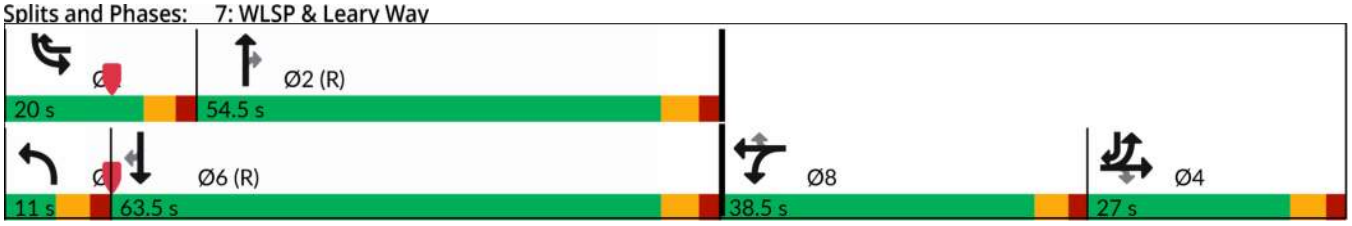


Lanes, Volumes, Timings
7: WLSP & Leary Way 03/21/2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	287	11	213	285	525	87	15	1013	1164	209	876	584
Future Volume (vph)	287	11	213	285	525	87	15	1013	1164	209	876	584
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-6%			3%			0%			0%	
Storage Length (ft)	0		175	200		150	200		275	175		0
Storage Lanes	0		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			No
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		718			834			1781			1175	
Travel Time (s)		16.3			19.0			30.4			20.0	
Confl. Peds. (#/hr)	34					34			3	3		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	4%	4%	4%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Shared Lane Traffic (%)				10%								
Turn Type	Split	NA	Perm	Split	NA	pm+ov	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	4	4		8	8	1	5	2		1	6	4
Permitted Phases			4			8			2			6
Detector Phase	4	4	4	8	8	1	5	2	2	1	6	4
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	7.0	7.0	7.0	5.0	10.0	10.0	7.0	10.0	5.0
Minimum Split (s)	10.9	10.9	10.9	38.5	38.5	12.5	10.5	33.9	33.9	12.5	15.9	10.9
Total Split (s)	27.0	27.0	27.0	38.5	38.5	20.0	11.0	54.5	54.5	20.0	63.5	27.0
Total Split (%)	19.3%	19.3%	19.3%	27.5%	27.5%	14.3%	7.9%	38.9%	38.9%	14.3%	45.4%	19.3%
Yellow Time (s)	3.9	3.9	3.9	3.5	3.5	3.5	3.5	3.9	3.9	3.5	3.9	3.9
All-Red 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
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.9	5.9	5.5	5.5	5.5	5.5	5.9	5.9	5.5	5.9	5.9
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?				Yes	Yes	Yes		Yes	Yes	Yes		
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	None

Intersection Summary
Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 92 (66%), Referenced to phase 2:NBT and 6:SBT, Start of 1st Green
Natural Cycle: 140
Control Type: Actuated-Coordinated

Splits and Phases: 7: WLSP & Leary Way



HCM 7th Signalized Intersection Summary
7: WLSP & Leary Way 03/21/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	287	11	213	285	525	87	15	1013	1164	209	876	584
Future Volume (veh/h)	287	11	213	285	525	87	15	1013	1164	209	876	584
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.93	1.00		0.95	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	2076	2076	2076	1817	1817	1817	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	302	12	224	284	575	92	16	1066	0	220	922	615
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	4	4	4	2	2	2	2	2	2	2	2	2
Cap, veh/h	287	11	247	381	799	482	29	1290		184	1599	951
Arrive On Green	0.15	0.15	0.15	0.22	0.22	0.22	0.01	0.12	0.00	0.10	0.45	0.45
Sat Flow, veh/h	1905	76	1640	1731	3635	1469	1781	3554	1585	1781	3554	1582
Grp Volume(v), veh/h	314	0	224	284	575	92	16	1066	0	220	922	615
Grp Sat Flow(s),veh/h/ln	1981	0	1640	1731	1817	1469	1781	1777	1585	1781	1777	1582
Q Serve(g_s), s	21.1	0.0	18.8	21.4	20.5	6.3	1.3	41.0	0.0	14.5	27.0	35.6
Cycle Q Clear(g_c), s	21.1	0.0	18.8	21.4	20.5	6.3	1.3	41.0	0.0	14.5	27.0	35.6
Prop In Lane	0.96		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	299	0	247	381	799	482	29	1290		184	1599	951
V/C Ratio(X)	1.05	0.00	0.91	0.75	0.72	0.19	0.54	0.83		1.19	0.58	0.65
Avail Cap(c_a), veh/h	299	0	247	408	857	506	70	1290		184	1599	951
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.93	0.93	0.93	0.31	0.31	0.00	0.90	0.90	0.90
Uniform Delay (d), s/veh	59.5	0.0	58.5	51.0	50.6	34.2	69.1	57.3	0.0	62.7	28.6	18.3
Incr Delay (d2), s/veh	66.4	0.0	33.5	7.1	2.9	0.3	4.7	2.0	0.0	124.5	1.4	3.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.1	0.0	10.1	10.1	9.7	2.3	0.6	20.0	0.0	12.9	11.5	19.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	125.8	0.0	91.9	58.0	53.5	34.4	73.8	59.3	0.0	187.2	30.0	21.3
LnGrp LOS	F		F	E	D	C	E	E		F	C	C
Approach Vol, veh/h		538			951			1082			1757	
Approach Delay, s/veh		111.7			53.0			59.5			46.6	
Approach LOS		F			D			E			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	20.0	56.7		27.0	7.8	68.9		36.3				
Change Period (Y+Rc), s	5.5	5.9		5.9	5.5	5.9		5.5				
Max Green Setting (Gmax), s	14.5	48.6		21.1	5.5	57.6		33.0				
Max Q Clear Time (g_c+I1), s	16.5	43.0		23.1	3.3	37.6		23.4				
Green Ext Time (p_c), s	0.0	3.3		0.0	0.0	11.2		5.2				

Intersection Summary	
HCM 7th Control Delay, s/veh	59.3
HCM 7th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings
8: Leary Way & 159th Pl NE 03/21/2025

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø2	Ø6
Lane Configurations								
Traffic Volume (vph)	99	1306	876	17	26	79		
Future Volume (vph)	99	1306	876	17	26	79		
Satd. Flow (prot)	1787	1881	3550	0	1805	1615		
Flt Permitted	0.950				0.950			
Satd. Flow (perm)	1701	1881	3550	0	1805	1615		
Satd. Flow (RTOR)			2			81		
Confl. Peds. (#/hr)	41			41		29		
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97		
Heavy Vehicles (%)	1%	1%	1%	1%	0%	0%		
Mid-Block Traffic (%)		0%	0%		50%			
Shared Lane Traffic (%)								
Lane Group Flow (vph)	102	1346	921	0	27	81		
Turn Type	Prot	NA	NA		Prot	pt+ov		
Protected Phases	7	4!	8		2 6!	6 7	2	6
Permitted Phases								
Detector Phase	7	4	8		2 6	7		
Switch Phase								
Minimum Initial (s)	5.0	7.0	7.0				4.0	6.0
Minimum Split (s)	10.0	12.0	20.0				21.0	11.0
Total Split (s)	19.0	105.0	75.0				21.0	11.0
Total Split (%)	15.1%	83.3%	59.5%				17%	9%
Yellow Time (s)	4.0	4.0	4.0				4.0	4.0
All-Red Time (s)	1.0	1.0	1.0				1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0					
Total Lost Time (s)	5.0	5.0	5.0					
Lead/Lag	Lead							Lag
Lead-Lag Optimize?	Yes							Yes
Recall Mode	None	C-Max	C-Max				None	None
Act Effct Green (s)	11.1	107.3	83.7		17.6	17.7		
Actuated g/C Ratio	0.09	0.85	0.66		0.14	0.14		
v/c Ratio	0.65	0.84	0.39		0.11	0.27		
Control Delay (s/veh)	74.3	14.2	12.8		30.3	11.3		
Queue Delay	0.0	2.5	0.0		0.0	0.0		
Total Delay (s/veh)	74.3	16.7	12.8		30.3	11.3		
LOS	E	B	B		C	B		
Approach Delay (s/veh)		20.8	12.8		16.1			
Approach LOS		C	B		B			

Intersection Summary			
Cycle Length: 126			
Actuated Cycle Length: 126			
Offset: 0 (0%), Referenced to phase 8:WBT and 4:EBT, Start of 1st Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.84			
Intersection Signal Delay (s/veh): 17.6		Intersection LOS: B	
Intersection Capacity Utilization 86.6%		ICU Level of Service E	
Analysis Period (min) 15			

! Phase conflict between lane groups.

Splits and Phases: 8: Leary Way & 159th Pl NE



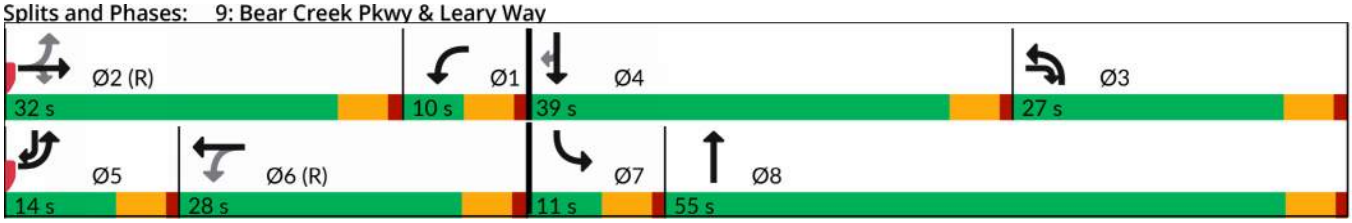
Lanes, Volumes, Timings
9: Bear Creek Pkwy & Leary Way 03/21/2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	168	574	589	18	334	82	393	306	13	44	490	86
Future Volume (vph)	168	574	589	18	334	82	393	306	13	44	490	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		225	175		0	190		0	275		100
Storage Lanes	1		1	1		0	2		0	1		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		664			421			452			692	
Travel Time (s)		15.1			9.6			10.3			15.7	
Confl. Peds. (#/hr)	12		6	6		12	6		17	17		6
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	2%	2%	2%	1%	1%	1%	2%	2%	2%	1%	1%	1%
Shared Lane Traffic (%)												
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA		Prot	NA		Prot	NA	pm+ov
Protected Phases	5	2	3	1	6		3	8		7	4	5
Permitted Phases	2		2	6								4
Detector Phase	5	2	3	1	6		3	8		7	4	4
Switch Phase												
Minimum Initial (s)	5.0	8.0	6.0	5.0	8.0		6.0	6.0		5.0	5.0	5.0
Minimum Split (s)	10.0	26.2	11.2	10.0	24.2		11.2	28.0		10.0	26.0	10.0
Total Split (s)	14.0	32.0	27.0	10.0	28.0		27.0	55.0		11.0	39.0	14.0
Total Split (%)	13.0%	29.6%	25.0%	9.3%	25.9%		25.0%	50.9%		10.2%	36.1%	13.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.2	1.2	1.0	1.2		1.2	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0	5.2	5.2	5.0	5.2		5.2	5.0		5.0	5.0	5.0
Lead/Lag	Lead	Lead	Lag	Lag	Lag		Lag	Lag		Lead	Lead	Lead
Lead-Lag Optimize?												
Recall Mode	None	C-Max	None	None	C-Max		None	None		None	None	None

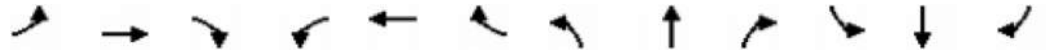
Intersection Summary

Area Type: Other
Cycle Length: 108
Actuated Cycle Length: 108
Offset: 84 (78%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

Splits and Phases: 9: Bear Creek Pkwy & Leary Way



HCM 7th Signalized Intersection Summary
9: Bear Creek Pkwy & Leary Way 03/21/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	168	574	589	18	334	82	393	306	13	44	490	86
Future Volume (veh/h)	168	574	589	18	334	82	393	306	13	44	490	86
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.99		0.98	0.99		0.98	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1885	1885	1885	1870	1870	1870	1885	1885	1885
Adj Flow Rate, veh/h	171	586	601	18	341	84	401	312	13	45	500	88
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	1	1	1	2	2	2	1	1	1
Cap, veh/h	236	882	609	344	853	207	490	701	29	62	539	582
Arrive On Green	0.08	0.25	0.25	0.13	0.30	0.30	0.14	0.39	0.39	0.03	0.29	0.29
Sat Flow, veh/h	1781	3554	1547	1795	2845	690	3456	1782	74	1795	1885	1569
Grp Volume(v), veh/h	171	586	601	18	213	212	401	0	325	45	500	88
Grp Sat Flow(s),veh/h/ln	1781	1777	1547	1795	1791	1744	1728	0	1856	1795	1885	1569
Q Serve(g_s), s	8.9	16.0	25.9	0.0	10.2	10.5	12.2	0.0	13.9	2.7	27.8	2.2
Cycle Q Clear(g_c), s	8.9	16.0	25.9	0.0	10.2	10.5	12.2	0.0	13.9	2.7	27.8	2.2
Prop In Lane	1.00		1.00	1.00		0.40	1.00		0.04	1.00		1.00
Lane Grp Cap(c), veh/h	236	882	609	344	537	523	490	0	731	62	539	582
V/C Ratio(X)	0.73	0.66	0.99	0.05	0.40	0.41	0.82	0.00	0.44	0.73	0.93	0.15
Avail Cap(c_a), veh/h	236	882	609	344	537	523	698	0	859	100	593	627
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.46	0.46	0.46	1.00	1.00	1.00	0.82	0.00	0.82	0.85	0.85	0.85
Uniform Delay (d), s/veh	37.2	36.6	32.6	34.7	30.0	30.1	45.0	0.0	24.1	51.7	37.5	9.0
Incr Delay (d2), s/veh	4.8	1.8	21.9	0.0	2.2	2.3	4.3	0.0	0.3	13.2	17.6	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	7.1	12.0	0.4	4.7	4.7	5.5	0.0	6.1	1.4	15.2	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	42.0	38.4	54.5	34.7	32.2	32.5	49.3	0.0	24.4	64.8	55.1	9.1
LnGrp LOS	D	D	D	C	C	C	D		C	E	E	A
Approach Vol, veh/h		1358			443			726			633	
Approach Delay, s/veh		46.0			32.4			38.1			49.4	
Approach LOS		D			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.6	32.0	20.5	35.9	14.0	37.6	8.7	47.7
Change Period (Y+Rc), s	5.2	* 5.2	5.2	5.0	5.0	5.2	5.0	* 5.2
Max Green Setting (Gmax), s	5.0	* 27	21.8	34.0	9.0	22.8	6.0	* 50
Max Q Clear Time (g_c+I1), s	2.0	27.9	14.2	29.8	10.9	12.5	4.7	15.9
Green Ext Time (p_c), s	0.0	0.0	1.2	1.1	0.0	1.3	0.0	1.3

Intersection Summary	
HCM 7th Control Delay, s/veh	43.0
HCM 7th LOS	D

Notes

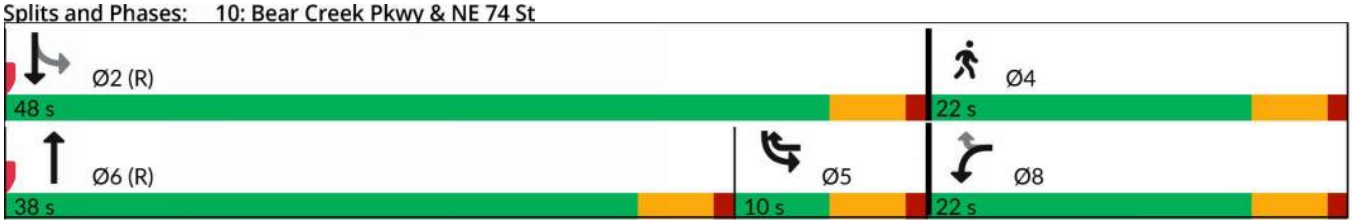
* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Lanes, Volumes, Timings
10: Bear Creek Pkwy & NE 74 St 03/21/2025

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø4
Lane Configurations							
Traffic Volume (vph)	24	252	604	11	160	956	
Future Volume (vph)	24	252	604	11	160	956	
Satd. Flow (prot)	1805	1615	1857	0	1787	1881	
Flt Permitted	0.950				0.312		
Satd. Flow (perm)	1641	1615	1857	0	581	1881	
Satd. Flow (RTOR)		176	2				
Confl. Peds. (#/hr)	44			20	20		
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	
Heavy Vehicles (%)	0%	0%	2%	2%	1%	1%	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	24	257	627	0	163	976	
Turn Type	Prot	pm+ov	NA		pm+pt	NA	
Protected Phases	8	5	6		5	2	4
Permitted Phases		8			2		
Detector Phase	8	5	6		5	2	
Switch Phase							
Minimum Initial (s)	7.0	4.0	8.0		4.0	5.0	8.0
Minimum Split (s)	12.0	9.0	23.0		9.0	10.0	22.0
Total Split (s)	22.0	10.0	38.0		10.0	48.0	22.0
Total Split (%)	31.4%	14.3%	54.3%		14.3%	68.6%	31%
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0		5.0	5.0	
Lead/Lag		Lag	Lead		Lag		
Lead-Lag Optimize?		Yes	Yes		Yes		
Recall Mode	None	None	C-Min		None	C-Min	None
Act Effct Green (s)	13.0	19.3	40.7		51.8	53.8	
Actuated g/C Ratio	0.19	0.28	0.58		0.74	0.77	
v/c Ratio	0.07	0.45	0.58		0.31	0.68	
Control Delay (s/veh)	21.4	8.1	15.1		8.5	12.0	
Queue Delay	0.0	0.0	0.0		0.0	0.7	
Total Delay (s/veh)	21.4	8.1	15.1		8.5	12.7	
LOS	C	A	B		A	B	
Approach Delay (s/veh)	9.3		15.1			12.1	
Approach LOS	A		B			B	

Intersection Summary	
Cycle Length: 70	
Actuated Cycle Length: 70	
Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBT, Start of 1st Green	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.68	
Intersection Signal Delay (s/veh): 12.6	Intersection LOS: B
Intersection Capacity Utilization 64.5%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 10: Bear Creek Pkwy & NE 74 St



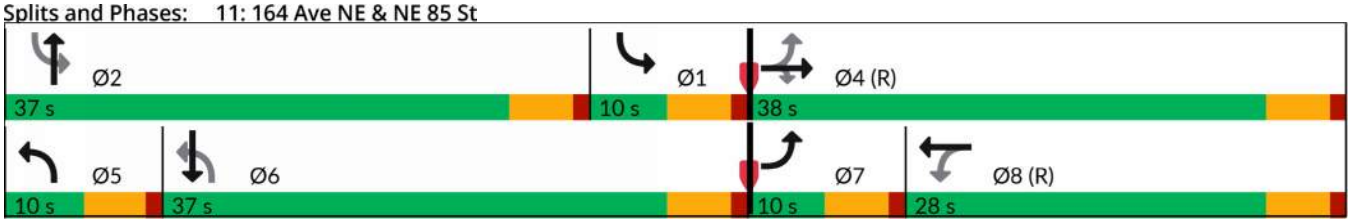
Lanes, Volumes, Timings
11: 164 Ave NE & NE 85 St 03/21/2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	365	70	8	209	172	30	517	20	170	377	36
Future Volume (vph)	70	365	70	8	209	172	30	517	20	170	377	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		150	200		0	250		0	240		0
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			28			30	
Link Distance (ft)		469			304			659			473	
Travel Time (s)		10.7			6.9			16.0			10.8	
Confl. Peds. (#/hr)	12					12	22					22
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Shared Lane Traffic (%)												
Turn Type	pm+pt	NA	Perm	Perm	NA		D.P+P	NA		D.P+P	NA	
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases	4		4	8			6			2		
Detector Phase	7	4	4	8	8		6 5	2		2 1	6	
Switch Phase												
Minimum Initial (s)	5.0	8.0	8.0	8.0	8.0		5.0	6.0		5.0	6.0	
Minimum Split (s)	10.0	20.0	20.0	20.0	20.0		10.0	22.0		10.0	27.0	
Total Split (s)	10.0	38.0	38.0	28.0	28.0		10.0	37.0		10.0	37.0	
Total Split (%)	11.8%	44.7%	44.7%	32.9%	32.9%		11.8%	43.5%		11.8%	43.5%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lead			Lag	Lag		Lead	Lead		Lag	Lag	
Lead-Lag Optimize?												
Recall Mode	None	C-Max	C-Max	C-Max	C-Max		None	None		None	None	

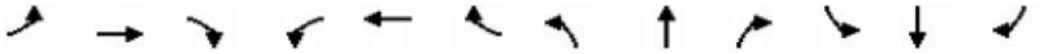
Intersection Summary

Area Type: Other
Cycle Length: 85
Actuated Cycle Length: 85
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of 1st Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

Splits and Phases: 11: 164 Ave NE & NE 85 St



HCM 7th Signalized Intersection Summary
11: 164 Ave NE & NE 85 St 03/21/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	365	70	8	209	172	30	517	20	170	377	36
Future Volume (veh/h)	70	365	70	8	209	172	30	517	20	170	377	36
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.99	0.99		0.98	0.99		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	74	384	74	8	220	181	32	544	21	179	397	38
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	1	1	1	1	1	1
Cap, veh/h	306	837	700	366	318	262	286	585	23	217	594	57
Arrive On Green	0.05	0.44	0.44	0.33	0.33	0.33	0.03	0.32	0.32	0.06	0.35	0.35
Sat Flow, veh/h	1810	1900	1588	941	955	786	1795	1800	69	1795	1688	162
Grp Volume(v), veh/h	74	384	74	8	0	401	32	0	565	179	0	435
Grp Sat Flow(s),veh/h/ln	1810	1900	1588	941	0	1741	1795	0	1870	1795	0	1850
Q Serve(g_s), s	2.2	12.0	2.3	0.5	0.0	17.0	1.0	0.0	24.8	2.9	0.0	16.9
Cycle Q Clear(g_c), s	2.2	12.0	2.3	3.4	0.0	17.0	1.0	0.0	24.8	2.9	0.0	16.9
Prop In Lane	1.00		1.00	1.00		0.45	1.00		0.04	1.00		0.09
Lane Grp Cap(c), veh/h	306	837	700	366	0	580	286	0	608	217	0	651
V/C Ratio(X)	0.24	0.46	0.11	0.02	0.00	0.69	0.11	0.00	0.93	0.83	0.00	0.67
Avail Cap(c_a), veh/h	325	837	700	366	0	580	336	0	704	218	0	696
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	0.83	0.00	0.83	1.00	0.00	1.00
Uniform Delay (d), s/veh	18.0	16.7	14.0	21.1	0.0	24.6	18.2	0.0	27.8	38.0	0.0	23.4
Incr Delay (d2), s/veh	0.2	1.8	0.3	0.1	0.0	6.6	0.1	0.0	14.3	20.9	0.0	1.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	5.4	0.9	0.1	0.0	7.8	0.4	0.0	13.1	4.8	0.0	7.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	18.1	18.5	14.3	21.2	0.0	31.2	18.3	0.0	42.0	58.8	0.0	25.1
LnGrp LOS	B	B	B	C		C	B		D	E		C
Approach Vol, veh/h		532			409			597			614	
Approach Delay, s/veh		17.8			31.0			40.8			34.9	
Approach LOS		B			C			D			C	

Timer - Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.9	32.6		42.4	7.7	34.9	9.1	33.3				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	5.0	32.0		33.0	5.0	32.0	5.0	23.0				
Max Q Clear Time (g_c+I1), s	4.9	26.8		14.0	3.0	18.9	4.2	19.0				
Green Ext Time (p_c), s	0.0	0.8		1.0	0.0	0.9	0.0	0.5				

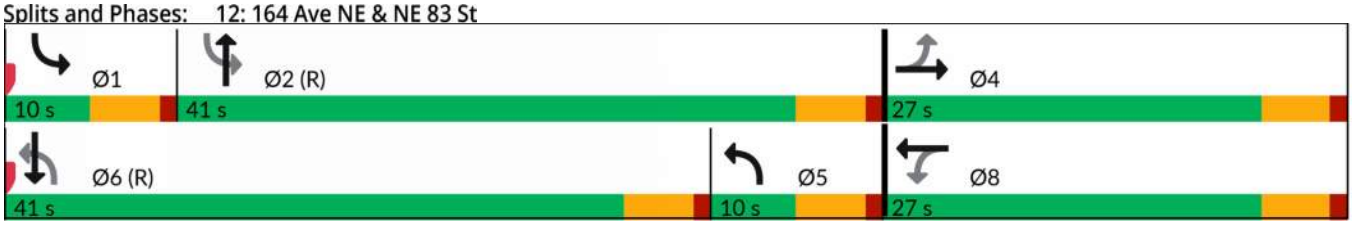
Intersection Summary		
HCM 7th Control Delay, s/veh		31.6
HCM 7th LOS		C

Lanes, Volumes, Timings
12: 164 Ave NE & NE 83 St 03/21/2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	210	68	24	117	38	63	497	47	68	370	17
Future Volume (vph)	40	210	68	24	117	38	63	497	47	68	370	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	200		0	200		0	200		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			28			28	
Link Distance (ft)		968			599			662			659	
Travel Time (s)		22.0			13.6			16.1			16.0	
Confl. Peds. (#/hr)	34		47	47		34	24		31	31		24
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	5%	5%	5%	1%	1%	1%	3%	3%	3%	1%	1%	1%
Mid-Block Traffic (%)		40%			20%			0%			0%	
Shared Lane Traffic (%)												
Turn Type	Perm	NA		Perm	NA		D.P+P	NA		D.P+P	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			6			2		
Detector Phase	4	4		8	8		6 5	2		2 1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	21.0	21.0		21.0	21.0		10.0	19.0		10.0	19.0	
Total Split (s)	27.0	27.0		27.0	27.0		10.0	41.0		10.0	41.0	
Total Split (%)	34.6%	34.6%		34.6%	34.6%		12.8%	52.6%		12.8%	52.6%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag							Lag	Lag		Lead	Lead	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	

Intersection Summary
Area Type: Other
Cycle Length: 78
Actuated Cycle Length: 78
Offset: 17 (22%), Referenced to phase 2:NBSB and 6:NBSB, Start of 1st Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 12: 164 Ave NE & NE 83 St



HCM 7th Signalized Intersection Summary
12: 164 Ave NE & NE 83 St 03/21/2025

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	210	68	24	117	38	63	497	47	68	370	17
Future Volume (veh/h)	40	210	68	24	117	38	63	497	47	68	370	17
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.93		0.89	0.96		0.89	1.00		0.97	0.99		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1826	1826	1885	1885	1885	1856	1856	1856	1885	1885	1885
Adj Flow Rate, veh/h	41	216	70	25	121	39	65	512	48	70	381	18
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	5	5	5	1	1	1	3	3	3	1	1	1
Cap, veh/h	247	277	90	146	287	92	628	900	84	639	823	39
Arrive On Green	0.07	0.07	0.07	0.22	0.22	0.22	0.26	1.00	1.00	0.05	0.46	0.46
Sat Flow, veh/h	1116	1278	414	1063	1322	426	1767	1666	156	1795	1782	84
Grp Volume(v), veh/h	41	0	286	25	0	160	65	0	560	70	0	399
Grp Sat Flow(s),veh/h/ln	1116	0	1692	1063	0	1747	1767	0	1822	1795	0	1867
Q Serve(g_s), s	2.8	0.0	13.0	1.8	0.0	6.2	0.0	0.0	0.0	1.3	0.0	11.4
Cycle Q Clear(g_c), s	8.9	0.0	13.0	14.7	0.0	6.2	0.0	0.0	0.0	1.3	0.0	11.4
Prop In Lane	1.00		0.24	1.00		0.24	1.00		0.09	1.00		0.05
Lane Grp Cap(c), veh/h	247	0	367	146	0	379	628	0	985	639	0	861
V/C Ratio(X)	0.17	0.00	0.78	0.17	0.00	0.42	0.10	0.00	0.57	0.11	0.00	0.46
Avail Cap(c_a), veh/h	319	0	477	215	0	493	628	0	985	664	0	861
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	0.91	0.00	0.91	0.99	0.00	0.99	0.85	0.00	0.85	0.74	0.00	0.74
Uniform Delay (d), s/veh	35.5	0.0	34.4	36.0	0.0	26.3	10.9	0.0	0.0	6.8	0.0	14.4
Incr Delay (d2), s/veh	0.1	0.0	4.0	0.2	0.0	0.3	0.0	0.0	2.0	0.0	0.0	1.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	6.2	0.5	0.0	2.5	0.5	0.0	0.6	0.4	0.0	4.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	35.6	0.0	38.3	36.2	0.0	26.6	10.9	0.0	2.0	6.8	0.0	15.7
LnGrp LOS	D		D	D		C	B		A	A		B
Approach Vol, veh/h		327			185			625			469	
Approach Delay, s/veh		38.0			27.9			3.0			14.4	
Approach LOS		D			C			A			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.9	47.2		21.9	15.1	41.0		21.9				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	5.0	36.0		22.0	5.0	36.0		22.0				
Max Q Clear Time (g_c+I1), s	3.3	2.0		15.0	2.0	13.4		16.7				
Green Ext Time (p_c), s	0.0	1.6		0.5	0.0	0.9		0.2				

Intersection Summary		
HCM 7th Control Delay, s/veh		16.3
HCM 7th LOS		B

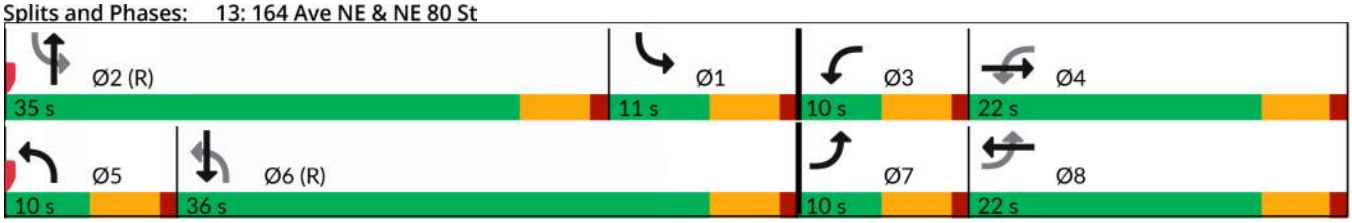
Lanes, Volumes, Timings
13: 164 Ave NE & NE 80 St 03/21/2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	75	161	21	34	193	56	23	361	61	109	362	68
Future Volume (vph)	75	161	21	34	193	56	23	361	61	109	362	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	140		0	150		0	100		0	200		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			28			28	
Link Distance (ft)		178			313			347			662	
Travel Time (s)		4.9			8.5			8.4			16.1	
Confl. Peds. (#/hr)	27		24	24		27	37		22	22		37
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	3%	3%	3%	3%	3%	3%
Shared Lane Traffic (%)												
Turn Type	D.P+P	NA		D.P+P	NA		D.P+P	NA		D.P+P	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	8			4			6			2		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	6.0		5.0	6.0	
Minimum Split (s)	10.0	17.0		10.0	18.0		10.0	18.0		10.0	19.0	
Total Split (s)	10.0	22.0		10.0	22.0		10.0	35.0		11.0	36.0	
Total Split (%)	12.8%	28.2%		12.8%	28.2%		12.8%	44.9%		14.1%	46.2%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lead		Lag	Lag	
Lead-Lag Optimize?	Yes	Yes			Yes			Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	

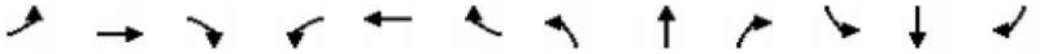
Intersection Summary

Area Type: Other
Cycle Length: 78
Actuated Cycle Length: 78
Offset: 18 (23%), Referenced to phase 2:NBSB and 6:NBSB, Start of 1st Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 13: 164 Ave NE & NE 80 St



HCM 7th Signalized Intersection Summary
13: 164 Ave NE & NE 80 St 03/21/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	75	161	21	34	193	56	23	361	61	109	362	68
Future Volume (veh/h)	75	161	21	34	193	56	23	361	61	109	362	68
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.98		0.93	0.97		0.92	0.98		0.95	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	81	173	23	37	208	60	25	388	66	117	389	73
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	1	1	1	1	1	3	3	3	3	3	3
Cap, veh/h	220	312	42	283	242	70	570	589	100	506	736	138
Arrive On Green	0.11	0.39	0.39	0.04	0.18	0.18	0.04	0.51	0.51	0.26	0.98	0.98
Sat Flow, veh/h	1795	1613	214	1795	1377	397	1767	1532	261	1767	1508	283
Grp Volume(v), veh/h	81	0	196	37	0	268	25	0	454	117	0	462
Grp Sat Flow(s),veh/h/ln	1795	0	1828	1795	0	1775	1767	0	1793	1767	0	1791
Q Serve(g_s), s	2.8	0.0	6.5	1.3	0.0	11.4	0.5	0.0	14.5	0.0	0.0	1.0
Cycle Q Clear(g_c), s	2.8	0.0	6.5	1.3	0.0	11.4	0.5	0.0	14.5	0.0	0.0	1.0
Prop In Lane	1.00		0.12	1.00		0.22	1.00		0.15	1.00		0.16
Lane Grp Cap(c), veh/h	220	0	354	283	0	312	570	0	690	506	0	874
V/C Ratio(X)	0.37	0.00	0.55	0.13	0.00	0.86	0.04	0.00	0.66	0.23	0.00	0.53
Avail Cap(c_a), veh/h	240	0	398	335	0	387	636	0	690	506	0	874
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.33	1.33	1.33	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.90	0.00	0.90	0.94	0.00	0.94
Uniform Delay (d), s/veh	23.8	0.0	21.3	24.0	0.0	31.2	9.2	0.0	15.3	16.8	0.0	0.5
Incr Delay (d2), s/veh	0.8	0.0	1.0	0.2	0.0	13.8	0.0	0.0	4.4	0.1	0.0	2.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	2.5	0.5	0.0	6.0	0.2	0.0	5.6	1.3	0.0	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	24.5	0.0	22.3	24.1	0.0	45.0	9.3	0.0	19.7	16.9	0.0	2.7
LnGrp LOS	C		C	C		D	A		B	B		A
Approach Vol, veh/h		277			305			479			579	
Approach Delay, s/veh		22.9			42.5			19.1			5.5	
Approach LOS		C			D			B			A	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.1	35.0	7.8	20.1	7.1	43.0	9.1	18.7
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	6.0	30.0	5.0	17.0	5.0	31.0	5.0	17.0
Max Q Clear Time (g_c+I1), s	2.0	16.5	3.3	8.5	2.5	3.0	4.8	13.4
Green Ext Time (p_c), s	0.1	1.3	0.0	0.4	0.0	1.6	0.0	0.3

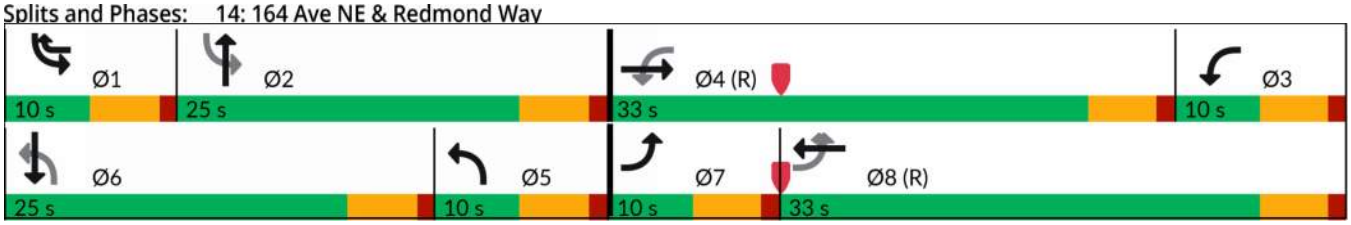
Intersection Summary	
HCM 7th Control Delay, s/veh	19.3
HCM 7th LOS	B

Lanes, Volumes, Timings
14: 164 Ave NE & Redmond Way 03/21/2025

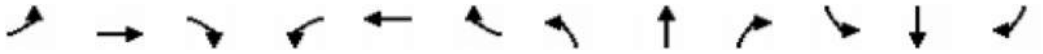
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	33	575	20	25	631	245	50	168	38	208	148	21
Future Volume (vph)	33	575	20	25	631	245	50	168	38	208	148	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125		0	250		0	70		0	150		150
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		314			714			325			347	
Travel Time (s)		7.1			16.2			7.4			7.9	
Confl. Peds. (#/hr)	56		39	39		56	61		51	51		61
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	2%	2%	2%	3%	3%	3%	1%	1%	1%	5%	5%	5%
Parking (#/hr)				0								
Shared Lane Traffic (%)												
Turn Type	D.P+P	NA		D.P+P	NA	pm+ov	D.P+P	NA		D.P+P	NA	
Protected Phases	7	4		3	8	1	5	2		1	6	
Permitted Phases	8			4		8	6			2		
Detector Phase	7	4		3	8	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	10.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	10.0	22.0		10.0	24.0	10.0	10.0	25.0		10.0	24.0	
Total Split (s)	10.0	33.0		10.0	33.0	10.0	10.0	25.0		10.0	25.0	
Total Split (%)	12.8%	42.3%		12.8%	42.3%	12.8%	12.8%	32.1%		12.8%	32.1%	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lead		Lag	Lag	Lead	Lag	Lag		Lead	Lead	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max		None	C-Max	None	None	None		None	None	

Intersection Summary
Area Type: CBD
Cycle Length: 78
Actuated Cycle Length: 78
Offset: 10 (13%), Referenced to phase 4:EBWB and 8:EBWB, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 14: 164 Ave NE & Redmond Way



HCM 7th Signalized Intersection Summary
14: 164 Ave NE & Redmond Way 03/21/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	33	575	20	25	631	245	50	168	38	208	148	21
Future Volume (veh/h)	33	575	20	25	631	245	50	168	38	208	148	21
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.92	1.00		0.93	0.95		0.86	0.92		0.92
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1683	1683	1683	1670	1670	1670	1697	1697	1697	1643	1643	1643
Adj Flow Rate, veh/h	34	593	21	26	651	253	52	173	39	214	153	22
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	3	3	3	1	1	1	5	5	5
Cap, veh/h	223	578	20	243	702	646	325	293	66	312	301	43
Arrive On Green	0.07	0.72	0.72	0.19	0.84	0.84	0.15	0.45	0.45	0.02	0.07	0.07
Sat Flow, veh/h	1603	1610	57	1590	1670	1321	1616	1298	293	1565	1386	199
Grp Volume(v), veh/h	34	0	614	26	651	253	52	0	212	214	0	175
Grp Sat Flow(s),veh/h/ln	1603	0	1667	1590	1670	1321	1616	0	1590	1565	0	1586
Q Serve(g_s), s	0.9	0.0	28.0	0.0	21.9	3.4	0.0	0.0	7.8	5.0	0.0	8.3
Cycle Q Clear(g_c), s	0.9	0.0	28.0	0.0	21.9	3.4	0.0	0.0	7.8	5.0	0.0	8.3
Prop In Lane	1.00		0.03	1.00		1.00	1.00		0.18	1.00		0.13
Lane Grp Cap(c), veh/h	223	0	599	243	702	646	325	0	358	312	0	344
V/C Ratio(X)	0.15	0.00	1.03	0.11	0.93	0.39	0.16	0.00	0.59	0.69	0.00	0.51
Avail Cap(c_a), veh/h	273	0	599	243	702	646	325	0	408	312	0	407
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.33	0.33	0.33
Upstream Filter(I)	0.77	0.00	0.77	0.82	0.82	0.82	0.72	0.00	0.72	0.88	0.00	0.88
Uniform Delay (d), s/veh	14.6	0.0	11.0	28.6	5.3	3.1	25.1	0.0	18.7	27.7	0.0	32.2
Incr Delay (d2), s/veh	0.2	0.0	39.0	0.2	17.4	1.5	0.2	0.0	1.3	5.5	0.0	1.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	9.9	0.4	5.3	0.9	0.8	0.0	2.4	2.1	0.0	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	14.9	0.0	50.0	28.7	22.7	4.5	25.3	0.0	20.0	33.2	0.0	33.2
LnGrp LOS	B		F	C	C	A	C		C	C		C
Approach Vol, veh/h		648			930			264			389	
Approach Delay, s/veh		48.2			17.9			21.1			33.2	
Approach LOS		D			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	22.6	12.4	33.0	10.7	21.9	7.6	37.8
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	5.0	20.0	5.0	28.0	5.0	20.0	5.0	28.0
Max Q Clear Time (g_c+I1), s	7.0	9.8	2.0	30.0	2.0	10.3	2.9	23.9
Green Ext Time (p_c), s	0.0	0.9	0.0	0.0	0.0	0.7	0.0	1.7

Intersection Summary	
HCM 7th Control Delay, s/veh	29.8
HCM 7th LOS	C

Lanes, Volumes, Timings
15: 164 Ave NE & Cleveland St 03/21/2025

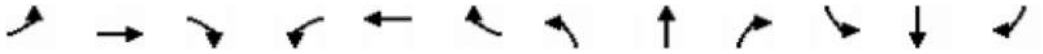
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	268	50	14	98	25	41	202	20	27	152	30
Future Volume (vph)	28	268	50	14	98	25	41	202	20	27	152	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	100		0	100		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		429			743			151			325	
Travel Time (s)		11.7			20.3			3.4			7.4	
Confl. Peds. (#/hr)	18		30	30		18	43		25	25		43
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	1%	1%	1%	2%	2%	2%
Parking (#/hr)	0	0	0									
Shared Lane Traffic (%)												
Turn Type	Perm	NA		Perm	NA		D.P+P	NA		D.P+P	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			6			2		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0		8.0	8.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	21.0	21.0		21.0	21.0		10.0	20.0		10.0	19.0	
Total Split (s)	43.0	43.0		43.0	43.0		10.0	25.0		10.0	25.0	
Total Split (%)	55.1%	55.1%		55.1%	55.1%		12.8%	32.1%		12.8%	32.1%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Lead/Lag							Lead	Lead		Lag	Lag	
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	

Intersection Summary
Area Type: CBD
Cycle Length: 78
Actuated Cycle Length: 78
Offset: 77 (99%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated

Splits and Phases: 15: 164 Ave NE & Cleveland St



HCM 7th Signalized Intersection Summary
15: 164 Ave NE & Cleveland St 03/21/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	28	268	50	14	98	25	41	202	20	27	152	30
Future Volume (veh/h)	28	268	50	14	98	25	41	202	20	27	152	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.98		0.97	1.00		0.97	0.93		0.88	0.95		0.87
Parking Bus, Adj	1.00	1.00	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1697	1697	1697	1683	1683	1683	1697	1697	1697	1683	1683	1683
Adj Flow Rate, veh/h	30	288	54	15	105	27	44	217	22	29	163	32
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	1	1	2	2	2	1	1	1	2	2	2
Cap, veh/h	90	702	126	111	694	170	218	267	27	178	225	44
Arrive On Green	0.60	0.60	0.60	1.00	1.00	1.00	0.04	0.18	0.18	0.06	0.34	0.34
Sat Flow, veh/h	67	1171	210	100	1159	283	1616	1494	151	1603	1330	261
Grp Volume(v), veh/h	372	0	0	147	0	0	44	0	239	29	0	195
Grp Sat Flow(s),veh/h/ln	1448	0	0	1543	0	0	1616	0	1645	1603	0	1592
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	1.7	0.0	10.9	0.0	0.0	8.4
Cycle Q Clear(g_c), s	10.5	0.0	0.0	0.0	0.0	0.0	1.7	0.0	10.9	0.0	0.0	8.4
Prop In Lane	0.08		0.15	0.10		0.18	1.00		0.09	1.00		0.16
Lane Grp Cap(c), veh/h	917	0	0	975	0	0	218	0	294	178	0	270
V/C Ratio(X)	0.41	0.00	0.00	0.15	0.00	0.00	0.20	0.00	0.81	0.16	0.00	0.72
Avail Cap(c_a), veh/h	917	0	0	975	0	0	258	0	422	233	0	408
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	0.97	0.00	0.00	0.99	0.00	0.00	1.00	0.00	1.00	0.93	0.00	0.93
Uniform Delay (d), s/veh	8.4	0.0	0.0	0.0	0.0	0.0	25.6	0.0	30.8	33.7	0.0	24.2
Incr Delay (d2), s/veh	1.3	0.0	0.0	0.3	0.0	0.0	0.4	0.0	7.8	0.4	0.0	3.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	0.0	0.0	0.1	0.0	0.0	0.7	0.0	4.8	0.5	0.0	2.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	9.7	0.0	0.0	0.3	0.0	0.0	26.0	0.0	38.5	34.1	0.0	27.6
LnGrp LOS	A			A			C		D	C		C
Approach Vol, veh/h		372			147			283			224	
Approach Delay, s/veh		9.7			0.3			36.6			28.4	
Approach LOS		A			A			D			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.3	19.0		51.7	8.1	18.2		51.7				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	5.0	20.0		38.0	5.0	20.0		38.0				
Max Q Clear Time (g_c+I1), s	2.0	12.9		12.5	3.7	10.4		2.0				
Green Ext Time (p_c), s	0.0	0.5		1.6	0.0	0.5		0.6				

Intersection Summary		
HCM 7th Control Delay, s/veh	19.9	
HCM 7th LOS	B	

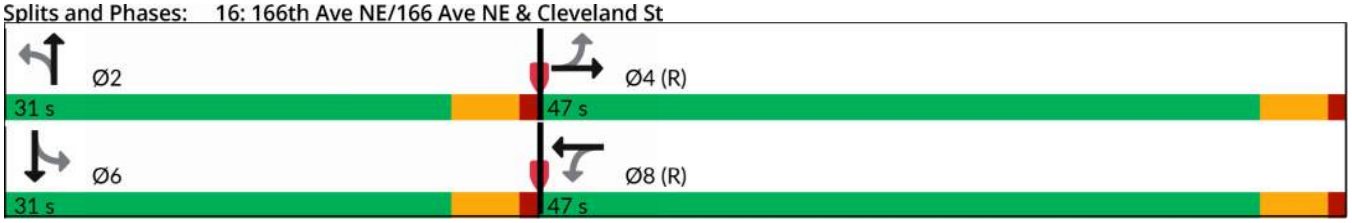
Lanes, Volumes, Timings
16: 166th Ave NE/166 Ave NE & Cleveland St 03/21/2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	47	250	27	37	114	26	16	185	102	7	88	11
Future Volume (vph)	47	250	27	37	114	26	16	185	102	7	88	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		200	0		0	100		125	160		0
Storage Lanes	0		0	0		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			25			30	
Link Distance (ft)		743			556			226			372	
Travel Time (s)		20.3			15.2			6.2			8.5	
Confl. Peds. (#/hr)	31		1	1		31	4		79	79		4
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Shared Lane Traffic (%)												
Turn Type	Perm	NA		Perm	NA		Perm	NA	Free	Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		Free	6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	22.0	22.0		22.0	22.0		22.0	22.0		22.0	22.0	
Total Split (s)	47.0	47.0		47.0	47.0		31.0	31.0		31.0	31.0	
Total Split (%)	60.3%	60.3%		60.3%	60.3%		39.7%	39.7%		39.7%	39.7%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max		C-Max	C-Max		Ped	Ped		Ped	Ped	

Intersection Summary

Area Type: CBD
Cycle Length: 78
Actuated Cycle Length: 78
Offset: 8 (10%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
Natural Cycle: 45
Control Type: Actuated-Coordinated

Splits and Phases: 16: 166th Ave NE/166 Ave NE & Cleveland St



HCM 7th Signalized Intersection Summary
16: 166th Ave NE/166 Ave NE & Cleveland St 03/21/2025

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	250	27	37	114	26	16	185	102	7	88	11
Future Volume (veh/h)	47	250	27	37	114	26	16	185	102	7	88	11
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.99		0.98	0.98		0.98	0.85		1.00	0.89		0.81
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1710	1710	1710	1697	1697	1697	1697	1697	1697	1697	1697	1697
Adj Flow Rate, veh/h	49	263	28	39	120	27	17	195	0	7	93	12
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	1	1	1	1	1	1	1	1	1
Cap, veh/h	169	854	87	226	660	141	254	351		192	295	38
Arrive On Green	1.00	1.00	1.00	0.67	0.67	0.67	0.21	0.21	0.00	0.41	0.41	0.41
Sat Flow, veh/h	175	1285	131	256	993	212	997	1697	1438	960	1428	184
Grp Volume(v), veh/h	340	0	0	186	0	0	17	195	0	7	0	105
Grp Sat Flow(s),veh/h/ln	1590	0	0	1461	0	0	997	1697	1438	960	0	1612
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	1.1	8.0	0.0	0.5	0.0	3.4
Cycle Q Clear(g_c), s	0.0	0.0	0.0	3.3	0.0	0.0	4.6	8.0	0.0	8.5	0.0	3.4
Prop In Lane	0.14		0.08	0.21		0.15	1.00		1.00	1.00		0.11
Lane Grp Cap(c), veh/h	1111	0	0	1028	0	0	254	351		192	0	333
V/C Ratio(X)	0.31	0.00	0.00	0.18	0.00	0.00	0.07	0.56		0.04	0.00	0.32
Avail Cap(c_a), veh/h	1111	0	0	1028	0	0	381	566		313	0	537
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	0.92	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.98	0.00	0.98
Uniform Delay (d), s/veh	0.0	0.0	0.0	4.9	0.0	0.0	27.8	27.7	0.0	23.9	0.0	19.2
Incr Delay (d2), s/veh	0.7	0.0	0.0	0.4	0.0	0.0	0.4	4.9	0.0	0.3	0.0	1.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.0	1.1	0.0	0.0	0.3	3.7	0.0	0.1	0.0	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.7	0.0	0.0	5.3	0.0	0.0	28.2	32.7	0.0	24.2	0.0	21.1
LnGrp LOS	A			A			C	C		C		C
Approach Vol, veh/h		340			186			212			112	
Approach Delay, s/veh		0.7			5.3			32.3			21.3	
Approach LOS		A			A			C			C	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	21.1	56.9	21.1	56.9
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	26.0	42.0	26.0	42.0
Max Q Clear Time (g_c+I1), s	10.0	2.0	10.5	5.3
Green Ext Time (p_c), s	1.9	4.8	0.8	2.4

Intersection Summary	
HCM 7th Control Delay, s/veh	12.3
HCM 7th LOS	B

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings
17: 170 Ave NE & NE 76 St 03/21/2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	157	2	15	8	5	52	5	939	2	17	514	107
Future Volume (vph)	157	2	15	8	5	52	5	939	2	17	514	107
Satd. Flow (prot)	0	1772	0	0	1658	0	1787	3573	0	1787	3432	0
Flt Permitted		0.699			0.959		0.406			0.178		
Satd. Flow (perm)	0	1288	0	0	1594	0	744	3573	0	335	3432	0
Satd. Flow (RTOR)		6			54						45	
Confl. Peds. (#/hr)	5		25	25		5	21		31	31		21
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	1%	1%	1%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	182	0	0	67	0	5	980	0	18	646	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases	7	4			8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		8	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		8.0	8.0		5.0	8.0	
Minimum Split (s)	10.0	24.0		24.0	24.0		18.0	18.0		10.0	19.0	
Total Split (s)	10.0	34.0		24.0	24.0		41.0	41.0		10.0	51.0	
Total Split (%)	11.8%	40.0%		28.2%	28.2%		48.2%	48.2%		11.8%	60.0%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lead			Lag	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		Min	Min		None	Min	
Act Effct Green (s)		14.6			14.6		26.2	26.2		27.5	27.5	
Actuated g/C Ratio		0.28			0.28		0.50	0.50		0.52	0.52	
v/c Ratio		0.51			0.14		0.01	0.55		0.06	0.36	
Control Delay (s/veh)		22.2			8.1		10.2	12.1		7.6	7.9	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		22.2			8.1		10.2	12.1		7.6	7.9	
LOS		C			A		B	B		A	A	
Approach Delay (s/veh)		22.2			8.1			12.1			7.9	
Approach LOS		C			A			B			A	

Intersection Summary	
Cycle Length: 85	
Actuated Cycle Length: 52.9	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.55	
Intersection Signal Delay (s/veh): 11.4	Intersection LOS: B
Intersection Capacity Utilization 50.9%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 17: 170 Ave NE & NE 76 St



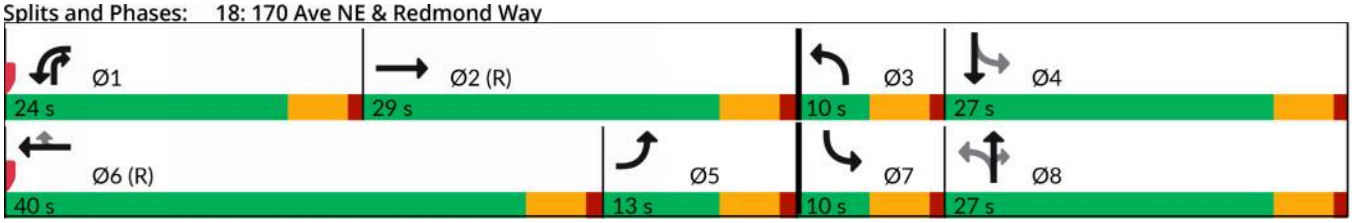
Lanes, Volumes, Timings
18: 170 Ave NE & Redmond Way 03/21/2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	62	842	84	388	724	248	29	382	740	148	171	16
Future Volume (vph)	62	842	84	388	724	248	29	382	740	148	171	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125		0	250		0	125		0	100		0
Storage Lanes	1		0	2		1	1		1	1		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		585			661			498			439	
Travel Time (s)		13.3			15.0			11.3			10.0	
Confl. Peds. (#/hr)	20		6	6		20	15		27	27		15
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Shared Lane Traffic (%)												
Turn Type	Prot	NA		Prot	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA	
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases						6	8		8	4		
Detector Phase	5	2		1	6	6	3 8	8	1	7 4	4	
Switch Phase												
Minimum Initial (s)	5.0	8.0		6.0	8.0	8.0	5.0	5.0	6.0	5.0	5.0	
Minimum Split (s)	10.0	24.0		11.0	23.0	23.0	10.0	27.0	11.0	10.0	27.0	
Total Split (s)	13.0	29.0		24.0	40.0	40.0	10.0	27.0	24.0	10.0	27.0	
Total Split (%)	14.4%	32.2%		26.7%	44.4%	44.4%	11.1%	30.0%	26.7%	11.1%	30.0%	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lag	Lag		Lead	Lead	Lead	Lead	Lag	Lead	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes			Yes			
Recall Mode	None	C-Max		None	C-Max	C-Max	None	None	None	None	None	

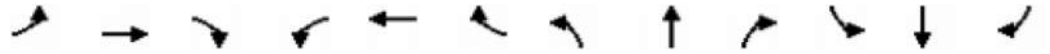
Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 54 (60%), Referenced to phase 2:EBT and 6:WBT, Start of 1st Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 18: 170 Ave NE & Redmond Way



HCM 7th Signalized Intersection Summary
18: 170 Ave NE & Redmond Way 03/21/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	62	842	84	388	724	248	29	382	740	148	171	16
Future Volume (veh/h)	62	842	84	388	724	248	29	382	740	148	171	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	0.98		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	65	886	88	408	762	261	31	402	779	156	180	17
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	160	1090	108	508	1393	605	332	461	611	199	457	43
Arrive On Green	0.18	0.66	0.66	0.05	0.13	0.13	0.03	0.24	0.24	0.02	0.09	0.09
Sat Flow, veh/h	1795	3284	326	3483	3582	1557	1795	1885	1545	1795	1691	160
Grp Volume(v), veh/h	65	483	491	408	762	261	31	402	779	156	0	197
Grp Sat Flow(s),veh/h/ln	1795	1791	1819	1742	1791	1557	1795	1885	1545	1795	0	1851
Q Serve(g_s), s	2.9	17.7	17.7	10.4	17.9	10.1	1.1	18.4	22.0	5.0	0.0	9.0
Cycle Q Clear(g_c), s	2.9	17.7	17.7	10.4	17.9	10.1	1.1	18.4	22.0	5.0	0.0	9.0
Prop In Lane	1.00		0.18	1.00		1.00	1.00		1.00	1.00		0.09
Lane Grp Cap(c), veh/h	160	594	604	508	1393	605	332	461	611	199	0	500
V/C Ratio(X)	0.41	0.81	0.81	0.80	0.55	0.43	0.09	0.87	1.28	0.79	0.00	0.39
Avail Cap(c_a), veh/h	160	594	604	735	1393	605	378	461	611	199	0	500
HCM Platoon Ratio	2.00	2.00	2.00	0.33	0.33	0.33	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	0.97	0.97	0.97	0.57	0.57	0.57	0.81	0.81	0.81	0.43	0.00	0.43
Uniform Delay (d), s/veh	34.9	13.1	13.1	41.6	31.8	15.9	24.4	32.7	27.6	29.9	0.0	34.0
Incr Delay (d2), s/veh	0.6	11.3	11.1	1.5	0.9	1.3	0.0	13.4	134.2	8.0	0.0	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	5.7	5.8	4.9	8.7	4.2	0.5	9.9	35.2	1.4	0.0	4.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	35.5	24.4	24.2	43.0	32.7	17.2	24.4	46.1	161.8	37.9	0.0	34.1
LnGrp LOS	D	C	C	D	C	B	C	D	F	D		C
Approach Vol, veh/h		1039			1431			1212			353	
Approach Delay, s/veh		25.0			32.8			119.9			35.8	
Approach LOS		C			C			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.1	34.9	7.7	29.3	13.0	40.0	10.0	27.0
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	19.0	24.0	5.0	22.0	8.0	35.0	5.0	22.0
Max Q Clear Time (g_c+I1), s	12.4	19.7	3.1	11.0	4.9	19.9	7.0	24.0
Green Ext Time (p_c), s	0.7	1.8	0.0	0.3	0.0	4.5	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	57.2
HCM 7th LOS	E

Lanes, Volumes, Timings
19: Bear Creek Crossing & Redmond Way 03/21/2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	98	1540	9	18	1132	155	41	17	51	128	18	57
Future Volume (vph)	98	1540	9	18	1132	155	41	17	51	128	18	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	175		150	0		0	0		0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		661			588			140			177	
Travel Time (s)		15.0			13.4			3.8			4.8	
Confl. Peds. (#/hr)	20		2	2		20	2		20	20		2
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	2%	2%	2%
Shared Lane Traffic (%)												
Turn Type	Prot	NA		Prot	NA	Perm	D.P+P	NA		D.P+P	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases						6	4			8		
Detector Phase	5	2		1	6	6	3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	8.0		6.0	8.0	8.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	10.0	24.0		11.0	23.0	23.0	10.0	27.0		10.0	27.0	
Total Split (s)	13.0	42.0		11.0	40.0	40.0	10.0	27.0		10.0	27.0	
Total Split (%)	14.4%	46.7%		12.2%	44.4%	44.4%	11.1%	30.0%		11.1%	30.0%	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lead		Lag	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes				Yes	Yes	
Recall Mode	None	C-Max		None	C-Max	C-Max	None	None		None	Max	

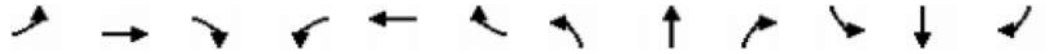
Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 14 (16%), Referenced to phase 2:EBT and 6:WBT, Start of 1st Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 19: Bear Creek Crossing & Redmond Way



HCM 7th Signalized Intersection Summary
19: Bear Creek Crossing & Redmond Way 03/21/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	98	1540	9	18	1132	155	41	17	51	128	18	57
Future Volume (veh/h)	98	1540	9	18	1132	155	41	17	51	128	18	57
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	0.98		0.97	0.98		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1900	1900	1900	1870	1870	1870
Adj Flow Rate, veh/h	101	1588	9	19	1167	160	42	18	53	132	19	59
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	1	1	1	1	1	0	0	0	2	2	2
Cap, veh/h	129	1501	9	155	1523	663	416	94	275	426	96	298
Arrive On Green	0.02	0.14	0.14	0.03	0.14	0.14	0.04	0.23	0.23	0.06	0.24	0.24
Sat Flow, veh/h	1795	3651	21	1795	3582	1560	1810	416	1224	1781	393	1221
Grp Volume(v), veh/h	101	779	818	19	1167	160	42	0	71	132	0	78
Grp Sat Flow(s),veh/h/ln	1795	1791	1881	1795	1791	1560	1810	0	1640	1781	0	1614
Q Serve(g_s), s	5.0	37.0	37.0	0.9	28.2	8.2	1.5	0.0	3.2	5.0	0.0	3.5
Cycle Q Clear(g_c), s	5.0	37.0	37.0	0.9	28.2	8.2	1.5	0.0	3.2	5.0	0.0	3.5
Prop In Lane	1.00		0.01	1.00		1.00	1.00		0.75	1.00		0.76
Lane Grp Cap(c), veh/h	129	736	773	155	1523	663	416	0	369	426	0	395
V/C Ratio(X)	0.78	1.06	1.06	0.12	0.77	0.24	0.10	0.00	0.19	0.31	0.00	0.20
Avail Cap(c_a), veh/h	160	736	773	155	1523	663	451	0	401	426	0	395
HCM Platoon Ratio	0.33	0.33	0.33	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.10	0.10	0.10	0.73	0.73	0.73	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	43.2	38.9	38.9	40.4	34.4	25.8	23.9	0.0	28.3	25.3	0.0	27.0
Incr Delay (d2), s/veh	1.9	29.8	30.0	0.2	2.8	0.6	0.1	0.0	0.2	0.3	0.0	1.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	23.7	24.9	0.4	14.0	3.4	0.7	0.0	1.3	2.2	0.0	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	45.1	68.7	68.9	40.6	37.1	26.4	24.0	0.0	28.4	25.6	0.0	28.1
LnGrp LOS	D	F	F	D	D	C	C		C	C		C
Approach Vol, veh/h		1698			1346			113			210	
Approach Delay, s/veh		67.4			35.9			26.8			26.5	
Approach LOS		E			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.7	42.0	8.3	27.0	11.5	43.3	10.0	25.3
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	6.0	37.0	5.0	22.0	8.0	35.0	5.0	22.0
Max Q Clear Time (g_c+I1), s	2.9	39.0	3.5	5.5	7.0	30.2	7.0	5.2
Green Ext Time (p_c), s	0.0	0.0	0.0	0.2	0.0	2.8	0.0	0.2

Intersection Summary	
HCM 7th Control Delay, s/veh	50.9
HCM 7th LOS	D

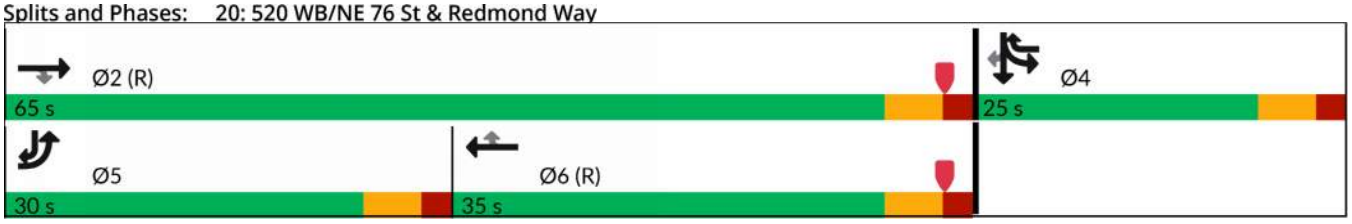
Lanes, Volumes, Timings
20: 520 WB/NE 76 St & Redmond Way 03/21/2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	426	1048	253	0	889	366	0	0	0	68	364	416
Future Volume (vph)	426	1048	253	0	889	366	0	0	0	68	364	416
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	220		110	0		0	0		0	400		350
Storage Lanes	2		1	1		1	0		0	1		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		45			45			25			25	
Link Distance (ft)		588			476			347			459	
Travel Time (s)		8.9			7.2			9.5			12.5	
Confl. Peds. (#/hr)	16					16						
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	2%	2%	2%
Shared Lane Traffic (%)												
Turn Type	Prot	NA	Perm		NA	pm+ov				Split	NA	pm+ov
Protected Phases	5	2			6	4				4	4	5
Permitted Phases			2			6						4
Detector Phase	5	2	2		6	4				4	4	5
Switch Phase												
Minimum Initial (s)	5.0	7.0	7.0		7.0	5.0				5.0	5.0	5.0
Minimum Split (s)	10.9	12.9	12.9		37.9	10.9				10.9	10.9	10.9
Total Split (s)	30.0	65.0	65.0		35.0	25.0				25.0	25.0	30.0
Total Split (%)	33.3%	72.2%	72.2%		38.9%	27.8%				27.8%	27.8%	33.3%
Yellow Time (s)	3.9	3.9	3.9		3.9	3.9				3.9	3.9	3.9
All-Red Time (s)	2.0	2.0	2.0		2.0	2.0				2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0				0.0	0.0	0.0
Total Lost Time (s)	5.9	5.9	5.9		5.9	5.9				5.9	5.9	5.9
Lead/Lag	Lead				Lag							Lead
Lead-Lag Optimize?												
Recall Mode	None	C-Min	C-Min		C-Min	None				None	None	None

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 61 (68%), Referenced to phase 2:EBT and 6:WBT, Start of Red
Natural Cycle: 80
Control Type: Actuated-Coordinated

Splits and Phases: 20: 520 WB/NE 76 St & Redmond Way



HCM 7th Signalized Intersection Summary
20: 520 WB/NE 76 St & Redmond Way 03/21/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	426	1048	253	0	889	366	0	0	0	68	364	416
Future Volume (veh/h)	426	1048	253	0	889	366	0	0	0	68	364	416
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	0	1885	1885				1870	1870	1870
Adj Flow Rate, veh/h	439	1080	261	0	916	377				70	375	429
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97				0.97	0.97	0.97
Percent Heavy Veh, %	1	1	1	0	1	1				2	2	2
Cap, veh/h	557	2352	1041	0	1545	1015				378	397	590
Arrive On Green	0.16	0.66	0.66	0.00	0.86	0.86				0.21	0.21	0.21
Sat Flow, veh/h	3483	3582	1586	0	3676	1568				1781	1870	1585
Grp Volume(v), veh/h	439	1080	261	0	916	377				70	375	429
Grp Sat Flow(s),veh/h/ln	1742	1791	1586	0	1791	1568				1781	1870	1585
Q Serve(g_s), s	10.9	13.3	6.1	0.0	6.5	3.6				2.9	17.8	19.1
Cycle Q Clear(g_c), s	10.9	13.3	6.1	0.0	6.5	3.6				2.9	17.8	19.1
Prop In Lane	1.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	557	2352	1041	0	1545	1015				378	397	590
V/C Ratio(X)	0.79	0.46	0.25	0.00	0.59	0.37				0.19	0.94	0.73
Avail Cap(c_a), veh/h	933	2352	1041	0	1545	1015				378	397	590
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00				1.00	1.00	1.00
Upstream Filter(I)	0.36	0.36	0.36	0.00	0.80	0.80				1.00	1.00	1.00
Uniform Delay (d), s/veh	36.3	7.6	6.3	0.0	4.0	1.5				29.1	34.9	24.3
Incr Delay (d2), s/veh	0.9	0.2	0.2	0.0	1.3	0.8				0.2	31.3	4.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	4.0	1.6	0.0	1.5	1.3				1.3	11.4	18.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	37.3	7.8	6.6	0.0	5.3	2.4				29.3	66.3	28.8
LnGrp LOS	D	A	A		A	A				C	E	C
Approach Vol, veh/h		1780			1293						874	
Approach Delay, s/veh		14.9			4.5						44.9	
Approach LOS		B			A						D	

Timer - Assigned Phs	2	4	5	6
Phs Duration (G+Y+Rc), s	65.0	25.0	20.3	44.7
Change Period (Y+Rc), s	5.9	5.9	5.9	5.9
Max Green Setting (Gmax), s	59.1	19.1	24.1	29.1
Max Q Clear Time (g_c+I1), s	15.3	21.1	12.9	8.5
Green Ext Time (p_c), s	12.7	0.0	1.5	9.1

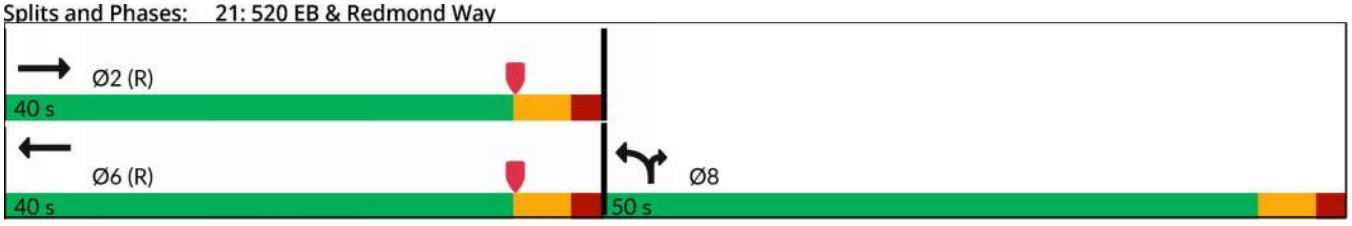
Intersection Summary	
HCM 7th Control Delay, s/veh	18.1
HCM 7th LOS	B

Notes
User approved pedestrian interval to be less than phase max green.
User approved changes to right turn type.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1116	0	0	867	409	1311
Future Volume (vph)	1116	0	0	867	409	1311
Satd. Flow (prot)	5136	0	0	3574	3467	2814
Flt Permitted					0.950	
Satd. Flow (perm)	5136	0	0	3574	3467	2814
Satd. Flow (RTOR)						27
Confl. Peds. (#/hr)		8	8			16
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1163	0	0	903	426	1366
Turn Type	NA			NA	Prot	Prot
Protected Phases	2			6	8	8
Permitted Phases						
Detector Phase	2			6	8	8
Switch Phase						
Minimum Initial (s)	10.0			10.0	5.0	5.0
Minimum Split (s)	37.9			15.9	37.9	37.9
Total Split (s)	40.0			40.0	50.0	50.0
Total Split (%)	44.4%			44.4%	55.6%	55.6%
Yellow Time (s)	3.9			3.9	3.9	3.9
All-Red Time (s)	2.0			2.0	2.0	2.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	5.9			5.9	5.9	5.9
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Min			C-Min	None	None
Act Effct Green (s)	31.7			31.7	46.5	46.5
Actuated g/C Ratio	0.35			0.35	0.52	0.52
v/c Ratio	0.64			0.72	0.24	0.93
Control Delay (s/veh)	14.4			25.9	12.7	33.4
Queue Delay	0.0			0.0	0.0	0.0
Total Delay (s/veh)	14.4			25.9	12.7	33.4
LOS	B			C	B	C
Approach Delay (s/veh)	14.4			25.9	28.4	
Approach LOS	B			C	C	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 61 (68%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay (s/veh): 23.6	Intersection LOS: C
Intersection Capacity Utilization 83.9%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 21: 520 EB & Redmond Way



Lanes, Volumes, Timings
22: 164 Ave NE & NE 76 St 03/21/2025



Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Volume (vph)	2	50	158	34	1	21	90	95	2	47	142	43
Future Volume (vph)	2	50	158	34	1	21	90	95	2	47	142	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)			25				25				25	
Link Distance (ft)			539				724				311	
Travel Time (s)			14.7				19.7				8.5	
Confl. Peds. (#/hr)	122	1		84	7	84		1	84	122		7
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	1%	1%	1%	1%	0%	0%	0%	0%	2%	2%	2%	2%
Shared Lane Traffic (%)												
Sign Control			Yield				Yield				Yield	

Intersection Summary	
Area Type:	Other
Control Type: Roundabout	



Lane Group	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Volume (vph)	3	72	113	26
Future Volume (vph)	3	72	113	26
Ideal Flow (vphpl)	1900	1900	1900	1900
Link Speed (mph)			25	
Link Distance (ft)			149	
Travel Time (s)			4.1	
Confl. Peds. (#/hr)	1	7		122
Peak Hour Factor	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	3%	3%	3%	3%
Shared Lane Traffic (%)				
Sign Control			Yield	

Intersection Summary

Intersection	
Intersection Delay, s/veh	6.2
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	290	246	278	256
Demand Flow Rate, veh/h	293	246	283	264
Vehicles Circulating, veh/h	260	298	347	194
Vehicles Exiting, veh/h	198	332	206	350
Ped Vol Crossing Leg, #/h	122	7	84	1
Ped Cap Adj	0.977	0.999	0.988	1.000
Approach Delay, s/veh	6.3	5.9	6.9	5.4
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
A (Intercept)	1380	1380	1380	1380
B (Slope)	1.02e-3	1.02e-3	1.02e-3	1.02e-3
Entry Flow, veh/h	293	246	283	264
Cap Entry Lane, veh/h	1058	1018	969	1132
Entry HV Adj Factor	0.990	1.000	0.981	0.969
Flow Entry, veh/h	290	246	278	256
Cap Entry, veh/h	1024	1017	939	1097
V/C Ratio	0.283	0.242	0.296	0.233
Control Delay, s/veh	6.3	5.9	6.9	5.4
LOS	A	A	A	A
95th %tile Queue, veh	1	1	1	1

Lanes, Volumes, Timings
23: 166th Ave NE & NE 76 St 03/21/2025



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	114	159	43	26	82	70	23	118	20	19	88	47
Future Volume (vph)	114	159	43	26	82	70	23	118	20	19	88	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		0	0		50
Storage Lanes	0		0	0		0	0		0	0		1
Taper Length (ft)	25			25			25			25		
Link Speed (mph)		25			25			10			10	
Link Distance (ft)		724			1313			308			226	
Travel Time (s)		19.7			35.8			21.0			15.4	
Confl. Peds. (#/hr)	5		49	49		5	9		72	72		9
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	0%	0%	0%
Parking (#/hr)	0	0	0				0	0	0			
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Intersection Delay, s/veh	11.3
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	114	159	43	26	82	70	23	118	20	19	88	47
Future Vol, veh/h	114	159	43	26	82	70	23	118	20	19	88	47
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	0	0	0
Mvmt Flow	121	169	46	28	87	74	24	126	21	20	94	50
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	1
HCM Control Delay, s/veh	12.9	10.2	10.8	9.9
HCM LOS	B	B	B	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	14%	36%	15%	18%	0%
Vol Thru, %	73%	50%	46%	82%	0%
Vol Right, %	12%	14%	39%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	161	316	178	107	47
LT Vol	23	114	26	19	0
Through Vol	118	159	82	88	0
RT Vol	20	43	70	0	47
Lane Flow Rate	171	336	189	114	50
Geometry Grp	4a	2	2	5	5
Degree of Util (X)	0.269	0.482	0.273	0.197	0.076
Departure Headway (Hd)	5.66	5.162	5.193	6.244	5.443
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	634	699	691	575	657
Service Time	3.702	3.194	3.232	3.987	3.185
HCM Lane V/C Ratio	0.27	0.481	0.274	0.198	0.076
HCM Control Delay, s/veh	10.8	12.9	10.2	10.5	8.6
HCM Lane LOS	B	B	B	B	A
HCM 95th-tile Q	1.1	2.6	1.1	0.7	0.2

Lanes, Volumes, Timings
24: 164th Ave NE & NE 74th St 03/21/2025



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	82	49	93	92	96	70
Future Volume (vph)	82	49	93	92	96	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	10			10	10	
Link Distance (ft)	321			415	239	
Travel Time (s)	21.9			28.3	16.3	
Confl. Peds. (#/hr)	75	214	36			36
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	0%	0%	0%	0%	1%	1%
Parking (#/hr)	0	0	0	0		
Shared Lane Traffic (%)						
Sign Control	Stop			Stop	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Intersection Delay, s/veh	8.9
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	82	49	93	92	96	70
Future Vol, veh/h	82	49	93	92	96	70
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles, %	0	0	0	0	1	1
Mvmt Flow	92	55	104	103	108	79
Number of Lanes	1	0	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay, s/veh	8.8	9.2	8.5
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	50%	63%	0%
Vol Thru, %	50%	0%	58%
Vol Right, %	0%	37%	42%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	185	131	166
LT Vol	93	82	0
Through Vol	92	0	96
RT Vol	0	49	70
Lane Flow Rate	208	147	187
Geometry Grp	1	1	1
Degree of Util (X)	0.263	0.191	0.22
Departure Headway (Hd)	4.555	4.673	4.255
Convergence, Y/N	Yes	Yes	Yes
Cap	790	767	843
Service Time	2.579	2.704	2.28
HCM Lane V/C Ratio	0.263	0.192	0.222
HCM Control Delay, s/veh	9.2	8.8	8.5
HCM Lane LOS	A	A	A
HCM 95th-tile Q	1.1	0.7	0.8

Lanes, Volumes, Timings
25: 166th Ave NE/166th Ave NE & NE 74th St 03/21/2025



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	53	42	103	45	44	89
Future Volume (vph)	53	42	103	45	44	89
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	10		10			10
Link Distance (ft)	375		216			226
Travel Time (s)	25.6		14.7			15.4
Confl. Peds. (#/hr)	53	105		34	34	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	1%	0%	0%	3%	3%
Parking (#/hr)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Sign Control	Stop		Stop			Stop

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Intersection Delay, s/veh	8.2
Intersection LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	53	42	103	45	44	89
Future Vol, veh/h	53	42	103	45	44	89
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	1	1	0	0	3	3
Mvmt Flow	58	46	112	49	48	97
Number of Lanes	1	0	1	0	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay, s/veh	8.1	8.1	8.4
HCM LOS	A	A	A

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	56%	33%
Vol Thru, %	70%	0%	67%
Vol Right, %	30%	44%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	148	95	133
LT Vol	0	53	44
Through Vol	103	0	89
RT Vol	45	42	0
Lane Flow Rate	161	103	145
Geometry Grp	1	1	1
Degree of Util (X)	0.184	0.127	0.178
Departure Headway (Hd)	4.113	4.431	4.431
Convergence, Y/N	Yes	Yes	Yes
Cap	875	811	815
Service Time	2.125	2.447	2.431
HCM Lane V/C Ratio	0.184	0.127	0.178
HCM Control Delay, s/veh	8.1	8.1	8.4
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.7	0.4	0.6

Lanes, Volumes, Timings
26: Bear Creek Pkwy & 164th Ave NE 03/21/2025



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	128	846	516	33	66	94
Future Volume (vph)	128	846	516	33	66	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100			150	0	125
Storage Lanes	1			1	1	1
Taper Length (ft)	25				25	
Link Speed (mph)		30	30		10	
Link Distance (ft)		500	450		401	
Travel Time (s)		11.4	10.2		27.3	
Confl. Peds. (#/hr)	12			12		18
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	1%	1%	2%	2%	2%	2%
Parking (#/hr)		0				
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	128	846	516	33	66	94
Future Vol, veh/h	128	846	516	33	66	94
Conflicting Peds, #/hr	12	0	0	12	0	18
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	150	0	125
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	1	1	2	2	2	2
Mvmt Flow	133	881	538	34	69	98

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	584	0	-	0	1697	568
Stage 1	-	-	-	-	550	-
Stage 2	-	-	-	-	1148	-
Critical Hdwy	4.11	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.209	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	996	-	-	-	102	523
Stage 1	-	-	-	-	578	-
Stage 2	-	-	-	-	302	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	986	-	-	-	86	510
Mov Cap-2 Maneuver	-	-	-	-	207	-
Stage 1	-	-	-	-	495	-
Stage 2	-	-	-	-	299	-

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	1.21	0	20.81
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	986	-	-	-	207	510
HCM Lane V/C Ratio	0.135	-	-	-	0.333	0.192
HCM Ctrl Dly (s/v)	9.2	-	-	-	30.9	13.7
HCM Lane LOS	A	-	-	-	D	B
HCM 95th %tile Q(veh)	0.5	-	-	-	1.4	0.7

Lanes, Volumes, Timings
27: Bear Creek Pkwy & 166th Ave NE 03/21/2025



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	84	829	432	71	73	117
Future Volume (vph)	84	829	432	71	73	117
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)		-1%	1%		-1%	
Storage Length (ft)	200			150	0	150
Storage Lanes	1			1	1	1
Taper Length (ft)	25				25	
Link Speed (mph)		30	30		10	
Link Distance (ft)		220	462		360	
Travel Time (s)		5.0	10.5		24.5	
Confl. Peds. (#/hr)	22			22		27
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	1%	1%	1%	1%	3%	3%
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	84	829	432	71	73	117
Future Vol, veh/h	84	829	432	71	73	117
Conflicting Peds, #/hr	22	0	0	22	0	27
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	200	-	-	150	0	150
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	-1	1	-	-1	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	1	1	1	1	3	3
Mvmt Flow	88	873	455	75	77	123

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	551	0	-	0	1526	504
Stage 1	-	-	-	-	477	-
Stage 2	-	-	-	-	1049	-
Critical Hdwy	4.11	-	-	-	6.23	6.13
Critical Hdwy Stg 1	-	-	-	-	5.23	-
Critical Hdwy Stg 2	-	-	-	-	5.23	-
Follow-up Hdwy	2.209	-	-	-	3.527	3.327
Pot Cap-1 Maneuver	1023	-	-	-	140	574
Stage 1	-	-	-	-	639	-
Stage 2	-	-	-	-	356	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1005	-	-	-	123	551
Mov Cap-2 Maneuver	-	-	-	-	250	-
Stage 1	-	-	-	-	572	-
Stage 2	-	-	-	-	349	-

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	0.82	0	18.13
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1005	-	-	-	250	551
HCM Lane V/C Ratio	0.088	-	-	-	0.308	0.224
HCM Ctrl Dly (s/v)	8.9	-	-	-	25.7	13.4
HCM Lane LOS	A	-	-	-	D	B
HCM 95th %tile Q(veh)	0.3	-	-	-	1.3	0.9

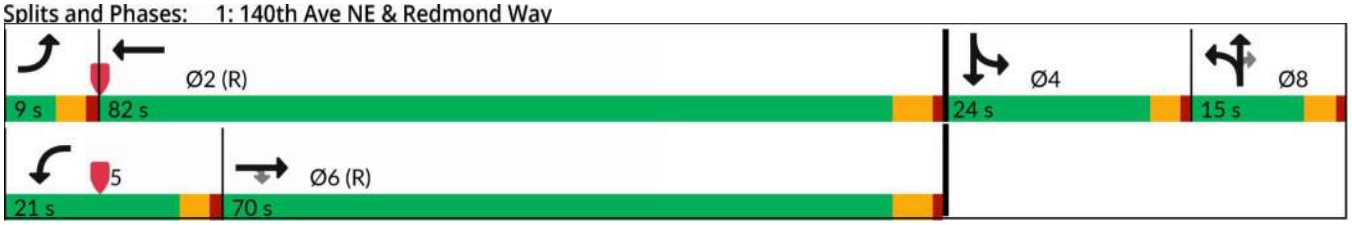
2034 No Action

Lanes, Volumes, Timings
1: 140th Ave NE & Redmond Way 03/21/2025

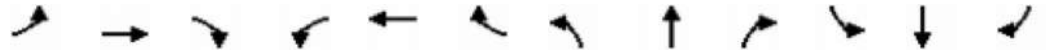
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	1314	117	166	1704	7	89	11	56	18	9	24
Future Volume (vph)	34	1314	117	166	1704	7	89	11	56	18	9	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-3%			4%			0%			7%	
Storage Length (ft)	125		250	250		0	0		200	0		30
Storage Lanes	1		1	1		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		40			40			35			25	
Link Distance (ft)		535			1832			797			317	
Travel Time (s)		9.1			31.2			15.5			8.6	
Confl. Peds. (#/hr)	8		2	2		8	11					11
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA	Perm	Split	NA	
Protected Phases	1	6		5	2		8	8		4	4	
Permitted Phases			6						8			
Detector Phase	1	6	6	5	2		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	5.0	12.0		5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	9.0	23.0	23.0	9.0	23.0		9.0	9.0	9.0	24.0	24.0	
Total Split (s)	9.0	70.0	70.0	21.0	82.0		15.0	15.0	15.0	24.0	24.0	
Total Split (%)	6.9%	53.8%	53.8%	16.2%	63.1%		11.5%	11.5%	11.5%	18.5%	18.5%	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)	4.0	5.0	5.0	4.0	5.0			4.0	4.0		4.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag							
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes							
Recall Mode	None	C-Max	C-Max	None	C-Max		None	None	None	None	None	

Intersection Summary
Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBT, Start of 1st Green
Natural Cycle: 100
Control Type: Actuated-Coordinated

Splits and Phases: 1: 140th Ave NE & Redmond Way



HCM 7th Signalized Intersection Summary
1: 140th Ave NE & Redmond Way 03/21/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	34	1314	117	166	1704	7	89	11	56	18	9	24
Future Volume (veh/h)	34	1314	117	166	1704	7	89	11	56	18	9	24
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	2003	2003	2003	1791	1791	1791	1900	1900	1900	1611	1611	1611
Adj Flow Rate, veh/h	37	1428	0	180	1852	8	97	12	0	20	10	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	1	1	1	1	1	0	0	0	0	0	0
Cap, veh/h	54	2387		204	2497	11	119	15		51	25	
Arrive On Green	0.03	0.63	0.00	0.12	0.72	0.72	0.07	0.07	0.00	0.05	0.05	0.00
Sat Flow, veh/h	1908	3806	1697	1706	3475	15	1619	200	1610	1040	520	0
Grp Volume(v), veh/h	37	1428	0	180	906	954	109	0	0	30	0	0
Grp Sat Flow(s),veh/h/ln	1908	1903	1697	1706	1701	1788	1819	0	1610	1559	0	0
Q Serve(g_s), s	2.5	29.1	0.0	13.5	41.7	41.8	7.7	0.0	0.0	2.4	0.0	0.0
Cycle Q Clear(g_c), s	2.5	29.1	0.0	13.5	41.7	41.8	7.7	0.0	0.0	2.4	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.01	0.89		1.00	0.67		0.00
Lane Grp Cap(c), veh/h	54	2387		204	1223	1285	133	0		76	0	
V/C Ratio(X)	0.68	0.60		0.88	0.74	0.74	0.82	0.00		0.39	0.00	
Avail Cap(c_a), veh/h	73	2387		223	1223	1285	154	0		240	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	62.6	14.5	0.0	56.3	11.0	11.0	59.4	0.0	0.0	59.9	0.0	0.0
Incr Delay (d2), s/veh	14.6	1.1	0.0	29.4	4.1	3.9	25.2	0.0	0.0	2.4	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	11.9	0.0	7.4	14.6	15.4	4.4	0.0	0.0	1.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	77.1	15.6	0.0	85.8	15.1	14.9	84.5	0.0	0.0	62.4	0.0	0.0
LnGrp LOS	E	B		F	B	B	F			E		
Approach Vol, veh/h		1465			2040			109			30	
Approach Delay, s/veh		17.1			21.2			84.5			62.4	
Approach LOS		B			C			F			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.7	98.4		10.4	19.6	86.5		13.5				
Change Period (Y+Rc), s	4.0	5.0		4.0	4.0	5.0		4.0				
Max Green Setting (Gmax), s	5.0	77.0		20.0	17.0	65.0		11.0				
Max Q Clear Time (g_c+I1), s	4.5	43.8		4.4	15.5	31.1		9.7				
Green Ext Time (p_c), s	0.0	25.2		0.0	0.1	19.1		0.0				

Intersection Summary		
HCM 7th Control Delay, s/veh	21.8	
HCM 7th LOS	C	

Notes

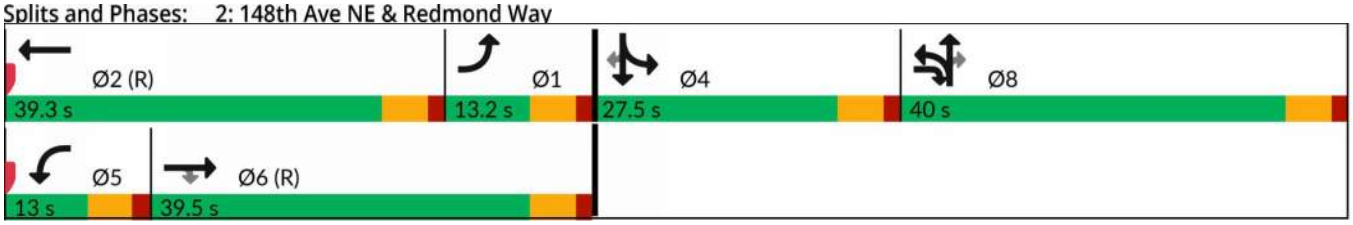
Unsignalized Delay for [NBR, EBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings
2: 148th Ave NE & Redmond Way 03/21/2025

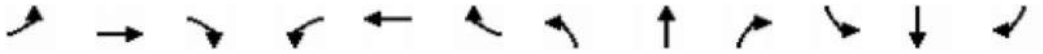
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	194	970	200	189	929	12	708	702	411	35	428	301
Future Volume (vph)	194	970	200	189	929	12	708	702	411	35	428	301
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-3%			0%			-3%			3%	
Storage Length (ft)	375		150	250		0	275		200	200		250
Storage Lanes	2		1	2		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		40			40			40			40	
Link Distance (ft)		957			1580			2623			1894	
Travel Time (s)		16.3			26.9			44.7			32.3	
Confl. Peds. (#/hr)	4		4	4		4			9	9		
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	2%	2%	2%
Shared Lane Traffic (%)							35%					
Turn Type	Prot	NA	pm+ov	Prot	NA		Split	NA	Perm	Split	NA	Perm
Protected Phases	1	6	8	5	2		8	8		4	4	
Permitted Phases			6						8			4
Detector Phase	1	6	8	5	2		8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.5	27.5	24.5	10.5	25.5		24.5	24.5	24.5	27.5	27.5	27.5
Total Split (s)	13.2	39.5	40.0	13.0	39.3		40.0	40.0	40.0	27.5	27.5	27.5
Total Split (%)	11.0%	32.9%	33.3%	10.8%	32.8%		33.3%	33.3%	33.3%	22.9%	22.9%	22.9%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5		1.5	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5		5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lag	Lag		Lead	Lead							
Lead-Lag Optimize?		Yes		Yes								
Recall Mode	None	C-Max	None	None	C-Max		None	None	None	None	None	None

Intersection Summary
Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 88 (73%), Referenced to phase 2:WBT and 6:EBT, Start of 1st Green
Natural Cycle: 130
Control Type: Actuated-Coordinated

Splits and Phases: 2: 148th Ave NE & Redmond Way



HCM 7th Signalized Intersection Summary
2: 148th Ave NE & Redmond Way 03/21/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	194	970	200	189	929	12	708	702	411	35	428	301
Future Volume (veh/h)	194	970	200	189	929	12	708	702	411	35	428	301
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	2003	2003	2003	1885	1885	1885	2003	2003	2003	1817	1817	1817
Adj Flow Rate, veh/h	209	1043	215	203	999	13	848	633	0	38	460	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	2	2	2
Cap, veh/h	311	1154	1001	218	1020	13	1097	576		283	565	
Arrive On Green	0.08	0.30	0.30	0.04	0.19	0.19	0.29	0.29	0.00	0.05	0.05	0.00
Sat Flow, veh/h	3701	3806	1691	3483	3620	47	3815	2003	1697	1731	3453	1540
Grp Volume(v), veh/h	209	1043	215	203	494	518	848	633	0	38	460	0
Grp Sat Flow(s),veh/h/ln	1850	1903	1691	1742	1791	1876	1908	2003	1697	1731	1726	1540
Q Serve(g_s), s	6.6	31.6	7.2	7.0	33.0	33.0	24.4	34.5	0.0	2.5	15.8	0.0
Cycle Q Clear(g_c), s	6.6	31.6	7.2	7.0	33.0	33.0	24.4	34.5	0.0	2.5	15.8	0.0
Prop In Lane	1.00		1.00	1.00		0.03	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	311	1154	1001	218	504	529	1097	576		283	565	
V/C Ratio(X)	0.67	0.90	0.21	0.93	0.98	0.98	0.77	1.10		0.13	0.81	
Avail Cap(c_a), veh/h	311	1154	1001	218	504	529	1097	576		317	633	
HCM Platoon Ratio	1.00	1.00	1.00	0.67	0.67	0.67	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	0.59	0.59	0.59	0.20	0.20	0.00	0.97	0.97	0.00
Uniform Delay (d), s/veh	53.4	40.1	11.5	57.2	48.3	48.3	39.2	42.8	0.0	48.7	55.0	0.0
Incr Delay (d2), s/veh	5.6	11.6	0.5	30.2	26.2	25.5	0.7	50.7	0.0	0.2	7.2	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	16.2	5.0	4.0	18.7	19.5	11.2	24.6	0.0	1.1	7.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	58.9	51.7	12.0	87.4	74.6	73.9	39.9	93.5	0.0	48.9	62.1	0.0
LnGrp LOS	E	D	B	F	E	E	D	F		D	E	
Approach Vol, veh/h		1467			1215			1481			498	
Approach Delay, s/veh		46.9			76.4			62.8			61.1	
Approach LOS		D			E			E			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	15.6	39.3		25.1	13.0	41.9		40.0				
Change Period (Y+Rc), s	5.5	5.5		5.5	5.5	5.5		5.5				
Max Green Setting (Gmax), s	7.7	33.8		22.0	7.5	34.0		34.5				
Max Q Clear Time (g_c+I1), s	8.6	35.0		17.8	9.0	33.6		36.5				
Green Ext Time (p_c), s	0.0	0.0		1.4	0.0	0.3		0.0				

Intersection Summary	
HCM 7th Control Delay, s/veh	61.2
HCM 7th LOS	E

Notes

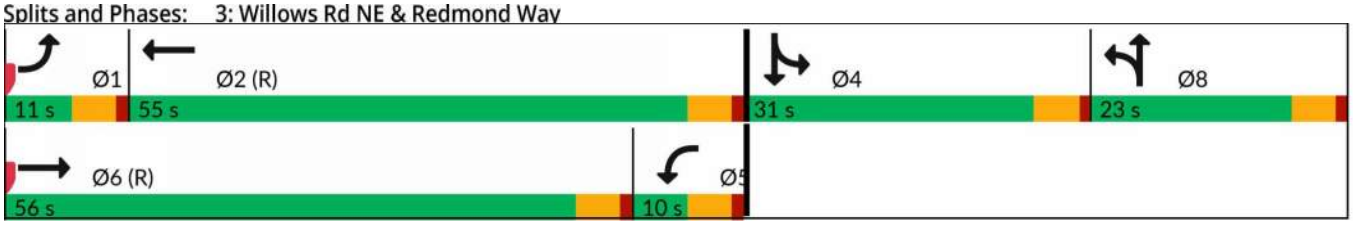
User approved volume balancing among the lanes for turning movement.
Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings
3: Willows Rd NE & Redmond Way 03/21/2025

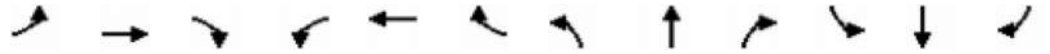
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	1484	15	28	1108	288	7	6	22	642	18	17
Future Volume (vph)	17	1484	15	28	1108	288	7	6	22	642	18	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-3%			0%			0%			5%	
Storage Length (ft)	150		0	125		30	0		0	275		0
Storage Lanes	1		0	1		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		40			40			25			35	
Link Distance (ft)		1580			850			188			922	
Travel Time (s)		26.9			14.5			5.1			18.0	
Confl. Peds. (#/hr)	12		4	4		12	19		5	5		19
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	1%	1%	1%
Shared Lane Traffic (%)										47%		
Turn Type	Prot	NA		Prot	NA		Split	NA		Split	NA	
Protected Phases	1	6		5	2		8	8		4	4	
Permitted Phases												
Detector Phase	1	6		5	2		8	8		4	4	
Switch Phase												
Minimum Initial (s)	6.0	12.0		5.0	12.0		5.0	5.0		6.0	6.0	
Minimum Split (s)	11.0	19.0		10.0	19.0		23.0	23.0		25.0	25.0	
Total Split (s)	11.0	56.0		10.0	55.0		23.0	23.0		31.0	31.0	
Total Split (%)	9.2%	46.7%		8.3%	45.8%		19.2%	19.2%		25.8%	25.8%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0		5.0	5.0	
Lead/Lag	Lead	Lead		Lag	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	

Intersection Summary
Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 34 (28%), Referenced to phase 2:WBT and 6:EBT, Start of 1st Green
Natural Cycle: 120
Control Type: Actuated-Coordinated

Splits and Phases: 3: Willows Rd NE & Redmond Way



HCM 7th Signalized Intersection Summary
3: Willows Rd NE & Redmond Way 03/21/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	1484	15	28	1108	288	7	6	22	642	18	17
Future Volume (veh/h)	17	1484	15	28	1108	288	7	6	22	642	18	17
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.91	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	2003	2003	2003	1885	1885	1885	1900	1900	1900	1738	1738	1738
Adj Flow Rate, veh/h	18	1596	16	30	1191	0	8	6	24	720	0	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	1	1	1	1	1	0	0	0	1	1	1
Cap, veh/h	43	1640	16	231	1902		21	16	63	717	377	0
Arrive On Green	0.01	0.14	0.14	0.26	1.00	0.00	0.06	0.06	0.06	0.22	0.00	0.00
Sat Flow, veh/h	1908	3860	39	1795	3676	0	334	250	1001	3310	1738	0
Grp Volume(v), veh/h	18	786	826	30	1191	0	38	0	0	720	0	0
Grp Sat Flow(s),veh/h/ln	1908	1903	1995	1795	1791	0	1586	0	0	1655	1738	0
Q Serve(g_s), s	1.1	49.4	49.5	1.5	0.0	0.0	2.8	0.0	0.0	26.0	0.0	0.0
Cycle Q Clear(g_c), s	1.1	49.4	49.5	1.5	0.0	0.0	2.8	0.0	0.0	26.0	0.0	0.0
Prop In Lane	1.00		0.02	1.00		0.00	0.21		0.63	1.00		0.00
Lane Grp Cap(c), veh/h	43	809	848	231	1902		100	0	0	717	377	0
V/C Ratio(X)	0.42	0.97	0.97	0.13	0.63		0.38	0.00	0.00	1.00	0.00	0.00
Avail Cap(c_a), veh/h	95	809	848	231	1902		238	0	0	717	377	0
HCM Platoon Ratio	0.33	0.33	0.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.34	0.34	0.34	0.66	0.66	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	58.8	50.9	50.9	39.4	0.0	0.0	54.0	0.0	0.0	47.0	0.0	0.0
Incr Delay (d2), s/veh	1.6	13.0	12.8	0.1	1.0	0.0	0.9	0.0	0.0	34.5	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	28.0	29.4	0.7	0.3	0.0	1.1	0.0	0.0	14.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	60.4	63.9	63.8	39.5	1.0	0.0	54.8	0.0	0.0	81.5	0.0	0.0
LnGrp LOS	E	E	E	D	A		D			F		
Approach Vol, veh/h		1630			1221			38			720	
Approach Delay, s/veh		63.8			2.0			54.8			81.5	
Approach LOS		E			A			D			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.7	68.7		31.0	20.4	56.0		12.6				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	6.0	50.0		26.0	5.0	51.0		18.0				
Max Q Clear Time (g_c+I1), s	3.1	2.0		28.0	3.5	51.5		4.8				
Green Ext Time (p_c), s	0.0	23.2		0.0	0.0	0.0		0.0				

Intersection Summary	
HCM 7th Control Delay, s/veh	46.3
HCM 7th LOS	D

Notes

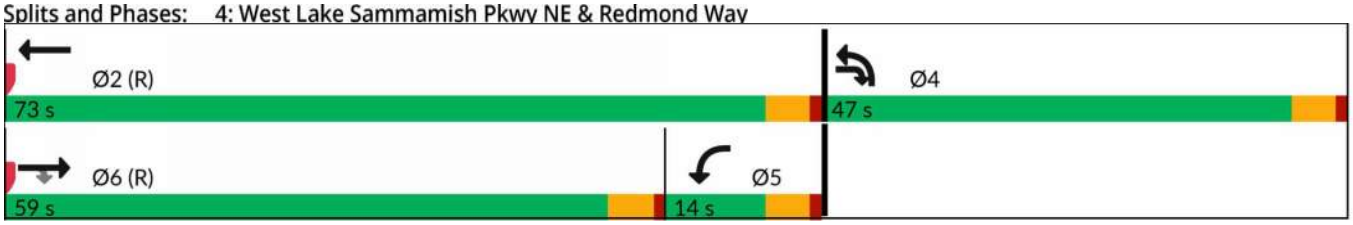
User approved volume balancing among the lanes for turning movement.
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings
4: West Lake Sammamish Pkwy NE & Redmond Way 03/21/2025

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1466	695	235	1037	393	210
Future Volume (vph)	1466	695	235	1037	393	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	-3%			3%	-4%	
Storage Length (ft)		125	150		0	75
Storage Lanes		1	2		1	0
Taper Length (ft)			25		25	
Right Turn on Red		Yes				Yes
Link Speed (mph)	30			30	35	
Link Distance (ft)	850			951	587	
Travel Time (s)	19.3			21.6	11.4	
Confl. Peds. (#/hr)		14	14			2
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	1%	1%	1%	1%	2%	2%
Shared Lane Traffic (%)						
Turn Type	NA	pm+ov	Prot	NA	Prot	
Protected Phases	6	4	5	2	4	
Permitted Phases		6				
Detector Phase	6	4	5	2	4	
Switch Phase						
Minimum Initial (s)	8.0	6.0	5.0	20.0	6.0	
Minimum Split (s)	22.0	25.0	10.0	25.0	25.0	
Total Split (s)	59.0	47.0	14.0	73.0	47.0	
Total Split (%)	49.2%	39.2%	11.7%	60.8%	39.2%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Recall Mode	C-Max	None	None	C-Max	None	

Intersection Summary
Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 42 (35%), Referenced to phase 2:WBT and 6:EBT, Start of 1st Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 4: West Lake Sammamish Pkwy NE & Redmond Way



HCM 7th Signalized Intersection Summary
4: West Lake Sammamish Pkwy NE & Redmond Way 03/21/2025



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1466	695	235	1037	393	210
Future Volume (veh/h)	1466	695	235	1037	393	210
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)		0.98	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	2003	2003	1832	1832	2027	2027
Adj Flow Rate, veh/h	1481	702	237	1047	397	0
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	1	1	1	1	2	2
Cap, veh/h	1713	752	663	2394	441	
Arrive On Green	0.90	0.90	0.39	1.00	0.23	0.00
Sat Flow, veh/h	3906	1671	3385	3573	1926	0
Grp Volume(v), veh/h	1481	702	237	1047	398	0
Grp Sat Flow(s),veh/h/ln	1903	1671	1693	1741	1931	0
Q Serve(g_s), s	21.1	31.5	5.9	0.0	24.0	0.0
Cycle Q Clear(g_c), s	21.1	31.5	5.9	0.0	24.0	0.0
Prop In Lane		1.00	1.00		1.00	0.00
Lane Grp Cap(c), veh/h	1713	752	663	2394	442	
V/C Ratio(X)	0.86	0.93	0.36	0.44	0.90	
Avail Cap(c_a), veh/h	1713	752	663	2394	676	
HCM Platoon Ratio	2.00	2.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	0.47	0.47	0.84	0.84	0.93	0.00
Uniform Delay (d), s/veh	4.4	4.9	31.1	0.0	44.9	0.0
Incr Delay (d2), s/veh	3.0	11.4	0.3	0.5	9.9	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	4.5	2.3	0.2	12.5	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	7.4	16.3	31.4	0.5	54.8	0.0
LnGrp LOS	A	B	C	A	D	
Approach Vol, veh/h	2183			1284	398	
Approach Delay, s/veh	10.2			6.2	54.8	
Approach LOS	B			A	D	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		87.5		32.5	28.5	59.0
Change Period (Y+Rc), s		5.0		5.0	5.0	5.0
Max Green Setting (Gmax), s		68.0		42.0	9.0	54.0
Max Q Clear Time (g_c+I1), s		2.0		26.0	7.9	33.5
Green Ext Time (p_c), s		6.3		1.5	0.1	12.8

Intersection Summary	
HCM 7th Control Delay, s/veh	13.5
HCM 7th LOS	B

Notes

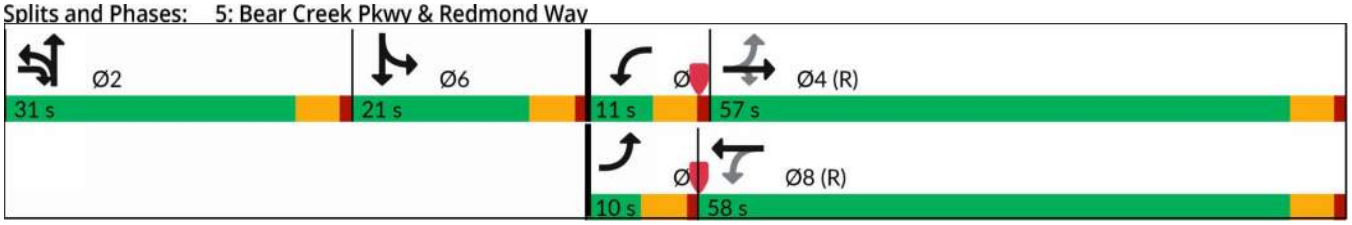
Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings
5: Bear Creek Pkwy & Redmond Way 03/21/2025

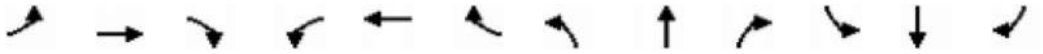
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	1082	555	78	1003	22	294	5	88	26	6	21
Future Volume (vph)	12	1082	555	78	1003	22	294	5	88	26	6	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-4%			0%			0%			0%	
Storage Length (ft)	150		175	150		0	125		0	0		0
Storage Lanes	1		1	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			25	
Link Distance (ft)		951			828			488			167	
Travel Time (s)		21.6			18.8			11.1			4.6	
Confl. Peds. (#/hr)	9		15	15		9	9		19	19		9
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)							32%					
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA		Split	NA		Split	NA	
Protected Phases	7	4	2	3	8		2	2		6	6	
Permitted Phases	4		4	8								
Detector Phase	7	4	2	3	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	8.0	6.0	5.0	8.0		6.0	6.0		5.0	5.0	
Minimum Split (s)	10.0	24.0	24.0	10.0	21.0		24.0	24.0		21.0	21.0	
Total Split (s)	10.0	57.0	31.0	11.0	58.0		31.0	31.0		21.0	21.0	
Total Split (%)	8.3%	47.5%	25.8%	9.2%	48.3%		25.8%	25.8%		17.5%	17.5%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag	Lead	Lead	Lag		Lead	Lead		Lag	Lag	
Lead-Lag Optimize?			Yes				Yes	Yes				
Recall Mode	None	C-Max	None	None	C-Max		None	None		None	None	

Intersection Summary
Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 64 (53%), Referenced to phase 4:EBTL and 8:WBTL, Start of 1st Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

Splits and Phases: 5: Bear Creek Pkwy & Redmond Way



HCM 7th Signalized Intersection Summary
5: Bear Creek Pkwy & Redmond Way 03/21/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	1082	555	78	1003	22	294	5	88	26	6	21
Future Volume (veh/h)	12	1082	555	78	1003	22	294	5	88	26	6	21
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.96	1.00		0.91
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	2042	2042	2042	1885	1885	1885	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	12	1115	572	80	1034	23	200	150	91	27	6	22
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	1	1	1	1	1	0	0	0	0	0	0
Cap, veh/h	341	2226	1255	298	2144	48	287	173	105	112	20	75
Arrive On Green	0.03	1.00	1.00	0.04	0.60	0.60	0.16	0.16	0.16	0.06	0.06	0.06
Sat Flow, veh/h	1945	3880	1708	1795	3581	80	1810	1090	661	1810	330	1209
Grp Volume(v), veh/h	12	1115	572	80	517	540	200	0	241	27	0	28
Grp Sat Flow(s),veh/h/ln	1945	1940	1708	1795	1791	1870	1810	0	1752	1810	0	1538
Q Serve(g_s), s	0.3	0.0	0.0	2.2	19.5	19.5	12.5	0.0	16.1	1.7	0.0	2.1
Cycle Q Clear(g_c), s	0.3	0.0	0.0	2.2	19.5	19.5	12.5	0.0	16.1	1.7	0.0	2.1
Prop In Lane	1.00		1.00	1.00		0.04	1.00		0.38	1.00		0.79
Lane Grp Cap(c), veh/h	341	2226	1255	298	1072	1120	287	0	278	112	0	96
V/C Ratio(X)	0.04	0.50	0.46	0.27	0.48	0.48	0.70	0.00	0.87	0.24	0.00	0.29
Avail Cap(c_a), veh/h	395	2226	1255	318	1072	1120	392	0	380	241	0	205
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.30	0.30	0.30	0.75	0.75	0.75	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	11.3	0.0	0.0	9.4	13.6	13.6	47.7	0.0	49.2	53.6	0.0	53.8
Incr Delay (d2), s/veh	0.0	0.2	0.4	0.2	1.2	1.1	2.5	0.0	13.4	1.1	0.0	1.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.1	0.1	0.9	8.0	8.3	5.9	0.0	8.1	0.8	0.0	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	11.3	0.2	0.4	9.6	14.7	14.7	50.3	0.0	62.6	54.7	0.0	55.4
LnGrp LOS	B	A	A	A	B	B	D		E	D		E
Approach Vol, veh/h		1699			1137			441			55	
Approach Delay, s/veh		0.4			14.4			57.0			55.1	
Approach LOS		A			B			E			E	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	24.0	9.7	73.9	12.5	6.6	76.9
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	26.0	6.0	52.0	16.0	5.0	53.0
Max Q Clear Time (g_c+I1), s	18.1	4.2	2.0	4.1	2.3	21.5
Green Ext Time (p_c), s	0.9	0.0	9.0	0.1	0.0	3.8

Intersection Summary	
HCM 7th Control Delay, s/veh	13.5
HCM 7th LOS	B

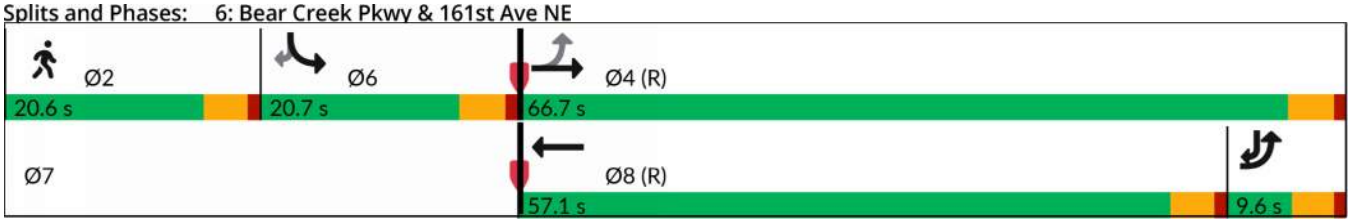
Notes
User approved volume balancing among the lanes for turning movement.

Lanes, Volumes, Timings
6: Bear Creek Pkwy & 161st Ave NE 03/21/2025

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø2
Lane Configurations							
Traffic Volume (vph)	36	523	346	205	119	87	
Future Volume (vph)	36	523	346	205	119	87	
Satd. Flow (prot)	1787	1693	1501	0	1787	1599	
Flt Permitted	0.299				0.950		
Satd. Flow (perm)	562	1693	1501	0	1612	1445	
Satd. Flow (RTOR)			38			99	
Confl. Peds. (#/hr)	48			48	29	23	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	
Parking (#/hr)		0	0	0			
Shared Lane Traffic (%)							
Lane Group Flow (vph)	41	594	626	0	135	99	
Turn Type	pm+pt	NA	NA		Prot	pm+ov	
Protected Phases	7	4	8		6	7	2
Permitted Phases	4					6	
Detector Phase	7	4	8		6	7	
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	9.4	9.6	20.6		20.6	9.4	20.6
Total Split (s)	9.6	66.7	57.1		20.7	9.6	20.6
Total Split (%)	8.9%	61.8%	52.9%		19.2%	8.9%	19%
Yellow Time (s)	3.4	3.6	3.6		3.6	3.4	3.6
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.4	4.6	4.6		4.6	4.4	
Lead/Lag	Lag		Lead		Lag	Lag	Lead
Lead-Lag Optimize?							
Recall Mode	None	C-Max	C-Max		None	None	None
Act Effct Green (s)	73.6	73.4	63.8		13.0	18.4	
Actuated g/C Ratio	0.68	0.68	0.59		0.12	0.17	
v/c Ratio	0.09	0.52	0.69		0.63	0.29	
Control Delay (s/veh)	10.3	13.4	18.2		57.8	6.7	
Queue Delay	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	10.3	13.4	18.2		57.8	6.7	
LOS	B	B	B		E	A	
Approach Delay (s/veh)		13.2	18.2		36.2		
Approach LOS		B	B		D		

Intersection Summary	
Cycle Length: 108	
Actuated Cycle Length: 108	
Offset: 11 (10%), Referenced to phase 4:EBTL and 8:WBT, Start of 1st Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.69	
Intersection Signal Delay (s/veh): 18.9	Intersection LOS: B
Intersection Capacity Utilization 50.0%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 6: Bear Creek Pkwy & 161st Ave NE

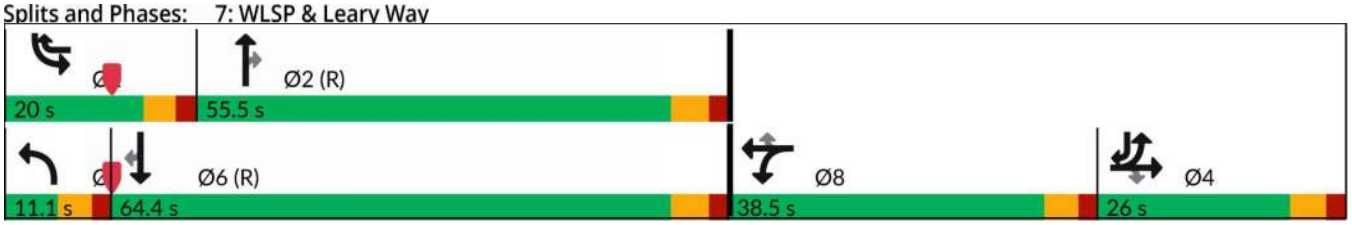


Lanes, Volumes, Timings
7: WLSP & Leary Way 03/21/2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	311	12	230	300	526	94	16	1097	1245	226	949	632
Future Volume (vph)	311	12	230	300	526	94	16	1097	1245	226	949	632
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-6%			3%			0%			0%	
Storage Length (ft)	0		175	200		150	200		275	175		0
Storage Lanes	0		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			No
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		718			834			1781			1175	
Travel Time (s)		16.3			19.0			30.4			20.0	
Confl. Peds. (#/hr)	34					34			3	3		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	4%	4%	4%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Shared Lane Traffic (%)				11%								
Turn Type	Split	NA	Perm	Split	NA	pm+ov	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	4	4		8	8	1	5	2		1	6	4
Permitted Phases			4			8			2			6
Detector Phase	4	4	4	8	8	1	5	2	2	1	6	4
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	7.0	7.0	7.0	5.0	10.0	10.0	7.0	10.0	5.0
Minimum Split (s)	10.9	10.9	10.9	38.5	38.5	12.5	10.5	33.9	33.9	12.5	15.9	10.9
Total Split (s)	26.0	26.0	26.0	38.5	38.5	20.0	11.1	55.5	55.5	20.0	64.4	26.0
Total Split (%)	18.6%	18.6%	18.6%	27.5%	27.5%	14.3%	7.9%	39.6%	39.6%	14.3%	46.0%	18.6%
Yellow Time (s)	3.9	3.9	3.9	3.5	3.5	3.5	3.5	3.9	3.9	3.5	3.9	3.9
All-Red 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
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.9	5.9	5.5	5.5	5.5	5.5	5.9	5.9	5.5	5.9	5.9
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?				Yes	Yes	Yes		Yes	Yes	Yes		
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	None

Intersection Summary
Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 90 (64%), Referenced to phase 2:NBT and 6:SBT, Start of 1st Green
Natural Cycle: 140
Control Type: Actuated-Coordinated

Splits and Phases: 7: WLSP & Leary Way



HCM 7th Signalized Intersection Summary
7: WLSP & Leary Way 03/21/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	311	12	230	300	526	94	16	1097	1245	226	949	632
Future Volume (veh/h)	311	12	230	300	526	94	16	1097	1245	226	949	632
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.93	1.00		0.95	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	2076	2076	2076	1817	1817	1817	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	327	13	242	290	590	99	17	1155	0	238	999	665
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	4	4	4	2	2	2	2	2	2	2	2	2
Cap, veh/h	273	11	235	383	805	485	31	1310		184	1617	947
Arrive On Green	0.14	0.14	0.14	0.22	0.22	0.22	0.01	0.12	0.00	0.10	0.45	0.45
Sat Flow, veh/h	1905	76	1634	1731	3635	1469	1781	3554	1585	1781	3554	1582
Grp Volume(v), veh/h	340	0	242	290	590	99	17	1155	0	238	999	665
Grp Sat Flow(s),veh/h/ln	1981	0	1634	1731	1817	1469	1781	1777	1585	1781	1777	1582
Q Serve(g_s), s	20.1	0.0	20.1	21.9	21.1	6.8	1.3	44.8	0.0	14.5	29.8	40.8
Cycle Q Clear(g_c), s	20.1	0.0	20.1	21.9	21.1	6.8	1.3	44.8	0.0	14.5	29.8	40.8
Prop In Lane	0.96		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	284	0	235	383	805	485	31	1310		184	1617	947
V/C Ratio(X)	1.20	0.00	1.03	0.76	0.73	0.20	0.55	0.88		1.29	0.62	0.70
Avail Cap(c_a), veh/h	284	0	235	408	857	506	71	1310		184	1617	947
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.92	0.92	0.92	0.31	0.31	0.00	0.90	0.90	0.90
Uniform Delay (d), s/veh	60.0	0.0	59.9	51.0	50.7	34.2	69.1	58.5	0.0	62.7	28.9	19.5
Incr Delay (d2), s/veh	117.1	0.0	67.1	7.6	3.1	0.3	4.7	3.0	0.0	162.0	1.6	3.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	19.3	0.0	12.7	10.3	10.0	2.5	0.6	21.9	0.0	14.8	12.8	21.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	177.1	0.0	127.1	58.5	53.8	34.5	73.8	61.5	0.0	224.7	30.5	23.4
LnGrp LOS	F		F	E	D	C	E	E		F	C	C
Approach Vol, veh/h		582			979			1172			1902	
Approach Delay, s/veh		156.3			53.2			61.7			52.3	
Approach LOS		F			D			E			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	20.0	57.5		26.0	7.9	69.6		36.5				
Change Period (Y+Rc), s	5.5	5.9		5.9	5.5	5.9		5.5				
Max Green Setting (Gmax), s	14.5	49.6		20.1	5.6	58.5		33.0				
Max Q Clear Time (g_c+I1), s	16.5	46.8		22.1	3.3	42.8		23.9				
Green Ext Time (p_c), s	0.0	1.9		0.0	0.0	10.3		5.1				

Intersection Summary												
HCM 7th Control Delay, s/veh			67.9									
HCM 7th LOS			E									

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings
8: Leary Way & 159th Pl NE 03/21/2025

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø2	Ø6
Lane Configurations								
Traffic Volume (vph)	107	1399	898	19	29	86		
Future Volume (vph)	107	1399	898	19	29	86		
Satd. Flow (prot)	1787	1881	3549	0	1805	1615		
Flt Permitted	0.950				0.950			
Satd. Flow (perm)	1704	1881	3549	0	1805	1615		
Satd. Flow (RTOR)			3			89		
Confl. Peds. (#/hr)	41			41		29		
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97		
Heavy Vehicles (%)	1%	1%	1%	1%	0%	0%		
Mid-Block Traffic (%)		0%	0%		50%			
Shared Lane Traffic (%)								
Lane Group Flow (vph)	110	1442	946	0	30	89		
Turn Type	Prot	NA	NA		Prot	pt+ov		
Protected Phases	7	4!	8		2 6!	6 7	2	6
Permitted Phases								
Detector Phase	7	4	8		2 6	7		
Switch Phase								
Minimum Initial (s)	5.0	7.0	7.0				4.0	6.0
Minimum Split (s)	10.0	12.0	20.0				21.0	11.0
Total Split (s)	20.0	105.0	74.0				21.0	11.0
Total Split (%)	15.9%	83.3%	58.7%				17%	9%
Yellow Time (s)	4.0	4.0	4.0				4.0	4.0
All-Red Time (s)	1.0	1.0	1.0				1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0					
Total Lost Time (s)	5.0	5.0	5.0					
Lead/Lag	Lead							Lag
Lead-Lag Optimize?	Yes							Yes
Recall Mode	None	C-Max	C-Max				None	None
Act Effct Green (s)	11.7	107.3	83.0		17.6	18.3		
Actuated g/C Ratio	0.09	0.85	0.66		0.14	0.15		
v/c Ratio	0.67	0.90	0.40		0.12	0.29		
Control Delay (s/veh)	74.1	19.0	13.3		30.2	10.8		
Queue Delay	0.0	5.0	0.0		0.0	0.0		
Total Delay (s/veh)	74.1	24.0	13.3		30.2	10.8		
LOS	E	C	B		C	B		
Approach Delay (s/veh)		27.6	13.3		15.7			
Approach LOS		C	B		B			

Intersection Summary
Cycle Length: 126
Actuated Cycle Length: 126
Offset: 0 (0%), Referenced to phase 8:WBT and 4:EBT, Start of 1st Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.90
Intersection Signal Delay (s/veh): 21.9 Intersection LOS: C
Intersection Capacity Utilization 91.5% ICU Level of Service F
Analysis Period (min) 15
! Phase conflict between lane groups.

Splits and Phases: 8: Leary Way & 159th Pl NE



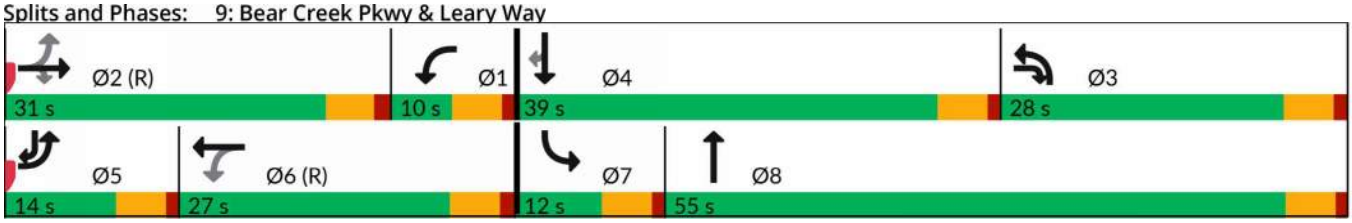
Lanes, Volumes, Timings
9: Bear Creek Pkwy & Leary Way 03/21/2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	182	622	623	20	362	88	374	290	14	47	518	93
Future Volume (vph)	182	622	623	20	362	88	374	290	14	47	518	93
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		225	175		0	190		0	275		100
Storage Lanes	1		1	1		0	2		0	1		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		664			421			452			692	
Travel Time (s)		15.1			9.6			10.3			15.7	
Confl. Peds. (#/hr)	12		6	6		12	6		17	17		6
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	2%	2%	2%	1%	1%	1%	2%	2%	2%	1%	1%	1%
Shared Lane Traffic (%)												
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA		Prot	NA		Prot	NA	pm+ov
Protected Phases	5	2	3	1	6		3	8		7	4	5
Permitted Phases	2		2	6								4
Detector Phase	5	2	3	1	6		3	8		7	4	4
Switch Phase												
Minimum Initial (s)	5.0	8.0	6.0	5.0	8.0		6.0	6.0		5.0	5.0	5.0
Minimum Split (s)	10.0	26.2	11.2	10.0	24.2		11.2	28.0		10.0	26.0	10.0
Total Split (s)	14.0	31.0	28.0	10.0	27.0		28.0	55.0		12.0	39.0	14.0
Total Split (%)	13.0%	28.7%	25.9%	9.3%	25.0%		25.9%	50.9%		11.1%	36.1%	13.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.2	1.2	1.0	1.2		1.2	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0	5.2	5.2	5.0	5.2		5.2	5.0		5.0	5.0	5.0
Lead/Lag	Lead	Lead	Lag	Lag	Lag		Lag	Lag		Lead	Lead	Lead
Lead-Lag Optimize?												
Recall Mode	None	C-Max	None	None	C-Max		None	None		None	None	None

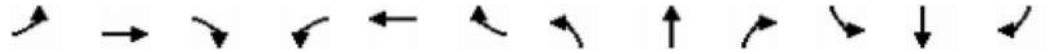
Intersection Summary

Area Type: Other
Cycle Length: 108
Actuated Cycle Length: 108
Offset: 85 (79%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 9: Bear Creek Pkwy & Leary Way



HCM 7th Signalized Intersection Summary
9: Bear Creek Pkwy & Leary Way 03/21/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	182	622	623	20	362	88	374	290	14	47	518	93
Future Volume (veh/h)	182	622	623	20	362	88	374	290	14	47	518	93
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.99		0.97	0.99		0.98	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1885	1885	1885	1870	1870	1870	1885	1885	1885
Adj Flow Rate, veh/h	186	635	636	20	369	90	382	296	14	48	529	95
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	1	1	1	2	2	2	1	1	1
Cap, veh/h	217	849	586	332	831	200	474	709	34	63	564	603
Arrive On Green	0.08	0.24	0.24	0.13	0.29	0.29	0.14	0.40	0.40	0.04	0.30	0.30
Sat Flow, veh/h	1781	3554	1545	1795	2850	686	3456	1770	84	1795	1885	1570
Grp Volume(v), veh/h	186	635	636	20	230	229	382	0	310	48	529	95
Grp Sat Flow(s),veh/h/ln	1781	1777	1545	1795	1791	1745	1728	0	1854	1795	1885	1570
Q Serve(g_s), s	9.0	17.9	25.8	0.0	11.3	11.6	11.6	0.0	13.0	2.9	29.5	2.4
Cycle Q Clear(g_c), s	9.0	17.9	25.8	0.0	11.3	11.6	11.6	0.0	13.0	2.9	29.5	2.4
Prop In Lane	1.00		1.00	1.00		0.39	1.00		0.05	1.00		1.00
Lane Grp Cap(c), veh/h	217	849	586	332	523	509	474	0	743	63	564	603
V/C Ratio(X)	0.86	0.75	1.08	0.06	0.44	0.45	0.81	0.00	0.42	0.76	0.94	0.16
Avail Cap(c_a), veh/h	217	849	586	332	523	509	730	0	858	116	593	628
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.34	0.34	0.34	1.00	1.00	1.00	0.82	0.00	0.82	0.83	0.83	0.83
Uniform Delay (d), s/veh	39.4	38.1	33.6	37.2	31.1	31.2	45.2	0.0	23.3	51.6	36.9	8.6
Incr Delay (d2), s/veh	10.8	2.1	48.5	0.1	2.7	2.9	3.2	0.0	0.3	14.0	19.7	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	8.0	16.2	0.5	5.2	5.2	5.1	0.0	5.7	1.5	16.4	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	50.2	40.2	82.1	37.3	33.8	34.0	48.4	0.0	23.6	65.7	56.6	8.7
LnGrp LOS	D	D	F	D	C	C	D		C	E	E	A
Approach Vol, veh/h		1457			479			692			672	
Approach Delay, s/veh		59.8			34.0			37.3			50.5	
Approach LOS		E			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.7	31.0	20.0	37.3	14.0	36.7	8.8	48.5
Change Period (Y+Rc), s	5.2	* 5.2	5.2	5.0	5.0	5.2	5.0	* 5.2
Max Green Setting (Gmax), s	5.0	* 26	22.8	34.0	9.0	21.8	7.0	* 50
Max Q Clear Time (g_c+I1), s	2.0	27.8	13.6	31.5	11.0	13.6	4.9	15.0
Green Ext Time (p_c), s	0.0	0.0	1.2	0.7	0.0	1.2	0.0	1.3

Intersection Summary	
HCM 7th Control Delay, s/veh	49.4
HCM 7th LOS	D

Notes

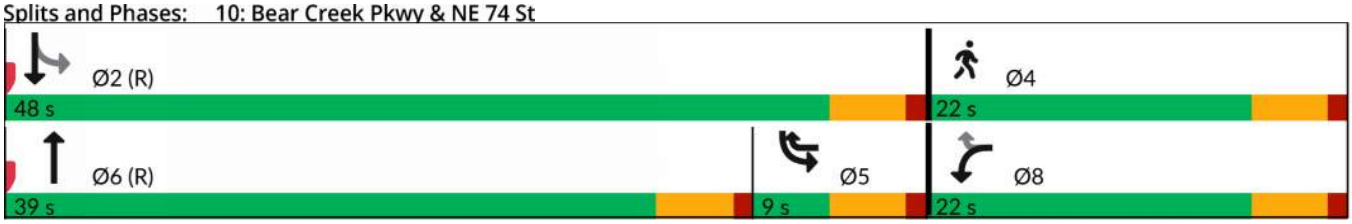
* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Lanes, Volumes, Timings
10: Bear Creek Pkwy & NE 74 St 03/21/2025

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø4
Lane Configurations							
Traffic Volume (vph)	26	205	630	12	152	1029	
Future Volume (vph)	26	205	630	12	152	1029	
Satd. Flow (prot)	1805	1615	1857	0	1787	1881	
Flt Permitted	0.950				0.300		
Satd. Flow (perm)	1641	1615	1857	0	559	1881	
Satd. Flow (RTOR)		172	2				
Confl. Peds. (#/hr)	44			20	20		
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	
Heavy Vehicles (%)	0%	0%	2%	2%	1%	1%	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	27	209	655	0	155	1050	
Turn Type	Prot	pm+ov	NA		pm+pt	NA	
Protected Phases	8	5	6		5	2	4
Permitted Phases		8			2		
Detector Phase	8	5	6		5	2	
Switch Phase							
Minimum Initial (s)	7.0	4.0	8.0		4.0	5.0	8.0
Minimum Split (s)	12.0	9.0	23.0		9.0	10.0	22.0
Total Split (s)	22.0	9.0	39.0		9.0	48.0	22.0
Total Split (%)	31.4%	12.9%	55.7%		12.9%	68.6%	31%
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0		5.0	5.0	
Lead/Lag		Lag	Lead		Lag		
Lead-Lag Optimize?		Yes	Yes		Yes		
Recall Mode	None	None	C-Min		None	C-Min	None
Act Effct Green (s)	13.0	18.5	41.5		51.8	53.8	
Actuated g/C Ratio	0.19	0.26	0.59		0.74	0.77	
v/c Ratio	0.08	0.38	0.59		0.31	0.73	
Control Delay (s/veh)	21.5	6.2	14.9		8.6	13.9	
Queue Delay	0.0	0.0	0.0		0.0	0.9	
Total Delay (s/veh)	21.5	6.2	14.9		8.6	14.8	
LOS	C	A	B		A	B	
Approach Delay (s/veh)	8.0		14.9			14.0	
Approach LOS	A		B			B	

Intersection Summary	
Cycle Length: 70	
Actuated Cycle Length: 70	
Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBT, Start of 1st Green	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.73	
Intersection Signal Delay (s/veh): 13.6	Intersection LOS: B
Intersection Capacity Utilization 68.3%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 10: Bear Creek Pkwy & NE 74 St



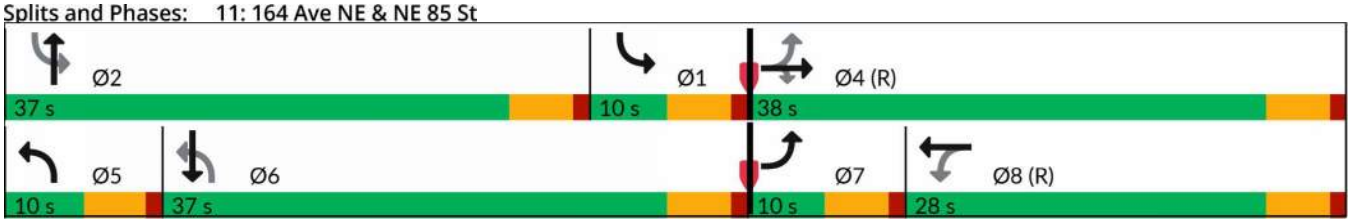
Lanes, Volumes, Timings
11: 164 Ave NE & NE 85 St 03/21/2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	76	395	75	9	226	187	30	543	21	184	404	39
Future Volume (vph)	76	395	75	9	226	187	30	543	21	184	404	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		150	200		0	250		0	240		0
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			28			30	
Link Distance (ft)		469			304			659			473	
Travel Time (s)		10.7			6.9			16.0			10.8	
Confl. Peds. (#/hr)	12					12	22					22
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Shared Lane Traffic (%)												
Turn Type	pm+pt	NA	Perm	Perm	NA		D.P+P	NA		D.P+P	NA	
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases	4		4	8			6			2		
Detector Phase	7	4	4	8	8		6 5	2		2 1	6	
Switch Phase												
Minimum Initial (s)	5.0	8.0	8.0	8.0	8.0		5.0	6.0		5.0	6.0	
Minimum Split (s)	10.0	20.0	20.0	20.0	20.0		10.0	22.0		10.0	27.0	
Total Split (s)	10.0	38.0	38.0	28.0	28.0		10.0	37.0		10.0	37.0	
Total Split (%)	11.8%	44.7%	44.7%	32.9%	32.9%		11.8%	43.5%		11.8%	43.5%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lead			Lag	Lag		Lead	Lead		Lag	Lag	
Lead-Lag Optimize?												
Recall Mode	None	C-Max	C-Max	C-Max	C-Max		None	None		None	None	

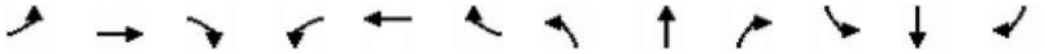
Intersection Summary

Area Type: Other
Cycle Length: 85
Actuated Cycle Length: 85
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of 1st Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 11: 164 Ave NE & NE 85 St



HCM 7th Signalized Intersection Summary
11: 164 Ave NE & NE 85 St 03/21/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	76	395	75	9	226	187	30	543	21	184	404	39
Future Volume (veh/h)	76	395	75	9	226	187	30	543	21	184	404	39
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.99	0.99		0.98	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	80	416	79	9	238	197	32	572	22	194	425	41
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	1	1	1	1	1	1
Cap, veh/h	261	809	676	325	302	250	284	611	23	216	619	60
Arrive On Green	0.05	0.43	0.43	0.32	0.32	0.32	0.03	0.34	0.34	0.06	0.37	0.37
Sat Flow, veh/h	1810	1900	1587	910	952	788	1795	1801	69	1795	1687	163
Grp Volume(v), veh/h	80	416	79	9	0	435	32	0	594	194	0	466
Grp Sat Flow(s),veh/h/ln	1810	1900	1587	910	0	1740	1795	0	1870	1795	0	1850
Q Serve(g_s), s	2.4	13.7	2.6	0.6	0.0	19.4	0.9	0.0	26.1	3.8	0.0	18.1
Cycle Q Clear(g_c), s	2.4	13.7	2.6	5.1	0.0	19.4	0.9	0.0	26.1	3.8	0.0	18.1
Prop In Lane	1.00		1.00	1.00		0.45	1.00		0.04	1.00		0.09
Lane Grp Cap(c), veh/h	261	809	676	325	0	551	284	0	634	216	0	679
V/C Ratio(X)	0.31	0.51	0.12	0.03	0.00	0.79	0.11	0.00	0.94	0.90	0.00	0.69
Avail Cap(c_a), veh/h	277	809	676	325	0	551	333	0	704	216	0	696
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	0.80	0.00	0.80	1.00	0.00	1.00
Uniform Delay (d), s/veh	19.5	18.0	14.8	23.2	0.0	26.4	17.7	0.0	27.2	38.2	0.0	22.8
Incr Delay (d2), s/veh	0.2	2.3	0.4	0.2	0.0	11.0	0.1	0.0	15.5	33.7	0.0	2.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	6.2	1.0	0.1	0.0	9.4	0.4	0.0	13.9	5.8	0.0	7.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	19.7	20.3	15.1	23.4	0.0	37.4	17.7	0.0	42.7	71.9	0.0	25.0
LnGrp LOS	B	C	B	C		D	B		D	E		C
Approach Vol, veh/h		575			444			626			660	
Approach Delay, s/veh		19.5			37.1			41.4			38.8	
Approach LOS		B			D			D			D	

Timer - Assigned Phs	1	2		4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	33.8		41.2	7.7	36.2	9.2	31.9
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	5.0	32.0		33.0	5.0	32.0	5.0	23.0
Max Q Clear Time (g_c+I1), s	5.8	28.1		15.7	2.9	20.1	4.4	21.4
Green Ext Time (p_c), s	0.0	0.7		1.1	0.0	0.9	0.0	0.2

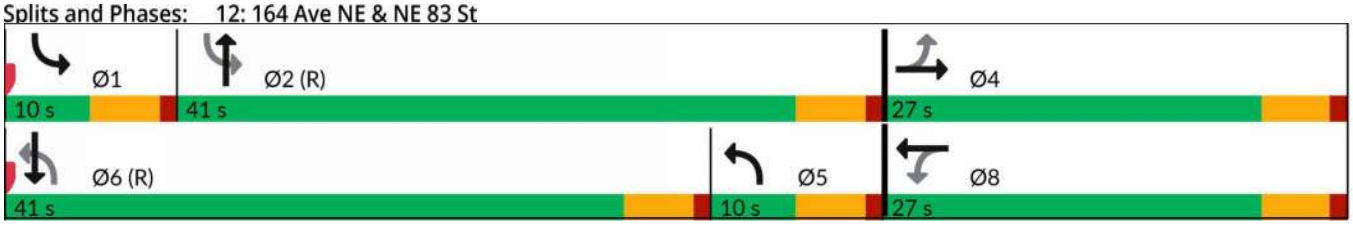
Intersection Summary	
HCM 7th Control Delay, s/veh	34.4
HCM 7th LOS	C

Lanes, Volumes, Timings
12: 164 Ave NE & NE 83 St 03/21/2025

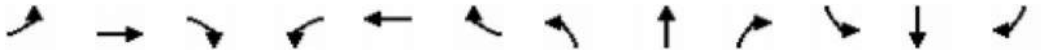
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	228	72	26	127	41	65	520	51	73	395	19
Future Volume (vph)	44	228	72	26	127	41	65	520	51	73	395	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	200		0	200		0	200		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			28			28	
Link Distance (ft)		968			599			662			659	
Travel Time (s)		22.0			13.6			16.1			16.0	
Confl. Peds. (#/hr)	34		47	47		34	24		31	31		24
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	5%	5%	5%	1%	1%	1%	3%	3%	3%	1%	1%	1%
Mid-Block Traffic (%)		40%			20%			0%			0%	
Shared Lane Traffic (%)												
Turn Type	Perm	NA		Perm	NA		D.P+P	NA		D.P+P	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			6			2		
Detector Phase	4	4		8	8		6 5	2		2 1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	21.0	21.0		21.0	21.0		10.0	19.0		10.0	19.0	
Total Split (s)	27.0	27.0		27.0	27.0		10.0	41.0		10.0	41.0	
Total Split (%)	34.6%	34.6%		34.6%	34.6%		12.8%	52.6%		12.8%	52.6%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag							Lag	Lag		Lead	Lead	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	

Intersection Summary
Area Type: Other
Cycle Length: 78
Actuated Cycle Length: 78
Offset: 18 (23%), Referenced to phase 2:NBSB and 6:NBSB, Start of 1st Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 12: 164 Ave NE & NE 83 St



HCM 7th Signalized Intersection Summary
12: 164 Ave NE & NE 83 St 03/21/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	44	228	72	26	127	41	65	520	51	73	395	19
Future Volume (veh/h)	44	228	72	26	127	41	65	520	51	73	395	19
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.94		0.90	0.98		0.90	1.00		0.97	0.99		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1826	1826	1885	1885	1885	1856	1856	1856	1885	1885	1885
Adj Flow Rate, veh/h	45	235	74	27	131	42	67	536	53	75	407	20
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	5	5	5	1	1	1	3	3	3	1	1	1
Cap, veh/h	256	299	94	148	307	98	582	869	86	617	821	40
Arrive On Green	0.08	0.08	0.08	0.23	0.23	0.23	0.23	1.00	1.00	0.05	0.46	0.46
Sat Flow, veh/h	1113	1292	407	1056	1327	425	1767	1656	164	1795	1778	87
Grp Volume(v), veh/h	45	0	309	27	0	173	67	0	589	75	0	427
Grp Sat Flow(s),veh/h/ln	1113	0	1698	1056	0	1752	1767	0	1820	1795	0	1866
Q Serve(g_s), s	3.0	0.0	13.9	1.9	0.0	6.6	0.0	0.0	0.0	1.4	0.0	12.5
Cycle Q Clear(g_c), s	9.6	0.0	13.9	15.9	0.0	6.6	0.0	0.0	0.0	1.4	0.0	12.5
Prop In Lane	1.00		0.24	1.00		0.24	1.00		0.09	1.00		0.05
Lane Grp Cap(c), veh/h	256	0	393	148	0	406	582	0	955	617	0	861
V/C Ratio(X)	0.18	0.00	0.79	0.18	0.00	0.43	0.12	0.00	0.62	0.12	0.00	0.50
Avail Cap(c_a), veh/h	313	0	479	201	0	494	582	0	955	639	0	861
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	0.91	0.00	0.91	0.99	0.00	0.99	0.84	0.00	0.84	0.73	0.00	0.73
Uniform Delay (d), s/veh	35.3	0.0	34.1	35.9	0.0	25.6	12.3	0.0	0.0	7.3	0.0	14.7
Incr Delay (d2), s/veh	0.1	0.0	5.0	0.2	0.0	0.3	0.0	0.0	2.5	0.0	0.0	1.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	6.8	0.5	0.0	2.7	0.6	0.0	0.7	0.5	0.0	5.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	35.4	0.0	39.2	36.1	0.0	25.8	12.4	0.0	2.5	7.3	0.0	16.2
LnGrp LOS	D		D	D		C	B		A	A		B
Approach Vol, veh/h		354			200			656			502	
Approach Delay, s/veh		38.7			27.2			3.5			14.8	
Approach LOS		D			C			A			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.0	45.9		23.1	13.9	41.0		23.1				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	5.0	36.0		22.0	5.0	36.0		22.0				
Max Q Clear Time (g_c+I1), s	3.4	2.0		15.9	2.0	14.5		17.9				
Green Ext Time (p_c), s	0.0	1.8		0.5	0.0	1.0		0.2				

Intersection Summary												
HCM 7th Control Delay, s/veh			16.9									
HCM 7th LOS			B									

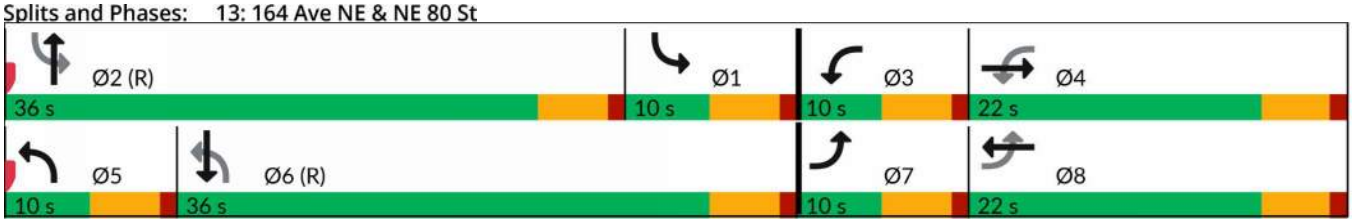
Lanes, Volumes, Timings
13: 164 Ave NE & NE 80 St 03/21/2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	81	174	22	37	209	61	25	369	66	118	385	73
Future Volume (vph)	81	174	22	37	209	61	25	369	66	118	385	73
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	140		0	150		0	100		0	200		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			28			28	
Link Distance (ft)		178			313			347			662	
Travel Time (s)		4.9			8.5			8.4			16.1	
Confl. Peds. (#/hr)	27		24	24		27	37		22	22		37
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	3%	3%	3%	3%	3%	3%
Shared Lane Traffic (%)												
Turn Type	D.P+P	NA		D.P+P	NA		D.P+P	NA		D.P+P	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	8			4			6			2		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	6.0		5.0	6.0	
Minimum Split (s)	10.0	17.0		10.0	18.0		10.0	18.0		10.0	19.0	
Total Split (s)	10.0	22.0		10.0	22.0		10.0	36.0		10.0	36.0	
Total Split (%)	12.8%	28.2%		12.8%	28.2%		12.8%	46.2%		12.8%	46.2%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lead		Lag	Lag	
Lead-Lag Optimize?	Yes	Yes			Yes			Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	

Intersection Summary

Area Type: Other
Cycle Length: 78
Actuated Cycle Length: 78
Offset: 18 (23%), Referenced to phase 2:NBSB and 6:NBSB, Start of 1st Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 13: 164 Ave NE & NE 80 St



HCM 7th Signalized Intersection Summary
13: 164 Ave NE & NE 80 St 03/21/2025

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	81	174	22	37	209	61	25	369	66	118	385	73
Future Volume (veh/h)	81	174	22	37	209	61	25	369	66	118	385	73
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.99		0.93	0.97		0.93	0.98		0.95	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	87	187	24	40	225	66	27	397	71	127	414	78
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	1	1	1	1	1	3	3	3	3	3	3
Cap, veh/h	221	333	43	293	258	76	531	604	108	467	712	134
Arrive On Green	0.11	0.41	0.41	0.04	0.19	0.19	0.04	0.53	0.53	0.21	0.95	0.95
Sat Flow, veh/h	1795	1622	208	1795	1373	403	1767	1519	272	1767	1507	284
Grp Volume(v), veh/h	87	0	211	40	0	291	27	0	468	127	0	492
Grp Sat Flow(s),veh/h/ln	1795	0	1830	1795	0	1776	1767	0	1791	1767	0	1791
Q Serve(g_s), s	3.0	0.0	6.9	1.3	0.0	12.4	0.6	0.0	14.7	0.0	0.0	2.6
Cycle Q Clear(g_c), s	3.0	0.0	6.9	1.3	0.0	12.4	0.6	0.0	14.7	0.0	0.0	2.6
Prop In Lane	1.00		0.11	1.00		0.23	1.00		0.15	1.00		0.16
Lane Grp Cap(c), veh/h	221	0	376	293	0	334	531	0	712	467	0	847
V/C Ratio(X)	0.39	0.00	0.56	0.14	0.00	0.87	0.05	0.00	0.66	0.27	0.00	0.58
Avail Cap(c_a), veh/h	239	0	399	342	0	387	594	0	712	467	0	847
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.33	1.33	1.33	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.90	0.00	0.90	0.92	0.00	0.92
Uniform Delay (d), s/veh	23.2	0.0	20.3	23.2	0.0	30.8	9.8	0.0	14.5	18.6	0.0	1.2
Incr Delay (d2), s/veh	0.8	0.0	1.3	0.2	0.0	16.6	0.0	0.0	4.3	0.2	0.0	2.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	2.6	0.6	0.0	6.7	0.2	0.0	5.6	1.6	0.0	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	24.0	0.0	21.6	23.4	0.0	47.3	9.8	0.0	18.8	18.8	0.0	3.9
LnGrp LOS	C		C	C		D	A		B	B		A
Approach Vol, veh/h		298			331			495			619	
Approach Delay, s/veh		22.3			44.4			18.3			6.9	
Approach LOS		C			D			B			A	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.1	36.0	7.9	21.0	7.2	41.9	9.2	19.7
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	5.0	31.0	5.0	17.0	5.0	31.0	5.0	17.0
Max Q Clear Time (g_c+I1), s	2.0	16.7	3.3	8.9	2.6	4.6	5.0	14.4
Green Ext Time (p_c), s	0.1	1.4	0.0	0.4	0.0	1.7	0.0	0.3

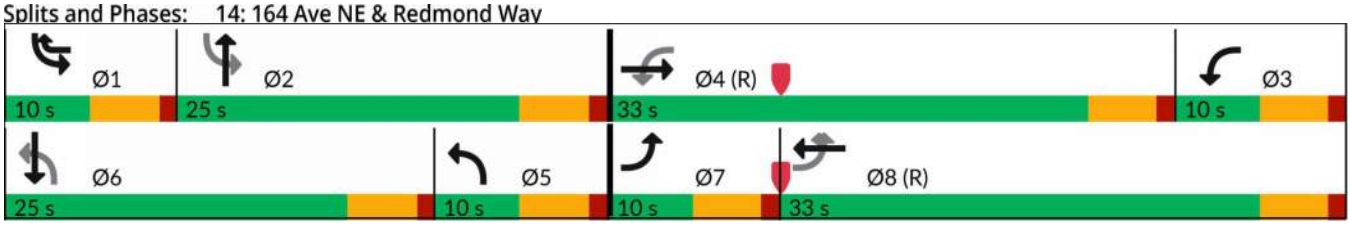
Intersection Summary	
HCM 7th Control Delay, s/veh	19.9
HCM 7th LOS	B

Lanes, Volumes, Timings
14: 164 Ave NE & Redmond Way 03/21/2025

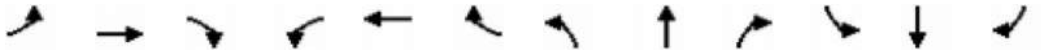
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	623	21	27	683	265	52	160	41	225	154	22
Future Volume (vph)	36	623	21	27	683	265	52	160	41	225	154	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125		0	250		0	70		0	150		150
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		314			714			325			347	
Travel Time (s)		7.1			16.2			7.4			7.9	
Confl. Peds. (#/hr)	56		39	39		56	61		51	51		61
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	2%	2%	2%	3%	3%	3%	1%	1%	1%	5%	5%	5%
Parking (#/hr)				0								
Shared Lane Traffic (%)												
Turn Type	D.P+P	NA		D.P+P	NA	pm+ov	D.P+P	NA		D.P+P	NA	
Protected Phases	7	4		3	8	1	5	2		1	6	
Permitted Phases	8			4		8	6			2		
Detector Phase	7	4		3	8	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	10.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	10.0	22.0		10.0	24.0	10.0	10.0	25.0		10.0	24.0	
Total Split (s)	10.0	33.0		10.0	33.0	10.0	10.0	25.0		10.0	25.0	
Total Split (%)	12.8%	42.3%		12.8%	42.3%	12.8%	12.8%	32.1%		12.8%	32.1%	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lead		Lag	Lag	Lead	Lag	Lag		Lead	Lead	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max		None	C-Max	None	None	None		None	None	

Intersection Summary
Area Type: CBD
Cycle Length: 78
Actuated Cycle Length: 78
Offset: 11 (14%), Referenced to phase 4:EBWB and 8:EBWB, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 14: 164 Ave NE & Redmond Way



HCM 7th Signalized Intersection Summary
14: 164 Ave NE & Redmond Way 03/21/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	36	623	21	27	683	265	52	160	41	225	154	22
Future Volume (veh/h)	36	623	21	27	683	265	52	160	41	225	154	22
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.92	1.00		0.93	0.95		0.86	0.92		0.92
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1683	1683	1683	1670	1670	1670	1697	1697	1697	1643	1643	1643
Adj Flow Rate, veh/h	37	642	22	28	704	273	54	165	42	232	159	23
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	3	3	3	1	1	1	5	5	5
Cap, veh/h	149	579	20	244	700	644	318	283	72	313	302	44
Arrive On Green	0.07	0.72	0.72	0.13	0.56	0.56	0.14	0.45	0.45	0.02	0.07	0.07
Sat Flow, veh/h	1603	1613	55	1590	1670	1321	1616	1259	321	1565	1385	200
Grp Volume(v), veh/h	37	0	664	28	704	273	54	0	207	232	0	182
Grp Sat Flow(s),veh/h/ln	1603	0	1668	1590	1670	1321	1616	0	1580	1565	0	1586
Q Serve(g_s), s	1.0	0.0	28.0	0.0	32.7	8.8	0.0	0.0	7.6	5.0	0.0	8.6
Cycle Q Clear(g_c), s	1.0	0.0	28.0	0.0	32.7	8.8	0.0	0.0	7.6	5.0	0.0	8.6
Prop In Lane	1.00		0.03	1.00		1.00	1.00		0.20	1.00		0.13
Lane Grp Cap(c), veh/h	149	0	599	244	700	644	318	0	355	313	0	346
V/C Ratio(X)	0.25	0.00	1.11	0.11	1.01	0.42	0.17	0.00	0.58	0.74	0.00	0.53
Avail Cap(c_a), veh/h	195	0	599	244	700	644	318	0	405	313	0	407
HCM Platoon Ratio	2.00	2.00	2.00	1.33	1.33	1.33	2.00	2.00	2.00	0.33	0.33	0.33
Upstream Filter(I)	0.77	0.00	0.77	0.82	0.82	0.82	0.74	0.00	0.74	0.86	0.00	0.86
Uniform Delay (d), s/veh	18.0	0.0	11.0	30.8	17.3	9.7	25.6	0.0	18.7	28.6	0.0	32.3
Incr Delay (d2), s/veh	0.7	0.0	66.5	0.2	32.1	1.7	0.2	0.0	1.2	7.8	0.0	1.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	14.5	0.5	15.3	2.4	0.8	0.0	2.4	2.7	0.0	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	18.7	0.0	77.5	31.0	49.4	11.3	25.7	0.0	19.9	36.4	0.0	33.4
LnGrp LOS	B		F	C	F	B	C		B	D		C
Approach Vol, veh/h		701			1005			261			414	
Approach Delay, s/veh		74.4			38.5			21.1			35.1	
Approach LOS		E			D			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	22.5	12.5	33.0	10.5	22.0	7.8	37.7
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	5.0	20.0	5.0	28.0	5.0	20.0	5.0	28.0
Max Q Clear Time (g_c+I1), s	7.0	9.6	2.0	30.0	2.0	10.6	3.0	34.7
Green Ext Time (p_c), s	0.0	0.9	0.0	0.0	0.0	0.7	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	46.6
HCM 7th LOS	D

Lanes, Volumes, Timings
15: 164 Ave NE & Cleveland St 03/21/2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	290	54	15	106	27	44	195	22	29	158	33
Future Volume (vph)	30	290	54	15	106	27	44	195	22	29	158	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	100		0	100		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		429			743			151			325	
Travel Time (s)		11.7			20.3			3.4			7.4	
Confl. Peds. (#/hr)	18		30	30		18	43		25	25		43
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	1%	1%	1%	2%	2%	2%
Parking (#/hr)	0	0	0									
Shared Lane Traffic (%)												
Turn Type	Perm	NA		Perm	NA		D.P+P	NA		D.P+P	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			6			2		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0		8.0	8.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	21.0	21.0		21.0	21.0		10.0	20.0		10.0	19.0	
Total Split (s)	42.0	42.0		42.0	42.0		10.0	26.0		10.0	26.0	
Total Split (%)	53.8%	53.8%		53.8%	53.8%		12.8%	33.3%		12.8%	33.3%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Lead/Lag							Lead	Lead		Lag	Lag	
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	

Intersection Summary
Area Type: CBD
Cycle Length: 78
Actuated Cycle Length: 78
Offset: 77 (99%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 15: 164 Ave NE & Cleveland St



HCM 7th Signalized Intersection Summary
15: 164 Ave NE & Cleveland St 03/21/2025

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	290	54	15	106	27	44	195	22	29	158	33
Future Volume (veh/h)	30	290	54	15	106	27	44	195	22	29	158	33
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.98		0.97	1.00		0.97	0.94		0.88	0.95		0.87
Parking Bus, Adj	1.00	1.00	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1697	1697	1697	1683	1683	1683	1697	1697	1697	1683	1683	1683
Adj Flow Rate, veh/h	32	312	58	16	114	29	47	210	24	31	170	35
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	1	1	2	2	2	1	1	1	2	2	2
Cap, veh/h	89	703	125	109	696	168	211	261	30	182	221	46
Arrive On Green	0.60	0.60	0.60	1.00	1.00	1.00	0.04	0.18	0.18	0.06	0.34	0.34
Sat Flow, veh/h	65	1174	209	98	1162	281	1616	1471	168	1603	1317	271
Grp Volume(v), veh/h	402	0	0	159	0	0	47	0	234	31	0	205
Grp Sat Flow(s),veh/h/ln	1448	0	0	1541	0	0	1616	0	1639	1603	0	1588
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	1.8	0.0	10.7	0.0	0.0	9.0
Cycle Q Clear(g_c), s	11.6	0.0	0.0	0.0	0.0	0.0	1.8	0.0	10.7	0.0	0.0	9.0
Prop In Lane	0.08		0.14	0.10		0.18	1.00		0.10	1.00		0.17
Lane Grp Cap(c), veh/h	917	0	0	973	0	0	211	0	291	182	0	267
V/C Ratio(X)	0.44	0.00	0.00	0.16	0.00	0.00	0.22	0.00	0.80	0.17	0.00	0.77
Avail Cap(c_a), veh/h	917	0	0	973	0	0	248	0	441	235	0	427
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	0.97	0.00	0.00	0.99	0.00	0.00	1.00	0.00	1.00	0.92	0.00	0.92
Uniform Delay (d), s/veh	8.6	0.0	0.0	0.0	0.0	0.0	25.7	0.0	30.8	33.5	0.0	24.5
Incr Delay (d2), s/veh	1.5	0.0	0.0	0.4	0.0	0.0	0.5	0.0	6.2	0.4	0.0	4.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	0.0	0.0	0.1	0.0	0.0	0.7	0.0	4.6	0.6	0.0	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	10.1	0.0	0.0	0.4	0.0	0.0	26.2	0.0	37.0	33.9	0.0	28.8
LnGrp LOS	B			A			C		D	C		C
Approach Vol, veh/h		402			159			281			236	
Approach Delay, s/veh		10.1			0.4			35.2			29.5	
Approach LOS		B			A			D			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.4	18.8		51.7	8.2	18.1		51.7				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	5.0	21.0		37.0	5.0	21.0		37.0				
Max Q Clear Time (g_c+I1), s	2.0	12.7		13.6	3.8	11.0		2.0				
Green Ext Time (p_c), s	0.0	0.5		1.8	0.0	0.5		0.7				

Intersection Summary												
HCM 7th Control Delay, s/veh			19.5									
HCM 7th LOS			B									

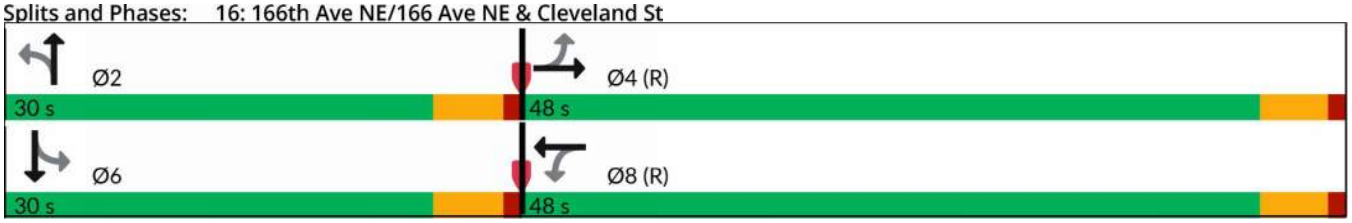
Lanes, Volumes, Timings
16: 166th Ave NE/166 Ave NE & Cleveland St 03/21/2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	51	271	29	34	123	28	17	191	98	7	93	12
Future Volume (vph)	51	271	29	34	123	28	17	191	98	7	93	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		200	0		0	100		125	160		0
Storage Lanes	0		0	0		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			25			30	
Link Distance (ft)		743			556			226			372	
Travel Time (s)		20.3			15.2			6.2			8.5	
Confl. Peds. (#/hr)	31		1	1		31	4		79	79		4
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Shared Lane Traffic (%)												
Turn Type	Perm	NA		Perm	NA		Perm	NA	Free	Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		Free	6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	22.0	22.0		22.0	22.0		22.0	22.0		22.0	22.0	
Total Split (s)	48.0	48.0		48.0	48.0		30.0	30.0		30.0	30.0	
Total Split (%)	61.5%	61.5%		61.5%	61.5%		38.5%	38.5%		38.5%	38.5%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max		C-Max	C-Max		Ped	Ped		Ped	Ped	

Intersection Summary

Area Type: CBD
Cycle Length: 78
Actuated Cycle Length: 78
Offset: 4 (5%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
Natural Cycle: 45
Control Type: Actuated-Coordinated

Splits and Phases: 16: 166th Ave NE/166 Ave NE & Cleveland St



HCM 7th Signalized Intersection Summary
16: 166th Ave NE/166 Ave NE & Cleveland St 03/21/2025

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	51	271	29	34	123	28	17	191	98	7	93	12
Future Volume (veh/h)	51	271	29	34	123	28	17	191	98	7	93	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.99		0.98	0.98		0.98	0.86		1.00	0.89		0.81
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1710	1710	1710	1697	1697	1697	1697	1697	1697	1697	1697	1697
Adj Flow Rate, veh/h	54	285	31	36	129	29	18	201	0	7	98	13
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	1	1	1	1	1	1	1	1	1
Cap, veh/h	171	848	88	203	687	147	252	351		189	295	39
Arrive On Green	1.00	1.00	1.00	0.66	0.66	0.66	0.21	0.21	0.00	0.41	0.41	0.41
Sat Flow, veh/h	177	1276	133	222	1033	221	994	1697	1438	957	1422	189
Grp Volume(v), veh/h	370	0	0	194	0	0	18	201	0	7	0	111
Grp Sat Flow(s),veh/h/ln	1586	0	0	1476	0	0	994	1697	1438	957	0	1610
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	1.2	8.3	0.0	0.5	0.0	3.7
Cycle Q Clear(g_c), s	0.0	0.0	0.0	3.5	0.0	0.0	4.9	8.3	0.0	8.8	0.0	3.7
Prop In Lane	0.15		0.08	0.19		0.15	1.00		1.00	1.00		0.12
Lane Grp Cap(c), veh/h	1107	0	0	1036	0	0	252	351		189	0	334
V/C Ratio(X)	0.33	0.00	0.00	0.19	0.00	0.00	0.07	0.57		0.04	0.00	0.33
Avail Cap(c_a), veh/h	1107	0	0	1036	0	0	364	544		297	0	516
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	0.90	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.98	0.00	0.98
Uniform Delay (d), s/veh	0.0	0.0	0.0	5.0	0.0	0.0	28.0	27.8	0.0	24.0	0.0	19.2
Incr Delay (d2), s/veh	0.7	0.0	0.0	0.4	0.0	0.0	0.4	5.2	0.0	0.3	0.0	2.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.0	1.1	0.0	0.0	0.3	3.8	0.0	0.1	0.0	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.7	0.0	0.0	5.4	0.0	0.0	28.4	33.0	0.0	24.3	0.0	21.2
LnGrp LOS	A			A			C	C		C		C
Approach Vol, veh/h		370			194			219			118	
Approach Delay, s/veh		0.7			5.4			32.7			21.4	
Approach LOS		A			A			C			C	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	21.2	56.8	21.2	56.8
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	25.0	43.0	25.0	43.0
Max Q Clear Time (g_c+I1), s	10.3	2.0	10.8	5.5
Green Ext Time (p_c), s	1.9	5.4	0.8	2.5

Intersection Summary	
HCM 7th Control Delay, s/veh	12.2
HCM 7th LOS	B

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings
17: 170 Ave NE & NE 76 St 03/21/2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	169	2	16	9	5	56	5	990	2	18	550	116
Future Volume (vph)	169	2	16	9	5	56	5	990	2	18	550	116
Satd. Flow (prot)	0	1772	0	0	1658	0	1787	3573	0	1787	3431	0
Flt Permitted		0.695			0.957		0.388			0.162		
Satd. Flow (perm)	0	1281	0	0	1591	0	712	3573	0	305	3431	0
Satd. Flow (RTOR)		6			58						46	
Confl. Peds. (#/hr)	5		25	25		5	21		31	31		21
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	1%	1%	1%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	195	0	0	72	0	5	1033	0	19	694	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases	7	4			8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		8	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		8.0	8.0		5.0	8.0	
Minimum Split (s)	10.0	24.0		24.0	24.0		18.0	18.0		10.0	19.0	
Total Split (s)	10.0	34.0		24.0	24.0		41.0	41.0		10.0	51.0	
Total Split (%)	11.8%	40.0%		28.2%	28.2%		48.2%	48.2%		11.8%	60.0%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lead			Lag	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		Min	Min		None	Min	
Act Effct Green (s)		15.7			15.7		27.8	27.8		29.1	29.1	
Actuated g/C Ratio		0.28			0.28		0.50	0.50		0.52	0.52	
v/c Ratio		0.53			0.15		0.01	0.58		0.06	0.38	
Control Delay (s/veh)		23.1			8.0		10.8	12.9		8.1	8.5	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		23.1			8.0		10.8	12.9		8.1	8.5	
LOS		C			A		B	B		A	A	
Approach Delay (s/veh)		23.1			8.0			12.9			8.4	
Approach LOS		C			A			B			A	

Intersection Summary	
Cycle Length: 85	
Actuated Cycle Length: 55.5	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.58	
Intersection Signal Delay (s/veh): 12.1	Intersection LOS: B
Intersection Capacity Utilization 53.1%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 17: 170 Ave NE & NE 76 St



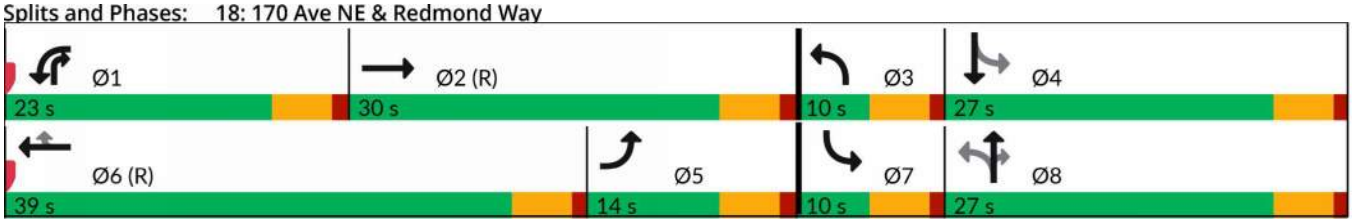
Lanes, Volumes, Timings
18: 170 Ave NE & Redmond Way 03/21/2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	67	906	91	414	781	268	32	405	783	160	184	17
Future Volume (vph)	67	906	91	414	781	268	32	405	783	160	184	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125		0	250		0	125		0	100		0
Storage Lanes	1		0	2		1	1		1	1		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		585			661			498			439	
Travel Time (s)		13.3			15.0			11.3			10.0	
Confl. Peds. (#/hr)	20		6	6		20	15		27	27		15
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Shared Lane Traffic (%)												
Turn Type	Prot	NA		Prot	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA	
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases						6	8		8	4		
Detector Phase	5	2		1	6	6	3 8	8	1	7 4	4	
Switch Phase												
Minimum Initial (s)	5.0	8.0		6.0	8.0	8.0	5.0	5.0	6.0	5.0	5.0	
Minimum Split (s)	10.0	24.0		11.0	23.0	23.0	10.0	27.0	11.0	10.0	27.0	
Total Split (s)	14.0	30.0		23.0	39.0	39.0	10.0	27.0	23.0	10.0	27.0	
Total Split (%)	15.6%	33.3%		25.6%	43.3%	43.3%	11.1%	30.0%	25.6%	11.1%	30.0%	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lag	Lag		Lead	Lead	Lead	Lead	Lag	Lead	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes			Yes			
Recall Mode	None	C-Max		None	C-Max	C-Max	None	None	None	None	None	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 55 (61%), Referenced to phase 2:EBT and 6:WBT, Start of 1st Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 18: 170 Ave NE & Redmond Way



HCM 7th Signalized Intersection Summary
18: 170 Ave NE & Redmond Way 03/21/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	67	906	91	414	781	268	32	405	783	160	184	17
Future Volume (veh/h)	67	906	91	414	781	268	32	405	783	160	184	17
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	0.98		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	71	954	96	436	822	282	34	426	824	168	194	18
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	180	1065	107	533	1353	588	322	461	622	190	454	42
Arrive On Green	0.20	0.65	0.65	0.05	0.12	0.12	0.03	0.24	0.24	0.02	0.09	0.09
Sat Flow, veh/h	1795	3279	330	3483	3582	1555	1795	1885	1545	1795	1694	157
Grp Volume(v), veh/h	71	521	529	436	822	282	34	426	824	168	0	212
Grp Sat Flow(s),veh/h/ln	1795	1791	1818	1742	1791	1555	1795	1885	1545	1795	0	1851
Q Serve(g_s), s	3.1	21.9	22.0	11.2	19.6	11.1	1.3	19.9	22.0	5.0	0.0	9.8
Cycle Q Clear(g_c), s	3.1	21.9	22.0	11.2	19.6	11.1	1.3	19.9	22.0	5.0	0.0	9.8
Prop In Lane	1.00		0.18	1.00		1.00	1.00		1.00	1.00		0.08
Lane Grp Cap(c), veh/h	180	582	591	533	1353	588	322	461	622	190	0	496
V/C Ratio(X)	0.40	0.90	0.90	0.82	0.61	0.48	0.11	0.92	1.32	0.88	0.00	0.43
Avail Cap(c_a), veh/h	180	582	591	697	1353	588	364	461	622	190	0	496
HCM Platoon Ratio	2.00	2.00	2.00	0.33	0.33	0.33	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	0.97	0.97	0.97	0.41	0.41	0.41	0.79	0.79	0.79	0.43	0.00	0.43
Uniform Delay (d), s/veh	33.6	14.5	14.5	41.5	33.1	16.7	24.4	33.2	27.3	31.2	0.0	34.5
Incr Delay (d2), s/veh	0.5	18.5	18.3	1.9	0.8	1.2	0.0	20.3	154.8	17.9	0.0	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	7.4	7.5	5.3	9.5	4.7	0.5	11.4	39.4	2.1	0.0	4.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	34.1	33.0	32.8	43.4	33.9	17.9	24.4	53.5	182.1	49.1	0.0	34.6
LnGrp LOS	C	C	C	D	C	B	C	D	F	D		C
Approach Vol, veh/h		1121			1540			1284			380	
Approach Delay, s/veh		33.0			33.7			135.3			41.0	
Approach LOS		C			C			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.8	34.2	7.9	29.1	14.0	39.0	10.0	27.0
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	18.0	25.0	5.0	22.0	9.0	34.0	5.0	22.0
Max Q Clear Time (g_c+I1), s	13.2	24.0	3.3	11.8	5.1	21.6	7.0	24.0
Green Ext Time (p_c), s	0.6	0.6	0.0	0.3	0.0	4.5	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	64.3
HCM 7th LOS	E

Lanes, Volumes, Timings
19: Bear Creek Crossing & Redmond Way 03/21/2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	106	1643	10	19	1218	168	44	18	55	139	20	62
Future Volume (vph)	106	1643	10	19	1218	168	44	18	55	139	20	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	175		150	0		0	0		0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		661			588			140			177	
Travel Time (s)		15.0			13.4			3.8			4.8	
Confl. Peds. (#/hr)	20		2	2		20	2		20	20		2
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	2%	2%	2%
Shared Lane Traffic (%)												
Turn Type	Prot	NA		Prot	NA	Perm	D.P+P	NA		D.P+P	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases						6	4			8		
Detector Phase	5	2		1	6	6	3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	8.0		6.0	8.0	8.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	10.0	24.0		11.0	23.0	23.0	10.0	27.0		10.0	27.0	
Total Split (s)	12.0	42.0		11.0	41.0	41.0	10.0	27.0		10.0	27.0	
Total Split (%)	13.3%	46.7%		12.2%	45.6%	45.6%	11.1%	30.0%		11.1%	30.0%	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lead		Lag	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes				Yes	Yes	
Recall Mode	None	C-Max		None	C-Max	C-Max	None	None		None	Max	

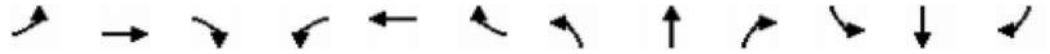
Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 17 (19%), Referenced to phase 2:EBT and 6:WBT, Start of 1st Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 19: Bear Creek Crossing & Redmond Way



HCM 7th Signalized Intersection Summary
19: Bear Creek Crossing & Redmond Way 03/21/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	106	1643	10	19	1218	168	44	18	55	139	20	62
Future Volume (veh/h)	106	1643	10	19	1218	168	44	18	55	139	20	62
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	0.98		0.97	0.98		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1900	1900	1900	1870	1870	1870
Adj Flow Rate, veh/h	109	1694	10	20	1256	173	45	19	57	143	21	64
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	1	1	1	1	1	0	0	0	2	2	2
Cap, veh/h	139	1501	9	152	1499	653	413	93	278	423	98	297
Arrive On Green	0.03	0.14	0.14	0.03	0.14	0.14	0.04	0.23	0.23	0.06	0.24	0.24
Sat Flow, veh/h	1795	3650	22	1795	3582	1559	1810	410	1229	1781	399	1216
Grp Volume(v), veh/h	109	831	873	20	1256	173	45	0	76	143	0	85
Grp Sat Flow(s),veh/h/ln	1795	1791	1881	1795	1791	1559	1810	0	1639	1781	0	1615
Q Serve(g_s), s	5.4	37.0	37.0	1.0	30.8	8.9	1.6	0.0	3.4	5.0	0.0	3.8
Cycle Q Clear(g_c), s	5.4	37.0	37.0	1.0	30.8	8.9	1.6	0.0	3.4	5.0	0.0	3.8
Prop In Lane	1.00		0.01	1.00		1.00	1.00		0.75	1.00		0.75
Lane Grp Cap(c), veh/h	139	736	773	152	1499	653	413	0	371	423	0	395
V/C Ratio(X)	0.79	1.13	1.13	0.13	0.84	0.26	0.11	0.00	0.20	0.34	0.00	0.22
Avail Cap(c_a), veh/h	140	736	773	152	1499	653	445	0	401	423	0	395
HCM Platoon Ratio	0.33	0.33	0.33	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.09	0.09	0.65	0.65	0.65	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	43.1	38.9	38.9	40.5	35.8	26.4	23.9	0.0	28.2	25.6	0.0	27.1
Incr Delay (d2), s/veh	2.6	59.5	60.1	0.2	3.8	0.6	0.1	0.0	0.2	0.3	0.0	1.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	29.8	31.4	0.4	15.4	3.8	0.7	0.0	1.4	2.4	0.0	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	45.8	98.4	99.0	40.7	39.6	27.0	24.0	0.0	28.4	26.0	0.0	28.4
LnGrp LOS	D	F	F	D	D	C	C		C	C		C
Approach Vol, veh/h		1813			1449			121			228	
Approach Delay, s/veh		95.5			38.1			26.8			26.9	
Approach LOS		F			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.6	42.0	8.4	27.0	11.9	42.7	10.0	25.4
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	6.0	37.0	5.0	22.0	7.0	36.0	5.0	22.0
Max Q Clear Time (g_c+I1), s	3.0	39.0	3.6	5.8	7.4	32.8	7.0	5.4
Green Ext Time (p_c), s	0.0	0.0	0.0	0.2	0.0	2.2	0.0	0.2

Intersection Summary	
HCM 7th Control Delay, s/veh	65.9
HCM 7th LOS	E

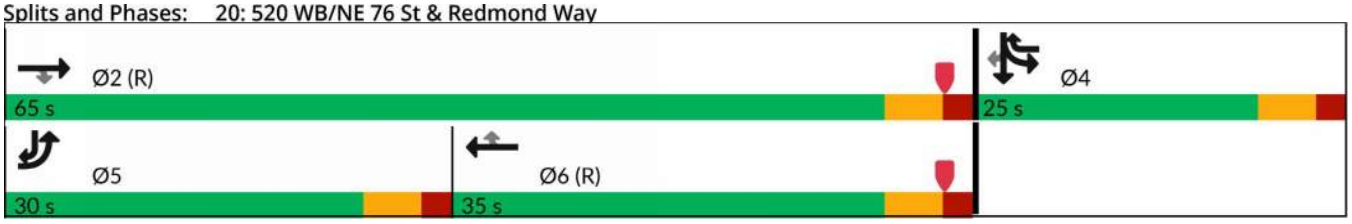
Lanes, Volumes, Timings
20: 520 WB/NE 76 St & Redmond Way 03/21/2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	453	1118	274	0	958	396	0	0	0	73	394	447
Future Volume (vph)	453	1118	274	0	958	396	0	0	0	73	394	447
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	220		110	0		0	0		0	400		350
Storage Lanes	2		1	1		1	0		0	1		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		45			45			25			25	
Link Distance (ft)		588			476			347			459	
Travel Time (s)		8.9			7.2			9.5			12.5	
Confl. Peds. (#/hr)	16					16						
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	2%	2%	2%
Shared Lane Traffic (%)												
Turn Type	Prot	NA	Perm		NA	pm+ov				Split	NA	pm+ov
Protected Phases	5	2			6	4				4	4	5
Permitted Phases			2			6						4
Detector Phase	5	2	2		6	4				4	4	5
Switch Phase												
Minimum Initial (s)	5.0	7.0	7.0		7.0	5.0				5.0	5.0	5.0
Minimum Split (s)	10.9	12.9	12.9		37.9	10.9				10.9	10.9	10.9
Total Split (s)	30.0	65.0	65.0		35.0	25.0				25.0	25.0	30.0
Total Split (%)	33.3%	72.2%	72.2%		38.9%	27.8%				27.8%	27.8%	33.3%
Yellow Time (s)	3.9	3.9	3.9		3.9	3.9				3.9	3.9	3.9
All-Red Time (s)	2.0	2.0	2.0		2.0	2.0				2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0				0.0	0.0	0.0
Total Lost Time (s)	5.9	5.9	5.9		5.9	5.9				5.9	5.9	5.9
Lead/Lag	Lead				Lag							Lead
Lead-Lag Optimize?												
Recall Mode	None	C-Min	C-Min		C-Min	None				None	None	None

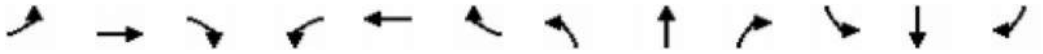
Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 62 (69%), Referenced to phase 2:EBT and 6:WBT, Start of Red
Natural Cycle: 80
Control Type: Actuated-Coordinated

Splits and Phases: 20: 520 WB/NE 76 St & Redmond Way



HCM 7th Signalized Intersection Summary
20: 520 WB/NE 76 St & Redmond Way 03/21/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	453	1118	274	0	958	396	0	0	0	73	394	447
Future Volume (veh/h)	453	1118	274	0	958	396	0	0	0	73	394	447
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	0	1885	1885				1870	1870	1870
Adj Flow Rate, veh/h	467	1153	282	0	988	408				75	406	461
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97				0.97	0.97	0.97
Percent Heavy Veh, %	1	1	1	0	1	1				2	2	2
Cap, veh/h	591	2352	1041	0	1509	999				378	397	605
Arrive On Green	0.11	0.44	0.44	0.00	0.84	0.84				0.21	0.21	0.21
Sat Flow, veh/h	3483	3582	1586	0	3676	1567				1781	1870	1585
Grp Volume(v), veh/h	467	1153	282	0	988	408				75	406	461
Grp Sat Flow(s),veh/h/ln	1742	1791	1586	0	1791	1567				1781	1870	1585
Q Serve(g_s), s	11.7	20.7	10.2	0.0	8.7	4.9				3.1	19.1	19.1
Cycle Q Clear(g_c), s	11.7	20.7	10.2	0.0	8.7	4.9				3.1	19.1	19.1
Prop In Lane	1.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	591	2352	1041	0	1509	999				378	397	605
V/C Ratio(X)	0.79	0.49	0.27	0.00	0.65	0.41				0.20	1.02	0.76
Avail Cap(c_a), veh/h	933	2352	1041	0	1509	999				378	397	605
HCM Platoon Ratio	0.67	0.67	0.67	1.00	2.00	2.00				1.00	1.00	1.00
Upstream Filter(I)	0.24	0.24	0.24	0.00	0.75	0.75				1.00	1.00	1.00
Uniform Delay (d), s/veh	38.3	14.4	11.5	0.0	4.8	1.9				29.2	35.5	24.2
Incr Delay (d2), s/veh	0.6	0.2	0.2	0.0	1.7	0.9				0.3	51.1	5.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	8.6	3.3	0.0	1.9	1.6				1.4	14.2	19.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	38.9	14.6	11.7	0.0	6.5	2.8				29.4	86.6	29.9
LnGrp LOS	D	B	B		A	A				C	F	C
Approach Vol, veh/h		1902			1396						942	
Approach Delay, s/veh		20.1			5.4						54.3	
Approach LOS		C			A						D	

Timer - Assigned Phs		2		4	5	6						
Phs Duration (G+Y+Rc), s		65.0		25.0	21.2	43.8						
Change Period (Y+Rc), s		5.9		5.9	5.9	5.9						
Max Green Setting (Gmax), s		59.1		19.1	24.1	29.1						
Max Q Clear Time (g_c+I1), s		22.7		21.1	13.7	10.7						
Green Ext Time (p_c), s		13.3		0.0	1.5	9.3						

Intersection Summary	
HCM 7th Control Delay, s/veh	22.9
HCM 7th LOS	C

Notes
User approved pedestrian interval to be less than phase max green.
User approved changes to right turn type.

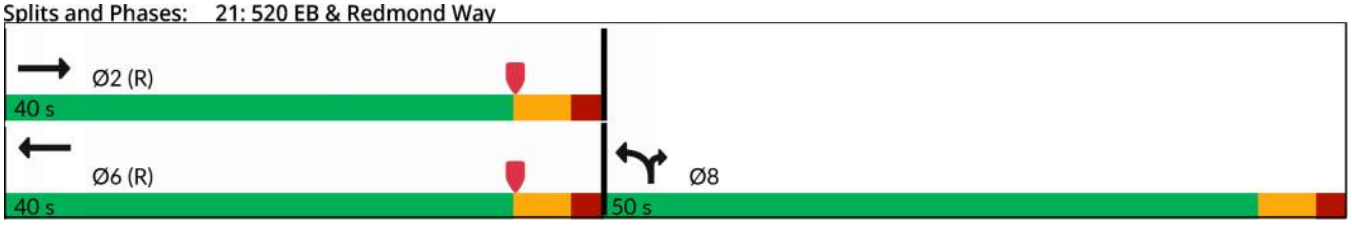
Lanes, Volumes, Timings
21: 520 EB & Redmond Way 03/21/2025

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1192	0	0	934	442	1419
Future Volume (vph)	1192	0	0	934	442	1419
Satd. Flow (prot)	5136	0	0	3574	3467	2814
Flt Permitted					0.950	
Satd. Flow (perm)	5136	0	0	3574	3467	2814
Satd. Flow (RTOR)						20
Confl. Peds. (#/hr)		8	8			16
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1242	0	0	973	460	1478
Turn Type	NA			NA	Prot	Prot
Protected Phases	2			6	8	8
Permitted Phases						
Detector Phase	2			6	8	8
Switch Phase						
Minimum Initial (s)	10.0			10.0	5.0	5.0
Minimum Split (s)	37.9			15.9	37.9	37.9
Total Split (s)	40.0			40.0	50.0	50.0
Total Split (%)	44.4%			44.4%	55.6%	55.6%
Yellow Time (s)	3.9			3.9	3.9	3.9
All-Red Time (s)	2.0			2.0	2.0	2.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	5.9			5.9	5.9	5.9
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Min			C-Min	None	None
Act Effct Green (s)	31.3			31.3	46.9	46.9
Actuated g/C Ratio	0.35			0.35	0.52	0.52
v/c Ratio	0.70			0.78	0.25	1.00
Control Delay (s/veh)	16.0			27.8	12.9	47.2
Queue Delay	0.0			0.0	0.0	0.0
Total Delay (s/veh)	16.0			27.8	12.9	47.2
LOS	B			C	B	D
Approach Delay (s/veh)	16.0			27.8	39.1	
Approach LOS	B			C	D	

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 62 (69%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.00
Intersection Signal Delay (s/veh): 29.5 Intersection LOS: C
Intersection Capacity Utilization 87.7% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 21: 520 EB & Redmond Way



Lanes, Volumes, Timings
22: 164 Ave NE & NE 76 St 03/21/2025



Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Volume (vph)	2	54	171	37	1	23	98	102	2	51	130	46
Future Volume (vph)	2	54	171	37	1	23	98	102	2	51	130	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)			25				25				25	
Link Distance (ft)			539				724				311	
Travel Time (s)			14.7				19.7				8.5	
Confl. Peds. (#/hr)	122	1		84	7	84		1	84	122		7
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	1%	1%	1%	1%	0%	0%	0%	0%	2%	2%	2%	2%
Shared Lane Traffic (%)												
Sign Control			Yield				Yield				Yield	

Intersection Summary	
Area Type:	Other
Control Type: Roundabout	



Lane Group	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Volume (vph)	4	78	116	28
Future Volume (vph)	4	78	116	28
Ideal Flow (vphpl)	1900	1900	1900	1900
Link Speed (mph)			25	
Link Distance (ft)			149	
Travel Time (s)			4.1	
Confl. Peds. (#/hr)	1	7		122
Peak Hour Factor	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	3%	3%	3%	3%
Shared Lane Traffic (%)				
Sign Control			Yield	

Intersection Summary

Intersection	
Intersection Delay, s/veh	6.4
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	314	266	273	269
Demand Flow Rate, veh/h	317	266	278	277
Vehicles Circulating, veh/h	273	294	375	211
Vehicles Exiting, veh/h	215	359	215	349
Ped Vol Crossing Leg, #/h	122	7	84	1
Ped Cap Adj	0.978	0.999	0.988	1.000
Approach Delay, s/veh	6.7	6.1	7.1	5.7
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
A (Intercept)	1380	1380	1380	1380
B (Slope)	1.02e-3	1.02e-3	1.02e-3	1.02e-3
Entry Flow, veh/h	317	266	278	277
Cap Entry Lane, veh/h	1045	1022	941	1113
Entry HV Adj Factor	0.990	1.000	0.982	0.970
Flow Entry, veh/h	314	266	273	269
Cap Entry, veh/h	1011	1021	913	1079
V/C Ratio	0.310	0.260	0.299	0.249
Control Delay, s/veh	6.7	6.1	7.1	5.7
LOS	A	A	A	A
95th %tile Queue, veh	1	1	1	1

Lanes, Volumes, Timings
23: 166th Ave NE & NE 76 St 03/21/2025



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	123	172	46	28	89	76	24	106	22	21	88	51
Future Volume (vph)	123	172	46	28	89	76	24	106	22	21	88	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		0	0		50
Storage Lanes	0		0	0		0	0		0	0		1
Taper Length (ft)	25			25			25			25		
Link Speed (mph)		25			25			10			10	
Link Distance (ft)		724			1313			308			226	
Travel Time (s)		19.7			35.8			21.0			15.4	
Confl. Peds. (#/hr)	5		49	49		5	9		72	72		9
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	0%	0%	0%
Parking (#/hr)	0	0	0				0	0	0			
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Intersection Delay, s/veh	11.8
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	123	172	46	28	89	76	24	106	22	21	88	51
Future Vol, veh/h	123	172	46	28	89	76	24	106	22	21	88	51
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	0	0	0
Mvmt Flow	131	183	49	30	95	81	26	113	23	22	94	54
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	1
HCM Control Delay, s/veh	13.8	10.5	10.9	10.2
HCM LOS	B	B	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	16%	36%	15%	19%	0%
Vol Thru, %	70%	50%	46%	81%	0%
Vol Right, %	14%	13%	39%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	152	341	193	109	51
LT Vol	24	123	28	21	0
Through Vol	106	172	89	88	0
RT Vol	22	46	76	0	51
Lane Flow Rate	162	363	205	116	54
Geometry Grp	4a	2	2	5	5
Degree of Util (X)	0.26	0.524	0.299	0.205	0.084
Departure Headway (Hd)	5.792	5.197	5.245	6.367	5.557
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	619	693	684	562	643
Service Time	3.842	3.233	3.289	4.115	3.305
HCM Lane V/C Ratio	0.262	0.524	0.3	0.206	0.084
HCM Control Delay, s/veh	10.9	13.8	10.5	10.8	8.8
HCM Lane LOS	B	B	B	B	A
HCM 95th-tile Q	1	3.1	1.3	0.8	0.3

Lanes, Volumes, Timings
24: 164th Ave NE & NE 74th St 03/21/2025



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	89	33	33	76	98	76
Future Volume (vph)	89	33	33	76	98	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	10			10	10	
Link Distance (ft)	321			415	239	
Travel Time (s)	21.9			28.3	16.3	
Confl. Peds. (#/hr)	75	214	36			36
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	0%	0%	0%	0%	1%	1%
Parking (#/hr)	0	0	0	0		
Shared Lane Traffic (%)						
Sign Control	Stop			Stop	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Intersection Delay, s/veh	8.4
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	89	33	33	76	98	76
Future Vol, veh/h	89	33	33	76	98	76
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles, %	0	0	0	0	1	1
Mvmt Flow	100	37	37	85	110	85
Number of Lanes	1	0	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay, s/veh	8.6	8.3	8.3
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	30%	73%	0%
Vol Thru, %	70%	0%	56%
Vol Right, %	0%	27%	44%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	109	122	174
LT Vol	33	89	0
Through Vol	76	0	98
RT Vol	0	33	76
Lane Flow Rate	122	137	196
Geometry Grp	1	1	1
Degree of Util (X)	0.153	0.174	0.224
Departure Headway (Hd)	4.488	4.574	4.119
Convergence, Y/N	Yes	Yes	Yes
Cap	801	785	874
Service Time	2.507	2.596	2.136
HCM Lane V/C Ratio	0.152	0.175	0.224
HCM Control Delay, s/veh	8.3	8.6	8.3
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.5	0.6	0.9

Lanes, Volumes, Timings
25: 166th Ave NE/166th Ave NE & NE 74th St 03/21/2025



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	57	45	90	49	47	89
Future Volume (vph)	57	45	90	49	47	89
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	10		10			10
Link Distance (ft)	375		216			226
Travel Time (s)	25.6		14.7			15.4
Confl. Peds. (#/hr)	53	105		34	34	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	1%	0%	0%	3%	3%
Parking (#/hr)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Sign Control	Stop		Stop			Stop

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Intersection Delay, s/veh	8.2
Intersection LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	57	45	90	49	47	89
Future Vol, veh/h	57	45	90	49	47	89
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	1	1	0	0	3	3
Mvmt Flow	62	49	98	53	51	97
Number of Lanes	1	0	1	0	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay, s/veh	8.1	8	8.4
HCM LOS	A	A	A

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	56%	35%
Vol Thru, %	65%	0%	65%
Vol Right, %	35%	44%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	139	102	136
LT Vol	0	57	47
Through Vol	90	0	89
RT Vol	49	45	0
Lane Flow Rate	151	111	148
Geometry Grp	1	1	1
Degree of Util (X)	0.172	0.136	0.182
Departure Headway (Hd)	4.104	4.419	4.442
Convergence, Y/N	Yes	Yes	Yes
Cap	876	814	813
Service Time	2.118	2.433	2.442
HCM Lane V/C Ratio	0.172	0.136	0.182
HCM Control Delay, s/veh	8	8.1	8.4
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.6	0.5	0.7

Lanes, Volumes, Timings
26: Bear Creek Pkwy & 164th Ave NE 03/21/2025



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	132	915	558	35	72	78
Future Volume (vph)	132	915	558	35	72	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100			150	0	125
Storage Lanes	1			1	1	1
Taper Length (ft)	25				25	
Link Speed (mph)		30	30		10	
Link Distance (ft)		500	450		401	
Travel Time (s)		11.4	10.2		27.3	
Confl. Peds. (#/hr)	12			12		18
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	1%	1%	2%	2%	2%	2%
Parking (#/hr)		0				
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	132	915	558	35	72	78
Future Vol, veh/h	132	915	558	35	72	78
Conflicting Peds, #/hr	12	0	0	12	0	18
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	150	0	125
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	1	1	2	2	2	2
Mvmt Flow	138	953	581	36	75	81

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	630	0	-	0	1821	611
Stage 1	-	-	-	-	593	-
Stage 2	-	-	-	-	1228	-
Critical Hdwy	4.11	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.209	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	957	-	-	-	85	494
Stage 1	-	-	-	-	552	-
Stage 2	-	-	-	-	277	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	948	-	-	-	~ 71	481
Mov Cap-2 Maneuver	-	-	-	-	187	-
Stage 1	-	-	-	-	467	-
Stage 2	-	-	-	-	274	-

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	1.19	0	24.78
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	948	-	-	-	187	481
HCM Lane V/C Ratio	0.145	-	-	-	0.4	0.169
HCM Ctrl Dly (s/v)	9.4	-	-	-	36.5	14
HCM Lane LOS	A	-	-	-	E	B
HCM 95th %tile Q(veh)	0.5	-	-	-	1.8	0.6

Notes

~: Volume exceeds capacity $: Delay exceeds 300s
+: Computation Not Defined *: All major volume in platoon

Lanes, Volumes, Timings
27: Bear Creek Pkwy & 166th Ave NE 03/21/2025



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	91	897	468	71	52	127
Future Volume (vph)	91	897	468	71	52	127
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)		-1%	1%		-1%	
Storage Length (ft)	200			150	0	150
Storage Lanes	1			1	1	1
Taper Length (ft)	25				25	
Link Speed (mph)		30	30		10	
Link Distance (ft)		220	462		360	
Travel Time (s)		5.0	10.5		24.5	
Confl. Peds. (#/hr)	22			22		27
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	1%	1%	1%	1%	3%	3%
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	91	897	468	71	52	127
Future Vol, veh/h	91	897	468	71	52	127
Conflicting Peds, #/hr	22	0	0	22	0	27
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	200	-	-	150	0	150
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	-1	1	-	-1	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	1	1	1	1	3	3
Mvmt Flow	96	944	493	75	55	134

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	589	0	-	0	1650	542
Stage 1	-	-	-	-	515	-
Stage 2	-	-	-	-	1136	-
Critical Hdwy	4.11	-	-	-	6.23	6.13
Critical Hdwy Stg 1	-	-	-	-	5.23	-
Critical Hdwy Stg 2	-	-	-	-	5.23	-
Follow-up Hdwy	2.209	-	-	-	3.527	3.327
Pot Cap-1 Maneuver	991	-	-	-	118	547
Stage 1	-	-	-	-	615	-
Stage 2	-	-	-	-	325	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	973	-	-	-	103	525
Mov Cap-2 Maneuver	-	-	-	-	226	-
Stage 1	-	-	-	-	545	-
Stage 2	-	-	-	-	319	-

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	0.84	0	17.59
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	973	-	-	-	226	525
HCM Lane V/C Ratio	0.098	-	-	-	0.242	0.255
HCM Ctrl Dly (s/v)	9.1	-	-	-	25.9	14.2
HCM Lane LOS	A	-	-	-	D	B
HCM 95th %tile Q(veh)	0.3	-	-	-	0.9	1

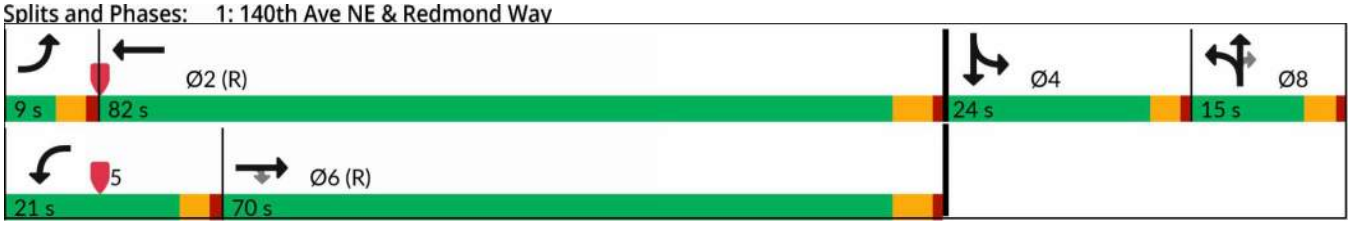
2034 With Project (Phases 1 to 3 of Scenario 2)

Lanes, Volumes, Timings
1: 140th Ave NE & Redmond Way 03/21/2025

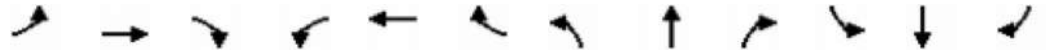
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	1318	117	173	1720	7	89	11	59	18	9	24
Future Volume (vph)	34	1318	117	173	1720	7	89	11	59	18	9	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-3%			4%			0%			7%	
Storage Length (ft)	125		250	250		0	0		200	0		30
Storage Lanes	1		1	1		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		40			40			35			25	
Link Distance (ft)		535			1832			797			317	
Travel Time (s)		9.1			31.2			15.5			8.6	
Confl. Peds. (#/hr)	8		2	2		8	11					11
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA	Perm	Split	NA	
Protected Phases	1	6		5	2		8	8		4	4	
Permitted Phases			6						8			
Detector Phase	1	6	6	5	2		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	5.0	12.0		5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	9.0	23.0	23.0	9.0	23.0		9.0	9.0	9.0	24.0	24.0	
Total Split (s)	9.0	70.0	70.0	21.0	82.0		15.0	15.0	15.0	24.0	24.0	
Total Split (%)	6.9%	53.8%	53.8%	16.2%	63.1%		11.5%	11.5%	11.5%	18.5%	18.5%	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)	4.0	5.0	5.0	4.0	5.0			4.0	4.0		4.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag							
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes							
Recall Mode	None	C-Max	C-Max	None	C-Max		None	None	None	None	None	

Intersection Summary
Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBT, Start of 1st Green
Natural Cycle: 100
Control Type: Actuated-Coordinated

Splits and Phases: 1: 140th Ave NE & Redmond Way



HCM 7th Signalized Intersection Summary
1: 140th Ave NE & Redmond Way 03/21/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	34	1318	117	173	1720	7	89	11	59	18	9	24
Future Volume (veh/h)	34	1318	117	173	1720	7	89	11	59	18	9	24
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	2003	2003	2003	1791	1791	1791	1900	1900	1900	1611	1611	1611
Adj Flow Rate, veh/h	37	1433	0	188	1870	8	97	12	0	20	10	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	1	1	1	1	1	0	0	0	0	0	0
Cap, veh/h	54	2370		212	2497	11	119	15		51	25	
Arrive On Green	0.03	0.62	0.00	0.12	0.72	0.72	0.07	0.07	0.00	0.05	0.05	0.00
Sat Flow, veh/h	1908	3806	1697	1706	3475	15	1619	200	1610	1040	520	0
Grp Volume(v), veh/h	37	1433	0	188	915	963	109	0	0	30	0	0
Grp Sat Flow(s),veh/h/ln	1908	1903	1697	1706	1701	1788	1819	0	1610	1559	0	0
Q Serve(g_s), s	2.5	29.6	0.0	14.1	42.6	42.7	7.7	0.0	0.0	2.4	0.0	0.0
Cycle Q Clear(g_c), s	2.5	29.6	0.0	14.1	42.6	42.7	7.7	0.0	0.0	2.4	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.01	0.89		1.00	0.67		0.00
Lane Grp Cap(c), veh/h	54	2370		212	1223	1285	133	0		76	0	
V/C Ratio(X)	0.68	0.60		0.89	0.75	0.75	0.82	0.00		0.39	0.00	
Avail Cap(c_a), veh/h	73	2370		223	1223	1285	154	0		240	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	62.6	14.8	0.0	56.0	11.1	11.2	59.4	0.0	0.0	59.9	0.0	0.0
Incr Delay (d2), s/veh	14.6	1.2	0.0	31.3	4.2	4.0	25.2	0.0	0.0	2.4	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	12.2	0.0	7.8	15.0	15.7	4.4	0.0	0.0	1.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	77.1	16.0	0.0	87.3	15.4	15.2	84.5	0.0	0.0	62.4	0.0	0.0
LnGrp LOS	E	B		F	B	B	F			E		
Approach Vol, veh/h		1470			2066			109			30	
Approach Delay, s/veh		17.5			21.8			84.5			62.4	
Approach LOS		B			C			F			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.7	98.4		10.4	20.1	86.0		13.5				
Change Period (Y+Rc), s	4.0	5.0		4.0	4.0	5.0		4.0				
Max Green Setting (Gmax), s	5.0	77.0		20.0	17.0	65.0		11.0				
Max Q Clear Time (g_c+I1), s	4.5	44.7		4.4	16.1	31.6		9.7				
Green Ext Time (p_c), s	0.0	24.9		0.0	0.1	19.0		0.0				

Intersection Summary	
HCM 7th Control Delay, s/veh	22.3
HCM 7th LOS	C

Notes

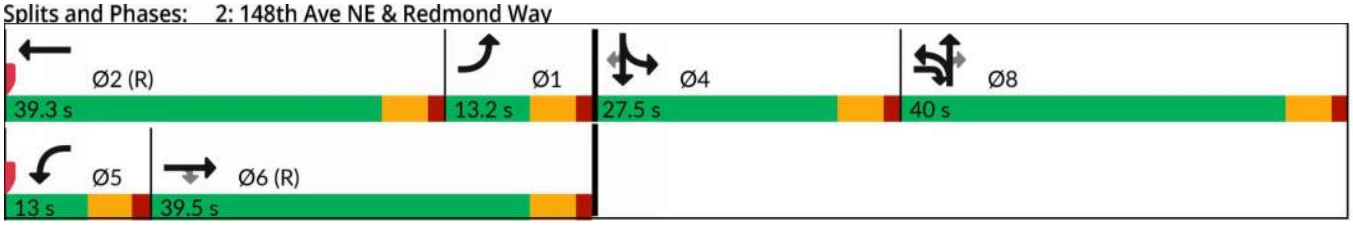
Unsignalized Delay for [NBR, EBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings
2: 148th Ave NE & Redmond Way 03/21/2025

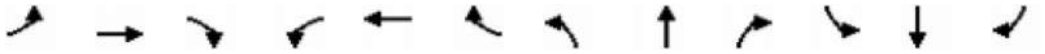
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	194	977	200	189	952	12	708	702	411	35	428	301
Future Volume (vph)	194	977	200	189	952	12	708	702	411	35	428	301
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-3%			0%			-3%			3%	
Storage Length (ft)	375		150	250		0	275		200	200		250
Storage Lanes	2		1	2		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		40			40			40			40	
Link Distance (ft)		957			1580			2623			1894	
Travel Time (s)		16.3			26.9			44.7			32.3	
Confl. Peds. (#/hr)	4		4	4		4			9	9		
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	2%	2%	2%
Shared Lane Traffic (%)							35%					
Turn Type	Prot	NA	pm+ov	Prot	NA		Split	NA	Perm	Split	NA	Perm
Protected Phases	1	6	8	5	2		8	8		4	4	
Permitted Phases			6						8			4
Detector Phase	1	6	8	5	2		8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.5	27.5	24.5	10.5	25.5		24.5	24.5	24.5	27.5	27.5	27.5
Total Split (s)	13.2	39.5	40.0	13.0	39.3		40.0	40.0	40.0	27.5	27.5	27.5
Total Split (%)	11.0%	32.9%	33.3%	10.8%	32.8%		33.3%	33.3%	33.3%	22.9%	22.9%	22.9%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5		1.5	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5		5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lag	Lag		Lead	Lead							
Lead-Lag Optimize?		Yes		Yes								
Recall Mode	None	C-Max	None	None	C-Max		None	None	None	None	None	None

Intersection Summary
Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 88 (73%), Referenced to phase 2:WBT and 6:EBT, Start of 1st Green
Natural Cycle: 130
Control Type: Actuated-Coordinated

Splits and Phases: 2: 148th Ave NE & Redmond Way



HCM 7th Signalized Intersection Summary
2: 148th Ave NE & Redmond Way 03/21/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	194	977	200	189	952	12	708	702	411	35	428	301
Future Volume (veh/h)	194	977	200	189	952	12	708	702	411	35	428	301
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	2003	2003	2003	1885	1885	1885	2003	2003	2003	1817	1817	1817
Adj Flow Rate, veh/h	209	1051	215	203	1024	13	848	633	0	38	460	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	2	2	2
Cap, veh/h	311	1154	1001	218	1020	13	1097	576		283	565	
Arrive On Green	0.08	0.30	0.30	0.04	0.19	0.19	0.29	0.29	0.00	0.05	0.05	0.00
Sat Flow, veh/h	3701	3806	1691	3483	3622	46	3815	2003	1697	1731	3453	1540
Grp Volume(v), veh/h	209	1051	215	203	506	531	848	633	0	38	460	0
Grp Sat Flow(s),veh/h/ln	1850	1903	1691	1742	1791	1877	1908	2003	1697	1731	1726	1540
Q Serve(g_s), s	6.6	31.9	7.2	7.0	33.8	33.8	24.4	34.5	0.0	2.5	15.8	0.0
Cycle Q Clear(g_c), s	6.6	31.9	7.2	7.0	33.8	33.8	24.4	34.5	0.0	2.5	15.8	0.0
Prop In Lane	1.00		1.00	1.00		0.02	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	311	1154	1001	218	504	529	1097	576		283	565	
V/C Ratio(X)	0.67	0.91	0.21	0.93	1.00	1.00	0.77	1.10		0.13	0.81	
Avail Cap(c_a), veh/h	311	1154	1001	218	504	529	1097	576		317	633	
HCM Platoon Ratio	1.00	1.00	1.00	0.67	0.67	0.67	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	0.55	0.55	0.55	0.20	0.20	0.00	0.97	0.97	0.00
Uniform Delay (d), s/veh	53.4	40.2	11.5	57.2	48.7	48.7	39.2	42.8	0.0	48.7	55.0	0.0
Incr Delay (d2), s/veh	5.6	12.2	0.5	28.8	30.6	30.0	0.7	50.7	0.0	0.2	7.2	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	16.4	5.0	3.9	19.7	20.6	11.2	24.6	0.0	1.1	7.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	58.9	52.5	12.0	86.1	79.3	78.6	39.9	93.5	0.0	48.9	62.1	0.0
LnGrp LOS	E	D	B	F	F	F	D	F		D	E	
Approach Vol, veh/h		1475			1240			1481			498	
Approach Delay, s/veh		47.5			80.1			62.8			61.1	
Approach LOS		D			F			E			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	15.6	39.3		25.1	13.0	41.9		40.0				
Change Period (Y+Rc), s	5.5	5.5		5.5	5.5	5.5		5.5				
Max Green Setting (Gmax), s	7.7	33.8		22.0	7.5	34.0		34.5				
Max Q Clear Time (g_c+I1), s	8.6	35.8		17.8	9.0	33.9		36.5				
Green Ext Time (p_c), s	0.0	0.0		1.4	0.0	0.1		0.0				

Intersection Summary	
HCM 7th Control Delay, s/veh	62.4
HCM 7th LOS	E

Notes

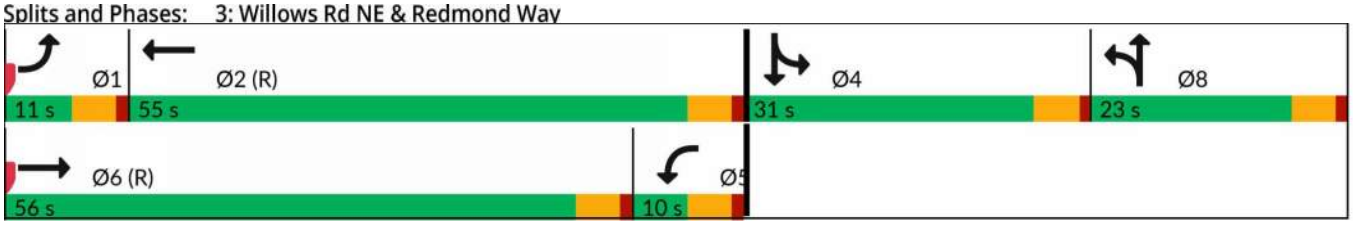
User approved volume balancing among the lanes for turning movement.
Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings
3: Willows Rd NE & Redmond Way 03/21/2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	1491	15	28	1131	303	7	6	22	646	18	17
Future Volume (vph)	17	1491	15	28	1131	303	7	6	22	646	18	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-3%			0%			0%			5%	
Storage Length (ft)	150		0	125		30	0		0	275		0
Storage Lanes	1		0	1		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		40			40			25			35	
Link Distance (ft)		1580			850			188			922	
Travel Time (s)		26.9			14.5			5.1			18.0	
Confl. Peds. (#/hr)	12		4	4		12	19		5	5		19
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	1%	1%	1%
Shared Lane Traffic (%)										47%		
Turn Type	Prot	NA		Prot	NA		Split	NA		Split	NA	
Protected Phases	1	6		5	2		8	8		4	4	
Permitted Phases												
Detector Phase	1	6		5	2		8	8		4	4	
Switch Phase												
Minimum Initial (s)	6.0	12.0		5.0	12.0		5.0	5.0		6.0	6.0	
Minimum Split (s)	11.0	19.0		10.0	19.0		23.0	23.0		25.0	25.0	
Total Split (s)	11.0	56.0		10.0	55.0		23.0	23.0		31.0	31.0	
Total Split (%)	9.2%	46.7%		8.3%	45.8%		19.2%	19.2%		25.8%	25.8%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0		5.0	5.0	
Lead/Lag	Lead	Lead		Lag	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	

Intersection Summary
Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 34 (28%), Referenced to phase 2:WBT and 6:EBT, Start of 1st Green
Natural Cycle: 130
Control Type: Actuated-Coordinated

Splits and Phases: 3: Willows Rd NE & Redmond Way



HCM 7th Signalized Intersection Summary
3: Willows Rd NE & Redmond Way 03/21/2025

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	1491	15	28	1131	303	7	6	22	646	18	17
Future Volume (veh/h)	17	1491	15	28	1131	303	7	6	22	646	18	17
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.91	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	2003	2003	2003	1885	1885	1885	1900	1900	1900	1738	1738	1738
Adj Flow Rate, veh/h	18	1603	16	30	1216	0	8	6	24	725	0	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	1	1	1	1	1	0	0	0	1	1	1
Cap, veh/h	43	1640	16	231	1902		21	16	63	717	377	0
Arrive On Green	0.01	0.14	0.14	0.26	1.00	0.00	0.06	0.06	0.06	0.22	0.00	0.00
Sat Flow, veh/h	1908	3860	38	1795	3676	0	334	250	1001	3310	1738	0
Grp Volume(v), veh/h	18	790	829	30	1216	0	38	0	0	725	0	0
Grp Sat Flow(s),veh/h/ln	1908	1903	1995	1795	1791	0	1586	0	0	1655	1738	0
Q Serve(g_s), s	1.1	49.6	49.7	1.5	0.0	0.0	2.8	0.0	0.0	26.0	0.0	0.0
Cycle Q Clear(g_c), s	1.1	49.6	49.7	1.5	0.0	0.0	2.8	0.0	0.0	26.0	0.0	0.0
Prop In Lane	1.00		0.02	1.00		0.00	0.21		0.63	1.00		0.00
Lane Grp Cap(c), veh/h	43	809	848	231	1902		100	0	0	717	377	0
V/C Ratio(X)	0.42	0.98	0.98	0.13	0.64		0.38	0.00	0.00	1.01	0.00	0.00
Avail Cap(c_a), veh/h	95	809	848	231	1902		238	0	0	717	377	0
HCM Platoon Ratio	0.33	0.33	0.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.33	0.33	0.33	0.65	0.65	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	58.8	51.0	51.0	39.4	0.0	0.0	54.0	0.0	0.0	47.0	0.0	0.0
Incr Delay (d2), s/veh	1.6	13.4	13.3	0.1	1.1	0.0	0.9	0.0	0.0	36.3	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	28.2	29.6	0.7	0.3	0.0	1.1	0.0	0.0	14.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	60.4	64.4	64.3	39.5	1.1	0.0	54.8	0.0	0.0	83.3	0.0	0.0
LnGrp LOS	E	E	E	D	A		D			F		
Approach Vol, veh/h		1637			1246			38			725	
Approach Delay, s/veh		64.3			2.0			54.8			83.3	
Approach LOS		E			A			D			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.7	68.7		31.0	20.4	56.0		12.6				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	6.0	50.0		26.0	5.0	51.0		18.0				
Max Q Clear Time (g_c+I1), s	3.1	2.0		28.0	3.5	51.7		4.8				
Green Ext Time (p_c), s	0.0	23.9		0.0	0.0	0.0		0.0				

Intersection Summary	
HCM 7th Control Delay, s/veh	46.7
HCM 7th LOS	D

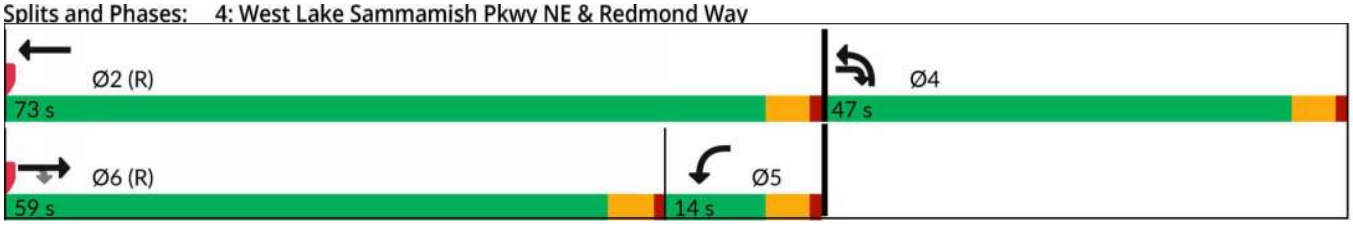
Notes
User approved volume balancing among the lanes for turning movement.
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings
4: West Lake Sammamish Pkwy NE & Redmond Way 03/21/2025

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1477	695	235	1075	393	210
Future Volume (vph)	1477	695	235	1075	393	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	-3%			3%	-4%	
Storage Length (ft)		125	150		0	75
Storage Lanes		1	2		1	0
Taper Length (ft)			25		25	
Right Turn on Red		Yes				Yes
Link Speed (mph)	30			30	35	
Link Distance (ft)	850			951	587	
Travel Time (s)	19.3			21.6	11.4	
Confl. Peds. (#/hr)		14	14			2
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	1%	1%	1%	1%	2%	2%
Shared Lane Traffic (%)						
Turn Type	NA	pm+ov	Prot	NA	Prot	
Protected Phases	6	4	5	2	4	
Permitted Phases		6				
Detector Phase	6	4	5	2	4	
Switch Phase						
Minimum Initial (s)	8.0	6.0	5.0	20.0	6.0	
Minimum Split (s)	22.0	25.0	10.0	25.0	25.0	
Total Split (s)	59.0	47.0	14.0	73.0	47.0	
Total Split (%)	49.2%	39.2%	11.7%	60.8%	39.2%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Recall Mode	C-Max	None	None	C-Max	None	

Intersection Summary
Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 42 (35%), Referenced to phase 2:WBT and 6:EBT, Start of 1st Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 4: West Lake Sammamish Pkwy NE & Redmond Way



HCM 7th Signalized Intersection Summary
4: West Lake Sammamish Pkwy NE & Redmond Way 03/21/2025



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1477	695	235	1075	393	210
Future Volume (veh/h)	1477	695	235	1075	393	210
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)		0.98	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	2003	2003	1832	1832	2027	2027
Adj Flow Rate, veh/h	1492	702	237	1086	397	0
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	1	1	1	1	2	2
Cap, veh/h	1713	752	663	2394	441	
Arrive On Green	0.90	0.90	0.39	1.00	0.23	0.00
Sat Flow, veh/h	3906	1671	3385	3573	1926	0
Grp Volume(v), veh/h	1492	702	237	1086	398	0
Grp Sat Flow(s),veh/h/ln	1903	1671	1693	1741	1931	0
Q Serve(g_s), s	21.8	31.5	5.9	0.0	24.0	0.0
Cycle Q Clear(g_c), s	21.8	31.5	5.9	0.0	24.0	0.0
Prop In Lane		1.00	1.00		1.00	0.00
Lane Grp Cap(c), veh/h	1713	752	663	2394	442	
V/C Ratio(X)	0.87	0.93	0.36	0.45	0.90	
Avail Cap(c_a), veh/h	1713	752	663	2394	676	
HCM Platoon Ratio	2.00	2.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	0.46	0.46	0.83	0.83	0.93	0.00
Uniform Delay (d), s/veh	4.4	4.9	31.1	0.0	44.9	0.0
Incr Delay (d2), s/veh	3.1	11.2	0.3	0.5	9.9	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	4.5	2.3	0.2	12.5	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	7.5	16.1	31.4	0.5	54.8	0.0
LnGrp LOS	A	B	C	A	D	
Approach Vol, veh/h	2194			1323	398	
Approach Delay, s/veh	10.3			6.1	54.8	
Approach LOS	B			A	D	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		87.5		32.5	28.5	59.0
Change Period (Y+Rc), s		5.0		5.0	5.0	5.0
Max Green Setting (Gmax), s		68.0		42.0	9.0	54.0
Max Q Clear Time (g_c+I1), s		2.0		26.0	7.9	33.5
Green Ext Time (p_c), s		6.7		1.5	0.1	12.9

Intersection Summary	
HCM 7th Control Delay, s/veh	13.4
HCM 7th LOS	B

Notes

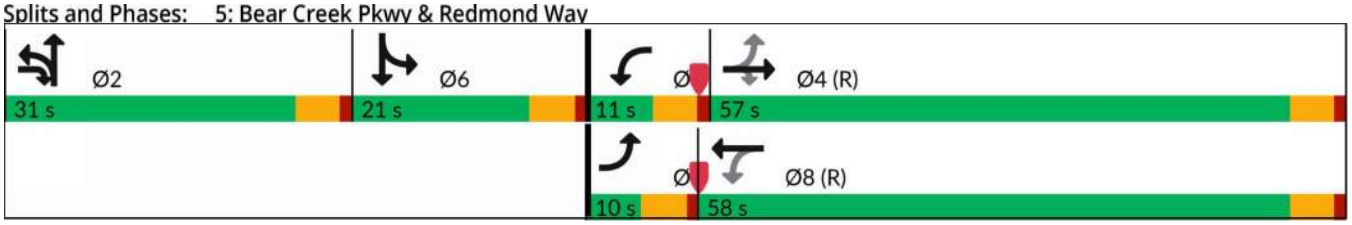
Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings
5: Bear Creek Pkwy & Redmond Way 03/21/2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	1082	566	78	1003	22	332	5	88	26	6	21
Future Volume (vph)	12	1082	566	78	1003	22	332	5	88	26	6	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-4%			0%			0%			0%	
Storage Length (ft)	150		175	150		0	125		0	0		0
Storage Lanes	1		1	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			25	
Link Distance (ft)		951			828			488			167	
Travel Time (s)		21.6			18.8			11.1			4.6	
Confl. Peds. (#/hr)	9		15	15		9	9		19	19		9
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)							34%					
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA		Split	NA		Split	NA	
Protected Phases	7	4	2	3	8		2	2		6	6	
Permitted Phases	4		4	8								
Detector Phase	7	4	2	3	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	8.0	6.0	5.0	8.0		6.0	6.0		5.0	5.0	
Minimum Split (s)	10.0	24.0	24.0	10.0	21.0		24.0	24.0		21.0	21.0	
Total Split (s)	10.0	57.0	31.0	11.0	58.0		31.0	31.0		21.0	21.0	
Total Split (%)	8.3%	47.5%	25.8%	9.2%	48.3%		25.8%	25.8%		17.5%	17.5%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag	Lead	Lead	Lag		Lead	Lead		Lag	Lag	
Lead-Lag Optimize?			Yes				Yes	Yes				
Recall Mode	None	C-Max	None	None	C-Max		None	None		None	None	

Intersection Summary
Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 64 (53%), Referenced to phase 4:EBTL and 8:WBTL, Start of 1st Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

Splits and Phases: 5: Bear Creek Pkwy & Redmond Way



HCM 7th Signalized Intersection Summary
5: Bear Creek Pkwy & Redmond Way 03/21/2025

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	1082	566	78	1003	22	332	5	88	26	6	21
Future Volume (veh/h)	12	1082	566	78	1003	22	332	5	88	26	6	21
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.97	1.00		0.91
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	2042	2042	2042	1885	1885	1885	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	12	1115	584	80	1034	23	219	177	91	27	6	22
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	1	1	1	1	1	0	0	0	0	0	0
Cap, veh/h	330	2174	1255	292	2096	47	312	201	103	112	20	75
Arrive On Green	0.03	1.00	1.00	0.04	0.59	0.59	0.17	0.17	0.17	0.06	0.06	0.06
Sat Flow, veh/h	1945	3880	1708	1795	3581	80	1810	1167	600	1810	330	1209
Grp Volume(v), veh/h	12	1115	584	80	517	540	219	0	268	27	0	28
Grp Sat Flow(s),veh/h/ln	1945	1940	1708	1795	1791	1870	1810	0	1768	1810	0	1538
Q Serve(g_s), s	0.3	0.0	0.0	2.2	20.2	20.2	13.7	0.0	17.8	1.7	0.0	2.1
Cycle Q Clear(g_c), s	0.3	0.0	0.0	2.2	20.2	20.2	13.7	0.0	17.8	1.7	0.0	2.1
Prop In Lane	1.00		1.00	1.00		0.04	1.00		0.34	1.00		0.79
Lane Grp Cap(c), veh/h	330	2174	1255	292	1048	1094	312	0	304	112	0	96
V/C Ratio(X)	0.04	0.51	0.47	0.27	0.49	0.49	0.70	0.00	0.88	0.24	0.00	0.29
Avail Cap(c_a), veh/h	384	2174	1255	313	1048	1094	392	0	383	241	0	205
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.28	0.28	0.28	0.75	0.75	0.75	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	12.0	0.0	0.0	10.1	14.5	14.5	46.8	0.0	48.5	53.6	0.0	53.8
Incr Delay (d2), s/veh	0.0	0.2	0.3	0.2	1.2	1.2	3.4	0.0	16.5	1.1	0.0	1.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.1	0.1	0.9	8.3	8.7	6.5	0.0	9.2	0.8	0.0	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	12.1	0.2	0.3	10.3	15.8	15.7	50.2	0.0	65.0	54.7	0.0	55.4
LnGrp LOS	B	A	A	B	B	B	D		E	D		E
Approach Vol, veh/h		1711			1137			487			55	
Approach Delay, s/veh		0.4			15.3			58.3			55.1	
Approach LOS		A			B			E			E	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	25.7	9.7	72.2	12.5	6.6	75.2
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	26.0	6.0	52.0	16.0	5.0	53.0
Max Q Clear Time (g_c+I1), s	19.8	4.2	2.0	4.1	2.3	22.2
Green Ext Time (p_c), s	0.9	0.0	9.1	0.1	0.0	3.8

Intersection Summary	
HCM 7th Control Delay, s/veh	14.6
HCM 7th LOS	B

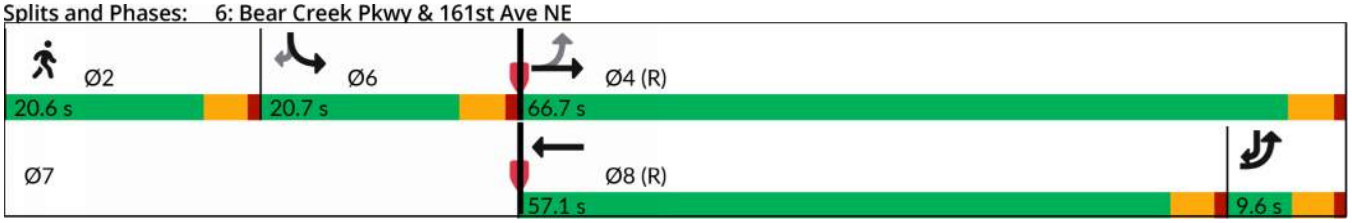
Notes
User approved volume balancing among the lanes for turning movement.

Lanes, Volumes, Timings
6: Bear Creek Pkwy & 161st Ave NE 03/21/2025

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø2
Lane Configurations							
Traffic Volume (vph)	36	534	384	205	119	87	
Future Volume (vph)	36	534	384	205	119	87	
Satd. Flow (prot)	1787	1693	1513	0	1787	1599	
Flt Permitted	0.271				0.950		
Satd. Flow (perm)	510	1693	1513	0	1612	1445	
Satd. Flow (RTOR)			35			99	
Confl. Peds. (#/hr)	48			48	29	23	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	
Parking (#/hr)		0	0	0			
Shared Lane Traffic (%)							
Lane Group Flow (vph)	41	607	669	0	135	99	
Turn Type	pm+pt	NA	NA		Prot	pm+ov	
Protected Phases	7	4	8		6	7	2
Permitted Phases	4					6	
Detector Phase	7	4	8		6	7	
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	9.4	9.6	20.6		20.6	9.4	20.6
Total Split (s)	9.6	66.7	57.1		20.7	9.6	20.6
Total Split (%)	8.9%	61.8%	52.9%		19.2%	8.9%	19%
Yellow Time (s)	3.4	3.6	3.6		3.6	3.4	3.6
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.4	4.6	4.6		4.6	4.4	
Lead/Lag	Lag		Lead		Lag	Lag	Lead
Lead-Lag Optimize?							
Recall Mode	None	C-Max	C-Max		None	None	None
Act Effct Green (s)	73.6	73.4	63.8		13.0	18.4	
Actuated g/C Ratio	0.68	0.68	0.59		0.12	0.17	
v/c Ratio	0.10	0.53	0.74		0.63	0.29	
Control Delay (s/veh)	10.5	13.6	20.6		57.8	6.7	
Queue Delay	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	10.5	13.6	20.6		57.8	6.7	
LOS	B	B	C		E	A	
Approach Delay (s/veh)		13.4	20.6		36.2		
Approach LOS		B	C		D		

Intersection Summary	
Cycle Length: 108	
Actuated Cycle Length: 108	
Offset: 11 (10%), Referenced to phase 4:EBTL and 8:WBT, Start of 1st Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.74	
Intersection Signal Delay (s/veh): 19.9	Intersection LOS: B
Intersection Capacity Utilization 51.9%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 6: Bear Creek Pkwy & 161st Ave NE

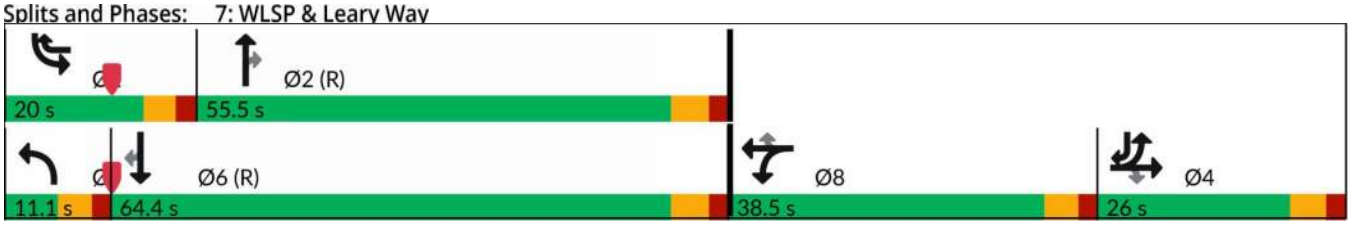


Lanes, Volumes, Timings
7: WLSP & Leary Way 03/21/2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	311	12	230	308	565	94	16	1097	1259	226	949	632
Future Volume (vph)	311	12	230	308	565	94	16	1097	1259	226	949	632
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-6%			3%			0%			0%	
Storage Length (ft)	0		175	200		150	200		275	175		0
Storage Lanes	0		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			No
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		718			834			1781			1175	
Travel Time (s)		16.3			19.0			30.4			20.0	
Confl. Peds. (#/hr)	34					34			3	3		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	4%	4%	4%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Shared Lane Traffic (%)				10%								
Turn Type	Split	NA	Perm	Split	NA	pm+ov	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	4	4		8	8	1	5	2		1	6	4
Permitted Phases			4			8			2			6
Detector Phase	4	4	4	8	8	1	5	2	2	1	6	4
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	7.0	7.0	7.0	5.0	10.0	10.0	7.0	10.0	5.0
Minimum Split (s)	10.9	10.9	10.9	38.5	38.5	12.5	10.5	33.9	33.9	12.5	15.9	10.9
Total Split (s)	26.0	26.0	26.0	38.5	38.5	20.0	11.1	55.5	55.5	20.0	64.4	26.0
Total Split (%)	18.6%	18.6%	18.6%	27.5%	27.5%	14.3%	7.9%	39.6%	39.6%	14.3%	46.0%	18.6%
Yellow Time (s)	3.9	3.9	3.9	3.5	3.5	3.5	3.5	3.9	3.9	3.5	3.9	3.9
All-Red 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
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.9	5.9	5.5	5.5	5.5	5.5	5.9	5.9	5.5	5.9	5.9
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?				Yes	Yes	Yes		Yes	Yes	Yes		
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	None

Intersection Summary
Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 90 (64%), Referenced to phase 2:NBT and 6:SBT, Start of 1st Green
Natural Cycle: 140
Control Type: Actuated-Coordinated

Splits and Phases: 7: WLSP & Leary Way



HCM 7th Signalized Intersection Summary
7: WLSP & Leary Way 03/21/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	311	12	230	308	565	94	16	1097	1259	226	949	632
Future Volume (veh/h)	311	12	230	308	565	94	16	1097	1259	226	949	632
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.93	1.00		0.95	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	2076	2076	2076	1817	1817	1817	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	327	13	242	306	620	99	17	1155	0	238	999	665
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	4	4	4	2	2	2	2	2	2	2	2	2
Cap, veh/h	273	11	235	389	817	490	31	1298		184	1605	942
Arrive On Green	0.14	0.14	0.14	0.22	0.22	0.22	0.01	0.12	0.00	0.10	0.45	0.45
Sat Flow, veh/h	1905	76	1634	1731	3635	1470	1781	3554	1585	1781	3554	1582
Grp Volume(v), veh/h	340	0	242	306	620	99	17	1155	0	238	999	665
Grp Sat Flow(s),veh/h/ln	1981	0	1634	1731	1817	1470	1781	1777	1585	1781	1777	1582
Q Serve(g_s), s	20.1	0.0	20.1	23.3	22.3	6.8	1.3	44.8	0.0	14.5	30.0	41.1
Cycle Q Clear(g_c), s	20.1	0.0	20.1	23.3	22.3	6.8	1.3	44.8	0.0	14.5	30.0	41.1
Prop In Lane	0.96		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	284	0	235	389	817	490	31	1298		184	1605	942
V/C Ratio(X)	1.20	0.00	1.03	0.79	0.76	0.20	0.55	0.89		1.29	0.62	0.71
Avail Cap(c_a), veh/h	284	0	235	408	857	506	71	1298		184	1605	942
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.91	0.91	0.91	0.31	0.31	0.00	0.90	0.90	0.90
Uniform Delay (d), s/veh	60.0	0.0	59.9	51.1	50.7	33.9	69.1	58.8	0.0	62.7	29.3	19.8
Incr Delay (d2), s/veh	117.1	0.0	67.1	9.3	3.8	0.3	4.7	3.3	0.0	162.0	1.6	4.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	19.3	0.0	12.7	11.1	10.6	2.5	0.6	22.0	0.0	14.8	12.9	21.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	177.1	0.0	127.1	60.4	54.5	34.1	73.8	62.0	0.0	224.7	30.9	23.8
LnGrp LOS	F		F	E	D	C	E	E		F	C	C
Approach Vol, veh/h		582			1025			1172			1902	
Approach Delay, s/veh		156.3			54.3			62.2			52.7	
Approach LOS		F			D			E			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	20.0	57.0		26.0	7.9	69.1		37.0				
Change Period (Y+Rc), s	5.5	5.9		5.9	5.5	5.9		5.5				
Max Green Setting (Gmax), s	14.5	49.6		20.1	5.6	58.5		33.0				
Max Q Clear Time (g_c+I1), s	16.5	46.8		22.1	3.3	43.1		25.3				
Green Ext Time (p_c), s	0.0	1.9		0.0	0.0	10.1		4.7				

Intersection Summary	
HCM 7th Control Delay, s/veh	68.3
HCM 7th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings
8: Leary Way & 159th Pl NE 03/21/2025

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø2	Ø6
Lane Configurations								
Traffic Volume (vph)	107	1413	945	19	29	86		
Future Volume (vph)	107	1413	945	19	29	86		
Satd. Flow (prot)	1787	1881	3550	0	1805	1615		
Flt Permitted	0.950				0.950			
Satd. Flow (perm)	1710	1881	3550	0	1805	1615		
Satd. Flow (RTOR)			3			89		
Confl. Peds. (#/hr)	41			41		29		
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97		
Heavy Vehicles (%)	1%	1%	1%	1%	0%	0%		
Mid-Block Traffic (%)		0%	0%		50%			
Shared Lane Traffic (%)								
Lane Group Flow (vph)	110	1457	994	0	30	89		
Turn Type	Prot	NA	NA		Prot	pt+ov		
Protected Phases	7	4!	8		2 6!	6 7	2	6
Permitted Phases								
Detector Phase	7	4	8		2 6	7		
Switch Phase								
Minimum Initial (s)	5.0	7.0	7.0				4.0	6.0
Minimum Split (s)	10.0	12.0	20.0				21.0	11.0
Total Split (s)	20.0	105.0	74.0				21.0	11.0
Total Split (%)	15.9%	83.3%	58.7%				17%	9%
Yellow Time (s)	4.0	4.0	4.0				4.0	4.0
All-Red Time (s)	1.0	1.0	1.0				1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0					
Total Lost Time (s)	5.0	5.0	5.0					
Lead/Lag	Lead							Lag
Lead-Lag Optimize?	Yes							Yes
Recall Mode	None	C-Max	C-Max				None	None
Act Effct Green (s)	11.7	107.3	83.0		17.6	18.3		
Actuated g/C Ratio	0.09	0.85	0.66		0.14	0.15		
v/c Ratio	0.67	0.91	0.42		0.12	0.29		
Control Delay (s/veh)	74.1	20.0	13.6		30.2	10.8		
Queue Delay	0.0	5.6	0.0		0.0	0.0		
Total Delay (s/veh)	74.1	25.7	13.6		30.2	10.8		
LOS	E	C	B		C	B		
Approach Delay (s/veh)		29.1	13.6		15.7			
Approach LOS		C	B		B			

Intersection Summary	
Cycle Length: 126	
Actuated Cycle Length: 126	
Offset: 0 (0%), Referenced to phase 8:WBT and 4:EBT, Start of 1st Green	
Natural Cycle: 110	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.91	
Intersection Signal Delay (s/veh): 22.7	Intersection LOS: C
Intersection Capacity Utilization 92.2%	ICU Level of Service F
Analysis Period (min) 15	

! Phase conflict between lane groups.

Splits and Phases: 8: Leary Way & 159th Pl NE



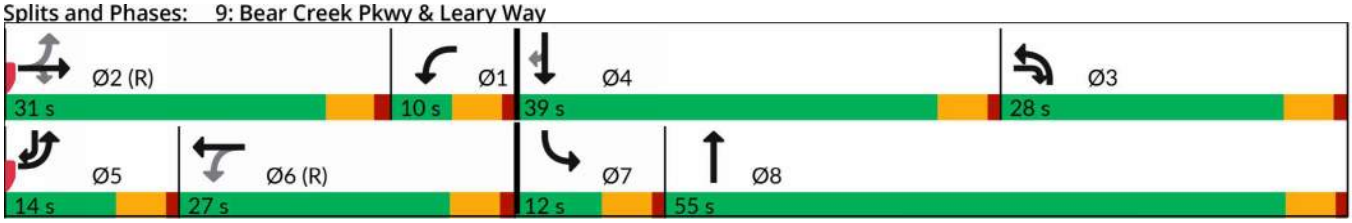
Lanes, Volumes, Timings
9: Bear Creek Pkwy & Leary Way 03/21/2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	182	622	637	20	362	88	421	328	14	47	529	93
Future Volume (vph)	182	622	637	20	362	88	421	328	14	47	529	93
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		225	175		0	190		0	275		100
Storage Lanes	1		1	1		0	2		0	1		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		664			421			452			692	
Travel Time (s)		15.1			9.6			10.3			15.7	
Confl. Peds. (#/hr)	12		6	6		12	6		17	17		6
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	2%	2%	2%	1%	1%	1%	2%	2%	2%	1%	1%	1%
Shared Lane Traffic (%)												
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA		Prot	NA		Prot	NA	pm+ov
Protected Phases	5	2	3	1	6		3	8		7	4	5
Permitted Phases	2		2	6								4
Detector Phase	5	2	3	1	6		3	8		7	4	4
Switch Phase												
Minimum Initial (s)	5.0	8.0	6.0	5.0	8.0		6.0	6.0		5.0	5.0	5.0
Minimum Split (s)	10.0	26.2	11.2	10.0	24.2		11.2	28.0		10.0	26.0	10.0
Total Split (s)	14.0	31.0	28.0	10.0	27.0		28.0	55.0		12.0	39.0	14.0
Total Split (%)	13.0%	28.7%	25.9%	9.3%	25.0%		25.9%	50.9%		11.1%	36.1%	13.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.2	1.2	1.0	1.2		1.2	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0	5.2	5.2	5.0	5.2		5.2	5.0		5.0	5.0	5.0
Lead/Lag	Lead	Lead	Lag	Lag	Lag		Lag	Lag		Lead	Lead	Lead
Lead-Lag Optimize?												
Recall Mode	None	C-Max	None	None	C-Max		None	None		None	None	None

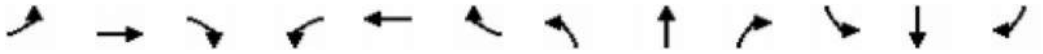
Intersection Summary

Area Type: Other
Cycle Length: 108
Actuated Cycle Length: 108
Offset: 85 (79%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 9: Bear Creek Pkwy & Leary Way



HCM 7th Signalized Intersection Summary
9: Bear Creek Pkwy & Leary Way 03/21/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	182	622	637	20	362	88	421	328	14	47	529	93
Future Volume (veh/h)	182	622	637	20	362	88	421	328	14	47	529	93
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.97	0.99		0.98	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1885	1885	1885	1870	1870	1870	1885	1885	1885
Adj Flow Rate, veh/h	186	635	650	20	369	90	430	335	14	48	540	95
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	1	1	1	2	2	2	1	1	1
Cap, veh/h	215	849	608	298	779	187	522	747	31	63	572	610
Arrive On Green	0.08	0.24	0.24	0.12	0.27	0.27	0.15	0.42	0.42	0.04	0.30	0.30
Sat Flow, veh/h	1781	3554	1545	1795	2849	686	3456	1781	74	1795	1885	1571
Grp Volume(v), veh/h	186	635	650	20	230	229	430	0	349	48	540	95
Grp Sat Flow(s),veh/h/ln	1781	1777	1545	1795	1791	1744	1728	0	1856	1795	1885	1571
Q Serve(g_s), s	9.0	17.9	25.8	0.0	11.6	11.9	13.0	0.0	14.5	2.9	30.2	2.2
Cycle Q Clear(g_c), s	9.0	17.9	25.8	0.0	11.6	11.9	13.0	0.0	14.5	2.9	30.2	2.2
Prop In Lane	1.00		1.00	1.00		0.39	1.00		0.04	1.00		1.00
Lane Grp Cap(c), veh/h	215	849	608	298	490	477	522	0	778	63	572	610
V/C Ratio(X)	0.86	0.75	1.07	0.07	0.47	0.48	0.82	0.00	0.45	0.76	0.94	0.16
Avail Cap(c_a), veh/h	215	849	608	298	490	477	730	0	859	116	593	628
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.33	0.33	0.33	1.00	1.00	1.00	0.79	0.00	0.79	0.82	0.82	0.82
Uniform Delay (d), s/veh	39.4	38.1	32.8	38.9	32.7	32.8	44.5	0.0	22.4	51.6	36.7	8.2
Incr Delay (d2), s/veh	11.4	2.0	42.0	0.1	3.2	3.4	4.3	0.0	0.3	13.9	20.5	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	7.9	15.3	0.5	5.4	5.4	5.9	0.0	6.3	1.5	16.9	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	50.8	40.1	74.8	39.0	35.9	36.3	48.8	0.0	22.8	65.5	57.2	8.3
LnGrp LOS	D	D	F	D	D	D	D		C	E	E	A
Approach Vol, veh/h		1471			479			779			683	
Approach Delay, s/veh		56.8			36.2			37.1			51.0	
Approach LOS		E			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.7	31.0	21.5	37.8	14.0	34.7	8.8	50.5
Change Period (Y+Rc), s	5.2	* 5.2	5.2	5.0	5.0	5.2	5.0	* 5.2
Max Green Setting (Gmax), s	5.0	* 26	22.8	34.0	9.0	21.8	7.0	* 50
Max Q Clear Time (g_c+I1), s	2.0	27.8	15.0	32.2	11.0	13.9	4.9	16.5
Green Ext Time (p_c), s	0.0	0.0	1.3	0.6	0.0	1.2	0.0	1.5

Intersection Summary	
HCM 7th Control Delay, s/veh	48.3
HCM 7th LOS	D

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

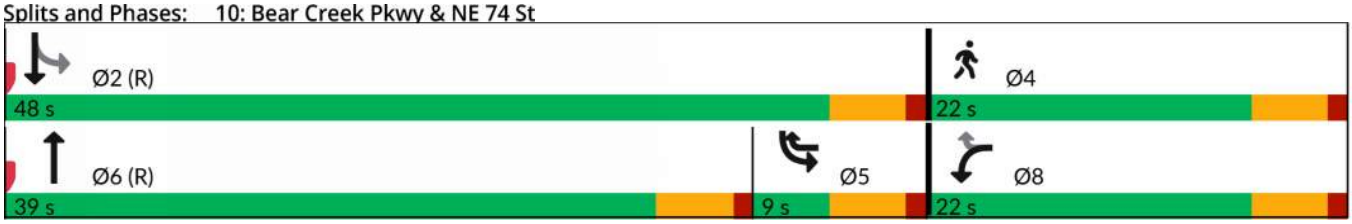
Lanes, Volumes, Timings
10: Bear Creek Pkwy & NE 74 St 03/21/2025

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø4
Lane Configurations							
Traffic Volume (vph)	26	268	652	12	171	1035	
Future Volume (vph)	26	268	652	12	171	1035	
Satd. Flow (prot)	1805	1615	1857	0	1787	1881	
Flt Permitted	0.950				0.283		
Satd. Flow (perm)	1641	1615	1857	0	528	1881	
Satd. Flow (RTOR)		162	2				
Confl. Peds. (#/hr)	44			20	20		
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	
Heavy Vehicles (%)	0%	0%	2%	2%	1%	1%	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	27	273	677	0	174	1056	
Turn Type	Prot	pm+ov	NA		pm+pt	NA	
Protected Phases	8	5	6		5	2	4
Permitted Phases		8			2		
Detector Phase	8	5	6		5	2	
Switch Phase							
Minimum Initial (s)	7.0	4.0	8.0		4.0	5.0	8.0
Minimum Split (s)	12.0	9.0	23.0		9.0	10.0	22.0
Total Split (s)	22.0	9.0	39.0		9.0	48.0	22.0
Total Split (%)	31.4%	12.9%	55.7%		12.9%	68.6%	31%
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0		5.0	5.0	
Lead/Lag		Lag	Lead		Lag		
Lead-Lag Optimize?		Yes	Yes		Yes		
Recall Mode	None	None	C-Min		None	C-Min	None
Act Effct Green (s)	13.0	18.7	41.3		51.8	53.8	
Actuated g/C Ratio	0.19	0.27	0.59		0.74	0.77	
v/c Ratio	0.08	0.50	0.62		0.36	0.73	
Control Delay (s/veh)	21.5	10.6	15.4		9.9	14.1	
Queue Delay	0.0	0.0	0.0		0.0	1.0	
Total Delay (s/veh)	21.5	10.6	15.4		9.9	15.1	
LOS	C	B	B		A	B	
Approach Delay (s/veh)	11.6		15.4			14.3	
Approach LOS	B		B			B	

Intersection Summary

Cycle Length: 70
Actuated Cycle Length: 70
Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBT, Start of 1st Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.73
Intersection Signal Delay (s/veh): 14.3 Intersection LOS: B
Intersection Capacity Utilization 68.6% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 10: Bear Creek Pkwy & NE 74 St



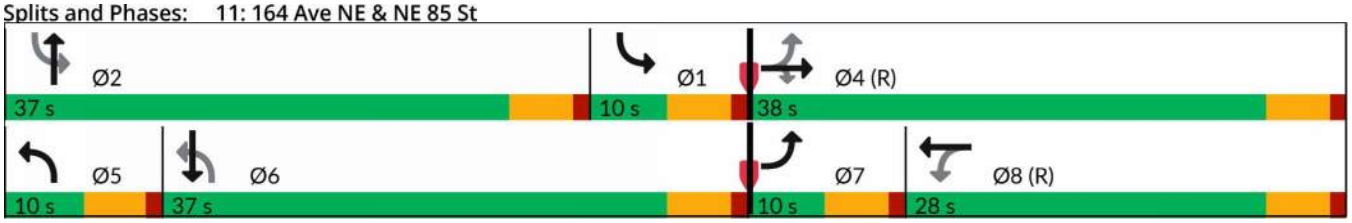
Lanes, Volumes, Timings
11: 164 Ave NE & NE 85 St 03/21/2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	76	395	76	9	226	187	32	558	21	184	408	39
Future Volume (vph)	76	395	76	9	226	187	32	558	21	184	408	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		150	200		0	250		0	240		0
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			28			30	
Link Distance (ft)		469			304			659			473	
Travel Time (s)		10.7			6.9			16.0			10.8	
Confl. Peds. (#/hr)	12					12	22					22
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Shared Lane Traffic (%)												
Turn Type	pm+pt	NA	Perm	Perm	NA		D.P+P	NA		D.P+P	NA	
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases	4		4	8			6			2		
Detector Phase	7	4	4	8	8		6 5	2		2 1	6	
Switch Phase												
Minimum Initial (s)	5.0	8.0	8.0	8.0	8.0		5.0	6.0		5.0	6.0	
Minimum Split (s)	10.0	20.0	20.0	20.0	20.0		10.0	22.0		10.0	27.0	
Total Split (s)	10.0	38.0	38.0	28.0	28.0		10.0	37.0		10.0	37.0	
Total Split (%)	11.8%	44.7%	44.7%	32.9%	32.9%		11.8%	43.5%		11.8%	43.5%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lead			Lag	Lag		Lead	Lead		Lag	Lag	
Lead-Lag Optimize?												
Recall Mode	None	C-Max	C-Max	C-Max	C-Max		None	None		None	None	

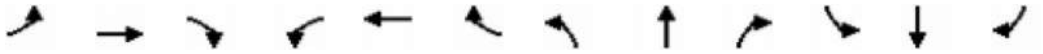
Intersection Summary

Area Type: Other
Cycle Length: 85
Actuated Cycle Length: 85
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of 1st Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 11: 164 Ave NE & NE 85 St



HCM 7th Signalized Intersection Summary
11: 164 Ave NE & NE 85 St 03/21/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	76	395	76	9	226	187	32	558	21	184	408	39
Future Volume (veh/h)	76	395	76	9	226	187	32	558	21	184	408	39
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.99	0.99		0.98	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	80	416	80	9	238	197	34	587	22	194	429	41
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	1	1	1	1	1	1
Cap, veh/h	252	795	664	317	295	244	290	624	23	215	629	60
Arrive On Green	0.05	0.42	0.42	0.31	0.31	0.31	0.03	0.35	0.35	0.06	0.37	0.37
Sat Flow, veh/h	1810	1900	1587	909	952	788	1795	1803	68	1795	1689	161
Grp Volume(v), veh/h	80	416	80	9	0	435	34	0	609	194	0	470
Grp Sat Flow(s),veh/h/ln	1810	1900	1587	909	0	1740	1795	0	1870	1795	0	1850
Q Serve(g_s), s	2.4	13.9	2.6	0.6	0.0	19.6	1.0	0.0	26.8	3.9	0.0	18.2
Cycle Q Clear(g_c), s	2.4	13.9	2.6	5.2	0.0	19.6	1.0	0.0	26.8	3.9	0.0	18.2
Prop In Lane	1.00		1.00	1.00		0.45	1.00		0.04	1.00		0.09
Lane Grp Cap(c), veh/h	252	795	664	317	0	539	290	0	648	215	0	690
V/C Ratio(X)	0.32	0.52	0.12	0.03	0.00	0.81	0.12	0.00	0.94	0.90	0.00	0.68
Avail Cap(c_a), veh/h	268	795	664	317	0	539	338	0	704	215	0	697
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	0.78	0.00	0.78	1.00	0.00	1.00
Uniform Delay (d), s/veh	19.9	18.4	15.1	23.8	0.0	27.0	17.3	0.0	26.9	38.2	0.0	22.4
Incr Delay (d2), s/veh	0.3	2.5	0.4	0.2	0.0	12.3	0.1	0.0	16.0	34.8	0.0	2.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	6.3	1.0	0.1	0.0	9.6	0.4	0.0	14.3	5.8	0.0	7.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	20.2	20.9	15.5	24.0	0.0	39.3	17.4	0.0	43.0	73.0	0.0	24.6
LnGrp LOS	C	C	B	C		D	B		D	E		C
Approach Vol, veh/h		576			444			643			664	
Approach Delay, s/veh		20.0			39.0			41.6			38.8	
Approach LOS		C			D			D			D	

Timer - Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.0	34.4		40.6	7.8	36.7	9.2	31.3				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	5.0	32.0		33.0	5.0	32.0	5.0	23.0				
Max Q Clear Time (g_c+I1), s	5.9	28.8		15.9	3.0	20.2	4.4	21.6				
Green Ext Time (p_c), s	0.0	0.6		1.1	0.0	0.9	0.0	0.2				

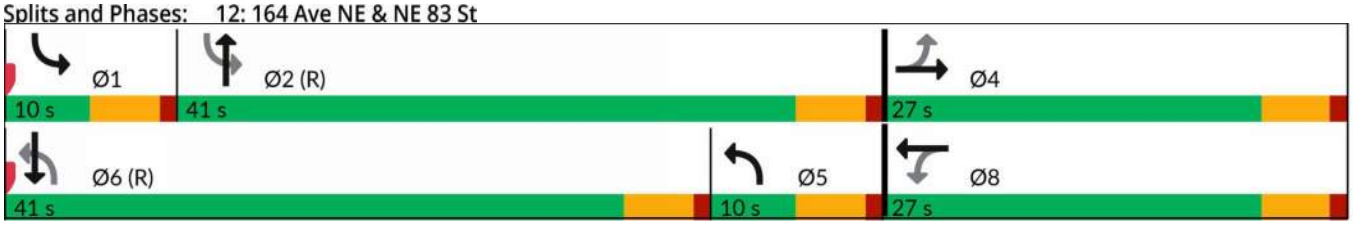
Intersection Summary	
HCM 7th Control Delay, s/veh	35.0
HCM 7th LOS	C

Lanes, Volumes, Timings
12: 164 Ave NE & NE 83 St 03/21/2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	228	73	26	127	41	68	537	51	73	400	19
Future Volume (vph)	44	228	73	26	127	41	68	537	51	73	400	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	200		0	200		0	200		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			28			28	
Link Distance (ft)		968			599			662			659	
Travel Time (s)		22.0			13.6			16.1			16.0	
Confl. Peds. (#/hr)	34		47	47		34	24		31	31		24
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	5%	5%	5%	1%	1%	1%	3%	3%	3%	1%	1%	1%
Mid-Block Traffic (%)		40%			20%			0%			0%	
Shared Lane Traffic (%)												
Turn Type	Perm	NA		Perm	NA		D.P+P	NA		D.P+P	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			6			2		
Detector Phase	4	4		8	8		6 5	2		2 1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	21.0	21.0		21.0	21.0		10.0	19.0		10.0	19.0	
Total Split (s)	27.0	27.0		27.0	27.0		10.0	41.0		10.0	41.0	
Total Split (%)	34.6%	34.6%		34.6%	34.6%		12.8%	52.6%		12.8%	52.6%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag							Lag	Lag		Lead	Lead	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	

Intersection Summary
Area Type: Other
Cycle Length: 78
Actuated Cycle Length: 78
Offset: 18 (23%), Referenced to phase 2:NBSB and 6:NBSB, Start of 1st Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 12: 164 Ave NE & NE 83 St



HCM 7th Signalized Intersection Summary
12: 164 Ave NE & NE 83 St 03/21/2025

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	44	228	73	26	127	41	68	537	51	73	400	19
Future Volume (veh/h)	44	228	73	26	127	41	68	537	51	73	400	19
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.94		0.90	0.98		0.90	1.00		0.97	0.99		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1826	1826	1885	1885	1885	1856	1856	1856	1885	1885	1885
Adj Flow Rate, veh/h	45	235	75	27	131	42	70	554	53	75	412	20
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	5	5	5	1	1	1	3	3	3	1	1	1
Cap, veh/h	257	299	95	148	308	99	577	871	83	609	821	40
Arrive On Green	0.08	0.08	0.08	0.23	0.23	0.23	0.23	1.00	1.00	0.05	0.46	0.46
Sat Flow, veh/h	1114	1287	411	1056	1327	425	1767	1662	159	1795	1780	86
Grp Volume(v), veh/h	45	0	310	27	0	173	70	0	607	75	0	432
Grp Sat Flow(s),veh/h/ln	1114	0	1697	1056	0	1752	1767	0	1821	1795	0	1866
Q Serve(g_s), s	3.0	0.0	14.0	1.9	0.0	6.6	0.0	0.0	0.0	1.4	0.0	12.7
Cycle Q Clear(g_c), s	9.6	0.0	14.0	15.9	0.0	6.6	0.0	0.0	0.0	1.4	0.0	12.7
Prop In Lane	1.00		0.24	1.00		0.24	1.00		0.09	1.00		0.05
Lane Grp Cap(c), veh/h	257	0	394	148	0	407	577	0	954	609	0	861
V/C Ratio(X)	0.17	0.00	0.79	0.18	0.00	0.43	0.12	0.00	0.64	0.12	0.00	0.50
Avail Cap(c_a), veh/h	313	0	479	201	0	494	577	0	954	632	0	861
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	0.91	0.00	0.91	0.99	0.00	0.99	0.82	0.00	0.82	0.72	0.00	0.72
Uniform Delay (d), s/veh	35.2	0.0	34.1	35.9	0.0	25.5	12.5	0.0	0.0	7.3	0.0	14.7
Incr Delay (d2), s/veh	0.1	0.0	5.1	0.2	0.0	0.3	0.0	0.0	2.7	0.0	0.0	1.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	6.8	0.5	0.0	2.7	0.7	0.0	0.7	0.5	0.0	5.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	35.4	0.0	39.2	36.1	0.0	25.8	12.5	0.0	2.7	7.4	0.0	16.2
LnGrp LOS	D		D	D		C	B		A	A		B
Approach Vol, veh/h		355			200			677			507	
Approach Delay, s/veh		38.7			27.2			3.7			14.9	
Approach LOS		D			C			A			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.0	45.9		23.1	13.9	41.0		23.1				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	5.0	36.0		22.0	5.0	36.0		22.0				
Max Q Clear Time (g_c+I1), s	3.4	2.0		16.0	2.0	14.7		17.9				
Green Ext Time (p_c), s	0.0	1.8		0.5	0.0	1.0		0.2				

Intersection Summary		
HCM 7th Control Delay, s/veh		16.8
HCM 7th LOS		B

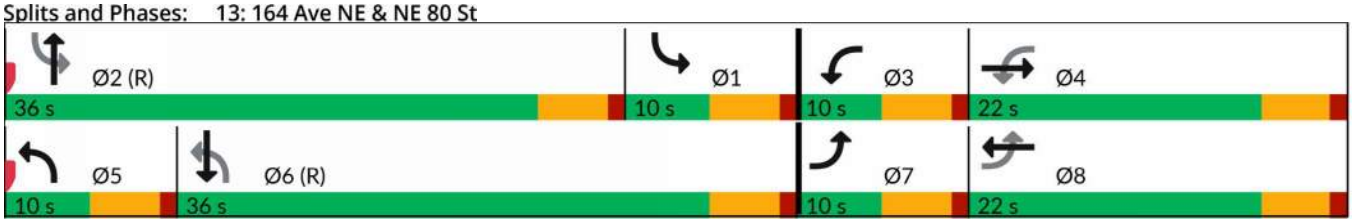
Lanes, Volumes, Timings
13: 164 Ave NE & NE 80 St 03/21/2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	81	174	22	37	209	61	25	389	66	118	391	73
Future Volume (vph)	81	174	22	37	209	61	25	389	66	118	391	73
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	140		0	150		0	100		0	200		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			28			28	
Link Distance (ft)		178			313			347			662	
Travel Time (s)		4.9			8.5			8.4			16.1	
Confl. Peds. (#/hr)	27		24	24		27	37		22	22		37
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	3%	3%	3%	3%	3%	3%
Shared Lane Traffic (%)												
Turn Type	D.P+P	NA		D.P+P	NA		D.P+P	NA		D.P+P	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	8			4			6			2		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	6.0		5.0	6.0	
Minimum Split (s)	10.0	17.0		10.0	18.0		10.0	18.0		10.0	19.0	
Total Split (s)	10.0	22.0		10.0	22.0		10.0	36.0		10.0	36.0	
Total Split (%)	12.8%	28.2%		12.8%	28.2%		12.8%	46.2%		12.8%	46.2%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lead		Lag	Lag	
Lead-Lag Optimize?	Yes	Yes			Yes			Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	

Intersection Summary

Area Type: Other
Cycle Length: 78
Actuated Cycle Length: 78
Offset: 18 (23%), Referenced to phase 2:NBSB and 6:NBSB, Start of 1st Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 13: 164 Ave NE & NE 80 St



HCM 7th Signalized Intersection Summary
13: 164 Ave NE & NE 80 St 03/21/2025

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	81	174	22	37	209	61	25	389	66	118	391	73
Future Volume (veh/h)	81	174	22	37	209	61	25	389	66	118	391	73
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.99		0.93	0.97		0.93	0.98		0.95	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	87	187	24	40	225	66	27	418	71	127	420	78
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	1	1	1	1	1	3	3	3	3	3	3
Cap, veh/h	221	333	43	293	258	76	528	609	104	452	714	133
Arrive On Green	0.11	0.41	0.41	0.04	0.19	0.19	0.04	0.53	0.53	0.21	0.95	0.95
Sat Flow, veh/h	1795	1622	208	1795	1373	403	1767	1533	260	1767	1511	281
Grp Volume(v), veh/h	87	0	211	40	0	291	27	0	489	127	0	498
Grp Sat Flow(s),veh/h/ln	1795	0	1830	1795	0	1776	1767	0	1794	1767	0	1792
Q Serve(g_s), s	3.0	0.0	6.9	1.3	0.0	12.4	0.6	0.0	15.7	0.0	0.0	2.7
Cycle Q Clear(g_c), s	3.0	0.0	6.9	1.3	0.0	12.4	0.6	0.0	15.7	0.0	0.0	2.7
Prop In Lane	1.00		0.11	1.00		0.23	1.00		0.15	1.00		0.16
Lane Grp Cap(c), veh/h	221	0	376	293	0	334	528	0	713	452	0	847
V/C Ratio(X)	0.39	0.00	0.56	0.14	0.00	0.87	0.05	0.00	0.69	0.28	0.00	0.59
Avail Cap(c_a), veh/h	239	0	399	342	0	387	591	0	713	452	0	847
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.33	1.33	1.33	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.88	0.00	0.88	0.92	0.00	0.92
Uniform Delay (d), s/veh	23.2	0.0	20.3	23.2	0.0	30.8	9.8	0.0	14.8	19.3	0.0	1.2
Incr Delay (d2), s/veh	0.8	0.0	1.3	0.2	0.0	16.6	0.0	0.0	4.7	0.2	0.0	2.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	2.6	0.6	0.0	6.7	0.2	0.0	5.9	1.6	0.0	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	24.0	0.0	21.6	23.4	0.0	47.3	9.8	0.0	19.5	19.5	0.0	3.9
LnGrp LOS	C		C	C		D	A		B	B		A
Approach Vol, veh/h		298			331			516			625	
Approach Delay, s/veh		22.3			44.4			19.0			7.1	
Approach LOS		C			D			B			A	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.1	36.0	7.9	21.0	7.2	41.9	9.2	19.7
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	5.0	31.0	5.0	17.0	5.0	31.0	5.0	17.0
Max Q Clear Time (g_c+I1), s	2.0	17.7	3.3	8.9	2.6	4.7	5.0	14.4
Green Ext Time (p_c), s	0.1	1.4	0.0	0.4	0.0	1.7	0.0	0.3

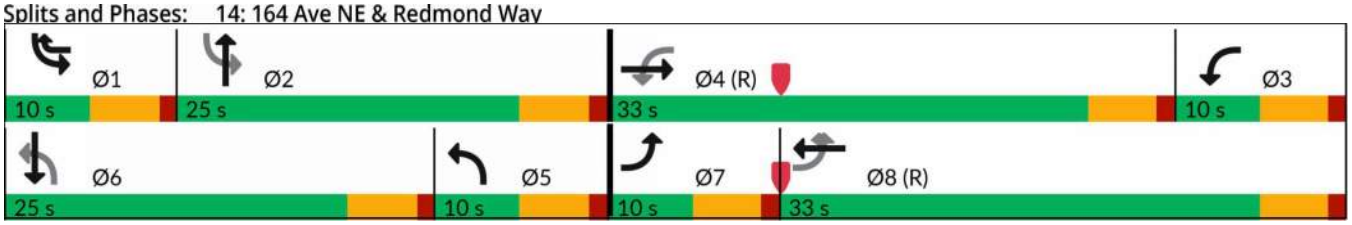
Intersection Summary	
HCM 7th Control Delay, s/veh	20.1
HCM 7th LOS	C

Lanes, Volumes, Timings
14: 164 Ave NE & Redmond Way 03/21/2025

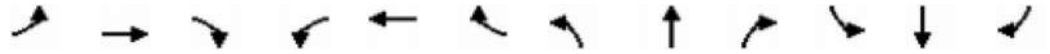
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	623	21	27	683	265	54	180	41	225	160	22
Future Volume (vph)	36	623	21	27	683	265	54	180	41	225	160	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125		0	250		0	70		0	150		150
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		314			714			325			347	
Travel Time (s)		7.1			16.2			7.4			7.9	
Confl. Peds. (#/hr)	56		39	39		56	61		51	51		61
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	2%	2%	2%	3%	3%	3%	1%	1%	1%	5%	5%	5%
Parking (#/hr)				0								
Shared Lane Traffic (%)												
Turn Type	D.P+P	NA		D.P+P	NA	pm+ov	D.P+P	NA		D.P+P	NA	
Protected Phases	7	4		3	8	1	5	2		1	6	
Permitted Phases	8			4		8	6			2		
Detector Phase	7	4		3	8	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	10.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	10.0	22.0		10.0	24.0	10.0	10.0	25.0		10.0	24.0	
Total Split (s)	10.0	33.0		10.0	33.0	10.0	10.0	25.0		10.0	25.0	
Total Split (%)	12.8%	42.3%		12.8%	42.3%	12.8%	12.8%	32.1%		12.8%	32.1%	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lead		Lag	Lag	Lead	Lag	Lag		Lead	Lead	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max		None	C-Max	None	None	None		None	None	

Intersection Summary
Area Type: CBD
Cycle Length: 78
Actuated Cycle Length: 78
Offset: 11 (14%), Referenced to phase 4:EBWB and 8:EBWB, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 14: 164 Ave NE & Redmond Way



HCM 7th Signalized Intersection Summary
14: 164 Ave NE & Redmond Way 03/21/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	36	623	21	27	683	265	54	180	41	225	160	22
Future Volume (veh/h)	36	623	21	27	683	265	54	180	41	225	160	22
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.92	1.00		0.93	0.95		0.87	0.93		0.92
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1683	1683	1683	1670	1670	1670	1697	1697	1697	1643	1643	1643
Adj Flow Rate, veh/h	37	642	22	28	704	273	56	186	42	232	165	23
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	3	3	3	1	1	1	5	5	5
Cap, veh/h	149	579	20	239	695	640	319	296	67	304	305	43
Arrive On Green	0.07	0.72	0.72	0.12	0.55	0.55	0.15	0.46	0.46	0.02	0.07	0.07
Sat Flow, veh/h	1603	1613	55	1590	1670	1320	1616	1298	293	1565	1393	194
Grp Volume(v), veh/h	37	0	664	28	704	273	56	0	228	232	0	188
Grp Sat Flow(s),veh/h/ln	1603	0	1668	1590	1670	1320	1616	0	1591	1565	0	1587
Q Serve(g_s), s	1.0	0.0	28.0	0.0	32.5	8.8	0.0	0.0	8.5	5.0	0.0	8.9
Cycle Q Clear(g_c), s	1.0	0.0	28.0	0.0	32.5	8.8	0.0	0.0	8.5	5.0	0.0	8.9
Prop In Lane	1.00		0.03	1.00		1.00	1.00		0.18	1.00		0.12
Lane Grp Cap(c), veh/h	149	0	599	239	695	640	319	0	363	304	0	348
V/C Ratio(X)	0.25	0.00	1.11	0.12	1.01	0.43	0.18	0.00	0.63	0.76	0.00	0.54
Avail Cap(c_a), veh/h	195	0	599	239	695	640	319	0	408	304	0	407
HCM Platoon Ratio	2.00	2.00	2.00	1.33	1.33	1.33	2.00	2.00	2.00	0.33	0.33	0.33
Upstream Filter(I)	0.77	0.00	0.77	0.82	0.82	0.82	0.70	0.00	0.70	0.85	0.00	0.85
Uniform Delay (d), s/veh	18.1	0.0	11.0	31.0	17.4	9.8	25.6	0.0	18.7	28.9	0.0	32.4
Incr Delay (d2), s/veh	0.7	0.0	66.5	0.2	34.2	1.7	0.2	0.0	1.8	9.4	0.0	1.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	14.5	0.5	15.7	2.4	0.8	0.0	2.7	2.9	0.0	3.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	18.7	0.0	77.5	31.2	51.6	11.5	25.7	0.0	20.5	38.2	0.0	33.5
LnGrp LOS	B		F	C	F	B	C		C	D		C
Approach Vol, veh/h		701			1005			284			420	
Approach Delay, s/veh		74.4			40.2			21.5			36.1	
Approach LOS		E			D			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	22.8	12.2	33.0	10.7	22.1	7.8	37.5
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	5.0	20.0	5.0	28.0	5.0	20.0	5.0	28.0
Max Q Clear Time (g_c+I1), s	7.0	10.5	2.0	30.0	2.0	10.9	3.0	34.5
Green Ext Time (p_c), s	0.0	1.0	0.0	0.0	0.0	0.7	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	47.2
HCM 7th LOS	D

Lanes, Volumes, Timings
15: 164 Ave NE & Cleveland St 03/21/2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	290	54	15	106	27	44	217	22	29	164	33
Future Volume (vph)	30	290	54	15	106	27	44	217	22	29	164	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	100		0	100		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		429			743			151			325	
Travel Time (s)		11.7			20.3			3.4			7.4	
Confl. Peds. (#/hr)	18		30	30		18	43		25	25		43
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	1%	1%	1%	2%	2%	2%
Parking (#/hr)	0	0	0									
Shared Lane Traffic (%)												
Turn Type	Perm	NA		Perm	NA		D.P+P	NA		D.P+P	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			6			2		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0		8.0	8.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	21.0	21.0		21.0	21.0		10.0	20.0		10.0	19.0	
Total Split (s)	42.0	42.0		42.0	42.0		10.0	26.0		10.0	26.0	
Total Split (%)	53.8%	53.8%		53.8%	53.8%		12.8%	33.3%		12.8%	33.3%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Lead/Lag							Lead	Lead		Lag	Lag	
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	

Intersection Summary
Area Type: CBD
Cycle Length: 78
Actuated Cycle Length: 78
Offset: 77 (99%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 15: 164 Ave NE & Cleveland St



HCM 7th Signalized Intersection Summary
15: 164 Ave NE & Cleveland St 03/21/2025

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	290	54	15	106	27	44	217	22	29	164	33
Future Volume (veh/h)	30	290	54	15	106	27	44	217	22	29	164	33
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.98		0.97	1.00		0.97	0.94		0.88	0.95		0.88
Parking Bus, Adj	1.00	1.00	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1697	1697	1697	1683	1683	1683	1697	1697	1697	1683	1683	1683
Adj Flow Rate, veh/h	32	312	58	16	114	29	47	233	24	31	176	35
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	1	1	2	2	2	1	1	1	2	2	2
Cap, veh/h	88	693	123	108	686	166	219	278	29	177	235	47
Arrive On Green	0.59	0.59	0.59	1.00	1.00	1.00	0.04	0.19	0.19	0.06	0.35	0.35
Sat Flow, veh/h	65	1175	209	97	1163	281	1616	1492	154	1603	1328	264
Grp Volume(v), veh/h	402	0	0	159	0	0	47	0	257	31	0	211
Grp Sat Flow(s),veh/h/ln	1448	0	0	1541	0	0	1616	0	1645	1603	0	1593
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	1.8	0.0	11.7	0.0	0.0	9.1
Cycle Q Clear(g_c), s	11.9	0.0	0.0	0.0	0.0	0.0	1.8	0.0	11.7	0.0	0.0	9.1
Prop In Lane	0.08		0.14	0.10		0.18	1.00		0.09	1.00		0.17
Lane Grp Cap(c), veh/h	904	0	0	960	0	0	219	0	307	177	0	282
V/C Ratio(X)	0.44	0.00	0.00	0.17	0.00	0.00	0.22	0.00	0.84	0.18	0.00	0.75
Avail Cap(c_a), veh/h	904	0	0	960	0	0	256	0	443	229	0	429
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	0.97	0.00	0.00	0.99	0.00	0.00	1.00	0.00	1.00	0.91	0.00	0.91
Uniform Delay (d), s/veh	9.0	0.0	0.0	0.0	0.0	0.0	25.1	0.0	30.6	33.9	0.0	23.7
Incr Delay (d2), s/veh	1.5	0.0	0.0	0.4	0.0	0.0	0.5	0.0	9.2	0.4	0.0	3.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	0.0	0.0	0.1	0.0	0.0	0.7	0.0	5.3	0.6	0.0	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	10.5	0.0	0.0	0.4	0.0	0.0	25.6	0.0	39.8	34.3	0.0	27.3
LnGrp LOS	B			A			C		D	C		C
Approach Vol, veh/h		402			159			304			242	
Approach Delay, s/veh		10.5			0.4			37.6			28.2	
Approach LOS		B			A			D			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.4	19.5		51.0	8.2	18.8		51.0				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	5.0	21.0		37.0	5.0	21.0		37.0				
Max Q Clear Time (g_c+I1), s	2.0	13.7		13.9	3.8	11.1		2.0				
Green Ext Time (p_c), s	0.0	0.6		1.8	0.0	0.5		0.7				

Intersection Summary		
HCM 7th Control Delay, s/veh		20.4
HCM 7th LOS		C

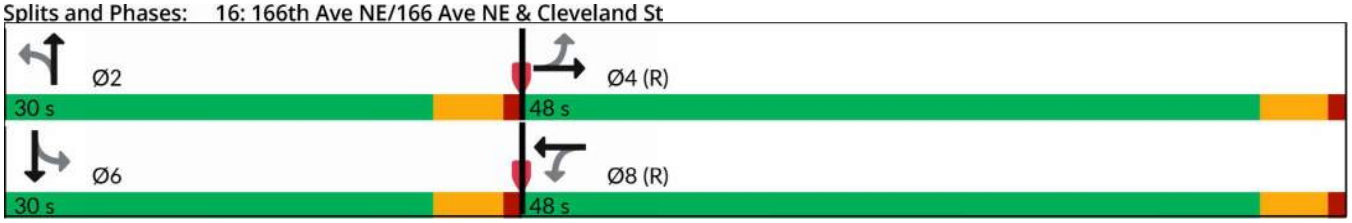
Lanes, Volumes, Timings
16: 166th Ave NE/166 Ave NE & Cleveland St 03/21/2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	51	271	29	39	123	28	17	199	110	7	95	12
Future Volume (vph)	51	271	29	39	123	28	17	199	110	7	95	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		200	0		0	100		125	160		0
Storage Lanes	0		0	0		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			25			30	
Link Distance (ft)		743			556			226			372	
Travel Time (s)		20.3			15.2			6.2			8.5	
Confl. Peds. (#/hr)	31		1	1		31	4		79	79		4
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Shared Lane Traffic (%)												
Turn Type	Perm	NA		Perm	NA		Perm	NA	Free	Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		Free	6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	22.0	22.0		22.0	22.0		22.0	22.0		22.0	22.0	
Total Split (s)	48.0	48.0		48.0	48.0		30.0	30.0		30.0	30.0	
Total Split (%)	61.5%	61.5%		61.5%	61.5%		38.5%	38.5%		38.5%	38.5%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max		C-Max	C-Max		Ped	Ped		Ped	Ped	

Intersection Summary

Area Type: CBD
Cycle Length: 78
Actuated Cycle Length: 78
Offset: 4 (5%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
Natural Cycle: 45
Control Type: Actuated-Coordinated

Splits and Phases: 16: 166th Ave NE/166 Ave NE & Cleveland St



HCM 7th Signalized Intersection Summary
16: 166th Ave NE/166 Ave NE & Cleveland St 03/21/2025

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	51	271	29	39	123	28	17	199	110	7	95	12
Future Volume (veh/h)	51	271	29	39	123	28	17	199	110	7	95	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.99		0.98	0.98		0.98	0.86		1.00	0.90		0.81
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1710	1710	1710	1697	1697	1697	1697	1697	1697	1697	1697	1697
Adj Flow Rate, veh/h	54	285	31	41	129	29	18	209	0	7	100	13
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	1	1	1	1	1	1	1	1	1
Cap, veh/h	170	847	88	221	660	141	252	353		185	297	39
Arrive On Green	1.00	1.00	1.00	0.66	0.66	0.66	0.21	0.21	0.00	0.42	0.42	0.42
Sat Flow, veh/h	177	1276	133	250	994	212	994	1697	1438	953	1427	185
Grp Volume(v), veh/h	370	0	0	199	0	0	18	209	0	7	0	113
Grp Sat Flow(s),veh/h/ln	1586	0	0	1456	0	0	994	1697	1438	953	0	1612
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	1.2	8.7	0.0	0.5	0.0	3.7
Cycle Q Clear(g_c), s	0.0	0.0	0.0	3.6	0.0	0.0	4.9	8.7	0.0	9.1	0.0	3.7
Prop In Lane	0.15		0.08	0.21		0.15	1.00		1.00	1.00		0.12
Lane Grp Cap(c), veh/h	1105	0	0	1022	0	0	252	353		185	0	335
V/C Ratio(X)	0.33	0.00	0.00	0.19	0.00	0.00	0.07	0.59		0.04	0.00	0.34
Avail Cap(c_a), veh/h	1105	0	0	1022	0	0	364	544		292	0	517
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	0.89	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.98	0.00	0.98
Uniform Delay (d), s/veh	0.0	0.0	0.0	5.0	0.0	0.0	28.0	27.9	0.0	24.2	0.0	19.1
Incr Delay (d2), s/veh	0.7	0.0	0.0	0.4	0.0	0.0	0.4	5.6	0.0	0.3	0.0	2.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.0	1.2	0.0	0.0	0.3	4.0	0.0	0.1	0.0	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.7	0.0	0.0	5.4	0.0	0.0	28.4	33.5	0.0	24.5	0.0	21.2
LnGrp LOS	A			A			C	C		C		C
Approach Vol, veh/h		370			199			227			120	
Approach Delay, s/veh		0.7			5.4			33.1			21.4	
Approach LOS		A			A			C			C	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	21.2	56.8	21.2	56.8
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	25.0	43.0	25.0	43.0
Max Q Clear Time (g_c+I1), s	10.7	2.0	11.1	5.6
Green Ext Time (p_c), s	1.9	5.4	0.8	2.6

Intersection Summary	
HCM 7th Control Delay, s/veh	12.5
HCM 7th LOS	B

Notes

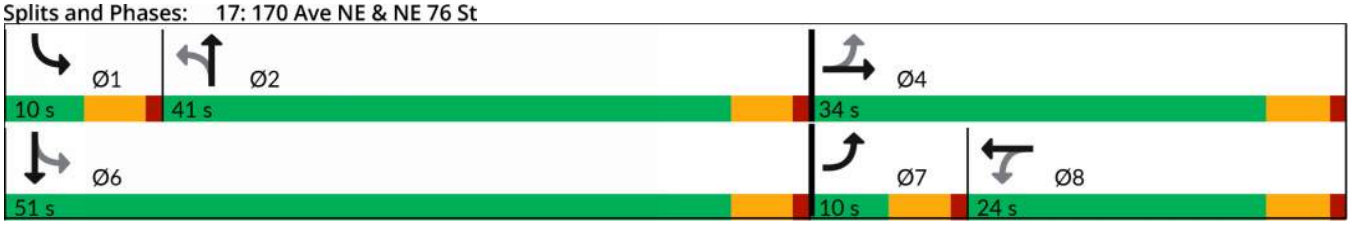
Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings
17: 170 Ave NE & NE 76 St 03/21/2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	169	2	16	9	5	56	5	1015	2	18	556	116
Future Volume (vph)	169	2	16	9	5	56	5	1015	2	18	556	116
Satd. Flow (prot)	0	1772	0	0	1658	0	1787	3573	0	1787	3432	0
Flt Permitted		0.695			0.957		0.385			0.156		
Satd. Flow (perm)	0	1281	0	0	1591	0	707	3573	0	293	3432	0
Satd. Flow (RTOR)		6			58						45	
Confl. Peds. (#/hr)	5		25	25		5	21		31	31		21
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	1%	1%	1%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	195	0	0	72	0	5	1059	0	19	700	0
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases	7	4			8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		8	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		8.0	8.0		5.0	8.0	
Minimum Split (s)	10.0	24.0		24.0	24.0		18.0	18.0		10.0	19.0	
Total Split (s)	10.0	34.0		24.0	24.0		41.0	41.0		10.0	51.0	
Total Split (%)	11.8%	40.0%		28.2%	28.2%		48.2%	48.2%		11.8%	60.0%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lead			Lag	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		Min	Min		None	Min	
Act Effct Green (s)		15.8			15.8		28.5	28.5		29.9	29.9	
Actuated g/C Ratio		0.28			0.28		0.51	0.51		0.53	0.53	
v/c Ratio		0.54			0.15		0.01	0.59		0.06	0.38	
Control Delay (s/veh)		23.6			8.1		10.8	13.0		8.1	8.4	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		23.6			8.1		10.8	13.0		8.1	8.4	
LOS		C			A		B	B		A	A	
Approach Delay (s/veh)		23.6			8.1			13.0			8.4	
Approach LOS		C			A			B			A	

Intersection Summary	
Cycle Length: 85	
Actuated Cycle Length: 56.4	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.59	
Intersection Signal Delay (s/veh): 12.2	Intersection LOS: B
Intersection Capacity Utilization 53.8%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 17: 170 Ave NE & NE 76 St

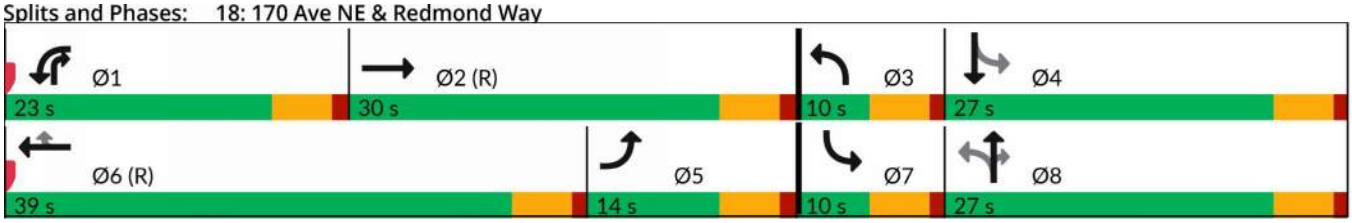


Lanes, Volumes, Timings
18: 170 Ave NE & Redmond Way 03/21/2025

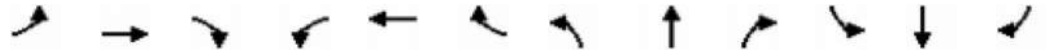
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	67	911	91	419	783	268	32	413	800	160	185	17
Future Volume (vph)	67	911	91	419	783	268	32	413	800	160	185	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125		0	250		0	125		0	100		0
Storage Lanes	1		0	2		1	1		1	1		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		585			661			498			439	
Travel Time (s)		13.3			15.0			11.3			10.0	
Confl. Peds. (#/hr)	20		6	6		20	15		27	27		15
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Shared Lane Traffic (%)												
Turn Type	Prot	NA		Prot	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA	
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases						6	8		8	4		
Detector Phase	5	2		1	6	6	3 8	8	1	7 4	4	
Switch Phase												
Minimum Initial (s)	5.0	8.0		6.0	8.0	8.0	5.0	5.0	6.0	5.0	5.0	
Minimum Split (s)	10.0	24.0		11.0	23.0	23.0	10.0	27.0	11.0	10.0	27.0	
Total Split (s)	14.0	30.0		23.0	39.0	39.0	10.0	27.0	23.0	10.0	27.0	
Total Split (%)	15.6%	33.3%		25.6%	43.3%	43.3%	11.1%	30.0%	25.6%	11.1%	30.0%	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lag	Lag		Lead	Lead	Lead	Lead	Lag	Lead	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes			Yes			
Recall Mode	None	C-Max		None	C-Max	C-Max	None	None	None	None	None	

Intersection Summary
Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 55 (61%), Referenced to phase 2:EBT and 6:WBT, Start of 1st Green
Natural Cycle: 110
Control Type: Actuated-Coordinated

Splits and Phases: 18: 170 Ave NE & Redmond Way



HCM 7th Signalized Intersection Summary
18: 170 Ave NE & Redmond Way 03/21/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	67	911	91	419	783	268	32	413	800	160	185	17
Future Volume (veh/h)	67	911	91	419	783	268	32	413	800	160	185	17
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	0.98		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	71	959	96	441	824	282	34	435	842	168	195	18
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	180	1061	106	538	1353	588	321	461	624	187	455	42
Arrive On Green	0.20	0.65	0.65	0.05	0.12	0.12	0.03	0.24	0.24	0.02	0.09	0.09
Sat Flow, veh/h	1795	3281	328	3483	3582	1555	1795	1885	1545	1795	1695	156
Grp Volume(v), veh/h	71	523	532	441	824	282	34	435	842	168	0	213
Grp Sat Flow(s),veh/h/ln	1795	1791	1819	1742	1791	1555	1795	1885	1545	1795	0	1851
Q Serve(g_s), s	3.1	22.4	22.4	11.3	19.6	11.1	1.3	20.4	22.0	5.0	0.0	9.8
Cycle Q Clear(g_c), s	3.1	22.4	22.4	11.3	19.6	11.1	1.3	20.4	22.0	5.0	0.0	9.8
Prop In Lane	1.00		0.18	1.00		1.00	1.00		1.00	1.00		0.08
Lane Grp Cap(c), veh/h	180	579	588	538	1353	588	321	461	624	187	0	496
V/C Ratio(X)	0.40	0.90	0.90	0.82	0.61	0.48	0.11	0.94	1.35	0.90	0.00	0.43
Avail Cap(c_a), veh/h	180	579	588	697	1353	588	363	461	624	187	0	496
HCM Platoon Ratio	2.00	2.00	2.00	0.33	0.33	0.33	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	0.97	0.97	0.97	0.40	0.40	0.40	0.78	0.78	0.78	0.43	0.00	0.43
Uniform Delay (d), s/veh	33.6	14.7	14.7	41.5	33.1	16.7	24.4	33.4	27.2	31.2	0.0	34.5
Incr Delay (d2), s/veh	0.5	19.5	19.3	1.9	0.8	1.1	0.0	23.7	165.2	20.1	0.0	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	7.7	7.7	5.4	9.5	4.7	0.5	12.1	41.3	2.2	0.0	4.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	34.1	34.2	34.0	43.4	33.9	17.8	24.4	57.1	192.4	51.3	0.0	34.6
LnGrp LOS	C	C	C	D	C	B	C	E	F	D		C
Approach Vol, veh/h		1126			1547			1311			381	
Approach Delay, s/veh		34.1			33.7			143.1			42.0	
Approach LOS		C			C			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.9	34.1	7.9	29.1	14.0	39.0	10.0	27.0
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	18.0	25.0	5.0	22.0	9.0	34.0	5.0	22.0
Max Q Clear Time (g_c+I1), s	13.3	24.4	3.3	11.8	5.1	21.6	7.0	24.0
Green Ext Time (p_c), s	0.6	0.3	0.0	0.3	0.0	4.5	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	67.4
HCM 7th LOS	E

Lanes, Volumes, Timings
19: Bear Creek Crossing & Redmond Way 03/21/2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	106	1665	10	19	1225	168	44	18	55	139	20	62
Future Volume (vph)	106	1665	10	19	1225	168	44	18	55	139	20	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	175		150	0		0	0		0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		661			588			140			177	
Travel Time (s)		15.0			13.4			3.8			4.8	
Confl. Peds. (#/hr)	20		2	2		20	2		20	20		2
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	2%	2%	2%
Shared Lane Traffic (%)												
Turn Type	Prot	NA		Prot	NA	Perm	D.P+P	NA		D.P+P	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases						6	4			8		
Detector Phase	5	2		1	6	6	3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	8.0		6.0	8.0	8.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	10.0	24.0		11.0	23.0	23.0	10.0	27.0		10.0	27.0	
Total Split (s)	12.0	42.0		11.0	41.0	41.0	10.0	27.0		10.0	27.0	
Total Split (%)	13.3%	46.7%		12.2%	45.6%	45.6%	11.1%	30.0%		11.1%	30.0%	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lead		Lag	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes				Yes	Yes	
Recall Mode	None	C-Max		None	C-Max	C-Max	None	None		None	Max	

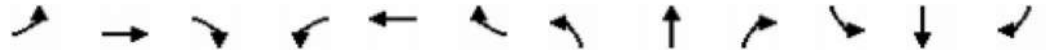
Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 17 (19%), Referenced to phase 2:EBT and 6:WBT, Start of 1st Green
Natural Cycle: 100
Control Type: Actuated-Coordinated

Splits and Phases: 19: Bear Creek Crossing & Redmond Way



HCM 7th Signalized Intersection Summary
19: Bear Creek Crossing & Redmond Way 03/21/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	106	1665	10	19	1225	168	44	18	55	139	20	62
Future Volume (veh/h)	106	1665	10	19	1225	168	44	18	55	139	20	62
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	0.98		0.97	0.98		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1900	1900	1900	1870	1870	1870
Adj Flow Rate, veh/h	109	1716	10	20	1263	173	45	19	57	143	21	64
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	1	1	1	1	1	0	0	0	2	2	2
Cap, veh/h	139	1501	9	152	1499	653	413	93	278	423	98	297
Arrive On Green	0.03	0.14	0.14	0.03	0.14	0.14	0.04	0.23	0.23	0.06	0.24	0.24
Sat Flow, veh/h	1795	3650	21	1795	3582	1559	1810	410	1229	1781	399	1216
Grp Volume(v), veh/h	109	841	885	20	1263	173	45	0	76	143	0	85
Grp Sat Flow(s),veh/h/ln	1795	1791	1881	1795	1791	1559	1810	0	1639	1781	0	1615
Q Serve(g_s), s	5.4	37.0	37.0	1.0	31.0	8.9	1.6	0.0	3.4	5.0	0.0	3.8
Cycle Q Clear(g_c), s	5.4	37.0	37.0	1.0	31.0	8.9	1.6	0.0	3.4	5.0	0.0	3.8
Prop In Lane	1.00		0.01	1.00		1.00	1.00		0.75	1.00		0.75
Lane Grp Cap(c), veh/h	139	736	773	152	1499	653	413	0	371	423	0	395
V/C Ratio(X)	0.79	1.14	1.14	0.13	0.84	0.26	0.11	0.00	0.20	0.34	0.00	0.22
Avail Cap(c_a), veh/h	140	736	773	152	1499	653	445	0	401	423	0	395
HCM Platoon Ratio	0.33	0.33	0.33	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.09	0.09	0.65	0.65	0.65	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	43.1	38.9	38.9	40.5	35.9	26.4	23.9	0.0	28.2	25.6	0.0	27.1
Incr Delay (d2), s/veh	2.6	65.9	66.5	0.2	3.9	0.6	0.1	0.0	0.2	0.3	0.0	1.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	31.1	32.8	0.4	15.6	3.8	0.7	0.0	1.4	2.4	0.0	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	45.8	104.8	105.4	40.7	39.8	27.0	24.0	0.0	28.4	26.0	0.0	28.4
LnGrp LOS	D	F	F	D	D	C	C		C	C		C
Approach Vol, veh/h		1835			1456			121			228	
Approach Delay, s/veh		101.6			38.3			26.8			26.9	
Approach LOS		F			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.6	42.0	8.4	27.0	11.9	42.7	10.0	25.4
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	6.0	37.0	5.0	22.0	7.0	36.0	5.0	22.0
Max Q Clear Time (g_c+I1), s	3.0	39.0	3.6	5.8	7.4	33.0	7.0	5.4
Green Ext Time (p_c), s	0.0	0.0	0.0	0.2	0.0	2.1	0.0	0.2

Intersection Summary	
HCM 7th Control Delay, s/veh	69.1
HCM 7th LOS	E

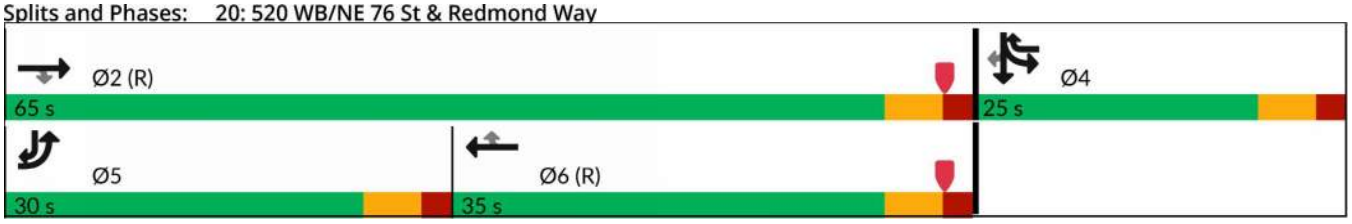
Lanes, Volumes, Timings
20: 520 WB/NE 76 St & Redmond Way 03/21/2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	460	1133	274	0	962	396	0	0	0	73	394	450
Future Volume (vph)	460	1133	274	0	962	396	0	0	0	73	394	450
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	220		110	0		0	0		0	400		350
Storage Lanes	2		1	1		1	0		0	1		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		45			45			25			25	
Link Distance (ft)		588			476			347			459	
Travel Time (s)		8.9			7.2			9.5			12.5	
Confl. Peds. (#/hr)	16					16						
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	2%	2%	2%
Shared Lane Traffic (%)												
Turn Type	Prot	NA	Perm		NA	pm+ov				Split	NA	pm+ov
Protected Phases	5	2			6	4				4	4	5
Permitted Phases			2			6						4
Detector Phase	5	2	2		6	4				4	4	5
Switch Phase												
Minimum Initial (s)	5.0	7.0	7.0		7.0	5.0				5.0	5.0	5.0
Minimum Split (s)	10.9	12.9	12.9		37.9	10.9				10.9	10.9	10.9
Total Split (s)	30.0	65.0	65.0		35.0	25.0				25.0	25.0	30.0
Total Split (%)	33.3%	72.2%	72.2%		38.9%	27.8%				27.8%	27.8%	33.3%
Yellow Time (s)	3.9	3.9	3.9		3.9	3.9				3.9	3.9	3.9
All-Red Time (s)	2.0	2.0	2.0		2.0	2.0				2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0				0.0	0.0	0.0
Total Lost Time (s)	5.9	5.9	5.9		5.9	5.9				5.9	5.9	5.9
Lead/Lag	Lead				Lag							Lead
Lead-Lag Optimize?												
Recall Mode	None	C-Min	C-Min		C-Min	None				None	None	None

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 62 (69%), Referenced to phase 2:EBT and 6:WBT, Start of Red
Natural Cycle: 80
Control Type: Actuated-Coordinated

Splits and Phases: 20: 520 WB/NE 76 St & Redmond Way



HCM 7th Signalized Intersection Summary
20: 520 WB/NE 76 St & Redmond Way 03/21/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	460	1133	274	0	962	396	0	0	0	73	394	450
Future Volume (veh/h)	460	1133	274	0	962	396	0	0	0	73	394	450
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	0	1885	1885				1870	1870	1870
Adj Flow Rate, veh/h	474	1168	282	0	992	408				75	406	464
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97				0.97	0.97	0.97
Percent Heavy Veh, %	1	1	1	0	1	1				2	2	2
Cap, veh/h	599	2352	1041	0	1502	996				378	397	609
Arrive On Green	0.12	0.44	0.44	0.00	0.84	0.84				0.21	0.21	0.21
Sat Flow, veh/h	3483	3582	1586	0	3676	1567				1781	1870	1585
Grp Volume(v), veh/h	474	1168	282	0	992	408				75	406	464
Grp Sat Flow(s),veh/h/ln	1742	1791	1586	0	1791	1567				1781	1870	1585
Q Serve(g_s), s	11.9	21.0	10.2	0.0	9.0	5.0				3.1	19.1	19.1
Cycle Q Clear(g_c), s	11.9	21.0	10.2	0.0	9.0	5.0				3.1	19.1	19.1
Prop In Lane	1.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	599	2352	1041	0	1502	996				378	397	609
V/C Ratio(X)	0.79	0.50	0.27	0.00	0.66	0.41				0.20	1.02	0.76
Avail Cap(c_a), veh/h	933	2352	1041	0	1502	996				378	397	609
HCM Platoon Ratio	0.67	0.67	0.67	1.00	2.00	2.00				1.00	1.00	1.00
Upstream Filter(I)	0.22	0.22	0.22	0.00	0.75	0.75				1.00	1.00	1.00
Uniform Delay (d), s/veh	38.3	14.5	11.5	0.0	5.0	2.0				29.2	35.5	24.1
Incr Delay (d2), s/veh	0.6	0.2	0.1	0.0	1.7	0.9				0.3	51.1	5.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	8.8	3.3	0.0	2.0	1.6				1.4	14.2	19.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	38.8	14.7	11.6	0.0	6.7	2.9				29.4	86.6	29.8
LnGrp LOS	D	B	B		A	A				C	F	C
Approach Vol, veh/h		1924			1400						945	
Approach Delay, s/veh		20.2			5.6						54.1	
Approach LOS		C			A						D	

Timer - Assigned Phs		2		4	5	6						
Phs Duration (G+Y+Rc), s		65.0		25.0	21.4	43.6						
Change Period (Y+Rc), s		5.9		5.9	5.9	5.9						
Max Green Setting (Gmax), s		59.1		19.1	24.1	29.1						
Max Q Clear Time (g_c+I1), s		23.0		21.1	13.9	11.0						
Green Ext Time (p_c), s		13.5		0.0	1.5	9.3						

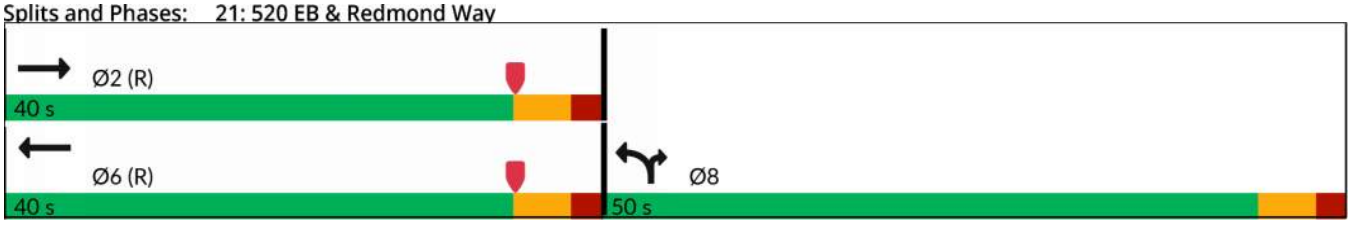
Intersection Summary	
HCM 7th Control Delay, s/veh	22.9
HCM 7th LOS	C

Notes
User approved pedestrian interval to be less than phase max green.
User approved changes to right turn type.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1207	0	0	938	442	1419
Future Volume (vph)	1207	0	0	938	442	1419
Satd. Flow (prot)	5136	0	0	3574	3467	2814
Flt Permitted					0.950	
Satd. Flow (perm)	5136	0	0	3574	3467	2814
Satd. Flow (RTOR)						19
Confl. Peds. (#/hr)		8	8			16
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1257	0	0	977	460	1478
Turn Type	NA			NA	Prot	Prot
Protected Phases	2			6	8	8
Permitted Phases						
Detector Phase	2			6	8	8
Switch Phase						
Minimum Initial (s)	10.0			10.0	5.0	5.0
Minimum Split (s)	37.9			15.9	37.9	37.9
Total Split (s)	40.0			40.0	50.0	50.0
Total Split (%)	44.4%			44.4%	55.6%	55.6%
Yellow Time (s)	3.9			3.9	3.9	3.9
All-Red Time (s)	2.0			2.0	2.0	2.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	5.9			5.9	5.9	5.9
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Min			C-Min	None	None
Act Effct Green (s)	31.4			31.4	46.8	46.8
Actuated g/C Ratio	0.35			0.35	0.52	0.52
v/c Ratio	0.70			0.78	0.25	1.00
Control Delay (s/veh)	16.1			27.9	12.9	47.7
Queue Delay	0.0			0.0	0.0	0.0
Total Delay (s/veh)	16.1			27.9	12.9	47.7
LOS	B			C	B	D
Approach Delay (s/veh)	16.1			27.9	39.4	
Approach LOS	B			C	D	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 62 (69%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.00	
Intersection Signal Delay (s/veh): 29.7	Intersection LOS: C
Intersection Capacity Utilization 87.7%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 21: 520 EB & Redmond Way



Lanes, Volumes, Timings
22: 164 Ave NE & NE 76 St 03/21/2025



Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Volume (vph)	2	54	171	37	1	23	98	102	2	51	152	46
Future Volume (vph)	2	54	171	37	1	23	98	102	2	51	152	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)			25				25				25	
Link Distance (ft)			539				724				311	
Travel Time (s)			14.7				19.7				8.5	
Confl. Peds. (#/hr)	122	1		84	7	84		1	84	122		7
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	1%	1%	1%	1%	0%	0%	0%	0%	2%	2%	2%	2%
Shared Lane Traffic (%)												
Sign Control			Yield				Yield				Yield	

Intersection Summary	
Area Type:	Other
Control Type: Roundabout	



Lane Group	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Volume (vph)	4	78	122	28
Future Volume (vph)	4	78	122	28
Ideal Flow (vphpl)	1900	1900	1900	1900
Link Speed (mph)			25	
Link Distance (ft)			149	
Travel Time (s)			4.1	
Confl. Peds. (#/hr)	1	7		122
Peak Hour Factor	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	3%	3%	3%	3%
Shared Lane Traffic (%)				
Sign Control			Yield	

Intersection Summary

Intersection	
Intersection Delay, s/veh	6.6
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	314	266	299	276
Demand Flow Rate, veh/h	317	266	305	284
Vehicles Circulating, veh/h	280	321	375	211
Vehicles Exiting, veh/h	215	359	222	376
Ped Vol Crossing Leg, #/h	122	7	84	1
Ped Cap Adj	0.978	0.999	0.988	1.000
Approach Delay, s/veh	6.8	6.3	7.5	5.8
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
A (Intercept)	1380	1380	1380	1380
B (Slope)	1.02e-3	1.02e-3	1.02e-3	1.02e-3
Entry Flow, veh/h	317	266	305	284
Cap Entry Lane, veh/h	1037	995	941	1113
Entry HV Adj Factor	0.990	1.000	0.981	0.970
Flow Entry, veh/h	314	266	299	276
Cap Entry, veh/h	1004	994	913	1079
V/C Ratio	0.313	0.268	0.328	0.255
Control Delay, s/veh	6.8	6.3	7.5	5.8
LOS	A	A	A	A
95th %tile Queue, veh	1	1	1	1

Lanes, Volumes, Timings
23: 166th Ave NE & NE 76 St 03/21/2025



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	123	172	46	28	89	76	24	126	22	21	95	51
Future Volume (vph)	123	172	46	28	89	76	24	126	22	21	95	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		0	0		50
Storage Lanes	0		0	0		0	0		0	0		1
Taper Length (ft)	25			25			25			25		
Link Speed (mph)		25			25			10			10	
Link Distance (ft)		724			1313			308			226	
Travel Time (s)		19.7			35.8			21.0			15.4	
Confl. Peds. (#/hr)	5		49	49		5	9		72	72		9
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	0%	0%	0%
Parking (#/hr)	0	0	0				0	0	0			
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Intersection Delay, s/veh	12.2
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	123	172	46	28	89	76	24	126	22	21	95	51
Future Vol, veh/h	123	172	46	28	89	76	24	126	22	21	95	51
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	0	0	0
Mvmt Flow	131	183	49	30	95	81	26	134	23	22	101	54
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	1
HCM Control Delay, s/veh	14.3	10.8	11.4	10.4
HCM LOS	B	B	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	14%	36%	15%	18%	0%
Vol Thru, %	73%	50%	46%	82%	0%
Vol Right, %	13%	13%	39%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	172	341	193	116	51
LT Vol	24	123	28	21	0
Through Vol	126	172	89	95	0
RT Vol	22	46	76	0	51
Lane Flow Rate	183	363	205	123	54
Geometry Grp	4a	2	2	5	5
Degree of Util (X)	0.297	0.534	0.306	0.22	0.085
Departure Headway (Hd)	5.844	5.298	5.358	6.429	5.624
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	613	678	669	557	634
Service Time	3.901	3.343	3.41	4.186	3.381
HCM Lane V/C Ratio	0.299	0.535	0.306	0.221	0.085
HCM Control Delay, s/veh	11.4	14.3	10.8	11	8.9
HCM Lane LOS	B	B	B	B	A
HCM 95th-tile Q	1.2	3.2	1.3	0.8	0.3

Lanes, Volumes, Timings
24: 164th Ave NE & NE 74th St 03/21/2025



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	89	52	96	98	104	76
Future Volume (vph)	89	52	96	98	104	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	10			10	10	
Link Distance (ft)	321			415	239	
Travel Time (s)	21.9			28.3	16.3	
Confl. Peds. (#/hr)	75	214	36			36
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	0%	0%	0%	0%	1%	1%
Parking (#/hr)	0	0	0	0		
Shared Lane Traffic (%)						
Sign Control	Stop			Stop	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Intersection Delay, s/veh	9
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	89	52	96	98	104	76
Future Vol, veh/h	89	52	96	98	104	76
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles, %	0	0	0	0	1	1
Mvmt Flow	100	58	108	110	117	85
Number of Lanes	1	0	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay, s/veh	9	9.4	8.7
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	49%	63%	0%
Vol Thru, %	51%	0%	58%
Vol Right, %	0%	37%	42%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	194	141	180
LT Vol	96	89	0
Through Vol	98	0	104
RT Vol	0	52	76
Lane Flow Rate	218	158	202
Geometry Grp	1	1	1
Degree of Util (X)	0.279	0.209	0.242
Departure Headway (Hd)	4.604	4.738	4.301
Convergence, Y/N	Yes	Yes	Yes
Cap	780	756	833
Service Time	2.635	2.776	2.331
HCM Lane V/C Ratio	0.279	0.209	0.242
HCM Control Delay, s/veh	9.4	9	8.7
HCM Lane LOS	A	A	A
HCM 95th-tile Q	1.1	0.8	0.9

Lanes, Volumes, Timings
25: 166th Ave NE/166th Ave NE & NE 74th St 03/21/2025



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	57	45	110	49	47	96
Future Volume (vph)	57	45	110	49	47	96
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	10		10			10
Link Distance (ft)	375		216			226
Travel Time (s)	25.6		14.7			15.4
Confl. Peds. (#/hr)	53	105		34	34	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	1%	0%	0%	3%	3%
Parking (#/hr)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Sign Control	Stop		Stop			Stop

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Intersection Delay, s/veh	8.3
Intersection LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	57	45	110	49	47	96
Future Vol, veh/h	57	45	110	49	47	96
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	1	1	0	0	3	3
Mvmt Flow	62	49	120	53	51	104
Number of Lanes	1	0	1	0	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay, s/veh	8.2	8.2	8.5
HCM LOS	A	A	A

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	56%	33%
Vol Thru, %	69%	0%	67%
Vol Right, %	31%	44%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	159	102	143
LT Vol	0	57	47
Through Vol	110	0	96
RT Vol	49	45	0
Lane Flow Rate	173	111	155
Geometry Grp	1	1	1
Degree of Util (X)	0.199	0.138	0.192
Departure Headway (Hd)	4.144	4.483	4.451
Convergence, Y/N	Yes	Yes	Yes
Cap	868	802	808
Service Time	2.158	2.501	2.467
HCM Lane V/C Ratio	0.199	0.138	0.192
HCM Control Delay, s/veh	8.2	8.2	8.5
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.7	0.5	0.7

Lanes, Volumes, Timings
26: Bear Creek Pkwy & 164th Ave NE 03/21/2025



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	138	915	558	35	72	100
Future Volume (vph)	138	915	558	35	72	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100			150	0	125
Storage Lanes	1			1	1	1
Taper Length (ft)	25				25	
Link Speed (mph)		30	30		10	
Link Distance (ft)		500	450		401	
Travel Time (s)		11.4	10.2		27.3	
Confl. Peds. (#/hr)	12			12		18
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	1%	1%	2%	2%	2%	2%
Parking (#/hr)		0				
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	138	915	558	35	72	100
Future Vol, veh/h	138	915	558	35	72	100
Conflicting Peds, #/hr	12	0	0	12	0	18
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	150	0	125
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	1	1	2	2	2	2
Mvmt Flow	144	953	581	36	75	104

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	630	0	-	0	1834	611
Stage 1	-	-	-	-	593	-
Stage 2	-	-	-	-	1241	-
Critical Hdwy	4.11	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.209	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	957	-	-	-	84	494
Stage 1	-	-	-	-	552	-
Stage 2	-	-	-	-	273	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	948	-	-	-	~ 70	481
Mov Cap-2 Maneuver	-	-	-	-	185	-
Stage 1	-	-	-	-	464	-
Stage 2	-	-	-	-	270	-

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	1.24	0	24.02
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	948	-	-	-	185	481
HCM Lane V/C Ratio	0.152	-	-	-	0.406	0.216
HCM Ctrl Dly (s/v)	9.5	-	-	-	37.2	14.5
HCM Lane LOS	A	-	-	-	E	B
HCM 95th %tile Q(veh)	0.5	-	-	-	1.8	0.8

Notes

~: Volume exceeds capacity $: Delay exceeds 300s
+: Computation Not Defined *: All major volume in platoon

Lanes, Volumes, Timings
27: Bear Creek Pkwy & 166th Ave NE 03/21/2025



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	91	897	468	77	77	127
Future Volume (vph)	91	897	468	77	77	127
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)		-1%	1%		-1%	
Storage Length (ft)	200			150	0	150
Storage Lanes	1			1	1	1
Taper Length (ft)	25				25	
Link Speed (mph)		30	30		10	
Link Distance (ft)		220	462		360	
Travel Time (s)		5.0	10.5		24.5	
Confl. Peds. (#/hr)	22			22		27
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	1%	1%	1%	1%	3%	3%
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	91	897	468	77	77	127
Future Vol, veh/h	91	897	468	77	77	127
Conflicting Peds, #/hr	22	0	0	22	0	27
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	200	-	-	150	0	150
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	-1	1	-	-1	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	1	1	1	1	3	3
Mvmt Flow	96	944	493	81	81	134

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	596	0	-	0	1650	542
Stage 1	-	-	-	-	515	-
Stage 2	-	-	-	-	1136	-
Critical Hdwy	4.11	-	-	-	6.23	6.13
Critical Hdwy Stg 1	-	-	-	-	5.23	-
Critical Hdwy Stg 2	-	-	-	-	5.23	-
Follow-up Hdwy	2.209	-	-	-	3.527	3.327
Pot Cap-1 Maneuver	986	-	-	-	118	547
Stage 1	-	-	-	-	615	-
Stage 2	-	-	-	-	325	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	968	-	-	-	103	525
Mov Cap-2 Maneuver	-	-	-	-	226	-
Stage 1	-	-	-	-	544	-
Stage 2	-	-	-	-	319	-

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	0.84	0	19.98
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	968	-	-	-	226	525
HCM Lane V/C Ratio	0.099	-	-	-	0.358	0.255
HCM Ctrl Dly (s/v)	9.1	-	-	-	29.5	14.2
HCM Lane LOS	A	-	-	-	D	B
HCM 95th %tile Q(veh)	0.3	-	-	-	1.5	1

Appendix F

ITE Pass-by Data for LUC 820

Vehicle Pass-By Rates by Land Use

Source: ITE *Trip Generation Manual* , 11th Edition

Land Use Code	820								
Land Use	Shopping Center (> 150k)								
Setting	General Urban/Suburban								
Time Period	Weekday PM Peak Period								
# Data Sites	8 Sites with GLA between 150 and 300k				16 Sites with GLA between 300 and 900k				
Average Pass-By Rate	29% for Sites with GLA between 150 and 300k				19% for Sites with GLA between 300 and 900k				
	Pass-By Characteristics for Individual Sites								
		Survey	#	Pass-By	Non-Pass-By Trips			Adj Street Peak	
GLA (000)	State or Province	Year	Interviews	Trip (%)	Primary (%)	Diverted (%)	Total (%)	Hour Volume	Source
213	Florida	1990	312	28	31	41	72	—	33
225	Illinois	1994	264	35	32	33	65	1970	24
227.9	Kentucky	1993	—	34	35	31	66	—	34
235	Kentucky	1993	211	35	29	36	65	2593	2
255	Iowa	1994	222	23	38	39	77	3706	24
256	Connecticut	1994	208	27	51	22	73	3422	24
293	Illinois	1994	282	24	70	6	76	4606	13
294	Pennsylvania	1994	213	24	48	18	76	4055	24
350	Massachusetts	1994	224	18	45	37	82	2112	24
361	Virginia	1994	315	17	54	29	83	2034	24
375	North Carolina	1994	214	29	48	23	71	2053	24
413	Texas	1994	228	28	51	21	72	589	24
418	Maryland	1994	281	20	50	30	80	5610	24
450	California	1994	321	23	49	28	77	2787	24
476	Washington	1994	234	25	53	22	75	3427	24
488	Texas	1994	257	12	75	13	88	1094	13
560	Virginia	1994	437	19	49	32	81	3051	24
581	Colorado	1994	296	18	53	29	82	2939	24
598	Colorado	1994	205	17	55	28	83	3840	24
633	Texas	1994	257	10	64	26	90	—	24
667	Illinois	1994	200	16	53	31	84	2770	24
738	New Jersey	1994	283	13	75	12	87	8059	24
800	California	1994	205	21	51	28	79	7474	24
808	California	1994	240	13	73	14	87	4035	24

Appendix G

Trip Generation Calculations

RTC Master Plan - Scenario 1 (All Residential Option) - Phases 1 - 3
Weekday Daily Trip Generation Summary

Land Use	Size	Units [1]	ITE LUC [2]	Trip Rate / Equation [2]	Directional Split [2] Enter	Directional Split [2] Exit	Vehicle Trip Generation Enter	Vehicle Trip Generation Exit	Vehicle Trip Generation Total
DAILY									
Master Plan Scenario 1 (Phases 1 - 3)									
Multifamily Housing (Mid-Rise) Close to Rail (Dense Multi-Use Urban)									
Buildings 4IC East & West (Phase 2)	550	DU	221	2.01	50%	50%	553	553	1,106
Building 4B (Phase 3)	150	DU	221	2.01	50%	50%	151	151	302
	700						704	704	1,408
Retail (Shopping Center >150k)									
Existing Shopping Center (to remain with project)	385,255	GLA							
New Shopping Center (proposed with project)	29,000	GLA							
	414,255	GLA	820	T = 26.11(X) + 5863.73	50%	50%	8,340	8,340	16,680
Less Existing Building Area									
Retail (Shopping Center >150k)	393,993	GLA	820	T = 26.11(X) + 5863.73	50%	50%	-8,076	-8,075	-16,151
						GROSS WEEKDAY DAILY TRIP GENERATION =	**9,044**	**9,044**	**18,088**
						Internal Reduction =	***0***	***0***	***0***
						Pass-By =	***0***	***0***	***0***
						NET TRIP GENERATION (NOT INCLUDING EXISTING USE CREDIT)	**9,044**	**9,044**	**18,088**
						EXISTING USES NET TRIP GENERATION	**-8,076**	**-8,075**	**-16,151**
						TOTAL NET NEW TRIP GENERATION (PROPOSED LESS EXISTING)	**968**	**969**	**1,937**
NET CHANGE BY LAND USE									
Multifamily Housing (Mid-Rise) Close to Rail (Dense Multi-Use Urban)	700	DU	221				704	704	1,408
Retail (Shopping Center >150k)	20,262	GLA	820				264	265	529
							968	969	1,937

[1] DU = Dwelling Units, GLA = Gross Leasable Area.

[2] Based on Institute of Transportation Engineers (ITE), *Trip Generation Manual* , 11th Edition (2021).

RTC Master Plan - Scenario 1 (All Residential Option) - Phases 1 - 3
Weekday AM Peak Hour Trip Generation Summary

Land Use	Size	Units [1]	ITE LUC [2]	Trip Rate / Equation [2]	Directional Split [2] Enter	Exit	Vehicle Trip Generation Enter	Exit	Total
AM PEAK HOUR									
Master Plan Scenario 1 (Phases 1 - 3)									
Multifamily Housing (Mid-Rise) Close to Rail (Dense Multi-Use Urban)									
Buildings 4IC East & West (Phase 2)	550	DU	221	0.25	15%	85%	21	117	138
Building 4B (Phase 3)	150	DU	221	0.25	15%	85%	6	32	38
	700						27	149	176
Internal Reduction [3]							*-1*	*-1*	-2
					Subtotal (less internal) =		26	148	174
Retail (Shopping Center >150k)									
Existing Shopping Center (to remain with project)	385,255	GLA							
New Shopping Center (proposed with project)	29,000	GLA							
	414,255	GLA	820	T = 0.59(X) + 133.55	62%	38%	234	144	378
Internal Reduction [3]							*-1*	*-1*	-2
					Subtotal (less internal) =		233	143	376
Less Existing Building Area									
Retail (Shopping Center >150k)	393,993	GLA	820	T = 0.59(X) + 133.55	62%	38%	-227	-139	-366
					GROSS AM PEAK HOUR TRIP GENERATION =		**261**	**293**	**554**
					Internal Reduction =		***-2***	***-2***	***-4***
					Pass-By =		***0***	***0***	***0***
					NET TRIP GENERATION (NOT INCLUDING EXISTING USE CREDIT)		**259**	**291**	**550**
					EXISTING USES NET TRIP GENERATION		**-227**	**-139**	**-366**
					TOTAL NET NEW TRIP GENERATION (PROPOSED LESS EXISTING)		**32**	**152**	**184**
NET CHANGE BY LAND USE									
Multifamily Housing (Mid-Rise) Close to Rail (Dense Multi-Use Urban)	700	DU	221				26	148	174
Retail (Shopping Center >150k)	20,262	GLA	820				6	4	10
							32	152	184

[1] DU = Dwelling Units, GLA = Gross Leasable Area.

[2] Based on Institute of Transportation Engineers (ITE), *Trip Generation Manual* , 11th Edition (2021).

[3] Internal trip reductions based on methodology documented in the ITE Trip Generation Handbook, 3rd Edition, September 2017

RTC Master Plan - Scenario 1 (All Residential Option) - Phases 1 - 3
Weekday PM Peak Hour Trip Generation Summary

Land Use	Size	Units [1]	ITE LUC [2]	Trip Rate / Equation [2]	Directional Split [2] Enter	Exit	Vehicle Trip Generation Enter	Exit	Total
PM PEAK HOUR									
Master Plan Scenario 1 (Phases 1 - 3)									
Multifamily Housing (Mid-Rise) Close to Rail (Dense Multi-Use Urban)									
Buildings 4IC East & West (Phase 2)	550	DU	221	0.25	74%	26%	102	36	138
Building 4B (Phase 3)	150	DU	221	0.25	74%	26%	28	10	38
	700						130	46	176
Internal Reduction [3]							*-60*	*-19*	*-79*
						Subtotal (less internal) =	70	27	97
Retail (Shopping Center >150k)									
Existing Shopping Center (to remain with project)	385,255	GLA							
New Shopping Center (proposed with project)	29,000	GLA							
	414,255	GLA	820	Ln(T) = 0.72Ln(X) + 3.02	48%	52%	754	816	1,570
Internal Reduction [3]							*-19*	*-60*	*-79*
Pass-by [4]	*19%*						*-140*	*-143*	*-283*
						Subtotal (less internal and pass-by) =	595	613	1,208
Less Existing Building Area									
Retail (Shopping Center >150k)	393,993	GLA	820	Ln(T) = 0.72Ln(X) + 3.02	48%	52%	-727	-788	-1,515
Pass-by [4]	*19%*						*138*	*150*	*288*
							-589	-638	-1,227
						GROSS PM PEAK HOUR TRIP GENERATION =	**884**	**862**	**1,746**
						Internal Reduction =	***-79***	***-79***	***-158***
						Pass-By =	***-140***	***-143***	***-283***
						NET TRIP GENERATION (NOT INCLUDING EXISTING USE CREDIT)	**665**	**640**	**1,305**
						EXISTING USES NET TRIP GENERATION	**-589**	**-638**	**-1,227**
						TOTAL NET NEW TRIP GENERATION (PROPOSED LESS EXISTING)	**76**	**2**	**78**
NET CHANGE BY LAND USE									
Multifamily Housing (Mid-Rise) Close to Rail (Dense Multi-Use Urban)	700	DU	221				70	27	97
Retail (Shopping Center >150k)	20,262	GLA	820				6	-25	-19
							76	2	78

[1] DU = Dwelling Units, GLA = Gross Leasable Area.

[2] Based on Institute of Transportation Engineers (ITE),*Trip Generation Manual* , 11th Edition (2021).

[3] Internal trip reductions based on methodology documented in the ITE Trip Generation Handbook, 3rd Edition, September 2017

[4] Based on pass-by % documented in the appendices of the ITE,*Trip Generation Manual* , 11th Edition (2021).

NCHRP 8-51 Internal Trip Capture Estimation Tool			
Project Name:	RTC Master Plan	**Organization:**	TENW
Project Location:	Redmond, WA	**Performed By:**	CAW
Scenario Description:	Scenario 1 - Ph 1 to 3	**Date:**	
Analysis Year:		**Checked By:**	
Analysis Period:	**AM Street Peak Hour**	**Date:**	3/27/2025

Table 1-A: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office				0		
Retail	820	414,255	GLA	378	234	144
Restaurant				0		
Cinema/Entertainment				0		
Residential	221	700	DU	176	27	149
Hotel				0		
All Other Land Uses[2]				0		
Total				554	261	293

Table 2-A: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.	% Transit	% Non-Motorized	Veh. Occ.	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						
All Other Land Uses[2]						

Table 3-A: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-A: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		0	0	1	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	1	0	0		0
Hotel	0	0	0	0	0	

Table 5-A: Computations Summary

	Total	Entering	Exiting
All Person-Trips	554	261	293
Internal Capture Percentage	1%	1%	1%
External Vehicle-Trips[3]	550	259	291
External Transit-Trips[4]	0	0	0
External Non-Motorized Trips[4]	0	0	0

Table 6-A: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	N/A	N/A
Retail	0%	1%
Restaurant	N/A	N/A
Cinema/Entertainment	N/A	N/A
Residential	4%	1%
Hotel	N/A	N/A

[1]Land Use Codes (LUCs) from *Trip Generation Informational Report*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

[3]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A

[4]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas Transportation Institute

Exhibit E

Project Name:	RTC Master Plan
Analysis Period:	**AM Street Peak Hour**

Table 7-A: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-A (D): Entering Trips			Table 7-A (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	0	0	1.00	0	0
Retail	1.00	234	234	1.00	144	144
Restaurant	1.00	0	0	1.00	0	0
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	27	27	1.00	149	149
Hotel	1.00	0	0	1.00	0	0

Table 8-A (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	42		19	0	20	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	3	1	30	0		0
Hotel	0	0	0	0	0	

Table 8-A (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		75	0	0	0	0
Retail	0		0	0	1	0
Restaurant	0	19		0	1	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	40	0	0		0
Hotel	0	9	0	0	0	

Table 9-A (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	0	0	0	0	0	0
Retail	1	233	234	233	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	1	26	27	26	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	0	0	0	0	0

Table 9-A (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	0	0	0	0	0	0
Retail	1	143	144	143	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	1	148	149	148	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	0	0	0	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

NCHRP 8-51 Internal Trip Capture Estimation Tool			
Project Name:	RTC Master Plan	**Organization:**	TENW
Project Location:	Redmond, WA	**Performed By:**	CAW
Scenario Description:	Scenario 1 - Ph 1 to 3	**Date:**	
Analysis Year:		**Checked By:**	
Analysis Period:	**PM Street Peak Hour**	**Date:**	3/27/2025

Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office				0		
Retail	820	414,255	GLA	1570	754	816
Restaurant				0		
Cinema/Entertainment				0		
Residential	221	700	DU	176	130	46
Hotel				0		
All Other Land Uses[2]				0		
Total				1746	884	862

Table 2-P: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.	% Transit	% Non-Motorized	Veh. Occ.	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						
All Other Land Uses[2]						

Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-P: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		0	0	60	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	19	0	0		0
Hotel	0	0	0	0	0	

Table 5-P: Computations Summary

	Total	Entering	Exiting
All Person-Trips	1,746	884	862
Internal Capture Percentage	9%	9%	9%
External Vehicle-Trips[3]	1,588	805	783
External Transit-Trips[4]	0	0	0
External Non-Motorized Trips[4]	0	0	0

Table 6-P: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	N/A	N/A
Retail	3%	7%
Restaurant	N/A	N/A
Cinema/Entertainment	N/A	N/A
Residential	46%	41%
Hotel	N/A	N/A

[1]Land Use Codes (LUCs) from *Trip Generation Informational Report*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

[3]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P

[4]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas Transportation Institute

Project Name:	RTC Master Plan
Analysis Period:	**PM Street Peak Hour**

Table 7-P: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-P (D): Entering Trips			Table 7-P (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	0	0	1.00	0	0
Retail	1.00	754	754	1.00	816	816
Restaurant	1.00	0	0	1.00	0	0
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	130	130	1.00	46	46
Hotel	1.00	0	0	1.00	0	0

Table 8-P (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	16		237	33	212	41
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	2	19	10	0		1
Hotel	0	0	0	0	0	

Table 8-P (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		60	0	0	5	0
Retail	0		0	0	60	0
Restaurant	0	377		0	21	0
Cinema/Entertainment	0	30	0		5	0
Residential	0	75	0	0		0
Hotel	0	15	0	0	0	

Table 9-P (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	0	0	0	0	0	0
Retail	19	735	754	735	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	60	70	130	70	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	0	0	0	0	0

Table 9-P (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	0	0	0	0	0	0
Retail	60	756	816	756	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	19	27	46	27	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	0	0	0	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

RTC Master Plan - Scenario 1 (All Residential Option) - Full Buildout (Phases 1 - 5)
Weekday Daily Trip Generation Summary

Land Use	Size	Units [1]	ITE LUC [2]	Trip Rate / Equation [2]	Directional Split [2] Enter	Directional Split [2] Exit	Vehicle Trip Generation Enter	Vehicle Trip Generation Exit	Vehicle Trip Generation Total
DAILY									
Master Plan Scenario 1 Full Buildout (Phases 1 - 5)									
Multifamily Housing (Mid-Rise) Close to Rail (Dense Multi-Use Urban)									
Buildings 4IC East & West (Phase 2)	550	DU	221	2.01	50%	50%	553	553	1,106
Building 4B (Phase 3)	150	DU	221	2.01	50%	50%	151	151	302
Building 3A (Phase 4)	165	DU	221	2.01	50%	50%	166	166	332
Building 3D (Phase 5)	155	DU	221	2.01	50%	50%	156	156	312
	1,020						1,026	1,026	2,052
Retail (Shopping Center >150k)									
Existing Shopping Center (to remain with project)	296,169	GLA							
New Shopping Center (proposed with project)	63,000	GLA							
	359,169	GLA	820	T = 26.11(X) + 5863.73	50%	50%	7,621	7,621	15,242
Less Existing Building Area									
Retail (Shopping Center >150k)	393,993	GLA	820	T = 26.11(X) + 5863.73	50%	50%	-8,076	-8,075	-16,151
GROSS WEEKDAY DAILY TRIP GENERATION =							**8,647**	**8,647**	**17,294**
Internal Reduction =							***0***	***0***	***0***
Pass-By =							***0***	***0***	***0***
NET TRIP GENERATION (NOT INCLUDING EXISTING USE CREDIT)							**8,647**	**8,647**	**17,294**
EXISTING USES NET TRIP GENERATION							**-8,076**	**-8,075**	**-16,151**
TOTAL NET NEW TRIP GENERATION (PROPOSED LESS EXISTING)							**571**	**572**	**1,143**
NET CHANGE BY LAND USE									
Multifamily Housing (Mid-Rise) Close to Rail (Dense Multi-Use Urban)	1,020	DU	221				1,026	1,026	2,052
Retail (Shopping Center >150k)	-34,824	GLA	820				-455	-454	-909
							571	572	1,143

[1] DU = Dwelling Units, GLA = Gross Leasable Area.

[2] Based on Institute of Transportation Engineers (ITE), *Trip Generation Manual* , 11th Edition (2021).

RTC Master Plan - Scenario 1 (All Residential Option) - Full Buildout (Phases 1 - 5)
Weekday AM Peak Hour Trip Generation Summary

Land Use	Size	Units [1]	ITE LUC [2]	Trip Rate / Equation [2]	Directional Split [2] Enter	Exit	Vehicle Trip Generation Enter	Exit	Total
AM PEAK HOUR									
Master Plan Scenario 1 Full Buildout (Phases 1 - 5)									
Multifamily Housing (Mid-Rise) Close to Rail (Dense Multi-Use Urban)									
Buildings 4IC East & West (Phase 2)	550	DU	221	0.25	15%	85%	21	117	138
Building 4B (Phase 3)	150	DU	221	0.25	15%	85%	6	32	38
Building 3A (Phase 4)	165	DU	221	0.25	15%	85%	6	35	41
Building 3D (Phase 5)	155	DU	221	0.25	15%	85%	6	33	39
	1,020						39	217	256
Internal Reduction [3]							*-1*	*-2*	*-3*
					Subtotal (less internal) =		38	215	253
Retail (Shopping Center >150k)									
Existing Shopping Center (to remain with project)	296,169	GLA							
New Shopping Center (proposed with project)	63,000	GLA							
	359,169	GLA	820	T = 0.59(X) + 133.55	62%	38%	214	131	345
Internal Reduction [3]							*-2*	*-1*	*-3*
					Subtotal (less internal) =		212	130	342
Less Existing Building Area									
Retail (Shopping Center >150k)	393,993	GLA	820	T = 0.59(X) + 133.55	62%	38%	-227	-139	-366
					GROSS AM PEAK HOUR TRIP GENERATION =		**253**	**348**	**601**
					Internal Reduction =		***-3***	***-3***	***-6***
					Pass-By =		***0***	***0***	***0***
					NET TRIP GENERATION (NOT INCLUDING EXISTING USE CREDIT)		**250**	**345**	**595**
					EXISTING USES NET TRIP GENERATION		**-227**	**-139**	**-366**
					TOTAL NET NEW TRIP GENERATION (PROPOSED LESS EXISTING)		**23**	**206**	**229**
NET CHANGE BY LAND USE									
Multifamily Housing (Mid-Rise) Close to Rail (Dense Multi-Use Urban)	1,020	DU	221				38	215	253
Retail (Shopping Center >150k)	-34,824	GLA	820				-15	-9	-24
							23	206	229

[1] DU = Dwelling Units, GLA = Gross Leasable Area.

[2] Based on Institute of Transportation Engineers (ITE), *Trip Generation Manual* , 11th Edition (2021).

[3] Internal trip reductions based on methodology documented in the ITE Trip Generation Handbook, 3rd Edition, September 2017

RTC Master Plan - Scenario 1 (All Residential Option) - Full Buildout (Phases 1 - 5)
Weekday PM Peak Hour Trip Generation Summary

Land Use	Size	Units [1]	ITE LUC [2]	Trip Rate / Equation [2]	Directional Split [2] Enter	Directional Split [2] Exit	Vehicle Trip Generation Enter	Vehicle Trip Generation Exit	Vehicle Trip Generation Total
PM PEAK HOUR									
Master Plan Scenario 1 Full Buildout (Phases 1 - 5)									
Multifamily Housing (Mid-Rise) Close to Rail (Dense Multi-Use Urban)									
Buildings 4IC East & West (Phase 2)	550	DU	221	0.25	74%	26%	102	36	138
Building 4B (Phase 3)	150	DU	221	0.25	74%	26%	28	10	38
Building 3A (Phase 4)	165	DU	221	0.25	74%	26%	30	11	41
Building 3D (Phase 5)	155	DU	221	0.25	74%	26%	29	10	39
	1,020						189	67	256
Internal Reduction [3]							*-87*	*-28*	*-115*
						Subtotal (less internal) =	102	39	141
Retail (Shopping Center >150k)									
Existing Shopping Center (to remain with project)	296,169	GLA							
New Shopping Center (proposed with project)	63,000	GLA							
	359,169	GLA	820	Ln(T) = 0.72Ln(X) + 3.02	48%	52%	680	737	1,417
Internal Reduction [3]							*-28*	*-87*	*-115*
Pass-by [4]	*19%*						*-124*	*-123*	*-247*
						Subtotal (less internal and pass-by) =	528	527	1,055
Less Existing Building Area									
Retail (Shopping Center >150k)	393,993	GLA	820	Ln(T) = 0.72Ln(X) + 3.02	48%	52%	-727	-788	-1,515
Pass-by [4]	*19%*						*138*	*150*	*288*
							-589	-638	-1,227
						GROSS PM PEAK HOUR TRIP GENERATION =	**869**	**804**	**1,673**
						Internal Reduction =	***-115***	***-115***	***-230***
						Pass-By =	***-124***	***-123***	***-247***
						NET TRIP GENERATION (NOT INCLUDING EXISTING USE CREDIT)	**630**	**566**	**1,196**
						EXISTING USES NET TRIP GENERATION	**-589**	**-638**	**-1,227**
						TOTAL NET NEW TRIP GENERATION (PROPOSED LESS EXISTING)	**41**	**-72**	**-31**
NET CHANGE BY LAND USE									
Multifamily Housing (Mid-Rise) Close to Rail (Dense Multi-Use Urban)	1,020	DU	221				102	39	141
Retail (Shopping Center >150k)	-34,824	GLA	820				-61	-111	-172
							41	-72	-31

[1] DU = Dwelling Units, GLA = Gross Leasable Area.

[2] Based on Institute of Transportation Engineers (ITE), *Trip Generation Manual* , 11th Edition (2021).

[3] Internal trip reductions based on methodology documented in the ITE Trip Generation Handbook, 3rd Edition, September 2017

[4] Based on pass-by % documented in the appendices of the ITE, *Trip Generation Manual* , 11th Edition (2021).

NCHRP 8-51 Internal Trip Capture Estimation Tool			
Project Name:	RTC Master Plan	**Organization:**	TENW
Project Location:	Redmond, WA	**Performed By:**	CAW
Scenario Description:	Scenario 1 - Full Buildout	**Date:**	
Analysis Year:		**Checked By:**	
Analysis Period:	**AM Street Peak Hour**	**Date:**	3/27/2025

Table 1-A: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office				0		
Retail	820	359,169	GLA	345	214	131
Restaurant				0		
Cinema/Entertainment				0		
Residential	221	1,020	DU	256	39	217
Hotel				0		
All Other Land Uses[2]				0		
Total				601	253	348

Table 2-A: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.	% Transit	% Non-Motorized	Veh. Occ.	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						
All Other Land Uses[2]						

Table 3-A: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-A: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		0	0	1	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	2	0	0		0
Hotel	0	0	0	0	0	

Table 5-A: Computations Summary

	Total	Entering	Exiting
All Person-Trips	601	253	348
Internal Capture Percentage	1%	1%	1%
External Vehicle-Trips[3]	595	250	345
External Transit-Trips[4]	0	0	0
External Non-Motorized Trips[4]	0	0	0

Table 6-A: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	N/A	N/A
Retail	1%	1%
Restaurant	N/A	N/A
Cinema/Entertainment	N/A	N/A
Residential	3%	1%
Hotel	N/A	N/A

[1]Land Use Codes (LUCs) from *Trip Generation Informational Report*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

[3]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A

[4]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas Transportation Institute

Exhibit E

Project Name:	RTC Master Plan
Analysis Period:	**AM Street Peak Hour**

Table 7-A: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-A (D): Entering Trips			Table 7-A (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	0	0	1.00	0	0
Retail	1.00	214	214	1.00	131	131
Restaurant	1.00	0	0	1.00	0	0
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	39	39	1.00	217	217
Hotel	1.00	0	0	1.00	0	0

Table 8-A (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	38		17	0	18	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	4	2	43	0		0
Hotel	0	0	0	0	0	

Table 8-A (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		68	0	0	0	0
Retail	0		0	0	1	0
Restaurant	0	17		0	2	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	36	0	0		0
Hotel	0	9	0	0	0	

Table 9-A (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	0	0	0	0	0	0
Retail	2	212	214	212	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	1	38	39	38	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	0	0	0	0	0

Table 9-A (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	0	0	0	0	0	0
Retail	1	130	131	130	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	2	215	217	215	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	0	0	0	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

NCHRP 8-51 Internal Trip Capture Estimation Tool			
Project Name:	RTC Master Plan	**Organization:**	TENW
Project Location:	Redmond, WA	**Performed By:**	CAW
Scenario Description:	Scenario 1 - Full Buildout	**Date:**	
Analysis Year:		**Checked By:**	
Analysis Period:	**PM Street Peak Hour**	**Date:**	3/27/2025

Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office				0		
Retail	820	359,169	GLA	1417	680	737
Restaurant				0		
Cinema/Entertainment				0		
Residential	221	1,020	DU	256	189	67
Hotel				0		
All Other Land Uses[2]				0		
Total				1673	869	804

Table 2-P: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.	% Transit	% Non-Motorized	Veh. Occ.	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						
All Other Land Uses[2]						

Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-P: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		0	0	87	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	28	0	0		0
Hotel	0	0	0	0	0	

Table 5-P: Computations Summary

	Total	Entering	Exiting
All Person-Trips	1,673	869	804
Internal Capture Percentage	14%	13%	14%
External Vehicle-Trips[3]	1,443	754	689
External Transit-Trips[4]	0	0	0
External Non-Motorized Trips[4]	0	0	0

Table 6-P: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	N/A	N/A
Retail	4%	12%
Restaurant	N/A	N/A
Cinema/Entertainment	N/A	N/A
Residential	46%	42%
Hotel	N/A	N/A

[1]Land Use Codes (LUCs) from *Trip Generation Informational Report*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

[3]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P

[4]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas Transportation Institute

Exhibit E

Project Name:	RTC Master Plan
Analysis Period:	**PM Street Peak Hour**

Table 7-P: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-P (D): Entering Trips			Table 7-P (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	0	0	1.00	0	0
Retail	1.00	680	680	1.00	737	737
Restaurant	1.00	0	0	1.00	0	0
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	189	189	1.00	67	67
Hotel	1.00	0	0	1.00	0	0

Table 8-P (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	15		214	29	192	37
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	3	28	14	0		2
Hotel	0	0	0	0	0	

Table 8-P (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		54	0	0	8	0
Retail	0		0	0	87	0
Restaurant	0	340		0	30	0
Cinema/Entertainment	0	27	0		8	0
Residential	0	68	0	0		0
Hotel	0	14	0	0	0	

Table 9-P (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	0	0	0	0	0	0
Retail	28	652	680	652	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	87	102	189	102	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	0	0	0	0	0

Table 9-P (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	0	0	0	0	0	0
Retail	87	650	737	650	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	28	39	67	39	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	0	0	0	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

RTC Master Plan - Scenario 2 (Residential & Office Option) - Phases 1 - 3
Weekday Daily Trip Generation Summary

Land Use	Size	Units [1]	ITE LUC [2]	Trip Rate / Equation [2]	Directional Split [2] Enter	Directional Split [2] Exit	Vehicle Trip Generation Enter	Vehicle Trip Generation Exit	Vehicle Trip Generation Total
DAILY									
Master Plan Scenario 2 (Phases 1 - 3)									
Multifamily Housing (Mid-Rise) Close to Rail (Dense Multi-Use Urban)									
Building 4IC East (Phase 2)	275	DU	221	2.01	50%	50%	276	277	553
Building 4B (Phase 3)	150	DU	221	2.01	50%	50%	151	151	302
	425						427	428	855
Retail (Shopping Center >150k)									
Existing Shopping Center (to remain with project)	385,255	GLA							
New Shopping Center (proposed with project)	27,600	GLA							
	412,855	GLA	820	T = 26.11(X) + 5863.73	50%	50%	8,322	8,321	16,643
Office (Urban/Suburban) [3]	270,100	GFA	710	Ln(T) = 0.87Ln(X) + 3.05	50%	50%	1,377	1,377	2,754
Less Existing Building Area									
Retail (Shopping Center >150k)	393,993	GLA	820	T = 26.11(X) + 5863.73	50%	50%	-8,076	-8,075	-16,151
				GROSS WEEKDAY DAILY TRIP GENERATION =			**10,126**	**10,126**	**20,252**
				Internal Reduction =			***0***	***0***	***0***
				Pass-By =			***0***	***0***	***0***
				NET TRIP GENERATION (NOT INCLUDING EXISTING USE CREDIT)			**10,126**	**10,126**	**20,252**
				EXISTING USES NET TRIP GENERATION			**-8,076**	**-8,075**	**-16,151**
				TOTAL NET NEW TRIP GENERATION (PROPOSED LESS EXISTING)			**2,050**	**2,051**	**4,101**
NET CHANGE BY LAND USE									
Multifamily Housing (Mid-Rise) Close to Rail (Dense Multi-Use Urban)	425	DU	221				427	428	855
Retail (Shopping Center >150k)	18,862	GLA	820				246	246	492
Office (Urban/Suburban) [3]	270,100	GFA	710				1,377	1,377	2,754
							2,050	2,051	4,101

[1] DU = Dwelling Units, GLA = Gross Leasable Area.

[2] Based on Institute of Transportation Engineers (ITE), *Trip Generation Manual* , 11th Edition (2021).

[3] There is no daily trip generation rate in ITE for LUC 710 Office in a Dense Multi Use Urban setting. As a conservative assumption, the daily trip generation was based on LU 710 in an Urban/Suburban setting.

RTC Master Plan - Scenario 2 (Residential & Office Option) - Phases 1 - 3
Weekday AM Peak Hour Trip Generation Summary

Land Use	Size	Units [1]	ITE LUC [2]	Trip Rate / Equation [2]	Directional Split [2] Enter	Directional Split [2] Exit	Vehicle Trip Generation Enter	Vehicle Trip Generation Exit	Vehicle Trip Generation Total
AM PEAK HOUR									
Master Plan Scenario 2 (Phases 1 - 3)									
Multifamily Housing (Mid-Rise) Close to Rail (Dense Multi-Use Urban)									
Building 4IC East (Phase 2)	275	DU	221	0.25	15%	85%	10	59	69
Building 4B (Phase 3)	150	DU	221	0.25	15%	85%	6	32	38
	425						16	91	107
Internal Reduction [3]							*0*	-3	-3
					Subtotal (less internal) =		16	88	104
Retail (Shopping Center >150k)									
Existing Shopping Center (to remain with project)	385,255	GLA							
New Shopping Center (proposed with project)	27,600	GLA							
	412,855	GLA	820	T = 0.59(X) + 133.55	62%	38%	234	143	377
Internal Reduction [3]							-9	-8	*-17*
					Subtotal (less internal) =		225	135	360
Office (Dense Multi-Use Urban)	270,100	GFA	710	0.84	87%	13%	197	30	227
Internal Reduction [3]							*-10*	-8	*-18*
					Subtotal (less internal) =		187	22	209
Less Existing Building Area									
Retail (Shopping Center >150k)	393,993	GLA	820	T = 0.59(X) + 133.55	62%	38%	-227	-139	-366
					GROSS AM PEAK HOUR TRIP GENERATION =		**447**	**264**	**711**
					Internal Reduction =		***-19***	***-19***	***-38***
					Pass-By =		***0***	***0***	***0***
					NET TRIP GENERATION (NOT INCLUDING EXISTING USE CREDIT)		**428**	**245**	**673**
					EXISTING USES NET TRIP GENERATION		**-227**	**-139**	**-366**
					TOTAL NET NEW TRIP GENERATION (PROPOSED LESS EXISTING)		**201**	**106**	**307**
NET CHANGE BY LAND USE									
Multifamily Housing (Mid-Rise) Close to Rail (Dense Multi-Use Urban)	425	DU	221				16	88	104
Retail (Shopping Center >150k)	18,862	GLA	820				-2	-4	-6
Office (Dense Multi-Use Urban)	270,100	GFA	710				187	22	209
							201	106	307

[1] DU = Dwelling Units, GLA = Gross Leasable Area.

[2] Based on Institute of Transportation Engineers (ITE), *Trip Generation Manual* , 11th Edition (2021).

[3] Internal trip reductions based on methodology documented in the ITE Trip Generation Handbook, 3rd Edition, September 2017

RTC Master Plan - Scenario 2 (Residential & Office Option) - Phases 1 - 3
Weekday PM Peak Hour Trip Generation Summary

Land Use	Size	Units [1]	ITE LUC [2]	Trip Rate / Equation [2]	Directional Split [2] Enter	Exit	Vehicle Trip Generation Enter	Exit	Total
PM PEAK HOUR									
Master Plan Scenario 2 (Phases 1 - 3)									
Multifamily Housing (Mid-Rise) Close to Rail (Dense Multi-Use Urban)									
Building 4IC East (Phase 2)	275	DU	221	0.25	74%	26%	51	18	69
Building 4B (Phase 3)	150	DU	221	0.25	74%	26%	28	10	38
	425						79	28	107
Internal Reduction [3]							-39	-13	-52
						Subtotal (less internal) =	40	15	55
Retail (Shopping Center >150k)									
Existing Shopping Center (to remain with project)	385,255	GLA							
New Shopping Center (proposed with project)	27,600	GLA							
	412,855	GLA	820	Ln(T) = 0.72Ln(X) + 3.02	48%	52%	752	815	1,567
Internal Reduction [3]							-51	-47	-98
Pass-by [4]	19%						-133	-146	-279
						Subtotal (less internal and pass-by) =	568	622	1,190
Office (Dense Multi-Use Urban)	270,100	GFA	710	T = 0.83(X) + 7.46	16%	84%	37	195	232
Internal Reduction [3]							-12	-42	-54
						Subtotal (less internal) =	25	153	178
Less Existing Building Area									
Retail (Shopping Center >150k)	393,993	GLA	820	Ln(T) = 0.72Ln(X) + 3.02	48%	52%	-727	-788	-1,515
Pass-by [4]	19%						138	150	288
							-589	-638	-1,227
						GROSS PM PEAK HOUR TRIP GENERATION =	**868**	**1,038**	**1,906**
						Internal Reduction =	**-102**	**-102**	**-204**
						Pass-By =	**-133**	**-146**	**-279**
						NET TRIP GENERATION (NOT INCLUDING EXISTING USE CREDIT)	**633**	**790**	**1,423**
						EXISTING USES NET TRIP GENERATION	**-589**	**-638**	**-1,227**
						TOTAL NET NEW TRIP GENERATION (PROPOSED LESS EXISTING)	**44**	**152**	**196**
NET CHANGE BY LAND USE									
Multifamily Housing (Mid-Rise) Close to Rail (Dense Multi-Use Urban)	425	DU	221				40	15	55
Retail (Shopping Center >150k)	18,862	GLA	820				-21	-16	-37
Office (Dense Multi-Use Urban)	270,100	GFA	710				25	153	178
							44	152	196

[1] DU = Dwelling Units, GLA = Gross Leasable Area.

[2] Based on Institute of Transportation Engineers (ITE), *Trip Generation Manual* , 11th Edition (2021).

[3] Internal trip reductions based on methodology documented in the ITE Trip Generation Handbook, 3rd Edition, September 2017

[4] Based on pass-by % documented in the appendices of the ITE, *Trip Generation Manual* , 11th Edition (2021).

NCHRP 8-51 Internal Trip Capture Estimation Tool			
Project Name:	RTC Master Plan	**Organization:**	TENW
Project Location:	Redmond, WA	**Performed By:**	CAW
Scenario Description:	Scenario 2 - Ph 1 to 3	**Date:**	
Analysis Year:		**Checked By:**	
Analysis Period:	**AM Street Peak Hour**	**Date:**	3/27/2025

Table 1-A: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office	710	270,100	GFA	227	197	30
Retail	820	412,855	GLA	377	234	143
Restaurant				0		
Cinema/Entertainment				0		
Residential	221	425	DU	107	16	91
Hotel				0		
All Other Land Uses[2]				0		
Total				711	447	264

Table 2-A: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.	% Transit	% Non-Motorized	Veh. Occ.	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						
All Other Land Uses[2]						

Table 3-A: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-A: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		8	0	0	0	0
Retail	8		0	0	0	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	2	1	0	0		0
Hotel	0	0	0	0	0	

Table 5-A: Computations Summary

	Total	Entering	Exiting
All Person-Trips	711	447	264
Internal Capture Percentage	5%	4%	7%
External Vehicle-Trips[3]	673	428	245
External Transit-Trips[4]	0	0	0
External Non-Motorized Trips[4]	0	0	0

Table 6-A: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	5%	27%
Retail	4%	6%
Restaurant	N/A	N/A
Cinema/Entertainment	N/A	N/A
Residential	0%	3%
Hotel	N/A	N/A

[1]Land Use Codes (LUCs) from *Trip Generation Informational Report*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

[3]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A

[4]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas Transportation Institute

Project Name:	RTC Master Plan
Analysis Period:	**AM Street Peak Hour**

Table 7-A: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-A (D): Entering Trips			Table 7-A (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	197	197	1.00	30	30
Retail	1.00	234	234	1.00	143	143
Restaurant	1.00	0	0	1.00	0	0
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	16	16	1.00	91	91
Hotel	1.00	0	0	1.00	0	0

Table 8-A (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		8	19	0	0	0
Retail	41		19	0	20	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	2	1	18	0		0
Hotel	0	0	0	0	0	

Table 8-A (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		75	0	0	0	0
Retail	8		0	0	0	0
Restaurant	28	19		0	1	0
Cinema/Entertainment	0	0	0		0	0
Residential	6	40	0	0		0
Hotel	6	9	0	0	0	

Table 9-A (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	10	187	197	187	0	0
Retail	9	225	234	225	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	0	16	16	16	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	0	0	0	0	0

Table 9-A (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	8	22	30	22	0	0
Retail	8	135	143	135	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	3	88	91	88	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	0	0	0	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

NCHRP 8-51 Internal Trip Capture Estimation Tool			
Project Name:	RTC Master Plan	**Organization:**	TENW
Project Location:	Redmond, WA	**Performed By:**	CAW
Scenario Description:	Scenario 2 - Ph 1 to 3	**Date:**	
Analysis Year:		**Checked By:**	
Analysis Period:	**PM Street Peak Hour**	**Date:**	3/27/2025

Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office	710	270,100	GFA	232	37	195
Retail	820	412,855	GLA	1567	752	815
Restaurant				0		
Cinema/Entertainment				0		
Residential	221	425	DU	107	79	28
Hotel				0		
All Other Land Uses[2]				0		
Total				1906	868	1038

Table 2-P: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.	% Transit	% Non-Motorized	Veh. Occ.	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						
All Other Land Uses[2]						

Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-P: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		39	0	0	3	0
Retail	11		0	0	36	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	1	12	0	0		0
Hotel	0	0	0	0	0	

Table 5-P: Computations Summary

	Total	Entering	Exiting
All Person-Trips	1,906	868	1,038
Internal Capture Percentage	11%	12%	10%
External Vehicle-Trips[3]	1,702	766	936
External Transit-Trips[4]	0	0	0
External Non-Motorized Trips[4]	0	0	0

Table 6-P: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	32%	22%
Retail	7%	6%
Restaurant	N/A	N/A
Cinema/Entertainment	N/A	N/A
Residential	49%	46%
Hotel	N/A	N/A

[1]Land Use Codes (LUCs) from *Trip Generation Informational Report*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

[3]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P

[4]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas Transportation Institute

Exhibit E

Project Name:	RTC Master Plan
Analysis Period:	**PM Street Peak Hour**

Table 7-P: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-P (D): Entering Trips			Table 7-P (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	37	37	1.00	195	195
Retail	1.00	752	752	1.00	815	815
Restaurant	1.00	0	0	1.00	0	0
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	79	79	1.00	28	28
Hotel	1.00	0	0	1.00	0	0

Table 8-P (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		39	8	0	4	0
Retail	16		236	33	212	41
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	1	12	6	0		1
Hotel	0	0	0	0	0	

Table 8-P (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		60	0	0	3	0
Retail	11		0	0	36	0
Restaurant	11	376		0	13	0
Cinema/Entertainment	2	30	0		3	0
Residential	21	75	0	0		0
Hotel	0	15	0	0	0	

Table 9-P (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	12	25	37	25	0	0
Retail	51	701	752	701	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	39	40	79	40	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	0	0	0	0	0

Table 9-P (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	42	153	195	153	0	0
Retail	47	768	815	768	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	13	15	28	15	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	0	0	0	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

RTC Master Plan - Scenario 2 (Residential & Office Option) - Full Buildout (Phases 1 - 5)
Weekday Daily Trip Generation Summary

Land Use	Size	Units [1]	ITE LUC [2]	Trip Rate / Equation [2]	Directional Split [2] Enter	Exit	Vehicle Trip Generation Enter	Exit	Total
DAILY									
Master Plan Scenario 2 Full Buildout (Phases 1 - 5)									
Multifamily Housing (Mid-Rise) Close to Rail (Dense Multi-Use Urban)									
Building 4IC East (Phase 2)	275	DU	221	2.01	50%	50%	276	277	553
Building 4B (Phase 3)	150	DU	221	2.01	50%	50%	151	151	302
Building 3A (Phase 4)	165	DU	221	2.01	50%	50%	166	166	332
Building 3D (Phase 5)	155	DU	221	2.01	50%	50%	156	156	312
	745						749	750	1,499
Retail (Shopping Center >150k)									
Existing Shopping Center (to remain with project)	296,169	GLA							
New Shopping Center (proposed with project)	61,600	GLA							
	357,769	GLA	820	T = 26.11(X) + 5863.73	50%	50%	7,603	7,602	15,205
Office (Urban/Suburban) [3]	270,100	GFA	710	Ln(T) = 0.87Ln(X) + 3.05	50%	50%	1,377	1,377	2,754
Less Existing Building Area									
Retail (Shopping Center >150k)	393,993	GLA	820	T = 26.11(X) + 5863.73	50%	50%	-8,076	-8,075	-16,151
				GROSS WEEKDAY DAILY TRIP GENERATION =			**9,729**	**9,729**	**19,458**
				Internal Reduction =			***0***	***0***	***0***
				Pass-By =			***0***	***0***	***0***
				NET TRIP GENERATION (NOT INCLUDING EXISTING USE CREDIT)			**9,729**	**9,729**	**19,458**
				EXISTING USES NET TRIP GENERATION			**-8,076**	**-8,075**	**-16,151**
				TOTAL NET NEW TRIP GENERATION (PROPOSED LESS EXISTING)			**1,653**	**1,654**	**3,307**
NET CHANGE BY LAND USE									
Multifamily Housing (Mid-Rise) Close to Rail (Dense Multi-Use Urban)	745	DU	221				749	750	1,499
Retail (Shopping Center >150k)	-36,224	GLA	820				-473	-473	-946
Office (Urban/Suburban) [3]	270,100	GFA	710				1,377	1,377	2,754
							1,653	1,654	3,307

[1] DU = Dwelling Units, GLA = Gross Leasable Area.

[2] Based on Institute of Transportation Engineers (ITE), *Trip Generation Manual* , 11th Edition (2021).

[3] There is no daily trip generation rate in ITE for LUC 710 Office in a Dense Multi Use Urban setting. As a conservative assumption, the daily trip generation was based on LU 710 in an Urban/Suburban setting.

RTC Master Plan - Scenario 2 (Residential & Office Option) - Full Buildout (Phases 1 - 5)
Weekday AM Peak Hour Trip Generation Summary

Land Use	Size	Units [1]	ITE LUC [2]	Trip Rate / Equation [2]	Directional Split [2] Enter	Exit	Vehicle Trip Generation Enter	Exit	Total
AM PEAK HOUR									
Master Plan Scenario 2 Full Buildout (Phases 1 - 5)									
Multifamily Housing (Mid-Rise) Close to Rail (Dense Multi-Use Urban)									
Building 4IC East (Phase 2)	275	DU	221	0.25	15%	85%	10	59	69
Building 4B (Phase 3)	150	DU	221	0.25	15%	85%	6	32	38
Building 3A (Phase 4)	165	DU	221	0.25	15%	85%	6	35	41
Building 3D (Phase 5)	155	DU	221	0.25	15%	85%	6	33	39
	745						28	159	187
Internal Reduction [3]							*-1*	*-5*	*-6*
					Subtotal (less internal) =		27	154	181
Retail (Shopping Center >150k)									
Existing Shopping Center (to remain with project)	296,169	GLA							
New Shopping Center (proposed with project)	61,600	GLA							
	357,769	GLA	820	T = 0.59(X) + 133.55	62%	38%	214	131	345
Internal Reduction [3]							*-10*	*-9*	*-19*
					Subtotal (less internal) =		204	122	326
Office (Dense Multi-Use Urban)	270,100	GFA	710	0.84	87%	13%	197	30	227
Internal Reduction [3]							*-11*	*-8*	*-19*
					Subtotal (less internal) =		186	22	208
Less Existing Building Area									
Retail (Shopping Center >150k)	393,993	GLA	820	T = 0.59(X) + 133.55	62%	38%	-227	-139	-366
					GROSS AM PEAK HOUR TRIP GENERATION =		**439**	**320**	**759**
					Internal Reduction =		***-22***	***-22***	***-44***
					Pass-By =		***0***	***0***	***0***
					NET TRIP GENERATION (NOT INCLUDING EXISTING USE CREDIT)		**417**	**298**	**715**
					EXISTING USES NET TRIP GENERATION		**-227**	**-139**	**-366**
					TOTAL NET NEW TRIP GENERATION (PROPOSED LESS EXISTING)		**190**	**159**	**349**
NET CHANGE BY LAND USE									
Multifamily Housing (Mid-Rise) Close to Rail (Dense Multi-Use Urban)	745	DU	221				27	154	181
Retail (Shopping Center >150k)	-36,224	GLA	820				-23	-17	-40
Office (Dense Multi-Use Urban)	270,100	GFA	710				186	22	208
							190	159	349

[1] DU = Dwelling Units, GLA = Gross Leasable Area.

[2] Based on Institute of Transportation Engineers (ITE), *Trip Generation Manual* , 11th Edition (2021).

[3] Internal trip reductions based on methodology documented in the ITE Trip Generation Handbook, 3rd Edition, September 2017

RTC Master Plan - Scenario 2 (Residential & Office Option) - Full Buildout (Phases 1 - 5)
Weekday PM Peak Hour Trip Generation Summary

Land Use	Size	Units [1]	ITE LUC [2]	Trip Rate / Equation [2]	Directional Split [2] Enter	Exit	Vehicle Trip Generation Enter	Exit	Total
PM PEAK HOUR									
Master Plan Scenario 2 Full Buildout (Phases 1 - 5)									
Multifamily Housing (Mid-Rise) Close to Rail (Dense Multi-Use Urban)									
Building 4IC East (Phase 2)	275	DU	221	0.25	74%	26%	51	18	69
Building 4B (Phase 3)	150	DU	221	0.25	74%	26%	28	10	38
Building 3A (Phase 4)	165	DU	221	0.25	74%	26%	30	11	41
Building 3D (Phase 5)	155	DU	221	0.25	74%	26%	29	10	39
	745						138	49	187
Internal Reduction [3]							*-67*	*-23*	*-90*
						Subtotal (less internal) =	71	26	97
Retail (Shopping Center >150k)									
Existing Shopping Center (to remain with project)	296,169	GLA							
New Shopping Center (proposed with project)	61,600	GLA							
	357,769	GLA	820	Ln(T) = 0.72Ln(X) + 3.02	48%	52%	678	735	1,413
Internal Reduction [3]							*-60*	*-74*	*-134*
Pass-by [4]	*19%*						*-117*	*-126*	*-243*
						Subtotal (less internal and pass-by) =	501	535	1,036
Office (Dense Multi-Use Urban)	270,100	GFA	710	T = 0.83(X) + 7.46	16%	84%	37	195	232
Internal Reduction [3]							*-13*	*-43*	*-56*
						Subtotal (less internal) =	24	152	176
Less Existing Building Area									
Retail (Shopping Center >150k)	393,993	GLA	820	Ln(T) = 0.72Ln(X) + 3.02	48%	52%	-727	-788	-1,515
Pass-by [4]	*19%*						*138*	*150*	*288*
							-589	-638	-1,227
						GROSS PM PEAK HOUR TRIP GENERATION =	**853**	**979**	**1,832**
						Internal Reduction =	***-140***	***-140***	***-280***
						Pass-By =	***-117***	***-126***	***-243***
						NET TRIP GENERATION (NOT INCLUDING EXISTING USE CREDIT)	**596**	**713**	**1,309**
						EXISTING USES NET TRIP GENERATION	**-589**	**-638**	**-1,227**
						TOTAL NET NEW TRIP GENERATION (PROPOSED LESS EXISTING)	**7**	**75**	**82**
NET CHANGE BY LAND USE									
Multifamily Housing (Mid-Rise) Close to Rail (Dense Multi-Use Urban)	745	DU	221				71	26	97
Retail (Shopping Center >150k)	-36,224	GLA	820				-88	-103	-191
Office (Dense Multi-Use Urban)	270,100	GFA	710				24	152	176
							7	75	82

[1] DU = Dwelling Units, GLA = Gross Leasable Area.

[2] Based on Institute of Transportation Engineers (ITE), *Trip Generation Manual* , 11th Edition (2021).

[3] Internal trip reductions based on methodology documented in the ITE Trip Generation Handbook, 3rd Edition, September 2017

[4] Based on pass-by % documented in the appendices of the ITE, *Trip Generation Manual* , 11th Edition (2021).

NCHRP 8-51 Internal Trip Capture Estimation Tool			
Project Name:	RTC Master Plan	**Organization:**	TENW
Project Location:	Redmond, WA	**Performed By:**	CAW
Scenario Description:	Scenario 2 - Full Buildout	**Date:**	
Analysis Year:		**Checked By:**	
Analysis Period:	**AM Street Peak Hour**	**Date:**	3/27/2025

Table 1-A: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office	710	270,100	GFA	227	197	30
Retail	820	357,769	GLA	345	214	131
Restaurant				0		
Cinema/Entertainment				0		
Residential	221	745	DU	187	28	159
Hotel				0		
All Other Land Uses[2]				0		
Total				759	439	320

Table 2-A: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.	% Transit	% Non-Motorized	Veh. Occ.	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						
All Other Land Uses[2]						

Table 3-A: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-A: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		8	0	0	0	0
Retail	8		0	0	1	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	3	2	0	0		0
Hotel	0	0	0	0	0	

Table 5-A: Computations Summary

	Total	Entering	Exiting
All Person-Trips	759	439	320
Internal Capture Percentage	6%	5%	7%
External Vehicle-Trips[3]	715	417	298
External Transit-Trips[4]	0	0	0
External Non-Motorized Trips[4]	0	0	0

Table 6-A: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	6%	27%
Retail	5%	7%
Restaurant	N/A	N/A
Cinema/Entertainment	N/A	N/A
Residential	4%	3%
Hotel	N/A	N/A

[1]Land Use Codes (LUCs) from *Trip Generation Informational Report*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

[3]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A

[4]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas Transportation Institute

Exhibit E

Project Name:	RTC Master Plan
Analysis Period:	**AM Street Peak Hour**

Table 7-A: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-A (D): Entering Trips			Table 7-A (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	197	197	1.00	30	30
Retail	1.00	214	214	1.00	131	131
Restaurant	1.00	0	0	1.00	0	0
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	28	28	1.00	159	159
Hotel	1.00	0	0	1.00	0	0

Table 8-A (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		8	19	0	0	0
Retail	38		17	0	18	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	3	2	32	0		0
Hotel	0	0	0	0	0	

Table 8-A (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		68	0	0	0	0
Retail	8		0	0	1	0
Restaurant	28	17		0	1	0
Cinema/Entertainment	0	0	0		0	0
Residential	6	36	0	0		0
Hotel	6	9	0	0	0	

Table 9-A (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	11	186	197	186	0	0
Retail	10	204	214	204	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	1	27	28	27	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	0	0	0	0	0

Table 9-A (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	8	22	30	22	0	0
Retail	9	122	131	122	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	5	154	159	154	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	0	0	0	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

NCHRP 8-51 Internal Trip Capture Estimation Tool			
Project Name:	RTC Master Plan	**Organization:**	TENW
Project Location:	Redmond, WA	**Performed By:**	CAW
Scenario Description:	Scenario 2 - Full Buildout	**Date:**	
Analysis Year:		**Checked By:**	
Analysis Period:	**PM Street Peak Hour**	**Date:**	3/27/2025

Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office	710	270,100	GFA	232	37	195
Retail	820	357,769	GLA	1413	678	735
Restaurant				0		
Cinema/Entertainment				0		
Residential	221	745	DU	187	138	49
Hotel				0		
All Other Land Uses[2]				0		
Total				1832	853	979

Table 2-P: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.	% Transit	% Non-Motorized	Veh. Occ.	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						
All Other Land Uses[2]						

Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-P: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		39	0	0	4	0
Retail	11		0	0	63	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	2	21	0	0		0
Hotel	0	0	0	0	0	

Table 5-P: Computations Summary

	Total	Entering	Exiting
All Person-Trips	1,832	853	979
Internal Capture Percentage	15%	16%	14%
External Vehicle-Trips[3]	1,552	713	839
External Transit-Trips[4]	0	0	0
External Non-Motorized Trips[4]	0	0	0

Table 6-P: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	35%	22%
Retail	9%	10%
Restaurant	N/A	N/A
Cinema/Entertainment	N/A	N/A
Residential	49%	47%
Hotel	N/A	N/A

[1]Land Use Codes (LUCs) from *Trip Generation Informational Report*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

[3]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P

[4]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas Transportation Institute

Project Name:	RTC Master Plan
Analysis Period:	**PM Street Peak Hour**

Table 7-P: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-P (D): Entering Trips			Table 7-P (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	37	37	1.00	195	195
Retail	1.00	678	678	1.00	735	735
Restaurant	1.00	0	0	1.00	0	0
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	138	138	1.00	49	49
Hotel	1.00	0	0	1.00	0	0

Table 8-P (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		39	8	0	4	0
Retail	15		213	29	191	37
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	2	21	10	0		1
Hotel	0	0	0	0	0	

Table 8-P (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		54	0	0	6	0
Retail	11		0	0	63	0
Restaurant	11	339		0	22	0
Cinema/Entertainment	2	27	0		6	0
Residential	21	68	0	0		0
Hotel	0	14	0	0	0	

Table 9-P (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	13	24	37	24	0	0
Retail	60	618	678	618	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	67	71	138	71	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	0	0	0	0	0

Table 9-P (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	43	152	195	152	0	0
Retail	74	661	735	661	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	23	26	49	26	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	0	0	0	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

Appendix H

Transportation Concurrency Application

CITY OF REDMOND TRANSPORTATION CONCURRENCY APPLICATION

This application provides the City of Redmond with the information needed to issue a certificate of concurrency for a development. Please complete the entire form and return it to the Redmond Engineering Services Division. After agreement is reached on the mobility unit demand for a development based on the land use type, size of development and table on the back of this application, the City will, if necessary, determine if enough mobility unit supply is available to issue a certificate of concurrency. If determining the mobility unit demand for a development requires an independent calculation a fee for the review will be required, payable at the City Hall Permit Center.

1. Applicant name and address: Mitch Ptacek, GGLO
   1301 1st Ave, #301
   Seattle, WA 98101
2. Property location:
   a. Property address: 7330, 7345, 7530 164th Ave NE
   b. Development name: RTC Master Plan (Scenario 2 Residential & Office Option, Phases 1 to 3)
   c. Assessor's Parcel Number(s): 7202410010, 7202410020, 7202410030, 7202410050
3. Type of development permit to be requested: Master Plan Development

	Land Use Type (ITE Land Use Code)	Development Units	Mobility Unit Rate (see table on back)	Mobility Unit Demand	Notes
Proposed	Multi-Family (LUC 221) Retail 300,000+ (LUC 820) Office 200,000-299,999 SF (LUC 710)	425 DU 412,855 SF 270,100 SF	1.39 5.34 4.94	590.75 2204.65 1334.29	Downtown
			Total Proposed:	4139.69	
Existing	Retail 300,000+ (LUC 820)	393,993 SF	5.34	2103.92	Downtown
			Total Existing:	2103.92	
Net New Mobility Unit Demand (Total Proposed minus Total Existing)				2035.77	

Signature of Applicant: Mitch Ptacek Digitally signed by Mitch Ptacek DN: E=MPtacek@GGLO.com, CN=Mitch Ptacek, OU=Architecture, OU=Professional Staff, OU=GGLO Users, DC=corp, DC=ggllo, DC=com Reason: I have reviewed this document Date: 2025.03.21 15:34:14-07'00' Date: 03.21.2025

For Official Use Only:

Mobility Unit Demand calculation reviewed: _____ _____
Initials Date

Concurrency certificate required: □ Yes □ No Mobility Units available: □ Yes □ No

Application number:_____

TABLE 1. Development Mobility Unit Calculator

Land Uses			ITE Land USE Code	Standard of Measure	Mobility Units/Land Use Unit		
					Downtown Urban Center	Overlake Urban Center	Rest of City
Residential		Single Family	210	dwelling	1.98	2.05	2.42
		Multiple Family	220	dwelling	1.39	1.44	1.7
		Residential Suites	N/A	residential suite	0.85	0.88	1.04
		Retirement Community	251	dwelling	0.64	0.66	0.78
		Nursing Home	620	bed	0.52	0.54	0.63
		Congregate Care/Asst Living	253	dwelling	0.4	0.41	0.49
		Hotel/Motel	310	room	1.86	1.93	2.28
Commercial	Services	Bank/Savings & Loan	912	sq ft/GFA	23.38	24.18	28.61
		Day Care	565	sq ft/GFA	17.81	18.42	21.8
		Library	590	sq ft/GFA	10.53	10.9	12.89
		Post Office	732	sq ft/GFA	16.19	16.75	19.82
		Service Station	944	fuel position	10.67	11.04	13.07
		Service Station/Minimart	945	fuel position	7.8	8.07	9.54
		Movie Theater	444,445	seat	0.11	0.12	0.14
		Carwash	947	stall	6.93	7.17	8.48
		Health Club/Racquet Club	492,493	sq ft/GFA	6.85	7.08	8.38
	Institutional	Elementary School	520	student	0.16	0.17	0.2
		High School	530	student	0.16	0.17	0.2
		Church/House of Worship	560	sq ft/GFA	1.06	1.09	1.3
		Hospital	610	sq ft/GFA	1.52	1.57	1.86
	Rest-aurant	Restaurant	931	sq ft/GFA	11.53	11.93	14.11
		Fast Food Restaurant	934	sq ft/GFA	31.41	32.49	38.45
	Retail Shopping Center	up to 99,999	820	sq ft/GLA	6.34	6.56	7.76
		100,000-199,999	820	sq ft/GLA	6.05	6.26	7.41
		200,000-299,999	820	sq ft/GLA	5.54	5.73	6.78
		300,000 and over	820	sq ft/GLA	5.34	5.52	6.53
		Supermarket	850	sq ft/GFA	13.68	14.15	16.74
		Convenience Market	851	sq ft/GFA	45.37	46.94	55.54
		Free Standing Discount Store	813, 815, 861, 863, 864	sq ft/GFA	4.51	4.66	5.52
		Miscellaneous Retail	820	sq ft/GFA	5.35	5.54	6.55
		Furniture Store	890	sq ft/GFA	0.52	0.54	0.64
		Car Sales - New/Used	841	sq ft/GFA	4.03	4.17	4.94
	Administrative Office	up to 99,999	710,715, 750	sq ft/GFA	6.58	6.81	8.06
		100,000-199,999	710,715, 750	sq ft/GFA	5.66	5.85	6.92
		200,000-299,999	710,715, 750	sq ft/GFA	4.94	5.11	6.04
		300,000 and over	710,715, 750	sq ft/GFA	4.63	4.79	5.67
		Medical Office/Clinic	720	sq ft/GFA	6.76	6.99	8.28
	Industrial	Light Industry/Manufacturing	110	sq ft/GFA	3.09	3.2	3.78
		Industrial Park	130	sq ft/GFA	2.71	2.8	3.31
		Warehousing/Storage	150	sq ft/GFA	1.02	1.05	1.25
		Mini Warehouse	151	sq ft/GFA	0.61	0.63	0.74

For uses with standard of measure in sq ft, mobility units are given per 1000 sq ft

Appendix I

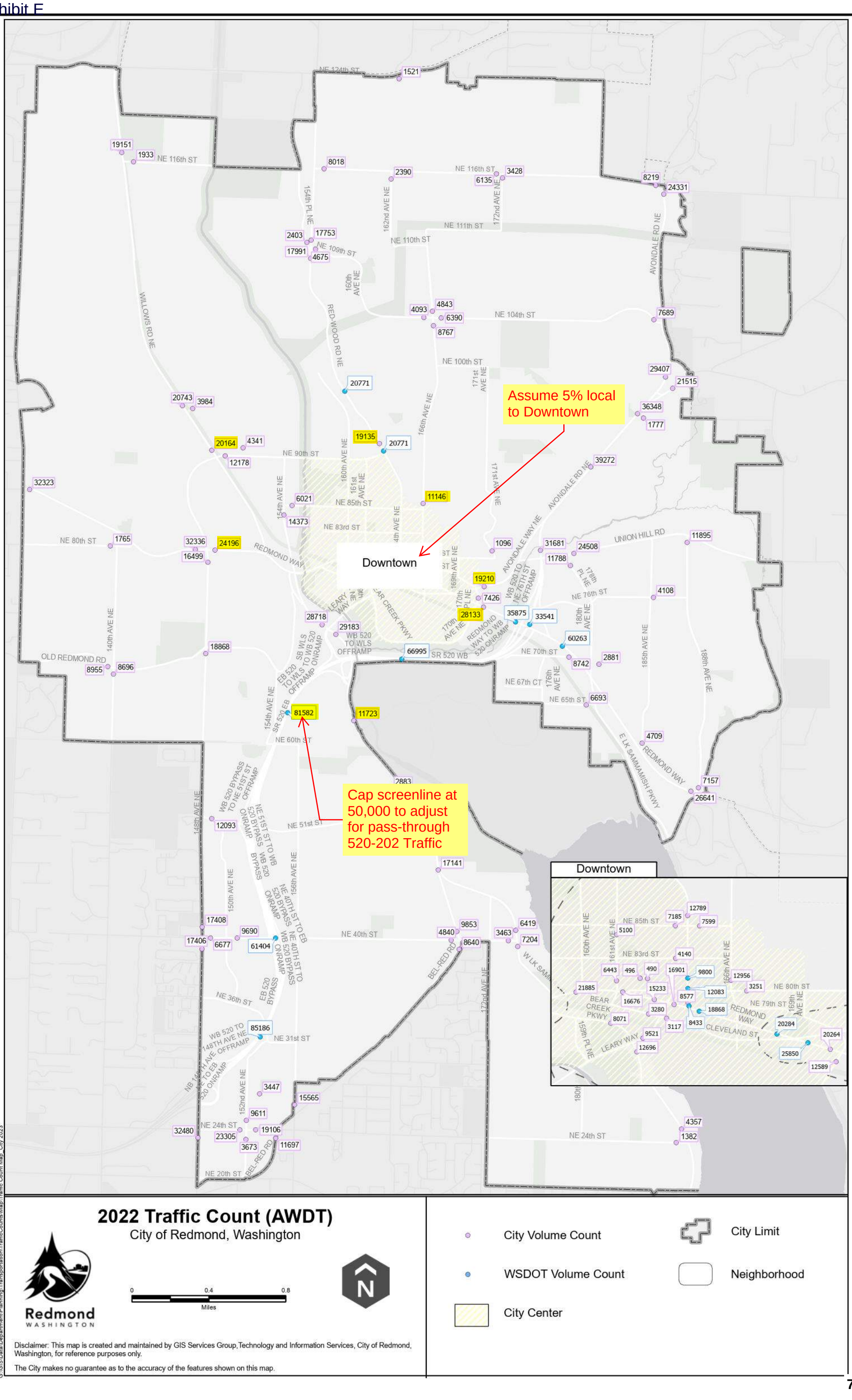
Trip Distribution Calculations

RTC Master Plan

Trip Distribution based on COR AWDT Count Map

Street		Screenlines 2022 AWDT Counts	Screenline %	Rounded for Distribution
Redmond Way (west)		24,196	13%	15%
SR 520 (west)		*50,000*	27%	25%
W Lk Samm Pkwy (south)		11,723	6%	5%
Avondale Way NE (north)		19,210	10%	10%
Redmond Way (east)		28,133	15%	15%
166th Ave NE (north)		11,146	6%	5%
Willows Rd (north)		20,164	11%	10%
164th Ave NE (north)		19,135	10%	10%
Local Traffic		*Estimated*	0%	5%
	Totals	183,707	100%	100%

Exhibit E


Assume 5% local to Downtown
Cap screenline at 50,000 to adjust for pass-through 520-202 Traffic
Downtown
NE 124th ST
NE 116th ST
NE 111th ST
NE 110th ST
NE 109th ST
NE 104th ST
NE 100th ST
NE 90th ST
NE 85th ST
NE 83rd ST
NE 80th ST
NE 76th ST
NE 70th ST
NE 67th CT
NE 65th ST
NE 60th ST
NE 51st ST
NE 40th ST
NE 36th ST
NE 31st ST
NE 24th ST
NE 20th ST
SR 520 WB
SR 520 EB
WILLOWS RD NE
OLD REDMOND RD
REDMOND WAY
AVONDALE RD NE
UNION HILL RD
LEARY WAY NE
BEAR CREEK PKWY
E LK SAMMAMISH PKWY
BEL-RED RD
154th PL NE
162nd AVE NE
172nd AVE NE
160th AVE NE
RED-WOOD RD NE
171st AVE NE
166th AVE NE
154th AVE NE
140th AVE NE
150th AVE NE
148th AVE NE
152nd AVE NE
156th AVE NE
4th AVE NE
161st AVE NE
169th AVE NE
170th PL NE
178th PL NE
180th AVE NE
185th AVE NE
188th AVE NE
176th AVE NE
159th PL NE
WB 520 TO NE 76TH ST OFFRAMP
WB 520 TO WLS OFFRAMP
SB WLS TO WB 520 ONRAMP
EB 520 TO WLS TO WB 520 OFFRAMP ONRAMP
REDMOND WAY TO WB 520 ONRAMP
WB 520 BYPASS TO NE 51ST ST OFFRAMP
NE 51ST ST TO WB 520 BYPASS ONRAMP
WB 520 BYPASS ONRAMP
NE 40TH ST TO EB 520 BYPASS ONRAMP
EB 520 BYPASS
WB 520 TO 148TH AVE NE OFFRAMP
NB 148TH AVE NE TO EB 520 ONRAMP
CLEVELAND ST
1521
19151
1933
8018
2390
3428
6135
8219
24331
2403
17753
17991
4675
4093
4843
6390
8767
7689
20771
20743
3984
29407
21515
36348
1777
20164
4341
12178
19135
39272
32323
6021
11146
14373
1765
32336
24196
16499
1096
31681
24508
11788
11895
19210
7426
4108
28718
28133
35875
33541
29183
18868
60263
66995
8955
8696
8742
2881
81582
11723
6693
4709
7157
26641
2883
12093
17141
17408
9690
17406
6677
61404
4840
9853
8640
6419
3463
7204
3447
15565
9611
32480
23305
19106
3673
11697
85186
12789
7185
7599
5100
4140
6443
496
490
16901
9800
12956
3251
21885
15233
12083
8577
16676
3280
18868
8071
3117
8433
9521
12696
20284
20264
25850
12589
4357
1382
2022 Traffic Count (AWDT)
City of Redmond, Washington
Redmond WASHINGTON
0 0.4 0.8
Miles
N
City Volume Count
WSDOT Volume Count
City Center
City Limit
Neighborhood
Disclaimer: This map is created and maintained by GIS Services Group, Technology and Information Services, City of Redmond, Washington, for reference purposes only.
The City makes no guarantee as to the accuracy of the features shown on this map.
G:\GIS\Data\Department\Planning\Transportation\TrafficCounts\Map\Traffic Count Map_City 2023

Item		Discussion Notes	Issue Status
Redmond Town Center Master Plan and Development Agreement			
1.	Phasing and Potential Project Timeline (all)	**Council Discussion** Council requested additional information on the project phasing and general timeline for the proposed Master Plan. **Staff Comments** The project is proposed to be completed in 5 phases during the term of the Development Agreement, which is 10 years, or 15 years with City approval of an extension. The scope of each phase is outlined in Attachment B. The applicant may change the sequence of phases at their discretion, as long as all infrastructure, public amenity space, and public benefits associated with each respective phase are consistent with the public benefits table included in the Master Plan, and each phase provides for adequate mitigation of the impacts associated with the development proposed in that phase. The project timeline for the Master Plan is at the discretion of the applicant team, so long as the timeline falls within the terms of the Development Agreement. Site plan entitlement and construction permits are required prior to construction on any phase, which will impact timelines. The applicant team will be available to address questions related to project timelines.	Opened 8/4/25 Closed X.XX.XX
2.	Project Renderings (Council Vice President Forsythe)	**Council Discussion** Council Vice President Forsythe requested renderings and images of the proposed Master Planned Development. **Staff Comments** The Master Plan (Attachment B, Exhibit C) contains conceptual renderings of the proposed Master Plan. Renderings at this stage of review are intended to demonstrate the overall scale of development and the general character of open spaces. More detailed design review of proposed buildings and sites will be conducted in conjunction with the Site Plan Entitlement land use permit that will be submitted for each phase.	Opened 8/4/25 Closed X.XX.XX

Item		Discussion Notes	Issue Status
3.	Redmond Town Center Zoning Code Updates (Councilmember Stuart)	**Council Discussion** Councilmember Stuart requested information on the land use standards that were set for development in conjunction with Redmond Zoning Code (RZC) updates to the Town Center Zone adopted in 2023. **Staff Comments** In 2023, Redmond City Council adopted an ordinance amending the Zoning Code regulations for the Town Center Zone. Those amendments provided greater development potential within the Town Center Zone for projects providing exceptional amenities and executing a Development Agreement. The concurrent Master Plan and Development Agreement currently under review are pursuing 12 story maximum heights through the Exceptional Amenities for Additional Height (EAAH) program, as established in RZC 21.10.050. To achieve the maximum 12 stories of allowable height through the EAAH incentive program, the applicant will be providing 20% of units as affordable housing, larger residential units, and commercial spaces supporting small and local businesses.	Opened 8/4/25 Closed X.XX.XX
4.	Overall Project Scope and Impacts to Existing Center (Council President Kritzer)	**Council Discussion** Council President Kritzer requested clarification on how proposed development will impact existing businesses within Redmond Town Center regarding potential displacement. **Staff Comments** Much of the existing Redmond Town Center commercial center will not be redeveloped with this Master Plan. Phase 3 proposes redevelopment of the existing BJ's Restaurant Site (7211 166th Ave NE), and Phases 4 and 5 propose the redevelopment of the two buildings closest to NE 76th Street that wrap the western and eastern edges of the Redmond Town Center parking structure, where Flatstick Pub and Zio Sal Ristorante are currently located (7530 164th Ave NE and 7525 166th Ave NE). Those businesses that front the NE 74th Street pedestrian thoroughfare are not proposed to be redeveloped with this Master Plan.	Opened 8/4/25 Closed X.XX.XX

Memorandum

Date: 9/23/2025
Meeting of: City Council Study Session

File No. SS 25-060
Type: Study Session

Council Talk Time