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 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 based on a pro-rata share of flows proposed by the development or existing facilities, or other equitable means of assessment. 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 pro-rata share sewer additional connection charge to cover the cost of basin-wide 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 based pro-rata share sewer additional connection charge to cover the cost of basin-wide improvements, 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

Fairbourne Properties LLC
Attention: _____'=
200 S Michigan Avenue, Suite 400

Community Development
P.O. Box 97010
Mail Stop: 4SPL
Redmond, WA 98073-9710

Chicago, IL 60601

And to its Attorney:
Ogden Murphy Wallace, P.L.L.C.
Attention: James E. Haney
901 Fifth Avenue, Suite 3500
Seattle, WA 98164-2008

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:

_____

James E. Haney, 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

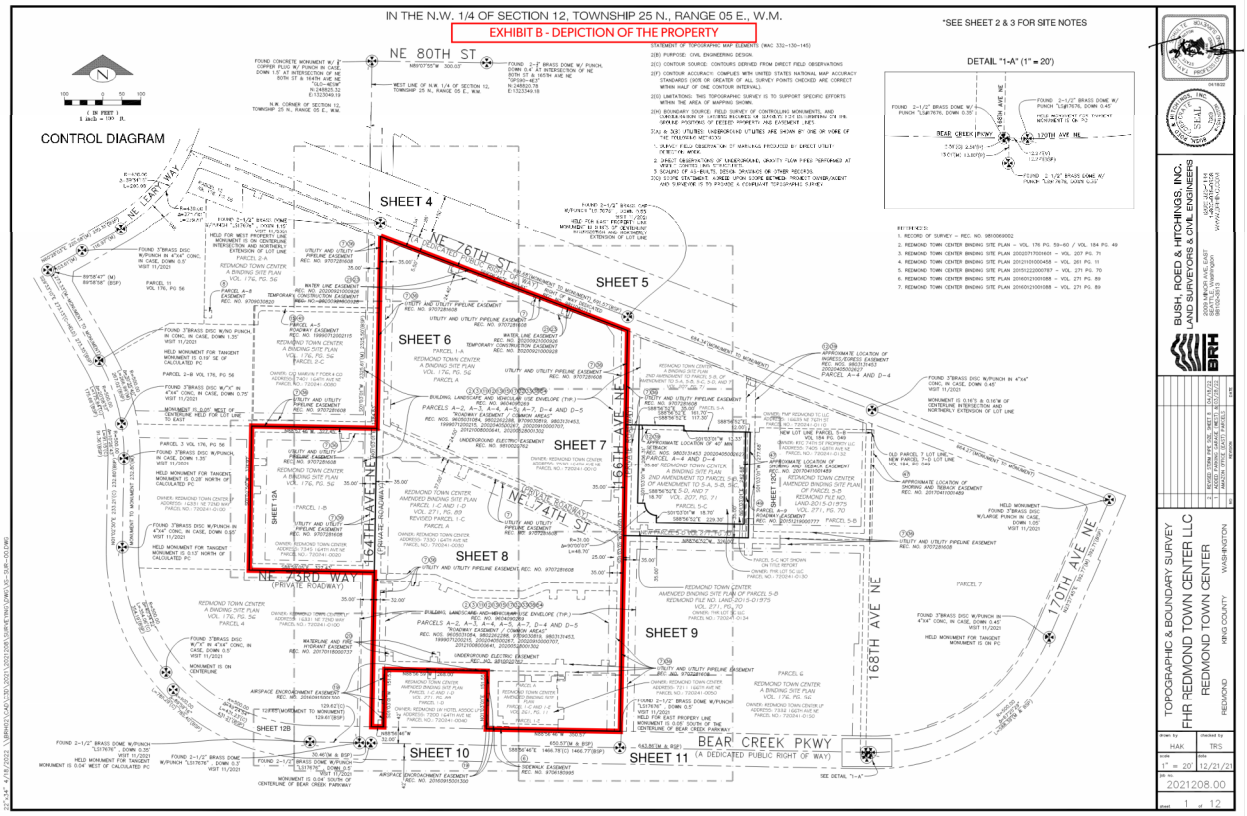


Exhibit C

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

Exhibit C

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.

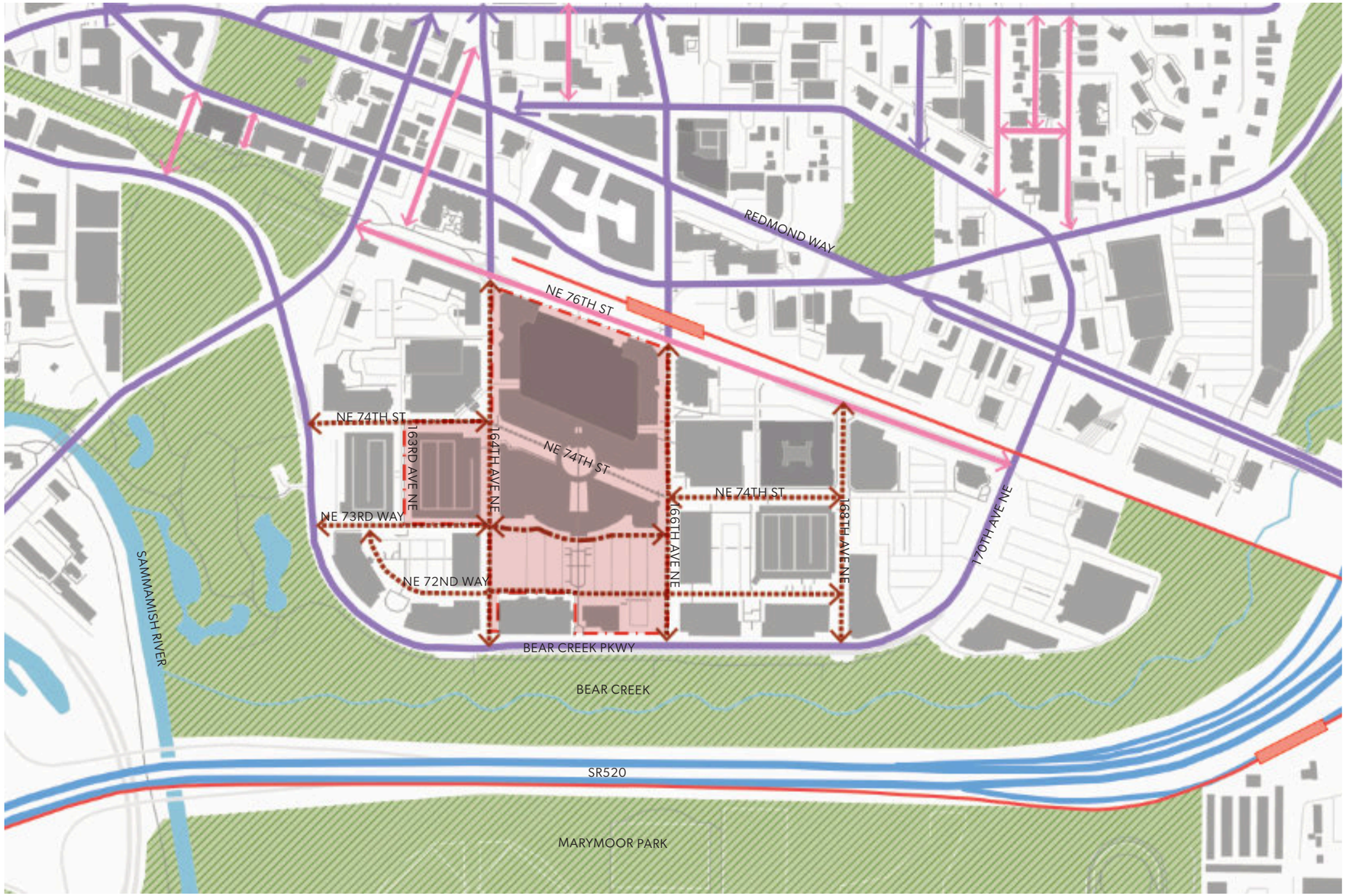
GREATER DIVERSITY OF BUILDING DESIGN + CHARACTER

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.

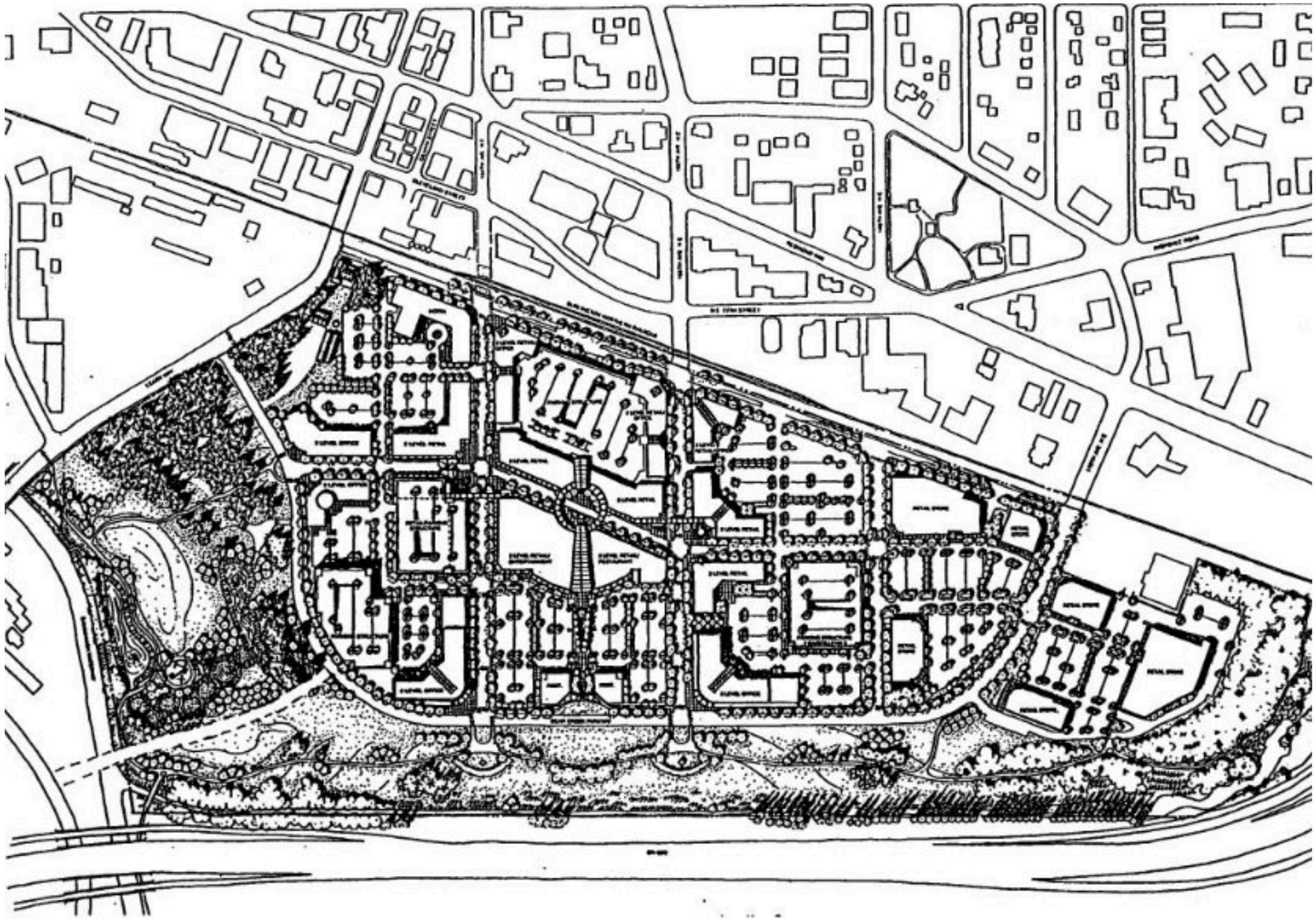
In 1978, concerned citizens formed Civic Action on Redmond Environment (CARE), a group which opposed the area being developed into a shopping center. The 1979 mayoral race featured the discussion of keeping the golf course as is or changing it.

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

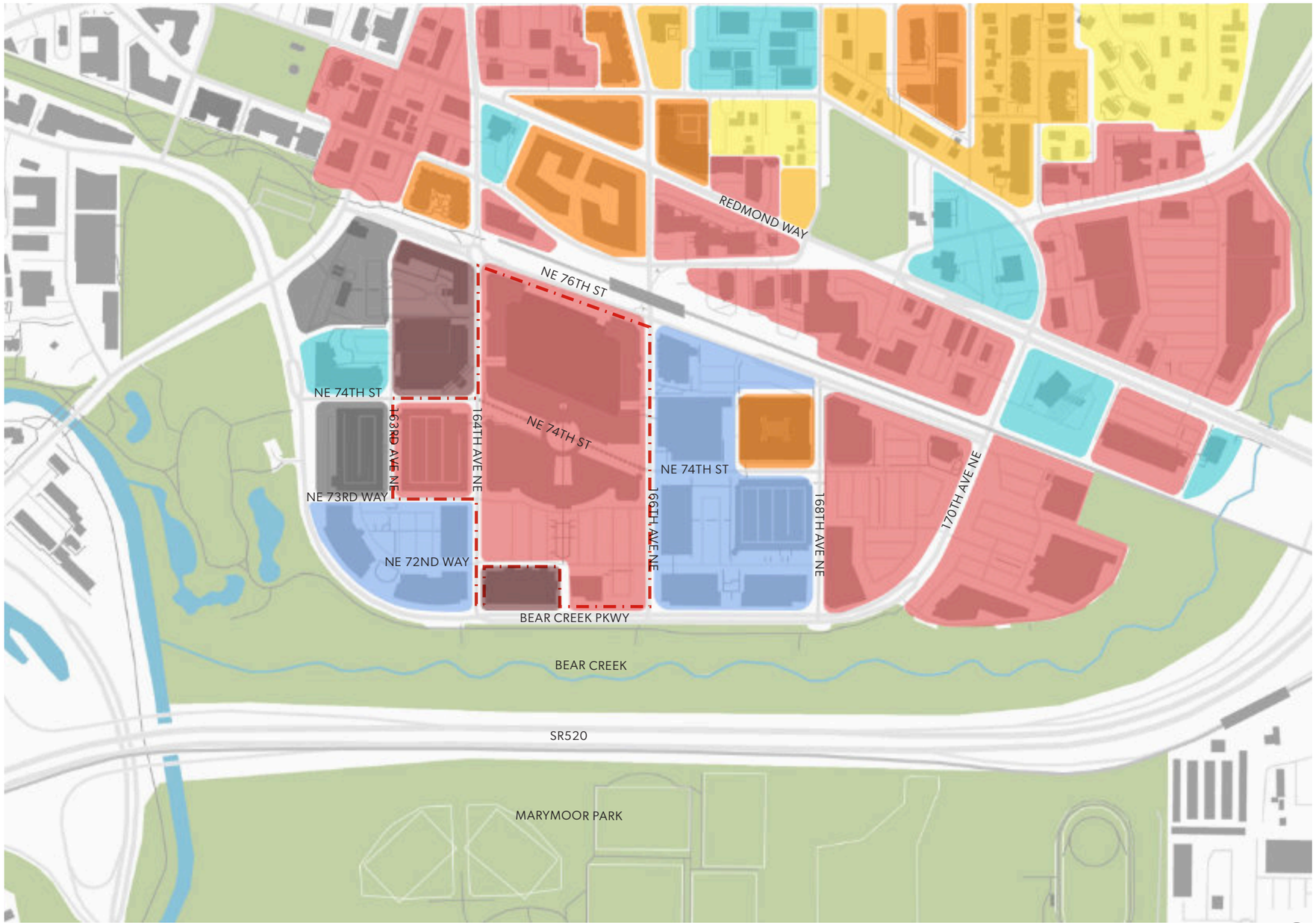
LEGEND

- 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

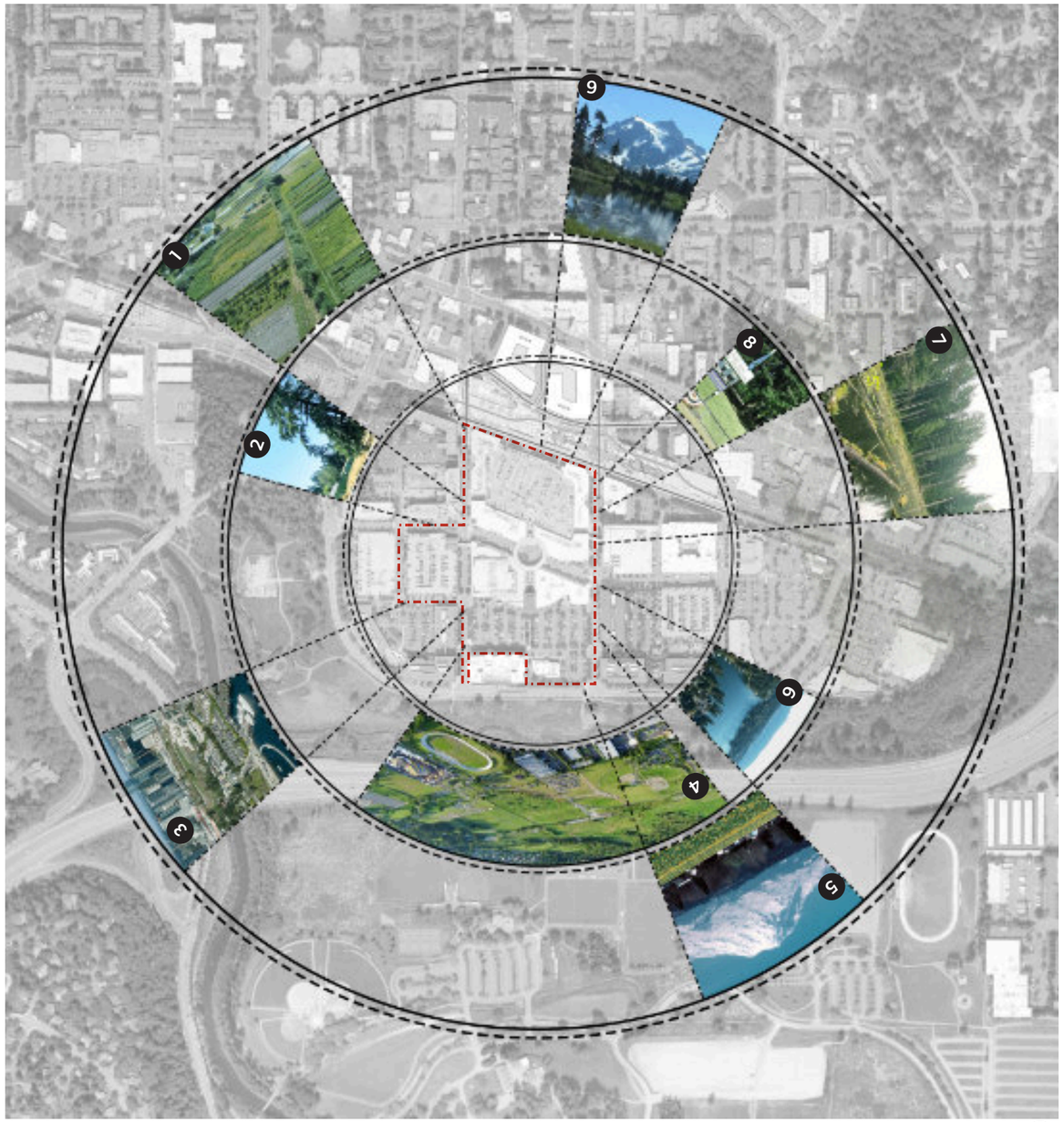


LEGEND

- 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

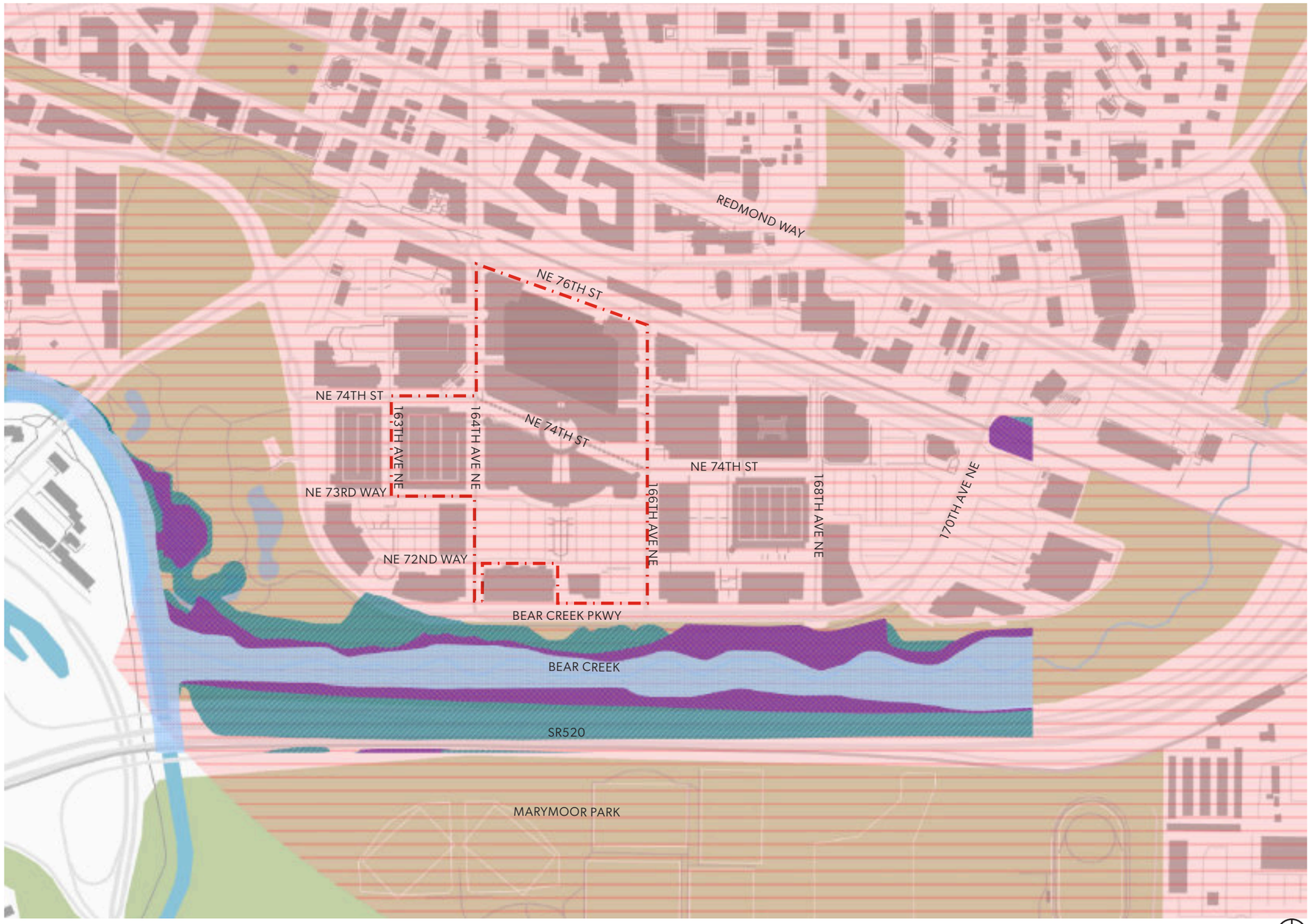
Lake Sammamish

Redmond Watershed Preserve

Hartman Park

Mount Baker

CRITICAL AREA PLAN

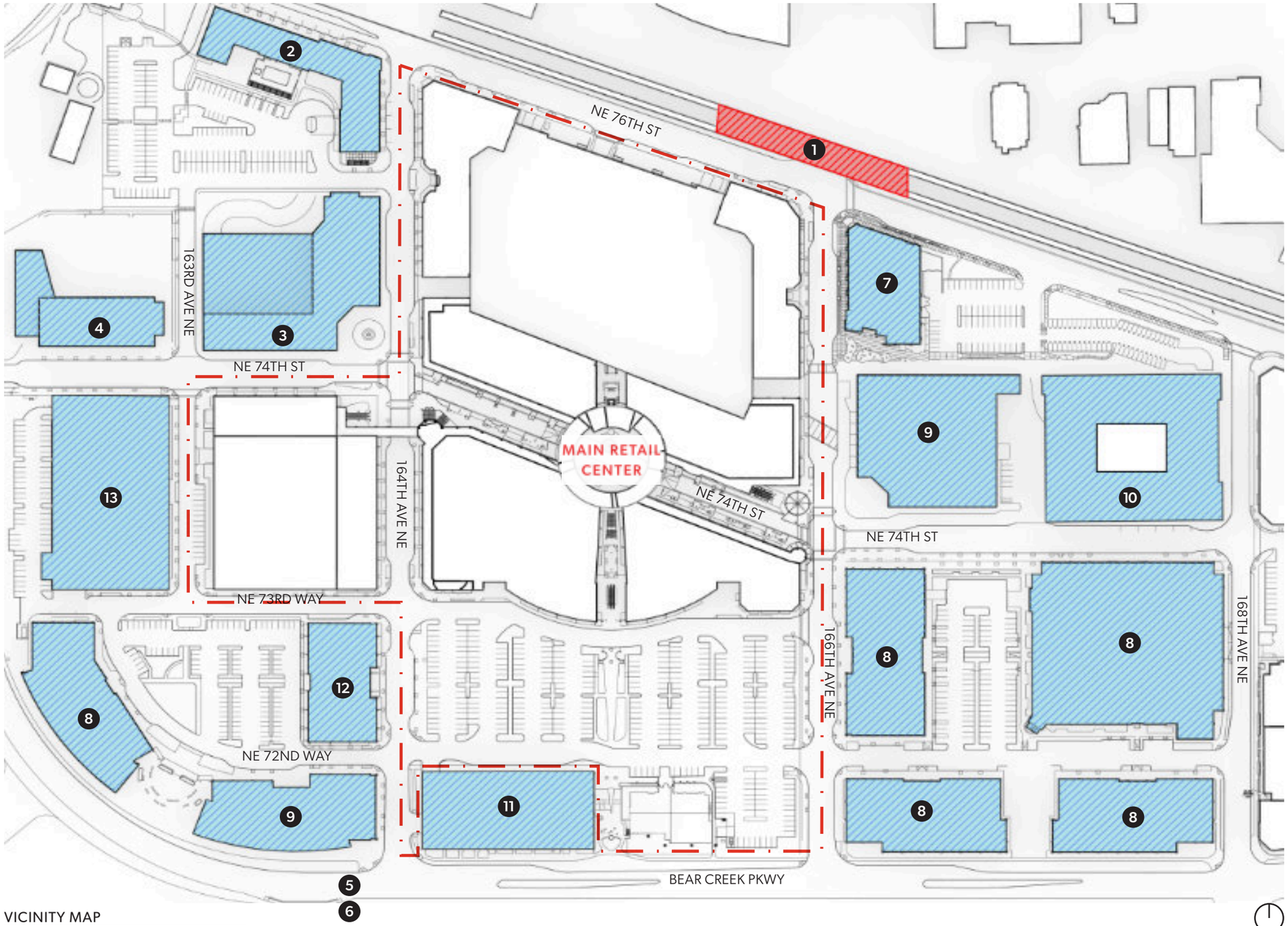


LEGEND

- 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



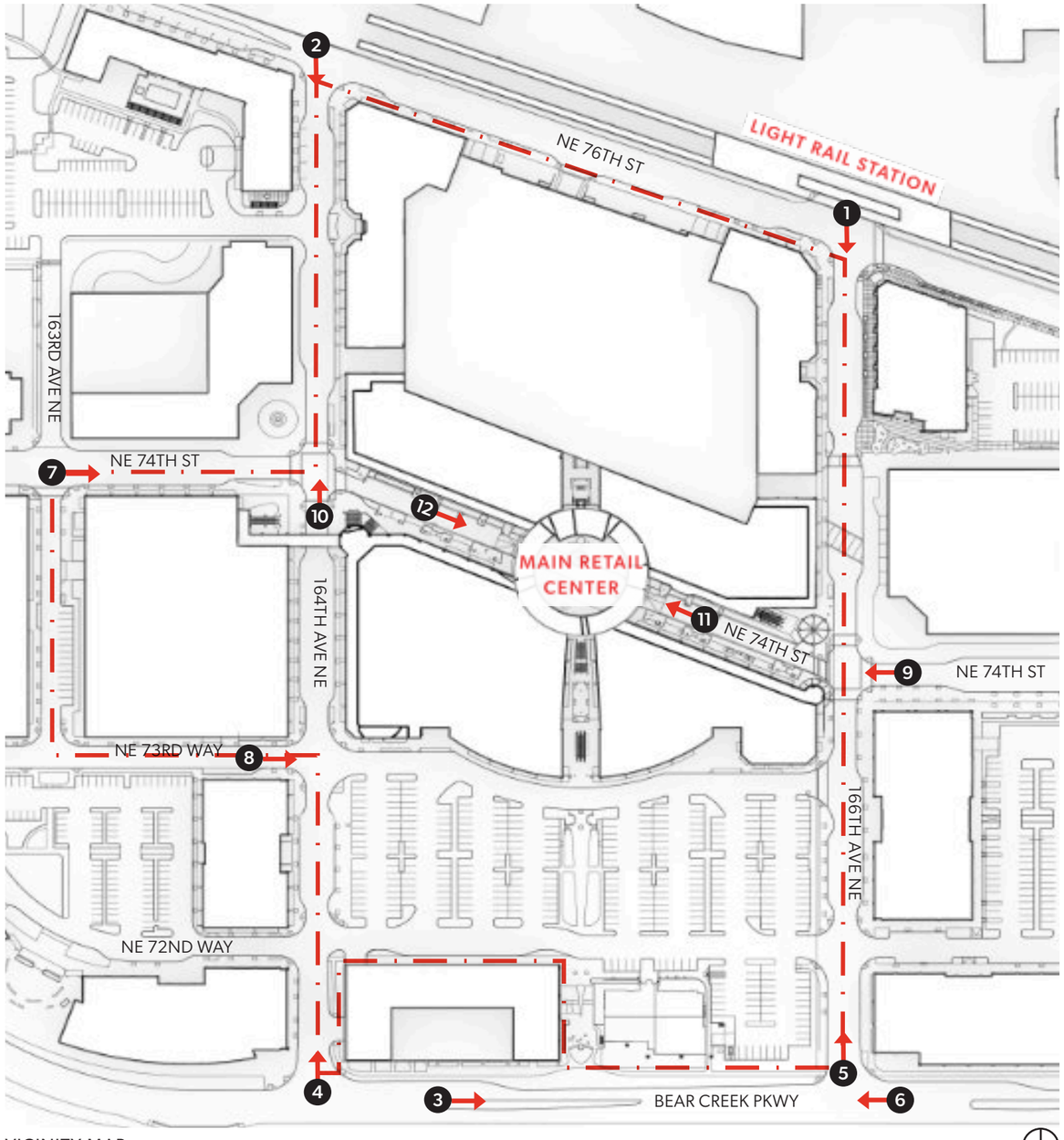
VICINITY MAP

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

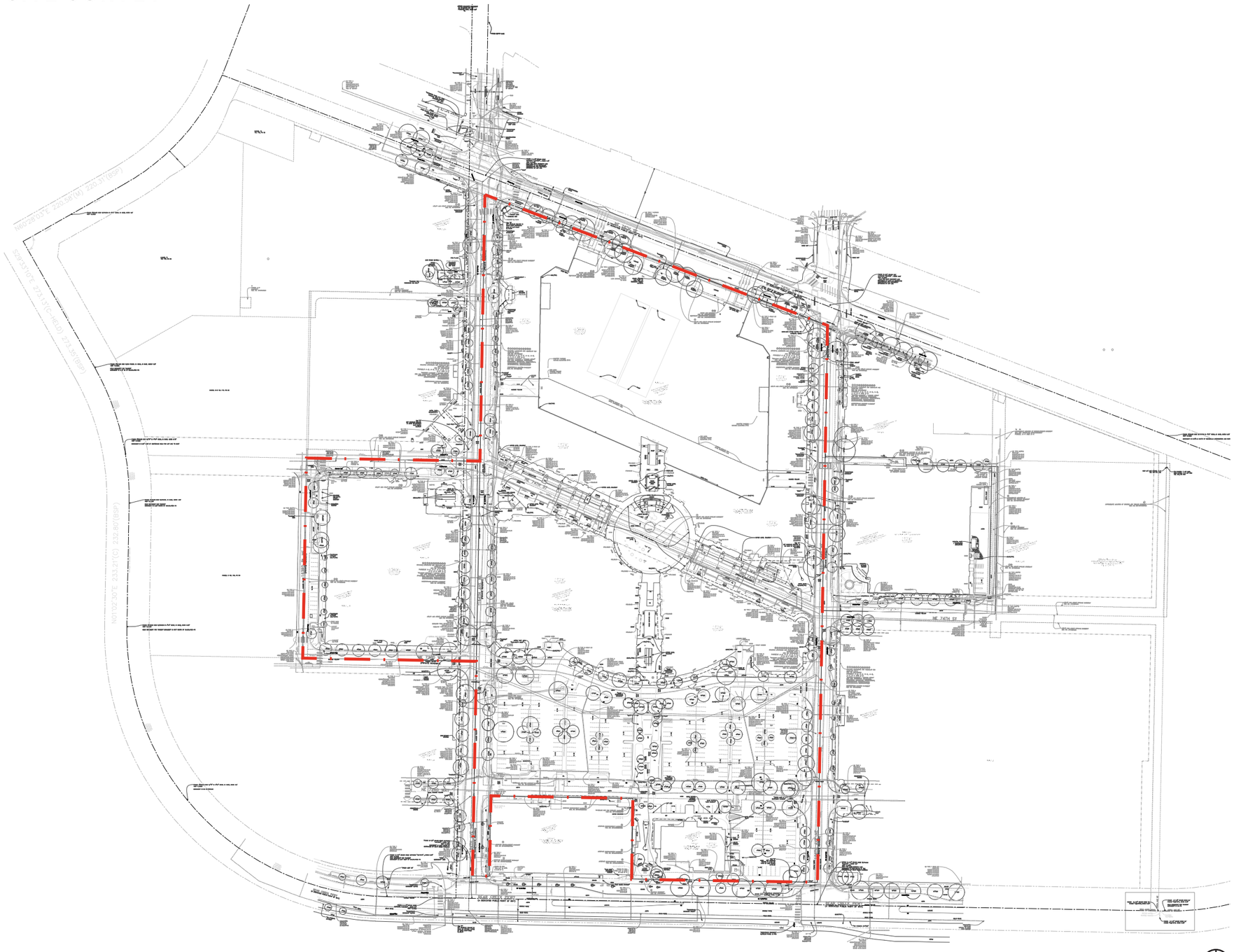
10

11

12

Exhibit C

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:

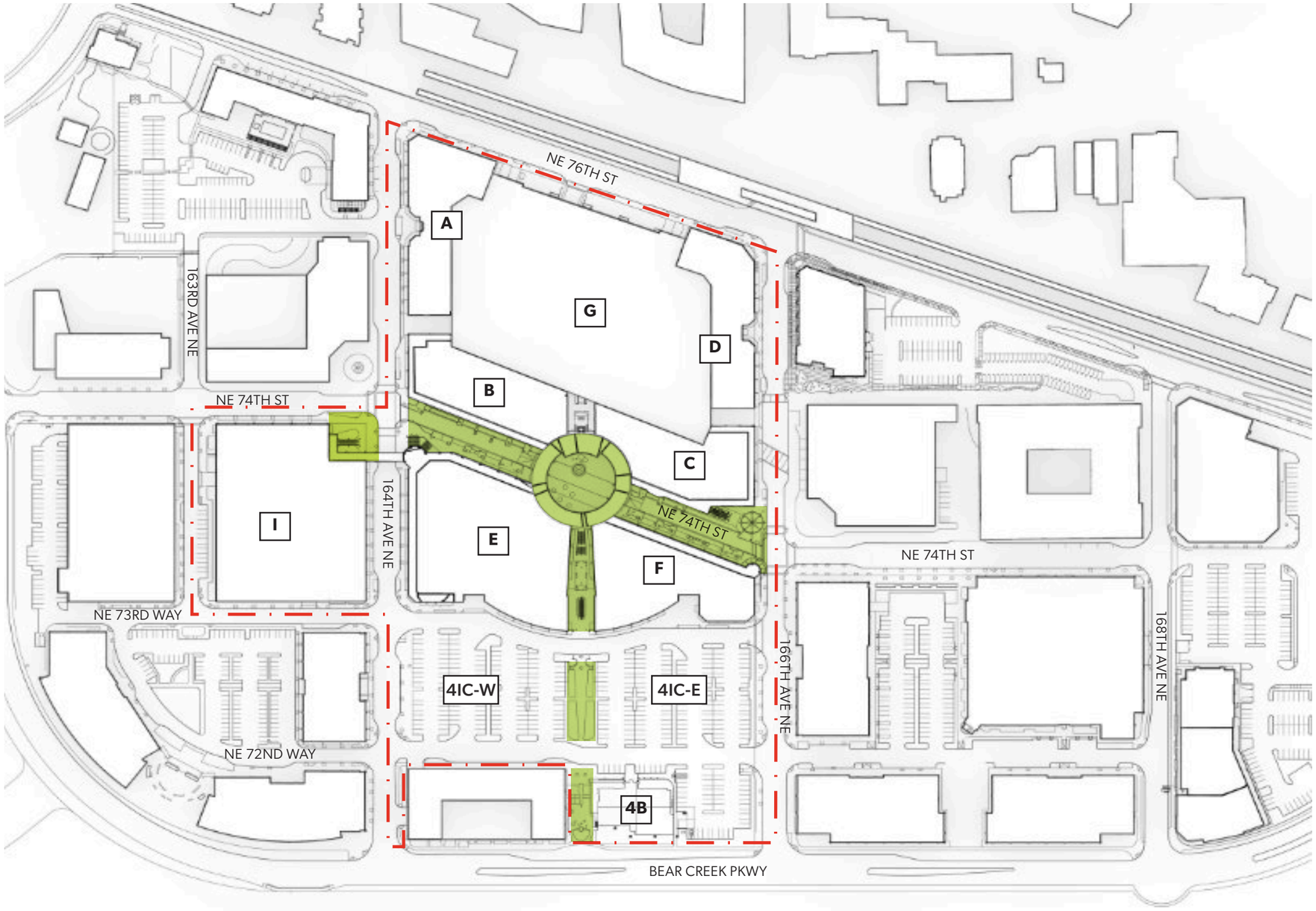
TWNC - TOWN CENTER NEIGHBORHOOD COMMERCIAL

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

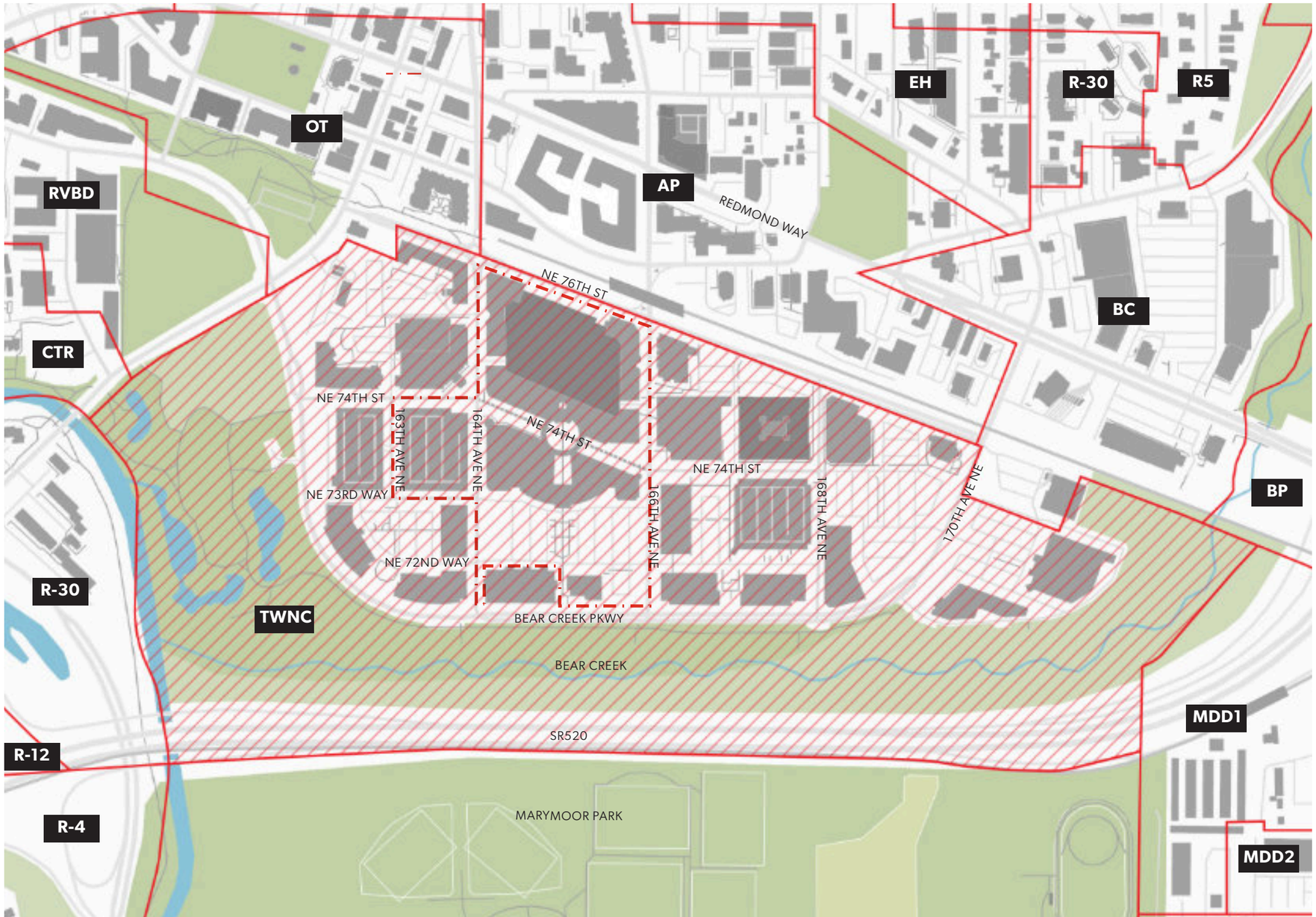
BUILDING		NON-PEDESTRIAN GENERATING LEASABLE SF	PEDESTRIAN GENERATING LEASABLE SF	TOTAL LEASABLE SF	% PEDESTRIAN GENERATING
BUILDING A	LEVEL 1	12,040	11,381	23,421	48.59%
	LEVEL 2	25,764	0	25,764	0.00%
	BUILDING TOTAL	37,804	11,381	49,185	23.14%
BUILDING B	LEVEL 1	0	25,210	25,210	100.00%
	LEVEL 2	5,526	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

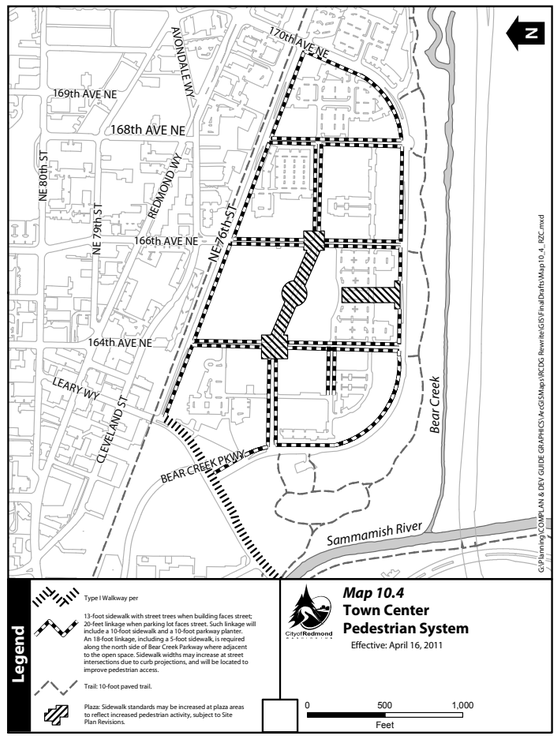
21.10.130 DOWNTOWN RESIDENTIAL SITE REQUIREMENTS

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.

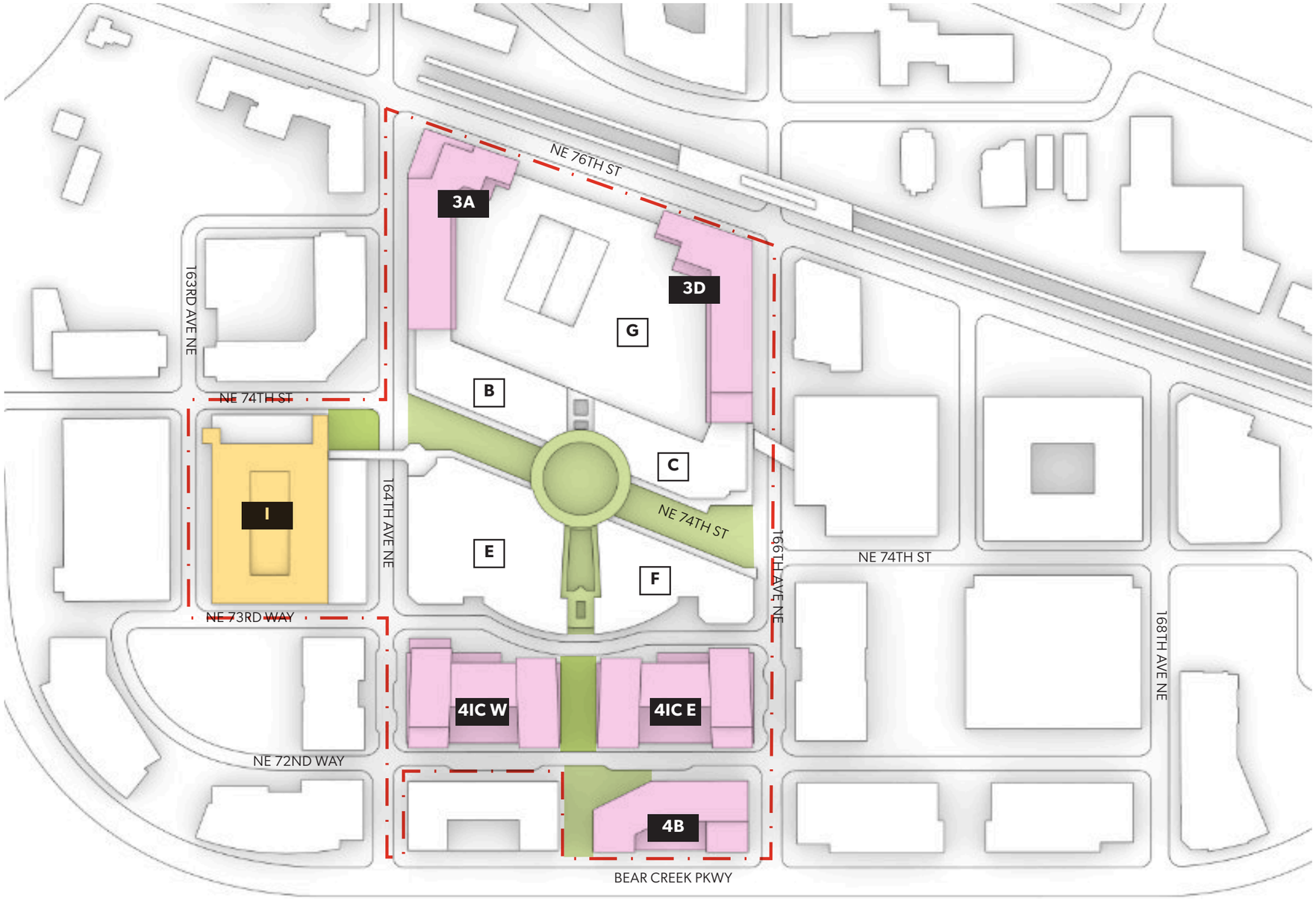
	TECHNIQUE	STORIES
	Allowable Base Height	5 Stories
1	Affordable housing and larger units: • Min. 20% of units affordable at 60% AMI. There is no requirement to also provide 10% designated for 80% AMI that would ordinarily be required under RZC Chapter 21.20. • A. Min. 10% two bedrooms units and min. 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

Exhibit C

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%

GGLO

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***

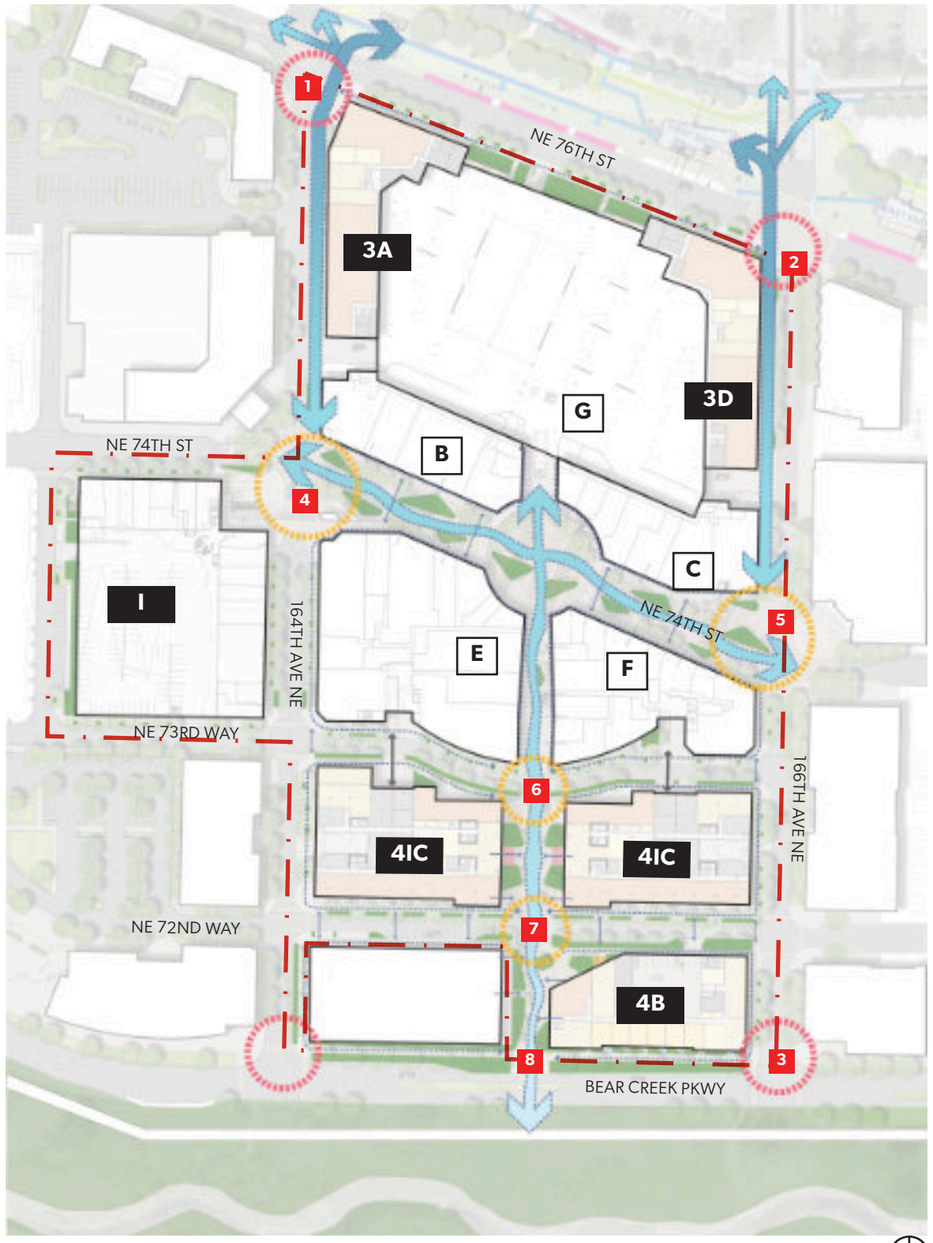
NOTES:

- 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.

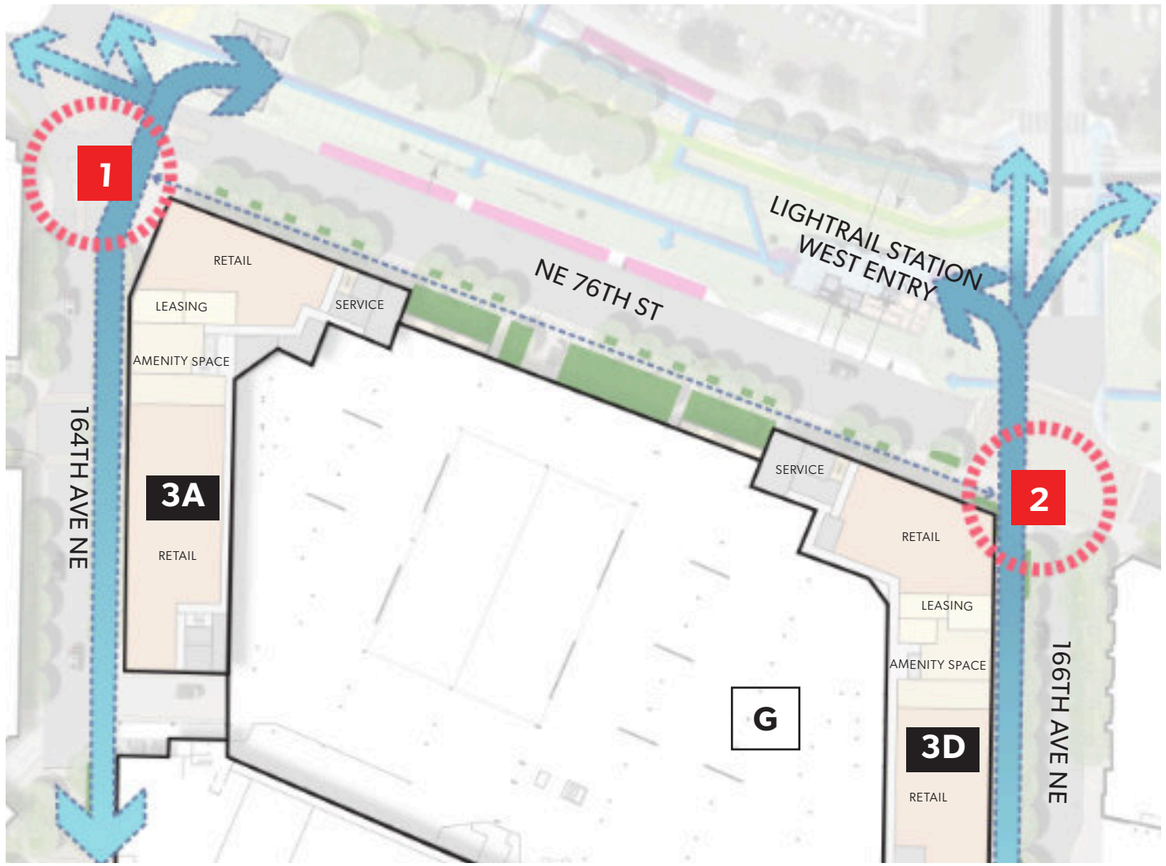
Creating open space connections is vital within the re-imagined Redmond Town Center. Safe and generous crossings at the new light rail access will serve a new influx of residents and visitors alike. Clear and defined bicycle circulation from Bear Creek Parkway into and around the site will provide easy 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.

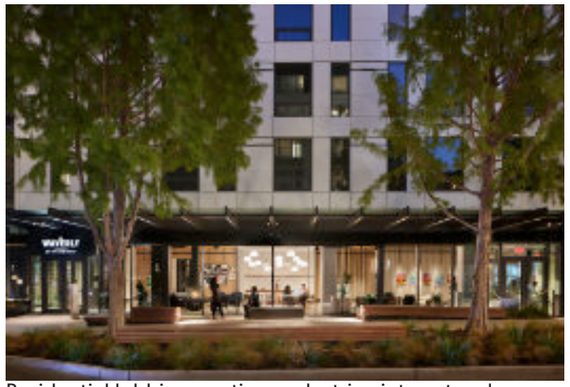
SUPPLEMENTAL DESIGN GUIDELINES

- 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

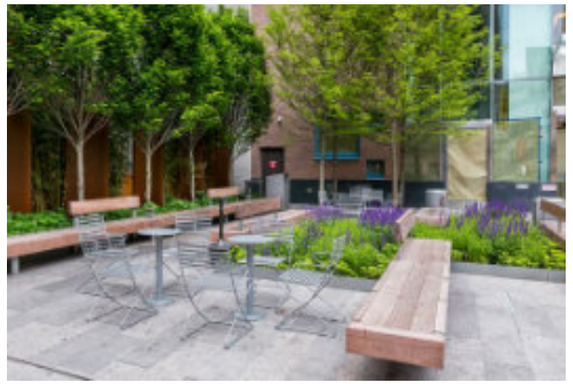
NOTE: Gateway design and precedent imagery intended to demonstrate design intent, not final design. Final design shall be included in SPE and shall meet the intent demonstrated in the above schematic design.

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.

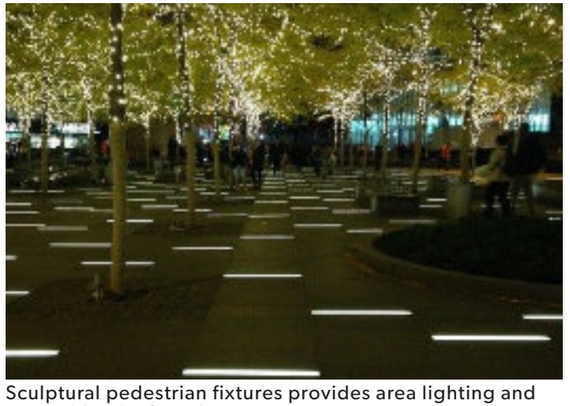
Lining circulation spaces with seating and low level lighting helps to define space and clarify travel routes.

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.

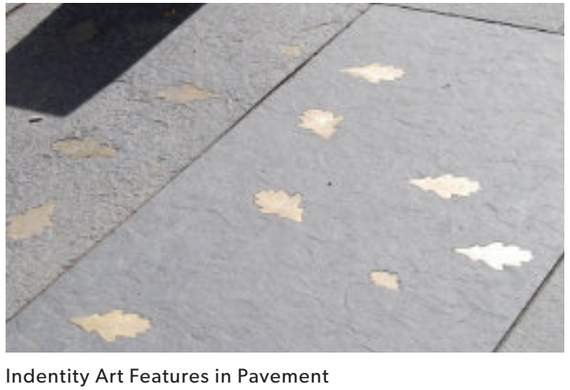
PRECEDENT IMAGES

Residential Lobby presence at corner

Transparency, residential lobby and amenity that engages with pedestrian realm

Overhead Weather Protection, Streetscape Planting

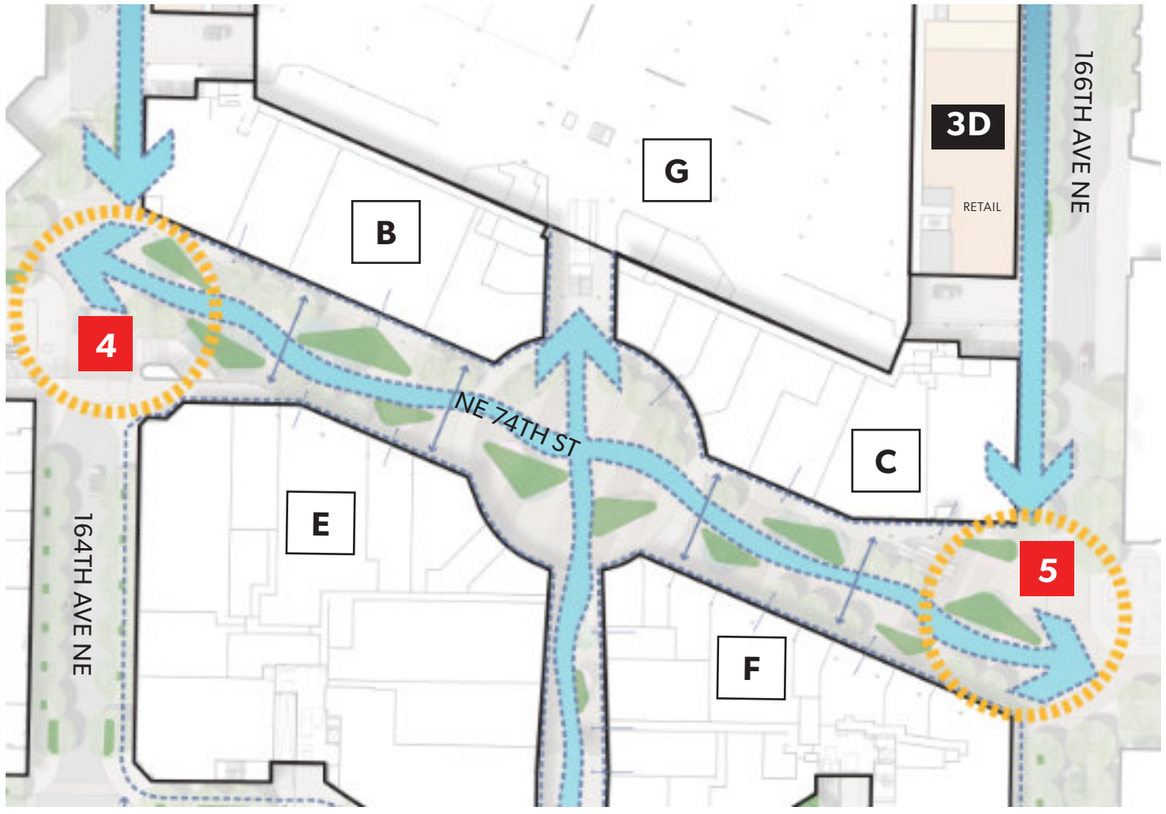
Native Planting Buffer at Bear Creek Parkway



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.

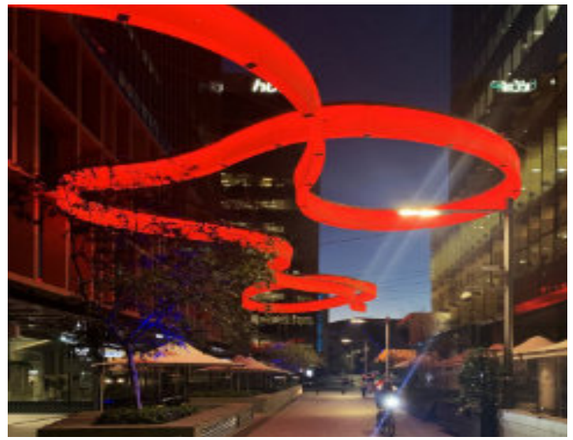
NOTE: Gateway design and precedent imagery intended to demonstrate design intent, not final design. Final design shall be included in SPE and shall meet the intent demonstrated in the above schematic design.

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

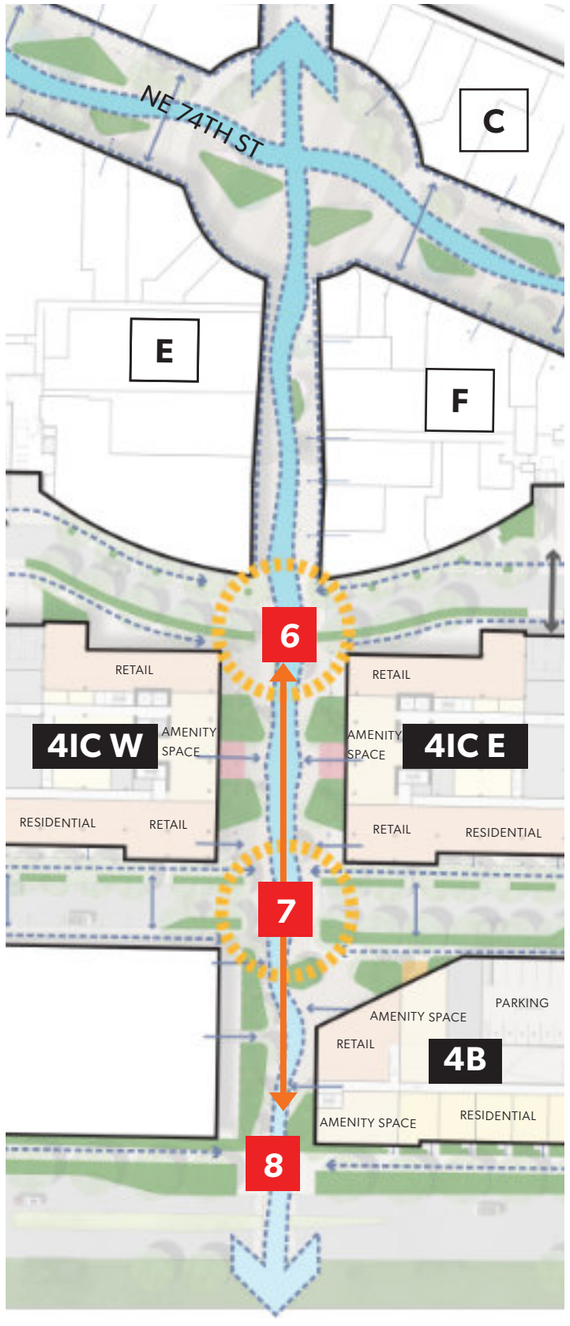


Sculptural lighting elements

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'

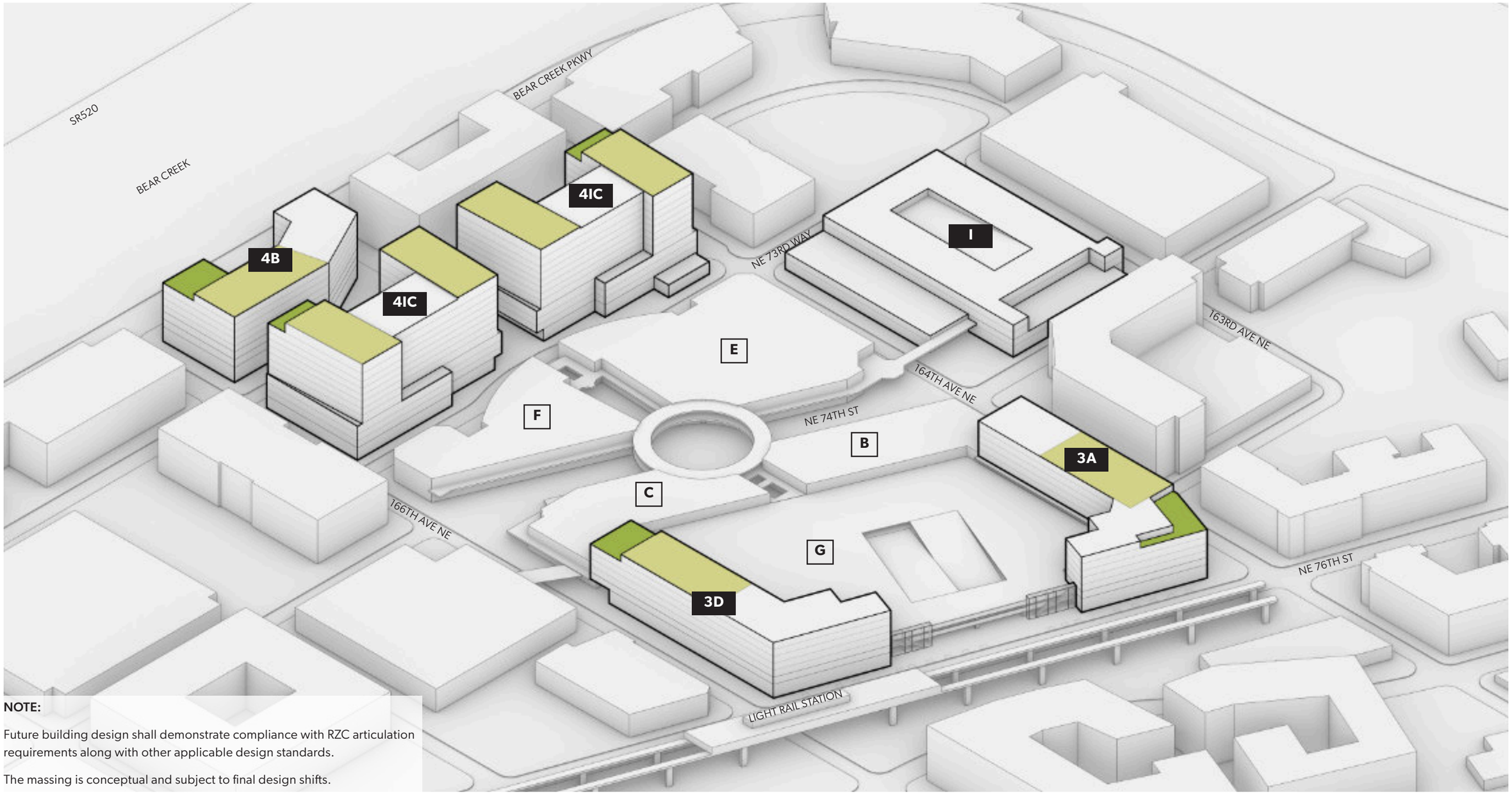
PROPOSED ROOF LEVEL - RESIDENTIAL AND OFFICE SCHEME

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:

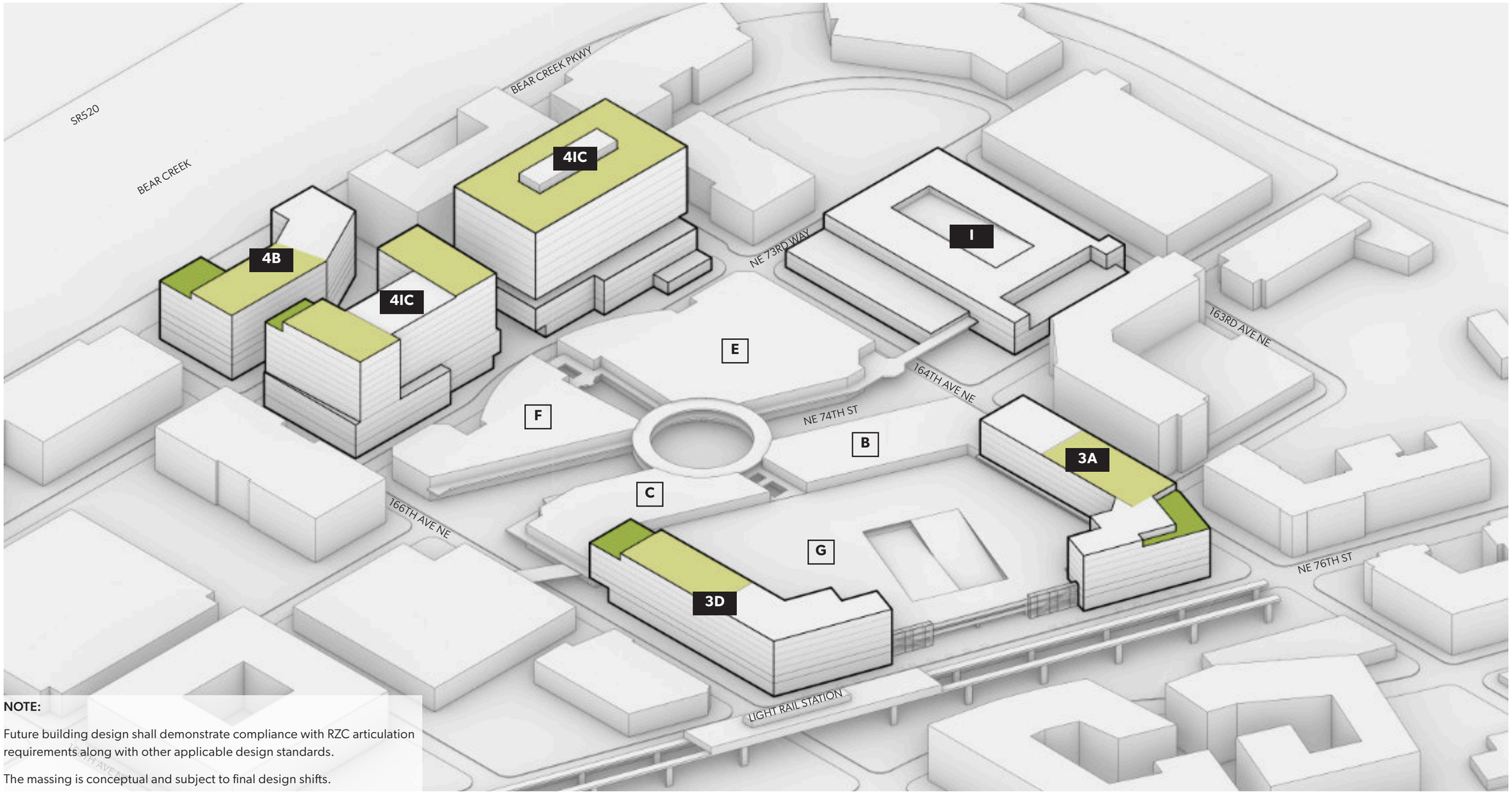
Future building design shall demonstrate compliance with RZC articulation requirements along with other applicable design standards.

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:

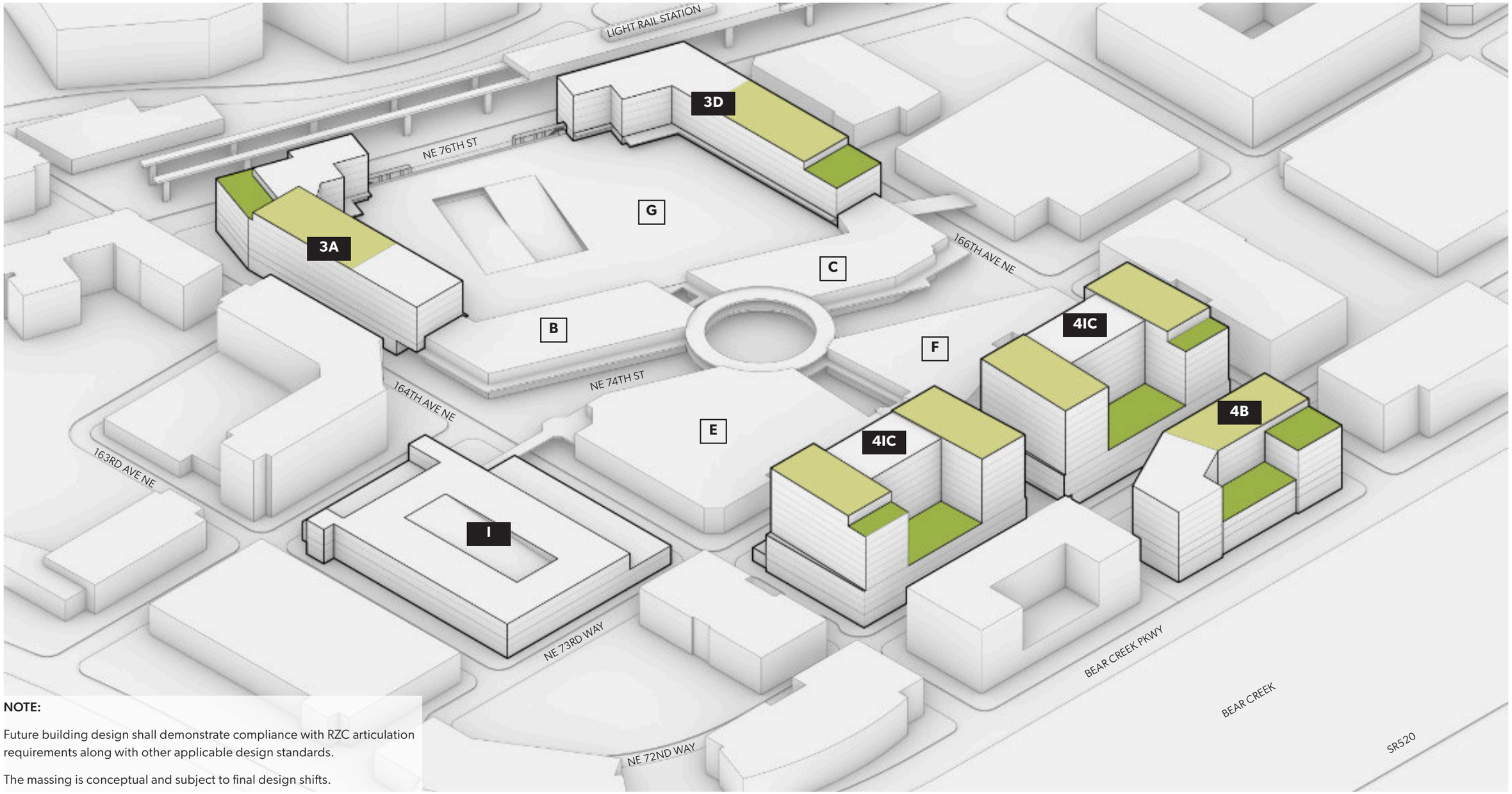
Future building design shall demonstrate compliance with RZC articulation requirements along with other applicable design standards.

The massing is conceptual and subject to final design shifts.

OVERALL MASSING VIEWS - NORTHEAST PERSPECTIVE (RESIDENTIAL AND OFFICE SCHEME)

NTS

OVERALL MASSING VIEWS - SOUTHWEST PERSPECTIVE (4IC RESIDENTIAL SCHEME)



NOTE:

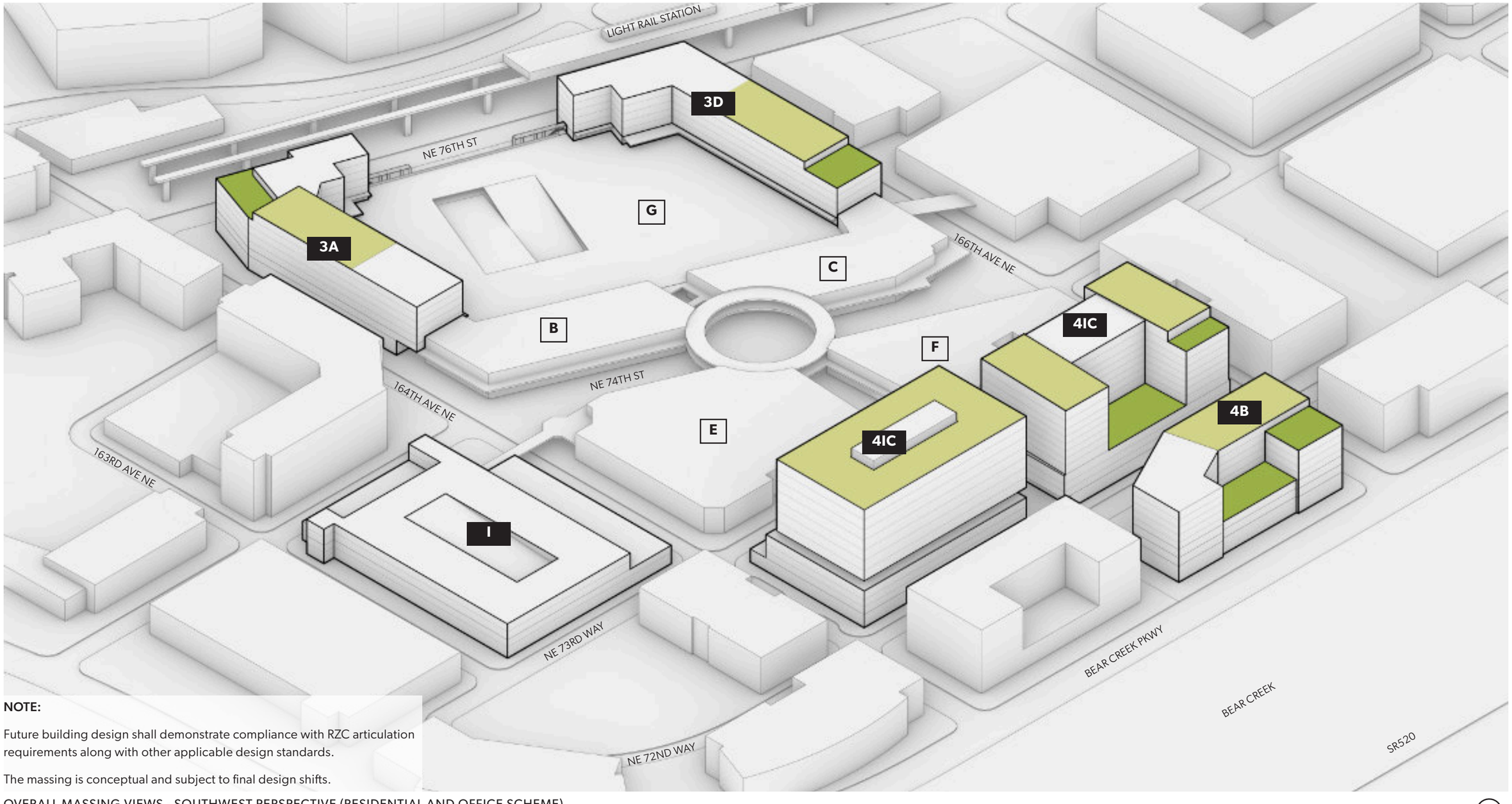
Future building design shall demonstrate compliance with RZC articulation requirements along with other applicable design standards.

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:

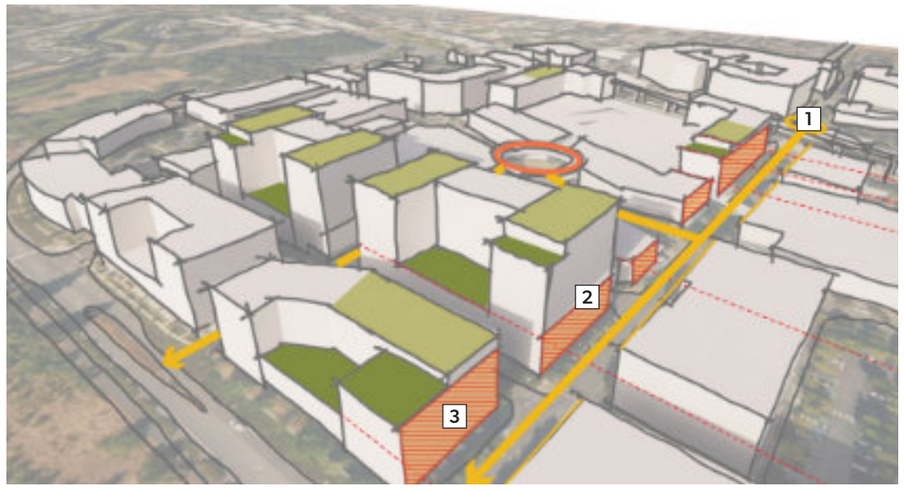
Future building design shall demonstrate compliance with RZC articulation requirements along with other applicable design standards.

The massing is conceptual and subject to final design shifts.

OVERALL MASSING VIEWS - SOUTHWEST PERSPECTIVE (RESIDENTIAL AND OFFICE SCHEME)

NTS

BULK AND SCALE DIAGRAMS (4IC ALL RESIDENTIAL SCHEME)



1 LIGHT RAIL STATION

2 RELIEF AT PODIUM

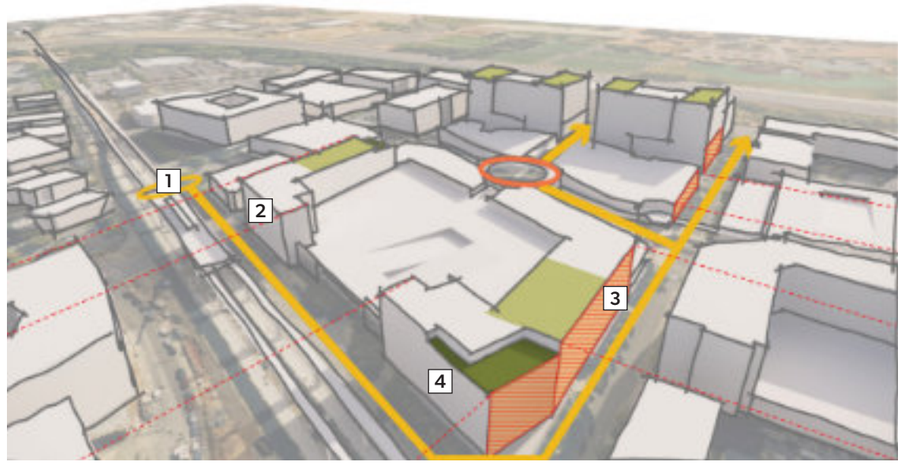
3 GROUND LEVEL ACTIVATION AND REGISTRATION OF PODIUM WITH MASSING ACROSS 166TH AVE NE

BULK AND SCALE DIAGRAMS (4IC ALL RESIDENTIAL SCHEME) - VIEW FROM SE

NTS

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

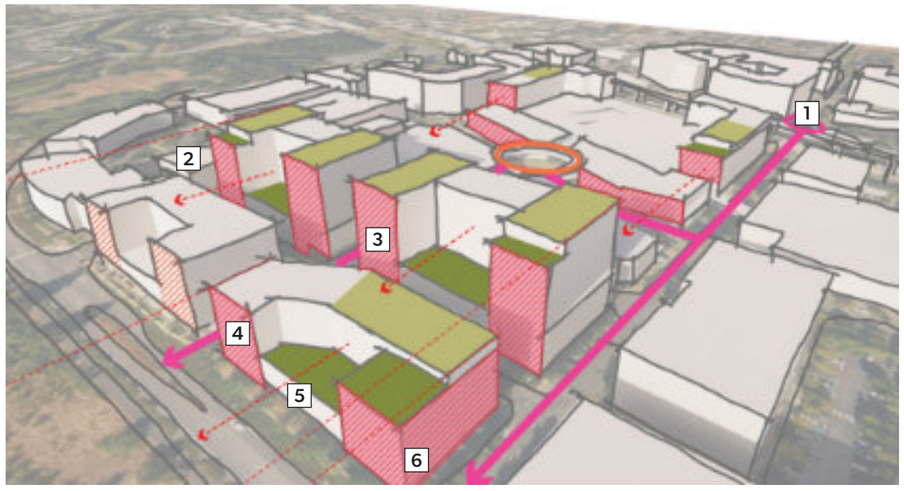
2 PROPOSED DEVELOPMENT SCALED TO MATCH ADJACENT EXISTING DEVELOPMENT

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 EXISTING DEVELOPMENT

3 TERRACED MASSING AT SOUTH ORIENTATION

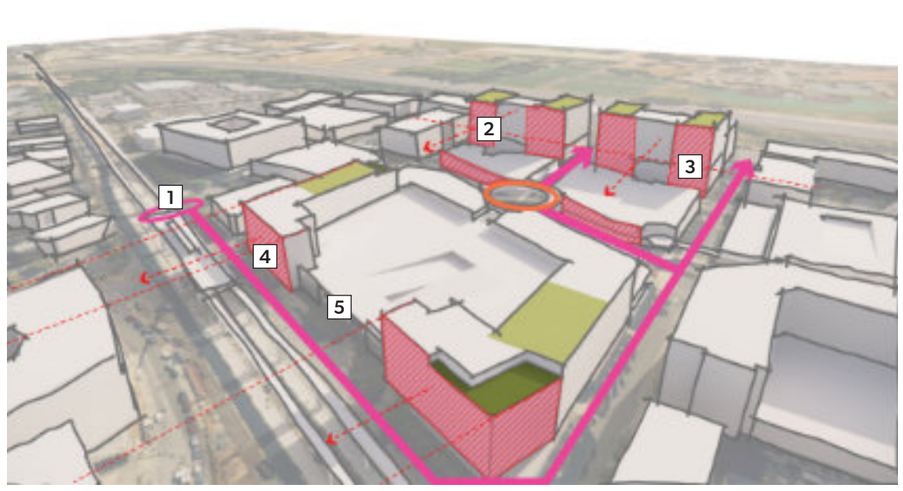
4 VERTICAL VARIATION OF MASSING AT LONG FACADE, REPETITION OF URBAN FORM

5 RELIEF AT BEAR CREEK PARKWAY

6 GATEWAY CORNER

BULK AND SCALE DIAGRAMS (4IC ALL RESIDENTIAL SCHEME) - VIEW FROM SE

NTS



1 LIGHT RAIL STATION

2 VERTICAL VARIATION OF MASSING AT LONG FACADE, REPETITION OF URBAN FORM

3 TERRACED MASSING AT NORTH ORIENTATION

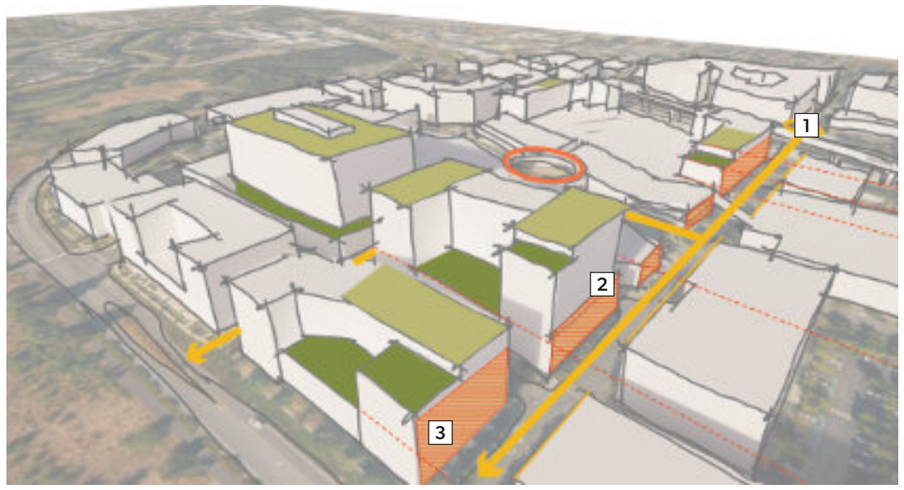
4 PROPOSED DEVELOPMENT SCALED TO MATCH ADJACENT EXISTING DEVELOPMENT

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

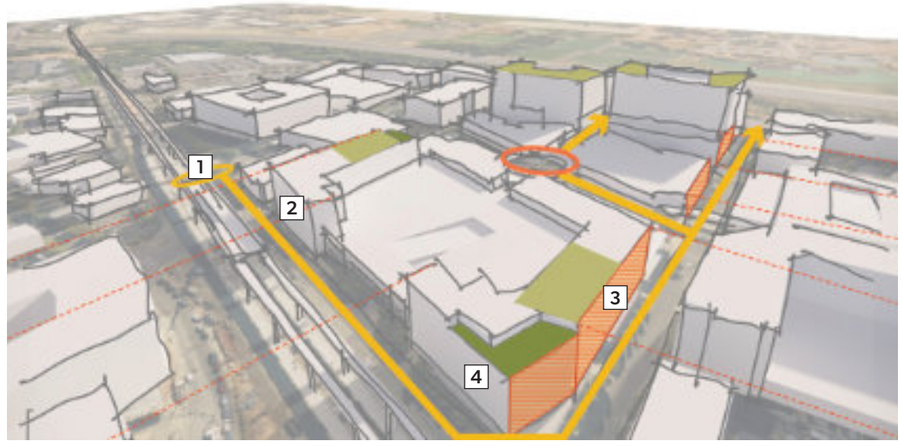
2 RELIEF AT PODIUM

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

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.



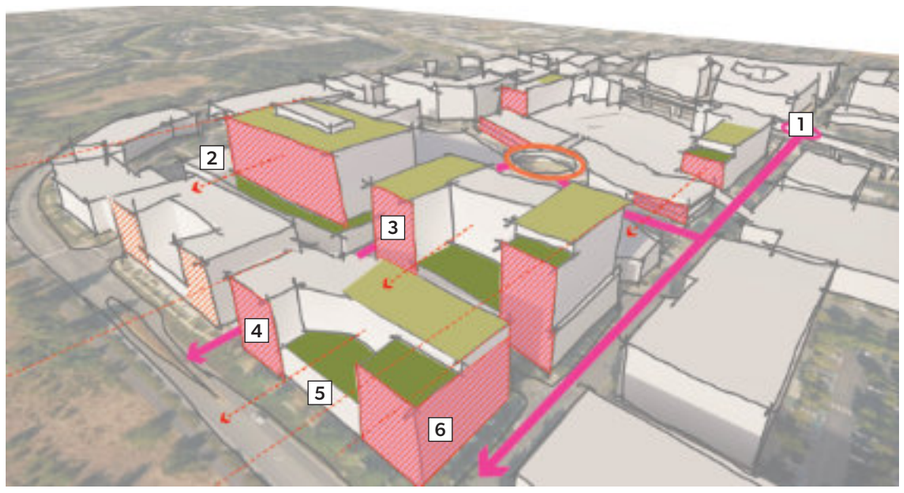
1 LIGHT RAIL STATION

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 EXISTING DEVELOPMENT

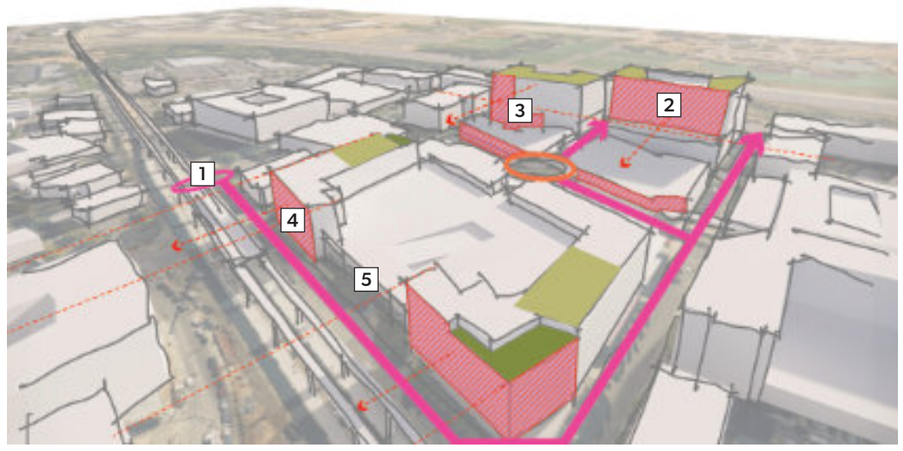
3 TERRACED MASSING AT SOUTH ORIENTATION

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



1 LIGHT RAIL STATION

2 VERTICAL VARIATION OF MASSING AT LONG FACADE, REPETITION OF URBAN FORM

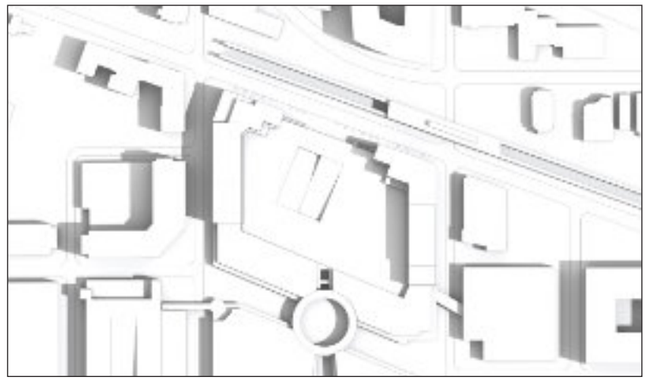
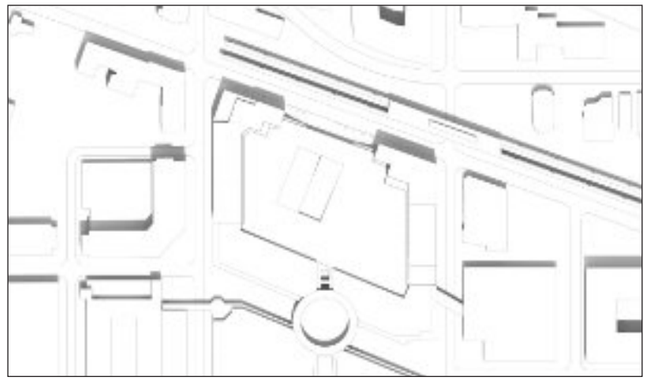
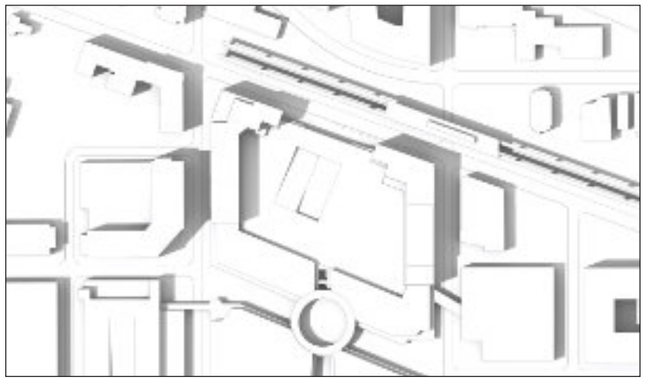
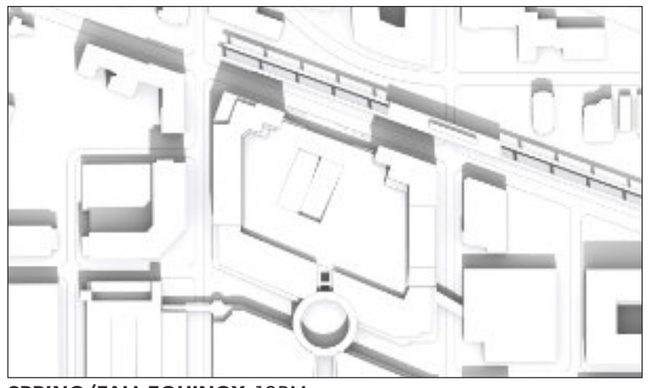
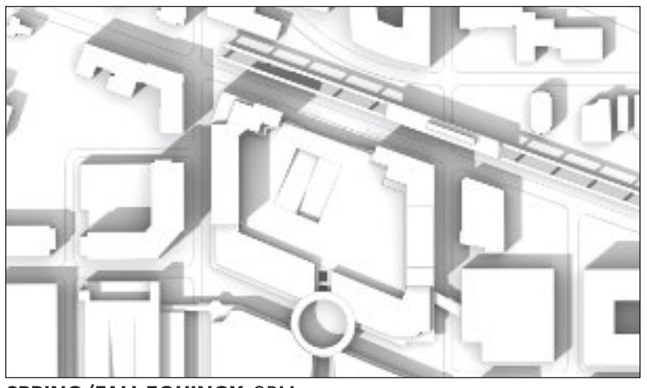
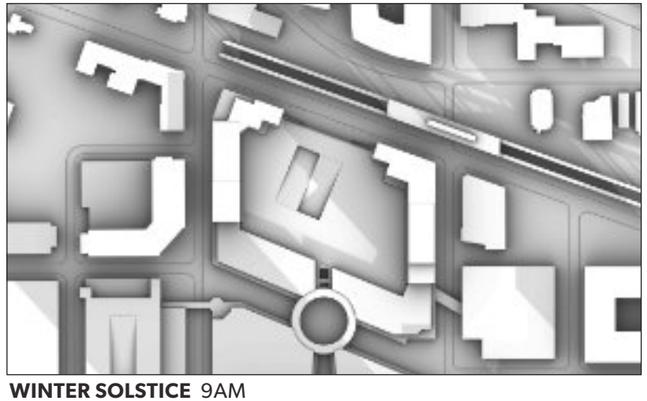
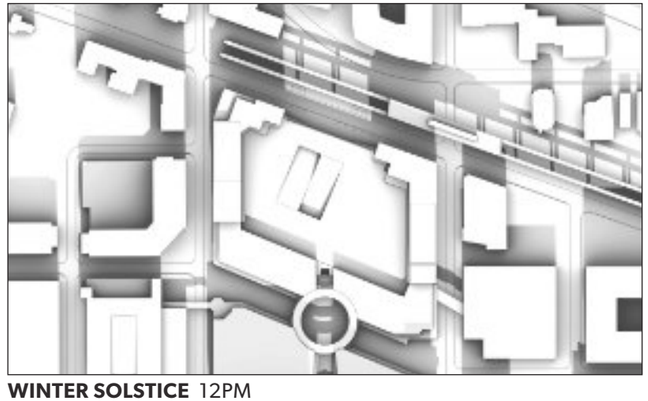
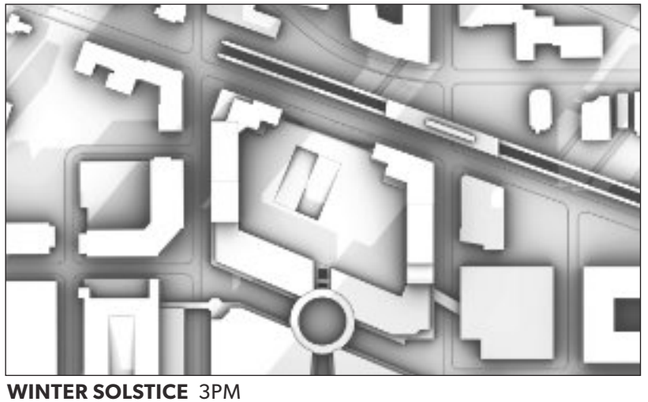
3 TERRACED MASSING AT NORTH ORIENTATION

4 PROPOSED DEVELOPMENT SCALED TO MATCH ADJACENT EXISTING DEVELOPMENT

5 RELIEF AT METRO ORIENTED FACADES

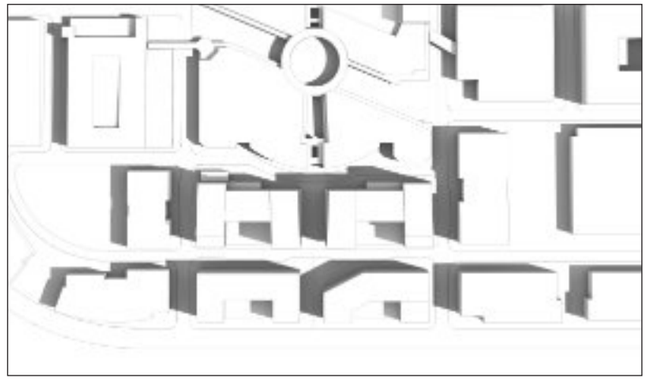
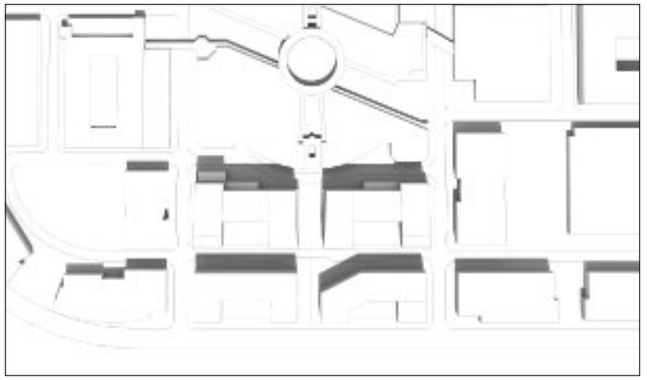
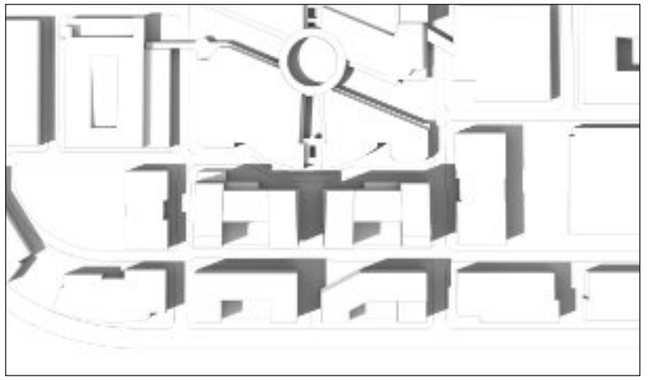
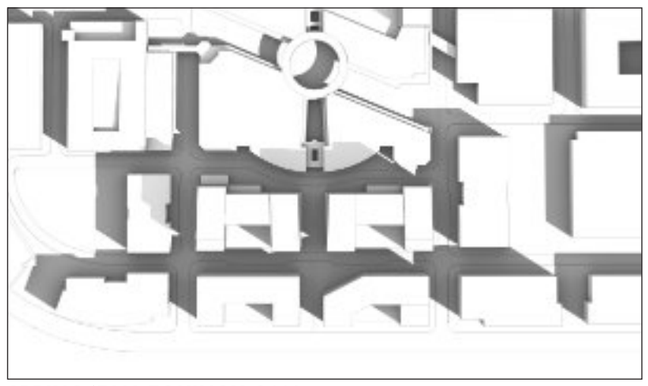
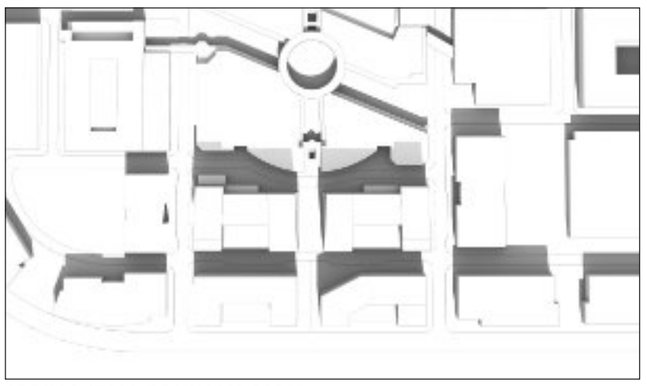
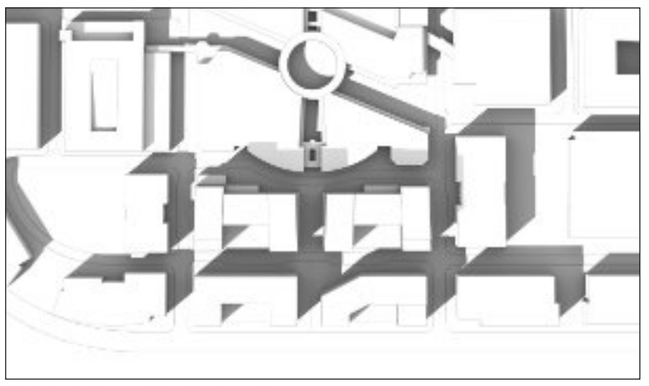
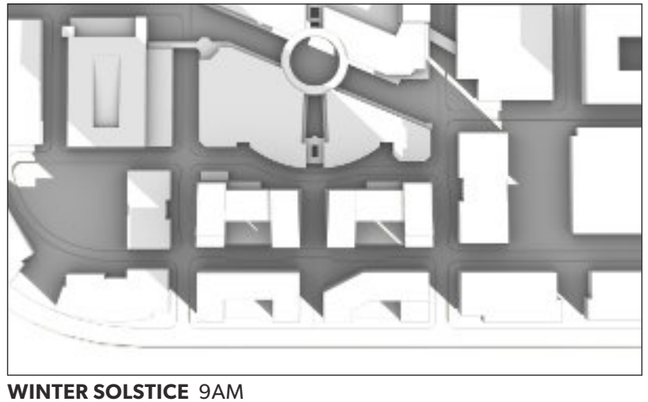
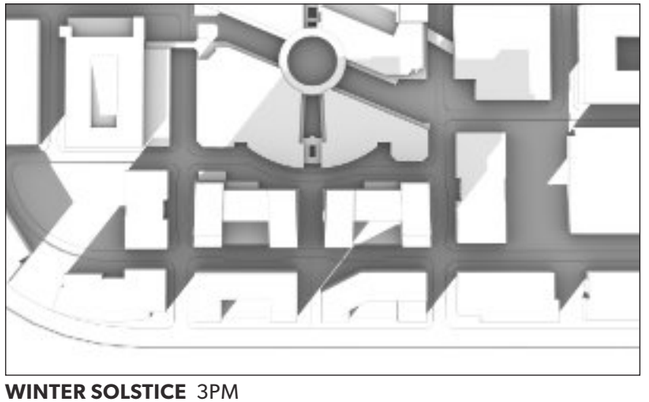
BULK AND SCALE DIAGRAMS (4IC RESIDENTIAL AND OFFICE SCHEME) - VIEW FROM NW
NTS

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

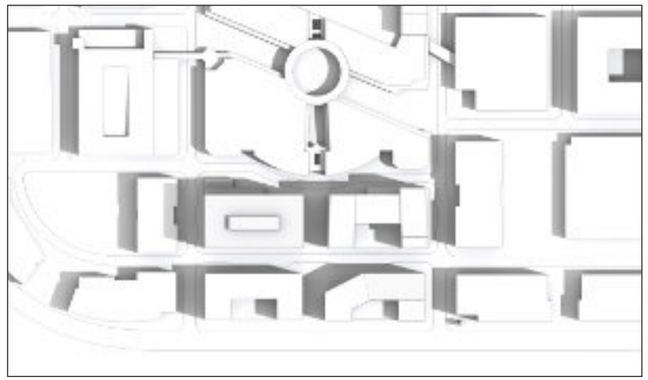
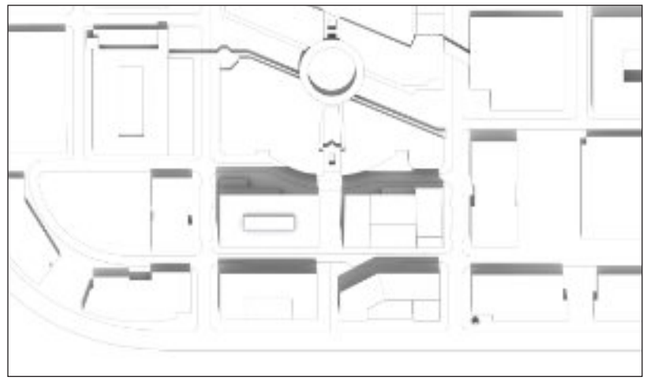
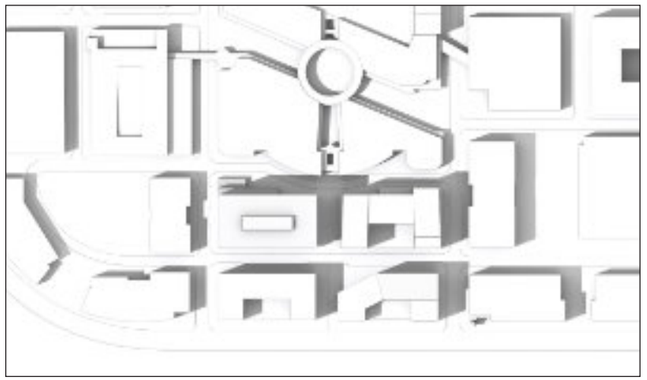
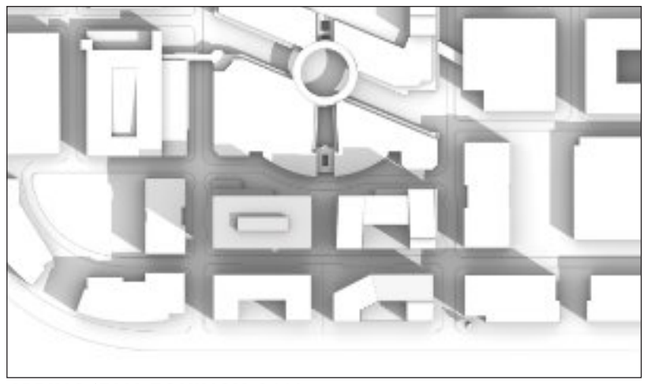
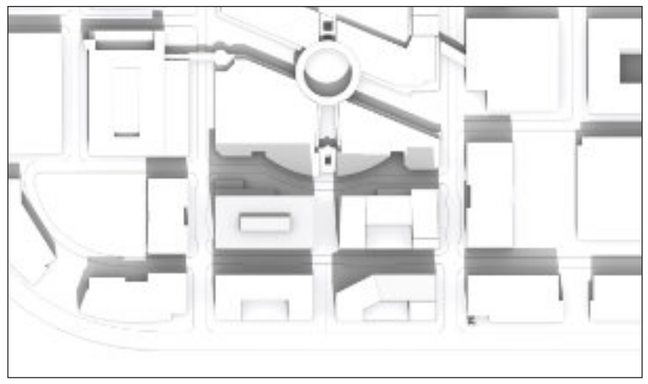
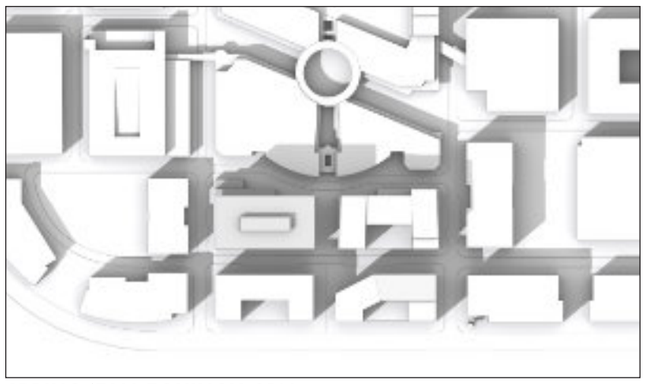
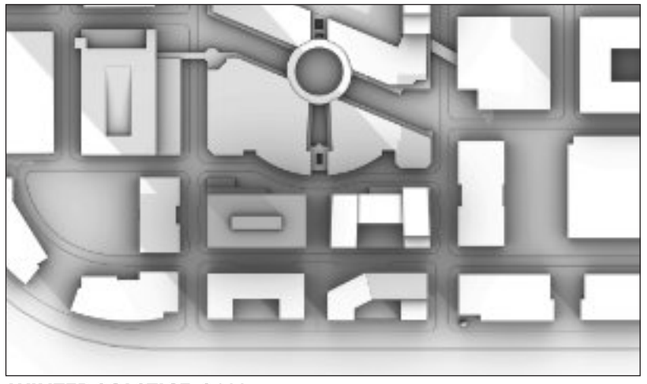
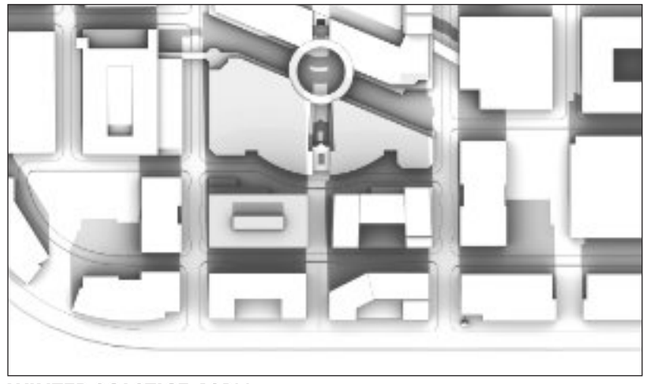
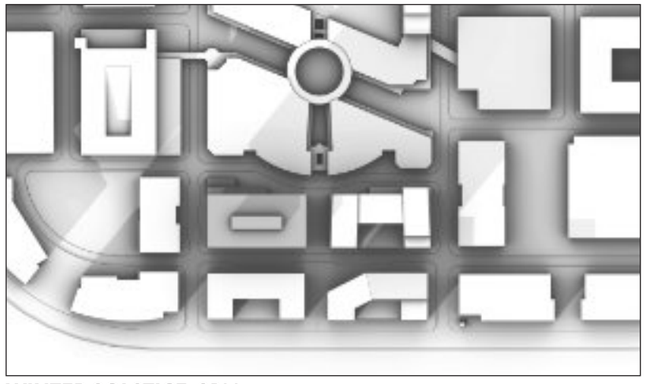
SHADOW STUDIES (SOUTH - ALL RESIDENTIAL SCHEME)

	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

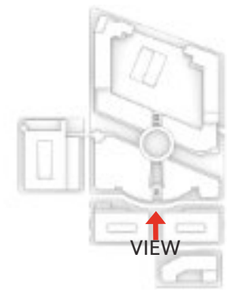
SHADOW STUDIES (SOUTH - 4IC RESIDENTIAL AND OFFICE SCHEME)

	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

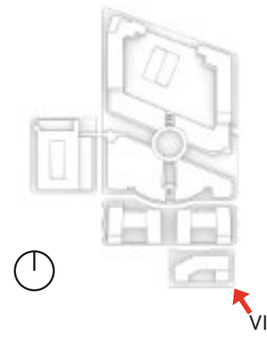
CONCEPT RENDER VIEWS - GROUND LEVEL (ALL RESIDENTIAL SCHEME)



CONCEPT RENDER VIEWS (ALL RESIDENTIAL SCHEME)

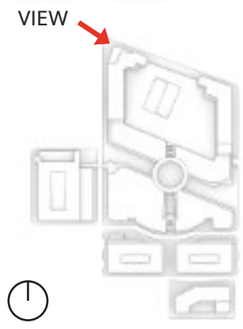
View from NW Corner of Proposed Development, NE 76th St and future Light Rail Station

View from SE Corner of Proposed Development, Bear Creek Parkway



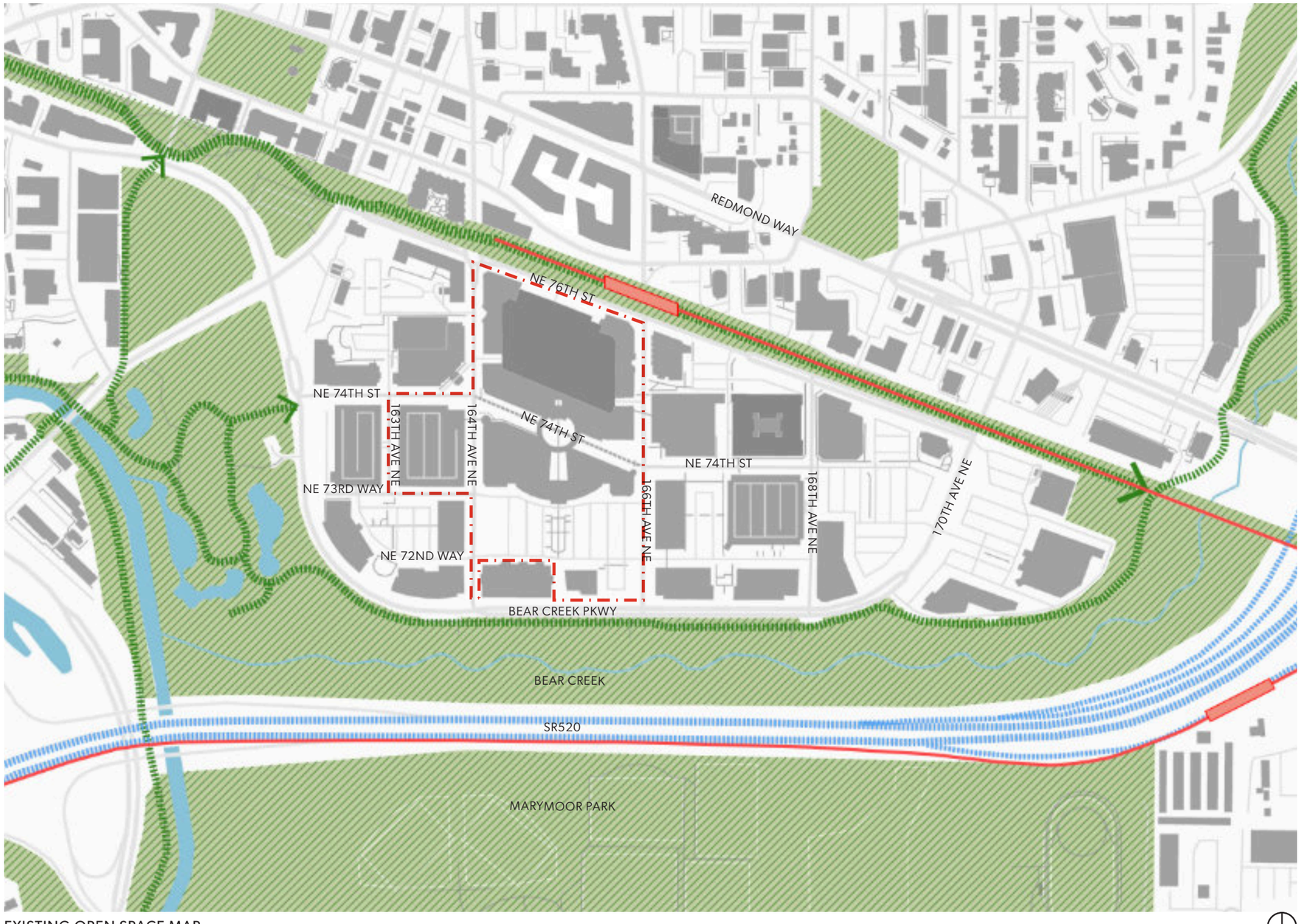
CONCEPT RENDER VIEWS (RESIDENTIAL AND OFFICE SCHEME)

View from NW Corner of Proposed Development, NE 76th St and future Light Rail Station



SECTION 3 - OPEN SPACE PLAN

EXISTING OPEN SPACE



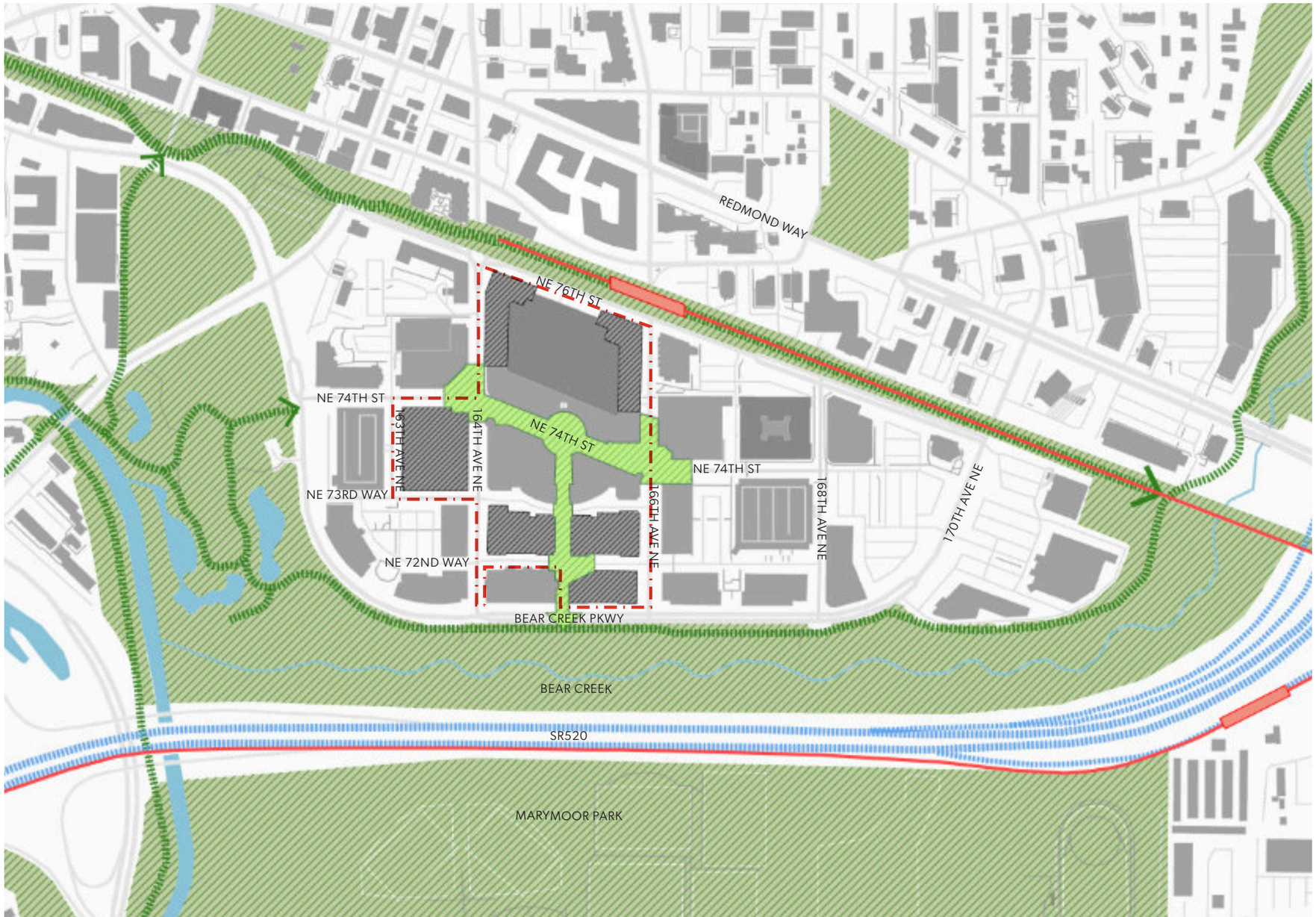
LEGEND

- 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

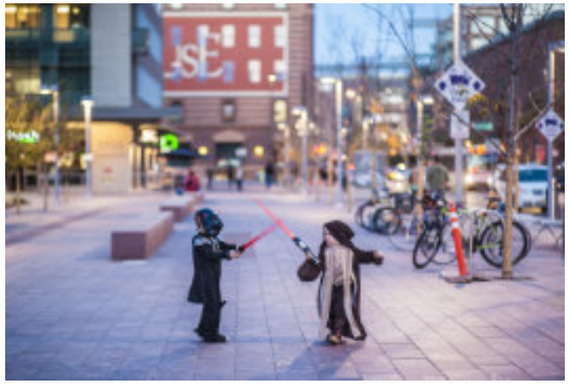
NTS

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

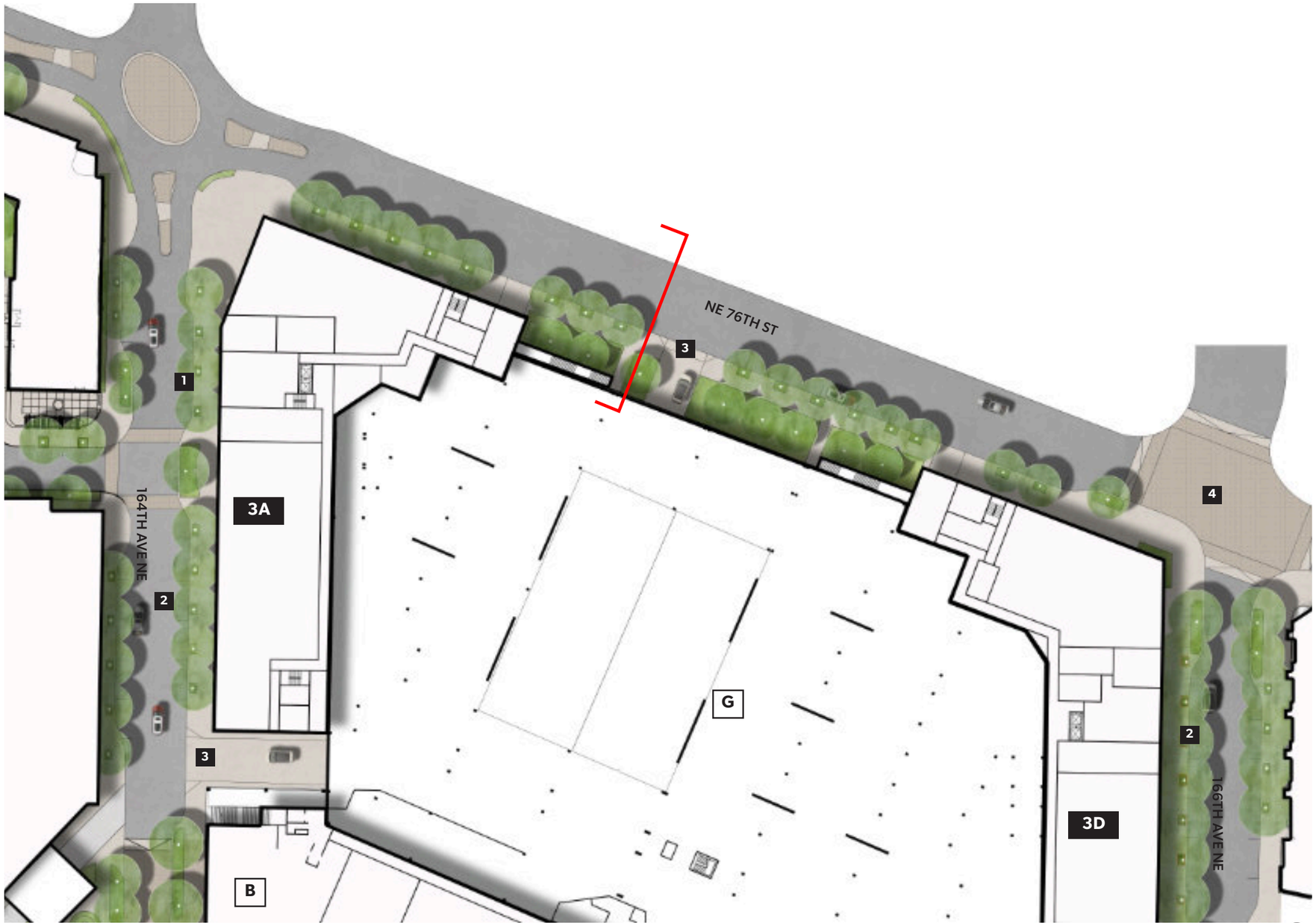
PROPOSED ROOF LEVEL - RESIDENTIAL AND OFFICE SCHEME

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

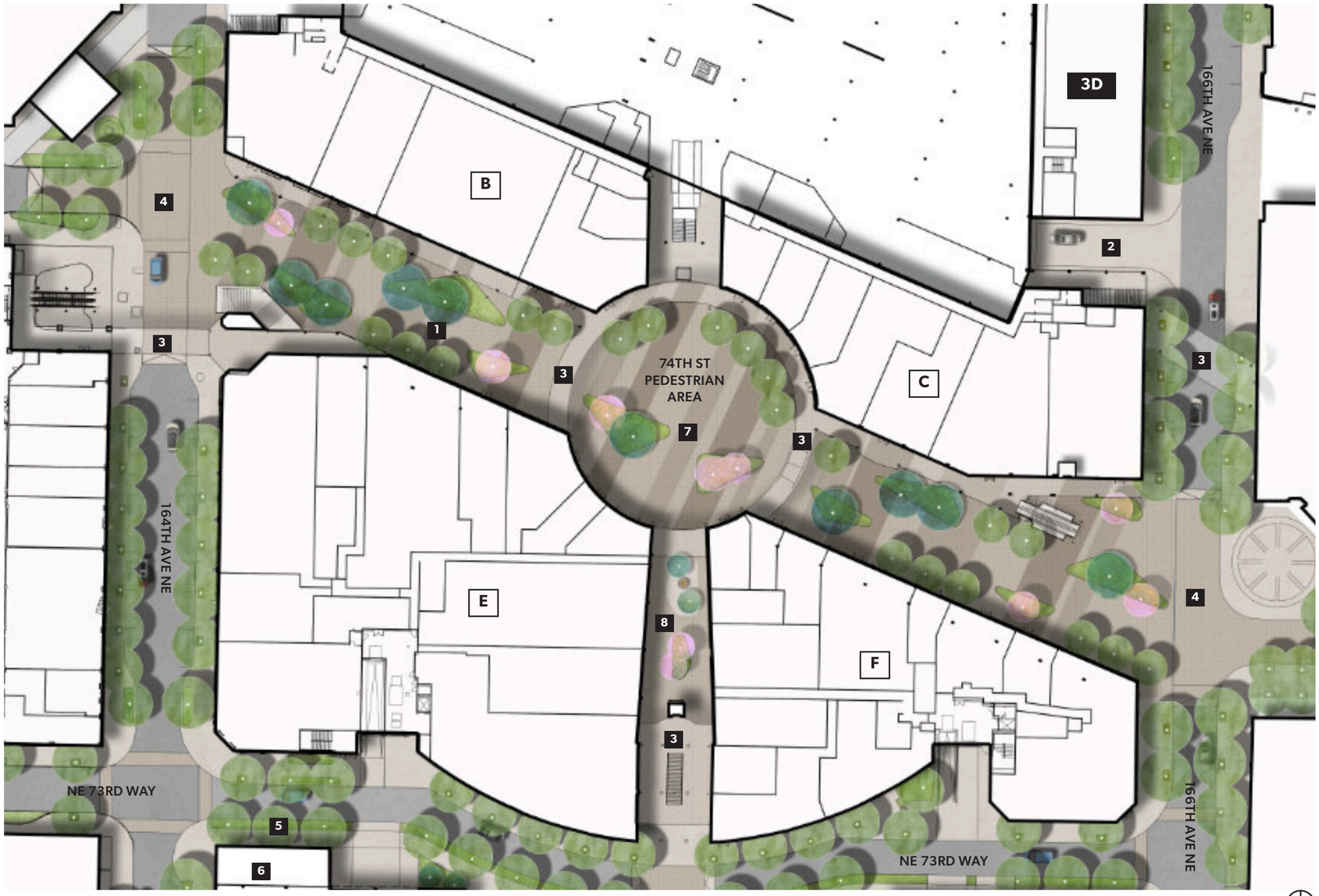
0' 35' 70'

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′

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'

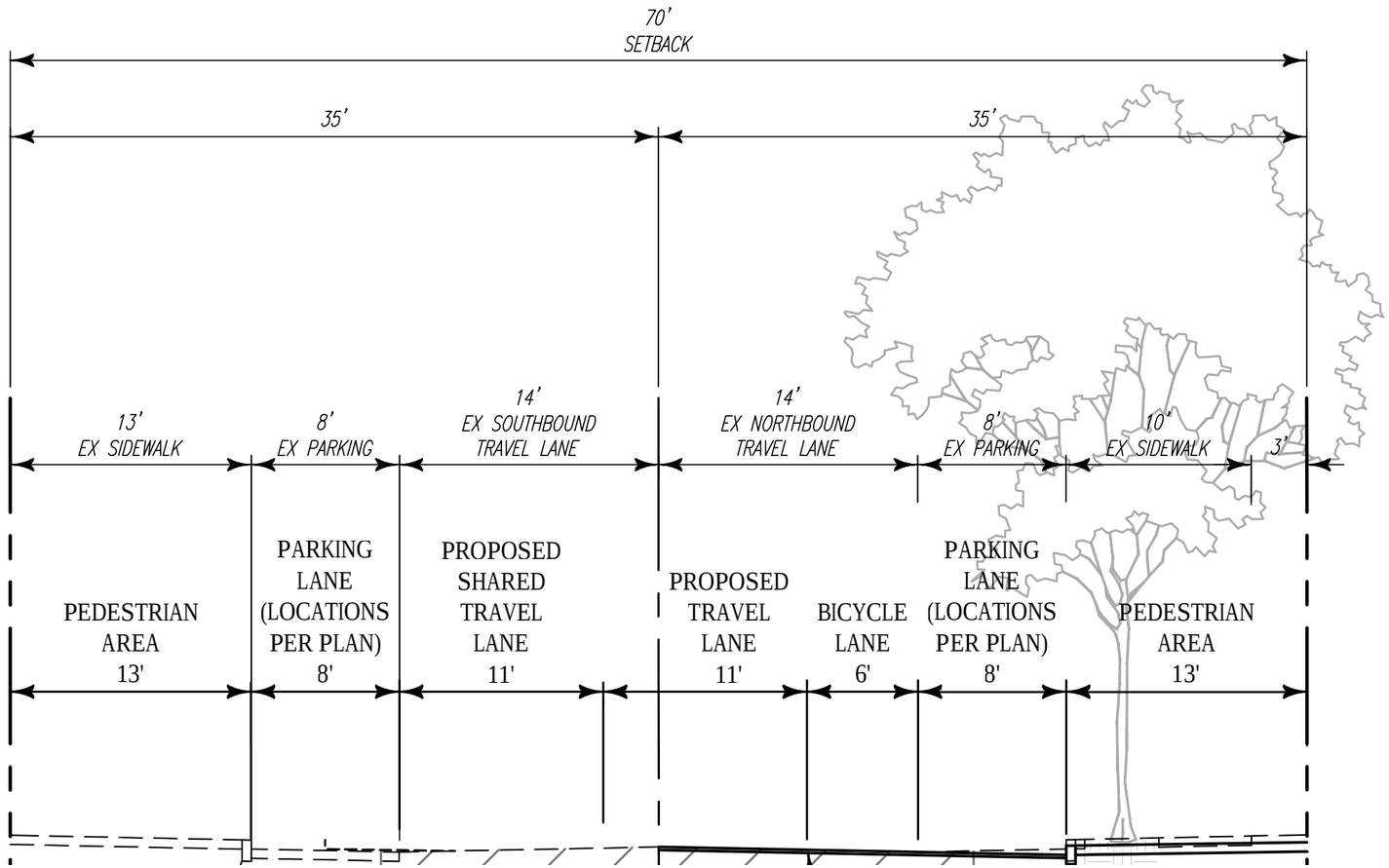
LEGEND

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

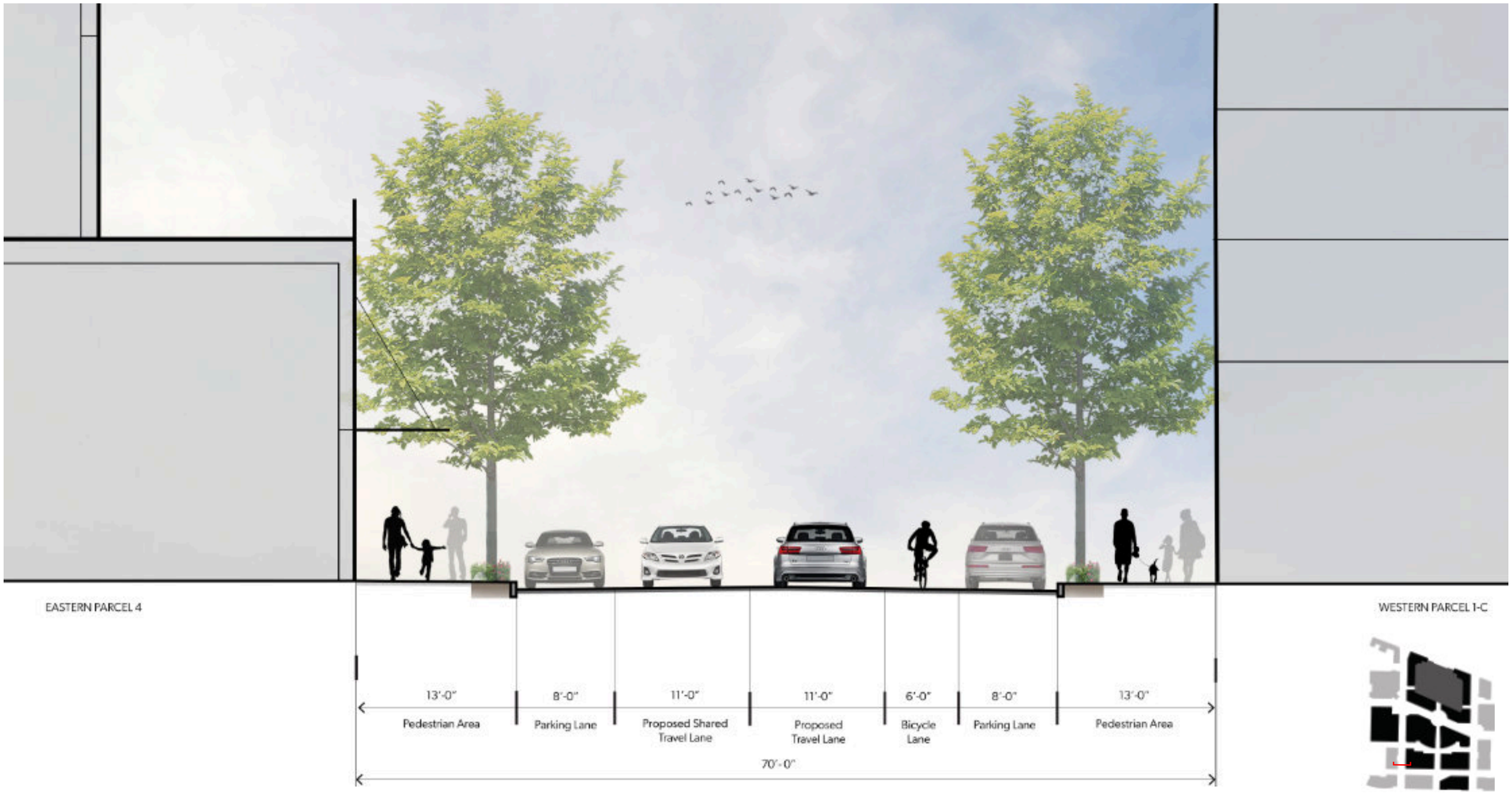
EXISTING 164TH AVE NE STREET SECTION (PRIVATE)



164TH AVE NE CIVIL STREET SECTION

NOT TO SCALE

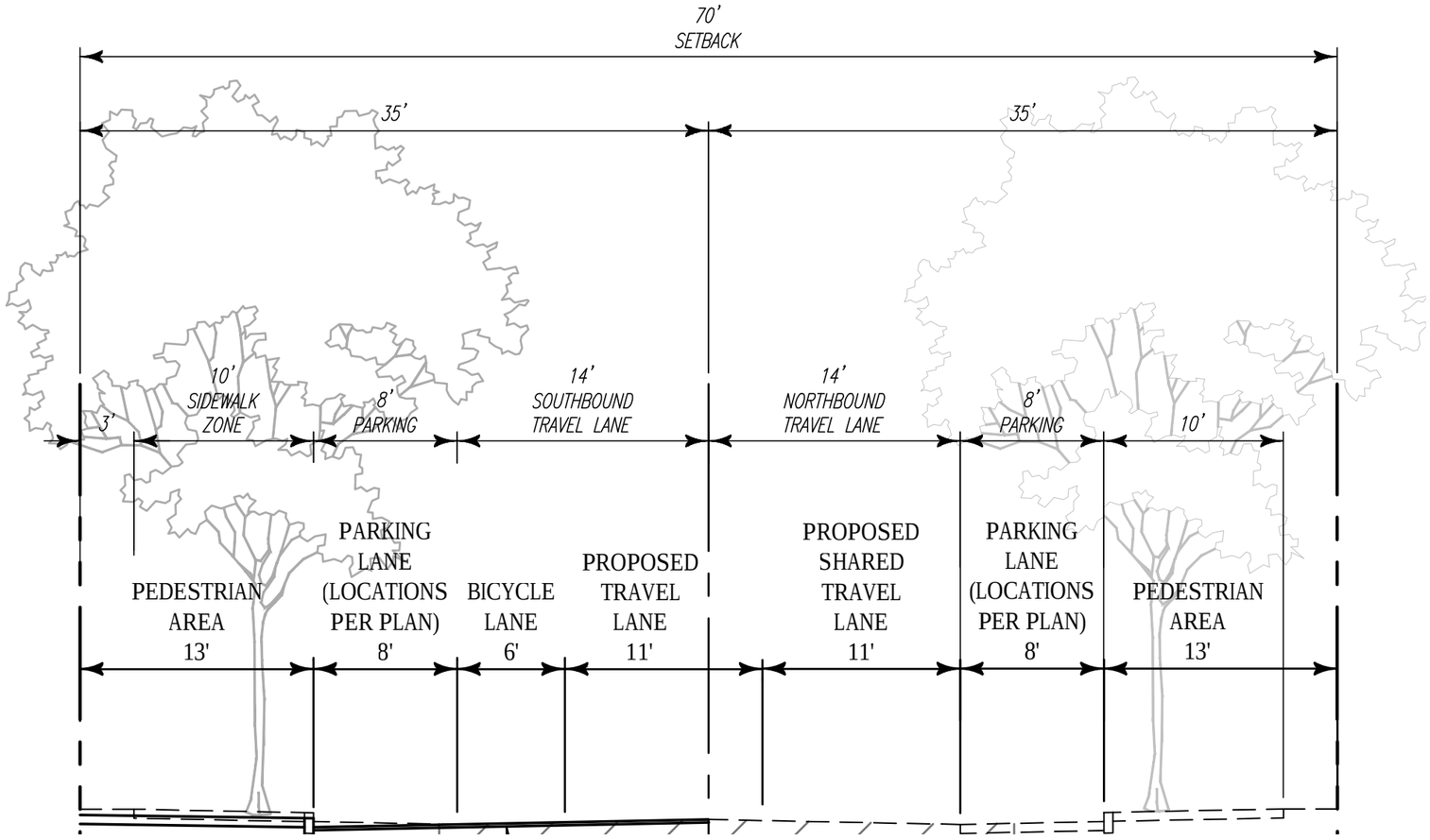
PROPOSED 164TH AVE NE STREET SECTION (PRIVATE)



PROPOSED 164TH AVE NE STREET SECTION

0' 4' 8'

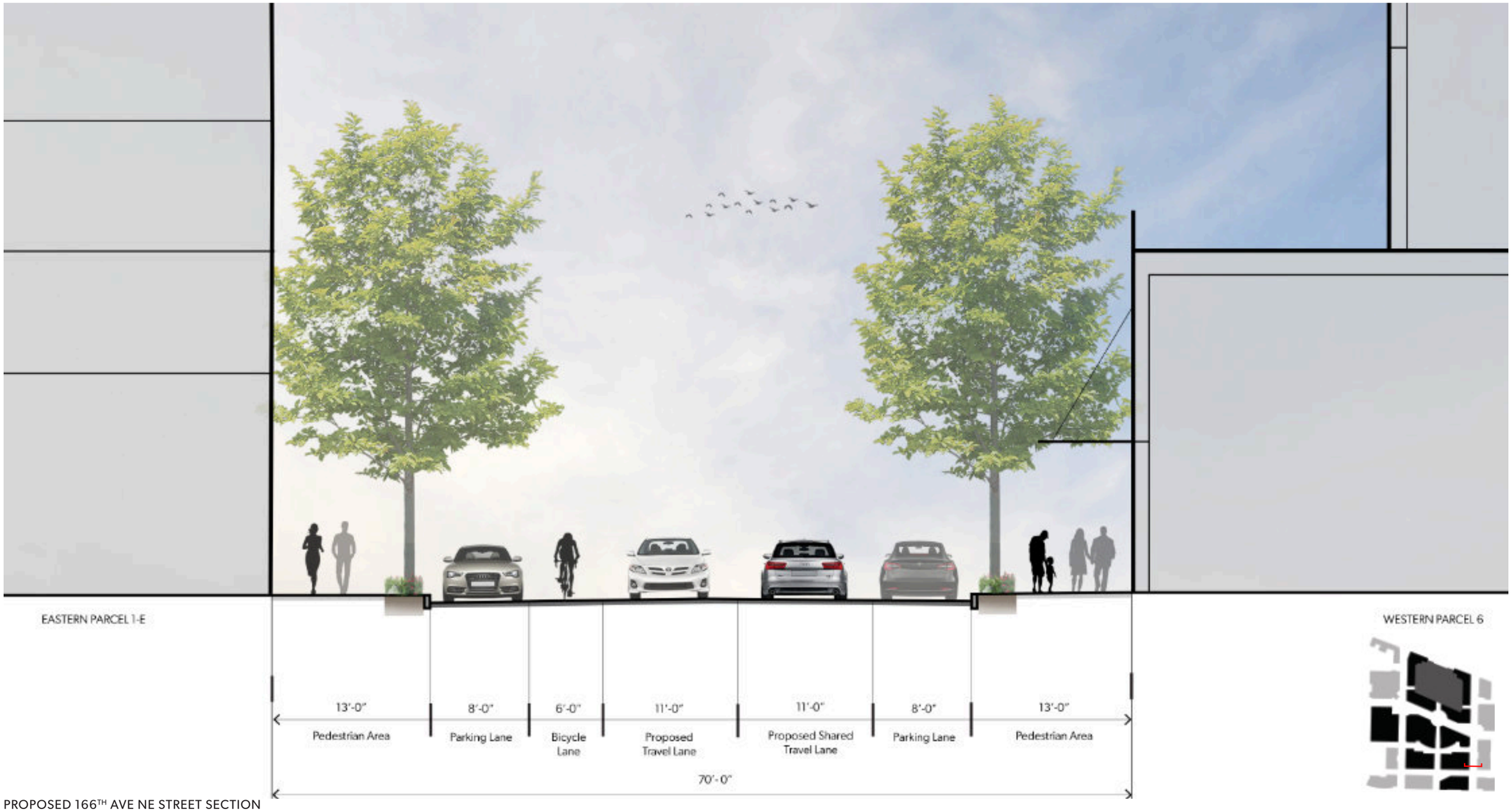
EXISTING 166TH AVE NE STREET SECTION (PRIVATE)



166TH AVE NE CIVIL STREET SECTION

NOT TO SCALE

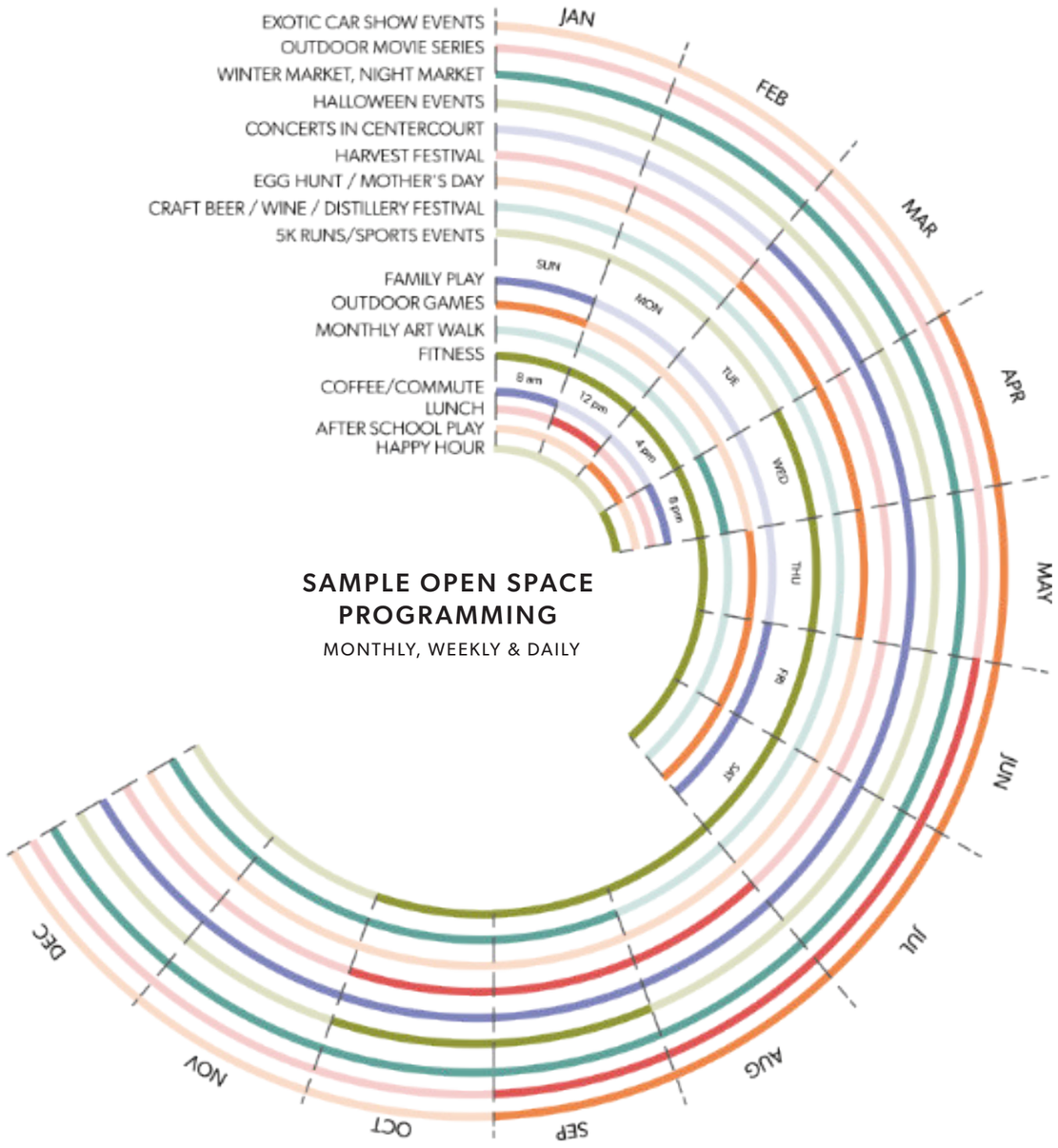
PROPOSED 166TH AVE NE STREET SECTION (PRIVATE)



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

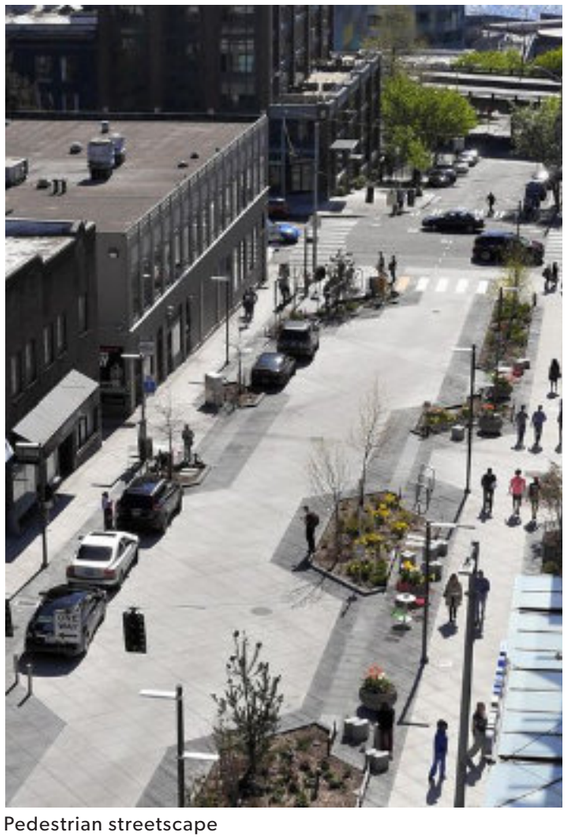
- CRAFT/ARTISAN
- FARM TO TABLE
- RAINWATER
- BEAR CREEK/WATERSHED

WOONERF/EASEMENTS PRECEDENT IMAGES

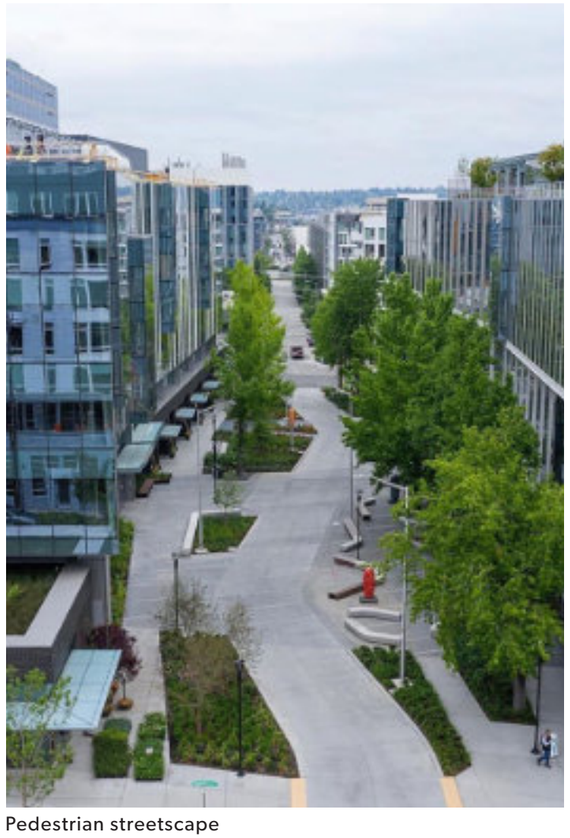
Pedestrian plaza

Pedestrian streetscape

Pedestrian streetscape

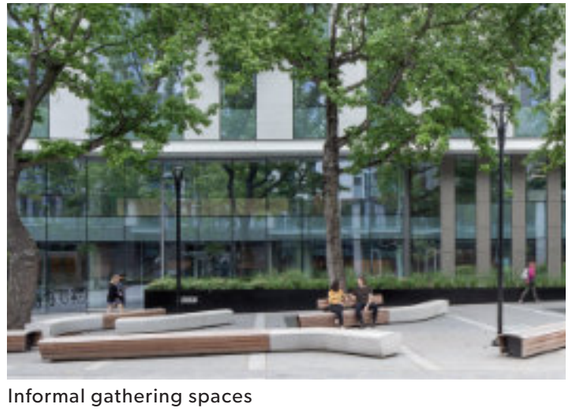


Pedestrian streetscape



Pedestrian streetscape

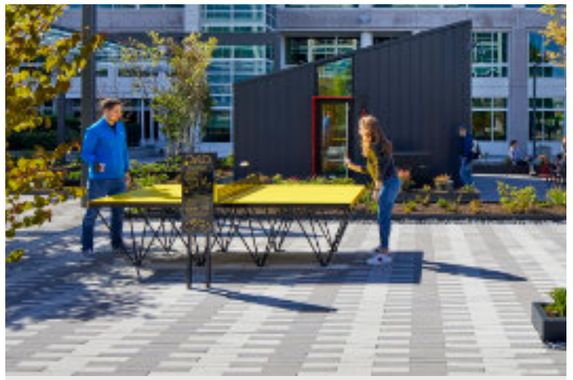
Informal gathering spaces



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

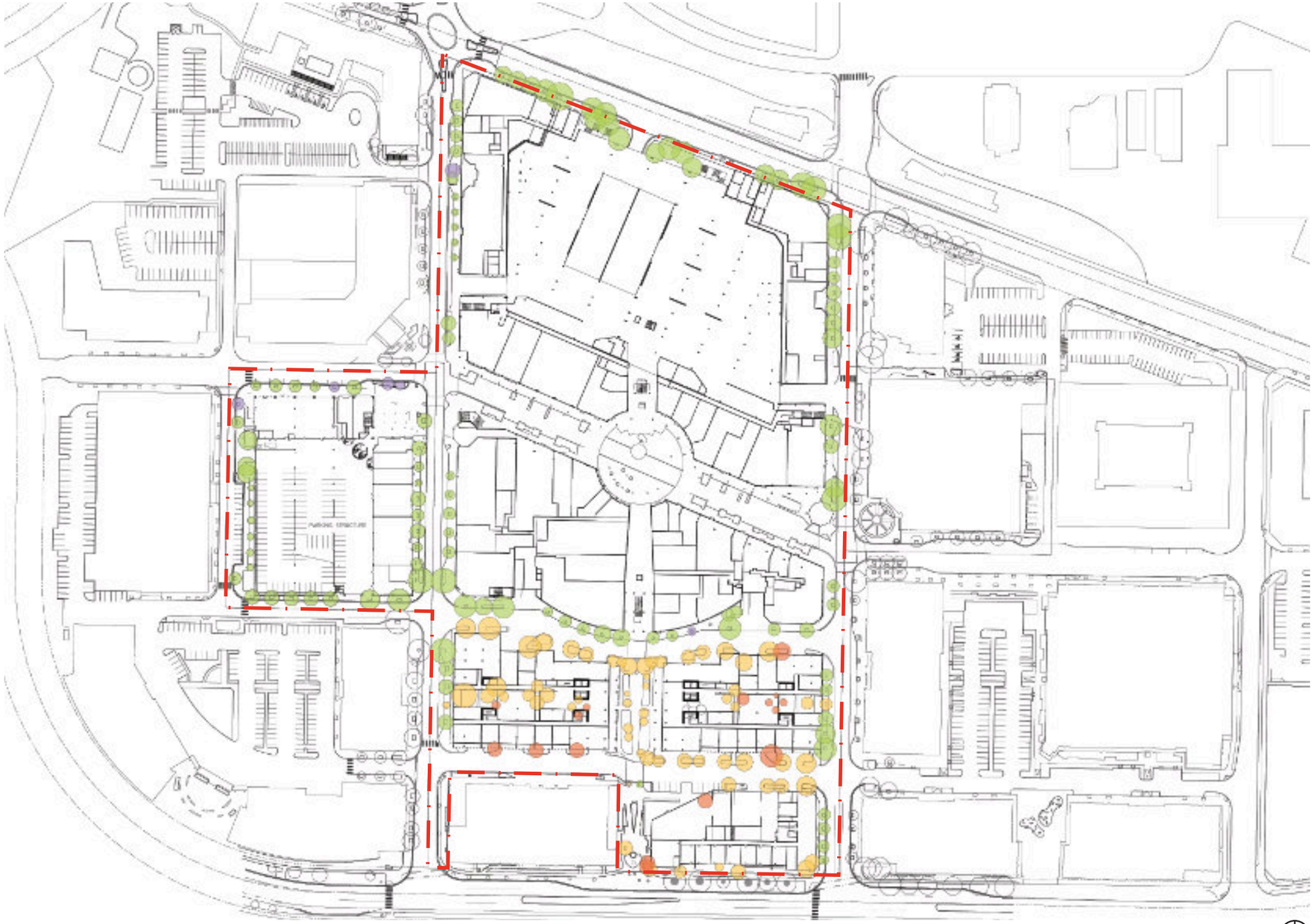
Spill out dining areas

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

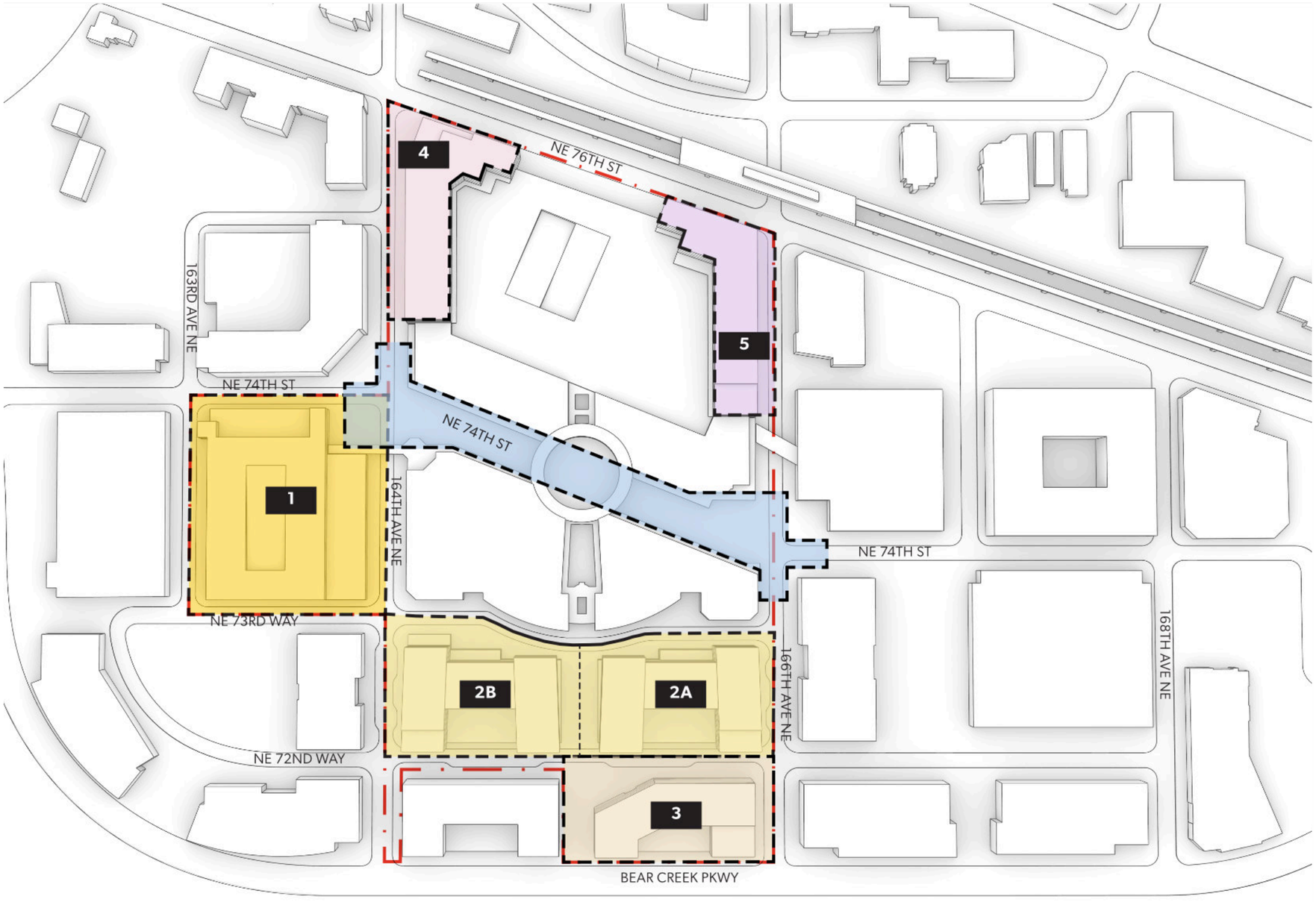
Total Tree Required = 82

Actual Trees Provided = 82

SECTION 4 - SITE DEVELOPMENT

Exhibit C

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)

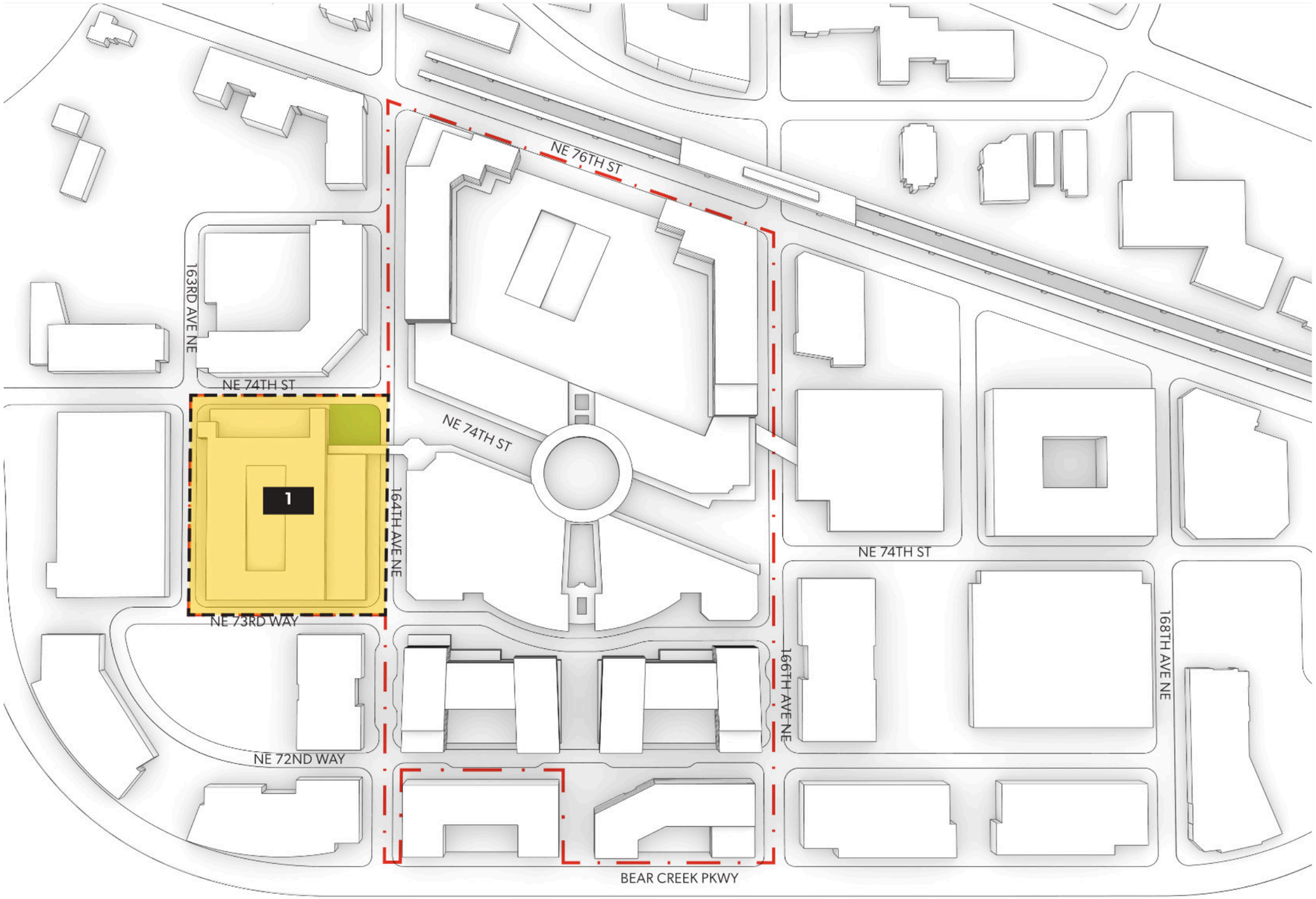
PHASE 5
MIXED-USE RESIDENTIAL
AREA: 35,922 SF (0.82 Acres)

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

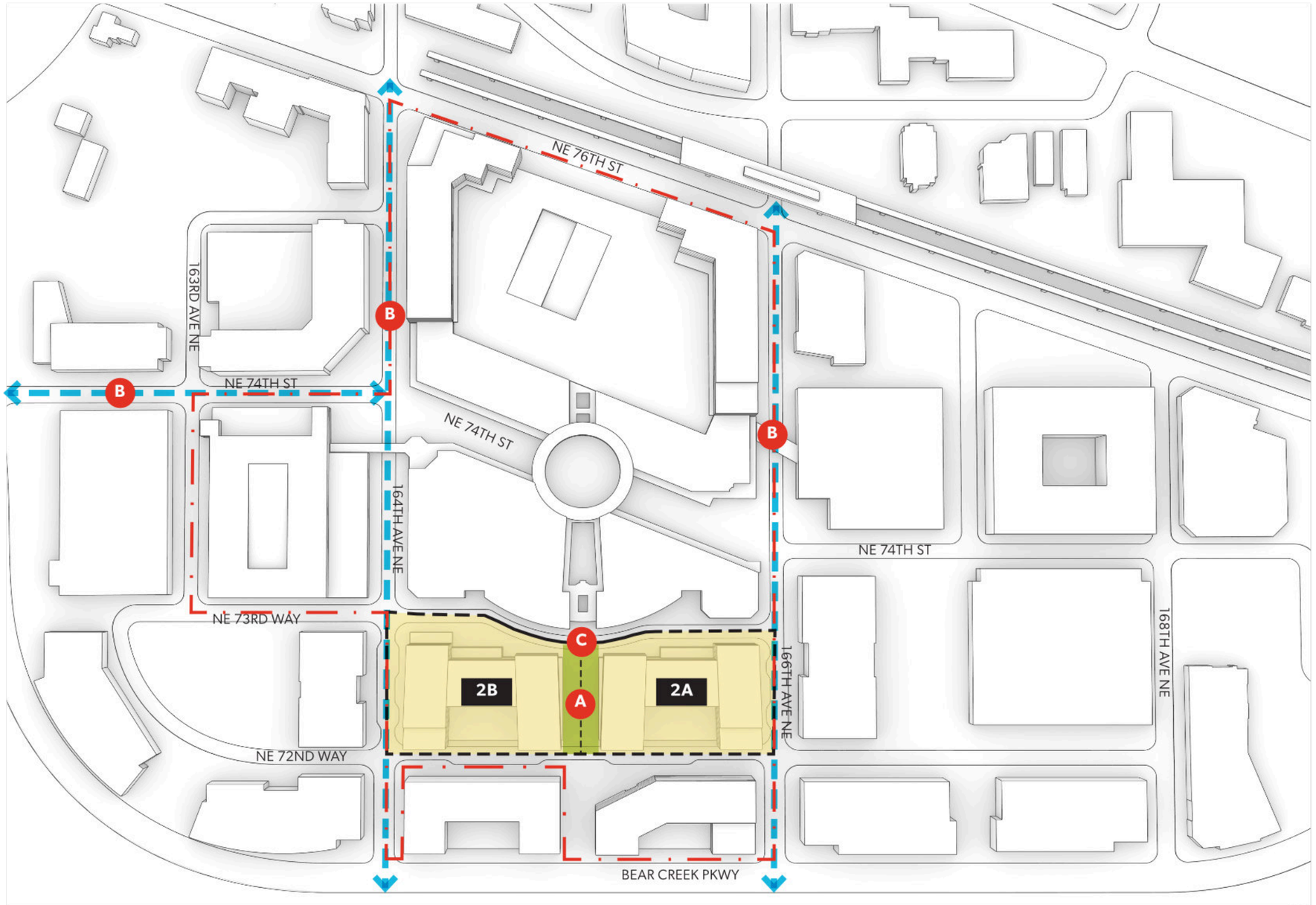
Two Story Addition to existing mixed-use parking garage with approximately 316 new parking stalls to replace existing allocated surface level parking and allow for new development.

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

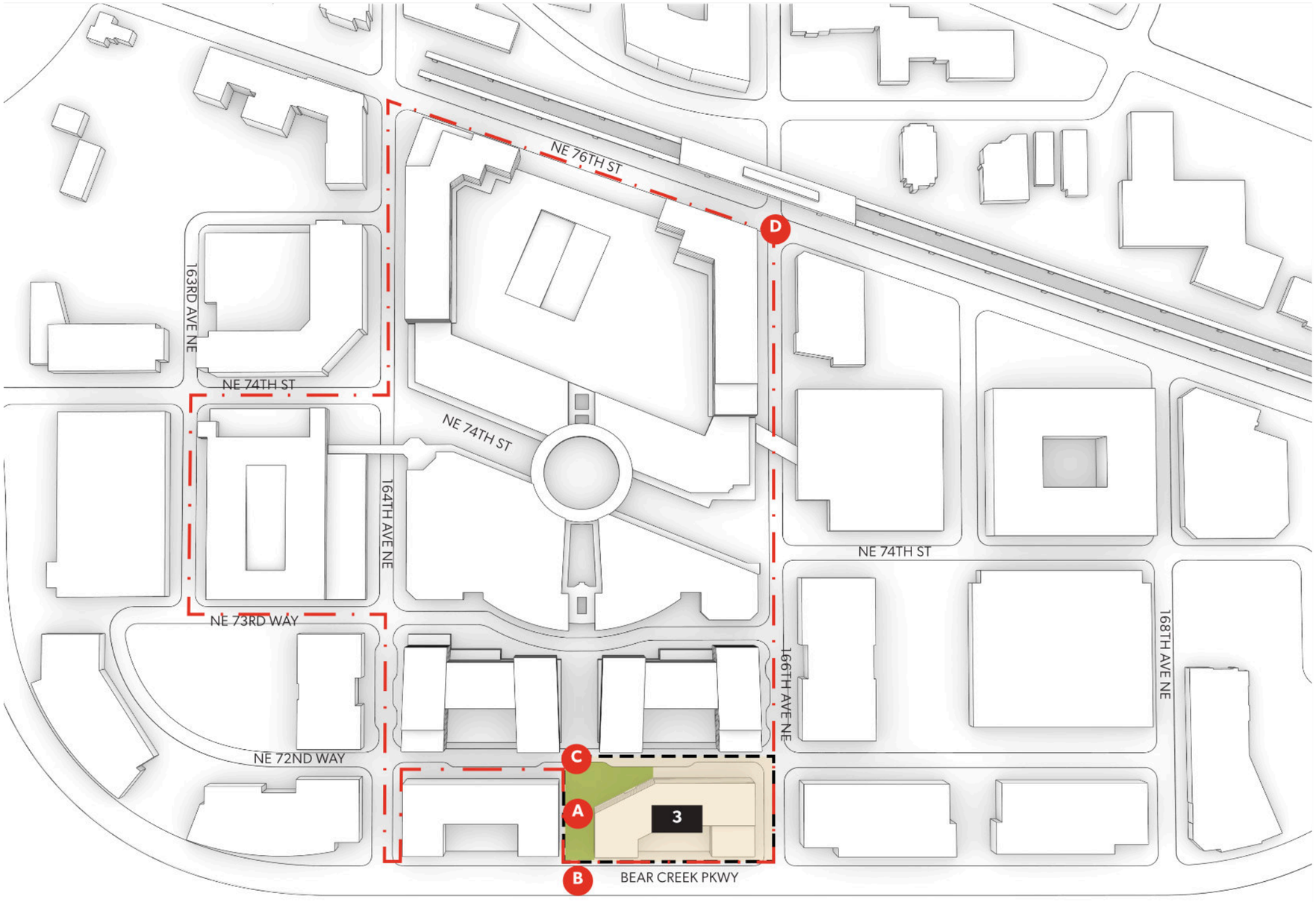
A Publicly accessible linear plaza open space connecting NE 74th St with Bear Creek Parkway

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

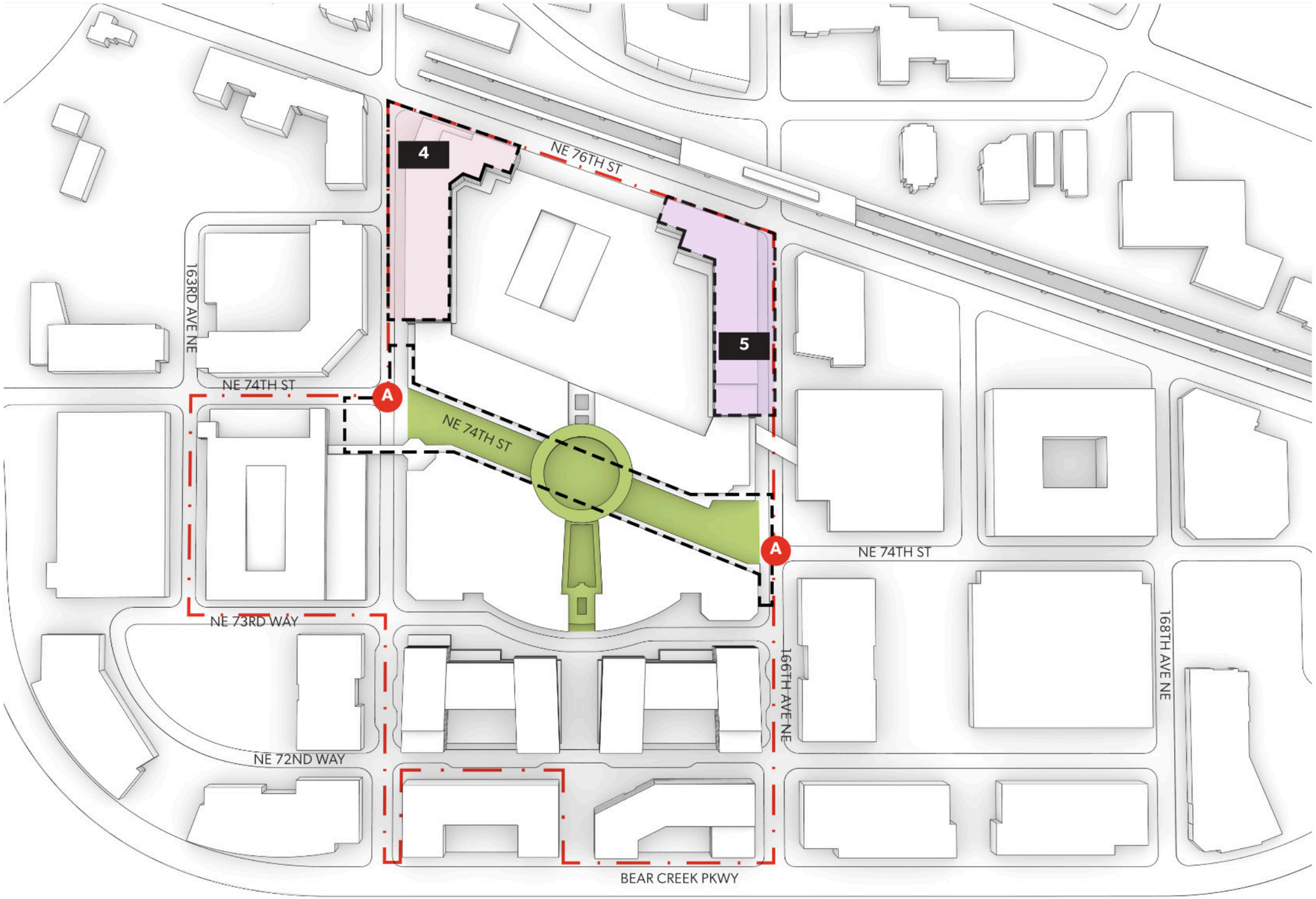
B Bear Creek Parkway Mid-block Crossing

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

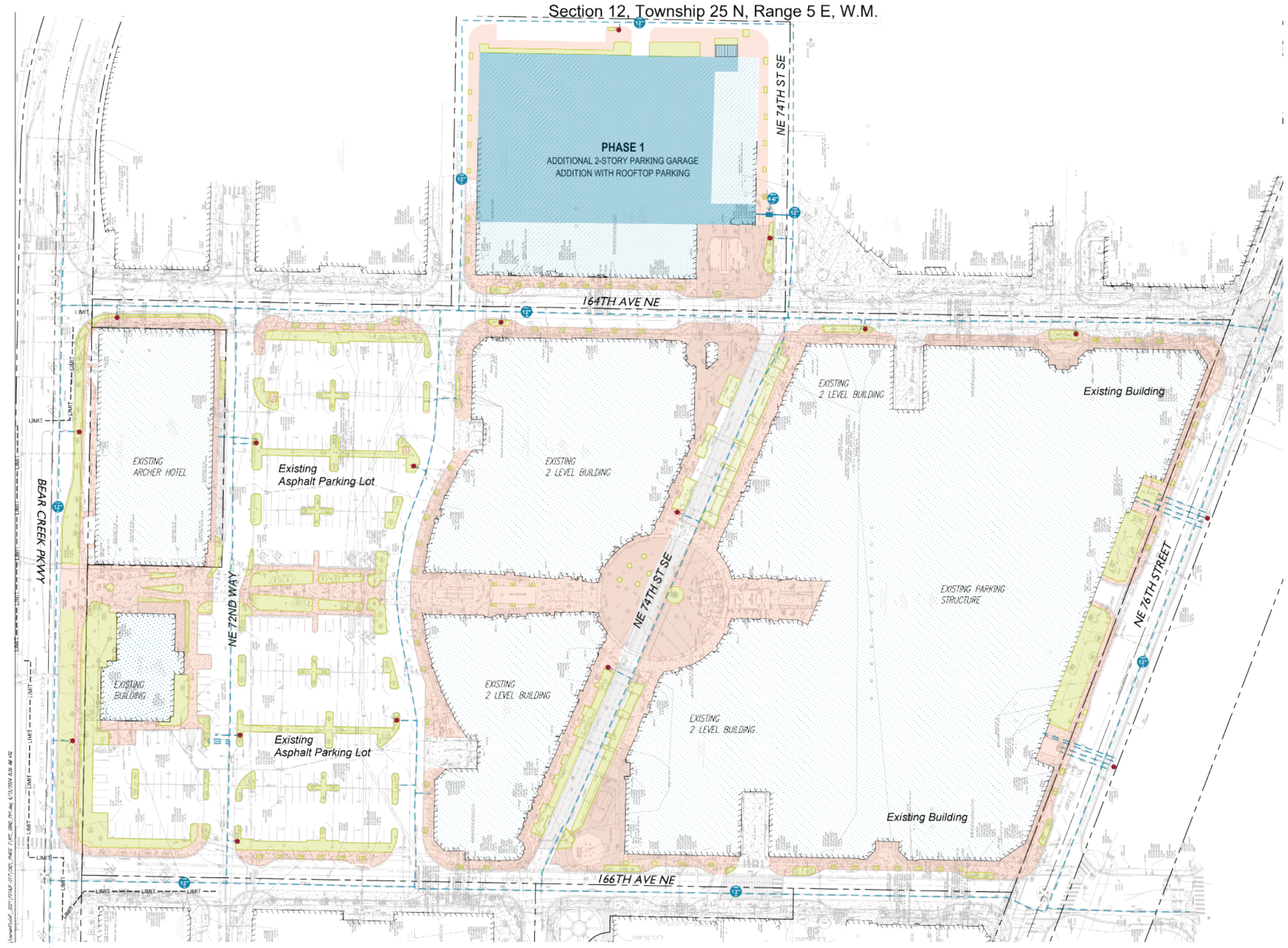
- PROPERTY LINE
- EXISTING/PROPOSED BUILDING
- EXISTING/PROPOSED ROAD
- EXISTING/PROPOSED WALKWAY
- EXISTING/PROPOSED LANDSCAPING
- EXISTING SEWER TO REMAIN
- EXISTING SEWER TO REMOVE
- PROPOSED SEWER
- NEW/PROPOSED
- DIAMETER
- PIPE MATERIAL

EX 8'' PVC

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

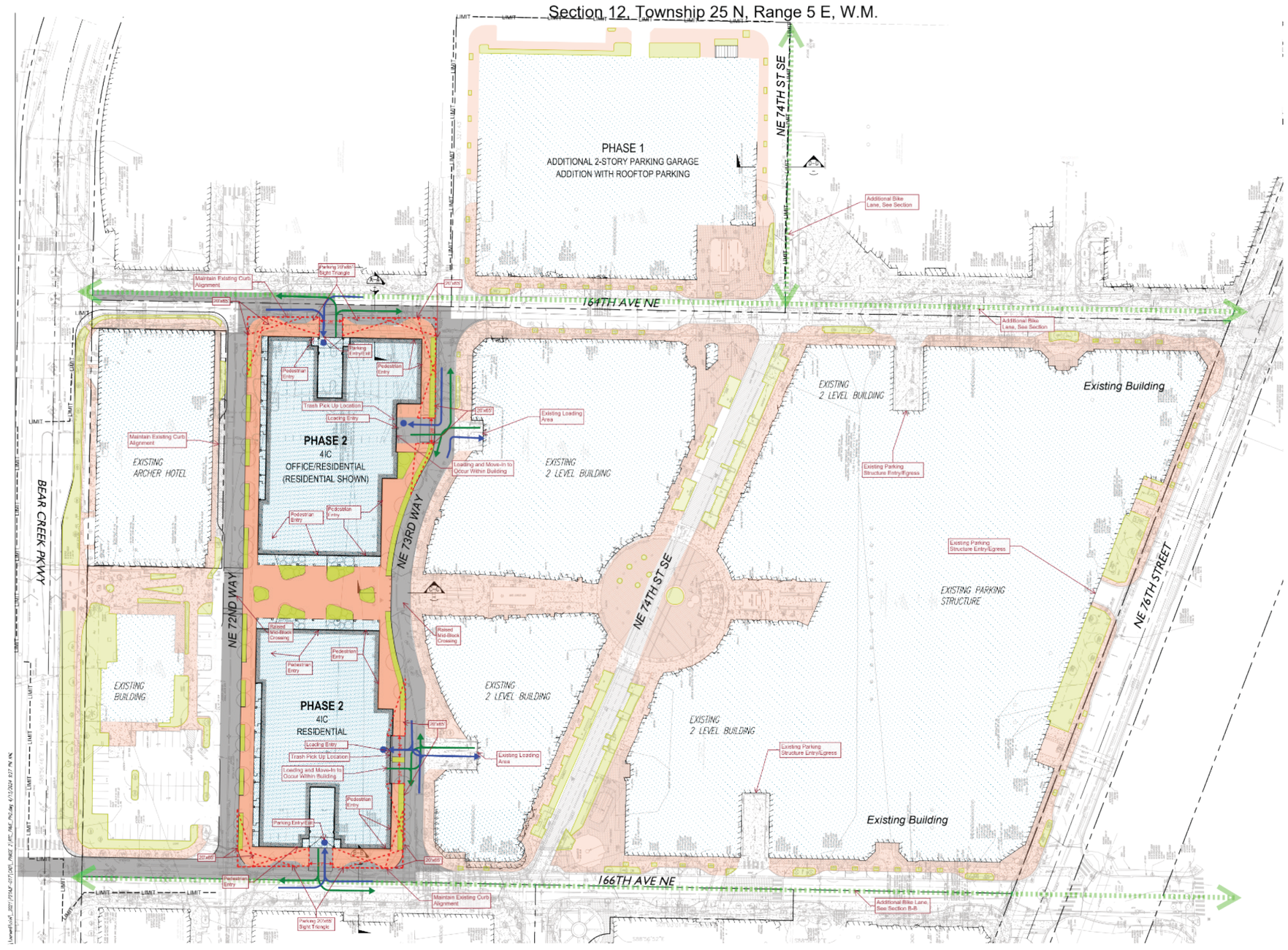
LEGEND

- 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



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

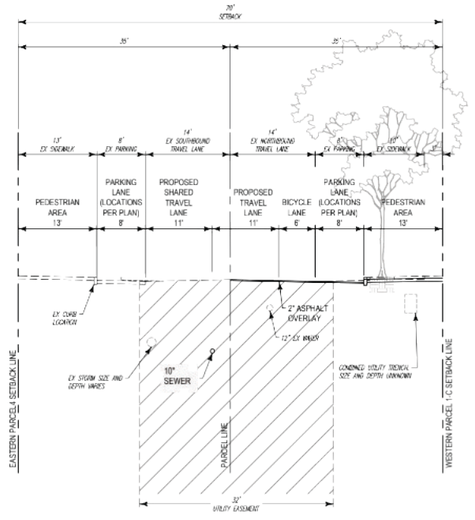
CONCEPTUAL TRANSPORTATION PLAN | PHASE 2

NOT TO SCALE - PLANS INCLUDED FOR REFERENCE ONLY, SEE CIVIL IMPROVEMENT PLANS FOR SCALED DRAWINGS

Exhibit C

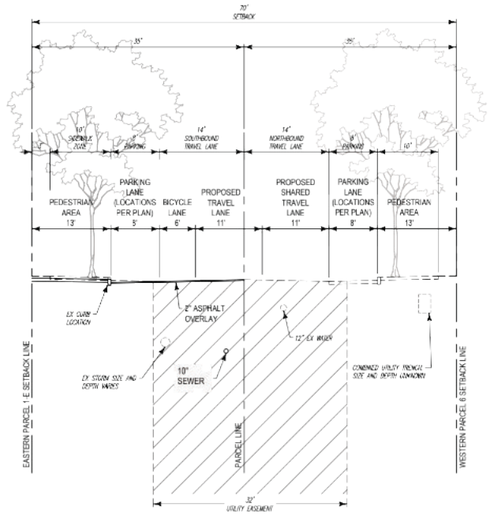
CONCEPTUAL ROADWAY SECTIONS | PHASE 2

Section 12, Township 25 N, Range 5 E, W.M.



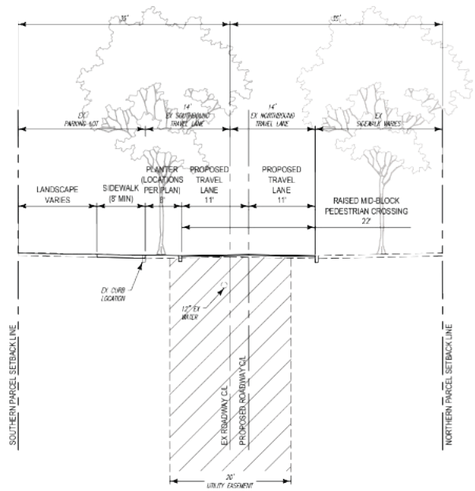
Section A-A: 164th Ave NE Section (Between NE 72nd Way and NE 73rd Way)

Scale 1"=10'



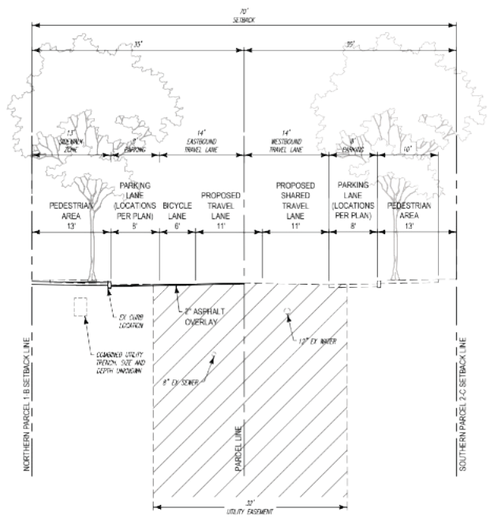
Section B-B: 166th Ave NE Section (Between NE 72nd Way and NE 76th Street)

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)

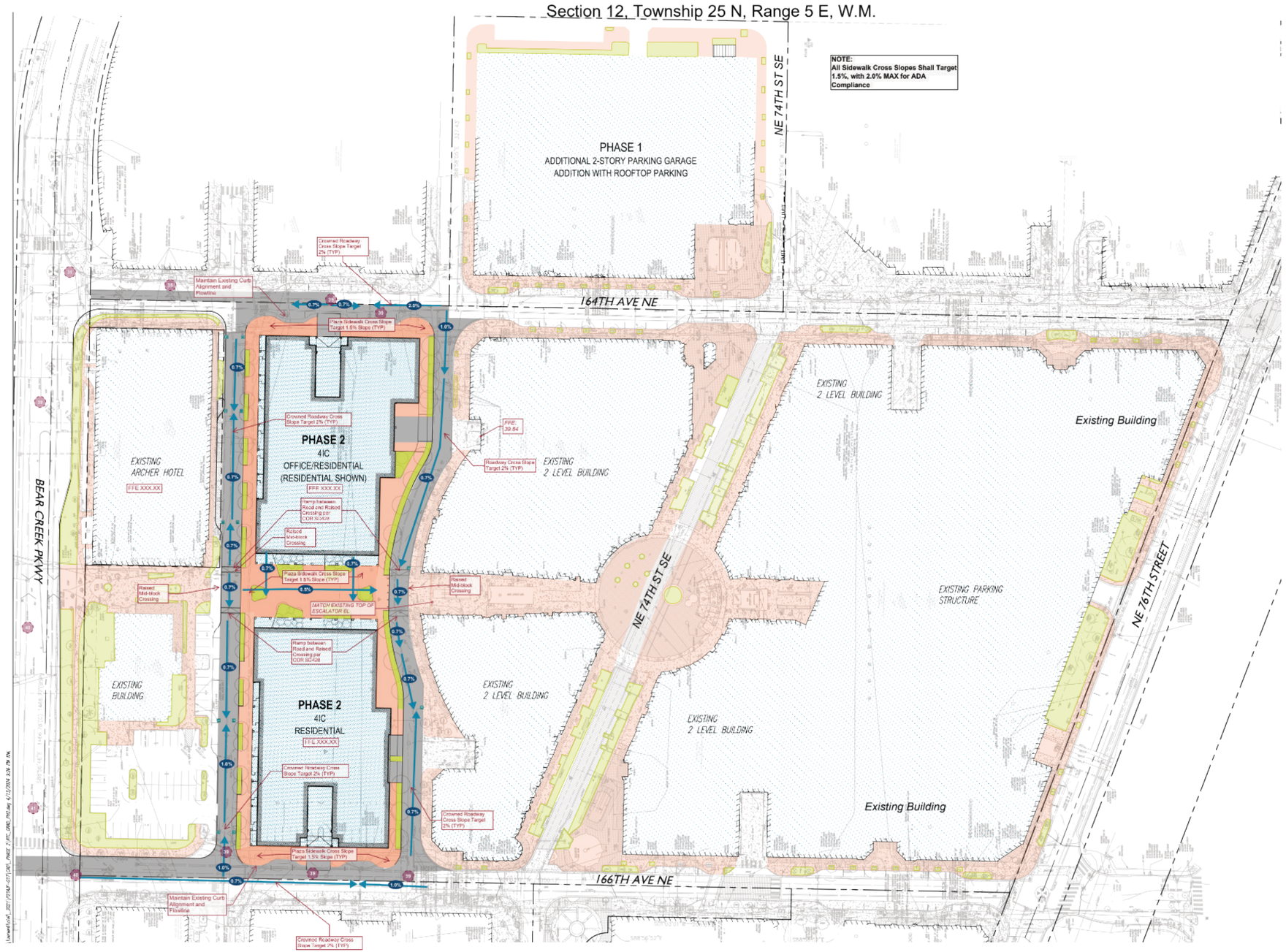
Scale 1"=10'

CONCEPTUAL ROADWAY SECTIONS | PHASE 2

NOT TO SCALE - PLANS INCLUDED FOR REFERENCE ONLY, SEE CIVIL IMPROVEMENT PLANS FOR SCALED DRAWINGS

GGLO

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

Exhibit C

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
- 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 2

NOT TO SCALE - PLANS INCLUDED FOR REFERENCE ONLY, SEE CIVIL IMPROVEMENT PLANS FOR SCALED DRAWINGS

CONCEPTUAL SEWER PLAN | PHASE 2

LEGEND

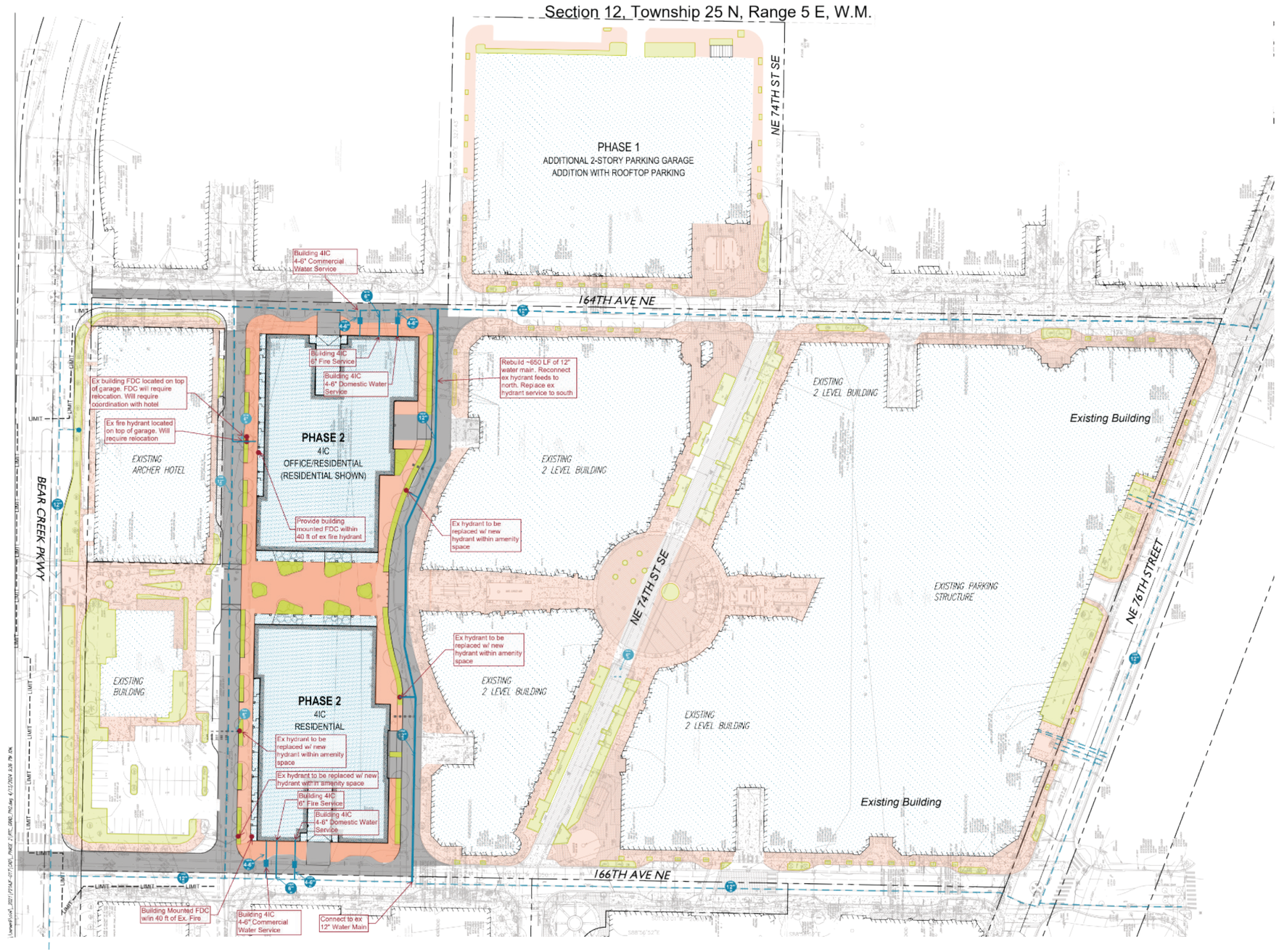
- PROPERTY LINE
- EXISTING/PROPOSED BUILDING
- EXISTING/PROPOSED ROAD
- EXISTING/PROPOSED WALKWAY
- EXISTING/PROPOSED LANDSCAPING
- EXISTING SEWER TO REMAIN
- EXISTING SEWER TO REMOVE
- PROPOSED SEWER
- NEW/PROPOSED
- EX 8'' PVC
- DIAMETER
- PIPE MATERIAL

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



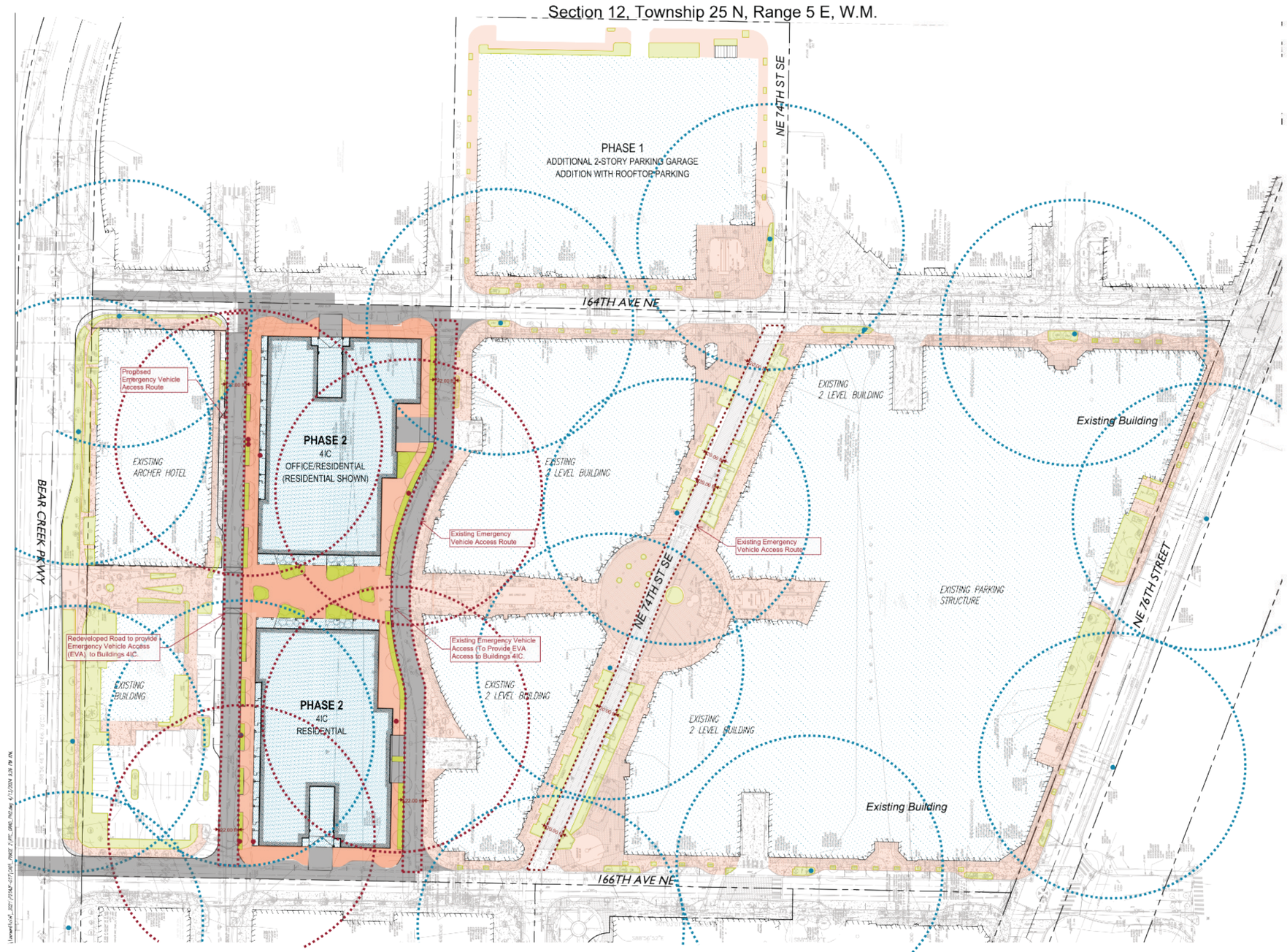
LEGEND

- 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

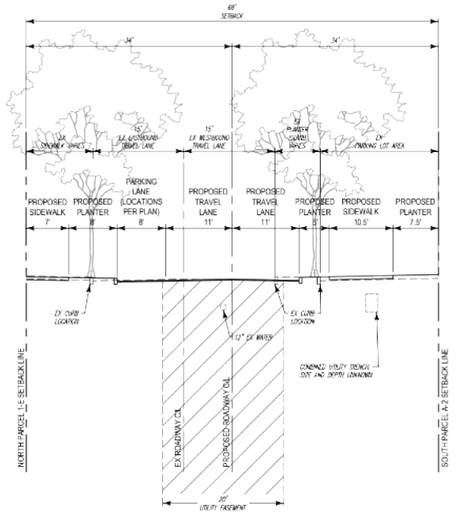
LEGEND

- 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

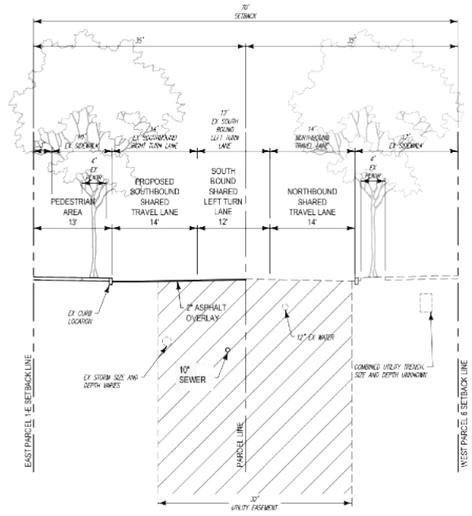
NOT TO SCALE - PLANS INCLUDED FOR REFERENCE ONLY, SEE CIVIL IMPROVEMENT PLANS FOR SCALED DRAWINGS

CONCEPTUAL ROADWAY SECTIONS | PHASE 3



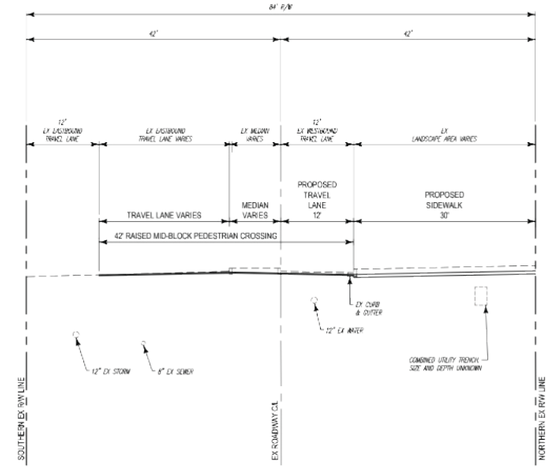
Section A-A: NE 72nd Way Section

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

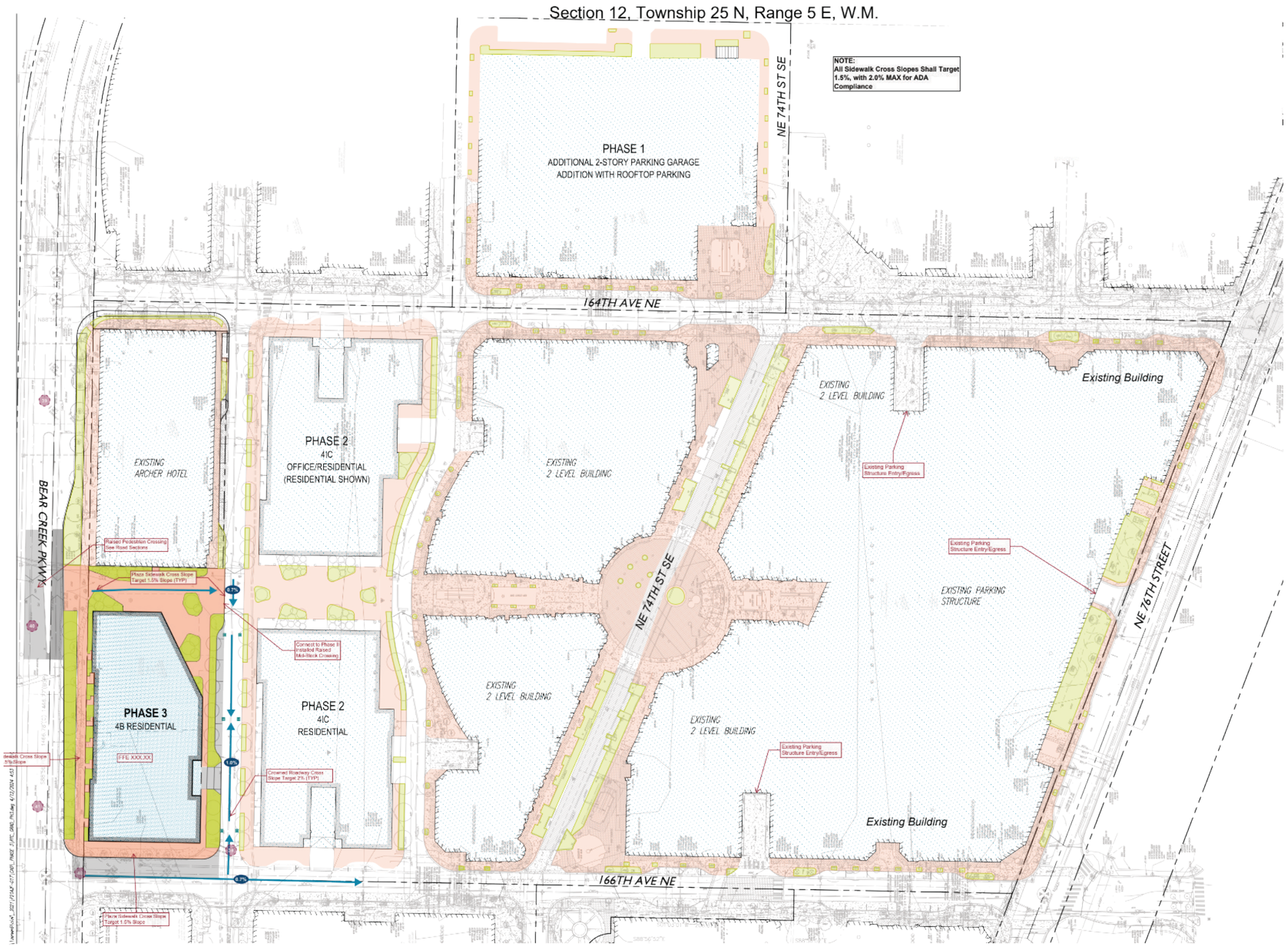
Scale 1"=10'

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

GGLO

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

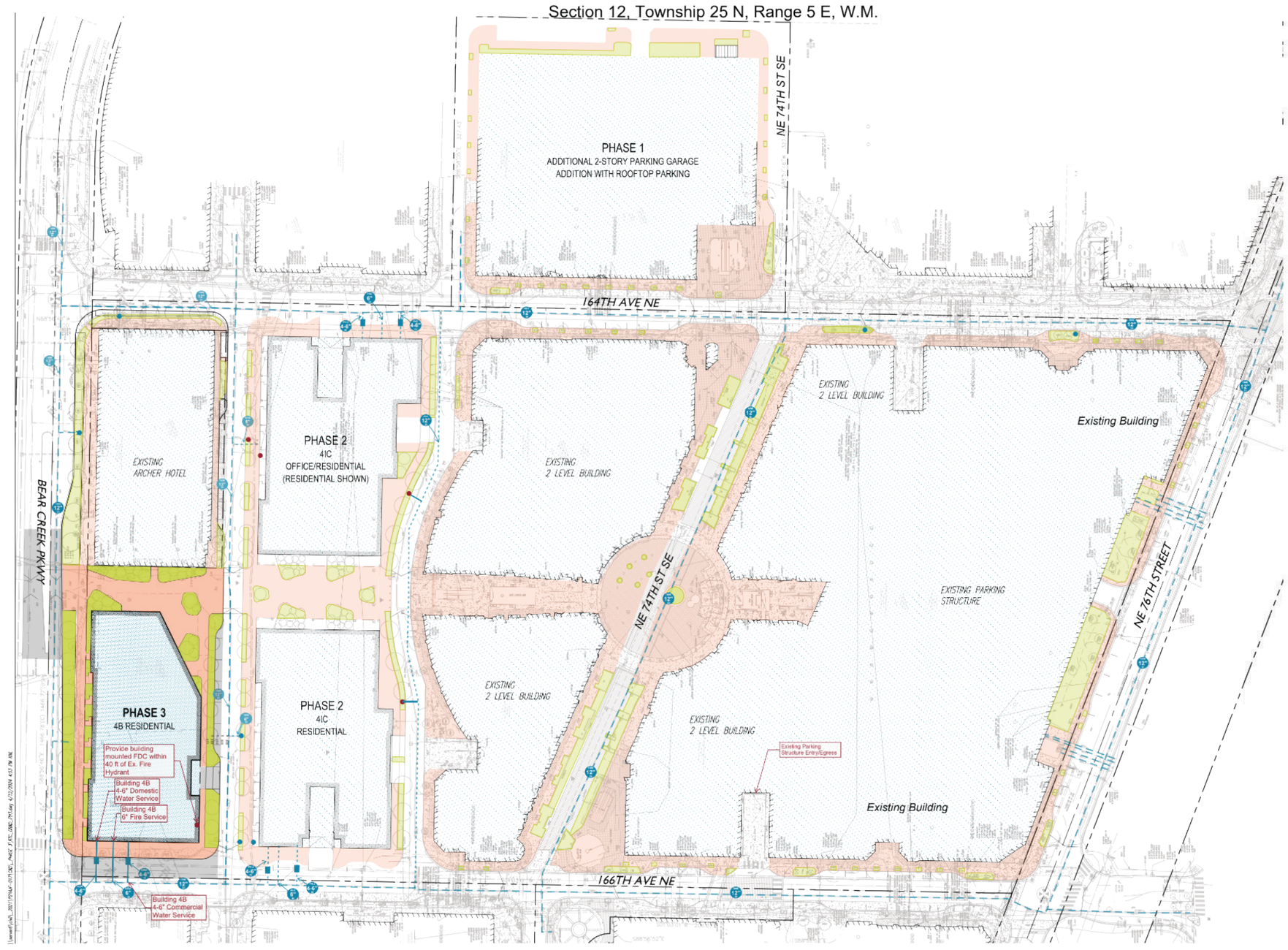
Note: Sewer Additional Connection Charges, in accordance with City of Redmond Resolution No. [insert number], must be paid to the City prior to connecting any new buildings to the water or sewer system.

CONCEPTUAL SEWER PLAN | PHASE 3

NOT TO SCALE - PLANS INCLUDED FOR REFERENCE ONLY, SEE CIVIL IMPROVEMENT PLANS FOR SCALED DRAWINGS

GGLO

CONCEPTUAL WATER PLAN | PHASE 3



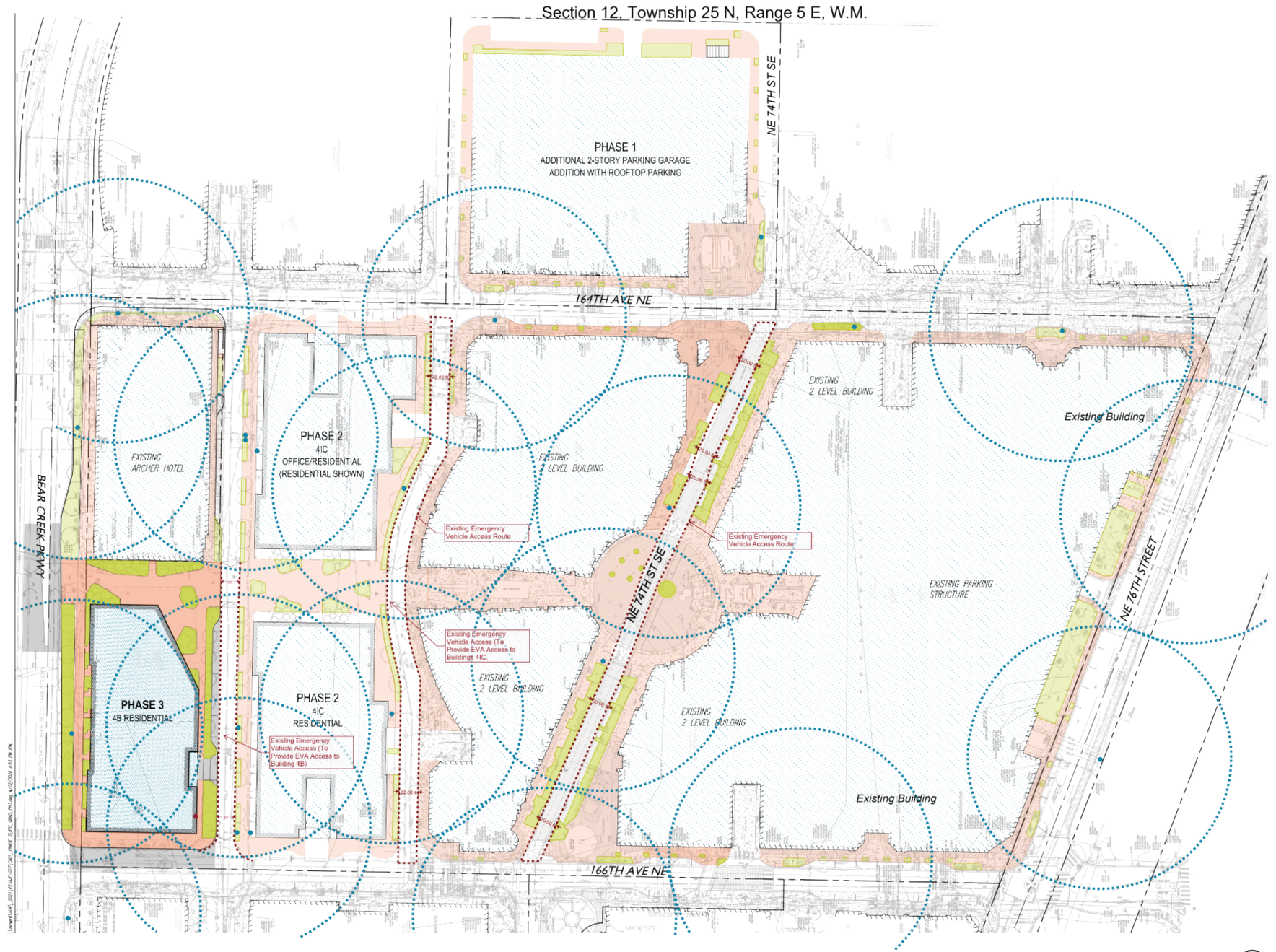
LEGEND

- 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



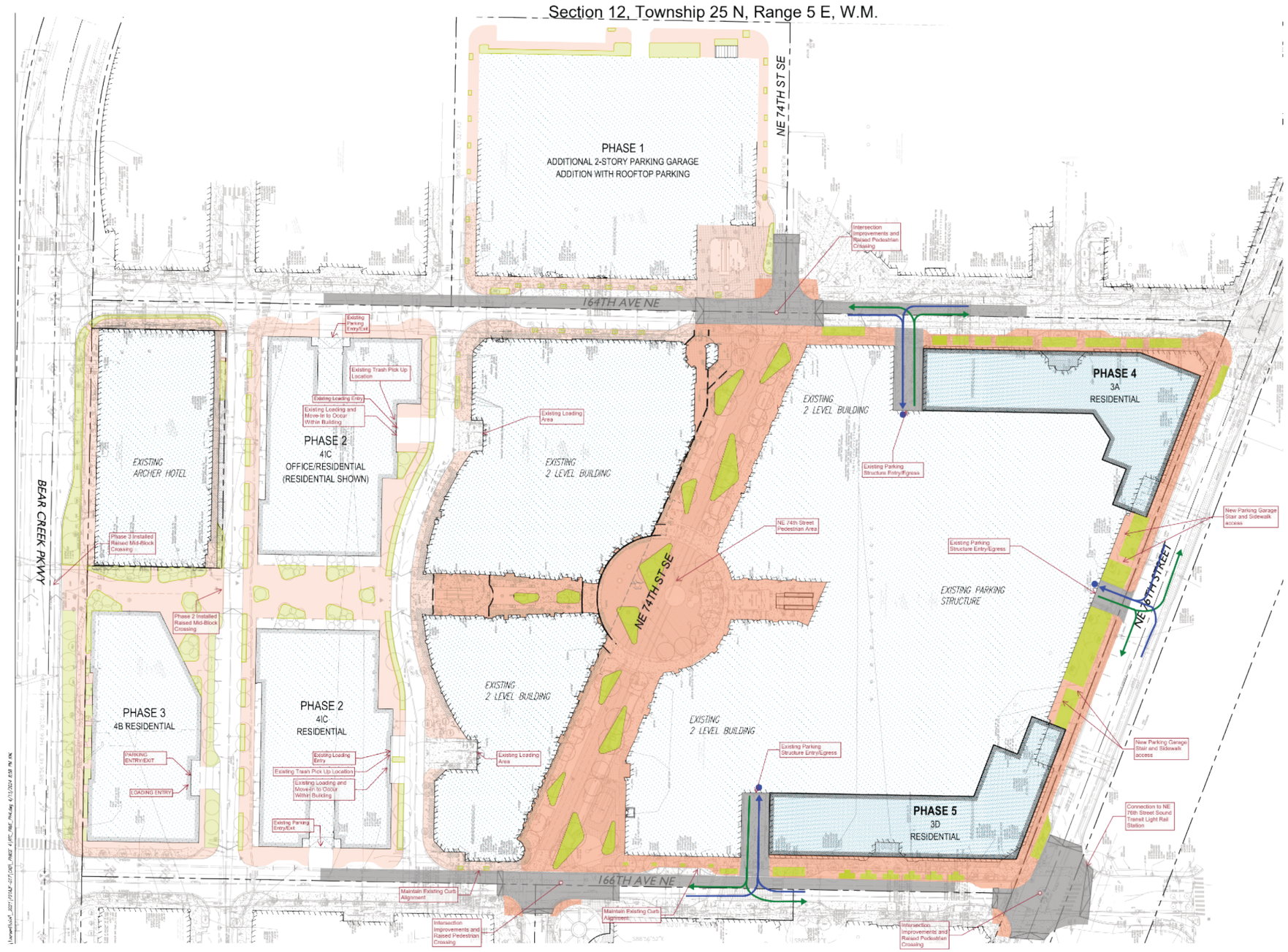
LEGEND

- 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

Exhibit C

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

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

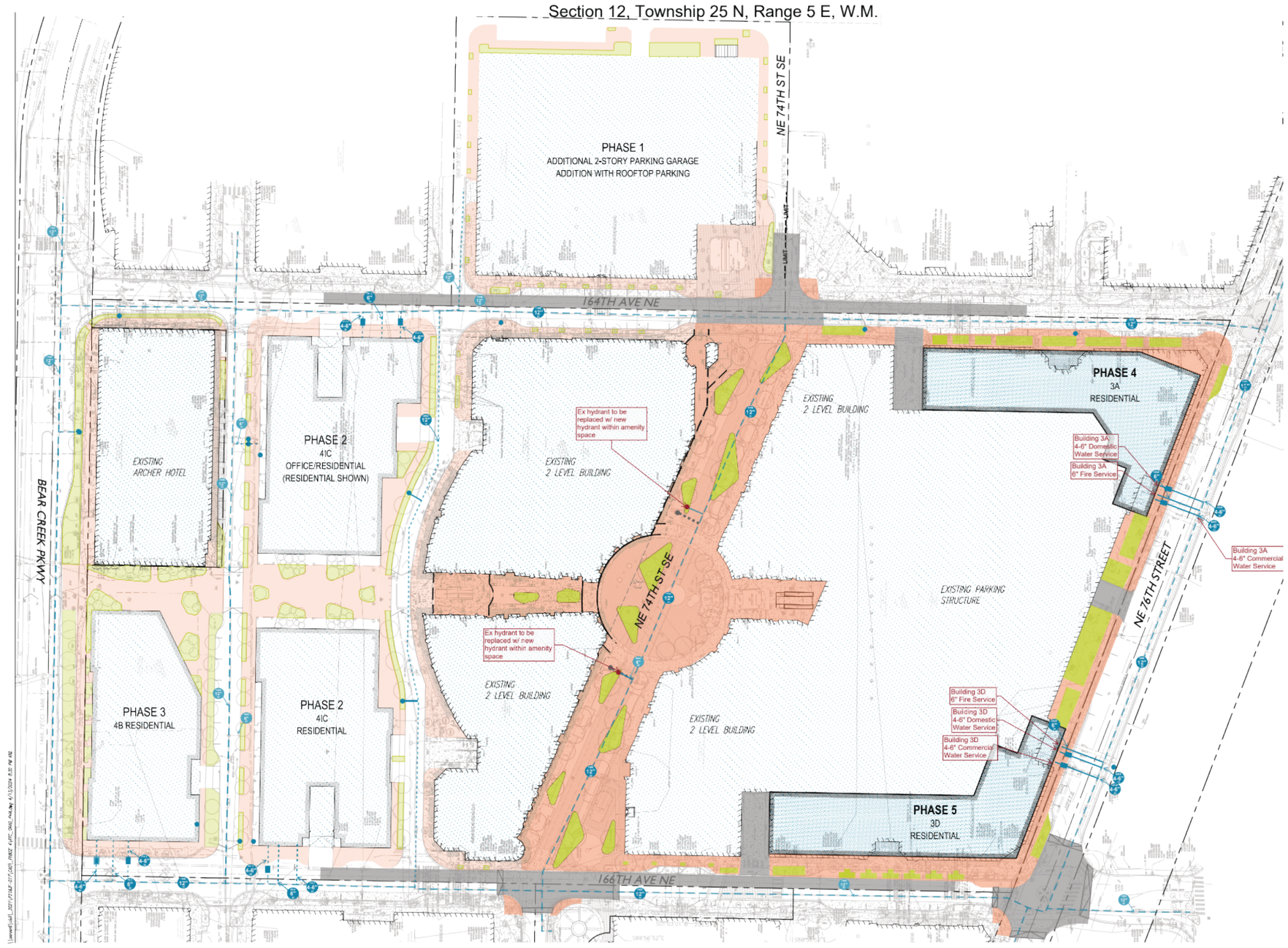
EX 8'' PVC

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
- 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

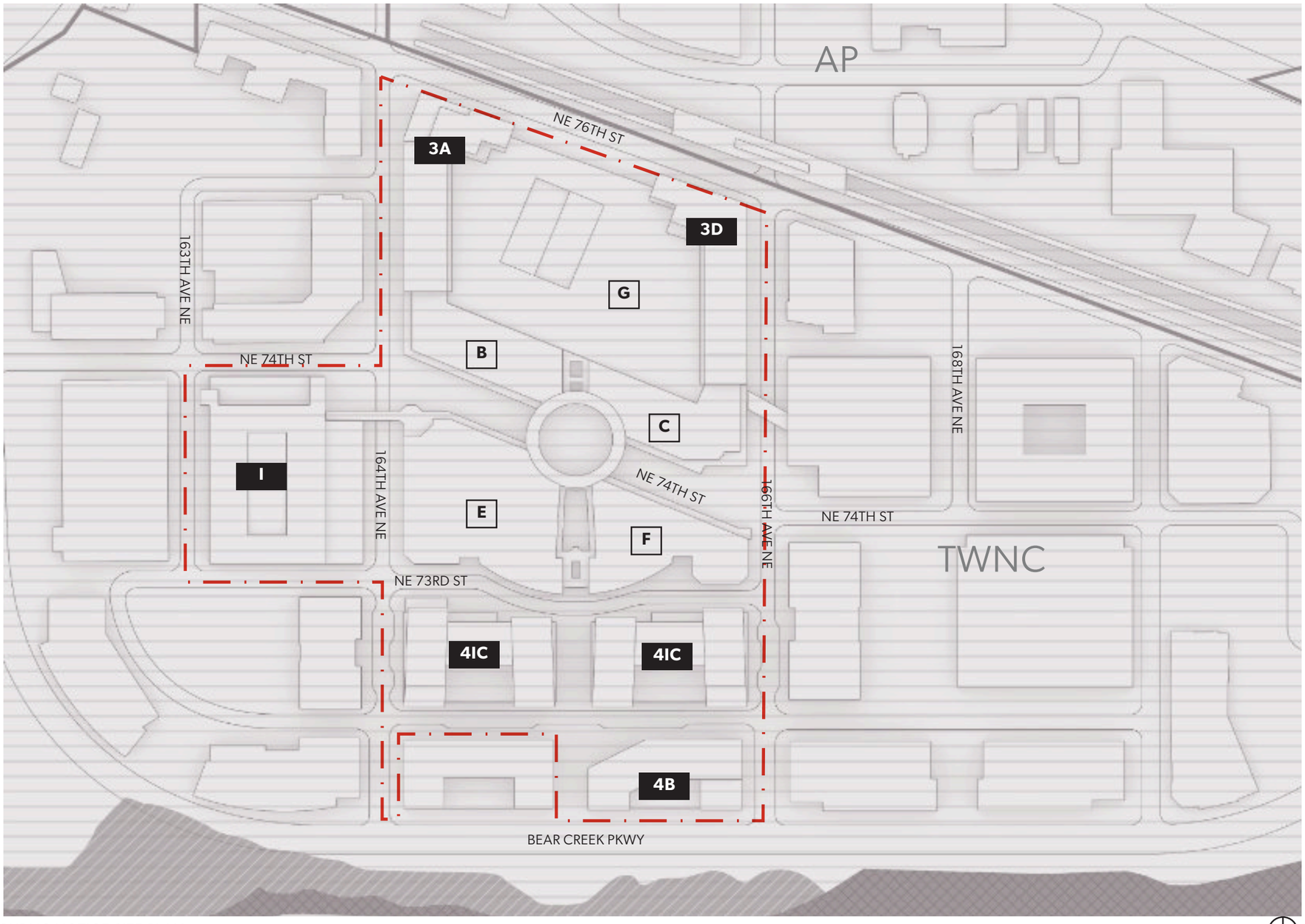
FIRE ACCESS PLAN | PHASE 4 AND 5

NOT TO SCALE - PLANS INCLUDED FOR REFERENCE ONLY, SEE CIVIL IMPROVEMENT PLANS FOR SCALED DRAWINGS

SECTION 5 - APPENDIX

Exhibit C

PUBLIC NOTICE SITE PLAN - REDMOND TOWN CENTER MPD



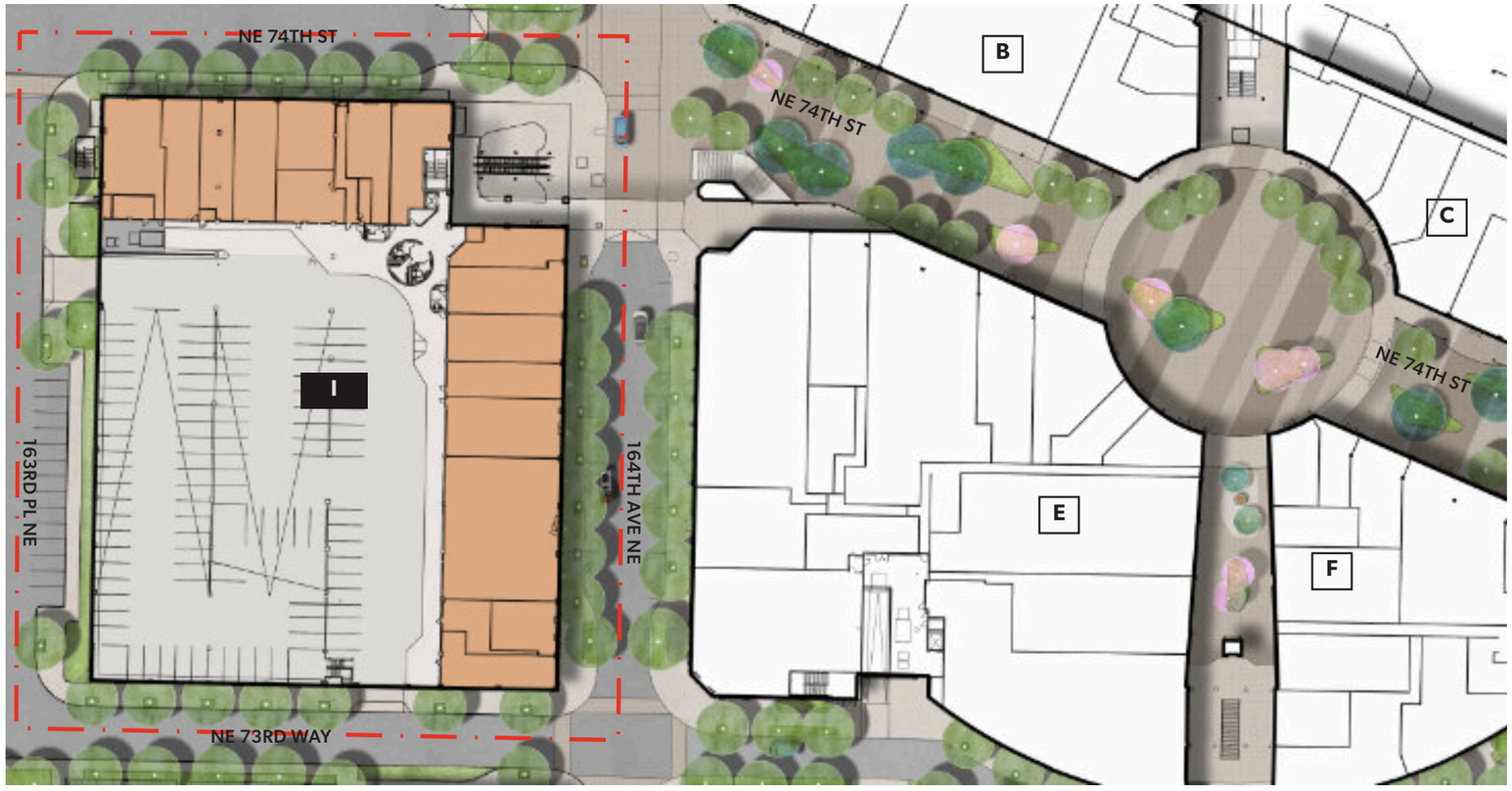
PUBLIC NOTICE SITE PLAN
NTS

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

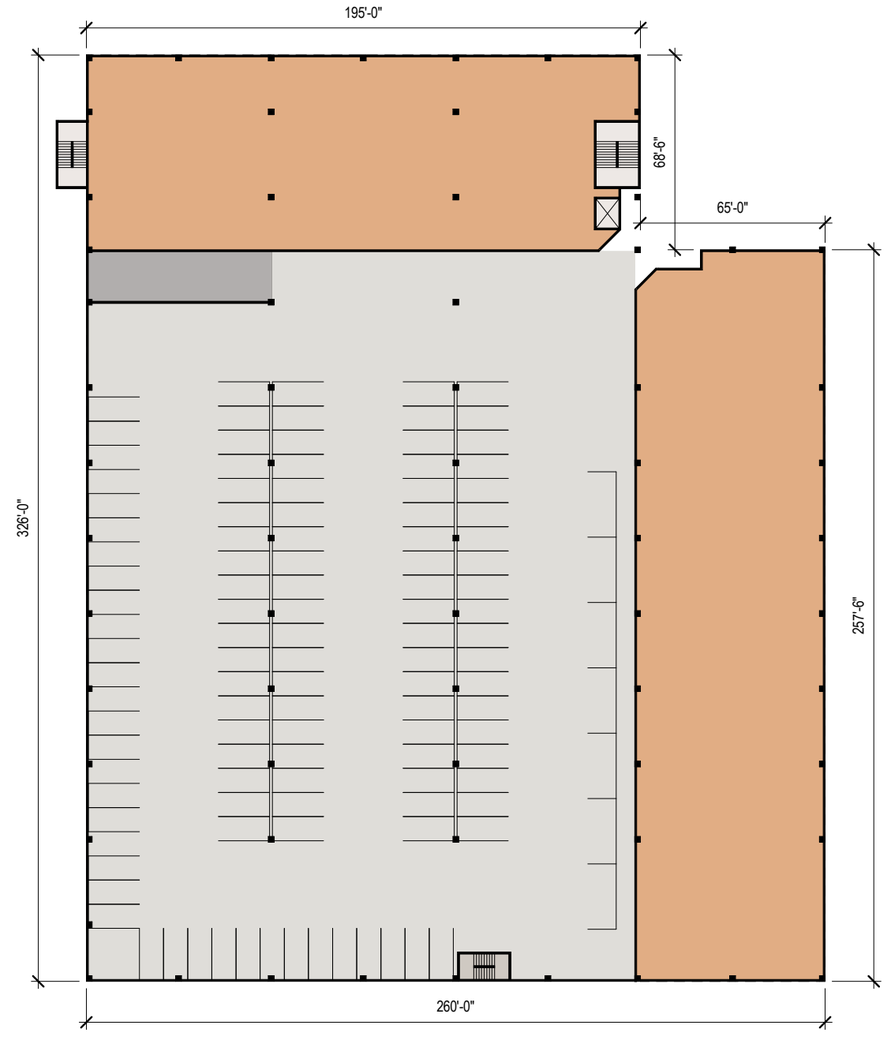
- LEASING / MAIL
- RESIDENTIAL
- COMMON RESI AMENITY
- COMMERCIAL
- SERVICES
- PARKING
- CIRCULATION
- OUTDOOR AMENITY
- # EXISTING BUILDING
- # PROPOSED NEW OR MODIFIED EXISTING BUILDING

BUILDING I - GARAGE

BUILDING I - GARAGE GROUND LEVEL SITE PLAN

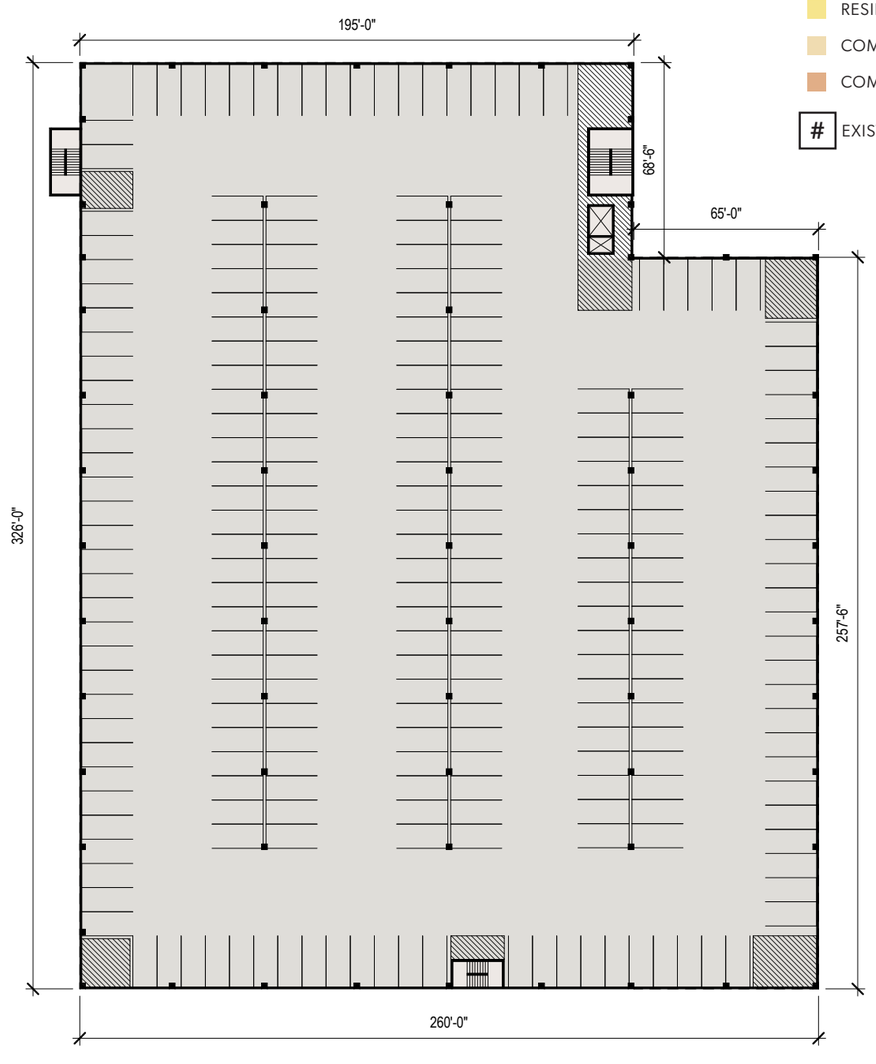
0' 25' 50'

BUILDING I - GARAGE



EXISTING LEVEL 01 FLOOR PLAN

0' 30' 60'



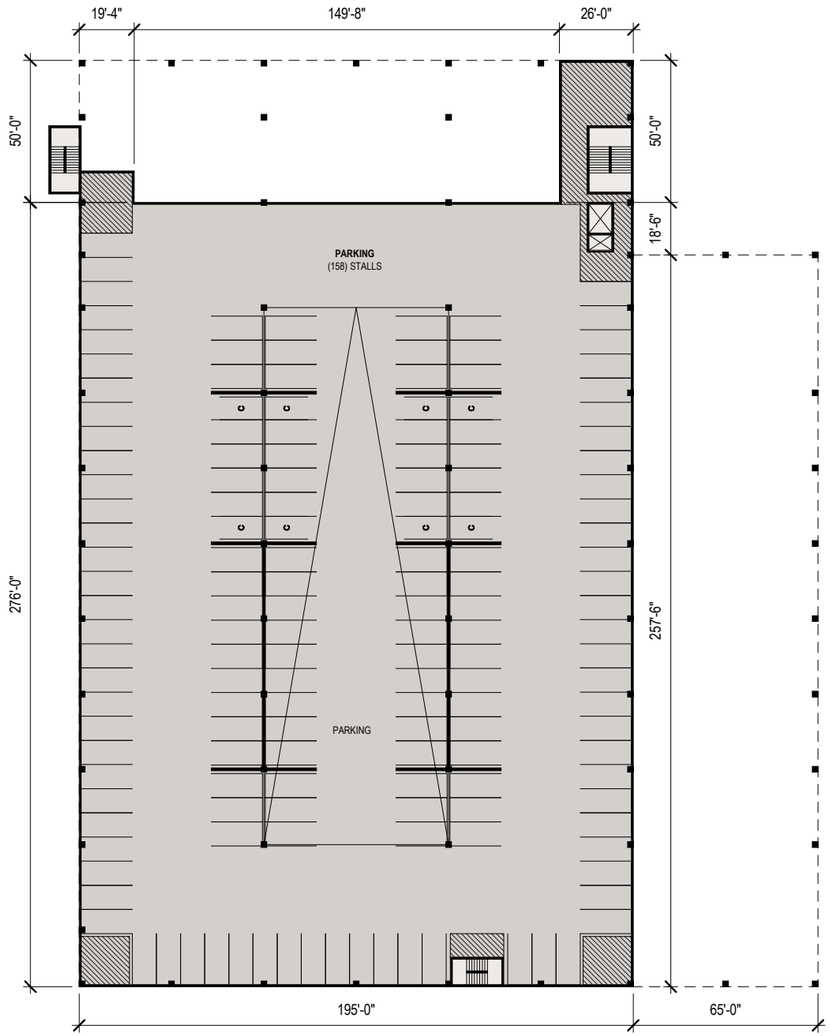
EXISTING LEVEL 02 - 03 FLOOR PLAN

0' 30' 60'

LEGEND

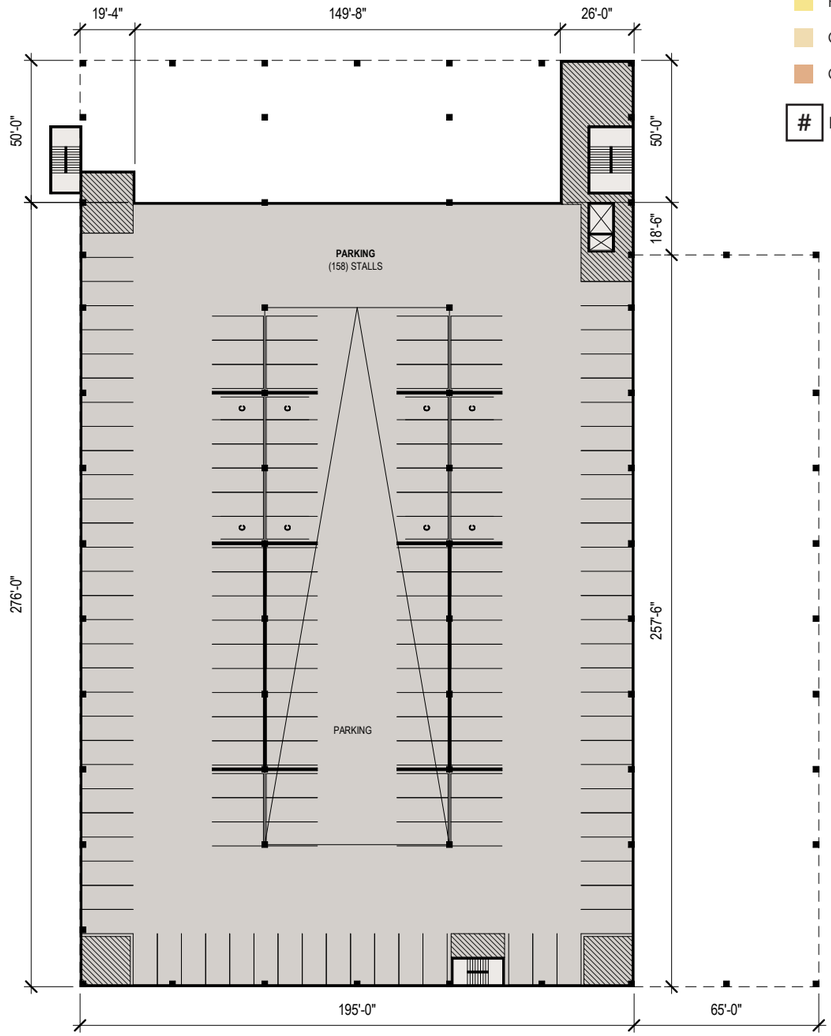
- LEASING / MAIL
- RESIDENTIAL
- COMMON RESI AMENITY
- COMMERCIAL
- # EXISTING BUILDING
- SERVICES
- PARKING
- CIRCULATION
- OUTDOOR AMENITY
- # PROPOSED NEW OR MODIFIED EXISTING BUILDING

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	RESIDENTIAL		COMMON RESI AMENITY	TERRACE
	AREA	UNITS	AREA	AREA	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	PARKING		CIRC	COMMERCIAL
	AREA	UNITS	AREA	AREA	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

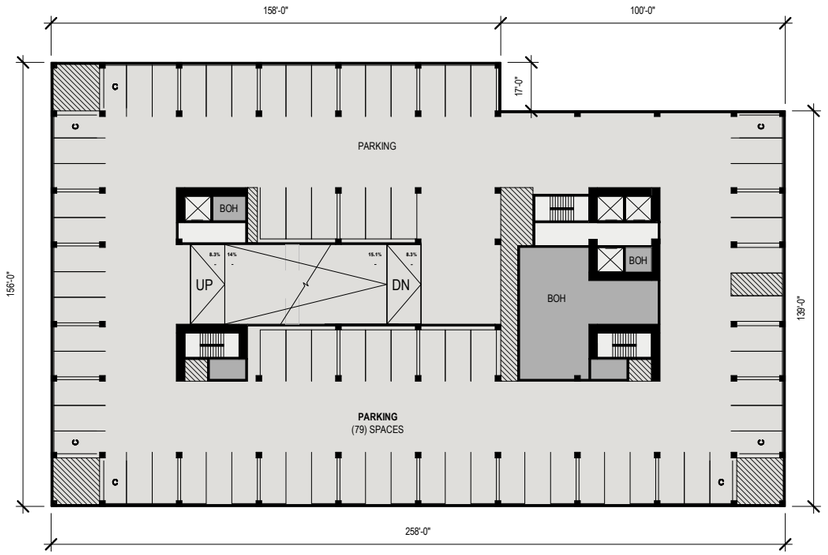
Ground level plaza areas are not included in the residential open space calculations.

BUILDING 4IC W - RESIDENTIAL

BUILDING 4IC - RESIDENTIAL GROUND LEVEL SITE PLAN

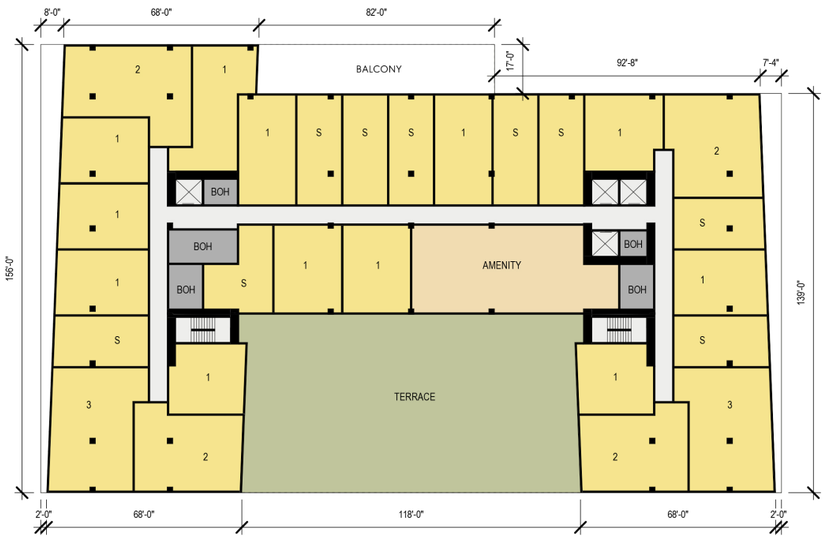
0' 25' 50'

BUILDING 4IC W - RESIDENTIAL



LEVEL 02 - 03 FLOOR PLAN

0' 30' 60'

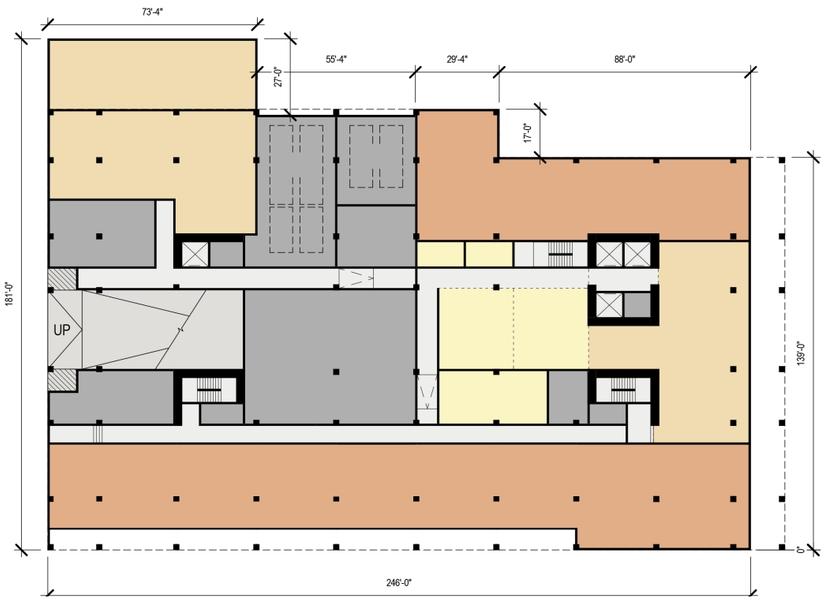


LEVEL 05 FLOOR PLAN

0' 30' 60'

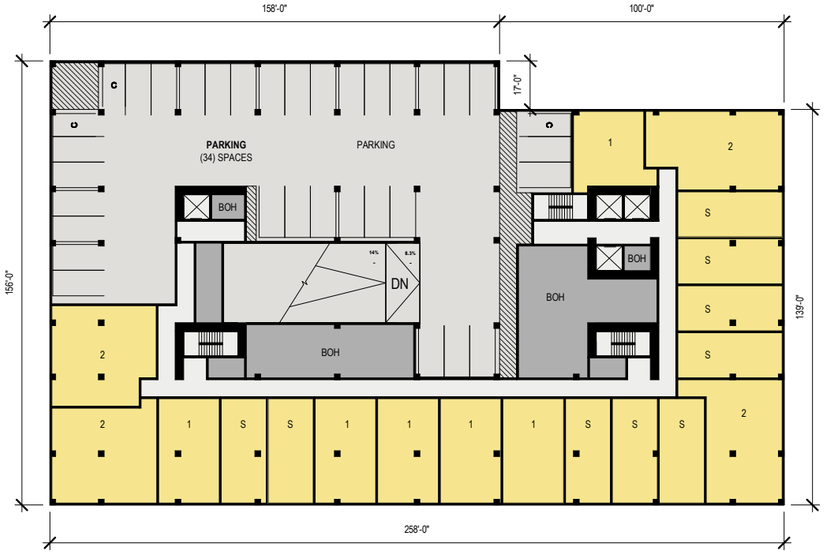
LEGEND

- 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'



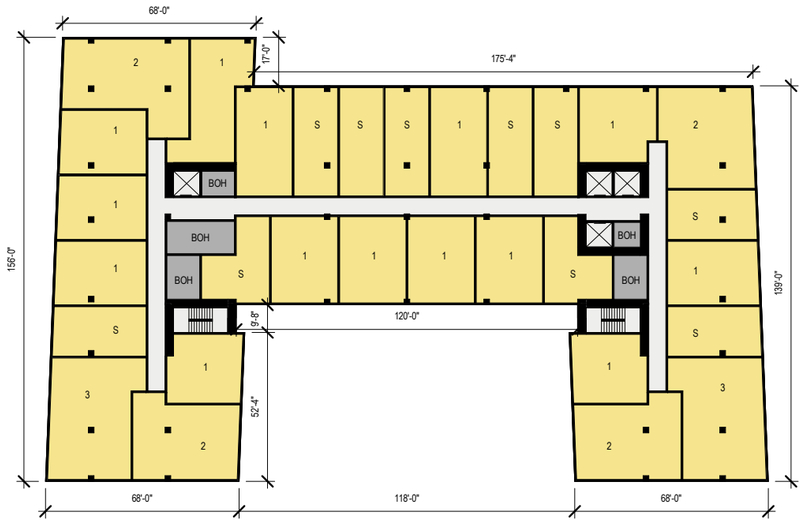
LEVEL 04 FLOOR PLAN

0' 30' 60'

BUILDING 4IC W - RESIDENTIAL

LEVEL 12 FLOOR PLAN

0' 30' 60'



LEVEL 06-11 FLOOR PLAN

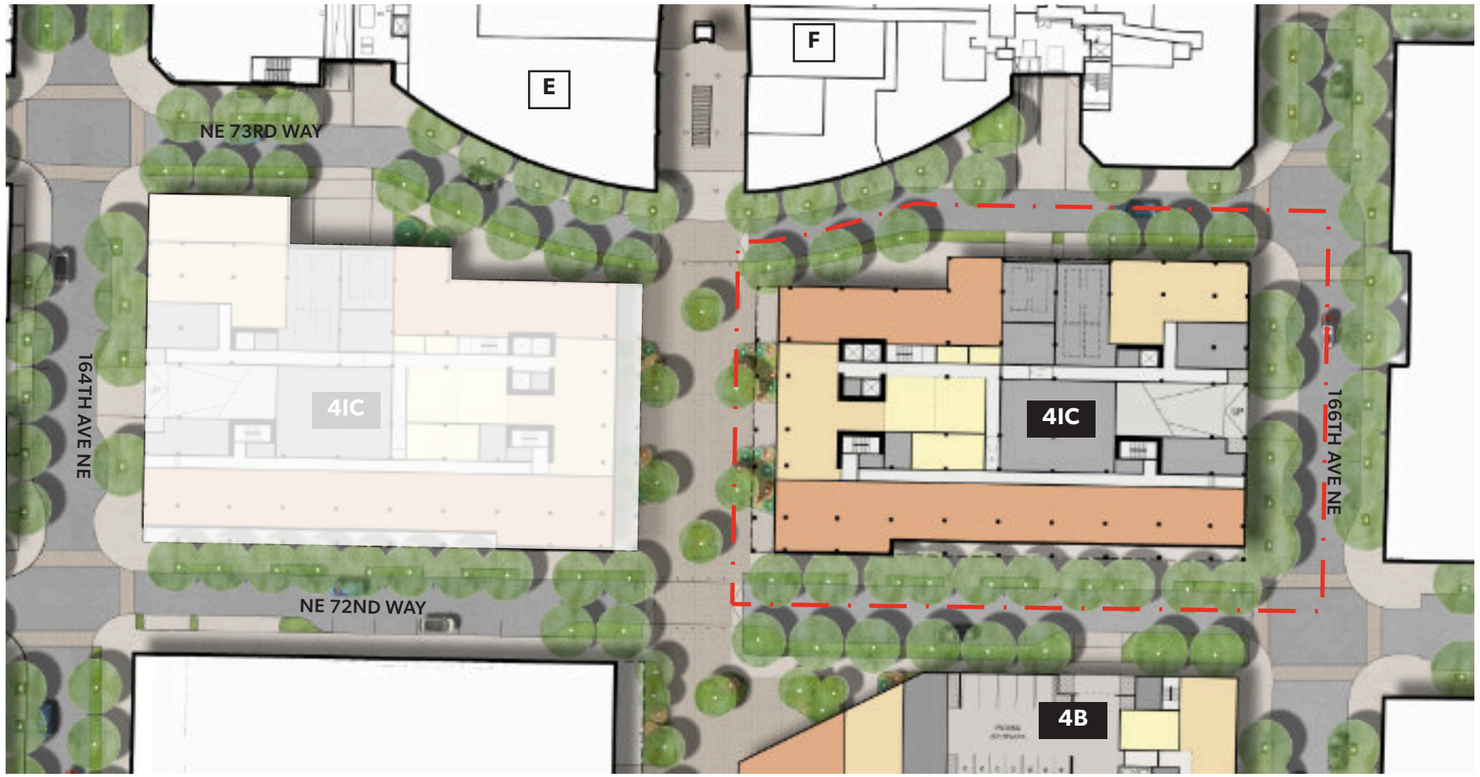
0' 30' 60'

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

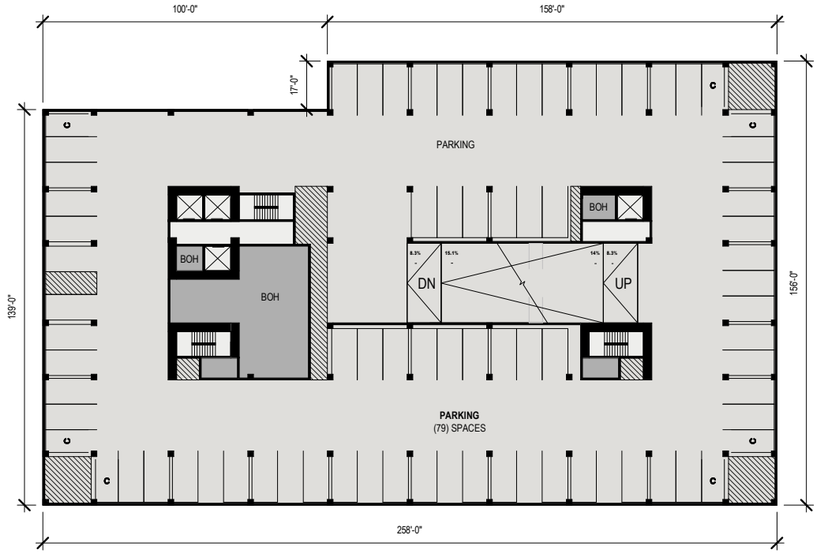
Ground level plaza areas are not included in the residential open space calculations.

BUILDING 4IC E - RESIDENTIAL

BUILDING 4IC - RESIDENTIAL GROUND LEVEL SITE PLAN

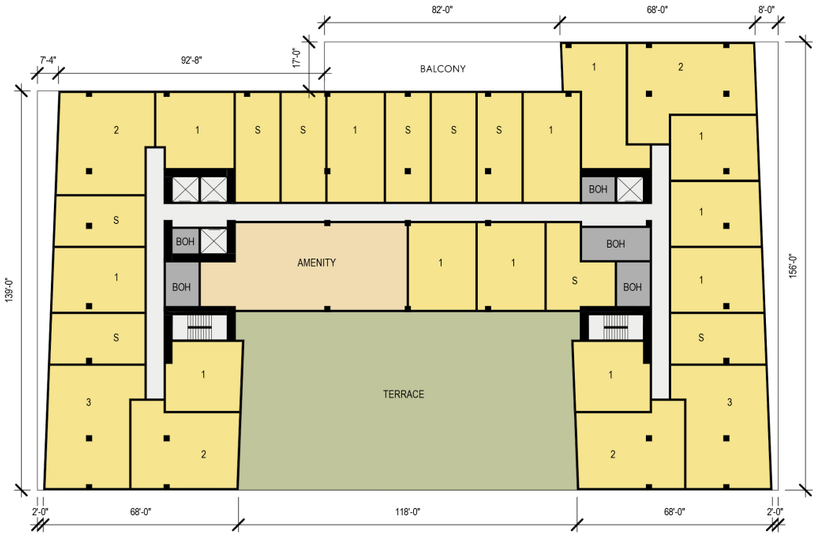
0' 25' 50'

BUILDING 4IC E - RESIDENTIAL



LEVEL 02 - 03 FLOOR PLAN

0' 30' 60'

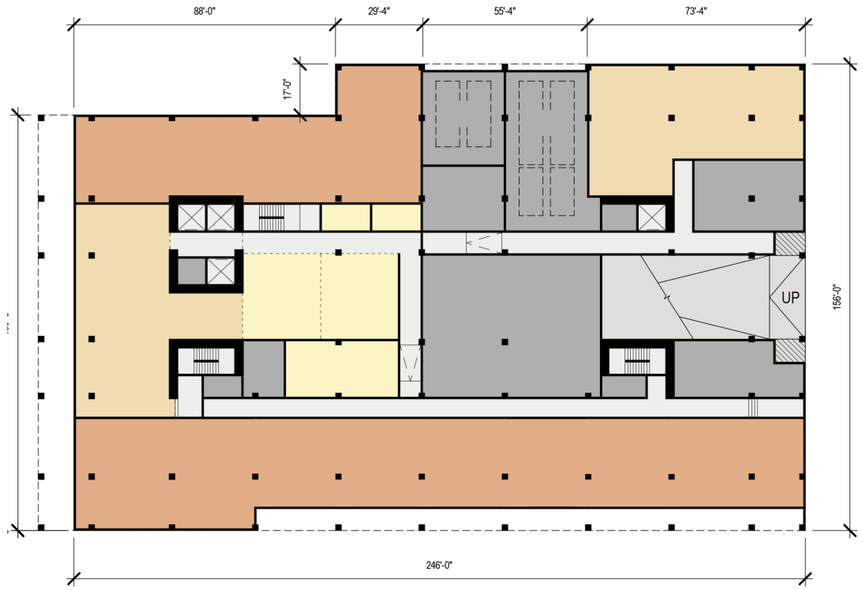


LEVEL 05 FLOOR PLAN

0' 30' 60'

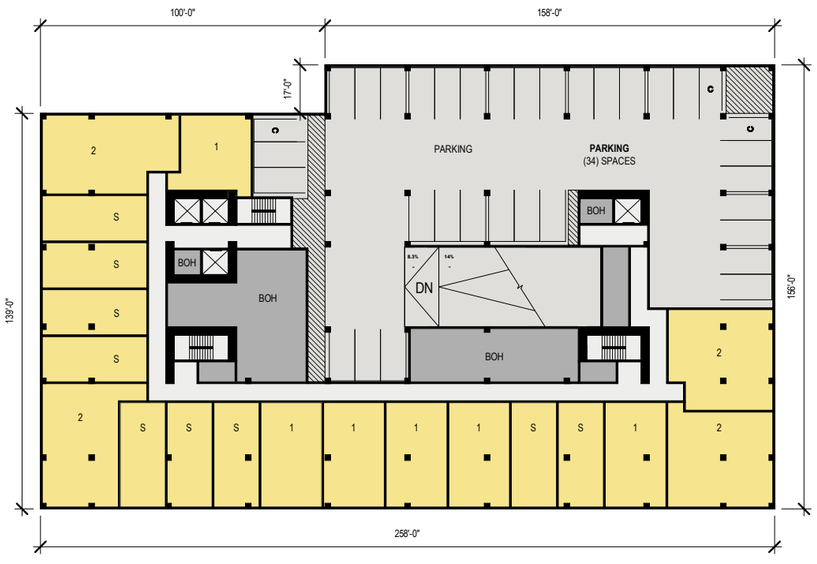
LEGEND

- 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

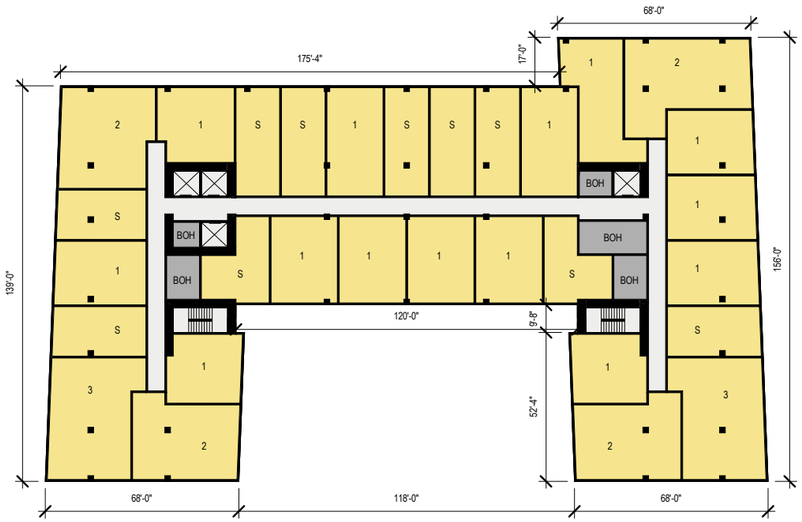
0' 30' 60'

GGLO

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

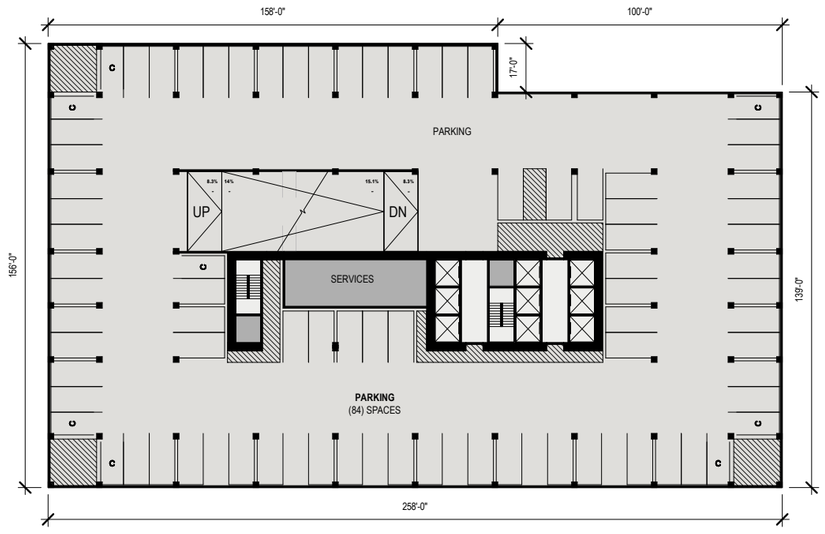
- LEASING / MAIL
- RESIDENTIAL
- COMMON OFFICE AMENITY
- COMMERCIAL
- SERVICES
- PARKING
- CIRCULATION
- OUTDOOR AMENITY
- # EXISTING BUILDING
- # PROPOSED NEW OR MODIFIED EXISTING BUILDING

BUILDING 4ICW - OFFICE

BUILDING 4IC - RESIDENTIAL AND OFFICE GROUND LEVEL SITE PLAN

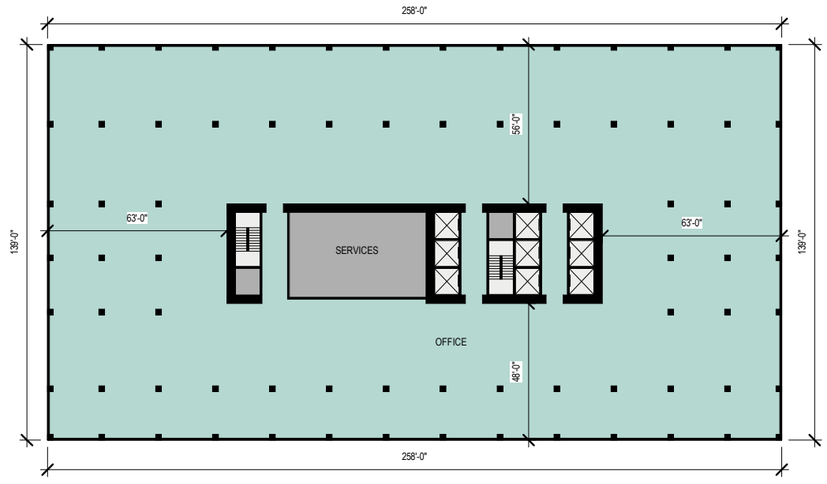
0' 25' 50'

BUILDING 4ICW - OFFICE



LEVEL 02 - 04 FLOOR PLAN

0' 30' 60'



LEVEL 06 - 12 FLOOR PLAN

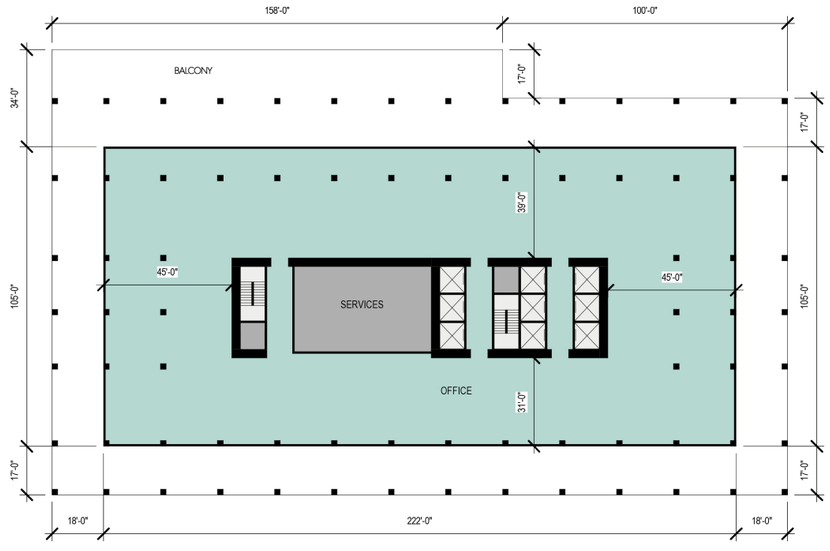
0' 30' 60'

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

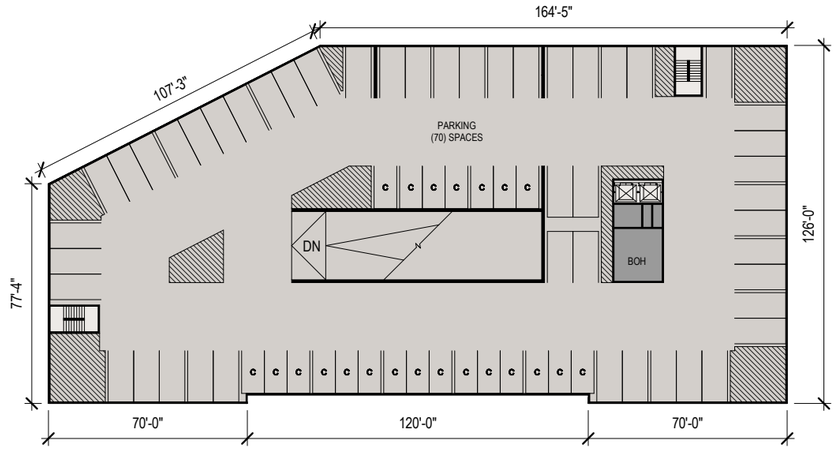
PROPOSED NEW OR MODIFIED EXISTING BUILDING

BUILDING 4B - RESIDENTIAL

BUILDING B - RESIDENTIAL GROUND LEVEL SITE PLAN

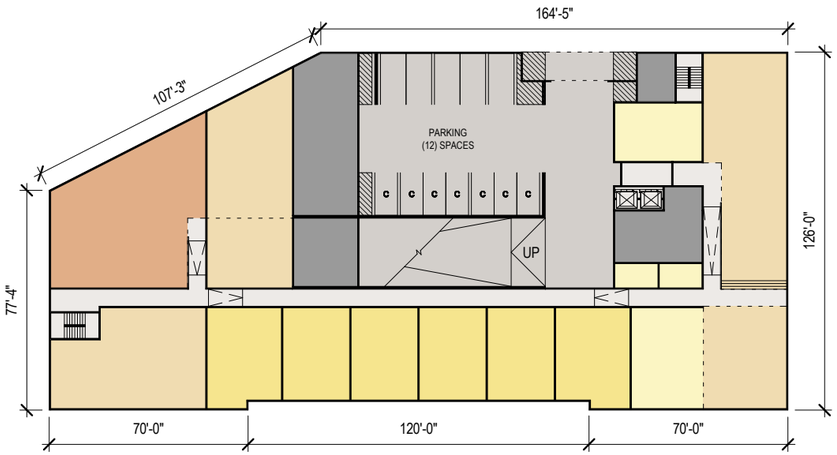
0' 15' 30'

BUILDING 4B - RESIDENTIAL



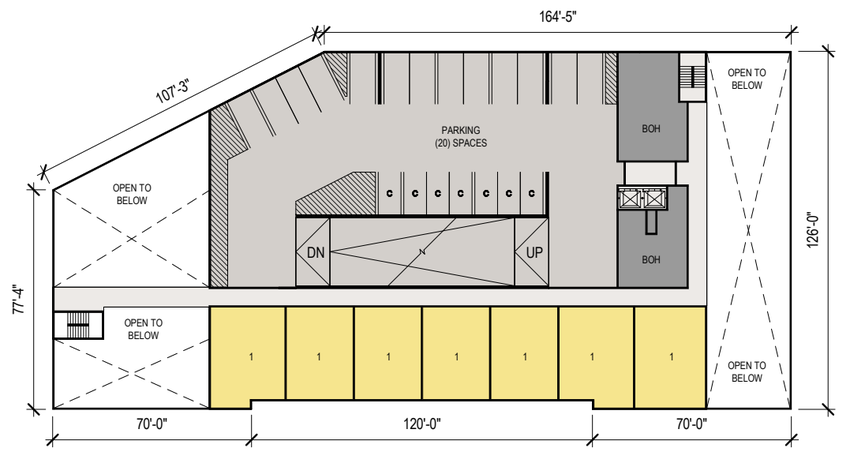
LEVEL 03 FLOOR PLAN

0' 30' 60'



LEVEL 01 FLOOR PLAN

0' 30' 60'



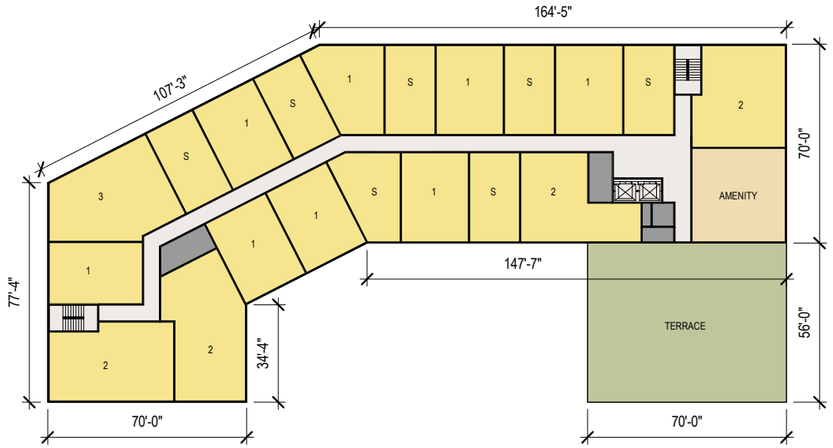
LEVEL 02 FLOOR PLAN

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

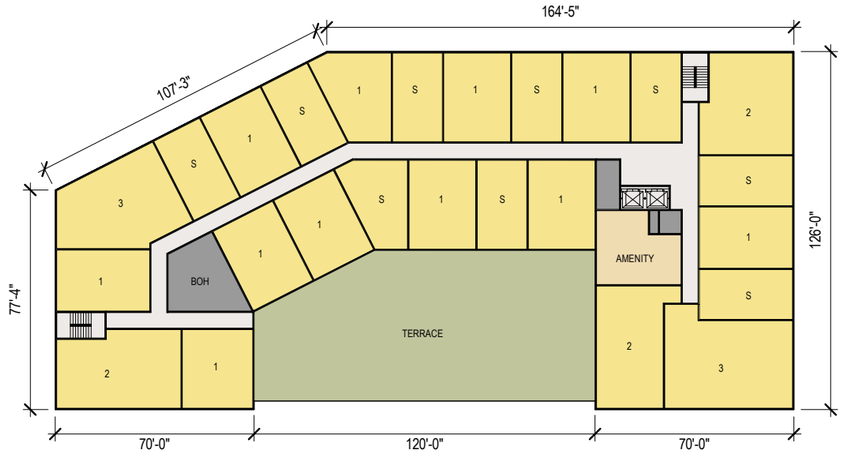


LEVEL 08 FLOOR PLAN

0' 30' 60'

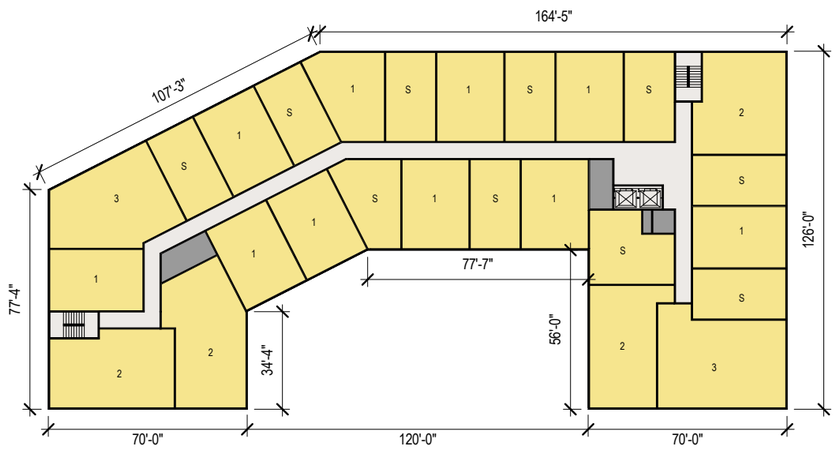
LEGEND

- 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'

GGLO

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

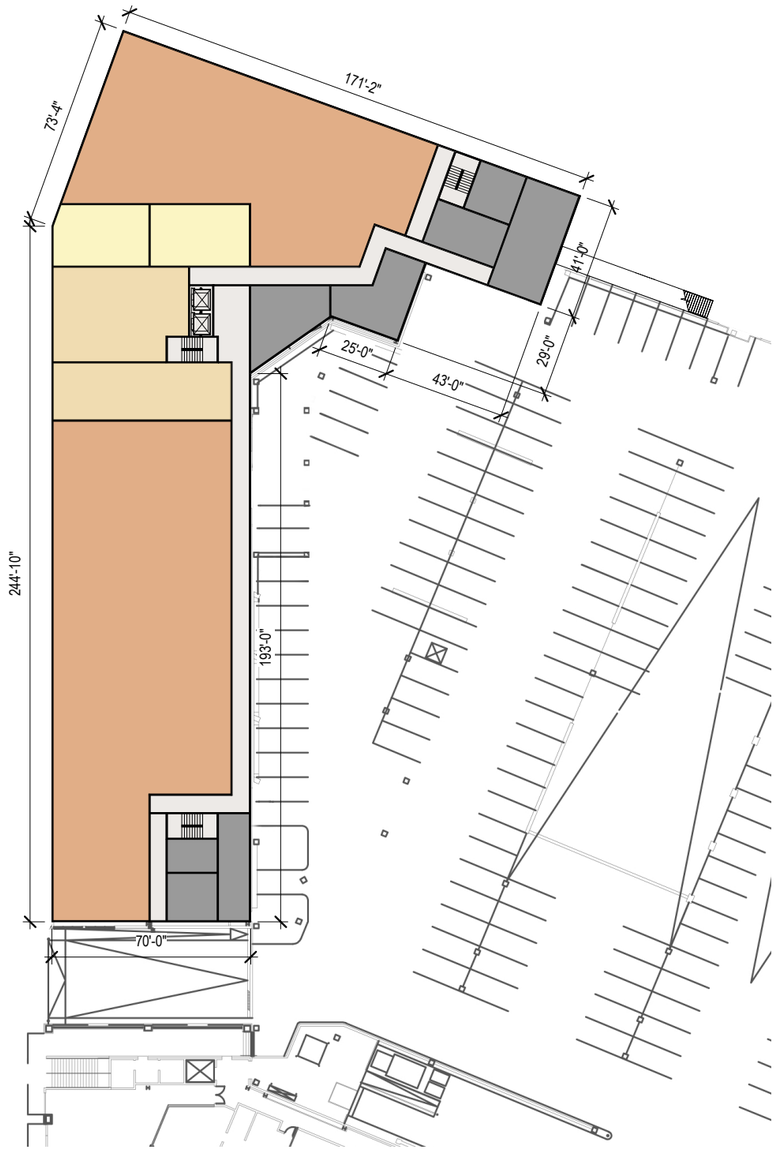
PROPOSED NEW OR MODIFIED EXISTING BUILDING

BUILDING 3A - RESIDENTIAL

BUILDING 3A - RESIDENTIAL GROUND LEVEL SITE PLAN

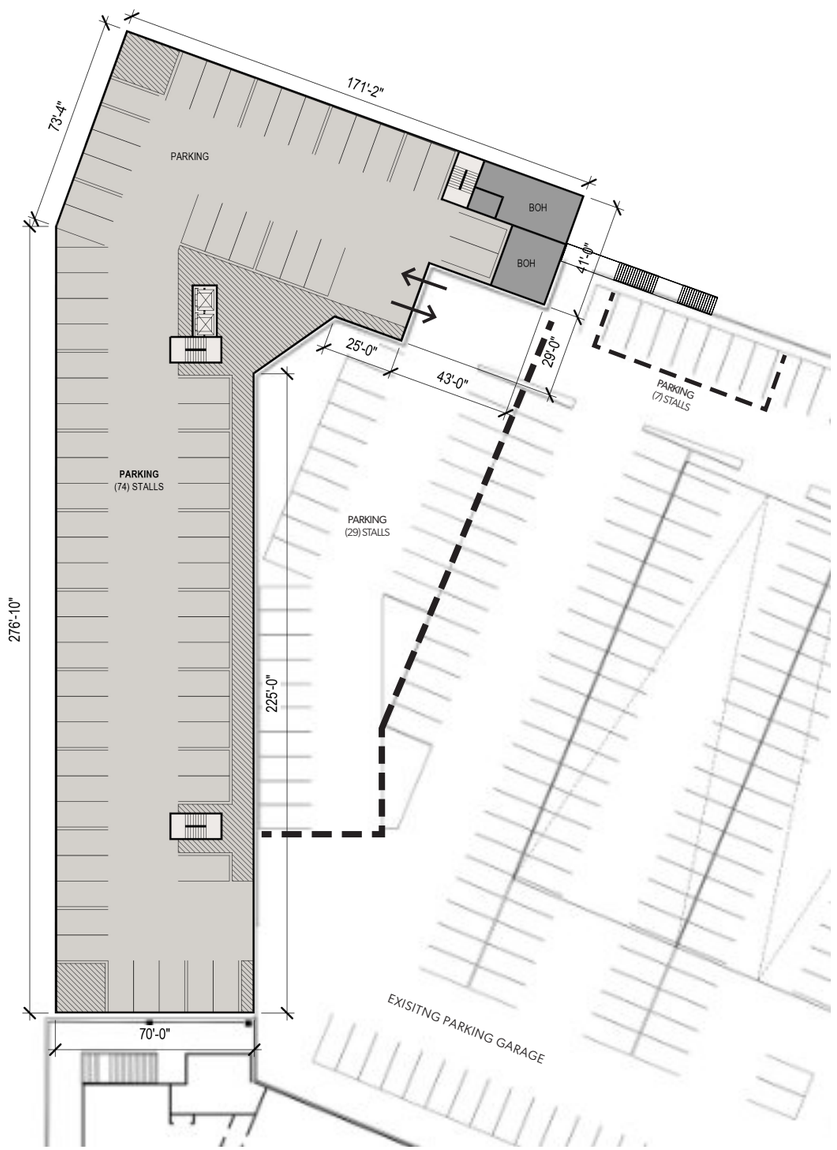
0' 30' 60'

BUILDING 3A - RESIDENTIAL



LEVEL 01 FLOOR PLAN

0' 30' 60'



LEVEL 02 FLOOR PLAN

0' 30' 60'

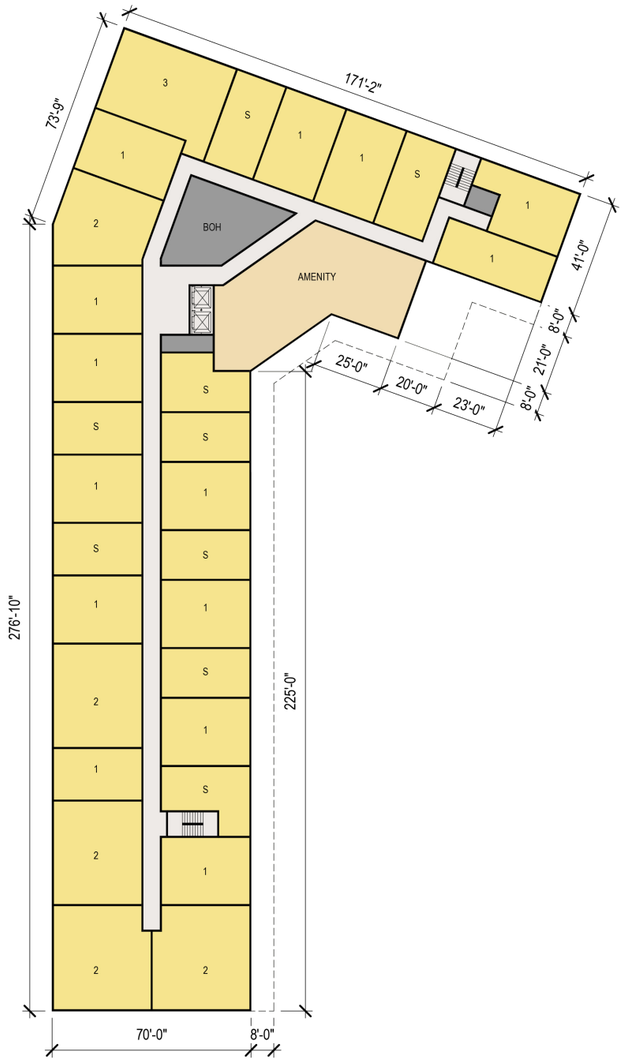
LEGEND

- LEASING / MAIL
- RESIDENTIAL
- COMMON RESI AMENITY
- COMMERCIAL
- # EXISTING BUILDING
- SERVICES
- PARKING
- CIRCULATION
- OUTDOOR AMENITY
- # PROPOSED NEW OR MODIFIED EXISTING BUILDING

BUILDING 3A - RESIDENTIAL

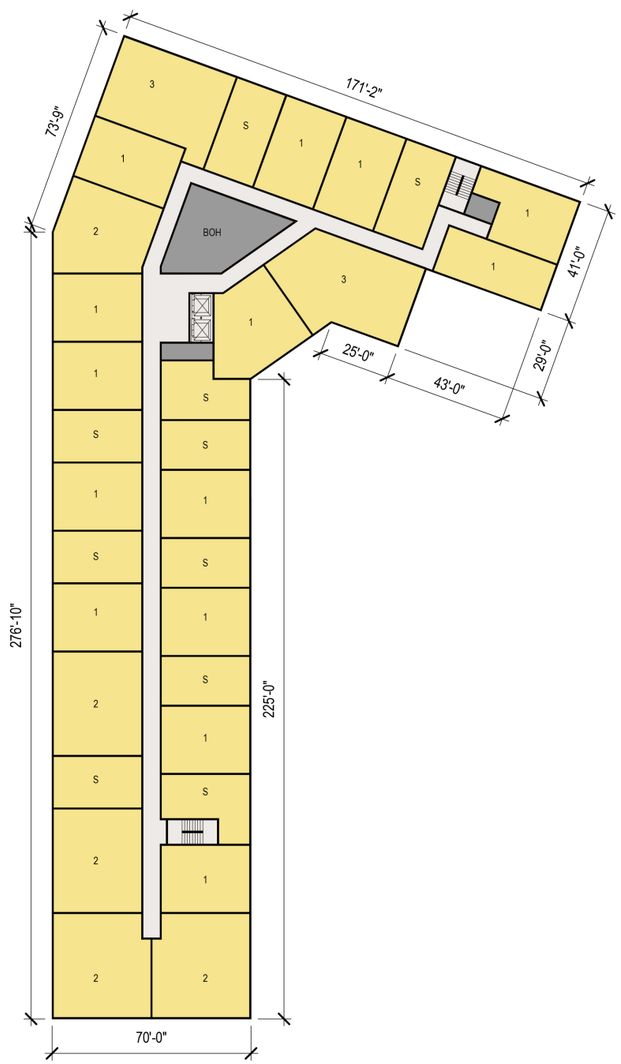
LEGEND

- LEASING / MAIL
- RESIDENTIAL
- COMMON RESI AMENITY
- COMMERCIAL
- # EXISTING BUILDING
- SERVICES
- PARKING
- CIRCULATION
- OUTDOOR AMENITY
- # PROPOSED NEW OR MODIFIED EXISTING BUILDING



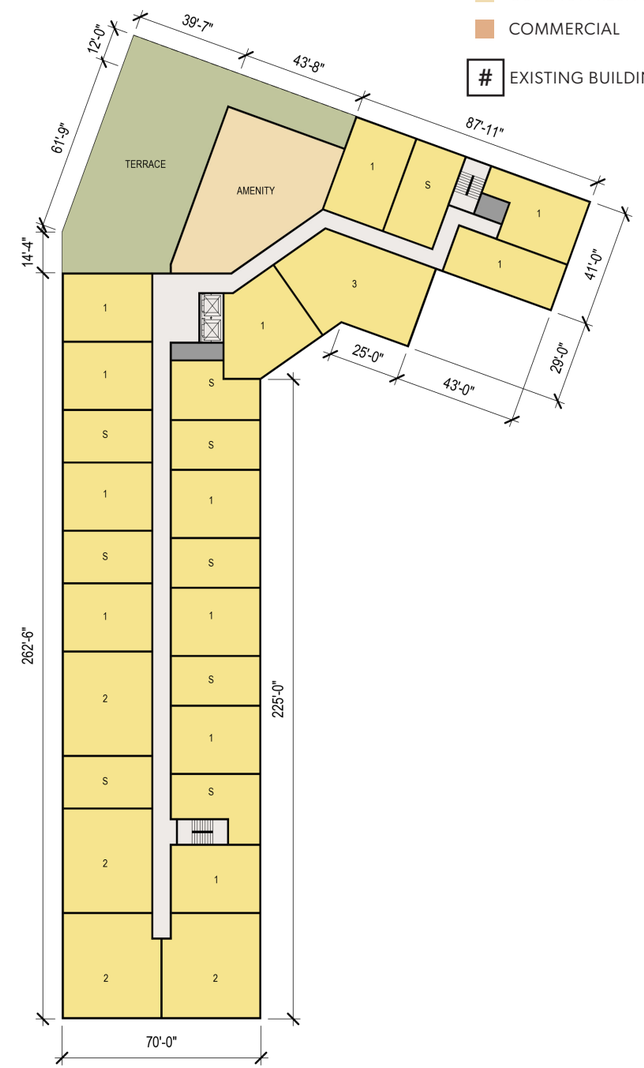
LEVEL 03 FLOOR PLAN

0' 30' 60'



LEVEL 04 - 06 TYPICAL FLOOR PLANS

0' 30' 60'

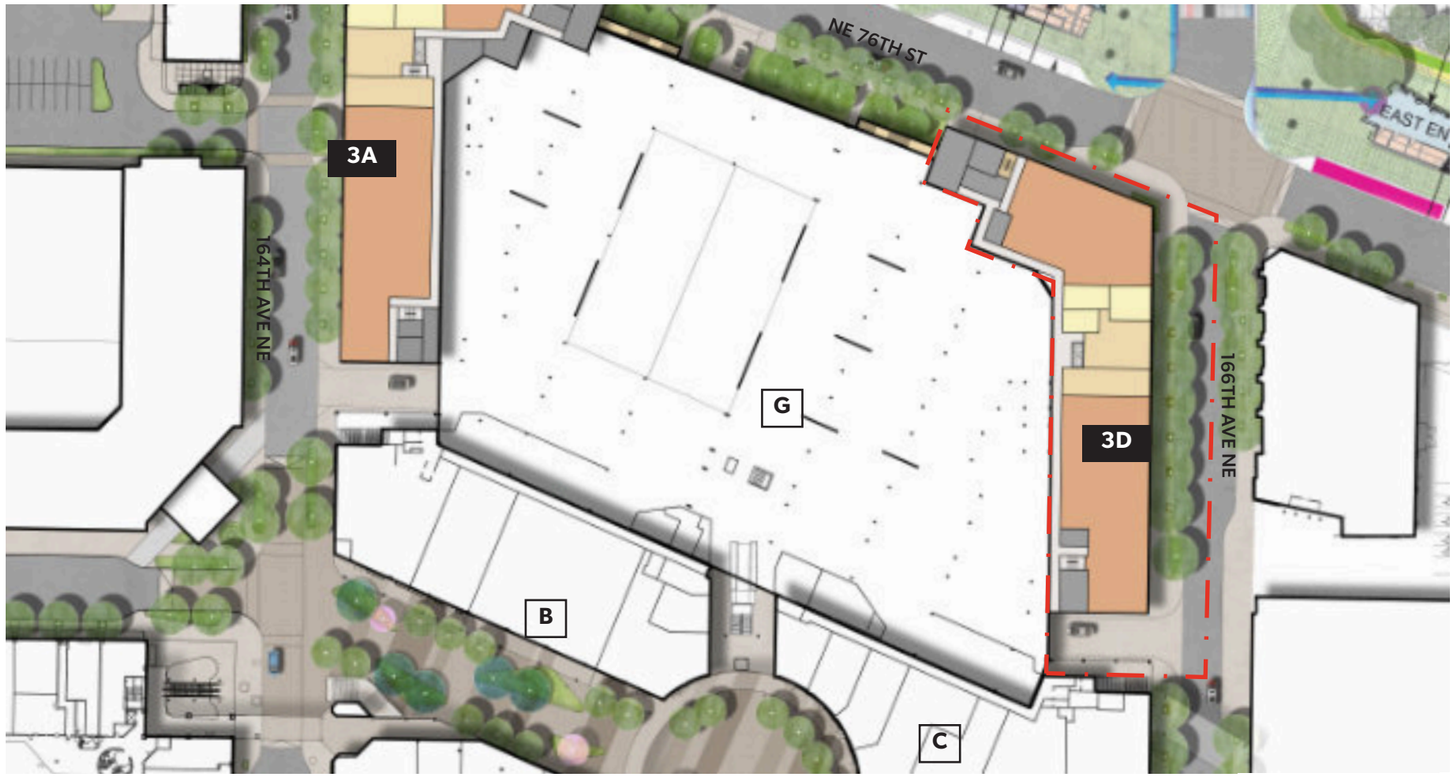


LEVEL 07 FLOOR PLAN

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.

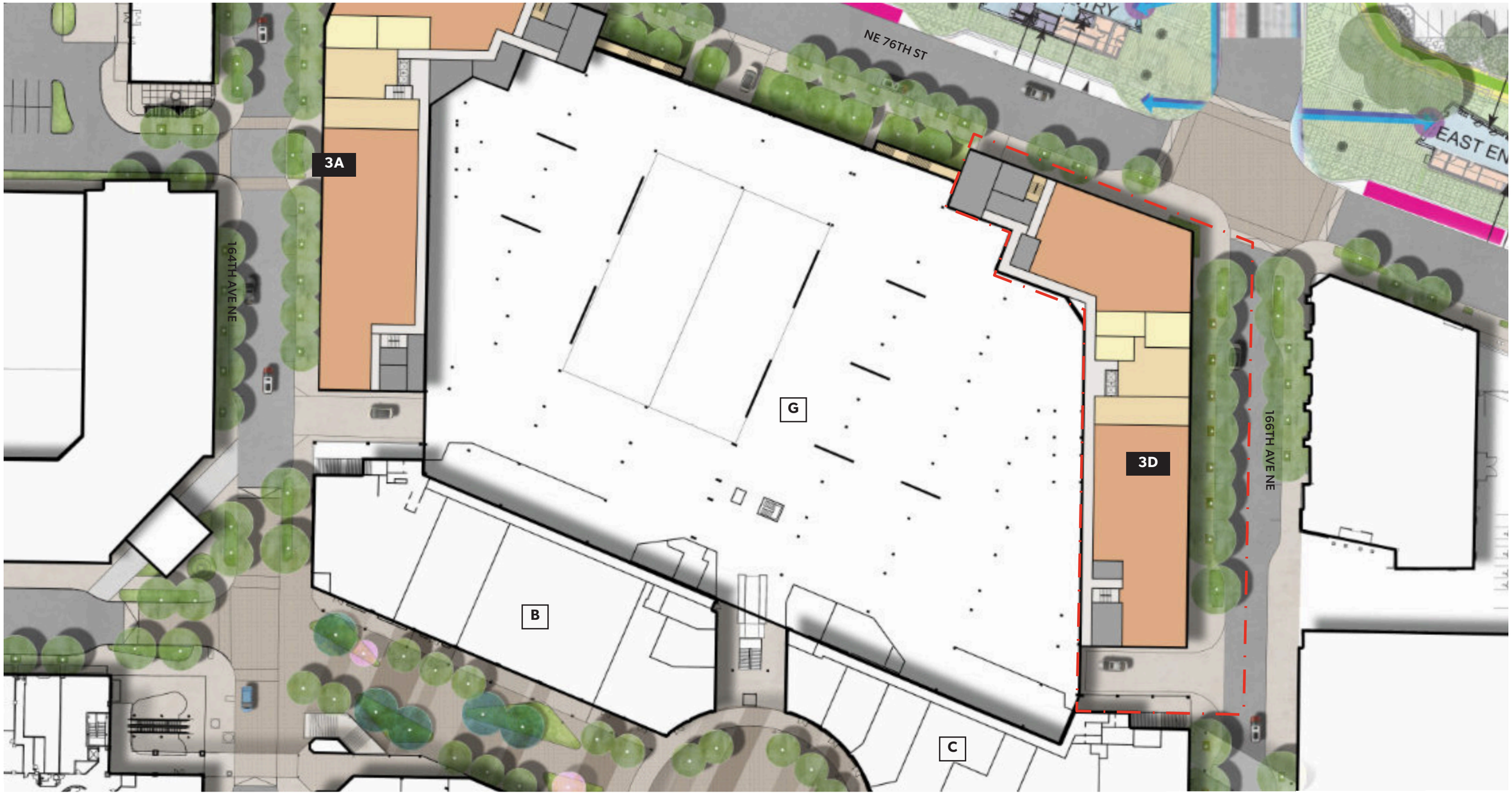
LEGEND

- LEASING / MAIL
- RESIDENTIAL
- COMMON RESI AMENITY
- COMMERCIAL
- SERVICES
- PARKING
- CIRCULATION
- OUTDOOR AMENITY

EXISTING BUILDING

PROPOSED NEW OR MODIFIED EXISTING BUILDING

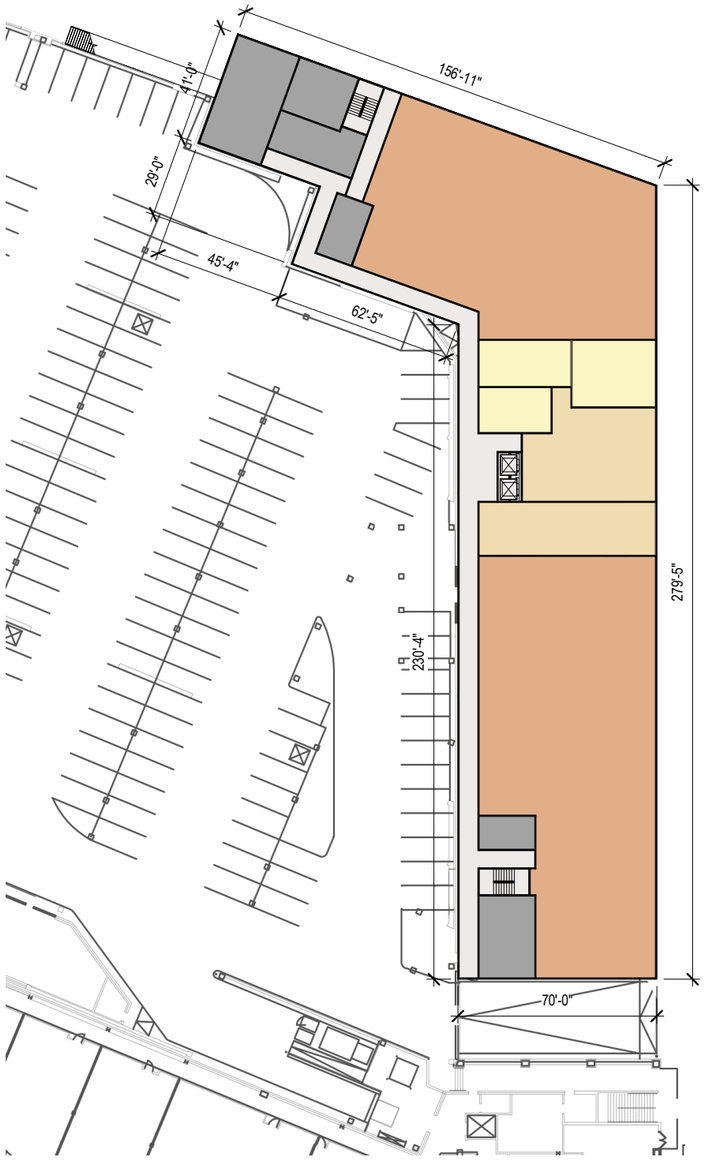
BUILDING 3D - RESIDENTIAL



BUILDING 3D - RESIDENTIAL GROUND LEVEL SITE PLAN

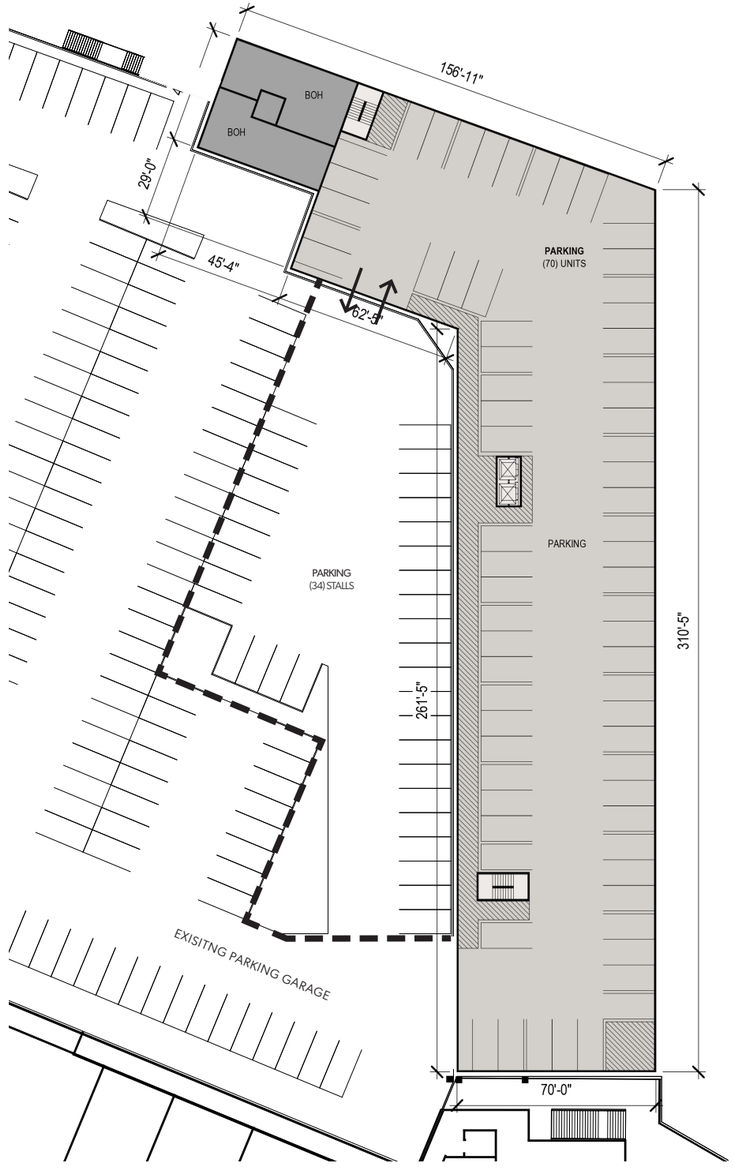
0' 30' 60'

BUILDING 3D - RESIDENTIAL



LEVEL 01 FLOOR PLAN

0' 30' 60'



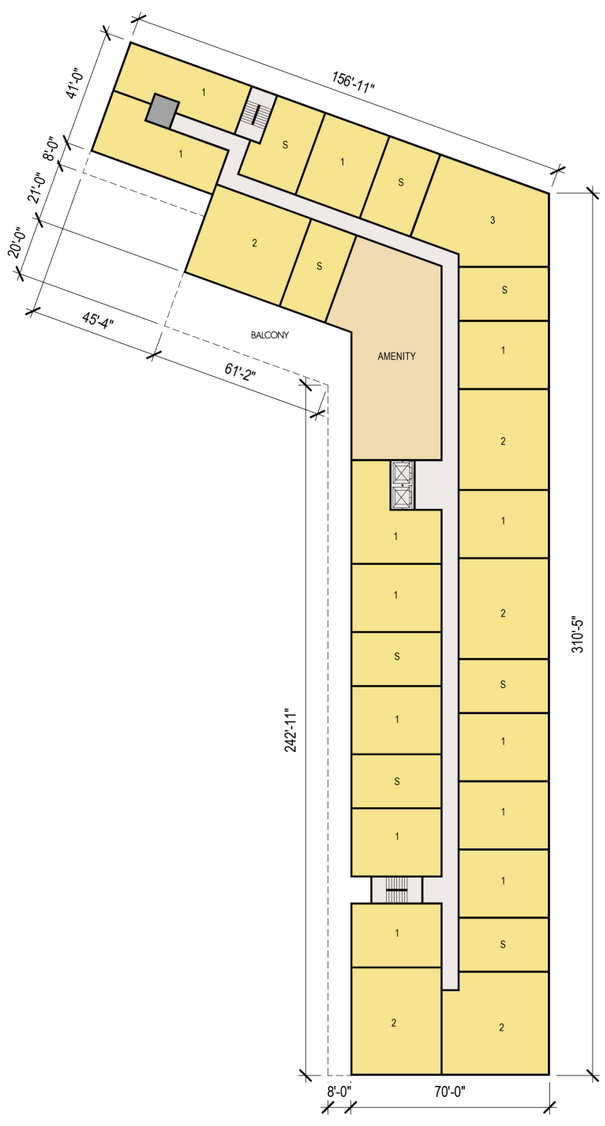
LEVEL 02 FLOOR PLAN

0' 30' 60'

LEGEND

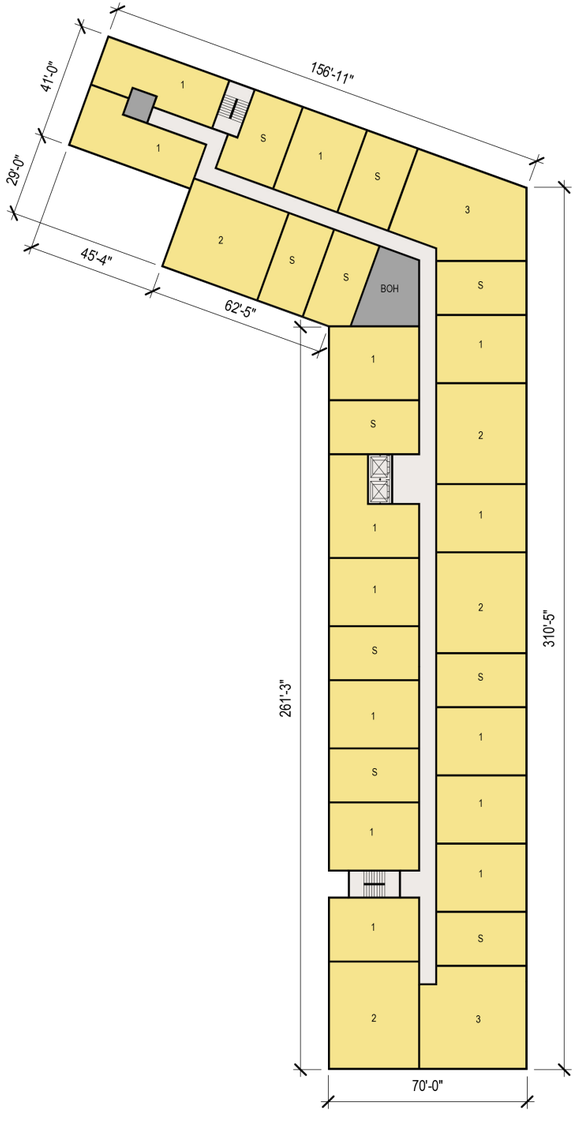
- LEASING / MAIL
- RESIDENTIAL
- COMMON RESI AMENITY
- COMMERCIAL
- # EXISTING BUILDING
- SERVICES
- PARKING
- CIRCULATION
- OUTDOOR AMENITY
- # PROPOSED NEW OR MODIFIED EXISTING BUILDING

BUILDING 3D - RESIDENTIAL



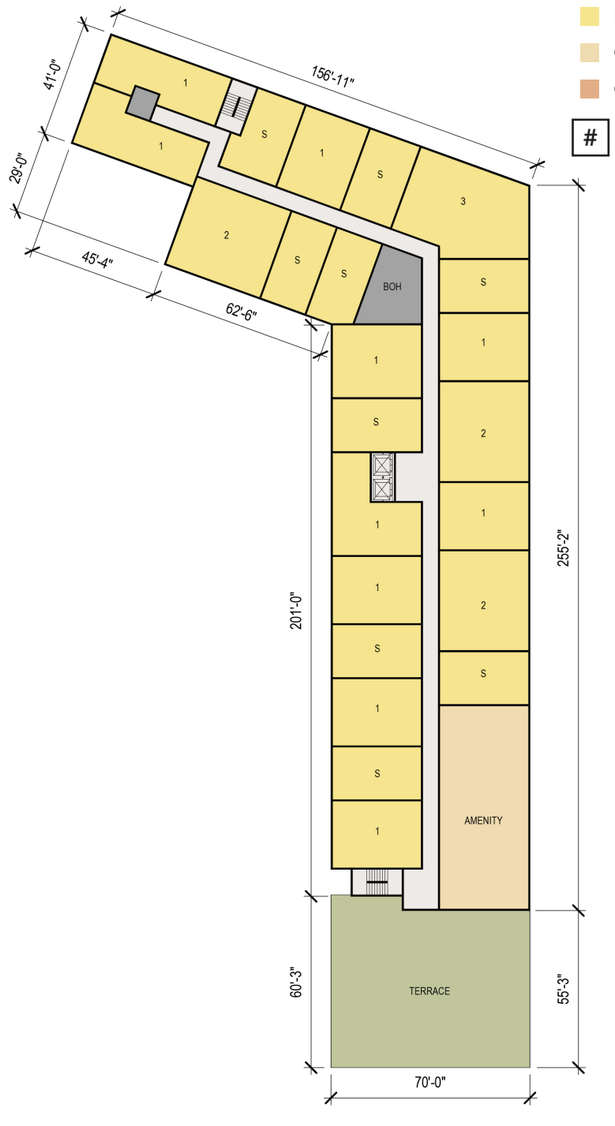
LEVEL 03 FLOOR PLAN

0' 30' 60'



LEVEL 04 - 06 TYPICAL FLOOR PLANS

0' 30' 60'



LEVEL 07 FLOOR PLAN

0' 30' 60'

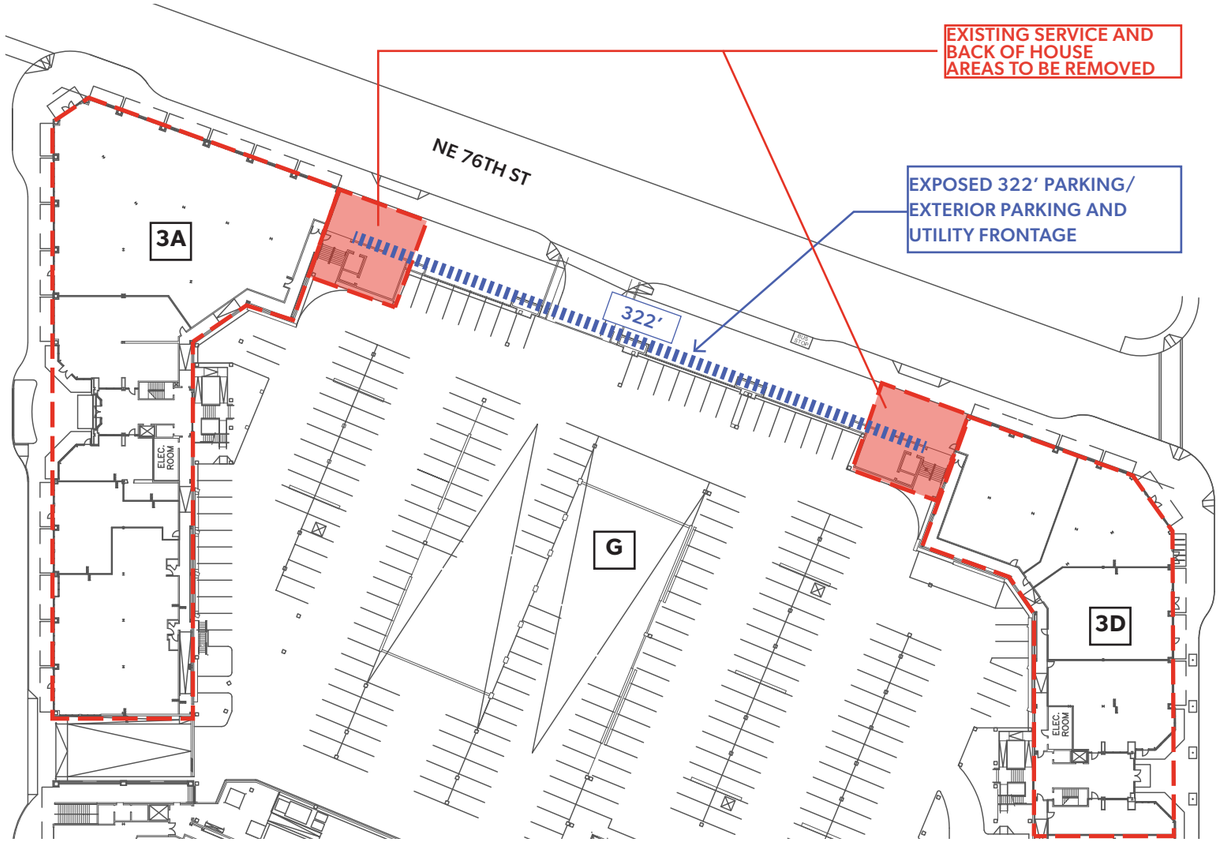
LEGEND

- LEASING / MAIL
- RESIDENTIAL
- COMMON RESI AMENITY
- COMMERCIAL
- # EXISTING BUILDING
- SERVICES
- PARKING
- CIRCULATION
- OUTDOOR AMENITY
- # PROPOSED NEW OR MODIFIED EXISTING BUILDING

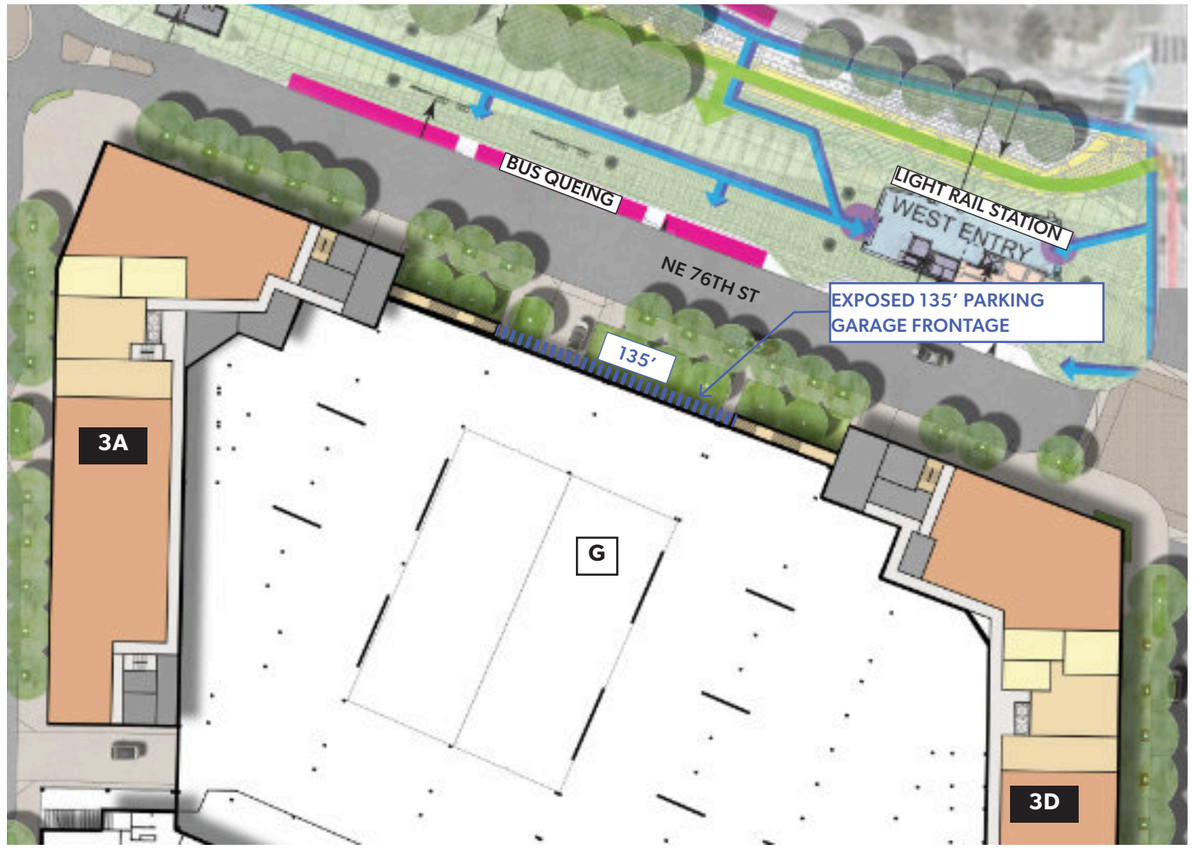
EXISTING G GARAGE MODIFICATIONS

BUILDING G - GARAGE

EXISTING



PROPOSED



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.

BUILDING G - GARAGE PROPOSED GROUND LEVEL SITE PLAN

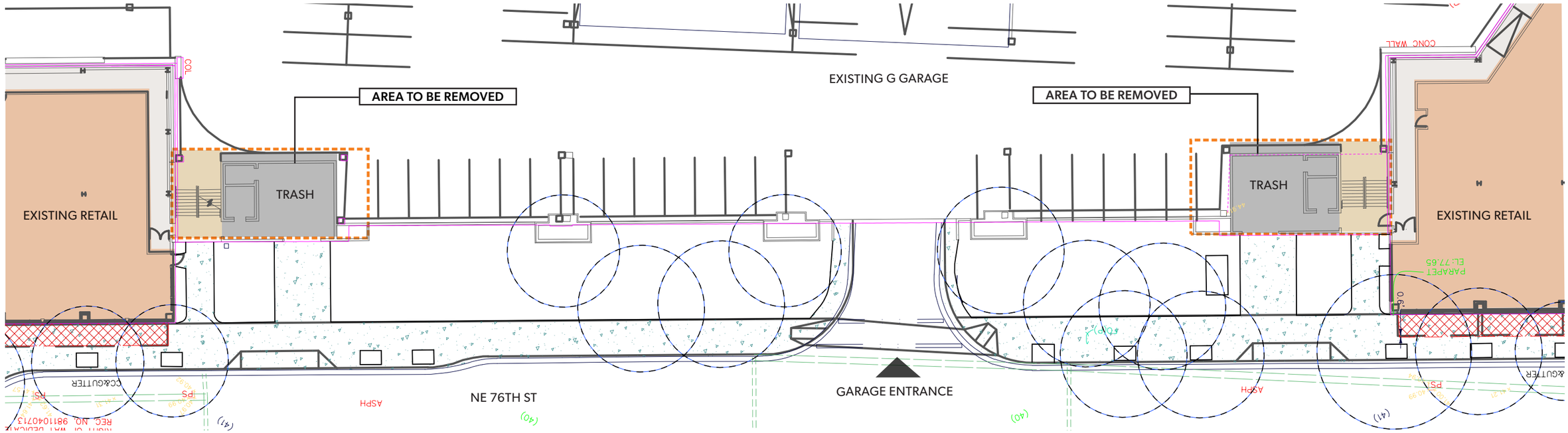
0' 40' 80'

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

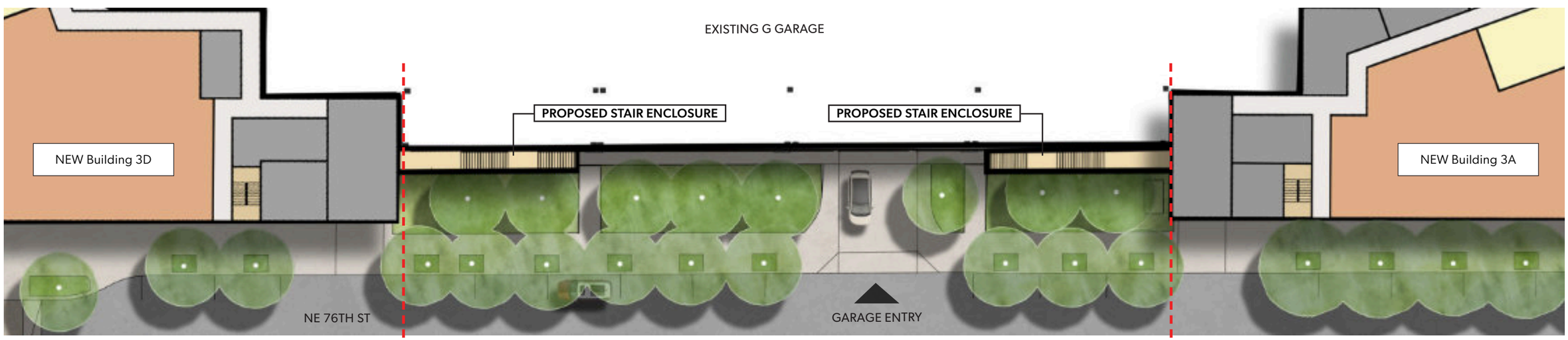
- COMMERCIAL
- COMMON RESI AMENITY
- SERVICES
- CIRCULATION

EXTERIOR UNSCREENED TRANSFORMER TO BE RELOCATED INTO THE NEW BUILDING.

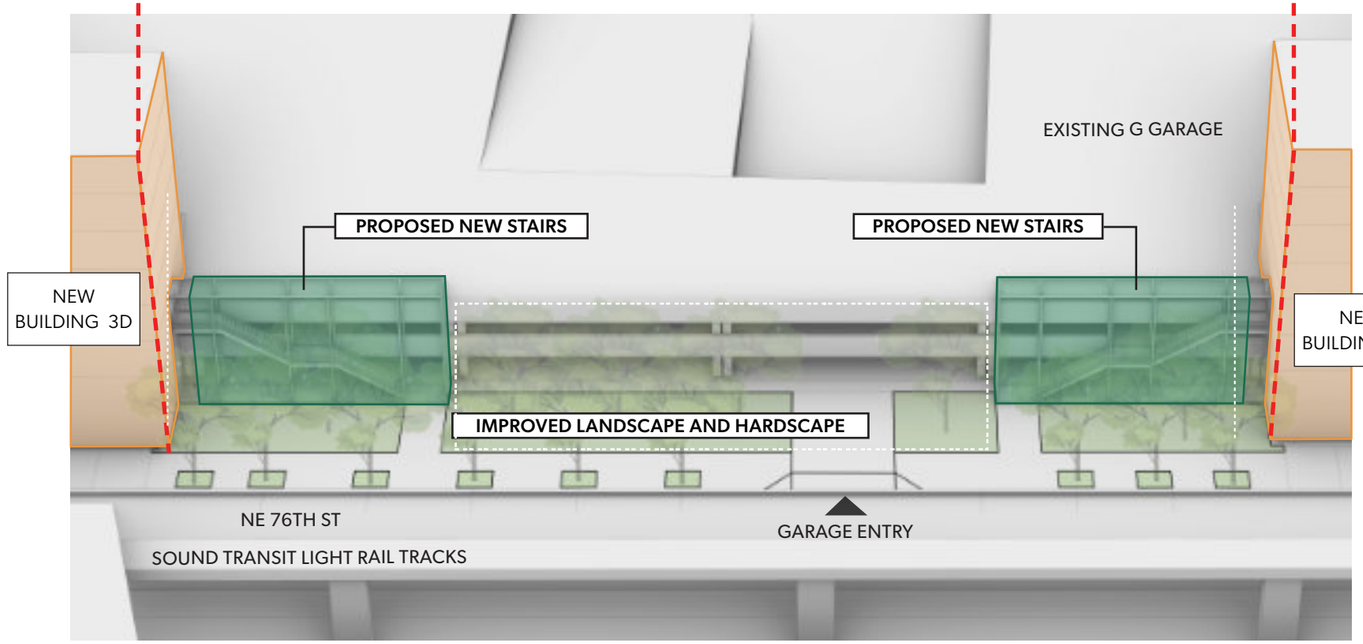
EXTERIOR TRASH ROOM AND BACK OF HOUSE SPACE TO BE RELOCATED INTO THE NEW BUILDING.

EXISTING G GARAGE NORTH FACADE
NTS

PROPOSED



PROPOSED G GARAGE FLOOR PLAN
NTS



PROPOSED G GARAGE NORTH FACADE
NTS

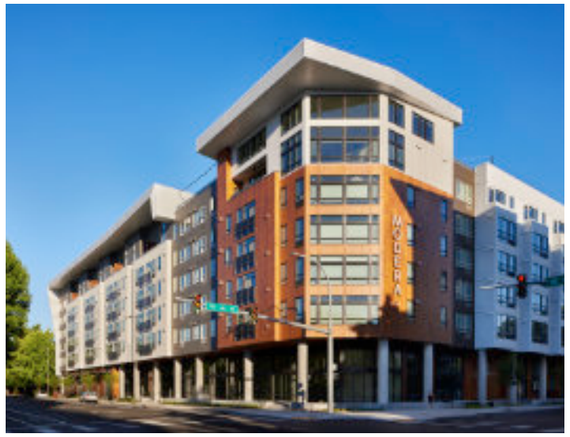
LEGEND
- COMMERCIAL
- COMMON RESI AMENITY
- SERVICES
- CIRCULATION

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.

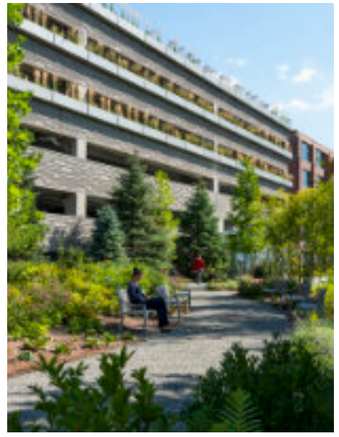
BUILDING G - GARAGE NORTH FACADE

GARAGE SCREENING AND LANDSCAPE PRECEDENT IMAGES



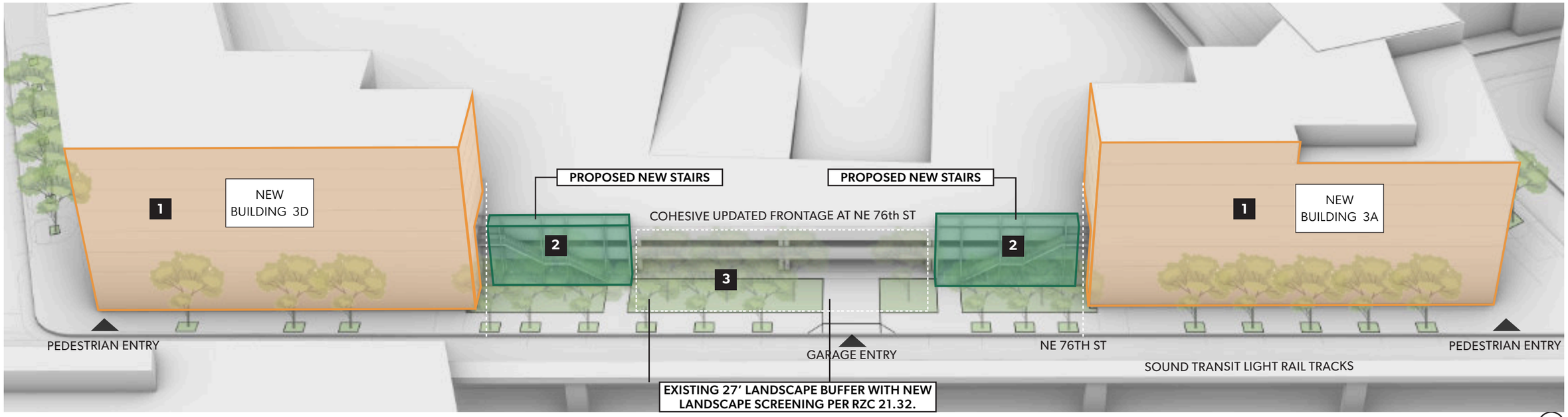
1 Multifamily Residential bookends existing parking garage and defines site gateway

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

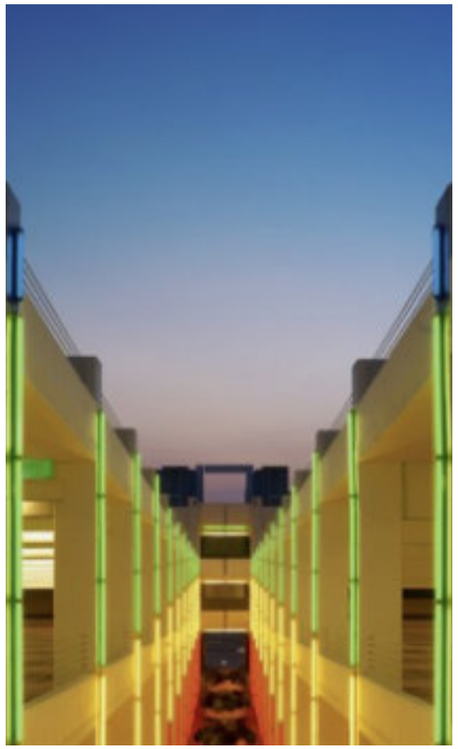
Proposed precedent imagery represents a design approach to showcase the movement of people, emphasize verticality, and create a playful active facade in place of horizontal concrete screening. Landscape precedent imagery include a layering of planting types and scales to soften and screen the existing 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.



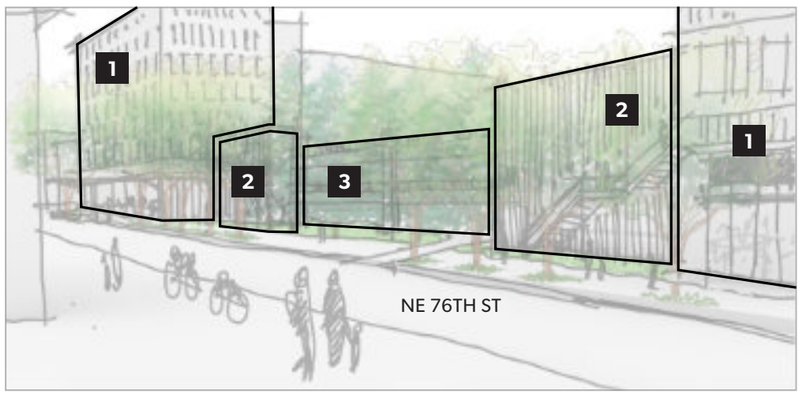
PROPOSED NE 76TH ST. ELEVATION WITH EXPANDED BUILDINGS AND STAIR ENCLOSURE

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.

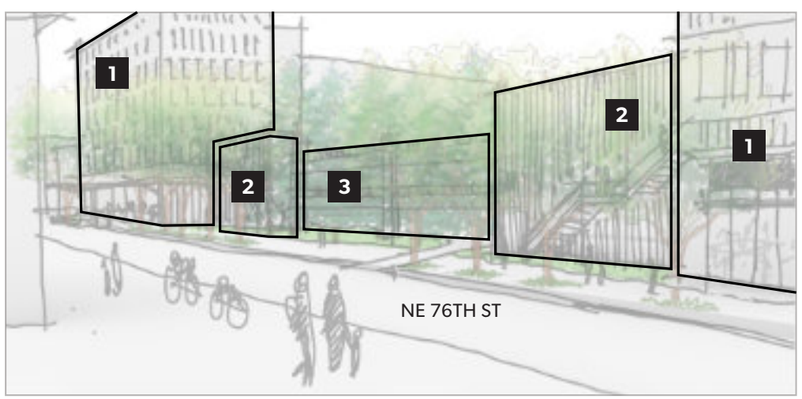
BUILDING G - PEDESTRIAN REALM AT NE 76TH STREET, LANDSCAPE DESIGN

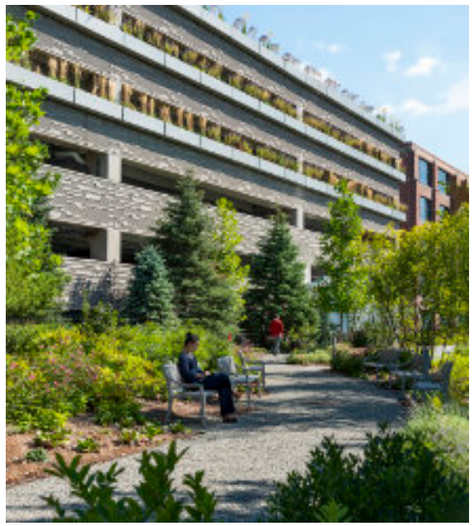
PLANTING AT MATURITY (12-15 YEARS)

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**

Exhibit E

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

TABLE OF CONTENTS

FINDINGS/CONCLUSIONS 1
INTRODUCTION 5
Project Description 5
Project Approach 8
Primary Data and Information Sources 9
EXISTING CONDITIONS 10
Study Area 10
Roadway Network 10
Transit Service 11
Non-Motorized Transportation Facilities 12
Crash History 12
Traffic Volumes 14
Intersection Levels of Service 17
FUTURE CONDITIONS 19
Planned Transportation Improvements 19
Project Trip Generation 22
Transportation Concurrency 23
Project Trip Distribution and Assignment 24
Future Traffic Operations 24
Future Traffic Volumes 24
Future Level of Service 31
MITIGATION 35

APPENDICES

Appendix A – Site Plan

Appendix B – Building Area and Unit Count Assumptions by Phase

Appendix C – WSDOT Crash Data

Appendix D – Existing Traffic Counts

Appendix E – Level of Service (LOS) Methodology and Calculations

Appendix F – ITE Pass-by Data for LUC 820

Appendix G – Trip Generation Calculations

Appendix H – Transportation Concurrency Application

Appendix I – Trip Distribution Calculations

LIST OF FIGURES AND TABLES

Figure 1 Project Site Vicinity 7
Figure 2 Study Intersections Map 15
Figure 3 2025 Existing Weekday PM Peak Hour Traffic Volumes 16
Figure 4 PM Peak Hour Project Trip Distribution 25
Figure 5 Weekday PM Peak Hour Project Trip Assignment (Phases 1 to 3 of Scenario 2) 26
Figure 6 2030 No Action Weekday PM Peak Hour Traffic Volumes 27
Figure 7 2030 With Project Weekday PM Peak Hour Traffic Volumes (Phases 1 to 3 of Scenario 2) 28
Figure 8 2034 No Action Weekday PM Peak Hour Traffic Volumes 29
Figure 9 2034 With Project Weekday PM Peak Hour Traffic Volumes (Phases 1 to 3 of Scenario 2) 30

Table 1 Existing Roadway Network Summary 11
Table 2 Crash Data Summary by Type, January 1, 2021 to December 31, 2023 13
Table 3 Crash Data Summary by Type, January 1, 2021 to December 31, 2023 14
Table 4 Existing 2025 Weekday PM Peak Hour LOS Summary 18
Table 5 Trip Generation Summary 23
Table 6 Future 2030 PM Peak Hour LOS Summary 32
Table 7 Future 2034 PM Peak Hour LOS Summary 33

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.

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.

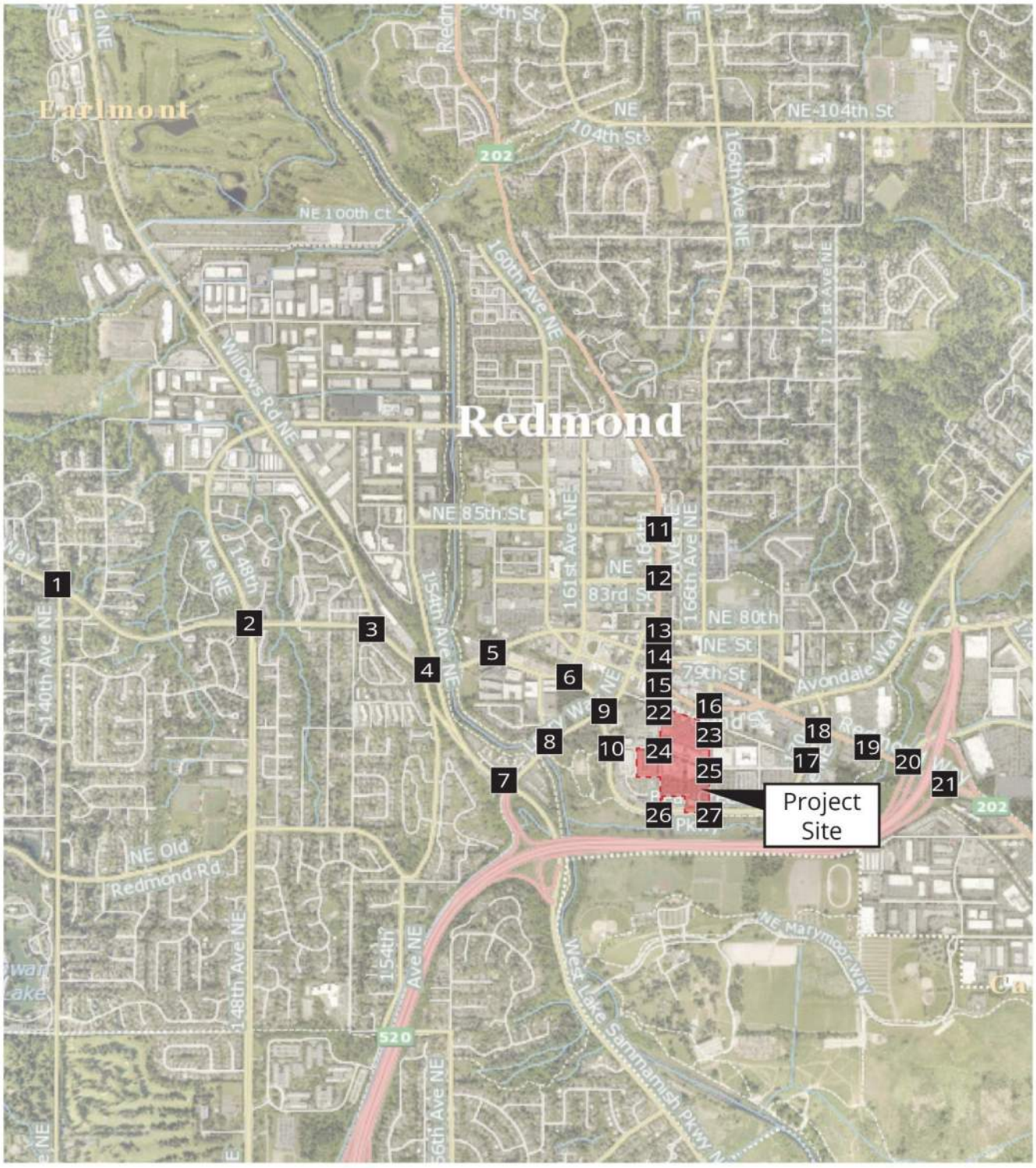


Figure 2: Study Intersections Map

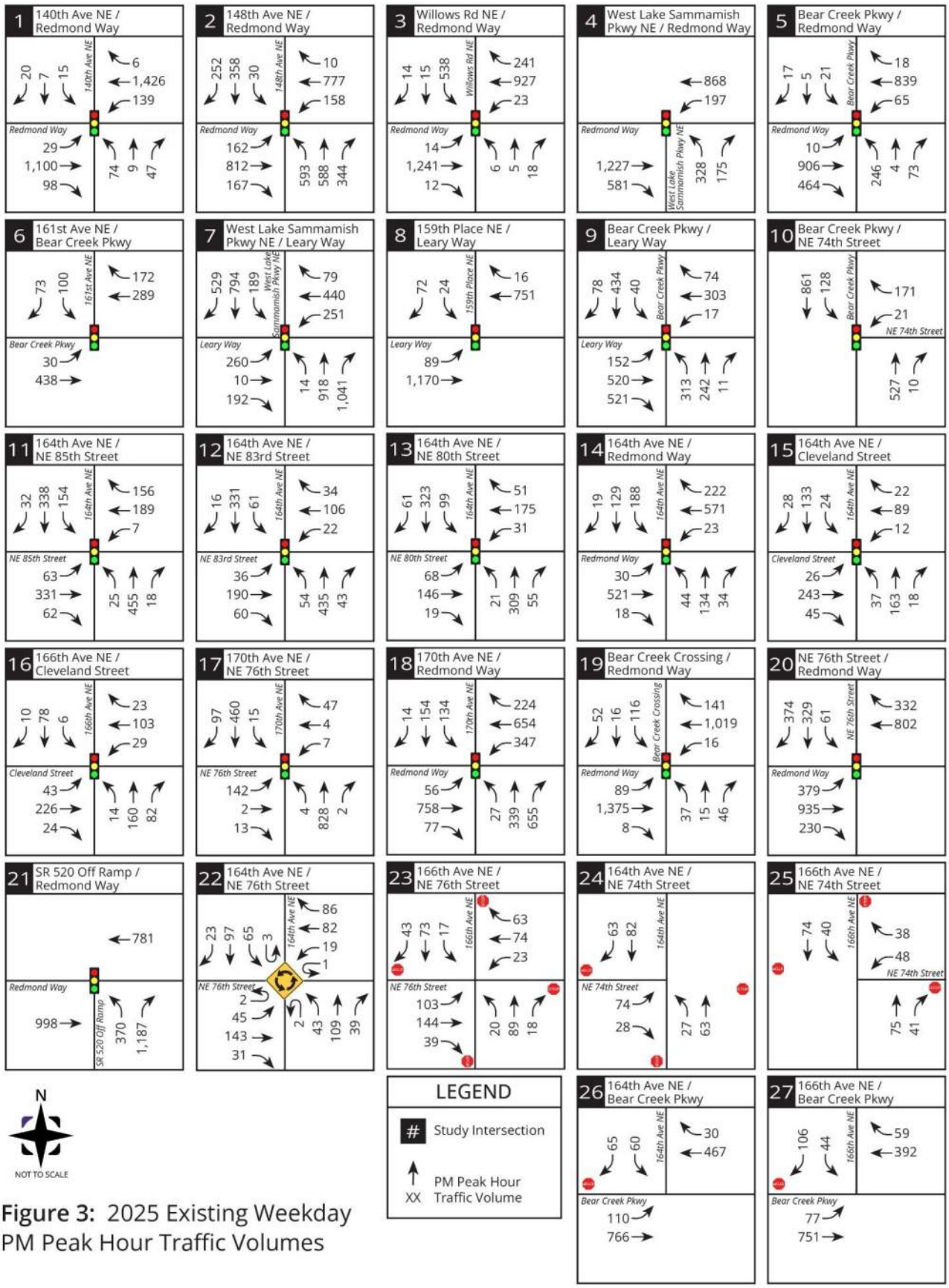


Figure 3: 2025 Existing Weekday PM Peak Hour Traffic Volumes

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

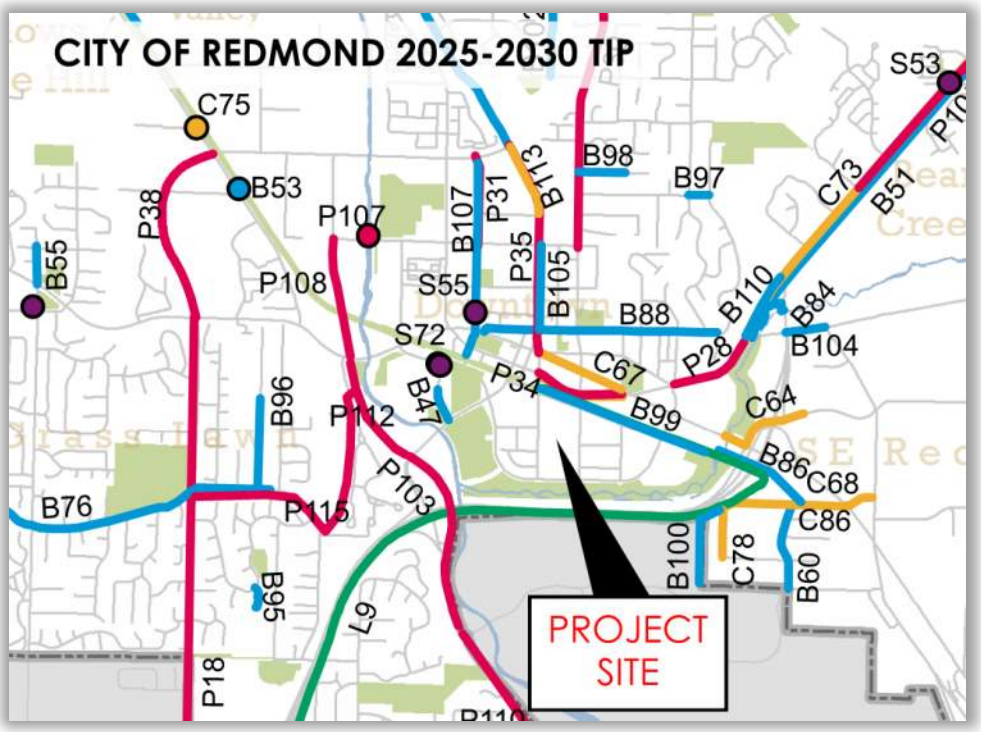
Study Intersection	LOS	Delay (sec)
Signalized Intersections:		
1. 140th Ave NE/Redmond Way	B	17.2
2. 148th Ave NE/Redmond Way	D	47.7
3. Willows Rd NE/Redmond Way	D	37.1
4. West Lake Sammamish Pkwy NE/Redmond Way	B	12.3
5. Bear Creek Pkwy/Redmond Way	B	12.4
6. Bear Creek Pkwy/161st Ave NE	B	16.7
7. West 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.

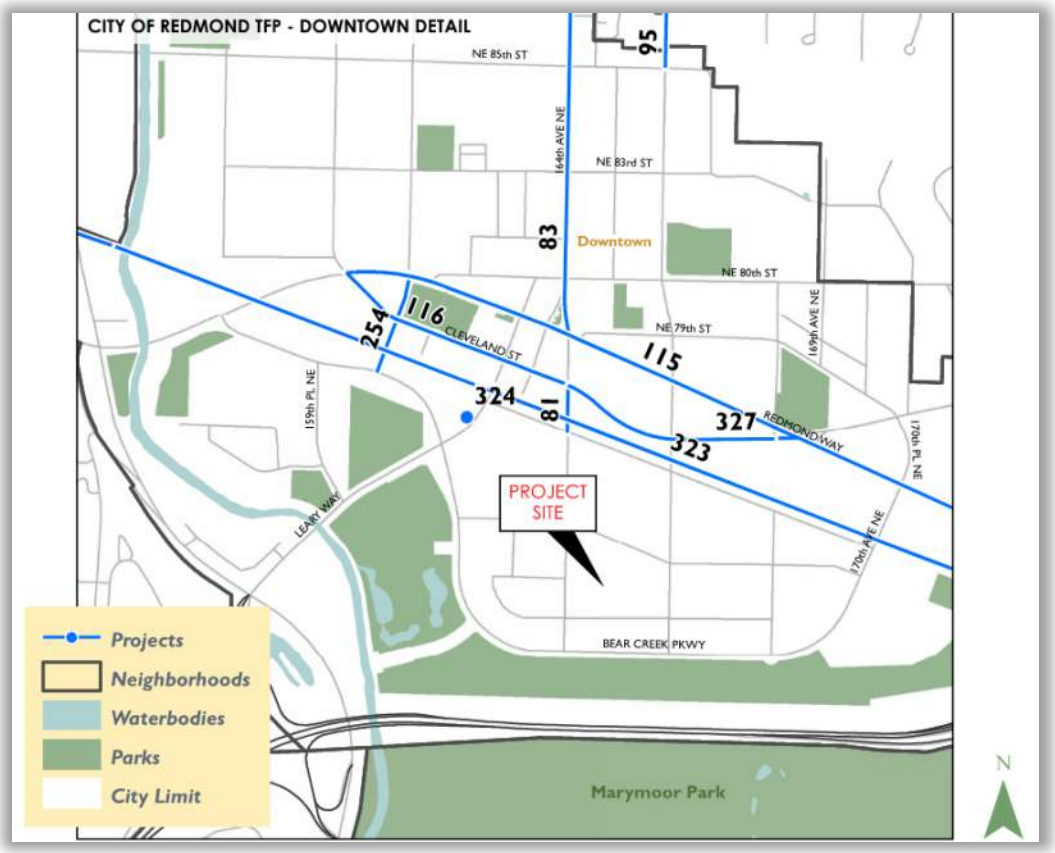
FUTURE CONDITIONS

Planned Transportation Improvements

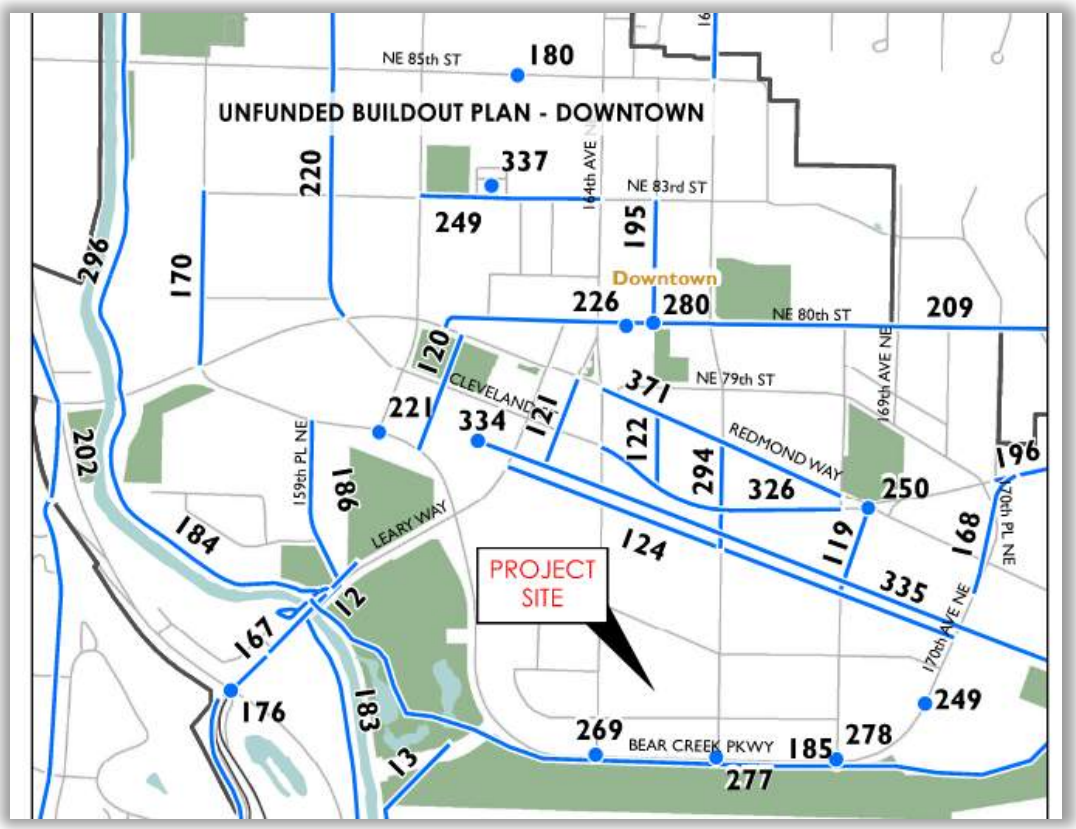
Based on a review of the currently proposed City of Redmond Six Year 2025-2030 Transportation Improvement Program (TIP) and the City of Redmond *Transportation Master Plan* (updated August 2017) including the *Transportation Facilities Plan (2013-2030)* and *Unfunded Buildout Plan*, the following section 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.

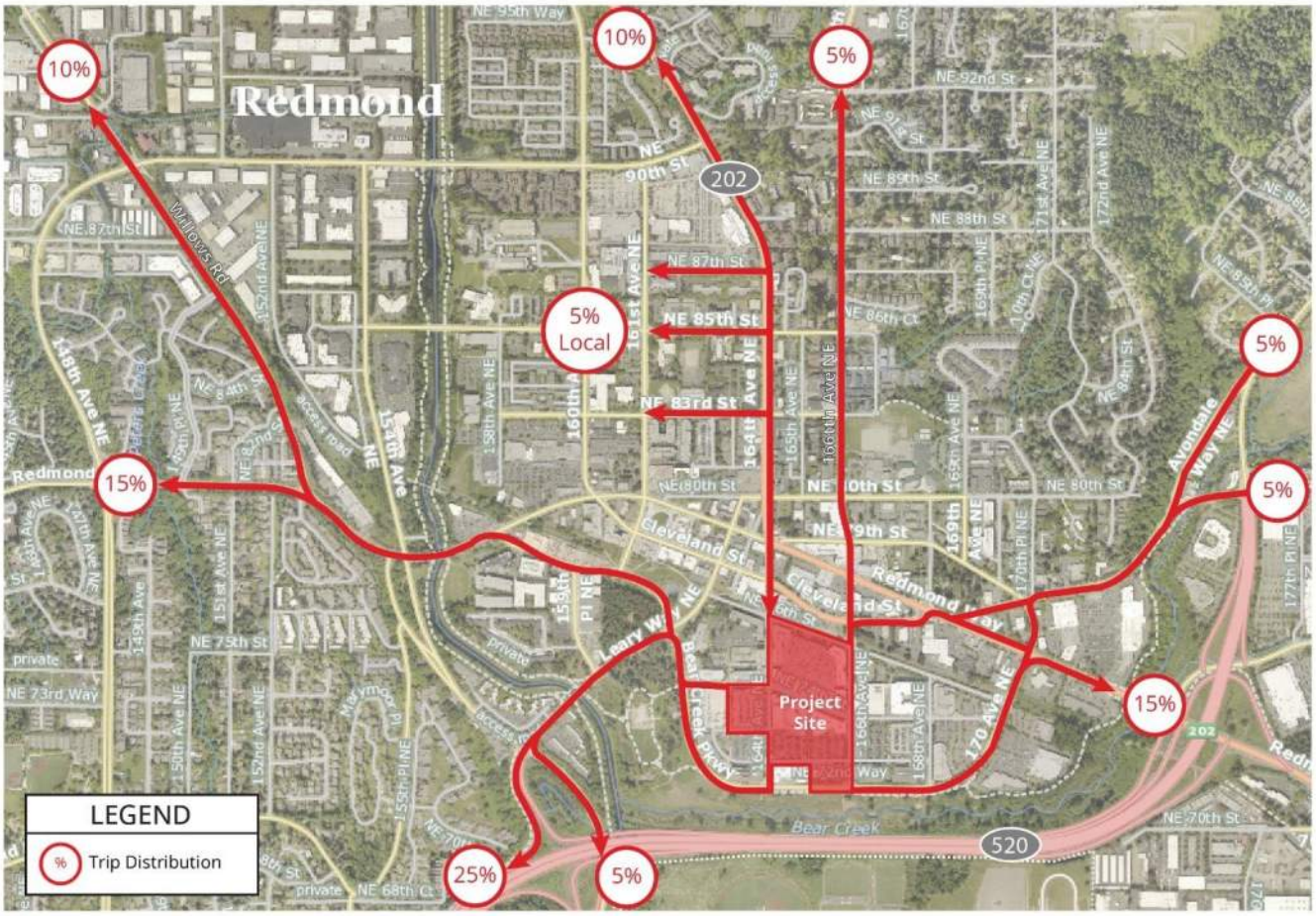


Figure 4: PM Peak Hour Project Trip Distribution

N
NOT TO SCALE

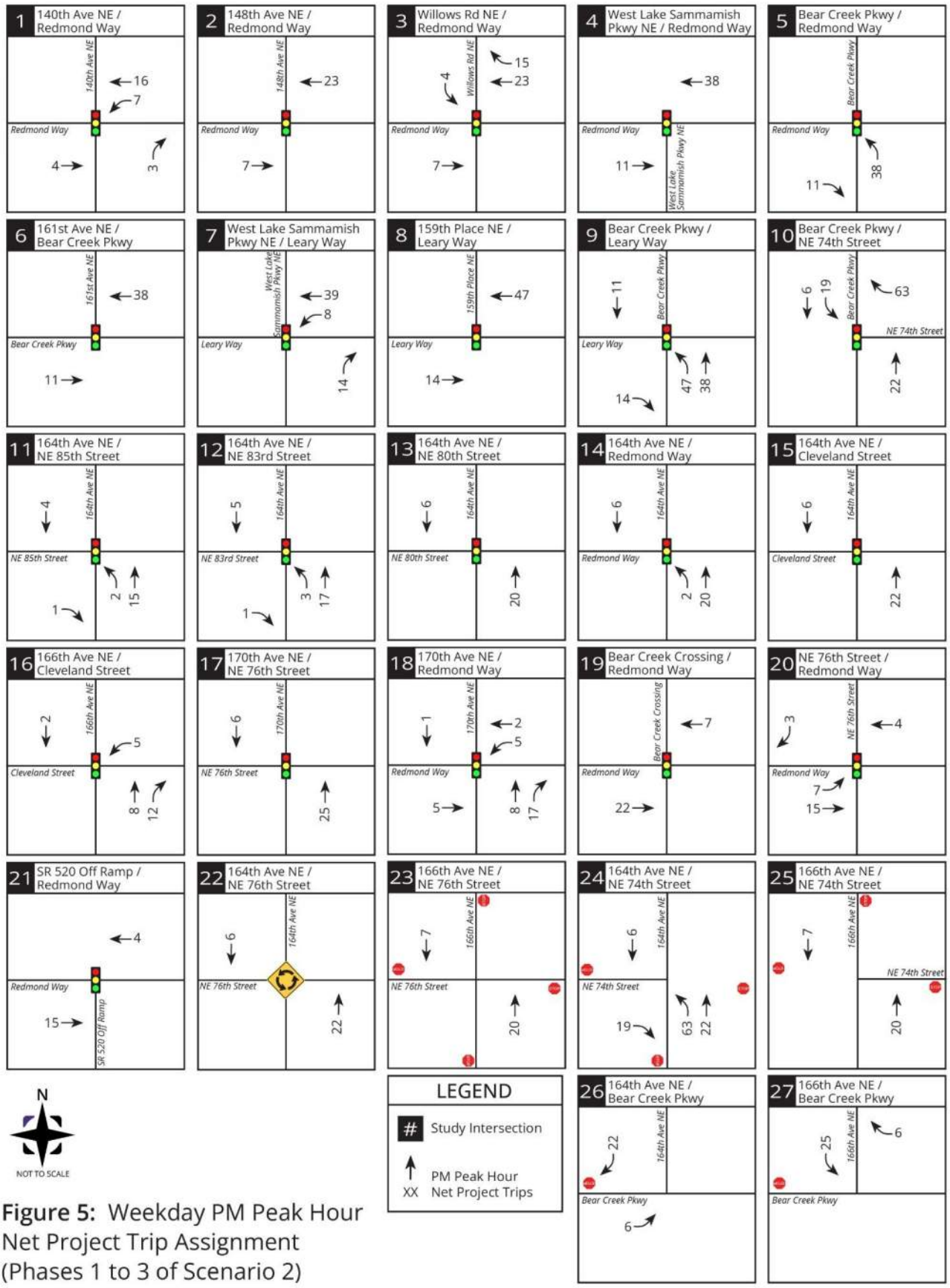


Figure 5: Weekday PM Peak Hour Net Project Trip Assignment (Phases 1 to 3 of Scenario 2)

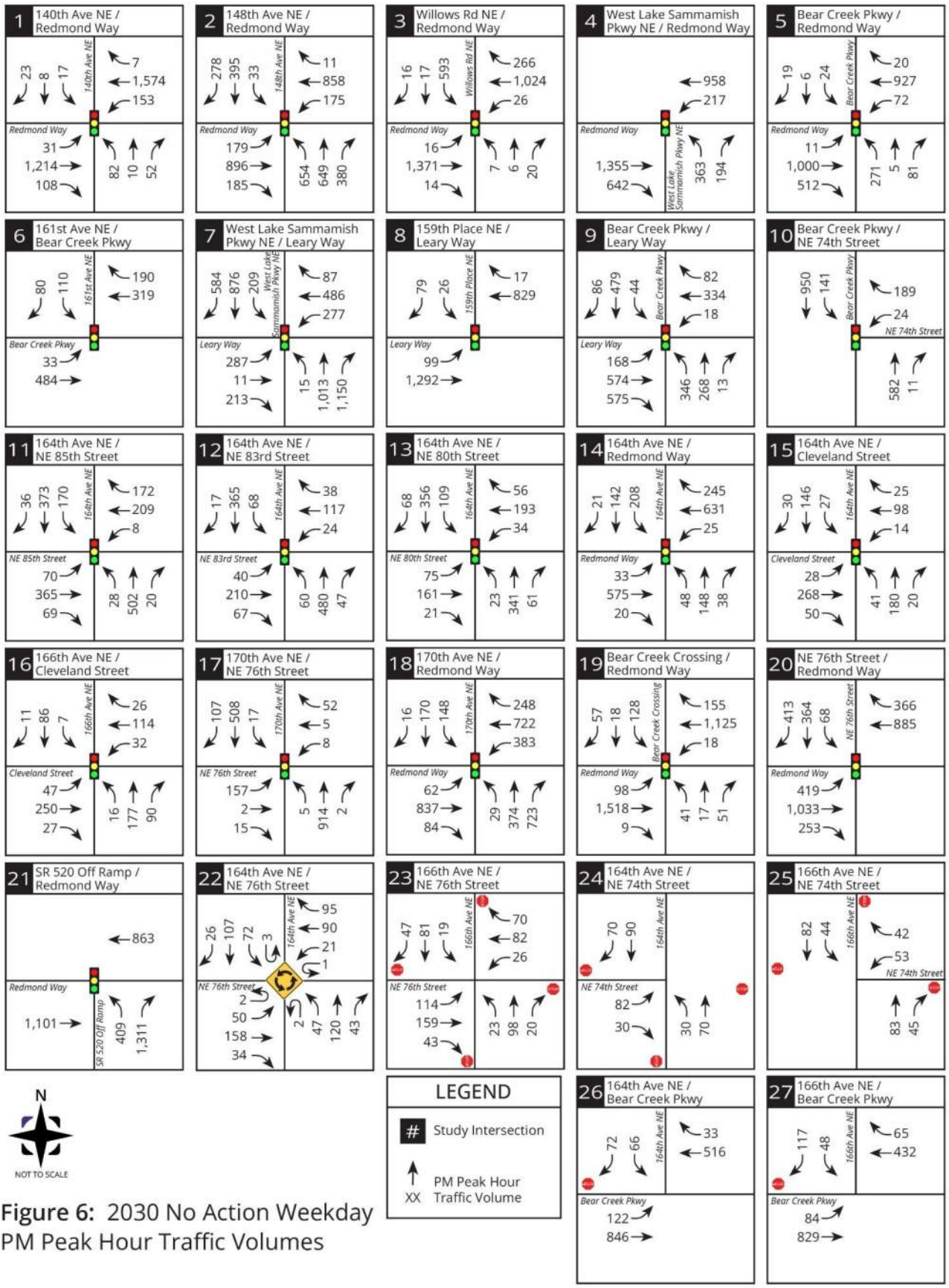


Figure 6: 2030 No Action Weekday PM Peak Hour Traffic Volumes

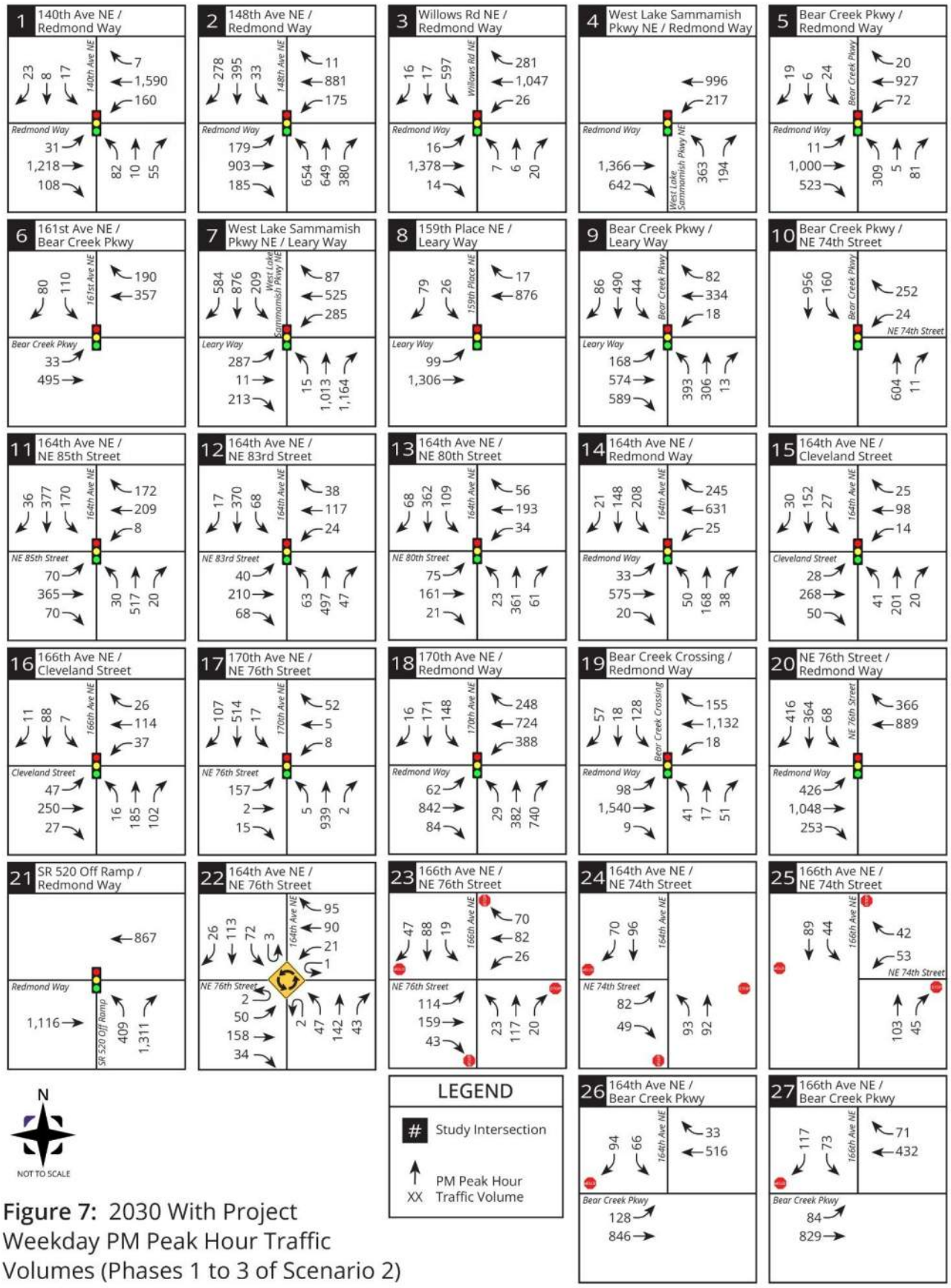


Figure 7: 2030 With Project Weekday PM Peak Hour Traffic Volumes (Phases 1 to 3 of Scenario 2)

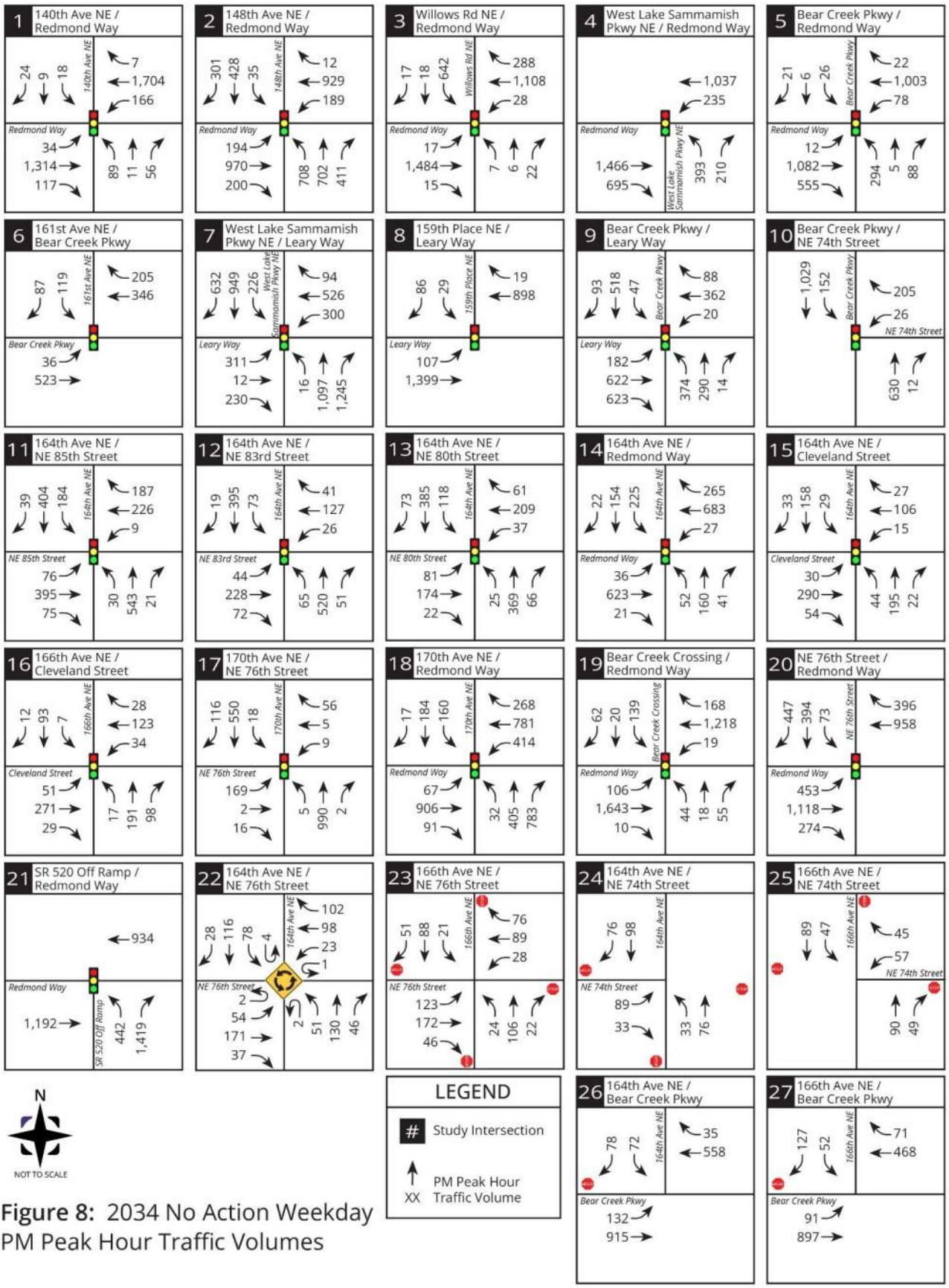


Figure 8: 2034 No Action Weekday PM Peak Hour Traffic Volumes

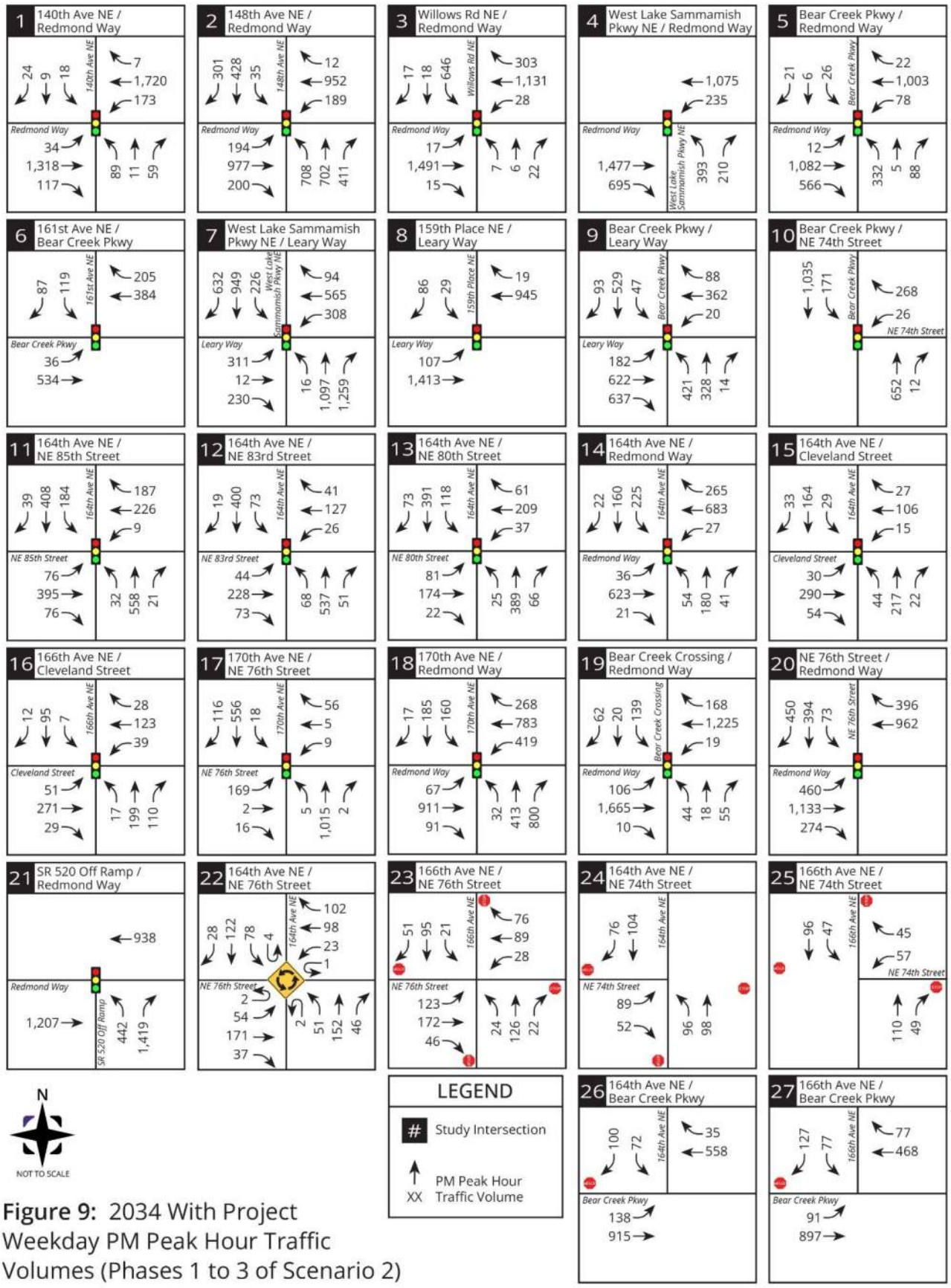


Figure 9: 2034 With Project Weekday PM Peak Hour Traffic Volumes (Phases 1 to 3 of Scenario 2)

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

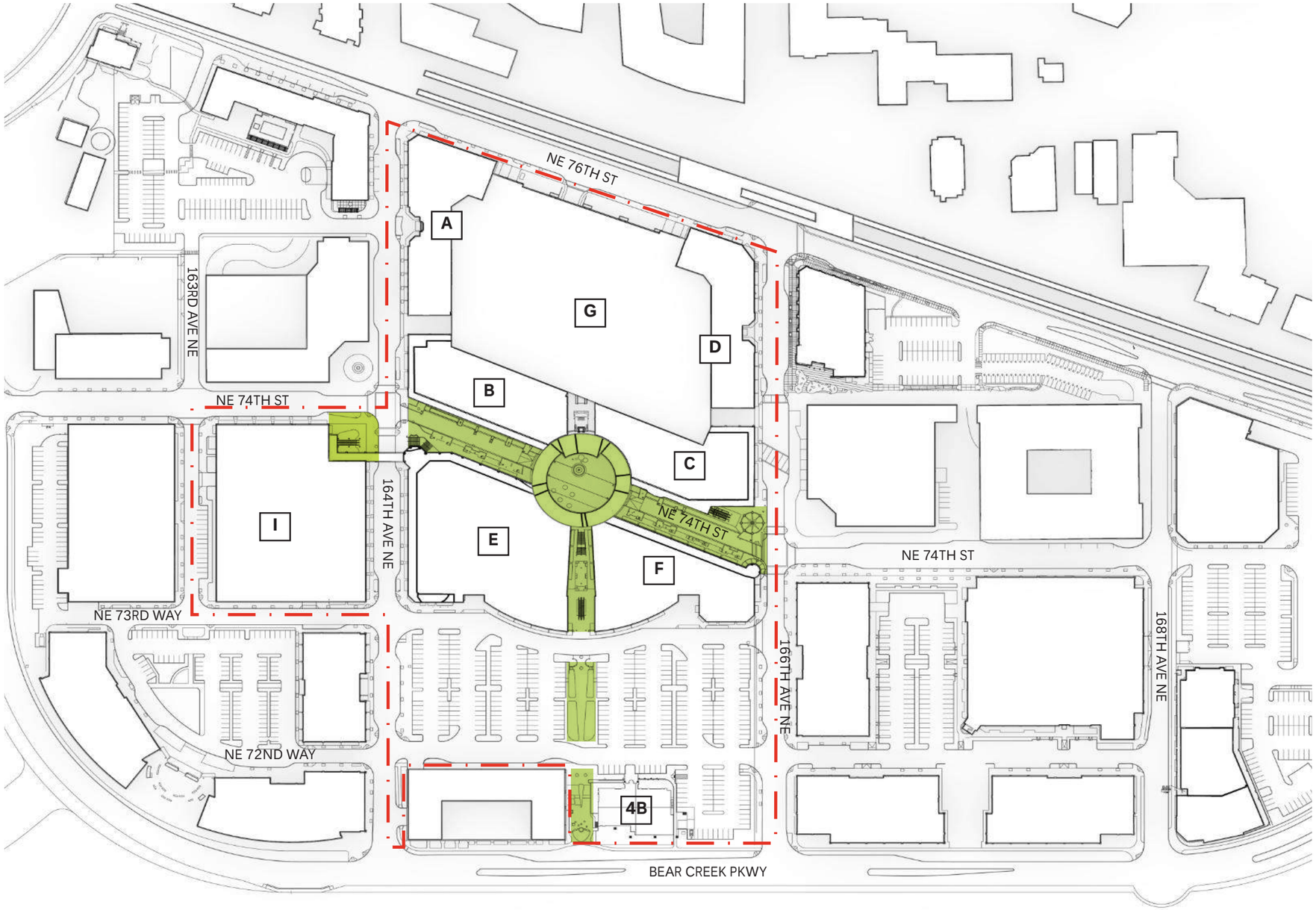
Off-Site Improvements. Based on the results of the analysis shown in this report, no project-specific off-site transportation mitigation is proposed for concurrency or SEPA purposes.

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

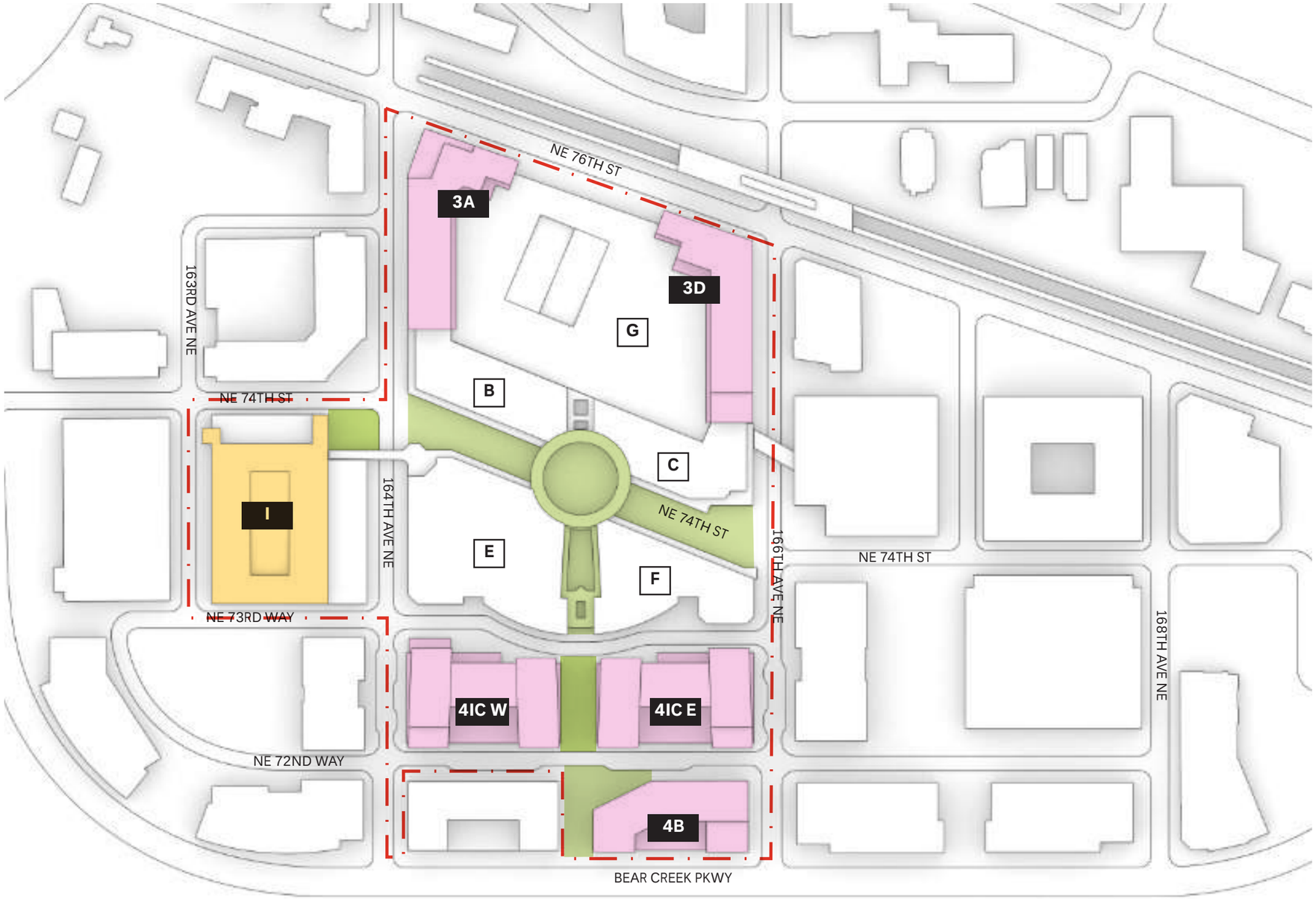
LEGEND

- 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	10/25/2023	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	From opposite direction - one left turn - one straight	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	06/20/2023	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 opposite 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						EC46483	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	03/03/2023	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	07/14/2022	13:45	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
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	12/13/2023	13:20	No Apparent Injury	0	0	2	0	0	Entering at angle	Making Right 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						ED01309	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	11/09/2022	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	06/04/2022	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	21:44	Suspected Minor Injury	2	0	2	0	0	Entering at angle	Going Straight Ahead	Going Straight Ahead	South	East	East	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						EA90804	02/24/2021	12:32	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	West	East	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	04/02/2023	07:20	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	West
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	EB13800	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

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

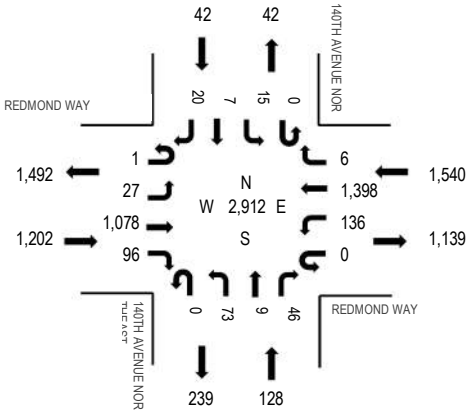
Exhibit E

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

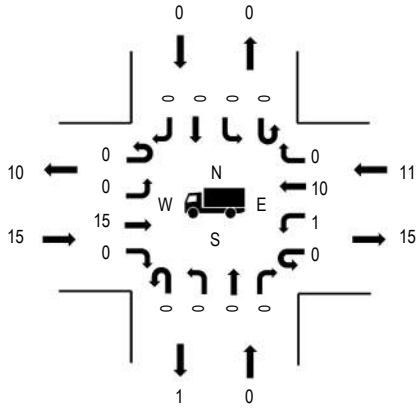
Location: 140TH AVENUE NORTHEAST & REDMOND WAY PM
Date: Tuesday, October 15, 2024
Peak Hour: 04:30 PM - 05:30 PM

Peak Hour

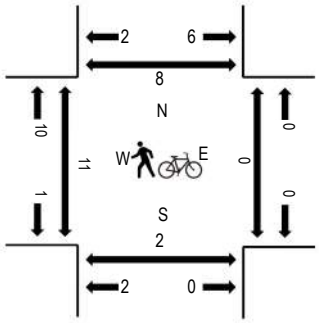
Motorized Vehicles



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

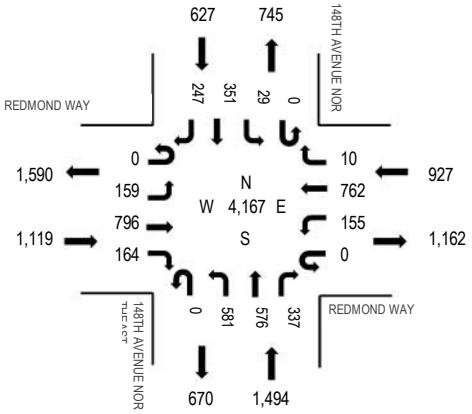
Exhibit E

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

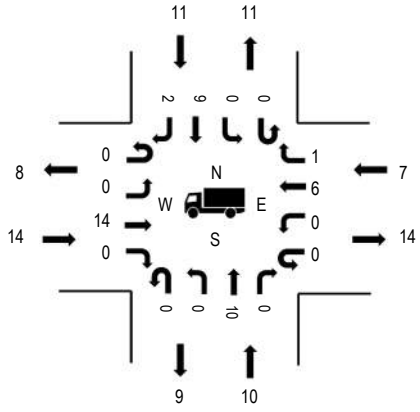
Location: 148TH AVENUE NORTHEAST & REDMOND WAY PM
Date: Tuesday, October 15, 2024
Peak Hour: 05:00 PM - 06:00 PM

Peak Hour

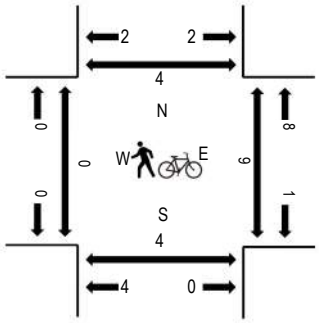
Motorized Vehicles



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

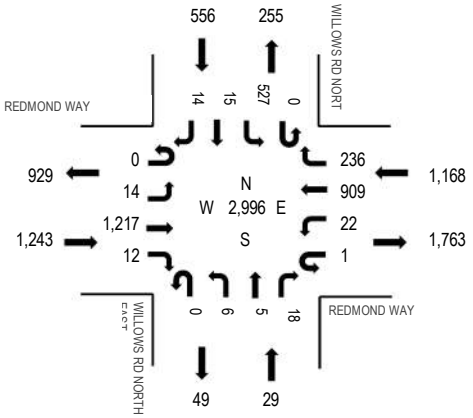
Exhibit E

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

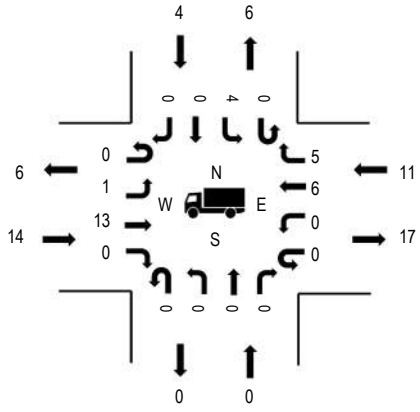
Peak Hour

Motorized Vehicles

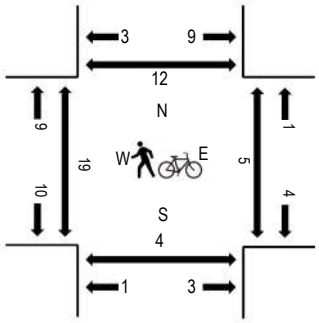


	HV%	PHF
EB	1.1%	0.91
WB	0.9%	0.88
NB	0.0%	0.81
SB	0.7%	0.90
All	1.0%	0.93

Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



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

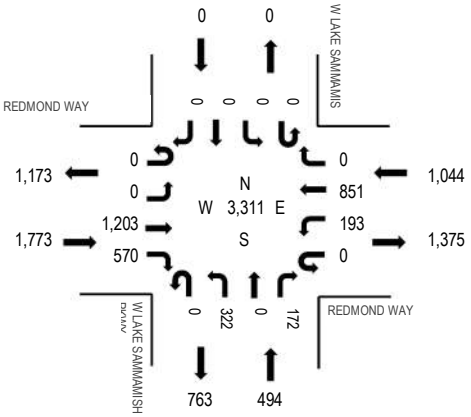
Exhibit E

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

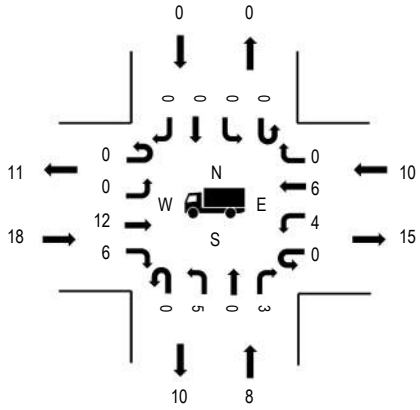
Location: W LAKE SAMMAMISH PKWY & REDMOND WAY PM
Date: Tuesday, October 15, 2024
Peak Hour: 04:30 PM - 05:30 PM

Peak Hour

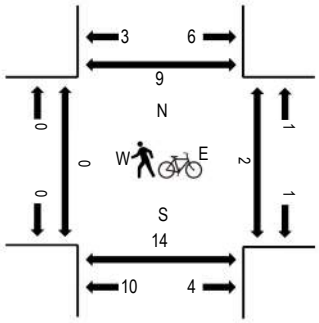
Motorized Vehicles



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

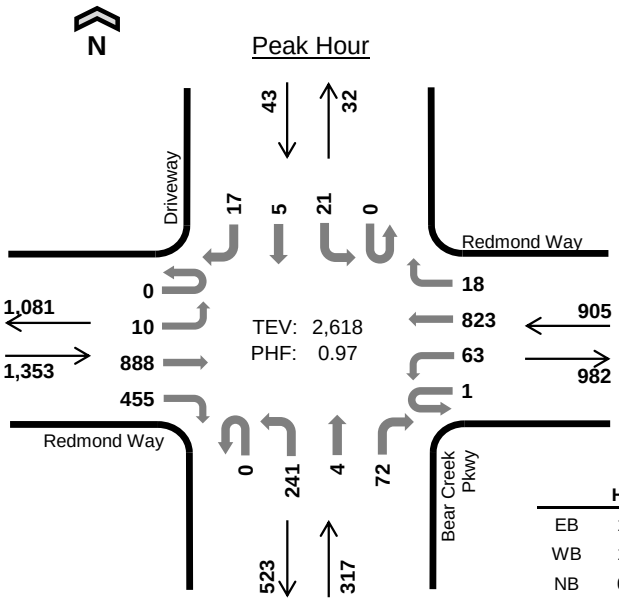
Traffic Counts - Motorized Vehicles

Interval Start Time	REDMOND WAY Eastbound				REDMOND WAY Westbound				W LAKE SAMMAMISH PKWY Northbound				W LAKE SAMMAMISH PKWY Southbound				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	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	

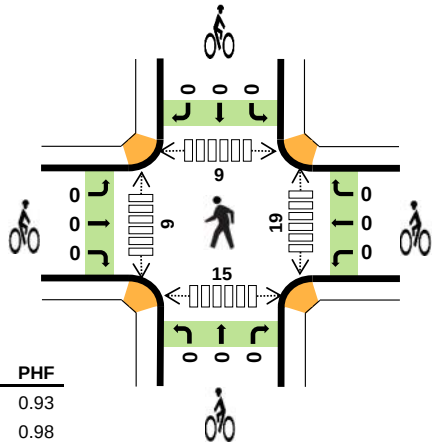
Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles in Crosswalk

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					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	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**

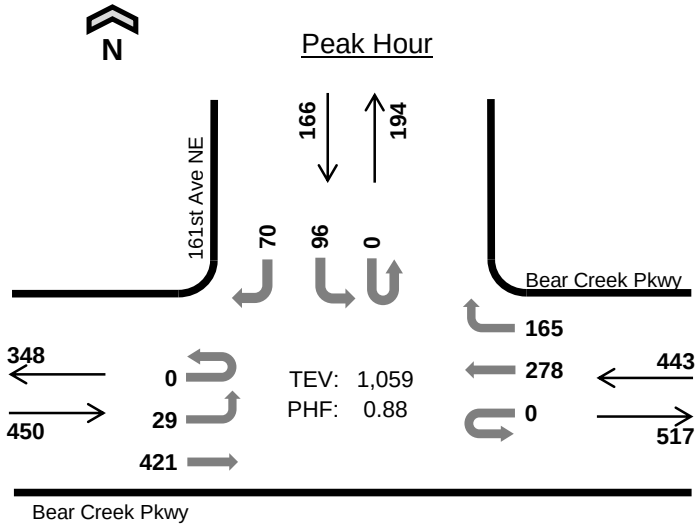
Two-Hour Count Summaries - Bikes

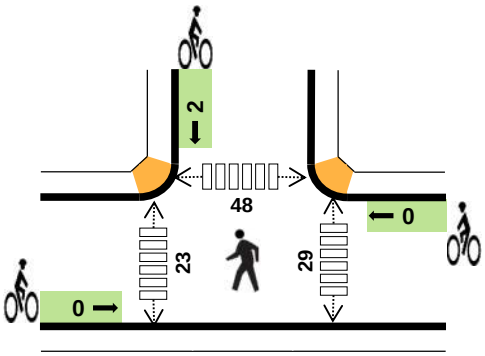
Interval Start	Redmond Way Eastbound			Redmond Way Westbound			Bear Creek Pkwy Northbound			Driveway Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	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**

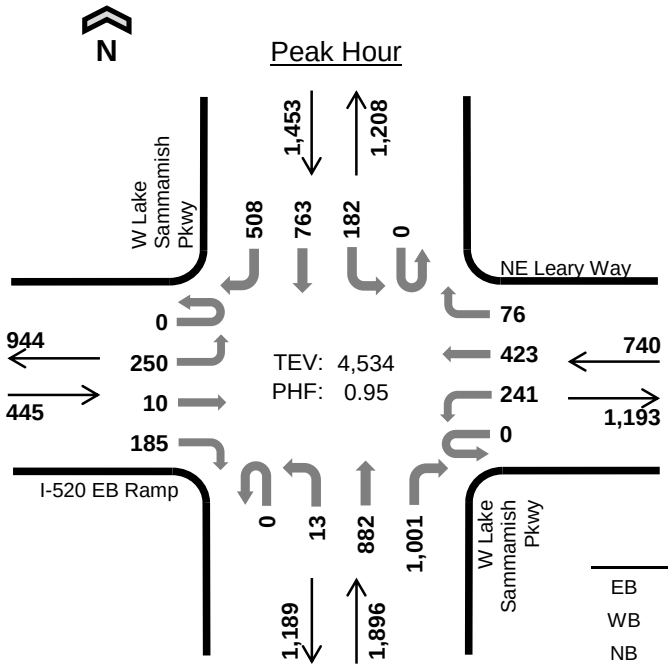
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

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***

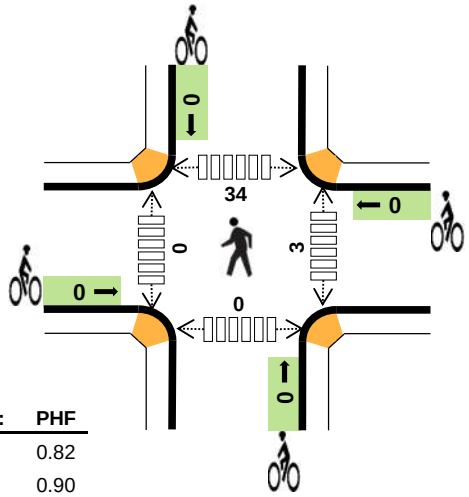
Mark Skaggs: (425) 250-0777

mark.skaggs@idaxdata.com

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

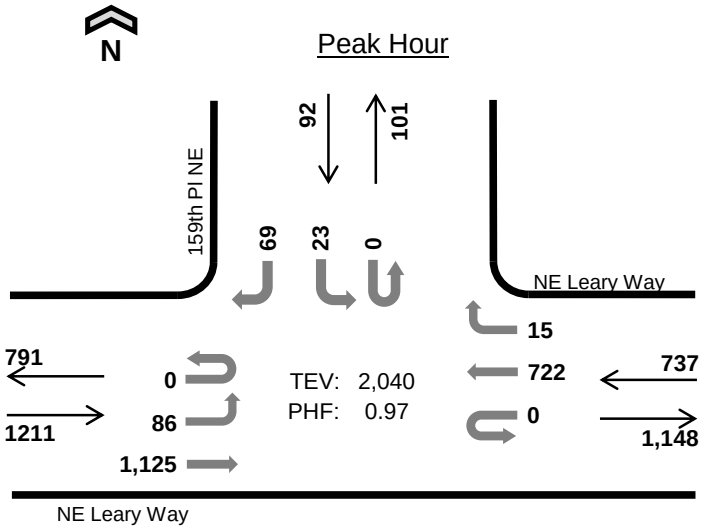
Two-Hour Count Summaries

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**

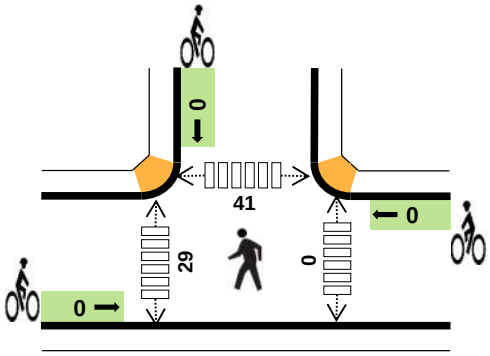
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

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



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

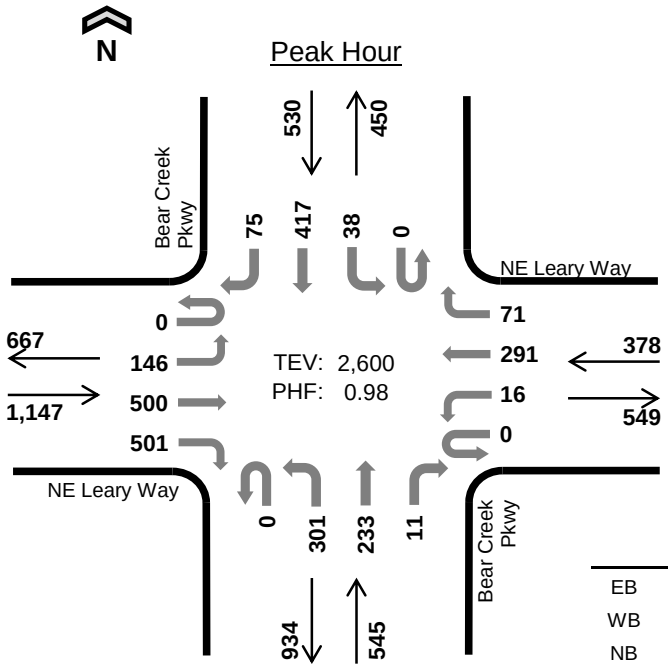
Interval Start	NE Leary Way Eastbound				NE Leary Way Westbound				0 Northbound				159th Pl NE Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	22	244	0	0	0	203	4	0	0	0	0	0	3	0	15	491	0
4:15 PM	0	15	302	0	0	0	165	3	0	0	0	0	0	4	0	22	511	0
4:30 PM	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.

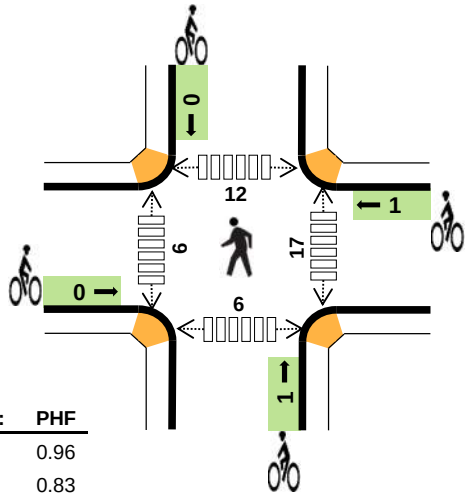
Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	5	5	0	1	*11*	0	0	0	0	*0*	0	2	5	0	*7*
4:15 PM	5	2	0	1	*8*	2	0	0	0	*2*	0	0	8	0	*8*
4:30 PM	2	1	0	0	*3*	0	0	0	0	*0*	0	1	4	0	*5*
4:45 PM	4	2	0	1	*7*	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***

Mark Skaggs: (425) 250-0777
mark.skaggs@idaxdata.com

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***

Mark Skaggs: (425) 250-0777

mark.skaggs@idaxdata.com

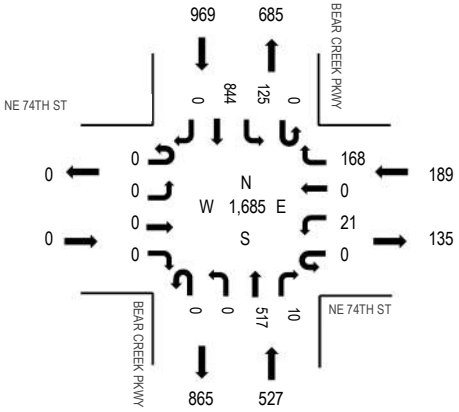
Exhibit E

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

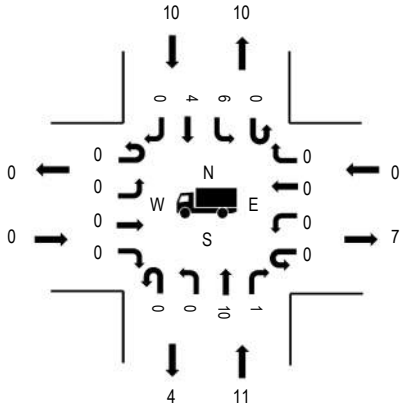
Location: BEAR CREEK PKWY & NE 74TH ST PM
Date: Tuesday, October 15, 2024
Peak Hour: 04:45 PM - 05:45 PM

Peak Hour

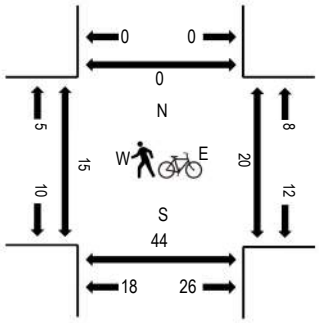
Motorized Vehicles



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

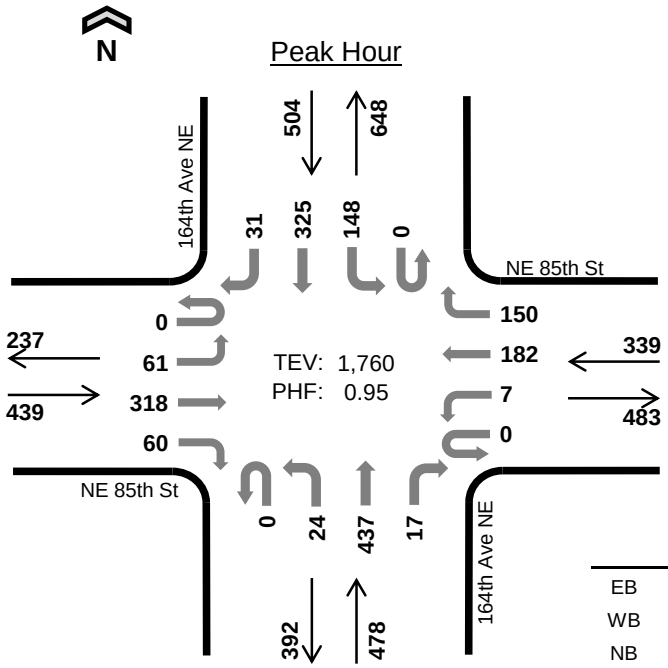
Traffic Counts - Motorized Vehicles

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	

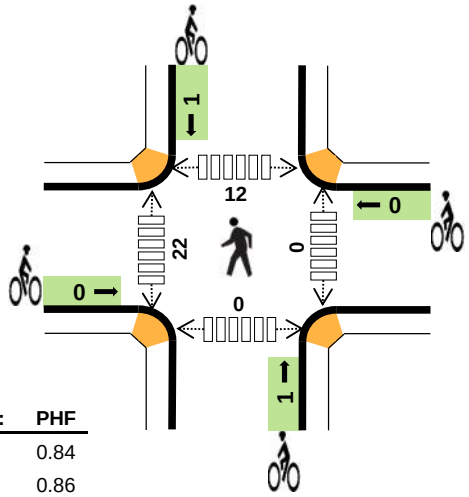
Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles in Crosswalk

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

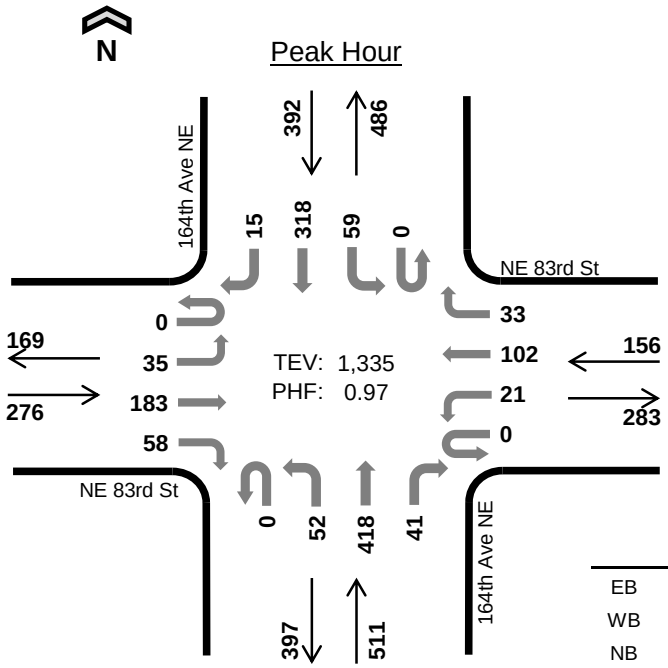
Interval Start	NE 85th St Eastbound				NE 85th St Westbound				164th Ave NE Northbound				164th Ave NE Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	18	68	19	0	2	42	36	0	7	111	2	0	40	98	6	449	0
4:15 PM	0	12	66	11	0	3	63	19	0	11	90	1	0	27	75	14	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.

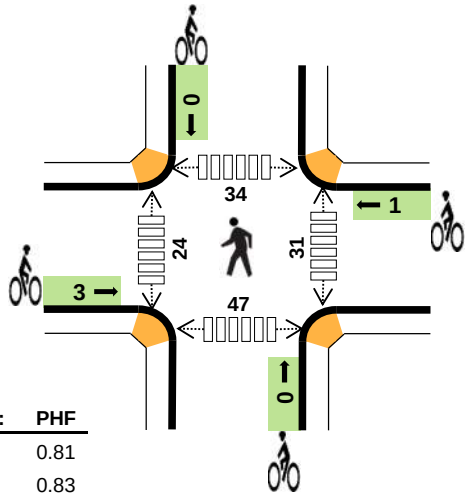
Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	0	1	2	*3*	1	0	0	0	*1*	0	5	6	0	*11*
4:15 PM	0	0	2	0	*2*	0	1	1	0	*2*	5	2	9	1	*17*
4:30 PM	1	0	3	2	*6*	0	0	0	0	*0*	0	4	5	0	*9*
4:45 PM	0	0	1	1	*2*	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***

Mark Skaggs: (425) 250-0777
mark.skaggs@idaxdata.com

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

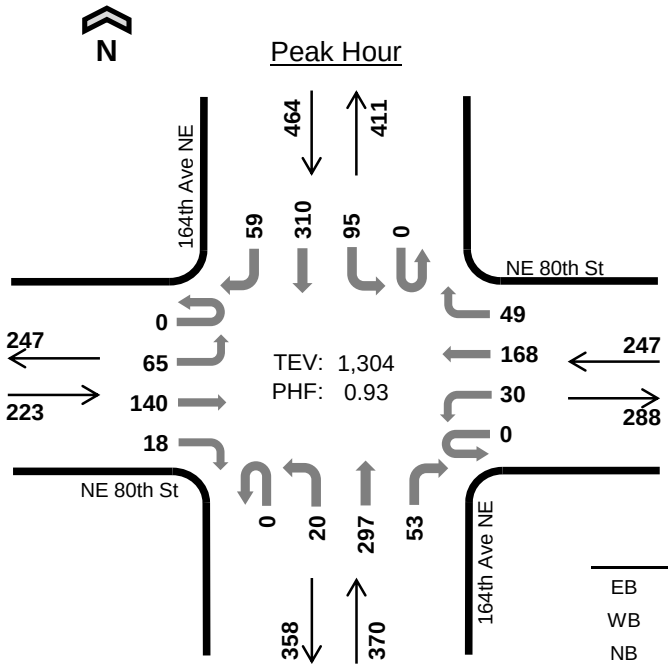
Interval Start	NE 83rd St Eastbound				NE 83rd St Westbound				164th Ave NE Northbound				164th Ave NE Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	4	31	22	0	6	20	11	0	7	103	4	0	17	99	6	330	0
4:15 PM	0	8	32	10	0	4	22	8	0	18	91	3	0	11	70	3	280	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.

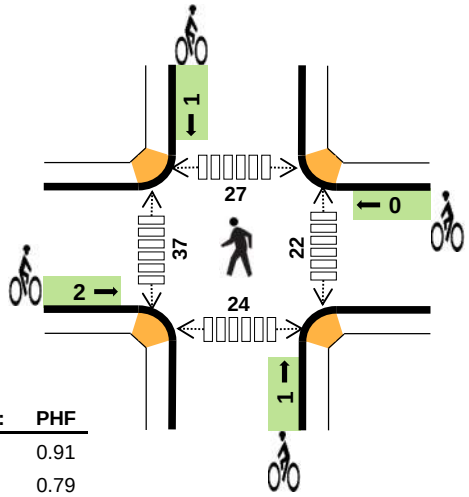
Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	2	0	3	2	*7*	0	0	0	0	*0*	9	4	13	5	*31*
4:15 PM	3	3	4	0	*10*	0	0	0	0	*0*	3	3	4	9	*19*
4:30 PM	3	1	2	3	*9*	0	0	0	0	*0*	3	4	1	7	*15*
4:45 PM	4	0	3	1	*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***

Mark Skaggs: (425) 250-0777
mark.skaggs@idaxdata.com

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

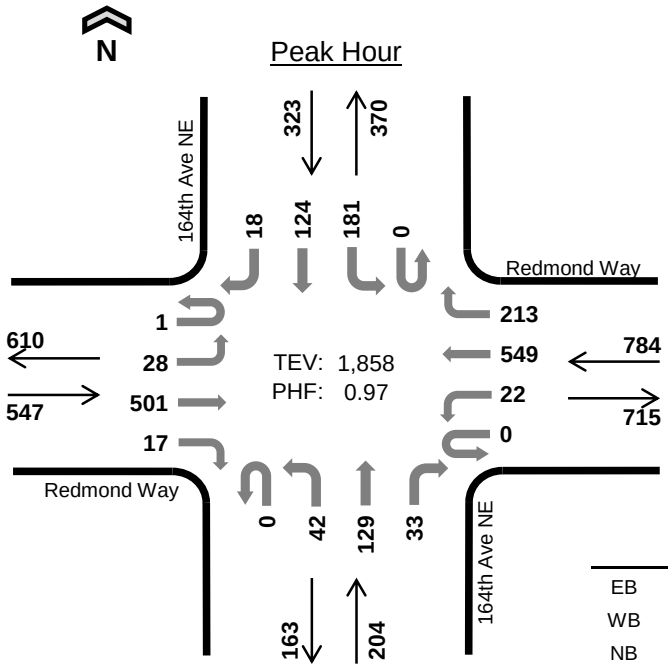
Interval Start	NE 80th St Eastbound				NE 80th St Westbound				164th Ave NE Northbound				164th Ave NE Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	**0**	**20**	**27**	**6**	**0**	**11**	**53**	**14**	**0**	**9**	**70**	**11**	**0**	**22**	**88**	**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.

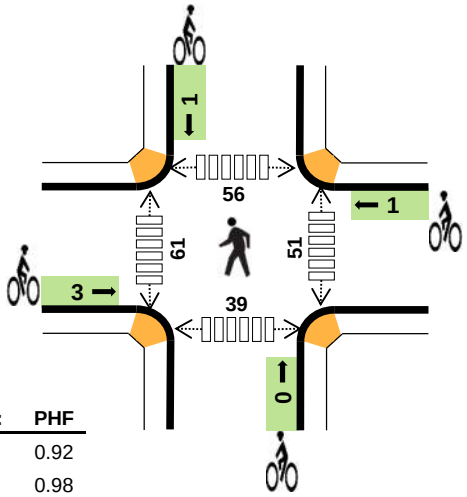
Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	**1**	**1**	**4**	**3**	***9***	**1**	**0**	**0**	**1**	***2***	**5**	**7**	**17**	**1**	*30*
4:15 PM	**0**	**1**	**2**	**4**	***7***	**0**	**0**	**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***

Mark Skaggs: (425) 250-0777 mark.skaggs@idaxdata.com

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***

Mark Skaggs: (425) 250-0777
mark.skaggs@idaxdata.com

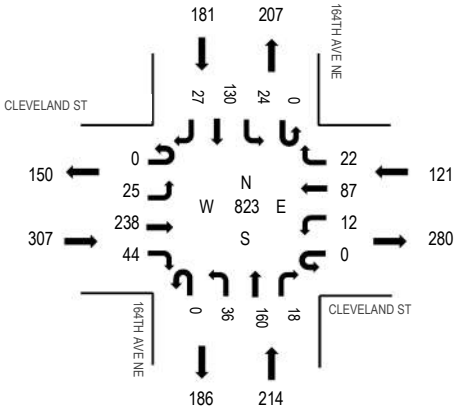
Exhibit E

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

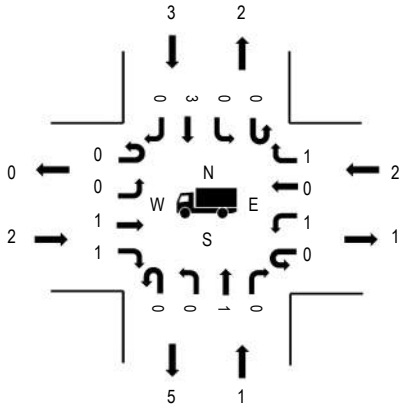
Location: 164TH AVE NE & CLEVELAND ST PM
Date: Tuesday, October 15, 2024
Peak Hour: 04:15 PM - 05:15 PM

Peak Hour

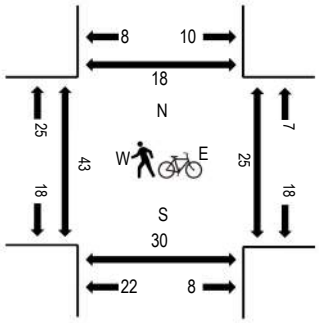
Motorized Vehicles



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

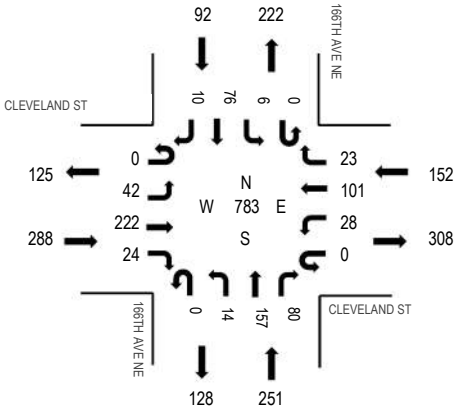
Exhibit E

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

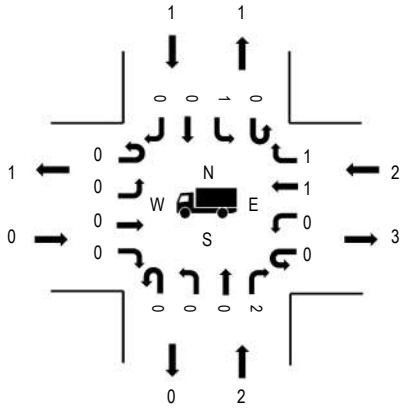
Location: 166TH AVE NE & CLEVELAND ST PM
Date: Tuesday, October 15, 2024
Peak Hour: 04:45 PM - 05:45 PM

Peak Hour

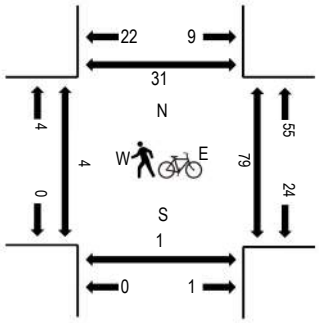
Motorized Vehicles



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

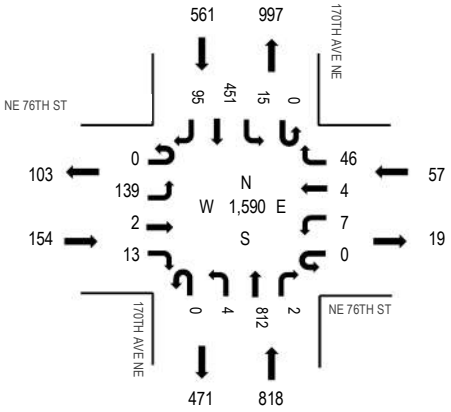
Exhibit E

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

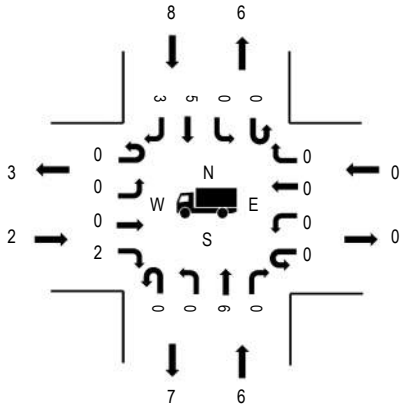
Location: 170TH AVE NE & NE 76TH ST PM
Date: Tuesday, October 15, 2024
Peak Hour: 04:15 PM - 05:15 PM

Peak Hour

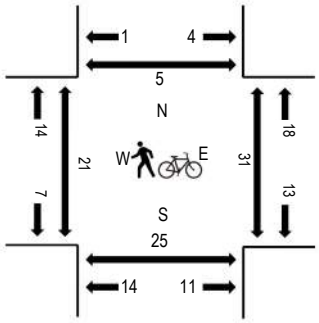
Motorized Vehicles



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

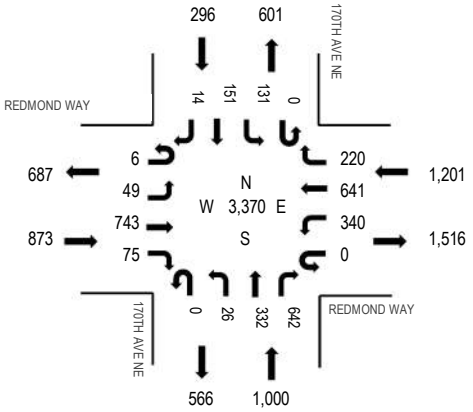
Exhibit E

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

Location: 170TH AVE NE & REDMOND WAY PM
Date: Tuesday, October 15, 2024
Peak Hour: 04:15 PM - 05:15 PM

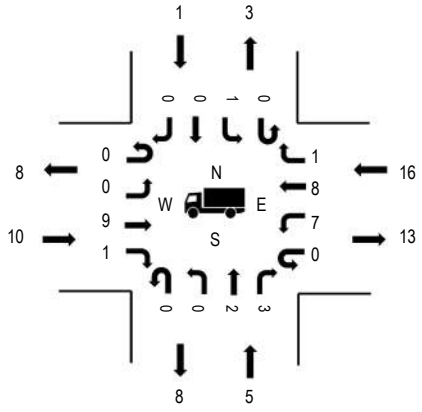
Peak Hour

Motorized Vehicles

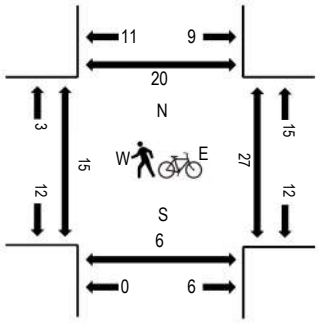


	HV%	PHF
EB	1.1%	0.97
WB	1.3%	0.91
NB	0.5%	0.98
SB	0.3%	0.81
All	0.9%	0.95

Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



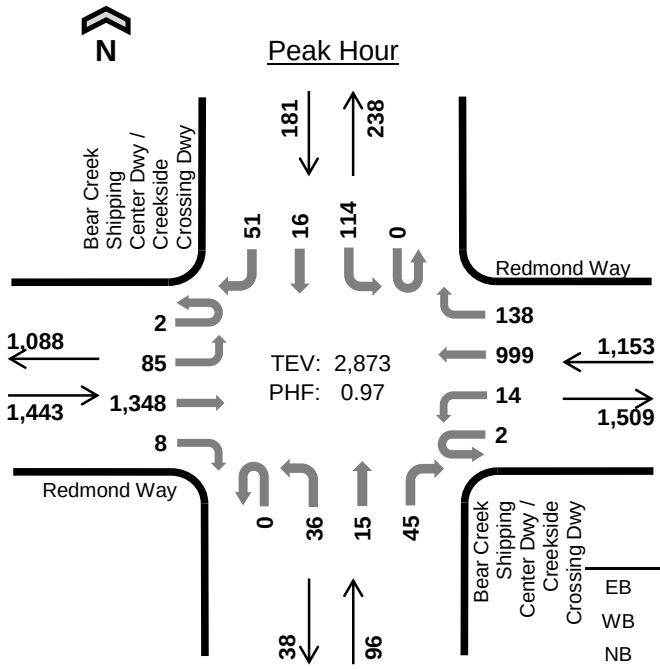
Traffic Counts - Motorized Vehicles

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	

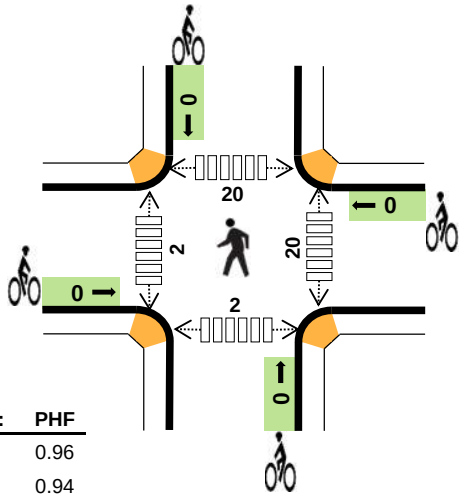
Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles in Crosswalk

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

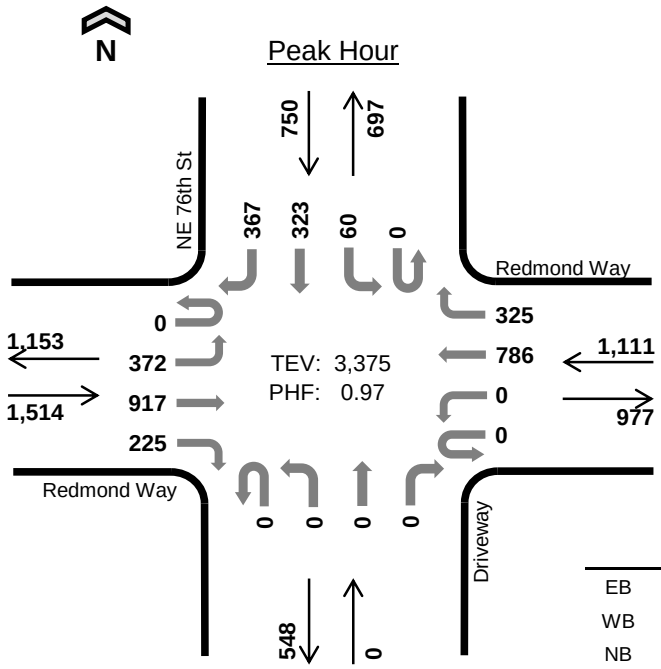
Two-Hour Count Summaries

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**

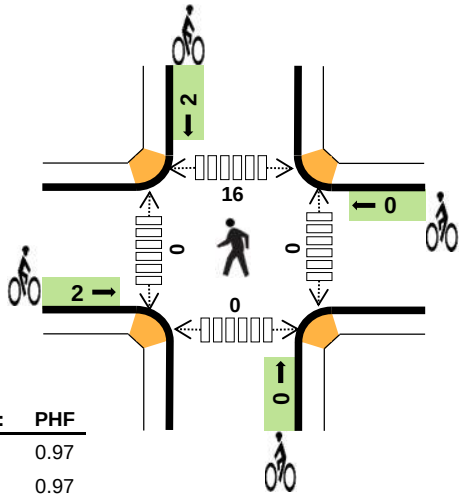
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

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.

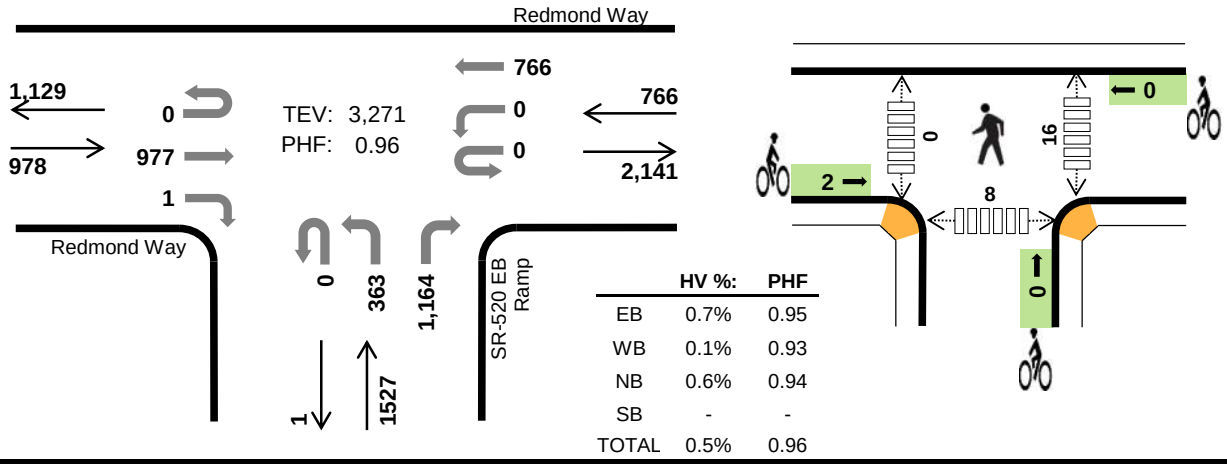
Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	4	1	0	9	*14*	0	0	0	0	*0*	0	0	3	0	*3*
4:15 PM	3	3	0	4	*10*	0	0	0	0	*0*	0	0	5	0	*5*
4:30 PM	**4**	**0**	**0**	**4**	***8***	**0**	**0**	**0**	**0**	***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***

Mark Skaggs: (425) 250-0777
mark.skaggs@idaxdata.com

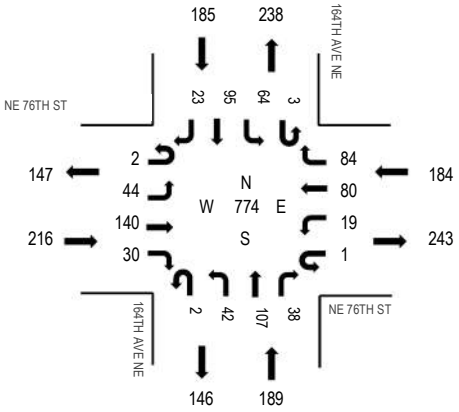
Exhibit E

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

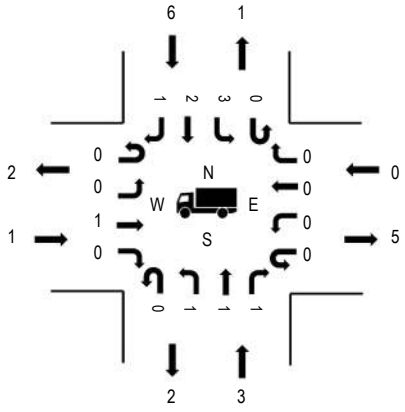
Location: 164TH AVE NE & NE 76TH ST PM
Date: Tuesday, October 15, 2024
Peak Hour: 04:00 PM - 05:00 PM

Peak Hour

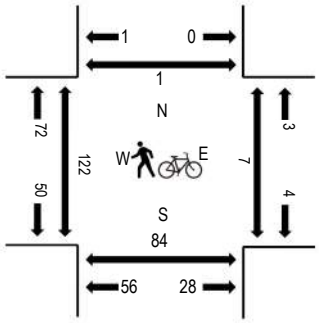
Motorized Vehicles



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				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	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

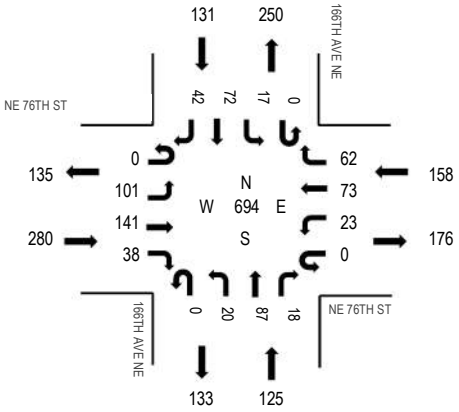
Exhibit E

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

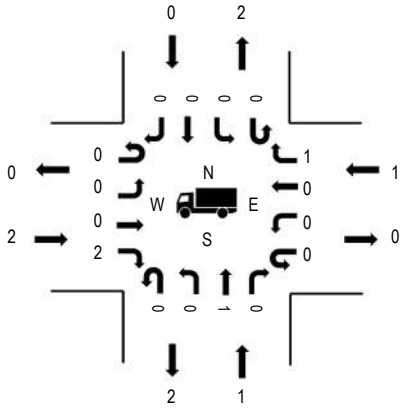
Location: 166TH AVE NE & NE 76TH ST PM
Date: Tuesday, October 15, 2024
Peak Hour: 04:45 PM - 05:45 PM

Peak Hour

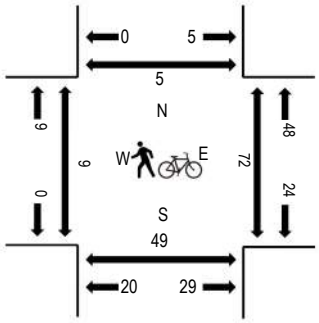
Motorized Vehicles



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

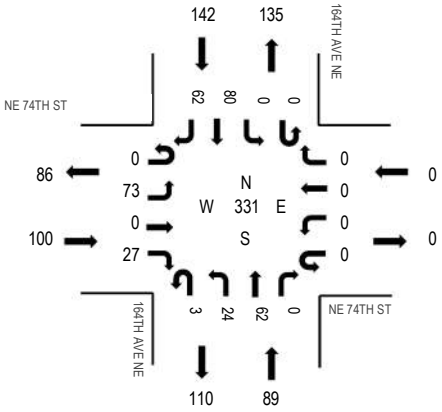
Exhibit E

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

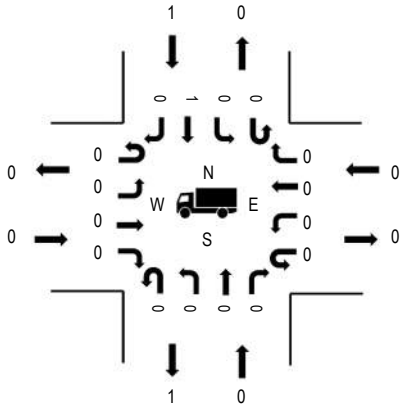
Location: 164TH AVE NE & NE 74TH ST PM
Date: Tuesday, October 15, 2024
Peak Hour: 05:00 PM - 06:00 PM

Peak Hour

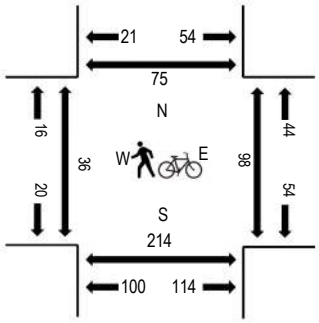
Motorized Vehicles



Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



	HV%	PHF
EB	0.0%	0.93
WB	0.0%	0.00
NB	0.0%	0.77
SB	0.7%	0.93
All	0.3%	0.89

Traffic Counts - Motorized Vehicles

Interval Start Time	NE 74TH ST Eastbound				NE 74TH 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	13	0	1	0	0	0	0	1	8	19	0	0	0	25	33	100	304
4:15 PM	0	21	0	5	0	0	0	0	0	2	13	0	0	0	17	11	69	297
4:30 PM	0	13	0	8	0	0	0	0	1	2	13	0	1	0	19	11	68	305
4:45 PM	0	17	0	3	0	0	0	0	1	3	13	0	1	0	16	13	67	311
5:00 PM	0	18	0	8	0	0	0	0	0	9	20	0	0	0	18	20	93	331
5:15 PM	0	14	0	7	0	0	0	0	0	4	14	0	0	0	22	16	77	
5:30 PM	0	24	0	3	0	0	0	0	1	7	10	0	0	0	18	11	74	
5:45 PM	0	17	0	9	0	0	0	0	2	4	18	0	0	0	22	15	87	
Count Total	0	137	0	44	0	0	0	0	6	39	120	0	2	0	157	130	635	
Peak Hour	0	73	0	27	0	0	0	0	3	24	62	0	0	0	80	62	331	

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	0	1	3	4:00 PM	0	0	0	0	0	4:00 PM	11	38	26	18	93
4:15 PM	0	0	0	1	1	4:15 PM	1	0	0	0	1	4:15 PM	11	45	22	15	93
4:30 PM	0	1	0	0	1	4:30 PM	0	0	0	0	0	4:30 PM	6	37	12	12	67
4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	0	0	4:45 PM	9	48	16	11	84
5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0	5:00 PM	6	57	19	11	93
5:15 PM	0	0	0	0	0	5:15 PM	0	0	1	0	1	5:15 PM	7	69	30	21	127
5:30 PM	0	0	0	1	1	5:30 PM	0	0	1	0	1	5:30 PM	10	35	29	17	91
5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0	5:45 PM	13	53	20	26	112
Count Total	2	1	0	3	6	Count Total	1	0	2	0	3	Count Total	73	382	174	131	760
Peak Hour	0	0	0	1	1	Peak Hour	0	0	2	0	2	Peak Hour	36	214	98	75	423

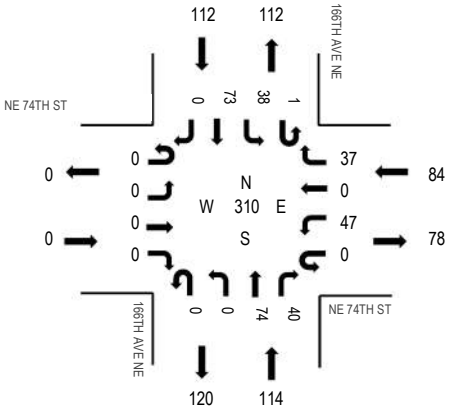
Exhibit E

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

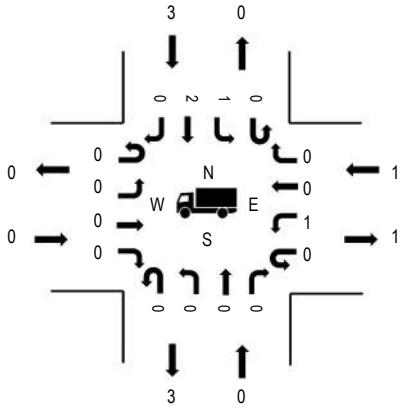
Location: 166TH AVE NE & NE 74TH ST PM
Date: Tuesday, October 15, 2024
Peak Hour: 05:00 PM - 06:00 PM

Peak Hour

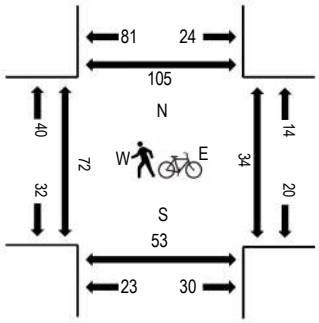
Motorized Vehicles



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

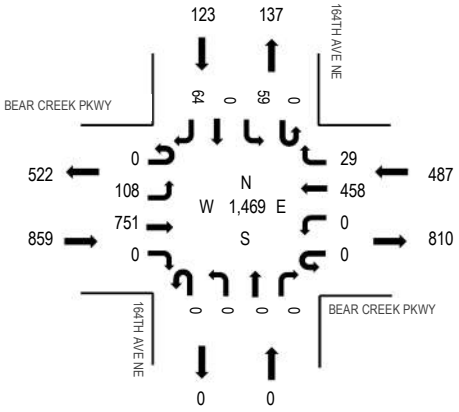
Exhibit E

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

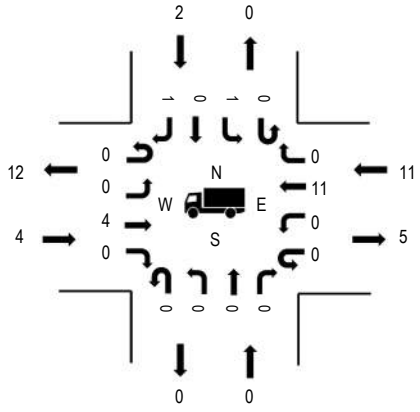
Location: 164TH AVE NE & BEAR CREEK PKWY PM
Date: Tuesday, October 15, 2024
Peak Hour: 04:45 PM - 05:45 PM

Peak Hour

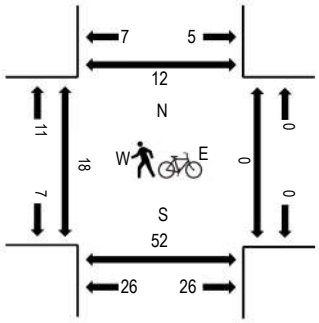
Motorized Vehicles



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

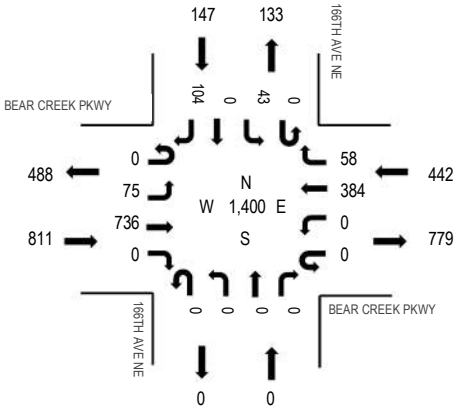
Exhibit E

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

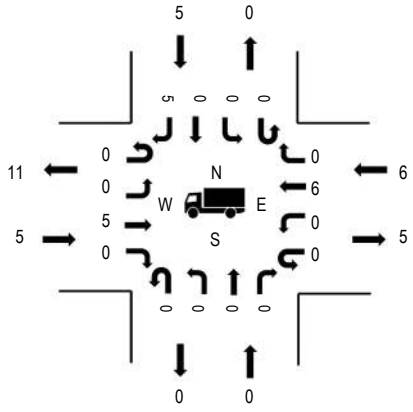
Location: 166TH AVE NE & BEAR CREEK PKWY PM
Date: Tuesday, October 15, 2024
Peak Hour: 04:45 PM - 05:45 PM

Peak Hour

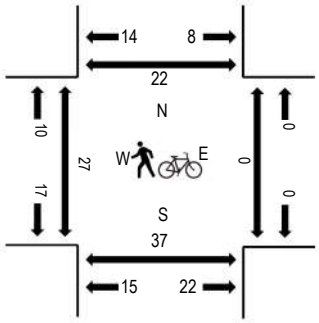
Motorized Vehicles



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.

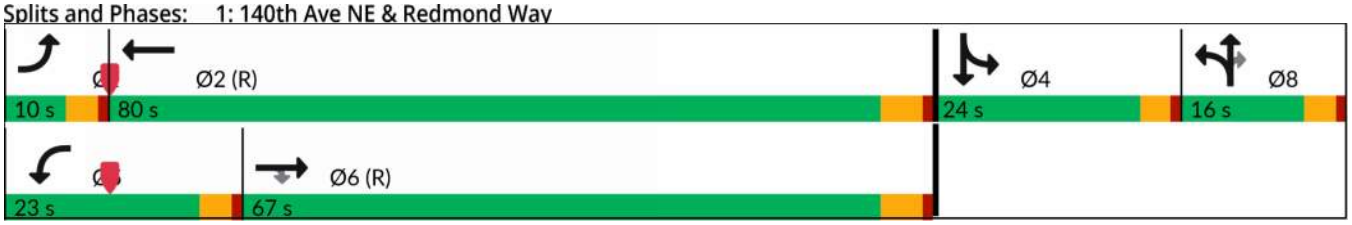
2025 Existing

Lanes, Volumes, Timings
1: 140th Ave NE & Redmond Way 03/21/2025

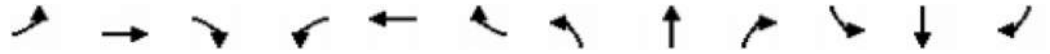
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	29	1100	98	139	1426	6	74	9	47	15	7	20
Future Volume (vph)	29	1100	98	139	1426	6	74	9	47	15	7	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-3%			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

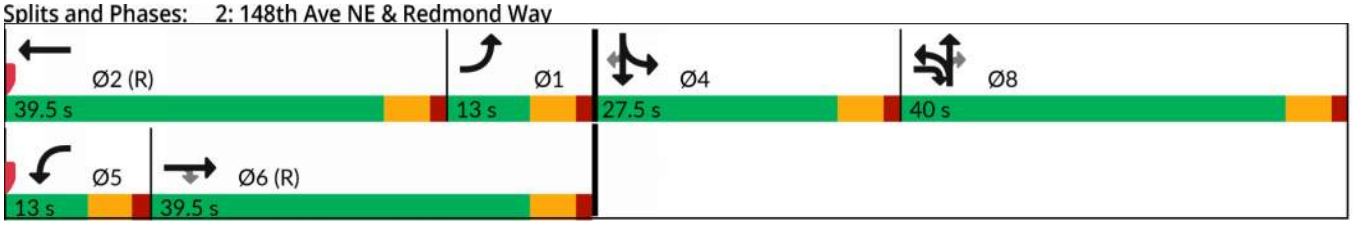
Unsignalized Delay for [NBR, EBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings
2: 148th Ave NE & Redmond Way 03/21/2025

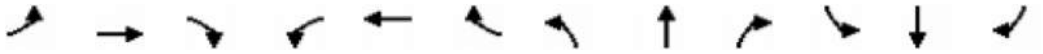
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	162	812	167	158	777	10	593	588	344	30	358	252
Future Volume (vph)	162	812	167	158	777	10	593	588	344	30	358	252
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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.

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)	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

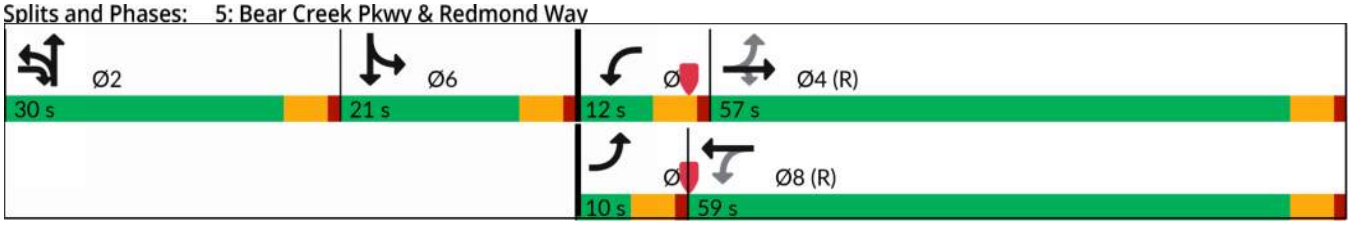
Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

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

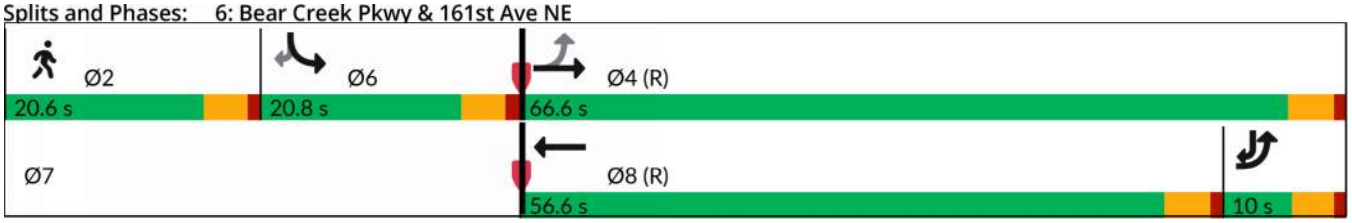
Notes
User approved volume balancing among the lanes for turning movement.

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

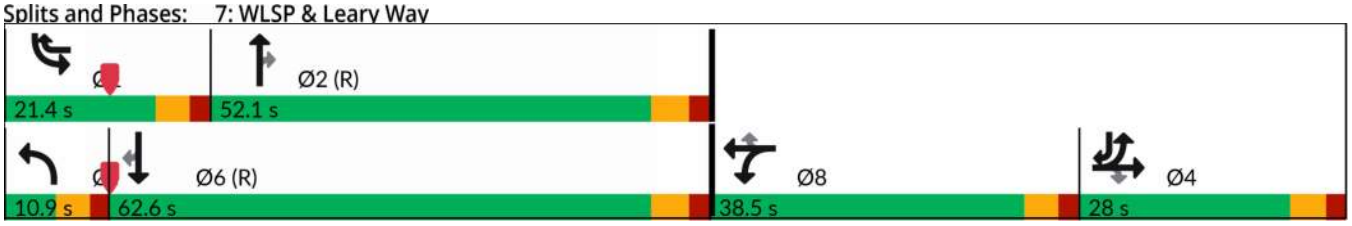


Lanes, Volumes, Timings
7: WLSP & Leary Way 03/21/2025

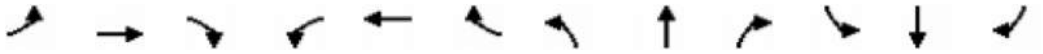
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	260	10	192	251	440	79	14	918	1041	189	794	529
Future Volume (vph)	260	10	192	251	440	79	14	918	1041	189	794	529
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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.

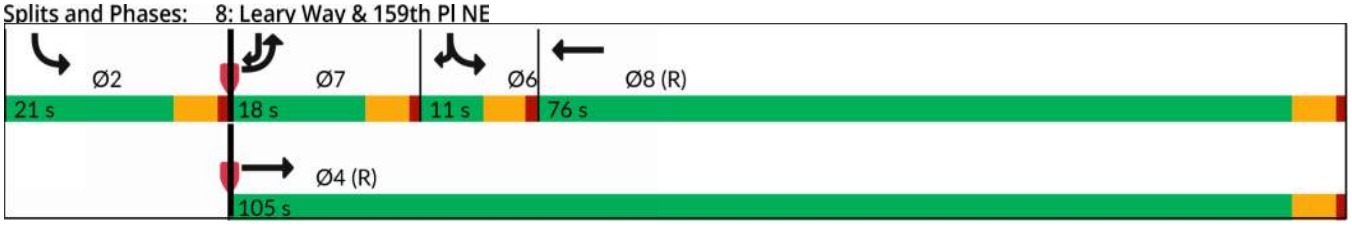
Lanes, Volumes, Timings
8: Leary Way & 159th Pl NE 03/21/2025

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



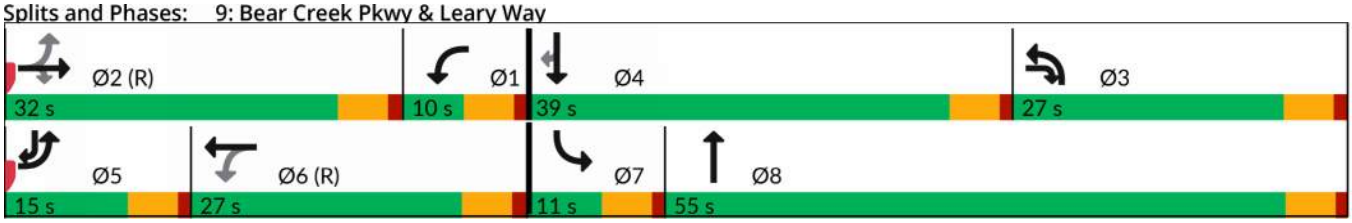
Lanes, Volumes, Timings
9: Bear Creek Pkwy & Leary Way 03/21/2025

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

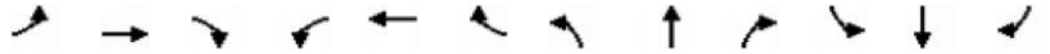
Intersection Summary

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.

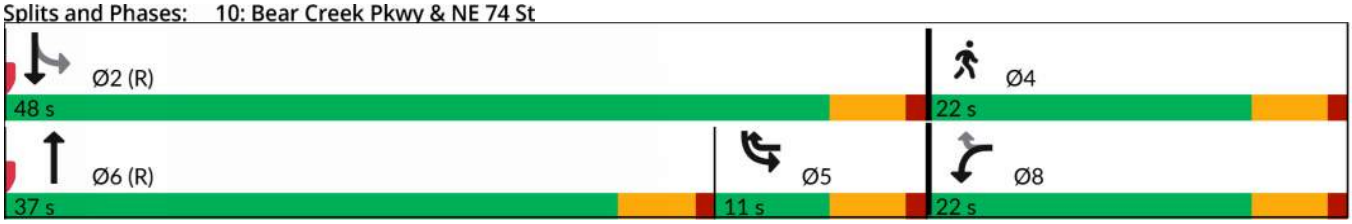
Lanes, Volumes, Timings
10: Bear Creek Pkwy & NE 74 St 03/21/2025

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



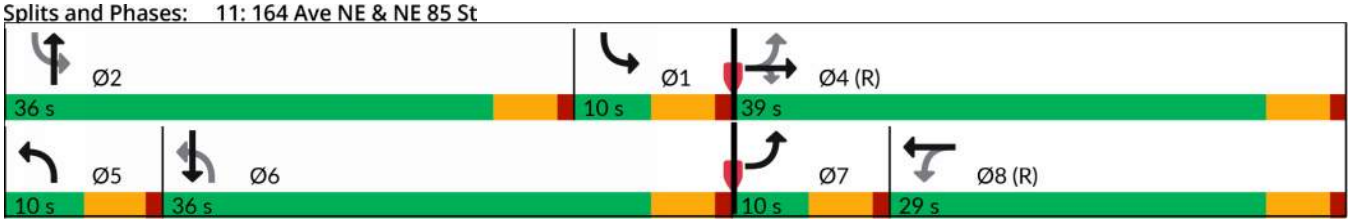
Lanes, Volumes, Timings
11: 164 Ave NE & NE 85 St 03/21/2025

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	

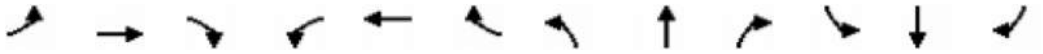
Intersection Summary

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				

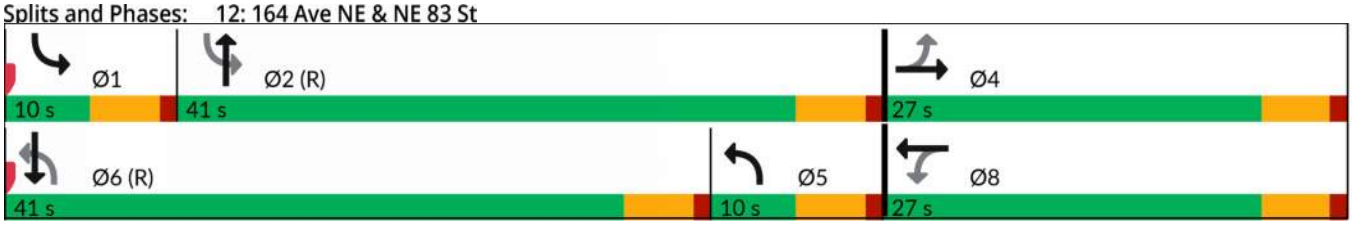
Intersection Summary		
HCM 7th Control Delay, s/veh		28.9
HCM 7th LOS		C

Lanes, Volumes, Timings
12: 164 Ave NE & NE 83 St 03/21/2025

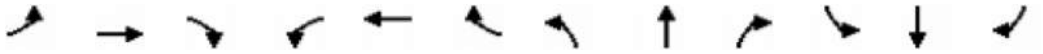
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	190	60	22	106	34	54	435	43	61	331	16
Future Volume (vph)	36	190	60	22	106	34	54	435	43	61	331	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (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

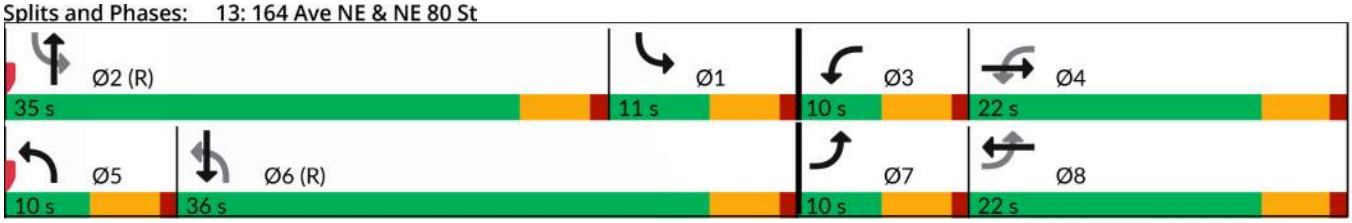
Lanes, Volumes, Timings
13: 164 Ave NE & NE 80 St 03/21/2025

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

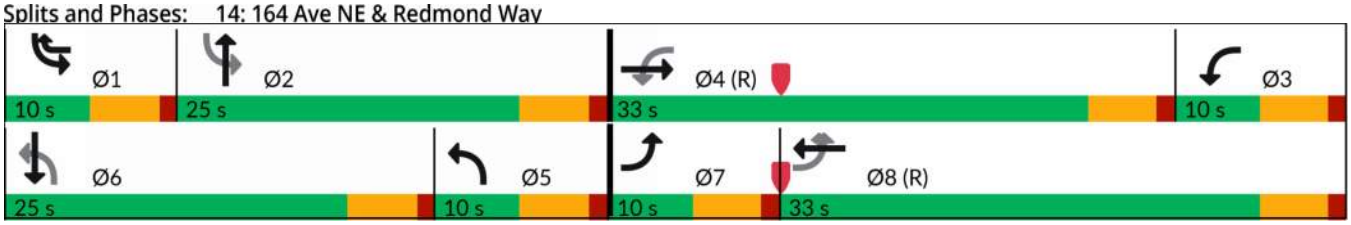
Intersection Summary	
HCM 7th Control Delay, s/veh	18.8
HCM 7th LOS	B

Lanes, Volumes, Timings
14: 164 Ave NE & Redmond Way 03/21/2025

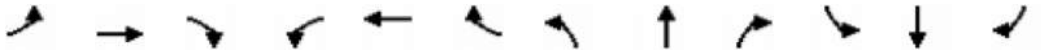
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	521	18	23	571	222	44	134	34	188	129	19
Future Volume (vph)	30	521	18	23	571	222	44	134	34	188	129	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage 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

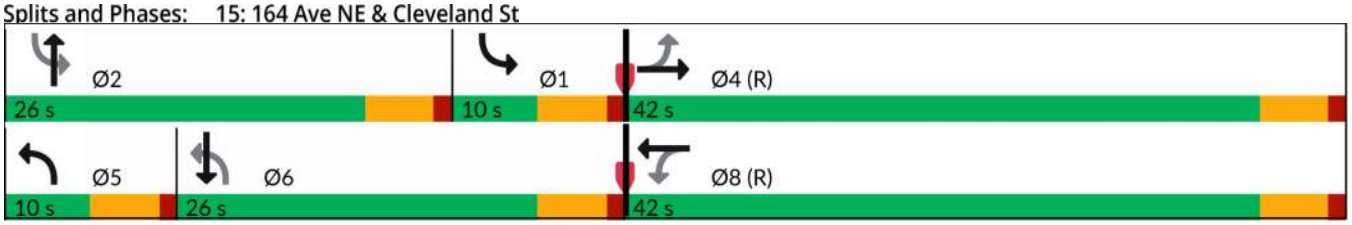
Intersection Summary	
HCM 7th Control Delay, s/veh	20.4
HCM 7th LOS	C

Lanes, Volumes, Timings
15: 164 Ave NE & Cleveland St 03/21/2025

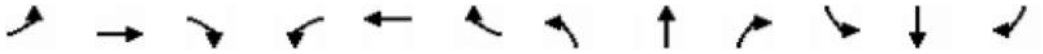
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	243	45	12	89	22	37	163	18	24	133	28
Future Volume (vph)	26	243	45	12	89	22	37	163	18	24	133	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (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

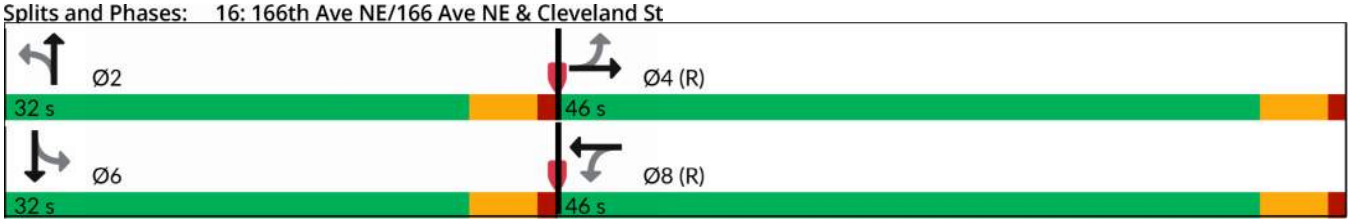
Lanes, Volumes, Timings
16: 166th Ave NE/166 Ave NE & Cleveland St 03/21/2025

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

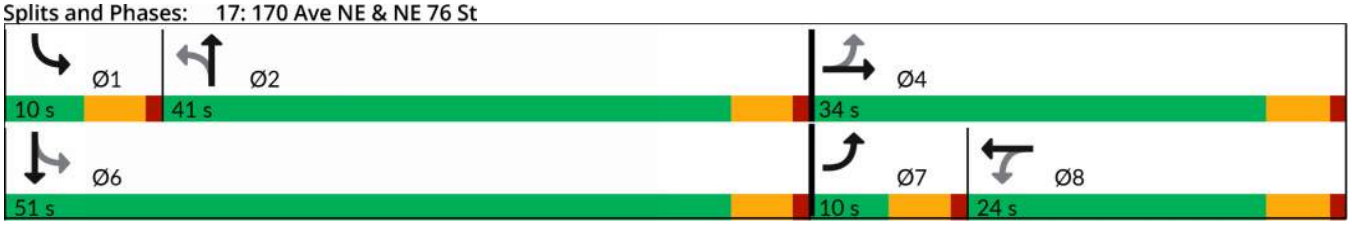
Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

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

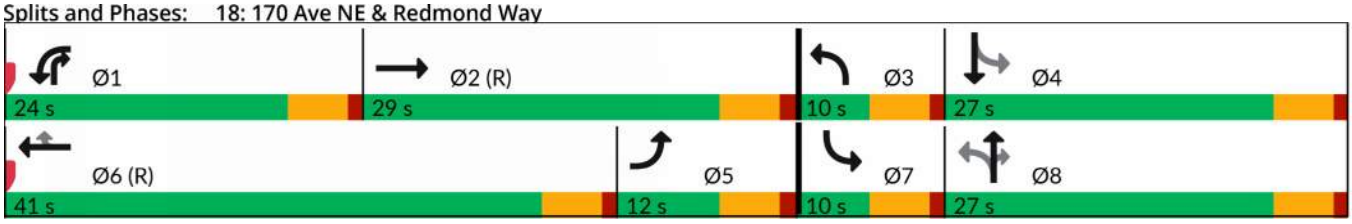


Lanes, Volumes, Timings
18: 170 Ave NE & Redmond Way 03/21/2025

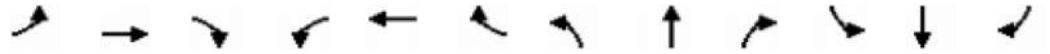
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	758	77	347	654	224	27	339	655	134	154	14
Future Volume (vph)	56	758	77	347	654	224	27	339	655	134	154	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage 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

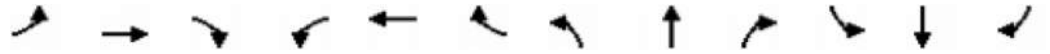
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	89	1375	8	16	1019	141	37	15	46	116	16	52
Future Volume (vph)	89	1375	8	16	1019	141	37	15	46	116	16	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage 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

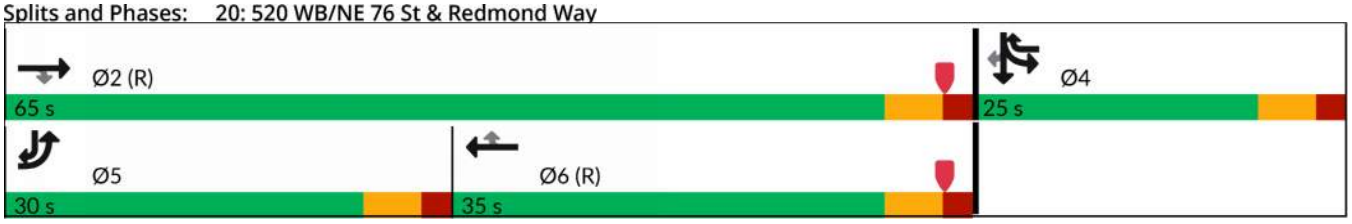
Lanes, Volumes, Timings
20: 520 WB/NE 76 St & Redmond Way 03/21/2025

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						

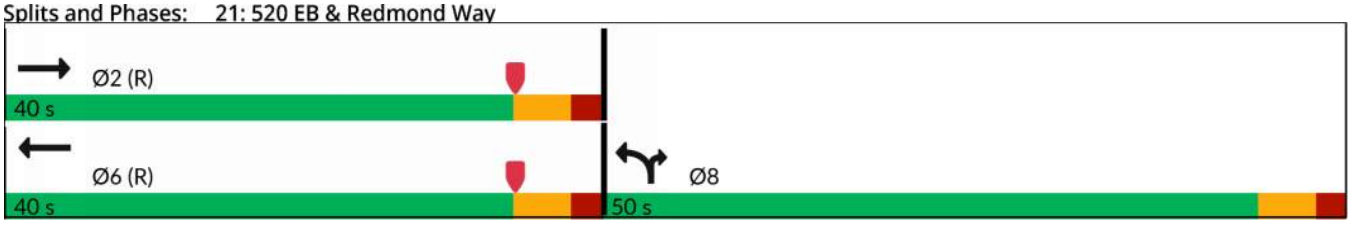
Intersection Summary	
HCM 7th Control Delay, s/veh	13.2
HCM 7th LOS	B

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

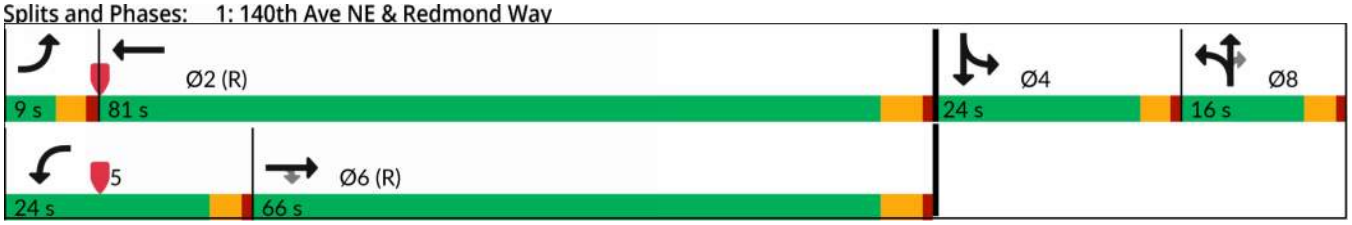
2030 No Action

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

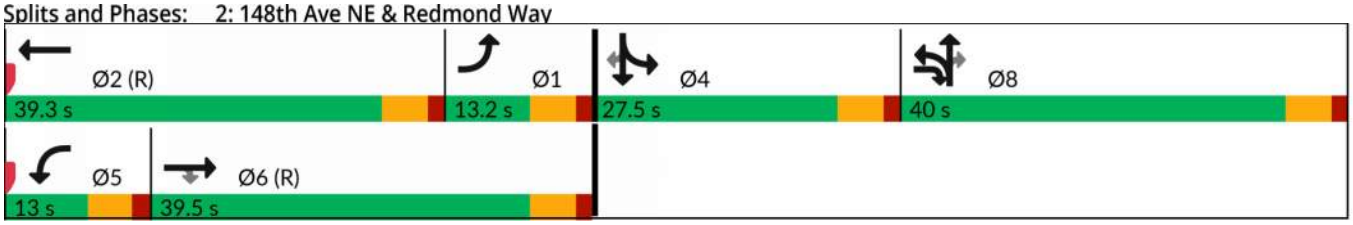
Unsignalized Delay for [NBR, EBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings
2: 148th Ave NE & Redmond Way 03/21/2025

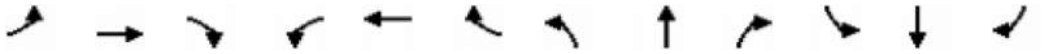
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	179	896	185	175	858	11	654	649	380	33	395	278
Future Volume (vph)	179	896	185	175	858	11	654	649	380	33	395	278
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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.

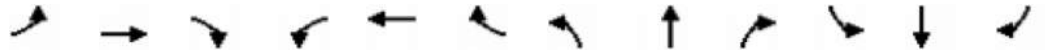
Lanes, Volumes, Timings
3: Willows Rd NE & Redmond Way 03/21/2025

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

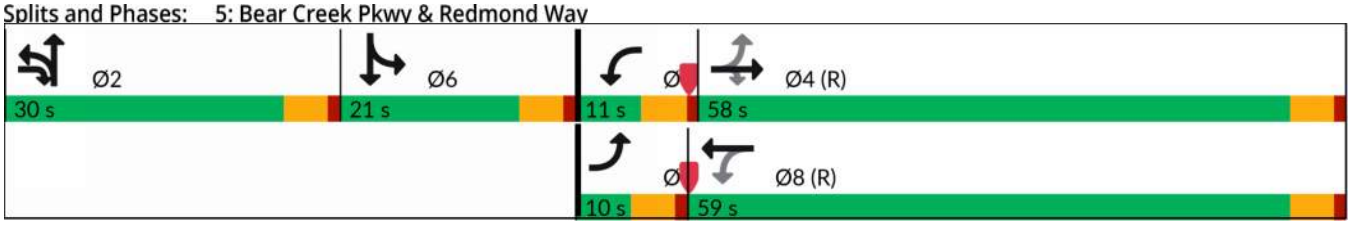
Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

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

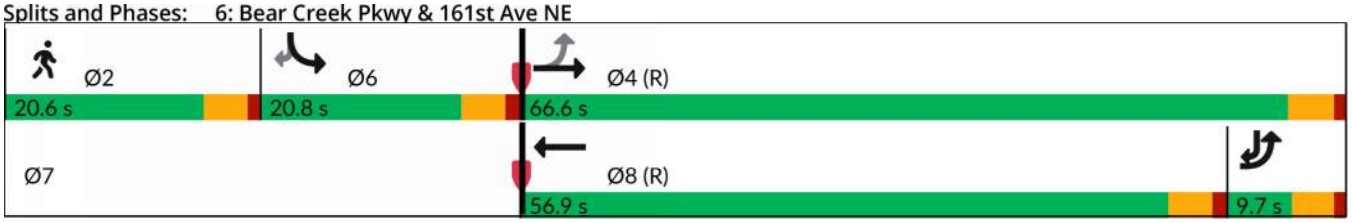
Notes
User approved volume balancing among the lanes for turning movement.

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

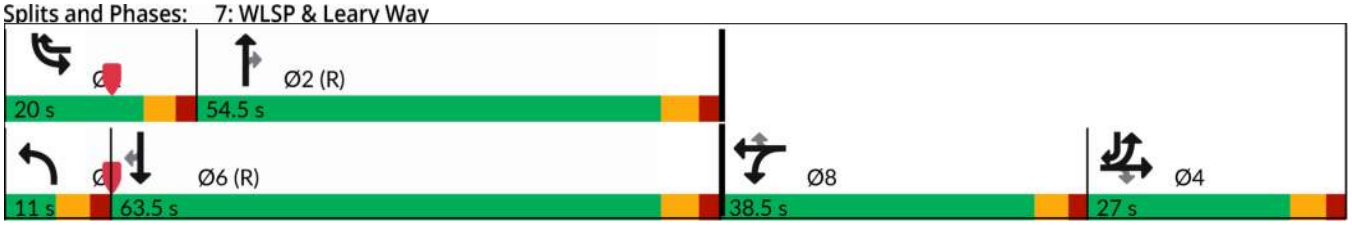


Lanes, Volumes, Timings
7: WLSP & Leary Way 03/21/2025

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.

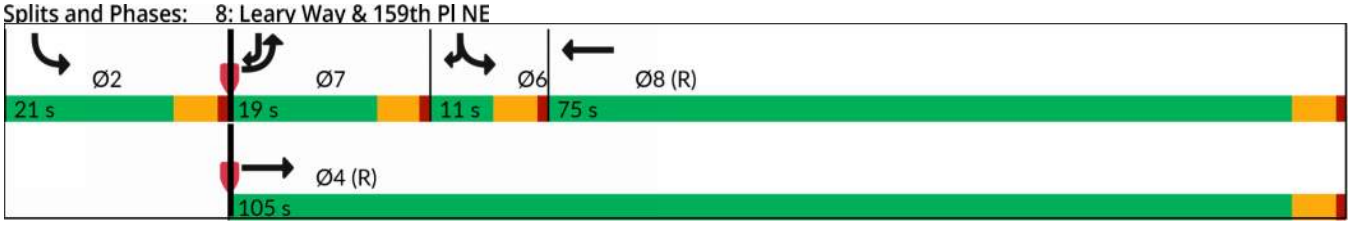
Lanes, Volumes, Timings
8: Leary Way & 159th Pl NE 03/21/2025

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



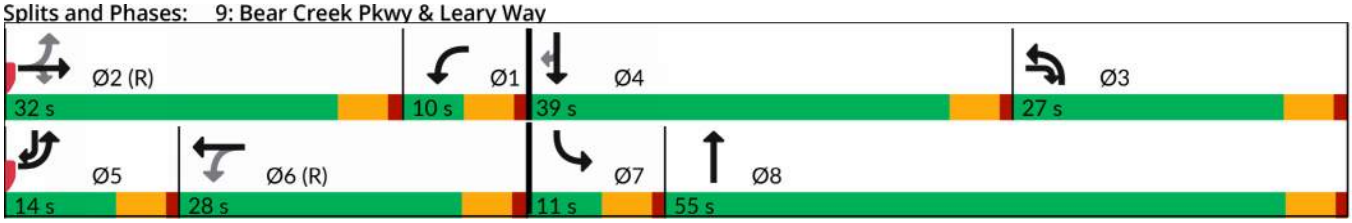
Lanes, Volumes, Timings
9: Bear Creek Pkwy & Leary Way 03/21/2025

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.

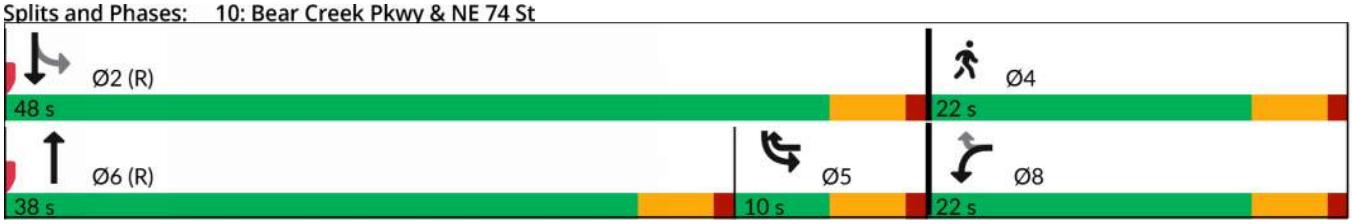
Lanes, Volumes, Timings
10: Bear Creek Pkwy & NE 74 St 03/21/2025

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



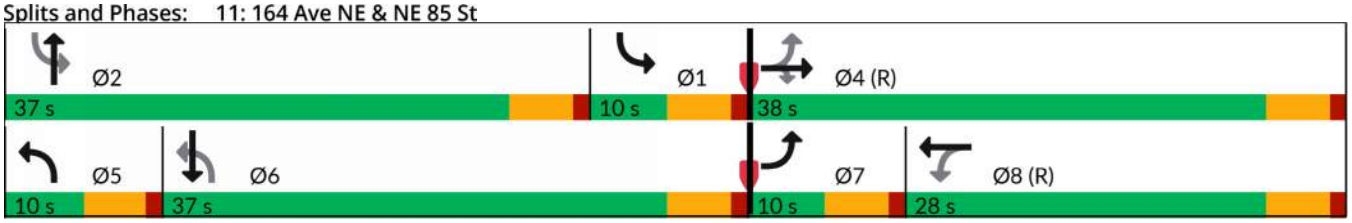
Lanes, Volumes, Timings
11: 164 Ave NE & NE 85 St 03/21/2025

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	

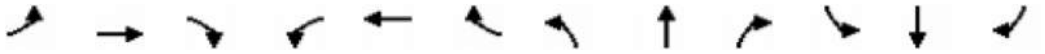
Intersection Summary

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				

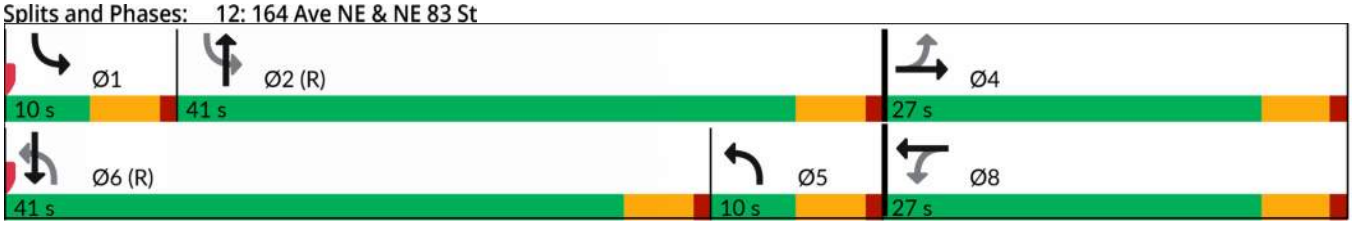
Intersection Summary		
HCM 7th Control Delay, s/veh		31.1
HCM 7th LOS		C

Lanes, Volumes, Timings
12: 164 Ave NE & NE 83 St 03/21/2025

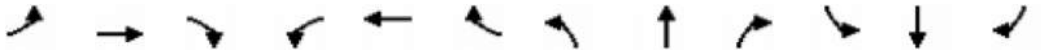
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	210	67	24	117	38	60	480	47	68	365	17
Future Volume (vph)	40	210	67	24	117	38	60	480	47	68	365	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (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

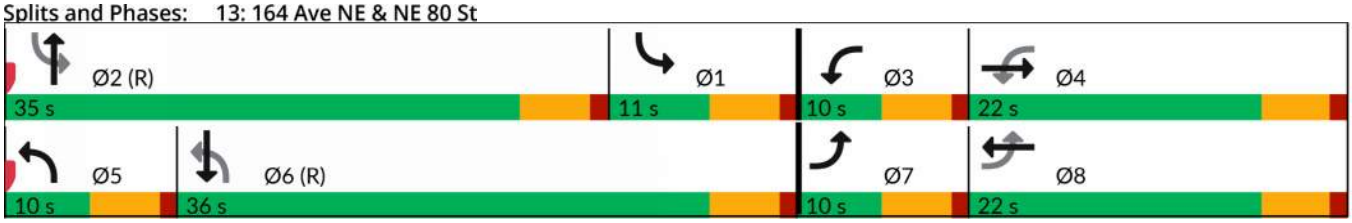
Lanes, Volumes, Timings
13: 164 Ave NE & NE 80 St 03/21/2025

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	

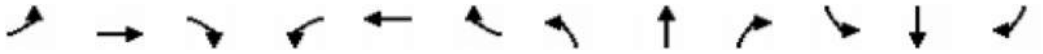
Intersection Summary

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

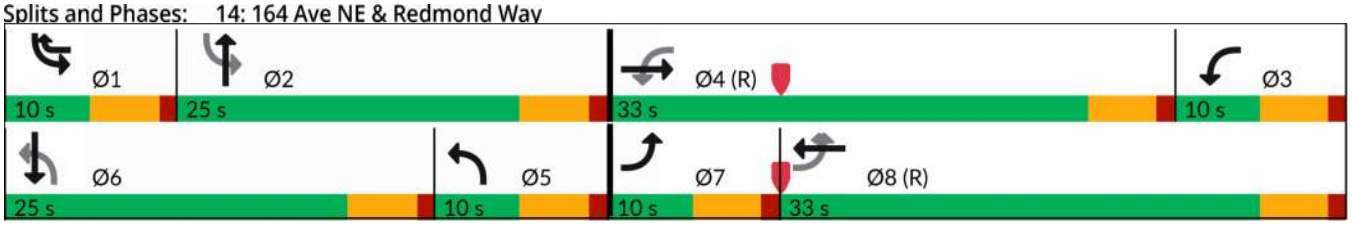
Intersection Summary	
HCM 7th Control Delay, s/veh	19.1
HCM 7th LOS	B

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

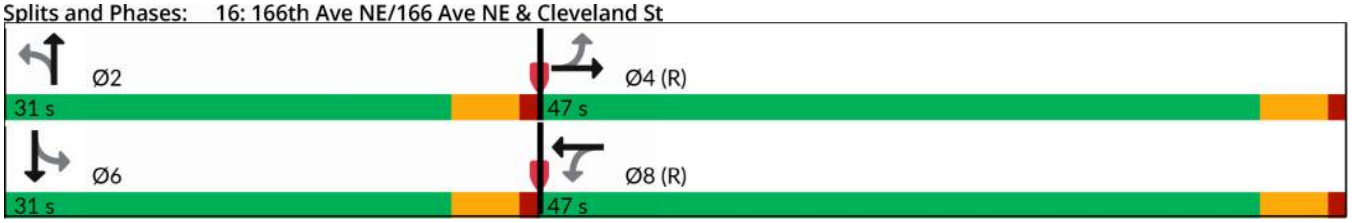
Lanes, Volumes, Timings
16: 166th Ave NE/166 Ave NE & Cleveland St 03/21/2025

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	

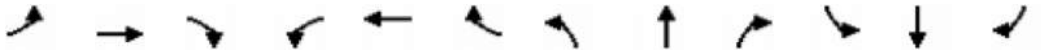
Intersection Summary

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

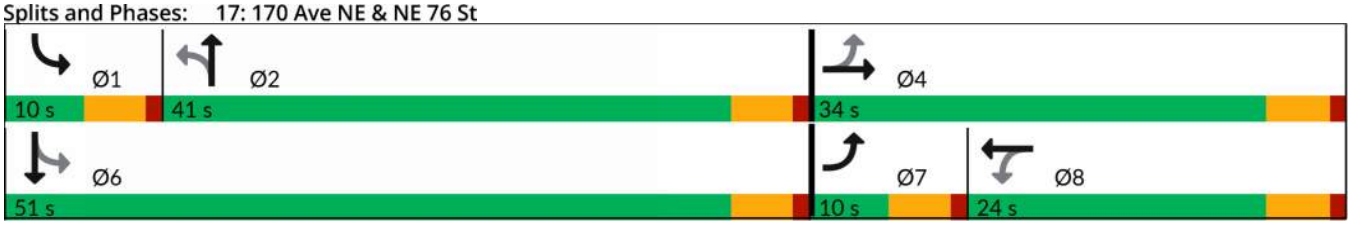
Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

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



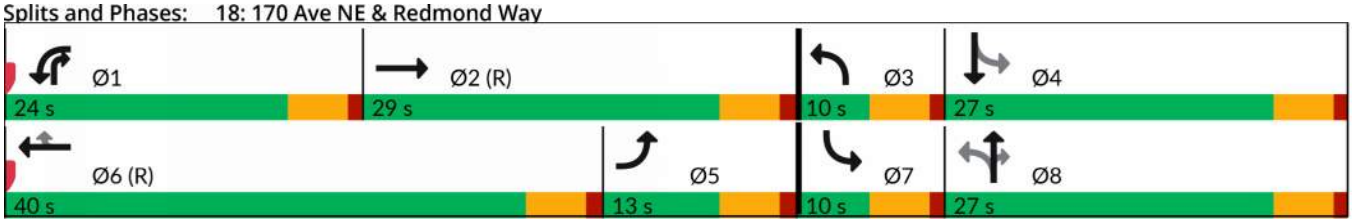
Lanes, Volumes, Timings
18: 170 Ave NE & Redmond Way 03/21/2025

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	

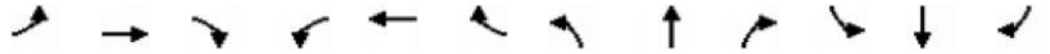
Intersection Summary

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

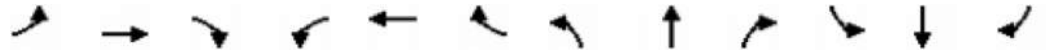
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	98	1518	9	18	1125	155	41	17	51	128	18	57
Future Volume (vph)	98	1518	9	18	1125	155	41	17	51	128	18	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage 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

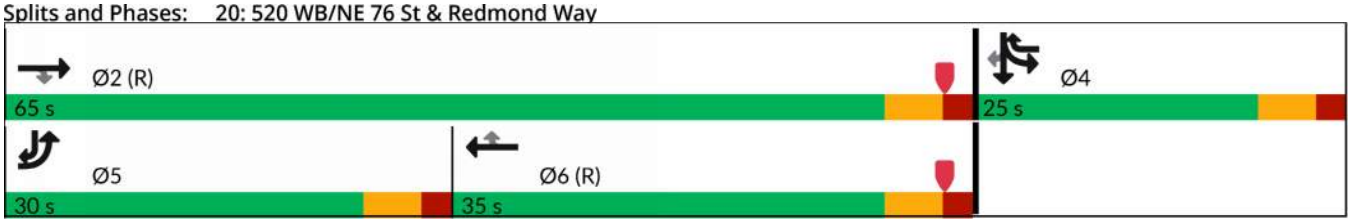
Lanes, Volumes, Timings
20: 520 WB/NE 76 St & Redmond Way 03/21/2025

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.

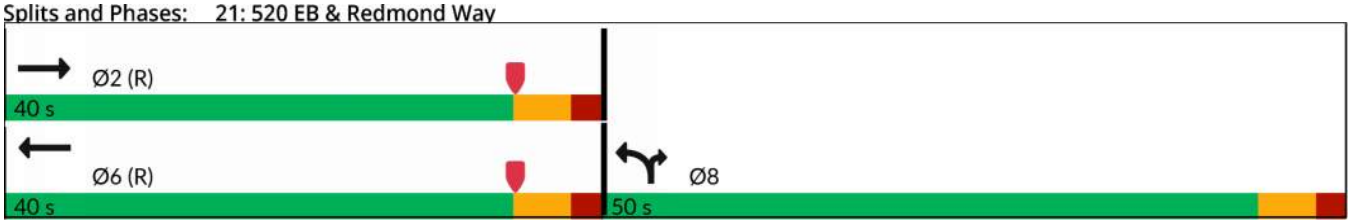
Lanes, Volumes, Timings
21: 520 EB & Redmond Way 03/21/2025

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

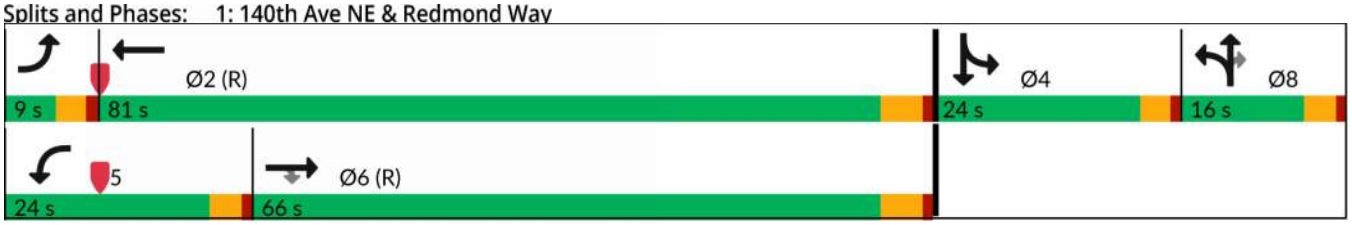
2030 With Project (Phases 1 to 3 of Scenario 2)

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

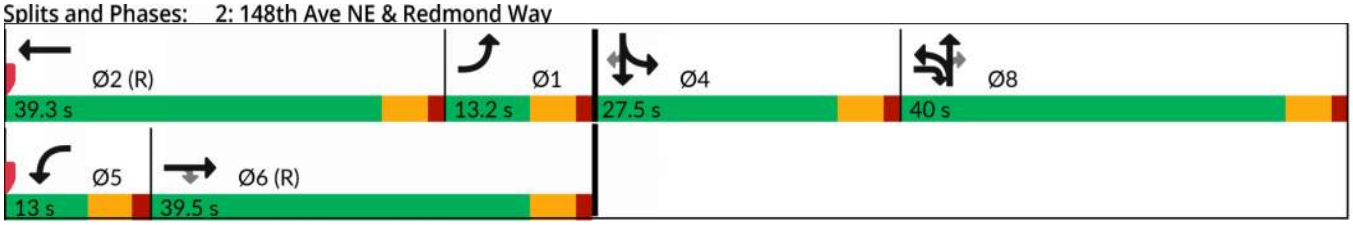
Unsignalized Delay for [NBR, EBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings
2: 148th Ave NE & Redmond Way 03/21/2025

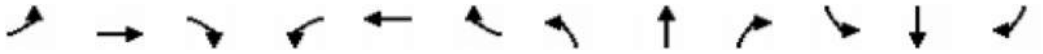
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	179	903	185	175	881	11	654	649	380	33	395	278
Future Volume (vph)	179	903	185	175	881	11	654	649	380	33	395	278
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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.

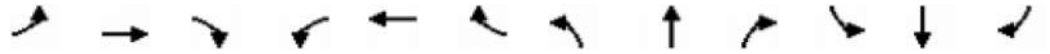
Lanes, Volumes, Timings
3: Willows Rd NE & Redmond Way 03/21/2025

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.

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)	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

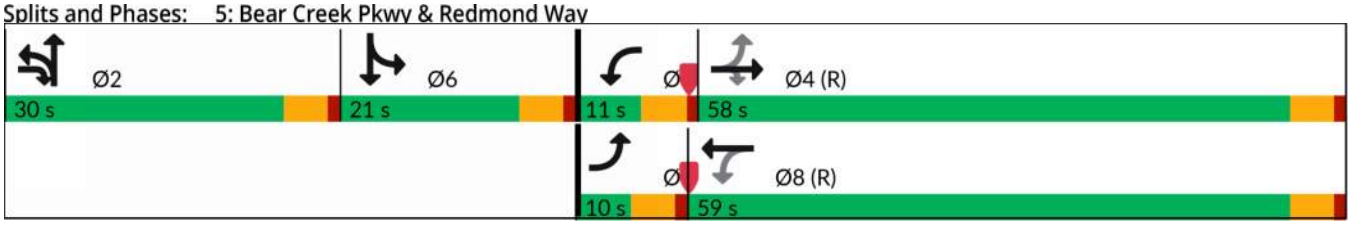
Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings
5: Bear Creek Pkwy & Redmond Way 03/21/2025

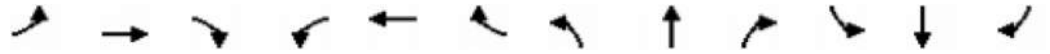
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	1000	523	72	927	20	309	5	81	24	6	19
Future Volume (vph)	11	1000	523	72	927	20	309	5	81	24	6	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-4%			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

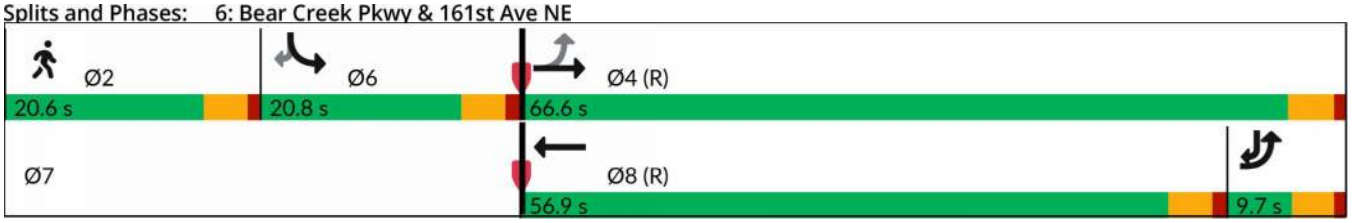
User approved volume balancing among the lanes for turning movement.

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

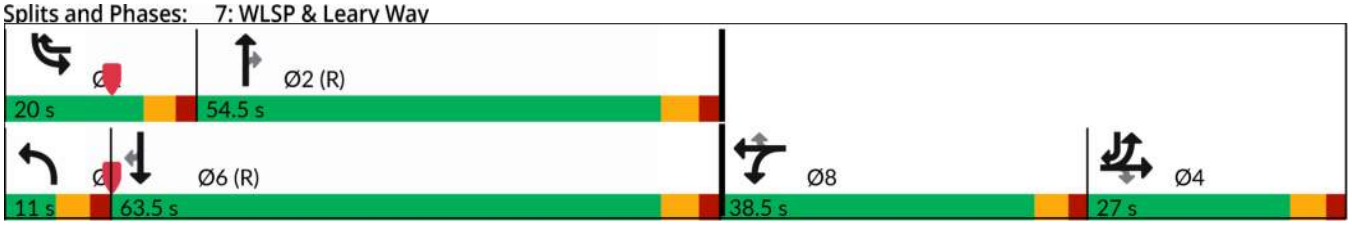


Lanes, Volumes, Timings
7: WLSP & Leary Way 03/21/2025

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.

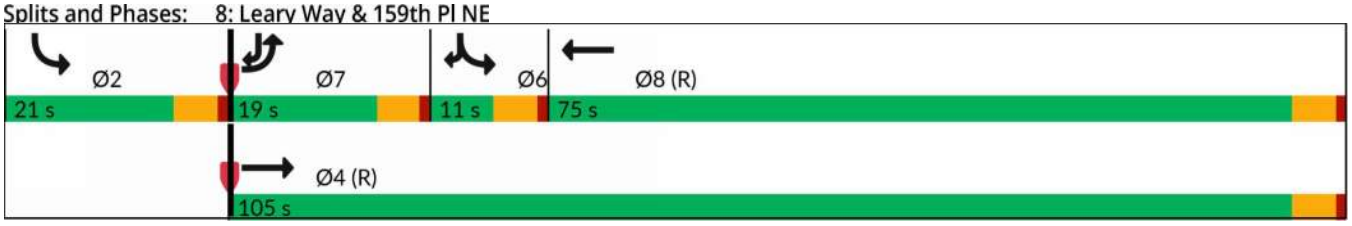
Lanes, Volumes, Timings
8: Leary Way & 159th Pl NE 03/21/2025

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



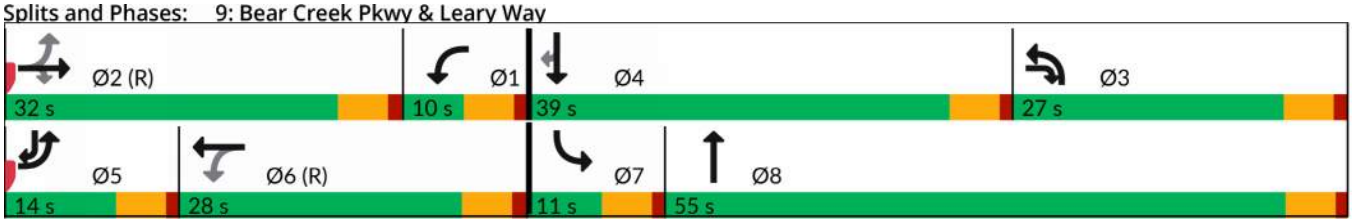
Lanes, Volumes, Timings
9: Bear Creek Pkwy & Leary Way 03/21/2025

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

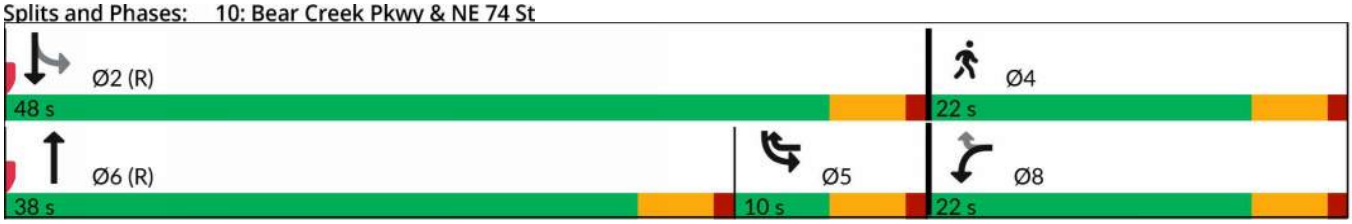
* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

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



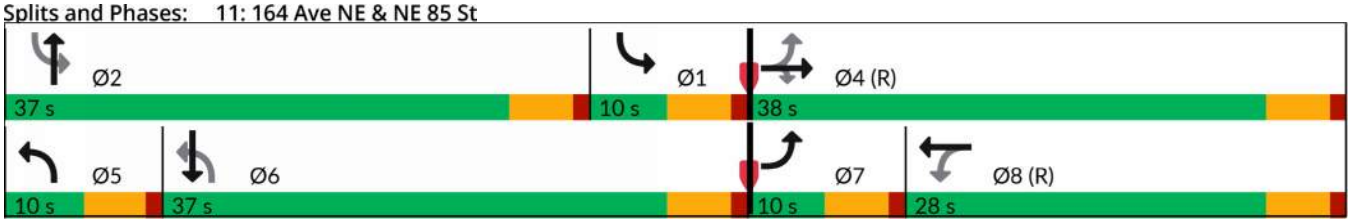
Lanes, Volumes, Timings
11: 164 Ave NE & NE 85 St 03/21/2025

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	

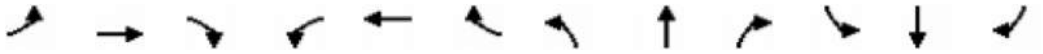
Intersection Summary

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

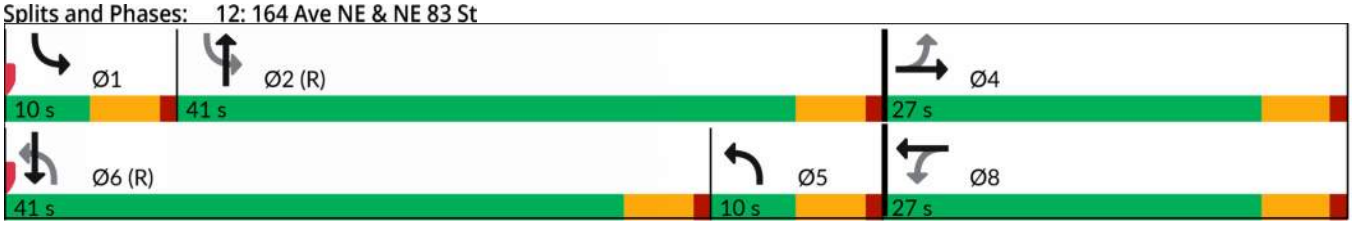
Intersection Summary	
HCM 7th Control Delay, s/veh	31.6
HCM 7th LOS	C

Lanes, Volumes, Timings
12: 164 Ave NE & NE 83 St 03/21/2025

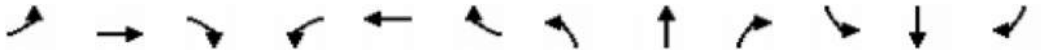
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	210	68	24	117	38	63	497	47	68	370	17
Future Volume (vph)	40	210	68	24	117	38	63	497	47	68	370	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (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

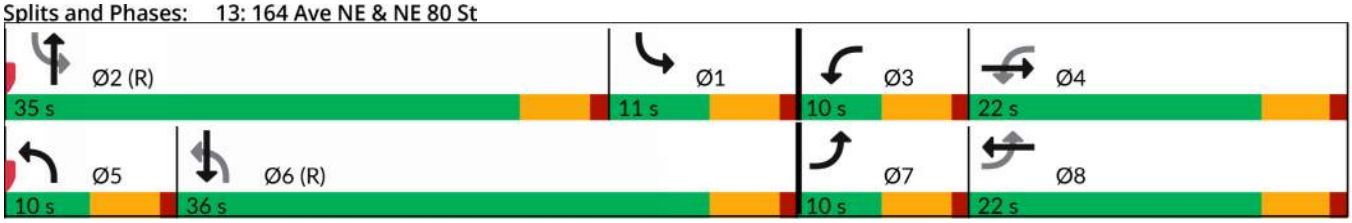
Lanes, Volumes, Timings
13: 164 Ave NE & NE 80 St 03/21/2025

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	

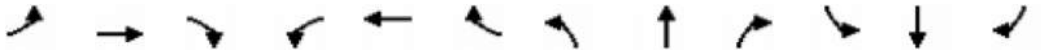
Intersection Summary

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

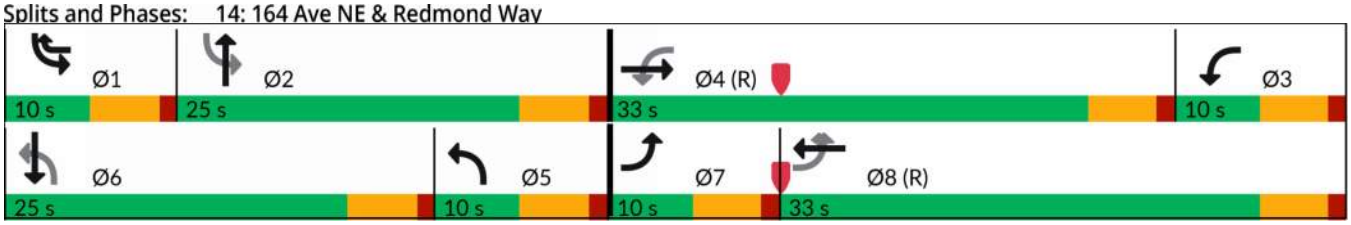
Intersection Summary	
HCM 7th Control Delay, s/veh	19.3
HCM 7th LOS	B

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

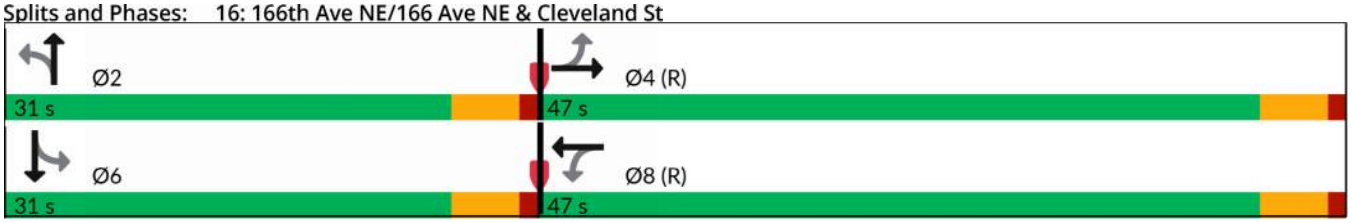
Lanes, Volumes, Timings
16: 166th Ave NE/166 Ave NE & Cleveland St 03/21/2025

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

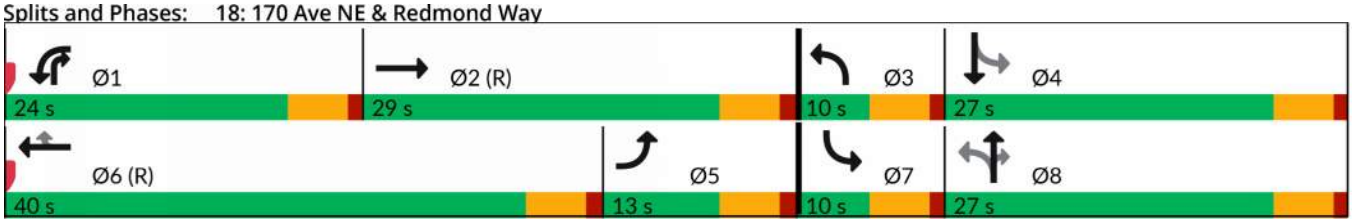
Lanes, Volumes, Timings
18: 170 Ave NE & Redmond Way 03/21/2025

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	

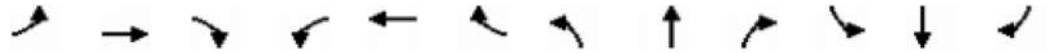
Intersection Summary

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

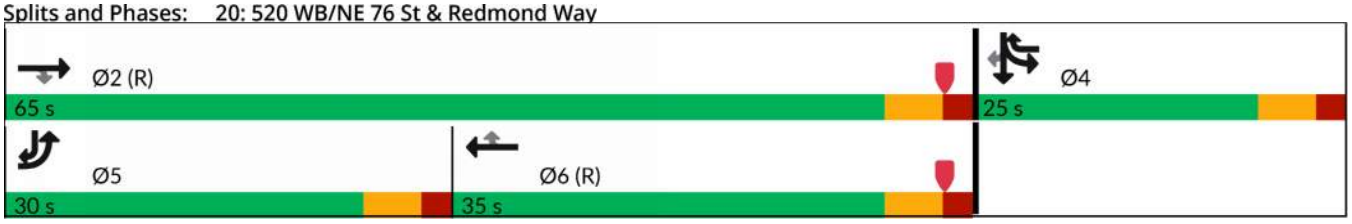
Lanes, Volumes, Timings
20: 520 WB/NE 76 St & Redmond Way 03/21/2025

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

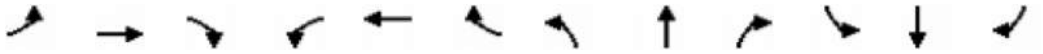
Intersection Summary

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.

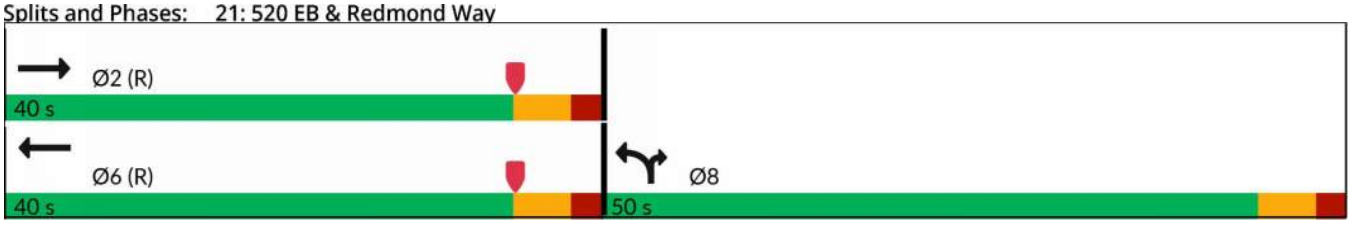
Lanes, Volumes, Timings
21: 520 EB & Redmond Way 03/21/2025

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

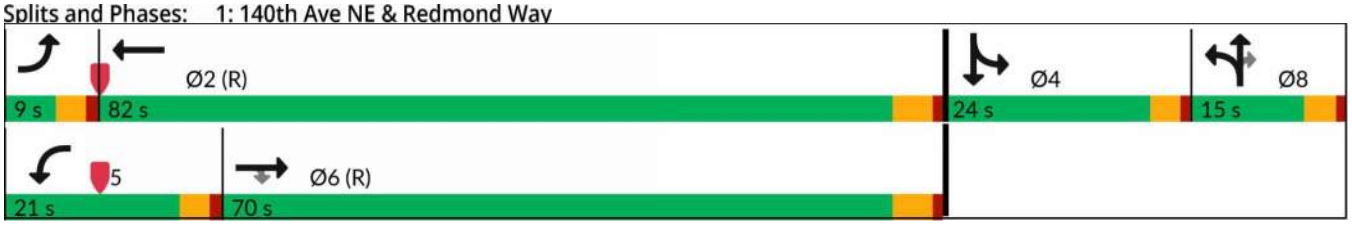
2034 No Action

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

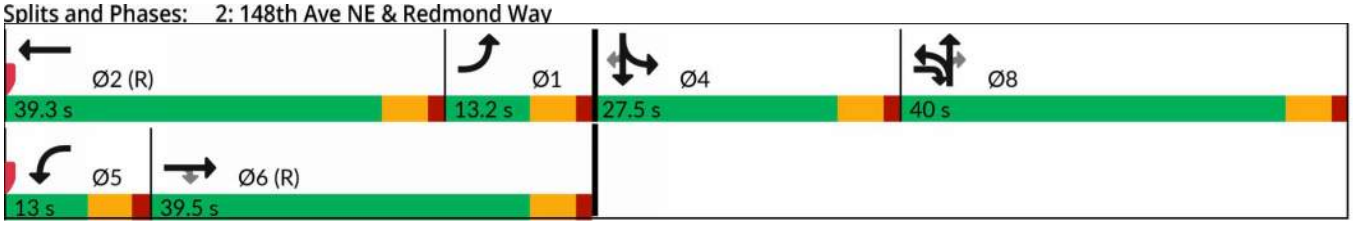
Unsignalized Delay for [NBR, EBR, SBR] is excluded from calculations of the approach delay and intersection delay.

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

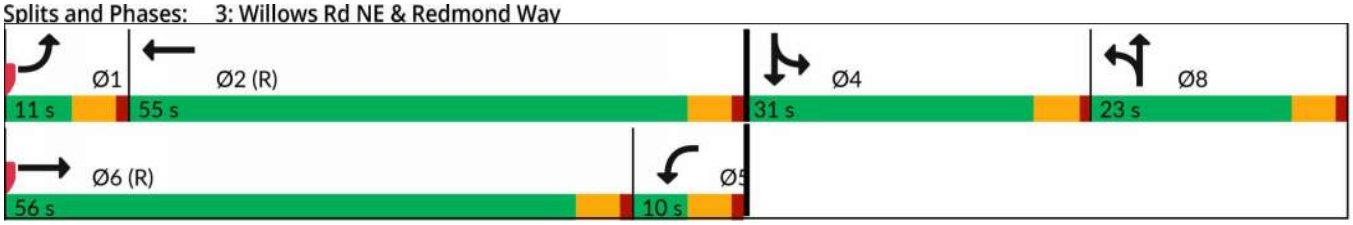
User approved volume balancing among the lanes for turning movement.
Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay.

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

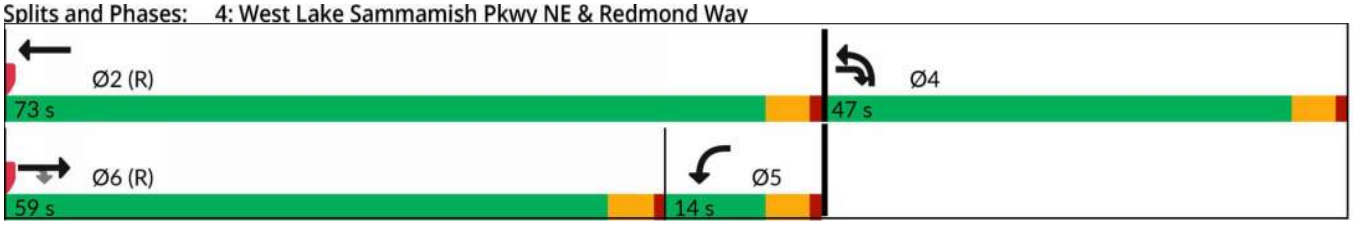
User approved volume balancing among the lanes for turning movement.
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

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

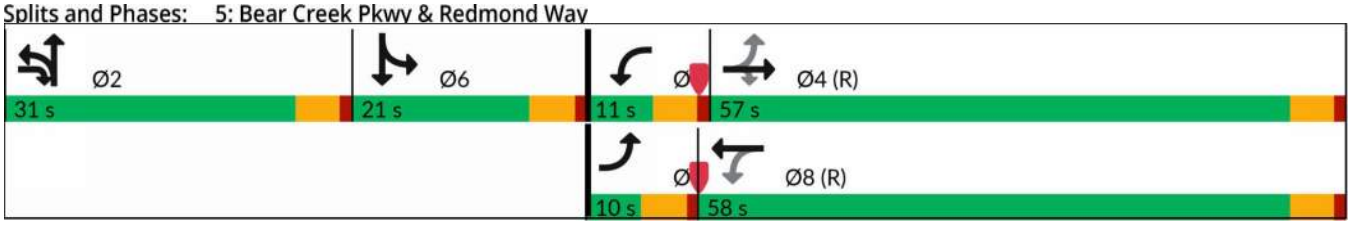
Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings
5: Bear Creek Pkwy & Redmond Way 03/21/2025

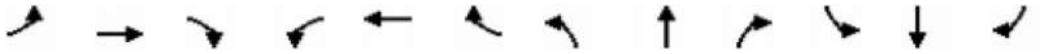
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	1082	555	78	1003	22	294	5	88	26	6	21
Future Volume (vph)	12	1082	555	78	1003	22	294	5	88	26	6	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-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

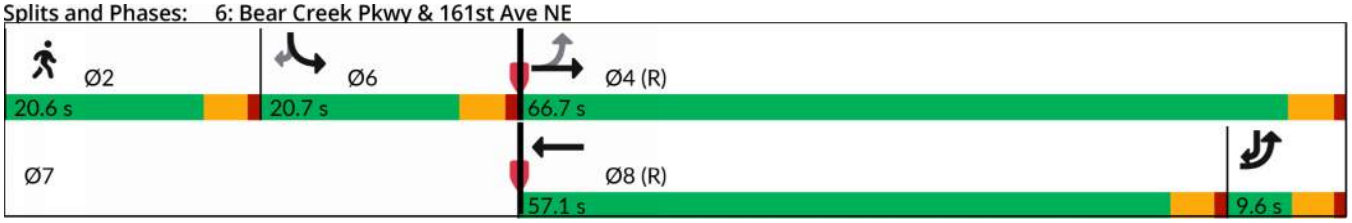
Notes
User approved volume balancing among the lanes for turning movement.

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

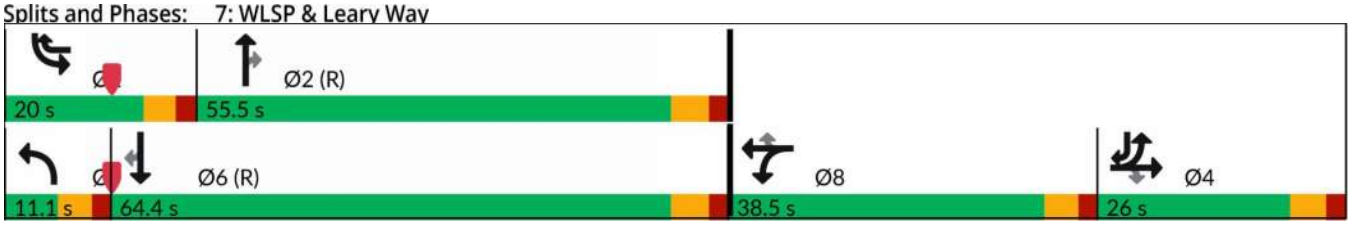


Lanes, Volumes, Timings
7: WLSP & Leary Way 03/21/2025

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

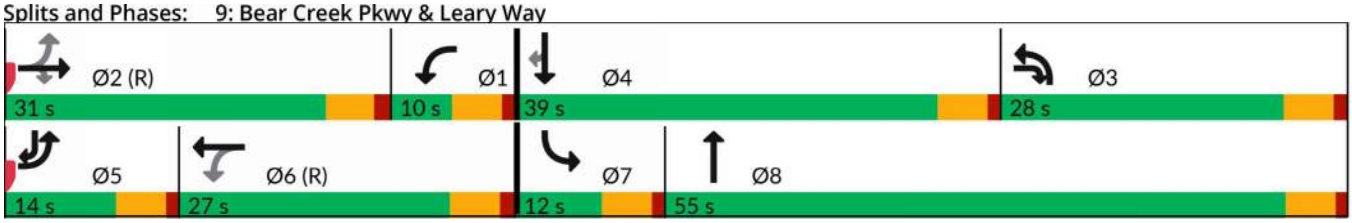
Lanes, Volumes, Timings
9: Bear Creek Pkwy & Leary Way 03/21/2025

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

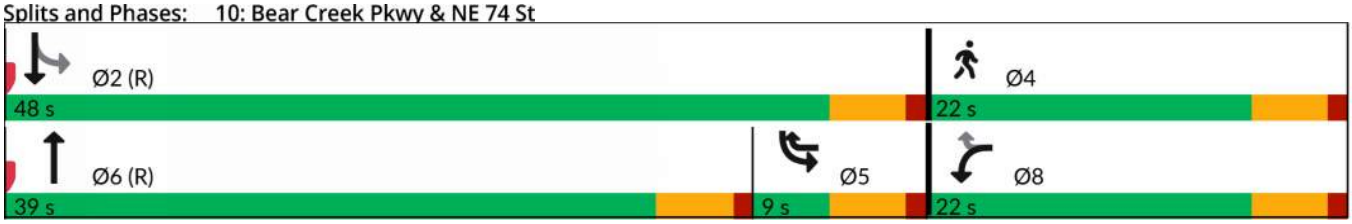
* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

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



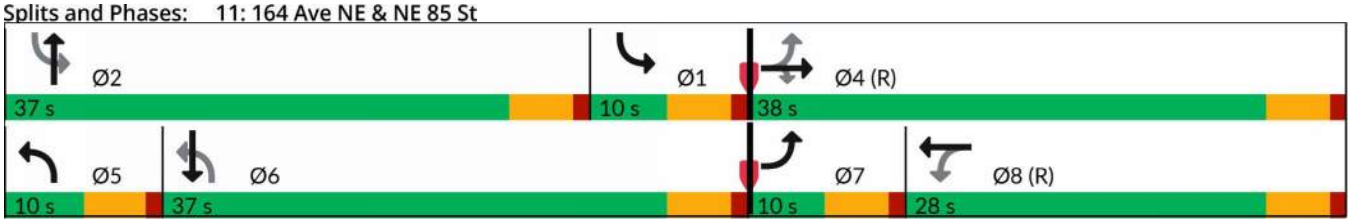
Lanes, Volumes, Timings
11: 164 Ave NE & NE 85 St 03/21/2025

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	

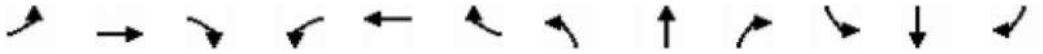
Intersection Summary

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

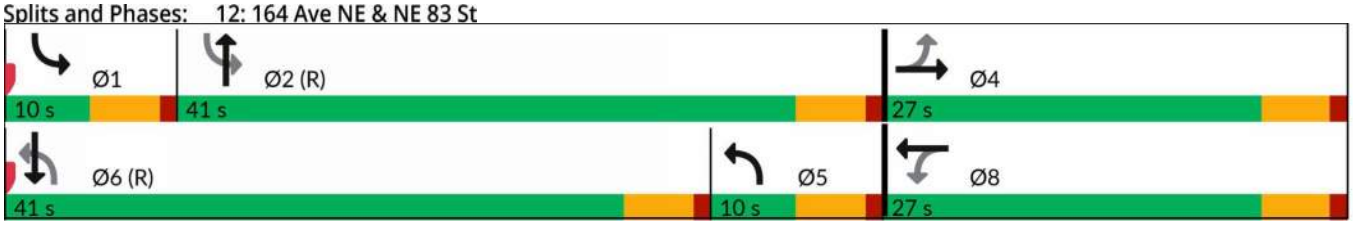
Intersection Summary	
HCM 7th Control Delay, s/veh	34.4
HCM 7th LOS	C

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

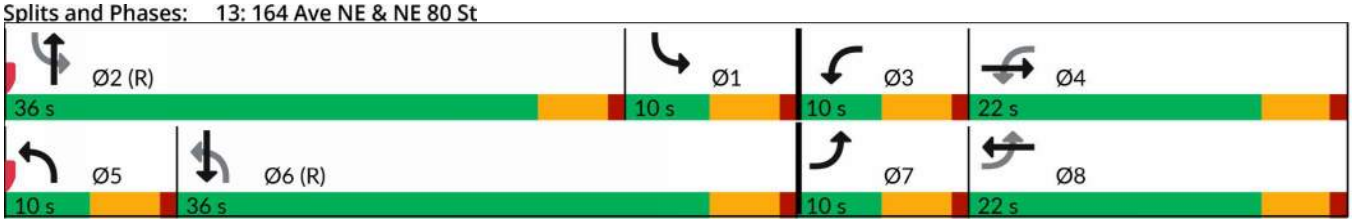
Lanes, Volumes, Timings
13: 164 Ave NE & NE 80 St 03/21/2025

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	

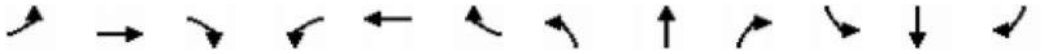
Intersection Summary

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

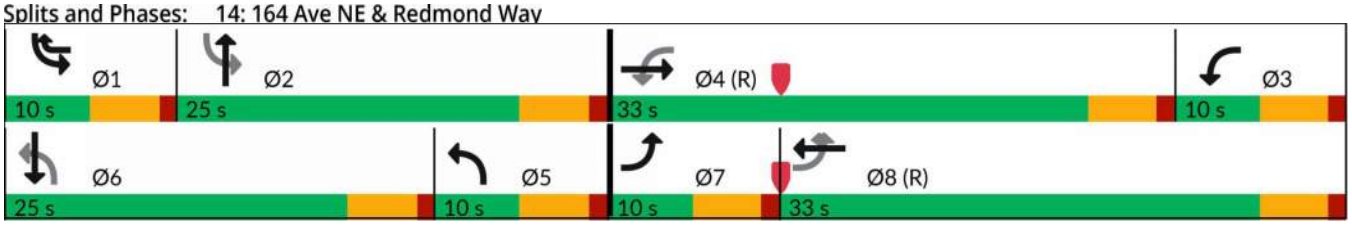
Intersection Summary	
HCM 7th Control Delay, s/veh	19.9
HCM 7th LOS	B

Lanes, Volumes, Timings
14: 164 Ave NE & Redmond Way 03/21/2025

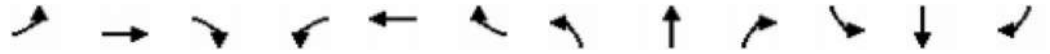
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	623	21	27	683	265	52	160	41	225	154	22
Future Volume (vph)	36	623	21	27	683	265	52	160	41	225	154	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage 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									

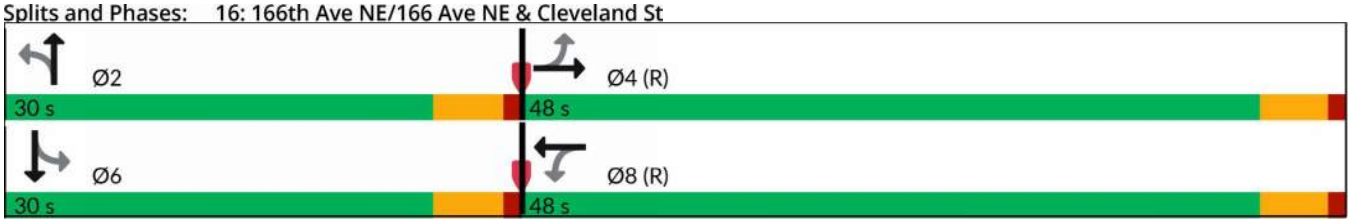
Lanes, Volumes, Timings
16: 166th Ave NE/166 Ave NE & Cleveland St 03/21/2025

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

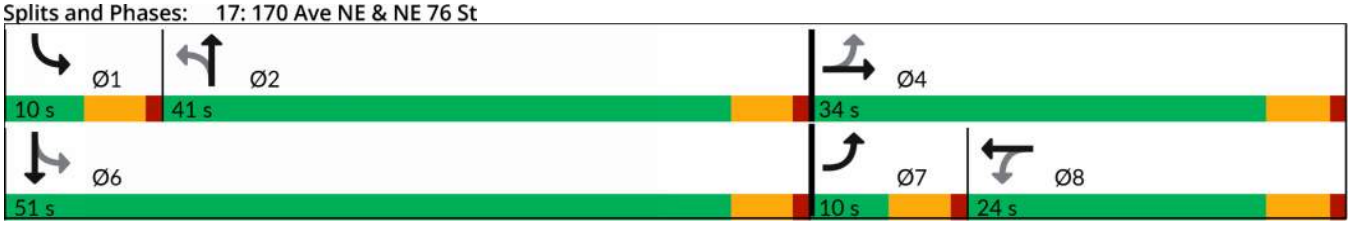
Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

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



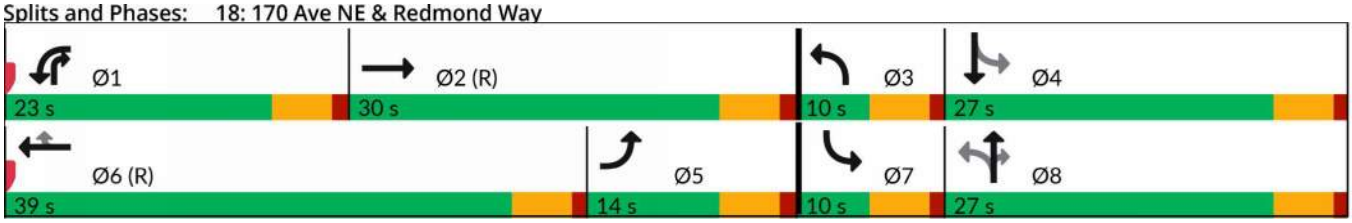
Lanes, Volumes, Timings
18: 170 Ave NE & Redmond Way 03/21/2025

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

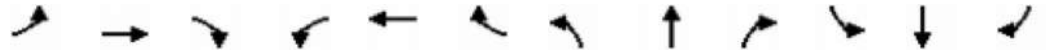
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	106	1643	10	19	1218	168	44	18	55	139	20	62
Future Volume (vph)	106	1643	10	19	1218	168	44	18	55	139	20	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage 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

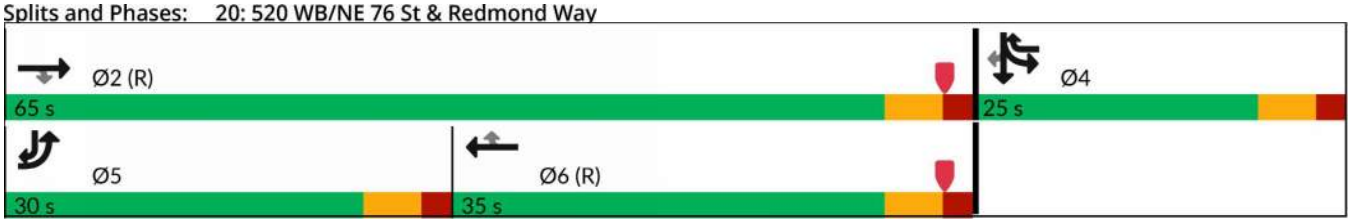
Lanes, Volumes, Timings
20: 520 WB/NE 76 St & Redmond Way 03/21/2025

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.

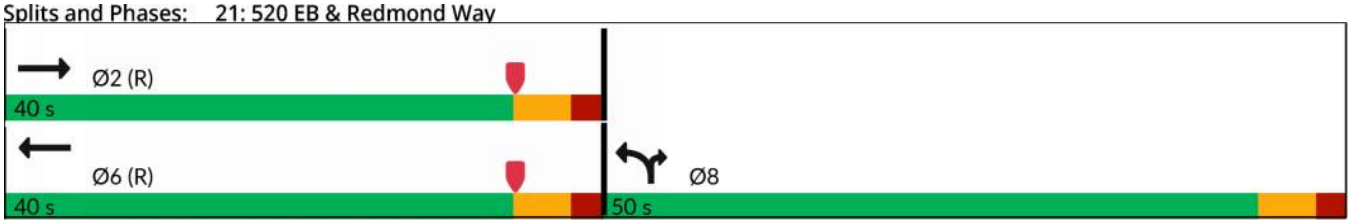
Lanes, Volumes, Timings
21: 520 EB & Redmond Way 03/21/2025

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

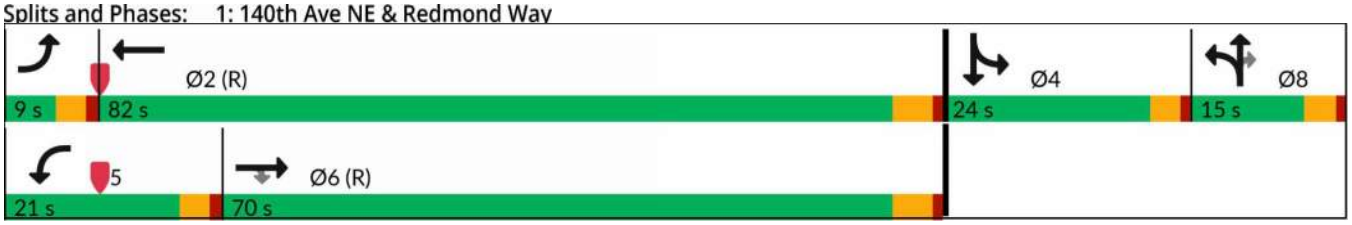
2034 With Project (Phases 1 to 3 of Scenario 2)

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

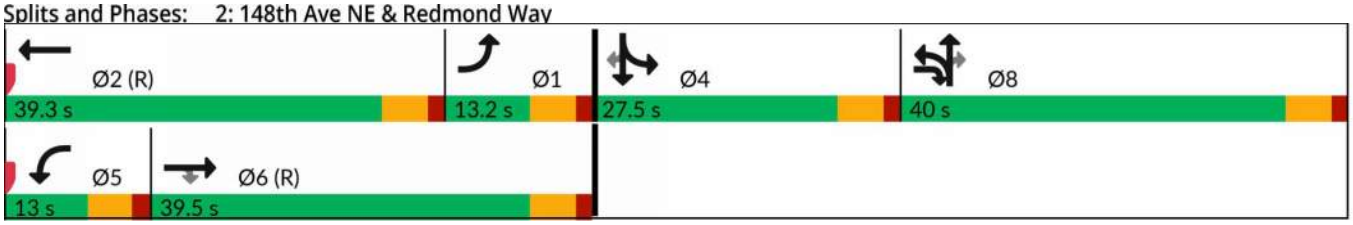
Unsignalized Delay for [NBR, EBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings
2: 148th Ave NE & Redmond Way 03/21/2025

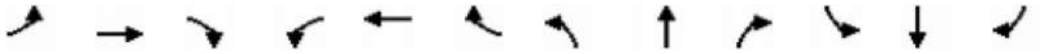
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	194	977	200	189	952	12	708	702	411	35	428	301
Future Volume (vph)	194	977	200	189	952	12	708	702	411	35	428	301
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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

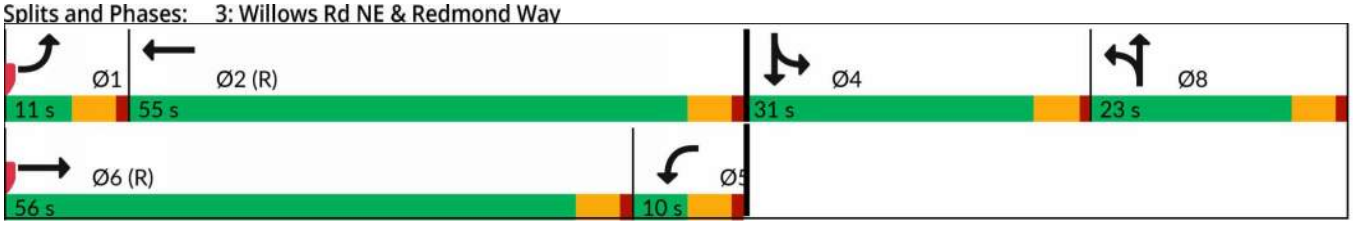
User approved volume balancing among the lanes for turning movement.
Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings
3: Willows Rd NE & Redmond Way 03/21/2025

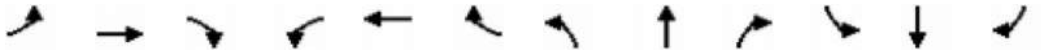
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	1491	15	28	1131	303	7	6	22	646	18	17
Future Volume (vph)	17	1491	15	28	1131	303	7	6	22	646	18	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-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

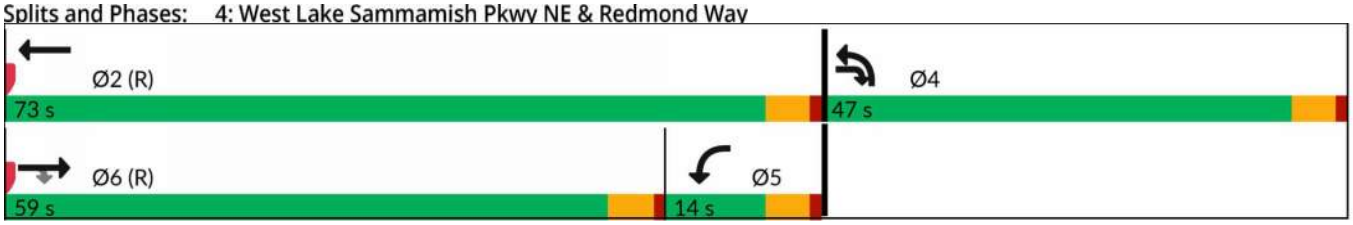
User approved volume balancing among the lanes for turning movement.
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

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

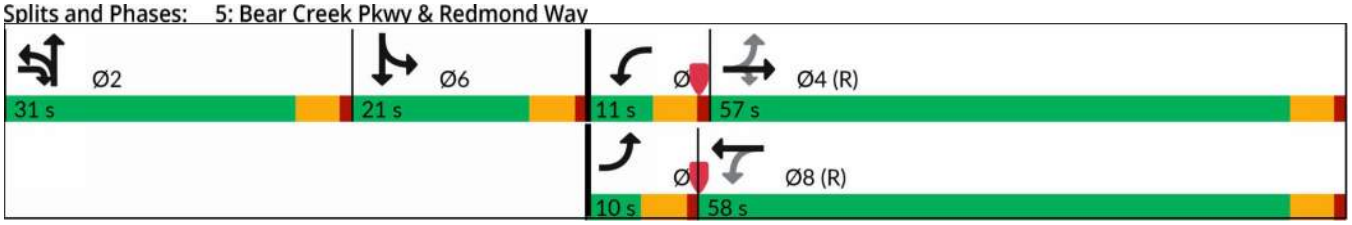
Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

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

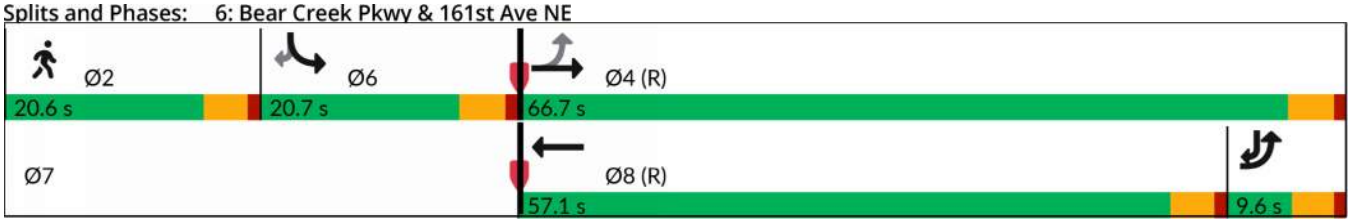
Notes
User approved volume balancing among the lanes for turning movement.

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

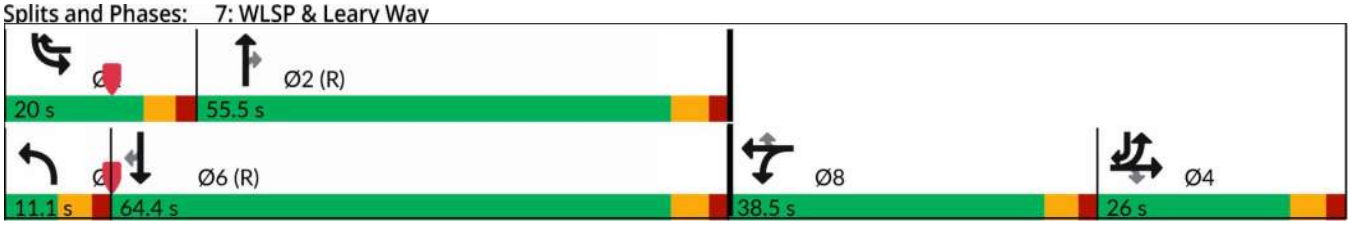


Lanes, Volumes, Timings
7: WLSP & Leary Way 03/21/2025

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.

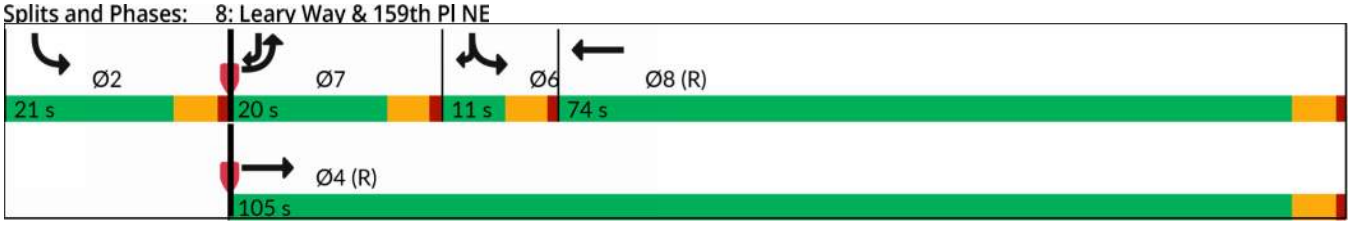
Lanes, Volumes, Timings
8: Leary Way & 159th Pl NE 03/21/2025

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



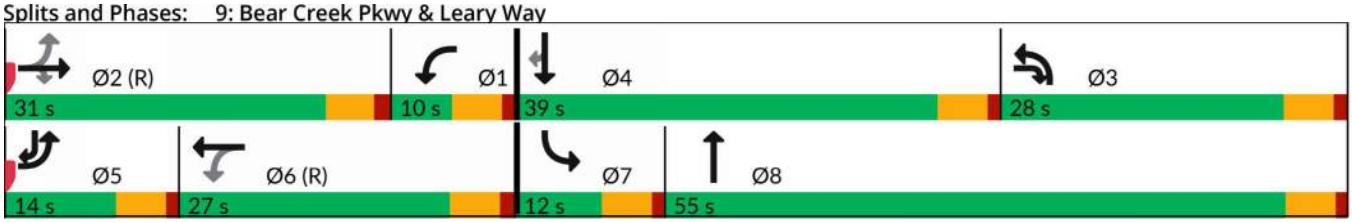
Lanes, Volumes, Timings
9: Bear Creek Pkwy & Leary Way 03/21/2025

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

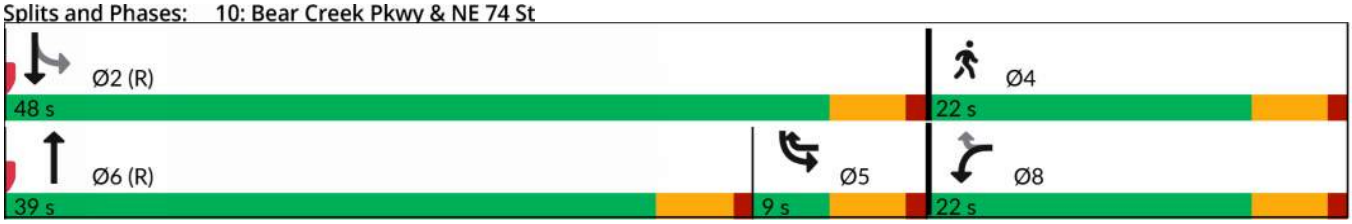
* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

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



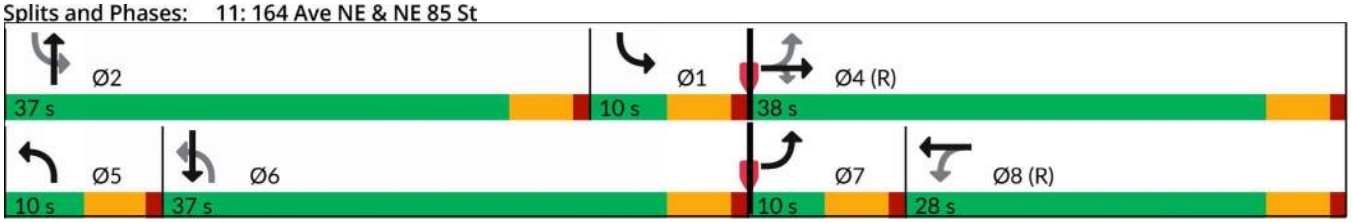
Lanes, Volumes, Timings
11: 164 Ave NE & NE 85 St 03/21/2025

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	

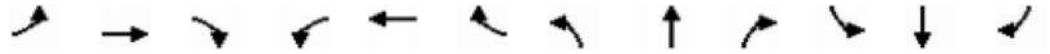
Intersection Summary

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				

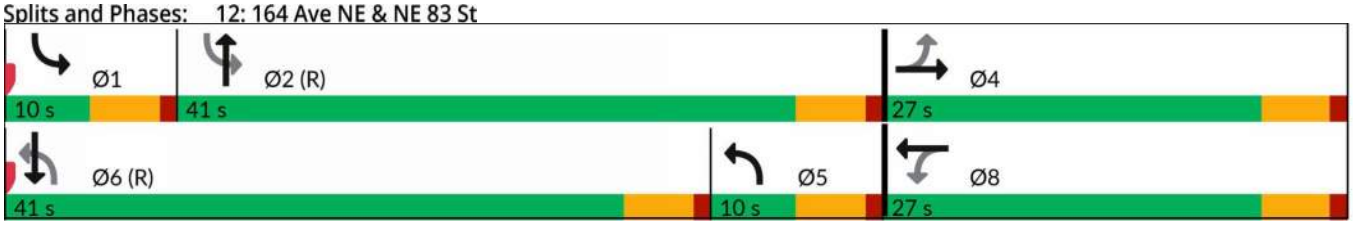
Intersection Summary	
HCM 7th Control Delay, s/veh	35.0
HCM 7th LOS	C

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

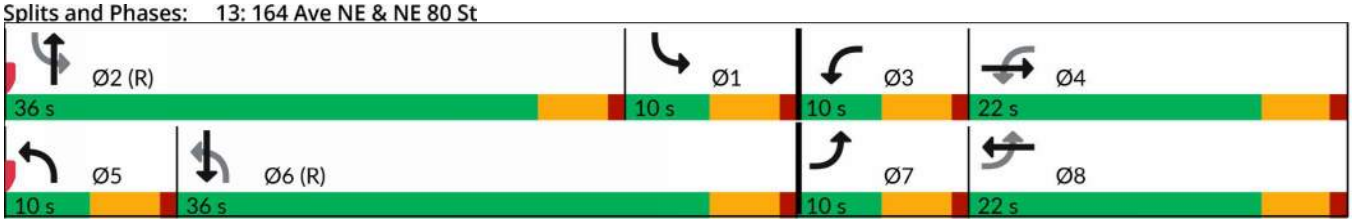
Lanes, Volumes, Timings
13: 164 Ave NE & NE 80 St 03/21/2025

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

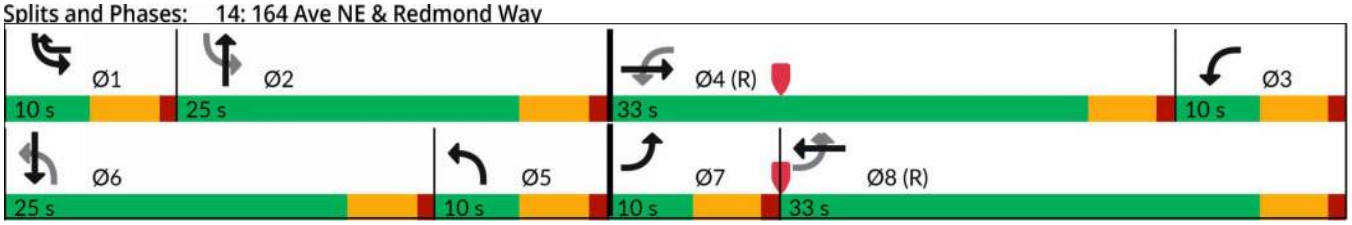
Intersection Summary	
HCM 7th Control Delay, s/veh	20.1
HCM 7th LOS	C

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

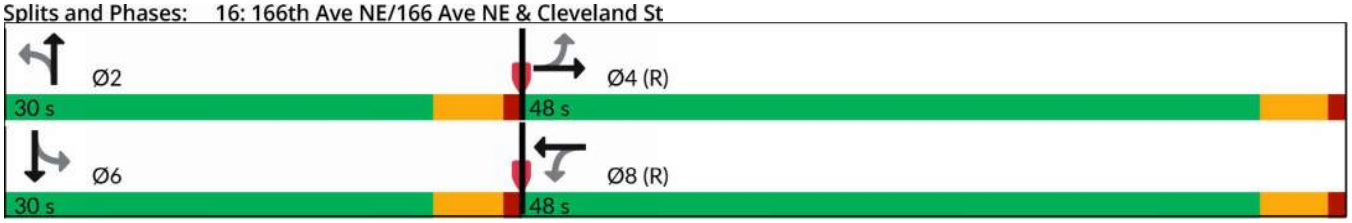
Lanes, Volumes, Timings
16: 166th Ave NE/166 Ave NE & Cleveland St 03/21/2025

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

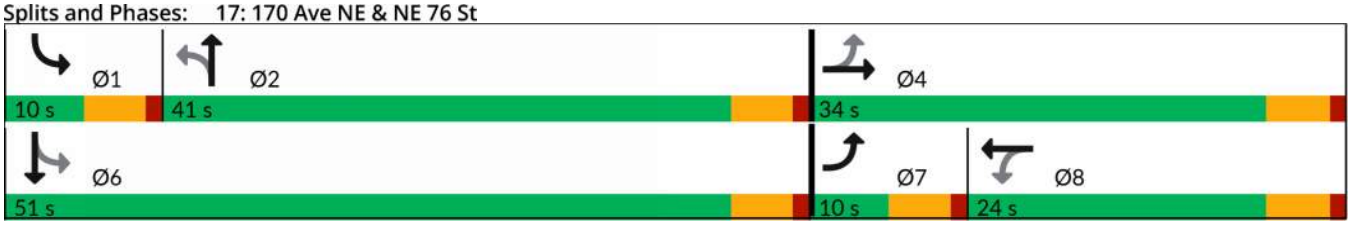
Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

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



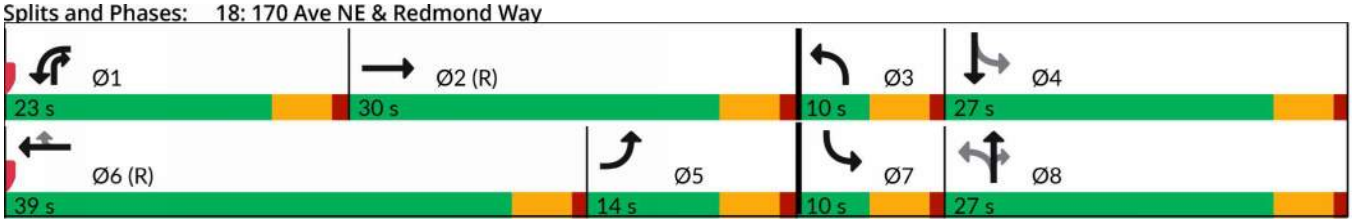
Lanes, Volumes, Timings
18: 170 Ave NE & Redmond Way 03/21/2025

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

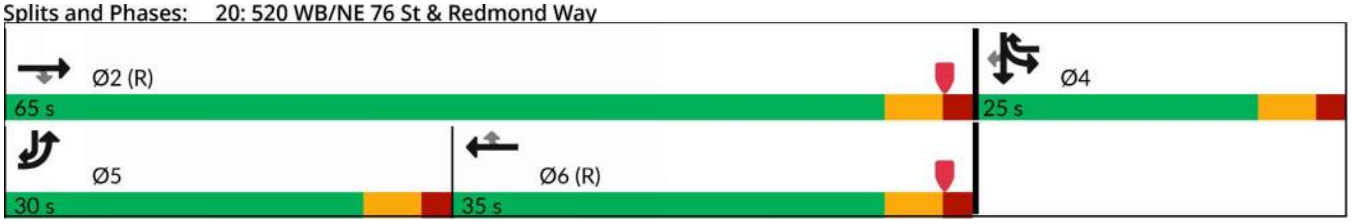
Lanes, Volumes, Timings
20: 520 WB/NE 76 St & Redmond Way 03/21/2025

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

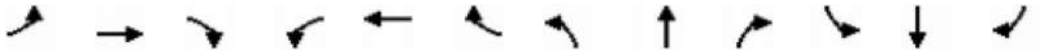
Intersection Summary

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

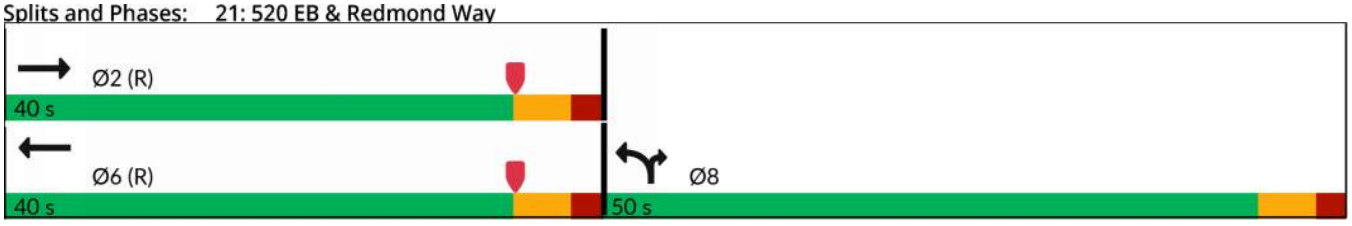
Notes
User approved pedestrian interval to be less than phase max green.
User approved changes to right turn type.

Lanes, Volumes, Timings
21: 520 EB & Redmond Way 03/21/2025

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

Exhibit E

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

Exhibit E

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).

Exhibit E

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

Exhibit E

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	Directional Split [2] Exit	Vehicle Trip Generation Enter	Vehicle Trip Generation Exit	Vehicle Trip Generation 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).

Exhibit E

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.

Exhibit E

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

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	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.

Exhibit E

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).

Exhibit E

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

Exhibit E

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).

Exhibit E

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.

Exhibit E

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.

Exhibit E

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.

Exhibit E

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

Exhibit E

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	Directional Split [2] Exit	Vehicle Trip Generation Enter	Vehicle Trip Generation Exit	Vehicle Trip Generation 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).

Exhibit E

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

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	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.

Exhibit E

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.

Exhibit E

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.

Exhibit E

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	Directional Split [2] Exit	Vehicle Trip Generation Enter	Vehicle Trip Generation Exit	Vehicle Trip Generation 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

Exhibit E

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).

Exhibit E

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.

Exhibit E

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

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	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

Exhibit E

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:_____

Exhibit E

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

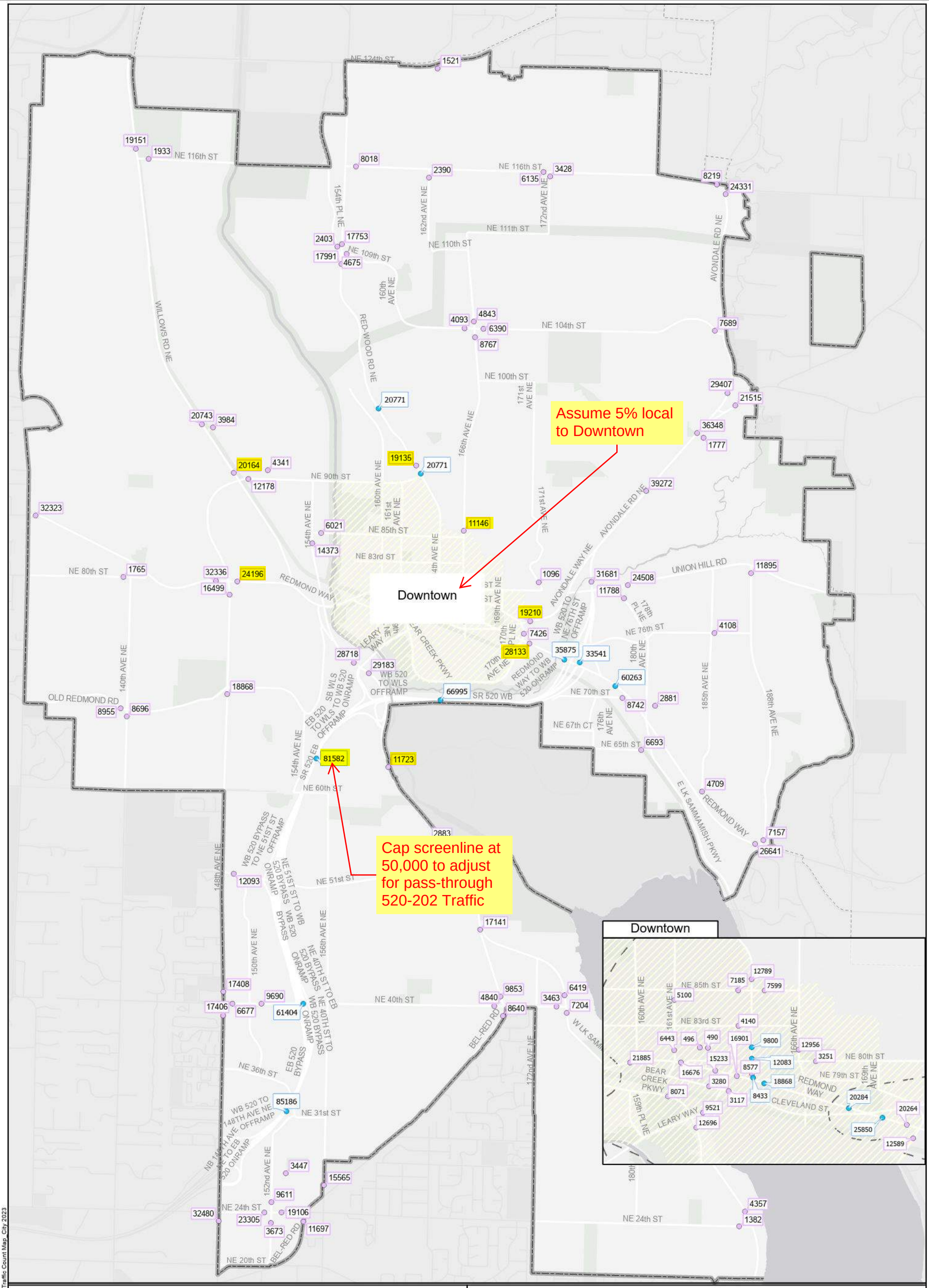
Exhibit E

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



2022 Traffic Count (AWDT)

City of Redmond, Washington

Redmond WASHINGTON

0 0.4 0.8 Miles

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