



UW MEDICAL CENTER – NORTHWEST

Draft Major Institution Master Plan, 2024 Update

Draft Environmental Impact Statement

September 2023

**PUBLIC NOTICE
UNIVERSITY OF WASHINGTON**

Project Name: UWMC-Northwest Major Institution Master Plan (MIMP)
Proponent & Lead Agency: University of Washington
Comment Period Closes: October 5, 2023

Description of Proposal: The UW Medical Center – Northwest Major Institution Master Plan will allow for space on the campus to accommodate projected population growth and corresponding increase in healthcare demands. It would also allow for replacing aging campus facilities with more energy efficient, lower maintenance, and appropriate systems for today’s medical center functional requirements. The Master Plan will include design guidelines and development standards for new development on the campus. The planning process is intended to foresee, assess, and outline mitigation measures for potential direct, indirect and cumulative impacts of development.

Location of proposal: 1550 N 115th Street, Seattle WA 98133. The project site is generally bounded by N 120th Street on the north, Meridian Avenue N to the east, N 115th Street on the south, and the Bikur Cholim Cemetery and multifamily residences to the west.

Please visit <https://facilities.uw.edu/Northwest-MIMP> for an online open house and the date and location of an in-person open house September 21, or email comments to NorthwestMIMP@uw.edu.

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DRAFT

ENVIRONMENTAL IMPACT STATEMENT

for the

**UNIVERSITY of WASHINGTON MEDICAL CENTER -
NORTHWEST**

**MAJOR INSTITUTION
MASTER PLAN UPDATE**

The Draft EIS (DEIS) for the *UWMC-Northwest 2024 Major Institution Master Plan Update* has been prepared in compliance with the State Environmental Policy Act (SEPA) of 1971 (Chapter 43.21C, Revised Code of Washington); the SEPA Rules, effective April 4, 1984, as amended (Chapter 197-11, Washington Administrative Code); and rules adopted by the University of Washington implementing SEPA (478-324 WAC). Preparation of this DEIS is the responsibility of the University's Campus Architecture & Planning department. The Campus Architecture & Planning department and the University's SEPA Advisory Committee have determined that this document has been prepared in a responsible manner using appropriate methodology and they have directed the areas of research and analysis that were undertaken in preparation of this DEIS. This document is not an authorization for an action, nor does it constitute a decision or a recommendation for an action; in its final form, it will accompany the *Proposed Action* and will be considered in making the final decisions on the proposal.

Date of DEIS Issuance September 5, 2023

Date Comments are Due on the DEIS..... October 5, 2023

FACT SHEET

PROJECT TITLE UWMC–Northwest – 2024 Major Institution Master Plan Update

PROPONENT/APPLICANT UWMC - Northwest

LOCATION The UWMC-Northwest campus is located in North Seattle between Highway 99 (Aurora Avenue) and I-5. The campus boundary (also referred to as the Major Institution Overlay (MIO) boundary) encompasses an area of approximately 33 acres. The campus extends from N 115th Street on the south, N 120th Street on the north, approximately Meridan Avenue N on the east, and the Stendall Place residential development and Bikur Cholim Cemetery on the west.

PROPOSED ACTION The Proposed Action involves adoption and implementation of an updated Major Institution Master Plan (MIMP) for the UWMC-Northwest campus. The Draft MIMP is described in detail in the UWMC-Northwest’s Draft MIMP, which is a separate document from this Draft EIS; the Draft MIMP is also summarized in Chapter 2 of this Draft EIS. Key elements of the Draft MIMP that are analyzed in this Draft EIS include:

- Campus Boundary – No changes to the current campus boundary are proposed.
- Building Space – A net increase in building space on campus of approximately 862,000 sq. ft. is proposed; along with the existing approximately 738,000 sq. ft. of building space, the UWMC-Northwest campus would contain up to 1.6 million sq. ft. of space.
- Building Locations – Potential development sites for proposed buildings could be located anywhere on campus, subject to proposed building height limit overlays and perimeter setback areas.

- **Building Uses** - The mix of uses proposed for the UWMC-Northwest campus are consistent with the current campus and the City of Seattle’s definition of a medical center, as they will relate to and support teaching hospital and clinics, labs, administrative offices, staff services, transportation, open space, food services, childcare, and facilities supporting the utilities and plant maintenance functions.
- **Development Standards** – Modification of certain development standards as authorized by the MIMP process, including height limit overlays and perimeter setback areas. Differing scenarios for height limit overlays and perimeter buffer areas are analyzed in this EIS.

EIS ALTERNATIVES

For the purposes of environmental review, three alternatives are analyzed in this EIS, including:

- **Alternative 1** – Proposed MIMP Update with simplified plan for height limit overlays and perimeter setback areas.
- **Alternative 2** – Proposed MIMP Update with additional restrictions on building height limit overlays and perimeter setback areas.
- **No Action Alternative** – No changes to the building height overlays and setbacks, or the physical improvements that are proposed under the MIMP Update.

LEAD AGENCY

University of Washington.

SEPA RESPONSIBLE OFFICIAL

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PURPOSE OF THIS DRAFT EIS

The SEPA environmental review process is designed to be used along with other decision-making factors to provide a comprehensive review of the proposal (WAC 197-11-055). The purpose of SEPA is to ensure that environmental values are given appropriate deliberation, along with other considerations.

The approval of the *2024 Major Institution Master Plan Update* is classified under SEPA as a non-project (also referred to as programmatic) action. A non-project action is defined as an action that is broader than a single specific project, and involves decisions on policies, plans or programs. A Draft EIS for a non-project proposal does not require site specific analysis; instead the Draft EIS addresses conditions at a more general level (WAC 197-11-422). As SEPA Lead Agency, the University of Washington is responsible for ensuring SEPA compliance.

FINAL ACTION

The decision by the Board of Regents, after consideration of environmental impacts and mitigation, to approve the *2024 Major Institution Master Plan Update* and associated Final EIS.

PERMITS AND APPROVALS

Preliminary investigation indicates that the following permits and/or approvals could be required or requested for the Proposed Actions. Additional permits/approvals may be identified during the review process associated with specific development projects.

University of Washington

- ***Board of Regents***
 - Approval of the Final *2024 Major Institution Master Plan Update* and associated Final EIS

Agencies with Jurisdiction

- ***State of Washington***
 - Dept. of Labor and Industries
 - Dept. of Ecology, Construction Stormwater General Permit

- ***Puget Sound Clean Air Agency***
 - Demolition and Asbestos Notification

- ***City of Seattle***
 - City Council approval of the *2024 Major institution Master Plan Update*
 - Master Use Permit
 - Grading Permit
 - Shoring Permit
 - Building Permits
 - Electrical Permits
 - Mechanical Permits
 - Occupancy Permits
 - Comprehensive Drainage Control Plan, Inspection and Maintenance Schedule
 - Construction Stormwater Control Plan Approvals

- ***Seattle Department of Transportation***
 - Street Use Permits (i.e., construction staging, construction operations, etc.)
 - Street Improvements (i.e., traffic signal)

- ***Seattle-King County Department of Health***
 - Plumbing Permits

**DRAFT EIS AUTHORS AND
PRINCIPAL CONTRIBUTORS**

The *2024 Major Institution Master Plan Update* Draft EIS has been prepared under the direction of the UWMC-Northwest and analyses were provided by the following consulting firms:

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LOCATION OF BACKGROUND INFORMATION

Background material and supporting documents are available by contacting the Responsible Official: Julie Blakeslee (jblakesl@uw.edu).

DATE OF DRAFT EIS ISSUANCE

September 5, 2023

DATE DRAFT EIS COMMENTS ARE DUE

Pursuant to the SEPA Rules (WAC 197-11-502), a 30-day comment period is required for Draft EIS documents and the University is providing 30 days. Comments on the Draft EIS are due on:

October 5, 2023

PUBLIC OPEN HOUSE

A public open house for the Draft EIS has been scheduled for September 21, 2023 at 6:00 PM. The public open house will be held at:

UWMC Northwest
Medical Office Building – Board Room 202
1550 N 115th Street
Seattle, WA 98133

AVAILABILITY OF THE DRAFT EIS

This Draft EIS has been distributed to agencies, organizations and individuals noted on the Distribution List contained in **Appendix A** to this document. Copies of the Draft EIS are also available

for review on the University's SEPA webpage (<https://facilities.uw.edu/committees/sepa>), and at Seattle Public Library's Broadview Branch (12755 Greenwood Avenue N, Seattle, WA 98133) and Northgate Branch (10548 5th Avenue NE, Seattle, WA 98125).

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CHAPTER 1

SUMMARY

1.1 INTRODUCTION

This chapter provides a summary of the Draft Environmental Impact Statement (Draft EIS) for proposed *UWMC-Northwest 2024 Major Institution Master Plan Update (MIMP Update)*. **Chapter 1** briefly describes the Proposed Action and the EIS Alternatives (Alternative 1, Alternative 2, and the No Action Alternative), and contains a comprehensive overview of environmental impacts identified for the alternatives. Please see **Chapter 2** of this Draft EIS for a more detailed description of the Proposed Action and alternatives and **Chapter 3** for a detailed description of the affected environment, environmental impacts, mitigation measures, and significant unavoidable adverse impacts.

1.2 PROJECT SUMMARY

The UWMC-Northwest campus is located in North Seattle between Highway 99 (Aurora Avenue) and I-5. The campus boundary (also referred to as the Major Institution Overlay (MIO) boundary) encompasses an area of approximately 33 acres. The campus extends from N 115th Street on the south, N 120th Street on the north, approximately Meridan Avenue N on the east, and the Stendall Place residential development and Bikur Cholim Cemetery on the west.

The UWMC-Northwest campus is within the City of Seattle MIO. The MIO is intended, among other things, to permit appropriate institutional growth within boundaries while minimizing the adverse impacts associated with development, balance a major institution's ability to change with need, to protect adjacent neighborhoods, encourage the concentration of institutions on existing campuses, and provide for coordinated growth through MIMPs (SMC 23.69). The first MIMP for UWMC-Northwest was adopted by the Seattle City Council in November 1991. The 1991 Final Adopted Master Plan included provisions for: Campus Boundary; Building Development; Building Heights; Setbacks; Access; and Landscaping.

Because the building capacity established under the 1991 MIMP is essentially utilized (approximately 26,000 sq. ft. of capacity remaining), the UWMC-Northwest is proposing an updated MIMP to guide future development on the campus to help address health care needs of the region. The proposed *MIMP Update* represents an update to the original MIMP prepared by UWMC-Northwest in compliance with Seattle Municipal Code (SMC) Chapter

23.69 for Major Institution Overlay Districts, as well as to fulfill the need for a comprehensive campus development plan.

To help meet the health care needs of the region, the proposed *MIMP Update* includes growth in overall building space from the existing approximately 738,600 sq. ft. of building space to up to 1.6 million sq. ft. of building space (reflecting a net increase of approximately 862,000 sq. ft.) over approximately 20 years.

1.3 MAJOR INSTITUTION MASTER PLAN GOALS (OBJECTIVES)

The proposed *MIMP Update* provides a long-term phased development plan that is intended to achieve the following development goals:

- **Accommodate Future Growth.** Accommodate future clinical care growth requirements while maintaining a positive campus experience for patients, visitors, staff, and the community.
- **Align Vision with Strategic Plan.** Align the UWMC - Northwest campus vision with the larger UW Medicine Strategic Plan.
- **Phase Growth for Future Needs.** Replace aging facilities, phase necessary campus expansion, and consider the energy efficiency and utility needs for future development.
- **Create Flexibility to Adapt with Changing Needs.** Create flexibility to support the dynamic, ever-changing healthcare market that allows project sequencing based on need and funding strategies.
- **Provide Community Engagement.** Through clear and transparent communication, ensure the community understands the project vision and can participate in the SEPA process.

1.4 PROPOSED ACTION

The development contemplated under the proposed *MIMP Update* includes inpatient (hospital) and outpatient clinic buildings to replace and grow existing health care capacity. New support uses such as administrative offices, daycare (for staff families), central utility plant(s), and parking structures are also planned. The Proposed Action involves adoption and implementation of the proposed *MIMP Update*.

Proposed MIMP Update Features

Campus Boundary

The current campus boundary and size (approximately 33 acres) would not change under the proposed *MIMP Update*.

Proposed Building Space

The proposed *MIMP Update* includes growth in overall building space from the existing approximately 738,600 sq. ft. of building space to up to 1.6 million sq. ft. of building space (reflecting a net increase of approximately 862,000 sq. ft.) over approximately 20 years. Potential development sites for the proposed building projects could be located anywhere on the campus, subject to proposed building height limits, perimeter setback areas, and retained buildings (see **Figure 2-4** for an illustration of buildings to be retained and potential buildings to be removed).

Proposed Building Uses

The mix of uses proposed for the UWMC-Northwest campus are consistent with the current campus and the City of Seattle’s definition of a medical center, as they will relate to and support teaching hospital, labs, medical offices, staff services, transportation, open space, food services, childcare, and facilities supporting the utilities and plant maintenance functions. Example uses could include the following types of infrastructure and growth and/or replacement of medical center functions: hospital, support, infrastructure.

Proposed Building Demolition

The proposed *MIMP Update* anticipates several buildings would remain in their current configuration, with on-going maintenance. Potential development sites for building projects could be located anywhere on the campus, subject to proposed perimeter building setbacks. One or more of the existing buildings may be demolished, including B/C/E-Wings, Medical Arts Building, Childcare Building, and/or the Medical Office Building. Once functions can be relocated (on or off-campus), demolition of these buildings could remove up to 301,000 GSF from the campus.

Parking and Access

Planned construction of new patient care buildings would increase the number of parking stalls required on campus. On the UWMC-Northwest campus, new construction would also remove existing stalls given that the majority of the available land to build is currently in use as surface parking lots. Additional parking may be built as an expansion of the existing parking structure and/or a standalone parking structure(s). A standalone facility may

include support uses (clinics, administrative offices or childcare, for example) in front, or as part of, the parking structure. New parking garages would expand electric vehicle charging stations at UWMC-Northwest. [Note: parking structures and basement levels are excluded from area calculations and MIMP limits]. To support the 1.6 million gross sq. ft. of healthcare and support functions at UWMC-Northwest, total parking supply is anticipated to grow from 1,633 stalls to approximately 3,533 stalls in a combination of surface lots and structured parking.

The majority of the UWMC-Northwest campus access would continue from driveways from N 115th Street. It is assumed that the existing driveways on N 115th Street would be reconfigured to enhance the entry/exit movement for all modes of travel, including the eventual removal of the existing toll booths (east entry off N 115th Street) and existing gate arm (west entry off N 115th Street). A new third access point is assumed in one of two optional locations: on N 115th Street immediately west of the McMurray Office Building, near the existing parking garage or on N 120th Street approximately opposite Densmore Avenue N.

Central Utility Plant

The proposed *MIMP Update* includes one or more Central Utility Plant(s) (CUPs) intended to consolidate and separate the critical infrastructure that supports the Medical Center into a standalone enclosed facility. Because the proposed CUP would be enclosed and would utilize the latest best management technology, it is anticipated that the levels of operational noise and air emissions would be controlled in a more efficient manner than under current conditions. The proposed CUP is anticipated to include the following equipment: emergency generators, heat pumps, electrical switchgear, cooling towers, chillers, boilers, medical air and vacuum tanks, and an oxygen tank.

1.5 EIS ALTERNATIVES

For the purposes of environmental review, two action alternatives and a no action alternative are analyzed in this Draft SEIS, including Alternative 1; Alternative 2; and a No Action Alternative. A full description of these alternatives is provided in Chapter 2.

Alternative 1

Consistent with the proposed *MIMP Update*, Alternative 1 would include up to approximately 862,000 sq. ft. of net new building space that would be developed on the campus; resulting in a total of approximately 1.6 million sq. ft. of building space on campus under Alternative 1. Under Alternative 1, and consistent with the proposed *MIMP Update*, the UWMC-Northwest campus would house up to 515 hospital beds (an increase from the current 353 licensed hospital beds on campus). Alternative 1 also assumes the demolition of

up to approximately 301,000 sq. ft. of building space. The buildings identified for demolition reflect buildings that are considered unlikely to be efficiently renovated and/or are anticipated to require removal to accommodate new and larger health care facilities.

Alternative 1 reflects a simplified plan for building height limit overlays and perimeter building setback areas intended to maintain development flexibility while preserving existing tree buffers along campus edges. Two height limit overlays are assumed under Alternative 1, including 65-feet where abutting parcels developed as residential uses; and, 175-feet for the remainder of the campus. Proposed perimeter building setback areas are intended to allow for the preservation of the majority of the existing tree canopy and allow UWMC-Northwest to consider different phasing options that respond to community needs and replacement over time. Setback areas include a 30-foot setback where campus abuts rights of way (N 115th Street, N 120th Street, and Burke Avenue N) and a 40-foot setback where campus abuts adjacent properties.

Alternative 2

Similar to Alternative 1 and consistent with the proposed *MIMP Update*, up to approximately 862,000 sq. ft. of net new building space would be developed on the campus; resulting in a total of approximately 1.6 million sq. ft. of building space on campus under Alternative 2. Under Alternative 2, the UWMC-Northwest campus would house up to 515 licensed hospital beds; an increase from the current 353 licensed hospital beds on campus. Alternative 2 also assumes the demolition of approximately 301,000 sq. ft. of building space.

Alternative 2 reflects additional restrictions on building height overlays compared to Alternative 1, including limiting the tallest building height to the central and southwest portions of the campus and adding a mid-range building height limit overlay (105 feet). The three building height limit overlays assumed under Alternative 2 include 65-feet at the north/northwest and eastern edges of campus abutting residential parcels; 105-feet in the southwest corner of campus (reflecting existing height limit); and, 175-feet for the remainder of the campus. Perimeter building setback areas under Alternative 2 would be narrower than under Alternative 1 and would include a 20-foot setback where campus abuts rights of way (N 115th Street, N 120th Street, and Burke Avenue N) and a 30-foot setback where campus abuts adjacent properties.

No Action Alternative

The No Action Alternative is intended to reflect conditions on the UWMC-Northwest campus if no *MIMP Update* were to be approved, and improvements to address increased health care needs were not implemented. It is anticipated that the approximately 26,000

sq. ft. of remaining campus building capacity under the 1991 Master Plan would be developed, which would accommodate approximately 3% of anticipated demand for health care supporting building space over the next approximately 20 years. The No Action Alternative does not meet the objectives of UWMC-Northwest.

1.6 IMPACTS, MITIGATION MEASURES AND SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS

The following highlights the impacts, mitigation measures, and significant unavoidable adverse impacts that would potentially result from the alternatives analyzed in this Draft EIS. **Table 1-1** provides a summary of the potential impacts that would be anticipated under the Draft EIS Alternatives. This summary is not intended to be a substitute for the complete discussion of each element that is contained in **Chapter 3**.

**Table 1-1
IMPACT SUMMARY MATRIX**

| Alternative 1 | Alternative 2 | No Action Alternative |
|--|---|---|
| 3.1 – Land Use | | |
| <ul style="list-style-type: none"> Development of up to 862,000 sq. ft. of net new building space), demolition of up to 301,000 sq. ft. of existing building space, dedicated perimeter building setback areas, and increased building heights. | <ul style="list-style-type: none"> Same amount of building development, building demolition, with additional restrictions on building heights, with less area in perimeter building setback areas. | <ul style="list-style-type: none"> Development of remaining approximately 26,000 sq.ft. of development capacity under the existing 1991 MIMP. Existing building heights and perimeter building setbacks. |
| <ul style="list-style-type: none"> Development would result in an intensification of existing land use character. | <ul style="list-style-type: none"> Same as Alternative 1. | <ul style="list-style-type: none"> Level of development and intensification substantially less than under Alternatives 1 and 2. |
| <ul style="list-style-type: none"> Development would not represent a change in the Medical Center land use character of the campus. | <ul style="list-style-type: none"> Same as Alternative 1. | <ul style="list-style-type: none"> Same as Alternatives 1 and 2. |
| 3.2 – Air Quality | | |
| <ul style="list-style-type: none"> Campus development would increase the consumption of electricity, fossil fuel, and natural gas on the campus which could contribute to cumulative air quality impacts. However, it is anticipated that new buildings under the proposed <i>MIMP Update</i> would be designed to be more energy efficient than existing buildings of similar size | <ul style="list-style-type: none"> Same as Alternative 1. | <ul style="list-style-type: none"> The level of consumption of electricity, fossil fuels and natural gas, and associated emissions would be less than Alternatives 1 and 2. |

| | | |
|---|--|---|
| on campus. Any emissions would be subject to applicable requirements of the University of Washington and the Puget Sound Clean Air Agency. | | |
| <ul style="list-style-type: none"> Development under Alternative 1 would generate increased CO₂ over the lifespan of building development. | <ul style="list-style-type: none"> Same as Alternative 1. | <ul style="list-style-type: none"> The No Action Alternative would generate lower amounts of CO₂ than Alternatives 1 and 2. |
| 3.3 – Environmental Health | | |
| <u>Hazardous Materials</u> | | |
| <ul style="list-style-type: none"> During construction, gas and other petroleum-based products would be utilized. As with any construction, accidental spills could occur. A spill prevention plan would minimize potential for accidental release of hazardous materials to the environment. | <ul style="list-style-type: none"> Same as Alternative 1. | <ul style="list-style-type: none"> The amount of construction and potential for accidental spills would be substantially less than under Alternatives 1 and 2. |
| <ul style="list-style-type: none"> New development would include hospital and medical office uses and associated increase in use and generation of hazardous materials and waste. Materials/waste would continue to be managed by the University’s Environmental Health and Safety Department. | <ul style="list-style-type: none"> Same as Alternative 1. | <ul style="list-style-type: none"> The use of medical hazardous materials and waste would be similar to current conditions. |

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| <p><u>Noise</u></p> <ul style="list-style-type: none"> Operational noise with new development associated with building systems (e.g. mechanical systems) and traffic noise. New mechanical systems may reduce some existing noise generators. | <ul style="list-style-type: none"> Same as Alternative 1. | <ul style="list-style-type: none"> The amount of new development would be substantial lower than under Alternatives 1 and 2, with noise levels similar to current conditions. |
| <ul style="list-style-type: none"> Emergency generators require air intakes/exhaust which would allow for some noise to escape the enclosed structure. However, because emergency generators are only utilized in the case of power disruption or during required monthly testing (typically one hour of testing per month), the amount of time the emergency generators would be utilized is anticipated to be low and would be similar to current conditions. | <ul style="list-style-type: none"> Same as Alternative 1. | <ul style="list-style-type: none"> The existing emergency generators would be generally tested and utilized as under current conditions. |
| <p>3.4 – Aesthetics, Light, Glare & Shadows</p> | | |
| <p><u>Aesthetics</u></p> <ul style="list-style-type: none"> The aesthetic character of the campus would reflect a denser development pattern with taller buildings. | <ul style="list-style-type: none"> Same as Alternative 1. | <ul style="list-style-type: none"> The aesthetic character would be similar to current conditions. |

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| <ul style="list-style-type: none"> Views to the campus would be modified to reflect increased density and building heights. | <ul style="list-style-type: none"> Similar to Alternative 1 with slightly lower potential for view to tallest buildings with reduced area with 175-foot building height overlay. | <ul style="list-style-type: none"> Views to campus would be similar to current conditions. |
| <p><u>Shadows</u></p> <ul style="list-style-type: none"> New buildings and landscaping would result in an increase in shadows. In general, these shadows would be cast over areas that already receive shadows from existing buildings and mature perimeter trees. | <ul style="list-style-type: none"> Similar to Alternative 1. | <ul style="list-style-type: none"> Shadow conditions would be similar to current conditions |
| <p><u>Light and Glare</u></p> <ul style="list-style-type: none"> New sources of light and glare would be generated from vehicles traveling through and adjacent to campus, light from new buildings and parking areas, and sunlight reflecting off new building surfaces. All development under the MIMP Update would comply with the University’s design review process, which includes consideration of measures to reduce light and glare. | <ul style="list-style-type: none"> Similar to Alternative 1. | <ul style="list-style-type: none"> Light and glare conditions would be similar to current conditions. |
| 3.5 – Historic & Cultural Resources | | |
| <ul style="list-style-type: none"> There are no buildings on or adjacent to the site that are listed on the NRHP | <ul style="list-style-type: none"> Same as Alternative 1. | <ul style="list-style-type: none"> Same as Alternatives 1 and 2. |

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| or as a City of Seattle Landmark and no direct or indirect impacts to listed historic resources would be anticipated. | | |
| <ul style="list-style-type: none"> The campus area is considered a moderately low risk for archaeological resources and the likelihood for cultural resource impacts is anticipated to be low. | <ul style="list-style-type: none"> Same as Alternative 1. | <ul style="list-style-type: none"> Same as Alternatives 1 and 2. |
| 3.6 – Transportation | | |
| <u>Construction</u> | | |
| <ul style="list-style-type: none"> Construction would generate traffic associated with deliveries and workers. Closure of City right-of-way would not be anticipated. | <ul style="list-style-type: none"> Same as Alternative 1. | <ul style="list-style-type: none"> The amount of construction and potential for traffic would be less than under Alternatives 1 and 2. |
| <u>Trip Generation</u> | | |
| <ul style="list-style-type: none"> Development would result in net new increase of approximately 662 trips during the weekday AM peak hour and 563 trips during the PM peak hour relative to No Action. | <ul style="list-style-type: none"> Same as Alternative 1. | <ul style="list-style-type: none"> Development under existing MIMP capacity would result in net new increase of approximately 29 trips during the weekday AM peak hour and 24 trips during the PM peak hour¹. |
| <u>Traffic Operations</u> | | |
| <ul style="list-style-type: none"> Two intersections would operate poorly (LOS E or F) during the AM | <ul style="list-style-type: none"> Same as Alternative 1. | <ul style="list-style-type: none"> One intersection would operate poorly during the AM peak hour with |

¹ Does not include trips associated with the Behavioral Health Building (120 AM peak hour and 73 during PM peak hour).

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| peak hour with five intersections operating poorly during the PM peak hour. | | three intersections operating poorly during the PM peak hour. |
| <u>Campus Access</u> <ul style="list-style-type: none"> The proposed 3rd access under either option (N 115th Street or N 120th Street) would operate at LOS A with limited queuing. | <ul style="list-style-type: none"> Same as Alternative 1. | <ul style="list-style-type: none"> No 3rd access included in existing MIMP. |
| <u>Pedestrian/Bicycle</u> <ul style="list-style-type: none"> Pedestrian and bicycle trips would increase. Features to improve bicycle and pedestrian conditions are included in the MIMP Update. | <ul style="list-style-type: none"> Same and Alternative 1. | <ul style="list-style-type: none"> Pedestrian and bicycle improvements would be less than under Alternative 1 and 2. |
| 3.7 – Utilities | | |
| <u>Water Supply</u> <ul style="list-style-type: none"> New development would require new connections and would increase demand on the water supply system. New development would utilize efficient fixtures and other water saving features as appropriate. As individual projects are proposed, specific analyses would be conducted to identify specific requirements. | <ul style="list-style-type: none"> Same as Alternative 1 | <ul style="list-style-type: none"> Buildout of the remaining 1991 MIMP capacity would result in increased demand on the water system, although at a lower level than under Alternatives 1 and 2. |

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| <p><u>Sewer</u></p> <ul style="list-style-type: none"> • New development would increase demands to the existing sewer system. As individual projects are proposed, side sewer evaluations would be completed to verify capacity and identify necessary improvements. | <ul style="list-style-type: none"> • Same as Alternative 1. | <ul style="list-style-type: none"> • Buildout of the remaining 1991 MIMP capacity would result in increased demand on the sewer system, although at a lower level than under Alternatives 1 and 2. |
| <p><u>Stormwater</u></p> <ul style="list-style-type: none"> • New development would result in an overall increase in impervious surfaces and as specific development projects occur, each project would be required to meet the applicable requirements of the City of Seattle’s Stormwater Manual. | <ul style="list-style-type: none"> • Same as Alternative 1. | <ul style="list-style-type: none"> • Minimal change to impervious surfaces anticipated. |
| <p>3.8 – Construction Impacts</p> | | |
| <ul style="list-style-type: none"> • Construction activities could occur throughout the development envelope (established by the building height overlays and perimeter building setbacks) and would include: removal of existing buildings, pavement and landscaping; excavation and grading; and, construction of health care service buildings. | <ul style="list-style-type: none"> • Same as Alternative 1. | <ul style="list-style-type: none"> • The level of construction activities would be substantially less than under Alternatives 1 and 2. |

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| <p><u>Earth</u></p> <ul style="list-style-type: none"> • Construction of buildings would result in approximately 1.5 to 2.9 million cubic yards of excavation (depending on the nature and location of individual projects), and approximately 365,000 cubic yards of fill. | <ul style="list-style-type: none"> • Same as Alternative 1. | <ul style="list-style-type: none"> • The amount of excavation and fill would be substantially less than under Alternatives 1 and 2. |
| <ul style="list-style-type: none"> • Development could occur in or in proximity to City of Seattle environmentally critical areas (ECA) for Steep Slopes and Landfill (Historical). Any development in proximity to the ECAs would be conducted in compliance with City of Seattle Environmentally Critical Areas regulations (SMC 25.09). | <ul style="list-style-type: none"> • Same as Alternative 1. | <ul style="list-style-type: none"> • The potential for new development to be located in or in proximity to ECAs would be substantially less than under Alternative 1 and 2. |
| <p><u>Air Quality</u></p> <ul style="list-style-type: none"> • Short-term construction-related air quality increases in particulates and emissions in the vicinity of the individual project construction sites. | <ul style="list-style-type: none"> • Same as under Alternative 1. | <ul style="list-style-type: none"> • The potential for construction related increases in particulates and emissions substantially less than under Alternatives 1 and 2. |
| <p><u>Trees</u></p> <ul style="list-style-type: none"> • Construction of projects could result in removal of existing lawns, trees and shrubs, including the potential to | <ul style="list-style-type: none"> • Similar to Alternative 1, although slightly higher potential for removal | <ul style="list-style-type: none"> • Potential for removal of lawns, trees (including Exceptional trees) and |

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| remove some trees meeting the City of Seattle definition of Exceptional tree. | of Exceptional trees given less area in perimeter setback areas. | shrubs substantially less than under Alternatives 1 and 2. |
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SUMMARY OF MITIGATION MEASURES AND SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS

Land Use

Mitigation Measures

Implementation of the proposed design guidance and development standards in the proposed *MIMP Update* would minimize potential land use impacts. These standards include, but are not limited to: building setbacks, visual screening with landscaping at campus edges adjacent to residential land uses, and implementation of the University of Washington (UW) Design and Environmental Review Process, including review by the UW Architectural Commission and SEPA Advisory Committee.

Significant Unavoidable Adverse Impacts

Under Alternatives 1 and 2, intensification in land uses on the UWMC-Northwest campus would occur as a result of increased density and building heights. With proposed mitigation measures, significant unavoidable land use impacts are not anticipated.

Air Quality

Mitigation Measures

The proposed *MIMP Update* includes sustainability design guidelines to create a more sustainable campus environment. These goals would, in part, guide future campus development and would indirectly relate to the overall air quality and GHG environment. In addition to compliance with applicable regulations related to construction and operations (including EPA, PSCAA and City of Seattle regulations), the following potential measures are intended to further reduce the potential for air quality and GHG impacts.

Construction

- Construction-related air quality mitigation measures are identified in **Section 3.8**, Construction Impacts.

Operations

- Air emissions would be consistent with applicable local, State, and Federal regulations, and would be consistent with the University of Washington Environmental Health and Safety Department guidelines.

- Features to minimize the potential for exhaust features in proximity to adjacent residential areas would be considered during the design of individual projects (including the CUP), and would be considered during implementation of the University design and environmental review process.
- Implementation of the proposed Transportation Management Plan would reduce vehicle trips and associated vehicle emissions.

GHG Emissions

- The University of Washington would embrace sustainability as an objective for all development on campus, including LEED provisions. Key measures that could be explored include:
 - installation of high performance glazing with low-E coatings to further reduce heat gain;
 - considering use of reflective roof surface treatments to reduce 'heat island effect' on building roofs;
 - planting of drought resistant and tolerant planting in landscaped areas to minimize irrigation requirements;
 - maximizing use of outside air for heating, ventilating, and air conditioning;
 - installation of efficient light fixtures, including occupancy and daylight sensors, as well as nighttime sweep controls;
 - use of low flow plumbing fixtures, which could result in a 30 percent reduction of water consumption;
 - use of low VOC emitting materials for finishes, adhesives primers and sealants;
 - incorporation of recycled content and rapidly renewable materials into project designs, including: concrete, steel and fibrous materials (bamboo, straw, jute, etc.);
 - salvage of demolished material and construction waste for recycling; and
 - Commitment to the Seattle 2030 District pilot program to reduce energy and water consumption, as well as CO₂ emissions from auto and freight traffic.

Significant Unavoidable Adverse Impacts

With implementation of the mitigation measures identified above, no significant unavoidable adverse impacts on air quality would be anticipated under the EIS Alternatives. Climate change and other issues associated with GHG emissions is a global issue, and it is

not possible to discern the impacts of the GHG emissions from a single major institution master plan.

Environmental Health

Mitigation Measures

Hazardous Materials

- Potential future development projects under the proposed *MIMP Update* should verify the presence, use and/or potential generation of hazardous materials on the project site prior to development.
- Hazardous materials generated and used on campus would continue to be managed in accordance with existing policies/standards established by the University's Environmental Health and Safety Department, as well as applicable local, state and federal standards/regulations.
- Existing facilities that handle hazardous materials could be improved under the proposed *MIMP Update* to meet future needs and standards.

Noise

- Construction-related noise mitigation measures are identified in **Section 3.8, Construction Impacts**.
- Development projects under the proposed *MIMP Update* that are located in areas that are proximate to noise-sensitive uses could require project-specific coordination with adjacent noise-sensitive users to determine potential noise-related issues associated with development on those sites and could require additional noise analysis and mitigation measures (if necessary).

Significant Unavoidable Adverse Impacts

It is anticipated that an increase in hazardous materials and noise would occur as development occurs under the proposed *MIMP Update*. With implementation of the mitigation measures identified above, no significant unavoidable adverse environmental health impacts would be anticipated under the EIS Alternatives.

Aesthetics, Light, Glare & Shadows

Mitigation Measures

Aesthetics

- Potential future development projects would be consistent with the development guidelines and development standards identified in the *MIMP Update*, including:
 - Provide visual screening to reasonably obscure a view from adjacent properties to campus utility equipment, support service areas, and/or surface parking operations. Screening shall be implemented through the use of vegetation, trees, fences, walls, and other materials. Screening will be maintained.
 - Where the property abuts residential parcels, campus landscaped areas will be maintained to help create a landscape buffer for neighbors. Planting materials will incorporate trees and shrubs to help obscure campus activities and provide privacy.
- The University of Washington’s design review process (architectural and landscape review, and environmental review) would review all building projects and consider aesthetic/views as part of individual projects.

Light & Glare

- The University’s existing design review process (architectural and landscape review, and environmental review) would continue to be used to review all building projects on campus.
- The design of potential future development would consider the use of least reflective glazing available to minimize the effects of reflective solar glare.
- Exterior light fixtures would continue to be shielded and sited to focus lighting and direct light away from adjacent off-campus land uses.

Shadows

- All potential development projects would comply with the University’s design review process and design standards (i.e., architectural review and review and environmental review) which would include a review of building orientation, building height, and associated potential shadows.

Significant Unavoidable Adverse Impacts

Development under the *MIMP Update* would result in changes to the aesthetic character of the campus, including increased density and building heights. The optional new driveway access from N 120th St. would include clearing of existing trees and increased ability to view building development in the center of campus. Implementation of the mitigation measures identified above are intended to minimize the potential for aesthetic impacts. Although the potential for views to building development on campus would increase, the change in view could be interpreted as positive or negative depending on the perception of the individual.

Potential future development under the *MIMP Update* would result in an increase in light and glare on campus associated with new buildings and associated vehicles. With the implementation of the mitigation measures identified above, no significant unavoidable adverse impacts are anticipated.

Potential future development under the *MIMP Update* would result in an increase in shadows on campus associated with new buildings and associated campus landscaping. However, in general these shadows would be cast over areas that already receive shadows from existing buildings and mature trees. With the implementation of the mitigation measures identified above, no significant unavoidable adverse impacts would be anticipated.

Historic & Cultural Resources

Mitigation Measures

Historic Resources

- The University of Washington's existing internal design review processes (architectural, environmental review, and Board or Regents) would continue to review and authorize major building projects in terms of siting, scale, and the use of compatible materials relative to historic structures.
- The University of Washington would continue to follow the Historic Resources Addendum (HRA) process for all proposed projects that include exterior alterations to buildings over 50 years old or are located adjacent to buildings or features over 50 years old. The HRA is intended to ensure that important elements of the campus, its historic character and value, environmental considerations and landscape context are valued.

Cultural Resources

- In the event that archaeological deposits are inadvertently discovered during construction of a development project, ground-disturbing activities would be halted immediately, and the University of Washington shall be notified. The University would then contact DAHP and the interested Coast Salish Native Americans, as appropriate, and as described in the recommended inadvertent discovery plan.
- Any human remains that are discovered during construction at a potential development site would be treated with dignity and respect. DAHP procedures would be followed.
 - If ground-disturbing activities encounter human skeletal remains during the course of construction, then all activity that may cause further disturbance to those remains must cease, and the area of the find must be secured and protected from further disturbance. In addition, the finding of human skeletal remains must be reported to the county coroner and local law enforcement in the most expeditious manner possible. The remains shall not be touched, moved, or further disturbed.
 - The county coroner will assume jurisdiction over the human skeletal remains and make a determination of whether those remains are forensic or non-forensic. If the county coroner determines the remains are non-forensic, they will report that finding to the DAHP. DAHP will then take jurisdiction over those remains and report them to the appropriate cemeteries and affected tribes. The State Physical Anthropologist will make a determination of whether the remains are Indian or non-Indian, and report that finding to any appropriate cemeteries and the affected tribes. The DAHP will then handle all consultation with the affected parties as to the future preservation, excavation, and disposition of the remains.

Significant Unavoidable Adverse Impacts

With implementation of the mitigation measures identified above, no significant unavoidable adverse historic or cultural resource impacts would be anticipated under the EIS Alternatives.

Transportation

Mitigation Measures

- The **Meridian Avenue N/N 115th Street** all-way stop controlled intersection is forecast to degrade from operating at LOS D and E during the AM and PM peak hour No Action 2030 and 2040 conditions, to operate at LOS F during the AM and PM peak hour Alternative 1 2030 and 2040 conditions. This increase in delay at the all-way stop

controlled intersection is identified as a significant impact which will require mitigation. As the current intersection is currently operating as an all-way stop, the proposed mitigation includes the signalization of the intersection. No changes in channelization are proposed with the signalization of the intersection. The timing of this improvement is based on the amount of development occurring and the horizon year that the development is anticipated due to background traffic growth. The following highlights mitigation triggers for this improvement numbers reflect net new square footage to campus.

- 2026 – up to 180,000 gsf
 - 2027 – up to 170,000 gsf
 - 2028 – up to 155,000 gsf
 - 2029 – up to 140,000 gsf
 - 2030 – up to 125,000 gsf
 - 2031 – up to 110,000 gsf
 - 2032 – up to 95,000 gsf
 - 2033 – up to 80,000 gsf
 - 2034 – up to 60,000 gsf
 - 2035 – up to 45,000 gsf
- **Construction Management Plan.** To minimize/reduce impacts to the surrounding neighborhood a Construction Management Plan, consistent with City requirements will be prepared. This plan will include the following elements:
 - Construction hours
 - Noise generating activities
 - Noise sensitive receivers
 - Construction noise management
 - Construction milestones
 - Construction parking
 - Right-of-Way use – (e.g. street closures, sidewalk closures, transit stop closures/relocations, etc.)
 - Haul Routes

Significant Unavoidable Adverse Impacts

The LOS at the 1st Avenue NE/N 130th Street intersection is forecast to degrade from operating at LOS D under future (2040) No Action weekday PM peak hour conditions to LOS E with Alternative 1, with an increase in delay of approximately 7 seconds. This exceeds the typical threshold of 5 seconds for identifying significant impacts. The reduced operations are associated with the proposed channelization revision along the N 130th Street corridor as part of the Vision Zero safety corridor project which prioritizes the implementation of non-motorized facilities including installing bicycle lanes along both sides of the road. This is accomplished by reducing N 130th Street from 4 vehicular lanes to a three-lane road (two through-lanes with a center two-way left turn lane) west of 1st Avenue NE. Given the

planned improvement at this location to reduce the vehicular capacity, prioritizing non-motorized, an improvement to increase vehicular capacity at this location is not proposed.

No additional significant and unavoidable adverse impacts have been identified through this analysis.

Utilities

Mitigation Measures

Water

- Use of low- or no-flow fixtures and other water saving devices would be utilized as feasible.
- Collection and re-use of stormwater for non-potable uses (i.e. irrigation, etc.) would be utilized as feasible to reduce public water supply demand.
- Drip watering or low precipitation systems would be utilized as feasible for irrigation, and types of ground cover that require less irrigation could continue to be utilized.

Sewer

- New connections to the onsite side sewers or new connections to the adjacent sewer mains would need to have a side sewer evaluation completed to verify that the system and services have the capacity to serve each specific new development project.

Stormwater

- Per the 2020 COSSM, any new development projects that include over 2,000 square feet of new and replaced hard surface will need to meet the wetland protection standard, pre-developed pasture standard, and peak control standard flow control requirements from the COSSM.
- Specific development projects with greater than 5,000 square feet of new or replaced pollution generating hard surfaces would be required to provide enhanced water quality treatment for those areas.
- Specific development projects with more than 1,500 square feet of new and replaced hard surface or 7,000 square feet of land disturbing activity would be required to meet OSM requirements for the entire project area.
- Geotechnical reports would be prepared for individual projects to identify specific geology and soils conditions at the site, and determine the feasibility of implementing stormwater infiltration BMPs (including rain gardens and/or other infiltration methods).

- Low-Impact Demand design features could be considered during design of individual projects to minimize stormwater runoff quantity and would be considered during implementation of the University of Washington (UW) Design and Environmental review process, including review by the UW Architectural Commission and SEPA Advisory Committee.

Significant Unavoidable Adverse Impacts

With implementation of the identified mitigation measures, significant utility related impacts are not anticipated.

Construction Impacts

Mitigation Measures

Earth

- All earthwork and site preparation on the UWMC-Northwest campus would be conducted in compliance with relevant grading criteria of the Seattle Municipal Code (Sections 22.170 and 22.802).
- The following Temporary Erosion and Sedimentation Control (TESC) measures would be implemented, as appropriate for the individual sites, as part of code compliance to reduce the risk of construction-related erosion:
 - The ground surface in the construction area would be sloped and sealed to reduce water infiltration, to promote rapid runoff, and to prevent water ponding.
 - To prevent soil disturbance, the size or type of construction equipment may have to be limited.
 - No soil would be left uncompacted and exposed to moisture. A smooth-drum vibratory roller, or equivalent, would be used to seal the ground surface.
 - Work areas and soil stockpiles would be covered with plastic. Bales of straw and/or geotextile silt fences would be used as appropriate to control soil erosion.
 - During periods of wet weather, excavation and fill placement would be observed by a geotechnical engineer (or engineer's representative) experienced in wet weather earthwork to determine that unsuitable materials are removed and that suitable compaction and site drainage is achieved.
 - Excavation slopes would be protected from infiltration and erosion by directing water away from excavations and covering slopes with impermeable membranes, such as plastic sheeting.

- Excavated materials, stockpiles, and equipment would be placed away from the top edge of excavations a distance equal to at least the depth of the excavation.
- To prevent an accumulation of dust and/or mud on campus during construction activities, the tires of construction equipment and trucks could be washed before they leave construction sites and streets could be swept as necessary.
- Site specific geotechnical recommendations would be provided as individual projects are proposed. Typical measures that could be implemented as part of code compliance, based on the specific conditions at the individual sites, include:
 - Excavations greater than four feet in height would be adequately sloped or braced to prevent localized sloughing and spalling.
 - Temporary shoring would be implemented during construction and would consist of a conventional soldier pile and lagging system.
 - All soil excavated from the site would be tested for contamination. All soil would be disposed of consistent with applicable University of Washington, State and local regulations.
 - Soldier piles and/or other slope stability techniques could be used as necessary in areas of unstable soils.
 - Structures could be designed with structural systems capable of supporting code-required floor loading and resisting lateral forces generated by earthquakes and wind.
- Whenever possible, construction could be scheduled to minimize overlapping of excavation periods for projects.
- Construction activities conducted in portions of the campus identified as containing earth-related environmentally critical areas (in the northwest corner of campus and in proximity to the Medical Office Building in central campus) identified by the City of Seattle Municipal Code (SMC) would comply with applicable development standards for: Steep Slope Areas (SMC 25.09.180); and, Landfills (Historical) (SMC 25.09.220)

Air Quality

- During construction, applicable best management practices (BMPs) to control dust, vehicle and equipment emissions would be implemented.
- Building construction and demolition would be conducted in compliance with Seattle Municipal Code Section 15.22.060B which provides criteria related to suppression of dust-generating activities.

- Where appropriate, temporary asphalt roadways would be provided as part of construction to reduce the amount of dust and dirt that would be generated.
- As applicable, a Construction Management Plan would be prepared for each individual construction project to establish parking areas, construction staging areas, truck haul routes, and provisions for maintaining pedestrian and vehicle routes. These measures are intended to, among other things, minimize traffic delays and associated vehicle idling.
- As applicable, control measures in the Washington Associated General Contractors *Guide to Handling Fugitive Dust from Construction Projects* would be used, including:
 - using only equipment and trucks that are maintained in optimal operational condition;
 - requiring all off-road equipment to have emission reduction equipment (e.g., require participation in Puget Sound Region Diesel Solutions, a program designed to reduce air pollution from diesel, by project sponsors and contractors);
 - implementing restrictions on construction truck and other vehicle idling (e.g., limit idling to a maximum of 5 minutes);
 - spraying exposed soil with water or other suppressant to reduce emissions of PM and deposition of particulate matter;
 - covering all trucks transporting materials, wetting materials in trucks, or providing adequate freeboard (space from the top of the material to the top of the truck bed), to reduce PM emissions and deposition during transport;
 - providing wheel washers to remove particulate matter that would otherwise be carried off-site by vehicles in order to decrease deposition of particulate matter on area roadways; and
 - covering dirt, gravel, and debris piles as needed to reduce dust and wind-blown debris.

Noise

- Construction activities would comply with the City of Seattle Noise Ordinance (SMC 25.08.425) which allows for temporary increases in the maximum permissible sound levels based on equipment type.
- The UWMC-Northwest also has additional conditions/considerations that project-specific contractors meet the following noise control criteria:

- The use of electric equipment and machinery is preferred. If noise levels on any equipment or device cannot reasonably be reduced to criteria levels, either that equipment or device will not be allowed on the job or use times will have to be scheduled subject to approval.
- The sound pressure level of each piece of equipment cannot be greater than 85 dBA at a distance of 50 feet. Rubber-tired equipment is to be used whenever possible instead of equipment with metal tracks. Mufflers for stationary engines are to be used in the hospital areas and areas within 100 feet of the campus boundary. Construction traffic should be routed through nearest campus exit.
- Air compressors are to be equipped with silencing packages.
- Jack hammers and roto hammers may be used where no other alternative is available; core drilling and saw cutting equipment is preferred.
- Specific scheduling of construction-related noise activities is required at the UWMC-Northwest Hospital.

Trees

- A detailed Urban Forest management Plan is under development for the campus that will document existing trees and provide standards for preservation and enhancement of trees on campus.
- Replacement of each Exceptional tree removed in associated with development with a tree or trees that will provide the same canopy coverage at maturity unless the removed tree qualifies as a hazardous tree.

Significant Unavoidable Adverse Impacts

With implementation of the identified mitigation measures, significant construction related impacts are not anticipated.

PROJECT DESCRIPTION

CHAPTER 2

INTRODUCTION AND DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

This chapter of the Draft Environmental Impact Statement (EIS) provides a discussion of the UW Medical Center (UWMC) system, information on the UWMC-Northwest campus and surrounding area, planning activities conducted in support of the proposed *UWMC-Northwest 2024 Major Institution Master Plan Update (MIMP Update)*, and a description of the Environmental Impact Statement (EIS) Alternatives. A detailed description of the affected environment, environmental impacts, mitigation measures and significant unavoidable adverse impacts is provided in **Chapter 3** of this Draft EIS.

2.1 Proponent and Project Location

Proponent

The proposed *MIMP Update* is sponsored by the UWMC-Northwest.

Project Location

The UWMC-Northwest campus is located in North Seattle between Highway 99 (Aurora Avenue) and I-5. The campus boundary (also referred to as the Major Institution Overlay (MIO) boundary) encompasses an area of approximately 33 acres. The campus extends from N 115th Street on the south, N 120th Street on the north, approximately Meridan Avenue N on the east, and the Stendall Place residential development and Bikur Cholim Cemetery on the west. **Figure 2-1** presents a regional map and **Figure 2-2** presents a vicinity map.



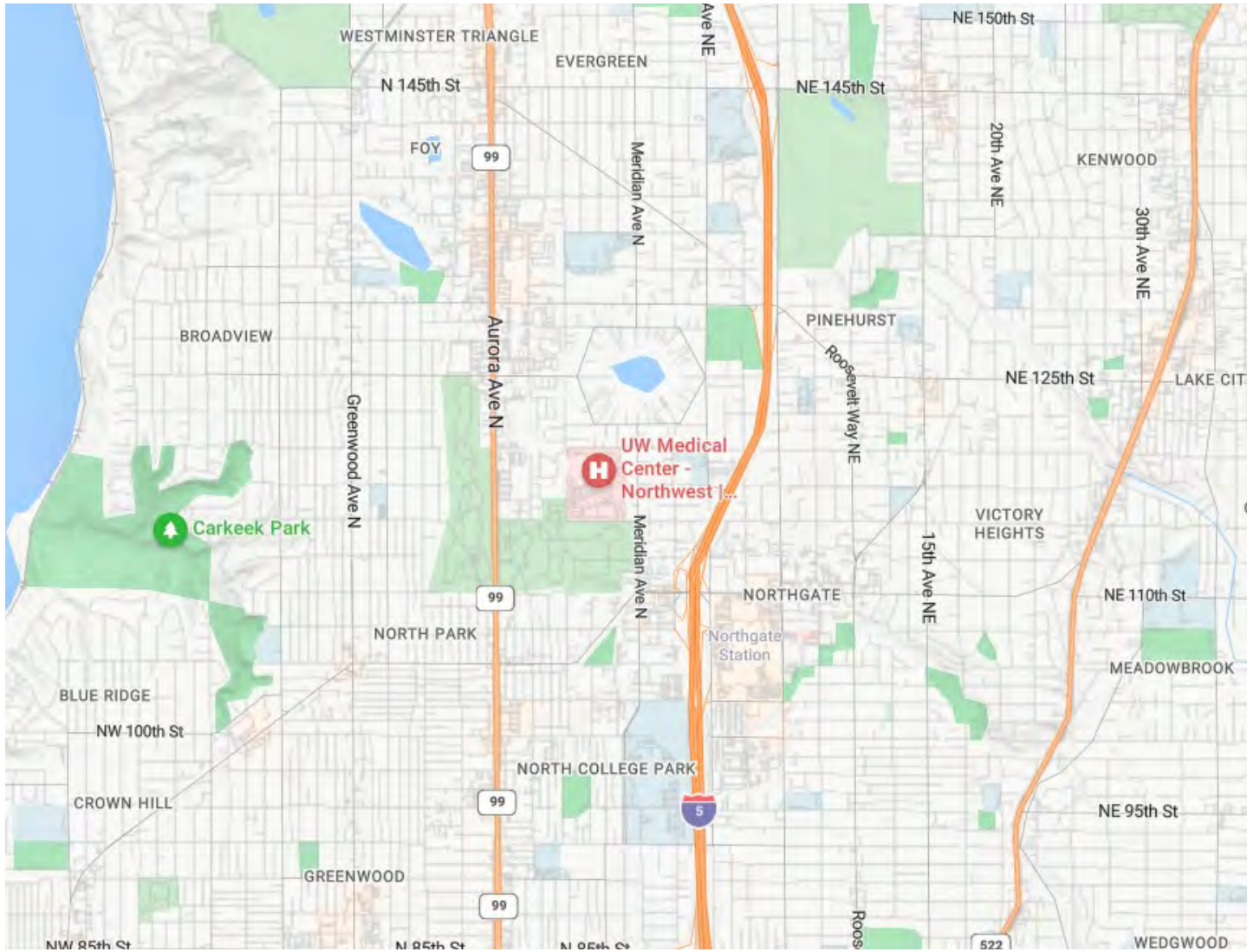
UWMC-Northwest Photo

2.2 Overview and Proposed Action Need Summary

Overview

The UWMC has two medical centers: the UWMC-Montlake at the University of Washington Seattle Campus and the UWMC-Northwest in North Seattle. The two campuses provide comprehensive healthcare services under a single hospital license. A brief description of each medical center follows.

UWMC-Northwest 2024 Major Institution Master Plan Update Draft EIS



Note: This figure is not to scale.



Source: Bing Maps and EA Engineering 2023



Figure 2-1
Regional Map

UWMC-Northwest 2024 Major Institution Master Plan Update
Draft EIS



Source: Google Earth and EA Engineering 2023



Figure 2-2
Vicinity Map

UWMC-Montlake is directly adjacent to the University of Washington Seattle campus and included within the University of Washington’s major institution overlay. The Montlake campus focuses on specialized, quaternary care which includes complex surgeries, treatments, and procedures.

UWMC-Northwest was built in 1960¹, became a part of the UW Medical Center system in 2010, and became UWMC-Northwest in 2020. The 33-acre medical center is a full-service medical center offering emergency care and a variety of inpatient and outpatient healthcare services. Patients from many communities across King and south Snohomish Counties come to UWMC-Northwest, with access from I-5 and Highway 99. UWMC-Northwest plays a critical, regional role in providing the full spectrum of community-based medical care, particularly in the areas of Cancer Care, Behavioral Health, Cardiology, Spine, Orthopedics, General Surgery, Obstetrics, and Emergency services.

Proposed Action Need Summary

The UWMC-Northwest campus is within the City of Seattle MIO. The MIO is intended, among other things, to permit appropriate institutional growth within boundaries while minimizing the adverse impacts associated with development, balance a major institution’s ability to change with need, to protect adjacent neighborhoods, encourage the concentration of institutions on existing campuses, and provide for coordinated growth through MIMPs (SMC 23.69).

The first MIMP for UWMC-Northwest was adopted by the Seattle City Council in November 1991 (Ordinance 115914)¹. The 1991 Final Adopted Master Plan included provisions for: Campus Boundary; Building Development; Building Heights; Setbacks; Access; and Landscaping.

Table 2-1 lists the level of building space (gross square feet), building height (in feet) and setbacks from the campus boundary (in feet) under the 1991 MIMP and level of current development on the campus. As indicated in the table, total building space on the UWMC-Northwest campus is currently 738,600 sq. ft. compared to the 764,600 sq. ft. capacity allowed under the 1991 Master Plan; thus, the campus has essentially reached the capacity established under the 1991 MIMP (approximately 26,000 sq. ft of additional building space capacity remaining). Existing campus building heights and setbacks are consistent with the limits established by the 1991 MIMP.

¹ *UWMC-Northwest was originally referred to as Northwest Hospital.*

**TABLE 2-1
1991 MASTER PLAN AND CURRENT CAMPUS DEVELOPMENT**

| | 1991 Master Plan | Current Campus Conditions |
|---|-----------------------|------------------------------|
| Total Campus Acreage | 33 | 33 |
| Total Campus Building Space Capacity | 764,600 sq. ft. | 738,600 sq. ft. ¹ |
| Maximum Building Height | 37, 50, 105 feet | 12 to 90 feet ¹ |
| Setbacks from Campus Boundary | 30, 40, 120, 180 feet | 30, 40, 120, 180 feet |

Source: UWMC-Northwest, January 2023.

¹ Includes the Behavioral Health Teaching Facility currently under construction.

With the evolving nature of health care needs subsequent to the 1991 Master Plan, the UWMC-Northwest has identified several factors that result in the need for more building space on campus, including:

- Regional Population Growth** - The Puget Sound region’s population has grown significantly since the last UWMC-Northwest MIMP was approved over 20 years ago. By 2050, the Puget Sound Regional Council has projected that the region will grow by more than 1.5 million people. Local demographics directly correlates to the increased demand for healthcare services and expansion of existing healthcare facilities. UWMC anticipates this demographic trend will continue and has adequately planned to accommodate these healthcare demands as part of the growth projections and long-term planning.
- Local Service Area Population Growth & Aging** -The UWMC-Northwest service area spans King and Snohomish Counties which is home for approximately 3.2 million residents. This area is experiencing rapid population growth and is projected to increase by 28% by 2040, exceeding 4 million people. The demand for healthcare is growing with the local service area’s projected population increase and the need for chronic disease management, as well as primary, preventative, and select specialty care will need to be met at UWMC - Northwest so that the hospital can continue to serve the community.

In addition to growth, the population projections also identify significant gains in the local service area’s aging population. Through 2030, the UWMC-Northwest service region is anticipating a 22% growth in the 65+ age group. This demographic experiences higher demand for healthcare services with more complex care needs.

- **Programmatic Needs** - Inpatient hospital care within the service area of UWMC-Northwest is estimated to double by 2043. From 2023 to 2043, inpatient volumes are anticipated to grow by 103% through a mix of organic (53%) and strategic growth (50%). Outpatient clinical care is estimated to grow by 45% in the same time period, from almost 6 million to 8 million patient visits annually. Significant space is needed at UWMC - Northwest to help meet this demand – in the hospital (inpatient beds, diagnostic and treatment services, support space, and infrastructure) and in the outpatient medical office buildings. According to SG2, a national healthcare services consultant, several inpatient and outpatient service lines provided at UWMC-Northwest are projected to grow and require additional space in the hospital and/ or ambulatory clinics.

UWMC-Montlake provides high-end quaternary care which includes Cardiology, Oncology, Obstetrics, Transplant, and Emergency Services, serving Washington state. UWMC-Northwest plays a critical role in the full spectrum community-based care regionally, particularly in the areas of Obstetrics, Emergency Services, and those listed above. UWMC-Northwest campus growth is key to providing capacity for UWMC highly specialized care for the region and state.

As part of the University’s academic medical center, UWMC-Northwest also needs support spaces to accommodate faculty and residents beyond just a community hospital setting. For example, current best practices include break-out rooms for collaboration and discussion near patient care areas so that providers can teach while maintaining patient privacy.

- **Replace (or Renovate) Older Campus Facilities** - Many of the facilities at UWMC-Northwest are more than 50 years old and require significant investment through renovation or replacement to meet contemporary healthcare practices.

Aging infrastructure should be replaced to meet current codes, best practices, and improve energy efficiency. Solutions may include development of a central utility plant (or multiple smaller structures) to improve campus operations and comply with the University’s sustainable practices. Seismic resilience of the older structures will also need to be addressed with new developments to ensure the hospital can maintain patient care and operations after a significant seismic event.

- **Increase Development Density and Functional Efficiencies** - The older, northern half of the campus is dominated by one-story buildings that spread out healthcare functions and increase walking distances between care areas. Modern medical centers are designed to closely locate all diagnosis and treatment areas so that staff proximity and patient care areas are quickly accessed, either on the same floor or on adjoining levels. All UWMC-Northwest hospital areas will need to grow to respond to the projected population.

In order to allow UWMC-Northwest to address health care needs associated with regional/local population growth, demographic changes (including aging population), evolving academic needs, upgrading older health care facilities, and increasing operational efficiencies, the University of Washington is proposing an update to the 1991 MIMP (see **Section 2.4** for detail).

2.3 Current Campus and Surrounding Area Conditions

Existing Campus

The UWMC-Northwest campus is located within the City of Seattle designated Northgate Urban Center in the Seattle Comprehensive Plan, and within a Major Institution Overlay (MIO) in the City zoning code. The campus underlying zoning is LR2, with height limits as defined by the 1991 MIMP of 37 feet (northern portion of campus), 50 feet (eastern portion of campus), and 105 feet (southern and central portions of campus).



Existing Campus

Existing building setbacks along the perimeter of the campus, as defined by the 1991 MIMP, include a 30-foot setback along the western and southern campus boundaries, 40-foot setback along the majority of the eastern campus boundary, and 120- to 180-foot setbacks along the northern campus boundary and a portion of the campus eastern boundary.

The UWMC-Northwest approximately 33-acre campus currently contains ten buildings connected by vehicular driveways and sidewalks, with a mix of surface and structured parking. Existing buildings range from one to six stories in height, with the majority of the buildings constructed in the 1960s with subsequent modifications (see **Figure 2-3**). The campus currently contains approximately 738,600 sq. Ft. in building space, including the Acute-Care Hospital (A-Wing), Surgical Services/Childbirth (B-Wing), Administration Building (D-Wing), Extended Care Facility (E-Wing), Specialty Center (Procare), Behavioral Health Teaching Facility, and three medical office buildings (see **Table 2-2**). A structured parking garage, surface parking lots, paved sidewalks and walkways, and interior and perimeter landscaping comprise the remainder of the campus area.

The existing buildings are mostly separate structures, with the exception of the multiple wings of the hospital complex (A-Wing, B/C-Wings, and the Behavioral Health Teaching Facility); this portion of the medical center contains all of the UWMC-Northwest's total of 381 licensed hospital beds. A skybridge connects the Medical Office Building to A-Wing. Two building located along the southern boundary of the campus (McMurry Medical Office Building and Fred Hutchinson Proton Therapy) are privately owned on leased land from the UW (see **Figure 2-3** and **Table 2-2**).

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Source: NBBJ 2023

Figure 2-3
Existing Campus Buildings

The UWMC-Northwest campus currently contains a total of 1,618 parking stalls distributed throughout the campus in a parking structure and several surface lots. The main public vehicular entrance to the UWMC-Northwest campus is provided from N 115th Street, which provides access for patients, visitors, emergency/service vehicles, and transit. A second access from N 115th Street provides keycard-controlled access for employees. A locked emergency/secondary access is provided from N 120th Street.²

**TABLE 2-2
EXISTING CAMPUS BUILDING CHARACTERISTICS**

| Existing Building | Building Area (Sq.Ft.) | Building Levels | Building Height (ft.) |
|-------------------------------------|------------------------|-----------------|-----------------------|
| Hospital | | | |
| A-Wing | 128,314 | 5 | 72 |
| B-Wing | 92,624 | 1+basement | 12 |
| C-Wing | 39,508 | 1+basement | 12-15 |
| Behavioral Health Teaching Facility | 188,846 | 6 | 90 |
| E-Wing | 54,408 | 1 | 12 |
| Medical Office Building | 70,202 | 2+basement | 44 |
| Medical Arts Building | 38,121 | 3 | 42 |
| McMurry Medical Office Building | 63,909 | 3 | 45 |
| Fred Huthinson Proton Therapy | 57,000 | 2 | 36 |
| Daycare Center | 5,611 | 1 | 12 |
| TOTAL BUILDING SPACE | 738,543 | | |
| Parking Structure | | 4 | 41 |

Source: UWMC-Northwest, January 2023.

Table 2-3 summarizes existing characteristics of the UWMC-Northwest campus, including building space, hospital beds, impervious (buildings, paved drives and sidewalks, etc.) and pervious (landscaping and natural area) area, campus population, and parking.

Campus buildings currently operate separate infrastructure systems (including emergency generators, heat pumps, electrical switch gear, cooling towers, and boilers). The current operation of separate building systems is considered by UWMC-Northwest to be inefficient and costly, and do not provide the appropriate level of back-up.

² The emergency/secondary access from N 120th Street is controlled by removable bollards.

**TABLE 2-3
EXISTING CAMPUS CHARACTERISTICS**

| | |
|---------------------------------------|-----------------------|
| Campus Acreage | 33 acres |
| Building Space | 738,600 sq.ft. |
| Building Height Maximums | 37, 50, 105 feet |
| Setback from Campus Boundary Required | 30, 40, 120, 180 feet |
| Hospital Beds | 353 beds* |
| Impervious Area | 20.36 acres |
| Pervious Area | 12.64 acres |
| Campus Staff Population | 3,150 people |
| Parking | 1,618 spaces |

Source: UWMC, 2023.

**Including beds anticipated with opening of the Behavioral Health Teaching Facility.*

Surrounding Area

The area surrounding the UWMC-Northwest campus is primarily residential and open space (cemetery) in character. One- to two-story single family residences comprise the majority of the uses to the north and east of the campus. Two-story multifamily residences (Stendall Place) are located to the west of the campus. Residences in the site vicinity are surrounded by existing mature landscaping and trees. Existing cemeteries are also located to the west and south of the campus, including the Bikur Cholim Cemetery to the west and the Evergreen Washelli Cemetery to the south and southwest (see **Figure 2-2**).

2.4 Major Institution Master Planning Process

Because the building capacity established under the 1991 MIMP is essentially utilized (approximately 26,000 sq. ft. of capacity remaining), the UWMC-Northwest is proposing an updated MIMP to guide future development on the campus to help address health care needs of the region.

The proposed *MIMP Update* represents an update to the original MIMP prepared by UWMC-Northwest³ in compliance with Seattle Municipal Code (SMC) Chapter 23.69 for Major Institution Overlay Districts, as well as to fulfill the need for a comprehensive campus development plan. The MIMP originally was adopted by Seattle City Council in November 1991 (Ord. 115914), with eight subsequent amendments between 1992-2001 for small changes to individual buildings.

UWMC-Northwest began the process of updating the 1991 MIMP in September 2022 with submittal of a Notice of Intent to the City of Seattle Department of Construction and Inspections (SDCI). The City published a notice about formation of the required

³ UWMC-Northwest was referred to as “Northwest Hospital” in 1991

Development Advisory Committee (DAC) and recommendations concerning prospective DAC members were approved by the Seattle City Council in March 2023. In December 2022, UWMC-Northwest submitted their proposed *Concept Plan* to SDCl. The DAC orientation occurred in February 2023, and the first working meeting occurred on March 23, 2023. Since then, meetings have been held on a monthly basis. The planning process associated with the UWMC-Northwest *MIMP Update* has involved numerous meetings to encourage broad involvement by numerous entities.

2.5 Environmental Review and Purpose

Consistent with the provisions of the State Environmental Policy Act (SEPA) (RCW 43.21C and WAC 197-11-050), the University of Washington is serving as the lead agency under SEPA (WAC 478-324-010 through -230).

In March 2023, the University of Washington began the formal environmental review process for the proposed *MIMP Update*. As the SEPA lead agency, the University of Washington is responsible for ensuring SEPA compliance. The University determined that the proposed *MIMP Update* could result in significant environmental impacts and that an EIS should be prepared. The University initiated the environmental review process by gathering public and agency input regarding specific topics and issues that should be analyzed as part of this EIS.

On March 27, 2023, the University of Washington issued a Determination of Significance and initiated the scoping process for this EIS. From March 27 through April 17 the University conducted the scoping comment period during which the public, public agencies and tribes were encouraged to provide input regarding the scope of the EIS. During the scoping period, five comment letters and emails were received. The University also held public scoping drop-in sessions on April 1 and 6 and an on-line open house during the comment period. A total of twelve (12) comment letters were received during the scoping comment period.

Based in part on the input received during the scoping period, the scope of the EIS was defined by the University of Washington. The following environmental elements were identified for analysis in the EIS

- *Land Use/Plans&Policies*
- *Employment*
- *Air Quality/GHG*
- *Environmental Health*
- *Aesthetics/Light&Glare/Shadows*
- *Historic/Cultural Resources*
- *Transportation*
- *Utilities*
- *Construction Impacts*

This EIS is intended to address the probable significant adverse impacts that could occur as a result of approval of the proposed *MIMP Update* by the University of Washington Board of Regents and the City of Seattle. A range of alternatives are analyzed in this EIS (see **Section 2.8** later in this chapter) that are intended, in part, to: **1)** encompass a range of focuses for campus development that can reasonably accommodate the projected building space needs; and, **2)** meet the identified MIMP goals and objectives. The alternatives function to provide representative locations of campus development for analysis in this EIS. Although the location and timing of campus development under the proposed *MIMP Update* cannot be specifically defined, Alternatives 1 and 2 are intended to meet the level of building square footages but with different building locations and heights.

The approval of the proposed *MIMP Update* is classified under SEPA as a non-project (also referred to as programmatic) action. A non-project action is defined as an action that is broader than a single site-specific project, and involves decisions on policies, plans, or programs. An EIS for a non-project proposal does not require site-specific analysis; instead, the EIS addresses conditions at a more general level (see WAC 197-11-442 for detail); as possible, the EIS includes detailed information and analysis (e.g., through the use of transportation modeling, greenhouse gas emission calculations; building massing simulations, etc.).

2.6 Major Institution Master Plan Goals (Objectives)

The proposed *MIMP Update* provides a long-term phased development plan that is intended to achieve the following development goals:

- **Accommodate Future Growth.** Accommodate future clinical care growth requirements while maintaining a positive campus experience for patients, visitors, staff, and the community.
- **Align Vision with Strategic Plan.** Align the UWMC - Northwest campus vision with the larger UW Medicine Strategic Plan.
- **Phase Growth for Future Needs.** Replace aging facilities, phase necessary campus expansion, and consider the energy efficiency and utility needs for future development.
- **Create Flexibility to Adapt with Changing Needs.** Create flexibility to support the dynamic, ever-changing healthcare market that allows project sequencing based on need and funding strategies.

- **Provide Community Engagement.** Through clear and transparent communication, ensure the community understands the project vision and can participate in the SEPA process.

2.7 Proposed Action(s)

The proposed *MIMP Update* is being formulated to achieve the Objectives listed in Section 2.6 above. The development contemplated under the proposed *MIMP Update* includes inpatient (hospital) and outpatient clinic buildings to replace and grow existing health care capacity. New support uses such as administrative offices, daycare (for staff families), central utility plant(s), and parking structures are also planned. The Proposed Action involves adoption and implementation of the proposed *MIMP Update*.

Proposed MIMP Update Features

Campus Boundary

The current campus boundary and size (approximately 33 acres) would not change under the proposed *MIMP Update*. The campus boundary under the proposed *MIMP Update* would remain as illustrated in **Figure 2-3**.

Proposed Building Space

To help meet the health care needs of the region, the proposed *MIMP Update* includes growth in overall building space from the existing approximately 738,600 sq. ft. of building space to up to 1.6 million sq. ft. of building space (reflecting a net increase of approximately 862,000 sq. ft.) over approximately 20 years. Potential development sites for the proposed building projects could be located anywhere on the campus, subject to proposed building height limits, perimeter setback areas, and retained buildings (see **Figure 2-4** for details on retained buildings).

Proposed Building Uses

The mix of uses proposed for the UWMC-Northwest campus are consistent with the current campus and the City of Seattle’s definition of a medical center, as they will relate to and support teaching hospital, labs, medical offices, staff services, transportation, open space, food services, childcare, and facilities supporting the utilities and plant maintenance functions.

Example uses could include the following types of infrastructure and growth and/or replacement of medical center functions:

- **Hospital.** Expansion will provide increased capacity for the Emergency Department, operating rooms (ORs), diagnostic and treatment areas, and modern, single occupancy patient rooms in an academic medical care setting. Over time, expansion of the Medical Center would eventually allow the demolition of older hospital structures.
- **Support.** Medical office buildings would help accommodate UWMC needs for outpatient and medical offices. Other support functions may include administrative office needs and a replacement childcare building in a co-located facility, or as separate structures. Potential support building(s) might provide offices, facilities support or workspace for the hospital, including the potential for training facilities for UWMC residents and staff. Any daycare space would entail outdoor play areas for the children in an enclosed, secure playground at grade, or as part of a safe rooftop amenity space.
- **Infrastructure.** Campus buildings currently operate separate building systems which is inefficient and costly. A new central utility plant (CUP) or multiple decentralized plants would replace aging equipment and provide much needed emergency generator capacity. The CUP would be sited and sized to support long-term campus growth, improving the energy efficiency and operating costs of UWMC-Northwest.

Proposed Building Demolition

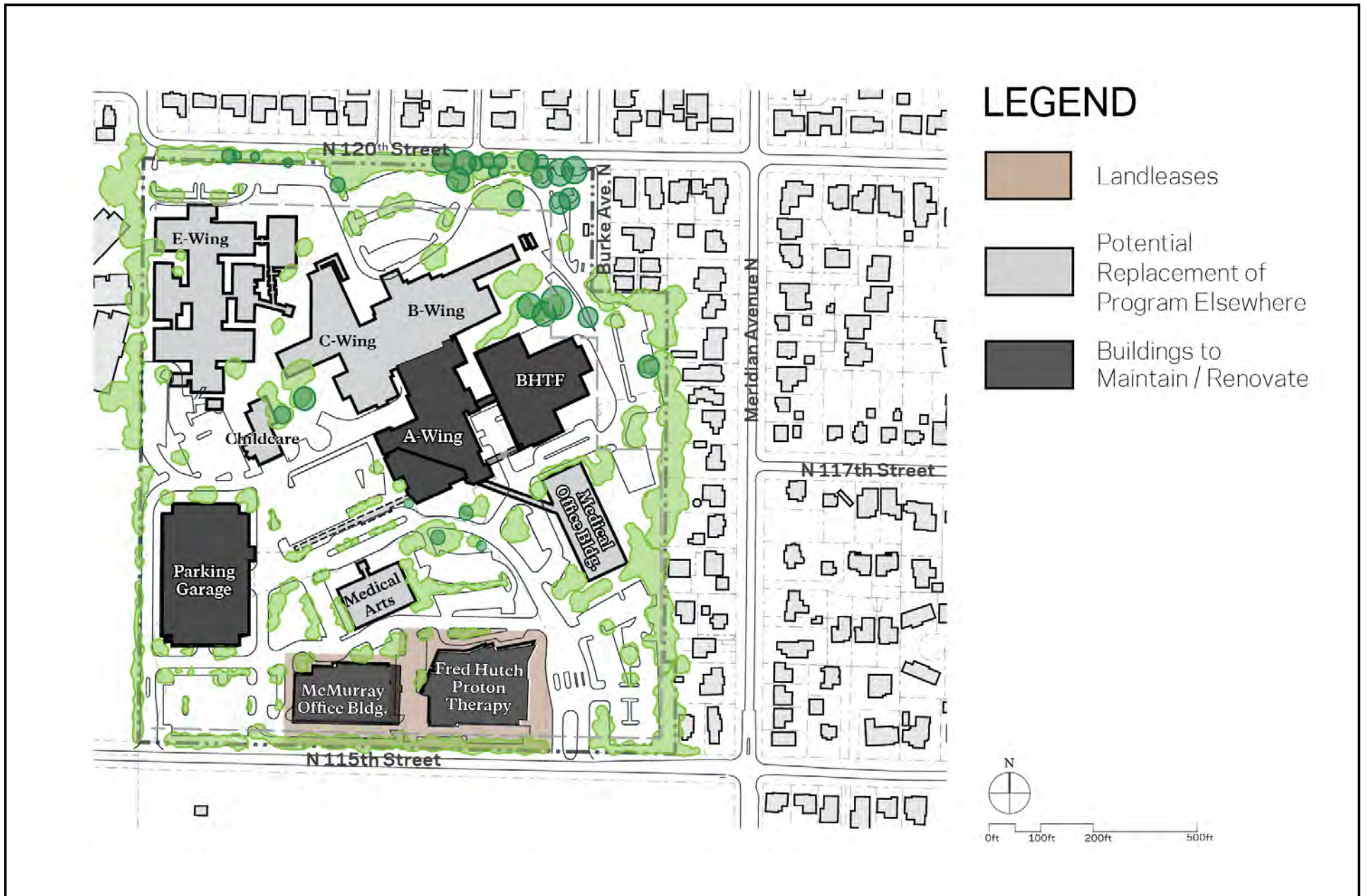
The proposed *MIMP Update* anticipates several buildings would remain in their current configuration, with on-going maintenance. **Figure 2-4** illustrates these buildings, including the two landleased facilities. **Figure 2-4** also illustrates older structures that may be demolished during implementation of the proposed *MIMP Update*. Potential development sites for building projects could be located anywhere on the campus, subject to proposed perimeter building setbacks and retained buildings.

As listed in **Table 2-4**, one or more existing buildings may be demolished: B/C/E-Wings, Medical Arts Building, Childcare Building, and/or the Medical Office Building. Once functions can be relocated (on or off-campus), demolition of these buildings could remove up to 301,000 GSF from the campus.

Parking and Access

Planned construction of new patient care buildings would increase the number of parking stalls required on campus. On the UWMC-Northwest campus, new construction would also remove existing stalls given that the majority of the available land to build is currently in use as surface parking lots. Parking development would, therefore, need to replace and grow the number of stalls on-campus.

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Source: NBBJ 2023

Figure 2-4
Potential Building Replacement

**TABLE 2-4
POTENTIAL BUILDING DEMOLITION**

| Existing Building | Number of Stories | Approx. Building Area (Sq.Ft.) |
|--|--------------------------|---------------------------------------|
| B-Wing | 1 | 92,624 |
| C-Wing | 1 | 39,508 |
| E-Wing | 1 | 54,408 |
| Medical Office Building | 2* | 70,202 |
| Medical Arts Building | 3 | 38,121 |
| Daycare Center | 1 | 5,611 |
| Total Potential Building Demolition | | 300,475 |

Source: UWMC-Northwest. 2023.

**The Medical Office Building includes a basement*

Additional parking may be built as an expansion of the existing parking structure and/or a standalone parking structure(s). A standalone facility may include support uses (clinics, administrative offices or childcare, for example) in front, or as part of, the parking structure. New parking garages would expand electric vehicle charging stations at UWMC-Northwest. [Note: parking structures and basement levels are excluded from area calculations and MIMP limits]. To support the 1.6 million gross sq. ft. of healthcare and support functions at UWMC-Northwest, total parking supply is anticipated to grow from 1,633 stalls to approximately 3,533 stalls in a combination of surface lots and structured parking.

As new projects are developed, UWMC-Northwest would improve site circulation and internal connectivity, particularly routes to the Emergency Department and to ease patient wayfinding. Safety and convenient proximities to care services are of the utmost importance. The new campus loop road would include accessible sidewalks, plantings, and pedestrian lighting to promote a safe, walkable environment for patients, visitors, and staff. The loop road would be developed in phases, as adjacent projects are constructed.

The campus loop road would continue to develop with adjacent projects until the whole campus benefits from an easy, completed circulation path. Each phase of development would ensure safe, clear campus circulation throughout the incremental development of the loop road. Adjacent site areas would be considered for surface parking areas and new landscaped open spaces. Additional circulation improvements anticipated for the campus are described in Section 3.6, **Transportation**.

The majority of the UWMC-Northwest campus access would continue from driveways from N 115th Street. It is assumed that the existing driveways on N 115th Street would be reconfigured to enhance the entry/exit movement for all modes of travel, including the

eventual removal of the existing toll booths (east entry off N 115th Street) and existing gate arm (west entry off N 115th Street). A new third access point is assumed in one of two optional locations: on N 115th Street immediately west of the McMurray Office Building, near the existing parking garage, or on N 120th Street approximately opposite Densmore Avenue N.

Central Utility Plant

The proposed *MIMP Update* includes one or more Central Utility Plant(s) (CUP) intended to consolidate and separate the critical infrastructure that supports the Medical Center into a standalone enclosed facility. The proposed CUP, which would be located on campus but outside of the perimeter building setback areas, would allow UWMC-Northwest to expand services over time and perform critical maintenance/replacement with minimal disruption to patient care. Because the proposed CUP would be enclosed and would utilize the latest best management technology, it is anticipated that the levels of operational noise and air emissions would be controlled in a more efficient manner than under current conditions.

The proposed CUP is anticipated to include the equipment listed below⁴.

- Emergency Generators.
- Heat Pumps.
- Electrical Switchgear
- Cooling Towers
- Chillers.
- Boilers
- Medical Air and Vacuum Tanks⁵
- Oxygen Tank⁵

As under current conditions for individual buildings, emergency generators associated with the proposed CUP would be required to be tested monthly. The duration of each monthly test is anticipated to be approximately one hour, similar to the current emergency generator testing schedule at UWMC-Northwest.

⁴ Additional equipment may be identified as planning for the CUP and individual building projects move forward.

⁵ The oxygen tank would be located adjacent to the CUP structure. The medical air and vacuum tanks is anticipated to be located within the CUP structure.

EIS Alternatives Summary

Because of the evolving nature of health care needs and University of Washington/UWMC funding which requires flexibility to respond to these evolving factors, the proposed *MIMP Update* does not identify specific project locations. Rather, building development under the proposed *MIMP Update* could occur anywhere on campus, but within the building development envelope established by the UWMC-Northwest *MIMP Update* Development Standards (i.e., building height limit overlays and setback areas from the campus perimeter).

Development standards that allow for taller buildings provide opportunities for smaller footprints, enabling the preservation of outdoor open space, integration of mature vegetation and a public realm that provides comfortable circulation routes for all modes of transport. The proposed *MIMP Update* contemplates that the distribution of taller buildings would be concentrated in the core of campus with direct connection to the A-Wing (the primary medical facility). Lower height structures, such as medical office and/or support buildings, parking structures and central utility plant(s) would be located closer to the perimeter of the site, to reduce the scale of development in closer proximity to the adjacent residential development.

In order to conduct a comprehensive environmental review, two development alternatives (Action Alternatives) and a No-Action Alternative have been developed for analysis in this EIS. Because the proposed *MIMP Update* does not identify specific project locations, and building development could occur anywhere on campus, subject to proposed Development Standards (including building height limit overlays, perimeter setback areas, and retained buildings), the two development alternatives (Alternatives 1 and 2) reflect differing building height limit overlays and perimeter building setback areas. These development EIS alternatives are formulated to create a range of potential development scenarios (without having specific building plans) and allow analysis of probable significant impacts under SEPA. All other features of Alternatives 1 and 2 (such as total net new building space, vehicular access, and parking) reflect that in the proposed *MIMP Update* and do not differ between Alternatives 1 and 2. Alternatives 1 and 2 meet the objectives of the UWMC-Northwest.

The No Action Alternative is intended to reflect conditions on the UWMC-Northwest campus if no *MIMP Update* were to be approved, and improvements to address increased health care needs were not implemented. The No Action Alternative does not meet the objectives of UWMC-Northwest.

Alternative 1

Building Space and Demolition

Consistent with the proposed *MIMP Update*, up to approximately 862,000 sq. ft. of net new building space would be developed on the campus; resulting in a total of approximately 1.6 million sq. ft. of building space on campus under Alternative 1. Under Alternative 1, and consistent with the proposed *MIMP Update*, the UWMC-Northwest campus would house up to 515 hospital beds; an increase from the current 353 licensed hospital beds on campus.

Alternative 1 assumes the demolition of up to approximately 301,000 sq. ft. of building space, as listed in **Table 2-4** and shown on **Figure 2-4**. The buildings identified for demolition reflect buildings that are considered unlikely to be efficiently renovated and/or are anticipated to require removal to accommodate new and larger health care facilities.

Building Height Overlays and Perimeter Setback Areas

Alternative 1 reflects a simplified plan for building height limit overlays and perimeter building setback areas intended to maintain development flexibility while preserving existing tree buffers along campus edges (see **Figure 2-5** for assumed Alternative 1 building height limit overlays). Two height limit overlays are assumed under Alternative 1, including:

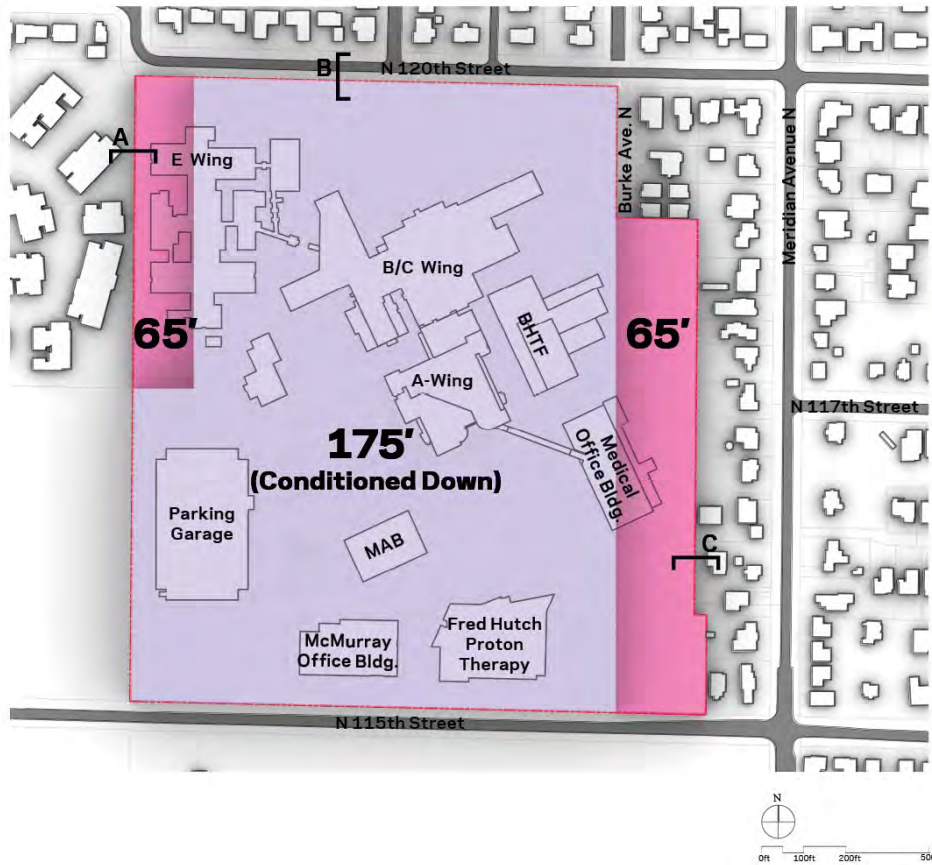
- *65-feet* where abutting parcels developed as residential uses.
- *175-feet* for the remainder of the campus.

Perimeter building setback areas under Alternative 1 are intended to allow for the preservation of the majority of the existing tree canopy and allow UWMC-Northwest to consider different phasing options that respond to community needs and replacement over time (see **Figure 2-5** for assumed Alternative 1 perimeter setback areas). The perimeter setback areas under Alternative 1 are assumed as follows:

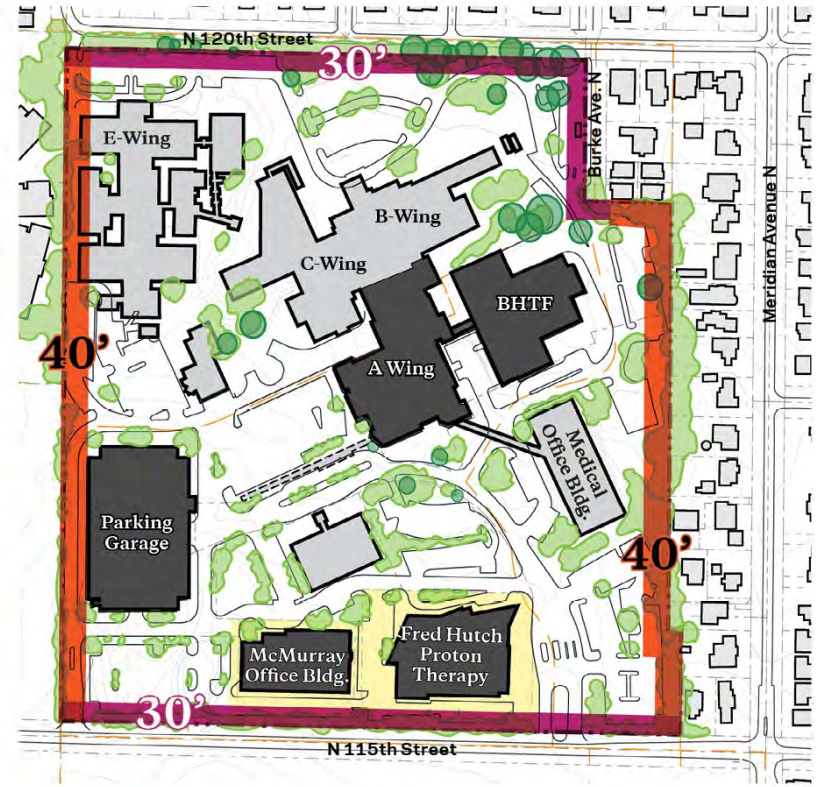
- *30-foot* setback where campus abuts rights of way (N 115th Street, N 120th Street, and Burke Avenue N).
- *40-foot* setback where campus abuts adjacent properties.

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Alternative 1



ALTERNATIVE 1 HEIGHT DIAGRAM



- 30' Setback** along rights of way
- 40' Setback** abutting parcels

ALTERNATIVE 1 SETBACK DIAGRAM

Source: NBBJ 2023

Figure 2-5

Alternative 1—Height Limit Overlays and Perimeter Setbacks

Parking and Vehicular Access

Consistent with the proposed *MIMP Update*, new construction under Alternative 1 would increase the demand for parking on campus. In addition, some new construction would likely be located on existing surface lots. New parking would, therefore, be required to replace and grow the number of stalls on-campus. Up to a total of 3,533 stalls are assumed under Alternative 1, an increase of approximately 1,900 stalls over existing conditions. The additional parking would be provided as an expansion of the existing parking structure and/or a standalone parking structure at the south side of campus.

As indicated for the proposed *MIMP Update*, the majority of the UWMC-Northwest campus access would continue from driveways from N 115th Street under Alternative 1. It is assumed that the existing driveways on N 115th Street would be reconfigured to enhance the entry/exit movement for all modes of travel, including the eventual removal of the existing toll booths (east entry off N 115th Street) and existing gate arm (west entry off N 115th Street). A new third access point is assumed to be located on N 115th Street immediately west of the McMurray Office Building, near the existing parking garage. An optional location of the new access on N 120th Street is also considered; this optional access would be located on the south side of N 120th Street opposite Densmore Avenue N.

Alternative 2

Building Space and Demolition

As under Alternative 1 and consistent with the proposed *MIMP Update*, up to approximately 862,000 sq. ft. of net new building space would be developed on the campus; resulting in a total of approximately 1.6 million sq. ft. of building space on campus under Alternative 2. Under Alternative 2, the UWMC-Northwest campus would house up to 515 licensed hospital beds; an increase from the current 353 licensed hospital beds on campus.

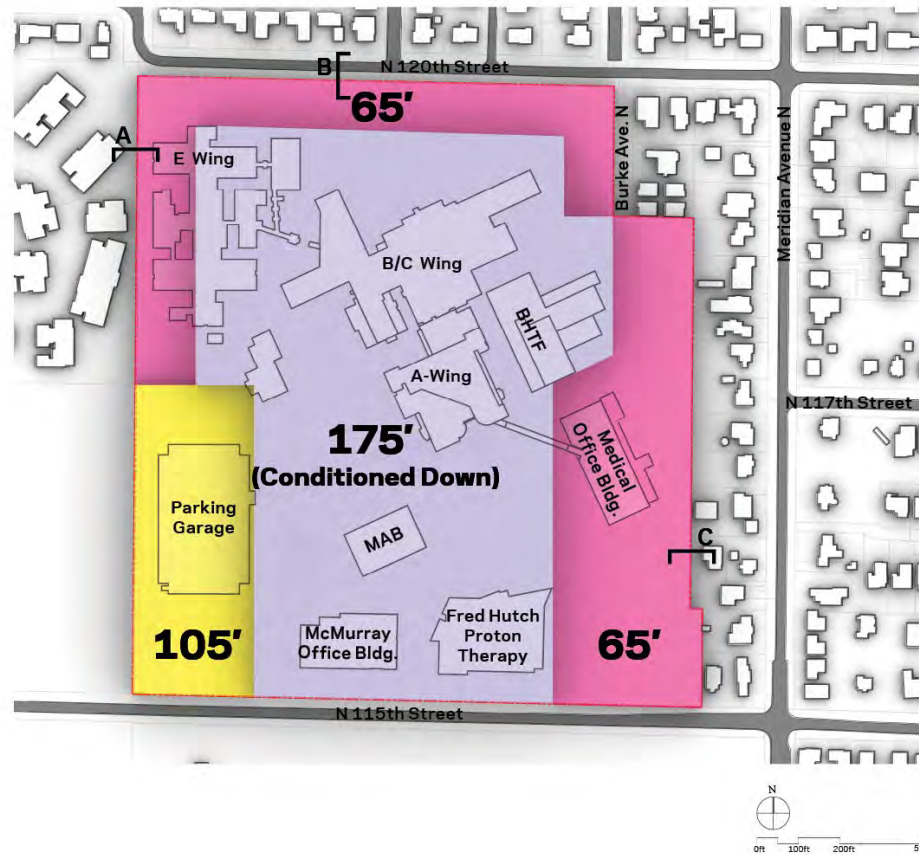
Alternative 2 assumes the demolition of approximately 301,000 sq. ft. of building space as listed in **Table 2-4** and shown on **Figure 2-6**. The buildings identified for demolition reflect buildings that are considered unlikely to be efficiently renovated and/or are anticipated to require removal to accommodate new health care facilities.

Building Height Overlays and Perimeter Setback Areas

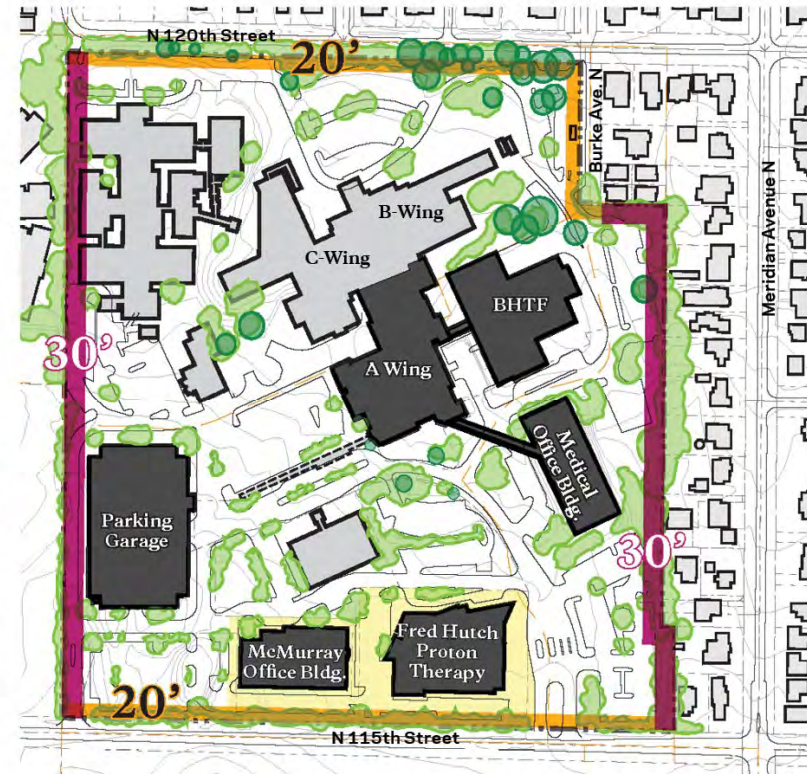
Alternative 2 reflects additional restrictions on building height overlays compared to Alternative 1, including limiting the tallest building height to the central and southwest portions of the campus and adding a mid-range building height limit overlay (105 feet); see **Figure 2-6**.

**UWMC-Northwest 2024 Major Institution Master Plan Update
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Alternative 2



ALTERNATIVE 2 HEIGHT DIAGRAM



- 20' Setback** along rights of way
- 30' Setback** abutting parcels

ALTERNATIVE 2 SETBACK DIAGRAM

Source: NBBJ 2023

Figure 2-6

Alternative 2—Height Limit Overlays and Perimeter Setbacks

The three building height limit overlays assumed under Alternative 2 are as follows:

- 65-feet at the north/northwest and eastern edges of campus abutting residential parcels.
- 105-feet in the southwest corner of campus (reflecting existing height limit)
- 175-feet for the remainder of the campus.

Perimeter building setback areas under Alternative 2 would be narrower than under Alternative 1, and are assumed as follows:

- 20-foot setback where campus abuts rights of way (N 115th Street, N 120th Street, and Burke Avenue N).
- 30-foot setback where campus abuts adjacent properties.

No Action Alternative

Under to No Action Alternative it is assumed that the demand for increases in health care services in the region would continue. However, this EIS alternative would not result in changes to the building height overlays and setbacks, or the physical improvements that are included under the proposed *MIMP Update* (as analyzed under the Proposed Action, and Alternatives 1 and 2), including the addition of approximately 862,000 sq.ft. of net new building space, vehicular access improvements, and new parking. It is anticipated that the approximately 26,000 sq. ft. of remaining campus building capacity under the 1991 Master Plan would be developed, which would accommodate approximately 3% of anticipated demand for health care supporting building space over the next approximately 20 years.

This alternative would not meet the demand for health care in the region and UWMC-Northwest's mission of improving the health of the public.

Parking and Vehicular Access

Parking and vehicular access under Alternative 2 would be as described for Alternative 1.

EIS Alternatives Summary

Alternatives 1 and 2 reflect implementation of the proposed *UWMC-Northwest MIMP Update* and improvements to meet anticipated increased demands for health care services in the region. The No Action Alternative reflects conditions with no update to the 1991 MIMP. The overall development assumptions under the EIS Alternatives are summarized in **Table 2-5** and include: **1)** campus acreage; **2)** new building space; **3)** total building space; **4)** building height limits; **5)** perimeter setbacks; **6)** number of hospital beds; **7)** amount of

impervious surface; **8)** amount of pervious surface/open space; **9)** staff population ; and, **10)** total number of parking stalls.

**TABLE 2-5
COMPARISON OF EIS ALTERNATIVES**

| | No Action | Alternative 1 | Alternative 2 |
|------------------------------|-----------------------|------------------|-------------------|
| Campus Acreage | 33 acres | 33 acres | 33 acres |
| New Building Space | 26,000 sq.ft. | 862,000 sq.ft. | 862,000 sq.ft. |
| Total Building Space | 764,600 sq.ft. | 1,600,000 sq.ft. | 1,600,000 sq.ft. |
| Building Height Limits | 37, 50, 105 feet | 65, 175 feet | 65, 105, 175 feet |
| Setback from Campus Boundary | 30, 40, 120, 180 feet | 30, 40 feet | 20, 30 feet |
| Hospital Beds | 353 beds | 515 beds | 515 beds |
| Impervious Area ¹ | 20.36 acres | 23.36 acres | 23.99 acres |
| Pervious Area ² | 12.64 acres | 9.50 acres | 8.87 acres |
| Parking | 1,633 spaces | 3,533 spaces | 3,533 spaces |

¹Includes area in building footprint, roadways, sidewalks, and plazas.

²Includes area in landscaping and other natural open space.

EIS Alternatives Considered But Not Carried Forward

The Washington State Environmental Policy Act (SEPA), as codified in Washington Administrative Code (WAC) 197-11, indicates that an “EIS shall provide impartial discussion of significant environmental impacts and shall inform decision makers and the public of reasonable alternatives...”.

Reasonable alternatives are defined as “actions that could feasibly attain or approximate a proposal’s objectives, but at a lower environmental cost or decreased level of environmental degradation” (WAC 197-11-435(5)(b)). The word reasonable“ is intended to limit the number and range of alternatives, as well as the amount of detailed analysis for each alternative” (WAC 197-11-435(5)(b)(i)).

Thus, as potential alternatives are identified, they should be measured against the following criteria:

- *Do they feasibly attain or approximate the proposal’s objectives?*
- *Do they provide a lower environmental cost/level of degradation than the proposal?*

The SEPA Handbook Guidelines (Washington State Department of Ecology, 2018) indicates that it may not be evident at the beginning of the process whether an alternative meets all of these criteria, and that the lead SEPA agency should continue to analyze each alternative until information becomes available that indicates an alternative fails to meet the criteria. The alternative can then be eliminated from further consideration.

During the process of identifying reasonable alternatives to be analyzed in the *UWMC-Northwest Campus MIMP EIS*, the University of Washington (the SEPA lead agency for this

plan) considered a Campus MIMP Update alternative that limited building heights and setbacks to the levels established in the 1991 MIMP. This alternative was measured against the UWMC-Northwest’s objectives, including:

- Accommodating future clinical care growth requirements while maintaining a positive campus experience for patients, visitors, staff, and the community;
- Replacing aging facilities, phasing necessary campus expansion and considering energy efficiency and utility needs for future development; and
- Creating flexibility to support the dynamic, ever changing healthcare market that allows project sequencing based on need and funding strategies.

In considering a potential EIS alternative reflecting existing building heights and setbacks (1991 MIMP) relative to SEPA criteria for EIS alternatives, the University of Washington determined that the building development capacity under an alternative with building heights/setbacks according to the 1991 MIMP could not “reasonably attain or approximate” the identified objective of *accommodating future clinical care growth requirements while maintaining a positive campus experience for patients, visitors, staff and the community*. The limited development capacity under this EIS alternative would also limit the ability to meet the identified objective of *creating flexibility to support the dynamic, ever changing healthcare market that allows project sequencing based on need and funding strategies*. Accordingly, and consistent with SEPA criteria for EIS alternatives, the University of Washington determined that this EIS alternative would not meet project objectives, and is not carried forward for analysis in this EIS.

2.9 Benefits and Disadvantages of Deferring Implementation of the Proposal

The benefits of deferring approval of the Proposed Action and implementation of development of the proposed *MIMP Update* include the deferral of:

- Temporary construction-related impacts associated with vibration, noise, air pollution and traffic.
- Expenditure of funds to create new health care facilities.

The disadvantages of deferring the approval of the Proposed Action and development under the proposed *MIMP Update* include:

- Inability to develop new health care facilities to meet the growing demand for health care services in the region and UWMC-Northwest service area.
- Continued cost associated with maintaining aging facilities.

- Increased cost of building facilities at a later date.
- Continued decline of campus from over-use of existing facilities.

Deferral would not meet the UWMC-Northwest's Objectives.

AFFECTED ENVIRONMENT, IMPACTS, MITIGATION MEASURES, AND
SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS

CHAPTER 3

AFFECTED ENVIRONMENT, IMPACTS, MITIGATION MEASURES, AND SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS

This chapter of the Draft Environmental Impact Statement (Draft EIS) describes the affected environment (i.e., existing conditions), impacts of the alternatives, mitigation measures, and any significant unavoidable adverse impacts on the environment that are anticipated under the DEIS alternatives.

3.1 LAND USE

This section of the Draft EIS describes the existing land use conditions on the UWMC-Northwest campus and vicinity and evaluates the potential land use impacts that could occur as a result of the DEIS Alternatives (Alternative 1 and Alternative 2) representing different development scenarios under the proposed *UWMC-Northwest 2024 Major Institution Master Plan Update (MIMP Update)*. Land use conditions under the No Action Alternative are also evaluated.

3.1.1 Affected Environment

Existing UWMC-Northwest Campus

The UWMC-Northwest campus encompasses approximately 33 acres and extends approximately 1,300 feet in an east-west direction and approximately 1,700 feet in a north-south direction. The entire campus is owned by the University of Washington (UW), with approximately three acres of the campus containing privately owned buildings on land leased from the UW.



The UWMC-Northwest campus reflects an urban medical center land use character, with a mix of buildings with associated driveways, sidewalks, surface and structured parking, and vegetated open space. Currently, approximately 20.36 acres (62 percent) of the campus is in impervious surfaces such as buildings, surface parking and roadways, with approximately 12.64 acres (38 percent) of the campus pervious area such as landscaped open space. The campus currently contains ten buildings ranging from one to seven stories in height, with a

combined total of approximately 738,550 sq. ft. in building space; characteristics of the existing buildings on the campus are summarized in **Table 3.1-1**.

**TABLE 3.1-1
EXISTING CAMPUS BUILDING CHARACTERISTICS**

| Existing Building | Building Area (sq. ft.) | Building Levels | Building Height (ft.) |
|-------------------------------------|-------------------------|-----------------|-----------------------|
| Hospital | | | |
| A-Wing | 128,314 | 5 | 72 |
| B-Wing | 92,624 | 1 | 12 |
| C-Wing | 39,508 | 2 | 12-15 |
| Behavioral Health Teaching Facility | 188,846 | 7 | 90 |
| E-Wing | 54,408 | 1 | 12 |
| Medical Office Building | 70,202 | 3 | 44 |
| Medical Arts Building | 38,121 | 3 | 42 |
| McMurry Medical Office Building | 63,909 | 3 | 45 |
| Fred Hutchinson Proton Therapy | 57,000 | 2 | 36 |
| Daycare Center | 5,611 | 1 | 12 |
| TOTAL BUILDING SPACE | 738,543 | | |
| Parking Structure | | 4 | 41 |

Source: UWMC-Northwest, 2023.

The existing buildings are mostly separate structures, except for the multiple wings of the hospital complex (A-Wing, B/C-Wings, and the Behavioral Health Teaching Facility); this portion of the medical center contains all the UWMC-Northwest’s total of 381 licensed hospital beds. A skybridge connects the Medical Office Building to A-Wing. Two buildings located along the southern boundary of the campus (McMurry Medical Office Building and Fred Hutchinson Proton Therapy) are privately owned and are located on land leased from the UW (see **Figure 2-3** in **Chapter 2** of this DEIS). The main public vehicular entrance to the UWMC-Northwest campus is from N 115th Street to the south, which provides access for patients, visitors, emergency/service vehicles, and transit. A second access from N 115th Street provides keycard-controlled access for employees and some service vehicles. There is a locked emergency/secondary access from N 120th Street to the north.

Surrounding Area

The UWMC-Northwest is situated in the extreme northwest corner, as an island, of the City-designated Northgate Urban Center; urban centers are areas of the City of Seattle with concentrated employment and housing with direct access to high-capacity transit. The majority of the immediate surrounding area is located outside of the Northgate Urban Center and farther than walking distance to the Northgate Link Station and Transit Center. The area surrounding the campus is primarily residential and open space (cemetery) in character. The UWMC-Northwest is a dominant land use in the area (see **Figure 3.1-1** for the map of the area land uses).

UWMC-Northwest 2024 Major Institution Master Plan Update
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Source: Google Earth and EA Engineering.

Figure 3.1-1
Existing Land Uses

The land use pattern of the area surrounding the UWMC-Northwest campus is largely built environment, with limited natural area. Prominent built features that influence the land use character of the area consist primarily of transportation routes, including State Route 99 (Aurora Ave. N) and Interstate 5 (I-5). I-5, the major north/south interstate vehicular travel corridor, is located approximately 1,200 feet east of the campus. Aurora Ave. N, a principal arterial in Seattle, is another major north/south vehicular travel corridor with associated commercial land uses, is located approximately 1,200 feet west of the campus. Although these transportation corridors are major built features in the area, neither of these features are visible from the UWMC-Northwest campus. Cemeteries are another prominent built feature in the area. Although the private cemeteries in the area are built land uses, they exhibit a vegetated open space land use character.

One- to two-story single-family residences comprise the majority of the uses to the north and east of the campus. Two-story multifamily residences (Stendall Place) are located to the west of the campus. Residences in the site vicinity (to the east, west and north) are surrounded by existing mature landscaping and trees. Existing cemeteries are also located to the west and south of the campus, including the Bikur Cholim Cemetery to the west, and the Evergreen Washelli Cemetery to the south and southwest (see **Figure 3.1-1**). N 115th St borders the UWMC-Northwest campus to the south and N 120th St borders the campus to the north.

Existing Land Use Designations

UWMC-Northwest Campus

The City of Seattle Comprehensive Plan identifies the UWMC-Northwest campus as an Urban Center (Northgate Urban Center); the Urban Center also includes area to the east of the campus on either side of I-5 (see **Figure 3.1-2**). The Seattle urban village strategy (including Urban Centers) encourages most future job and housing growth to occur in specific areas in the city that are best able to absorb and capitalize on that growth.

The UWMC-Northwest campus is located within the Major Institution Overlay (MIO) zoning area (see **Figure 3.1-3**). The purpose of the MIO is to: permit appropriate institutional growth within boundaries while minimizing adverse impacts; balance a major institution's ability to change and the associated public benefit with need to protect livability/vitality of adjacent neighborhoods; encourage concentration of major institution development on existing campuses; and, provide for the coordinated growth of major institutions through master plans (refer to the Relationships to Plans and Policies portion of this section for additional detail). The campus' underlying zoning is LR2 (Lowrise2), a multifamily residential zone.

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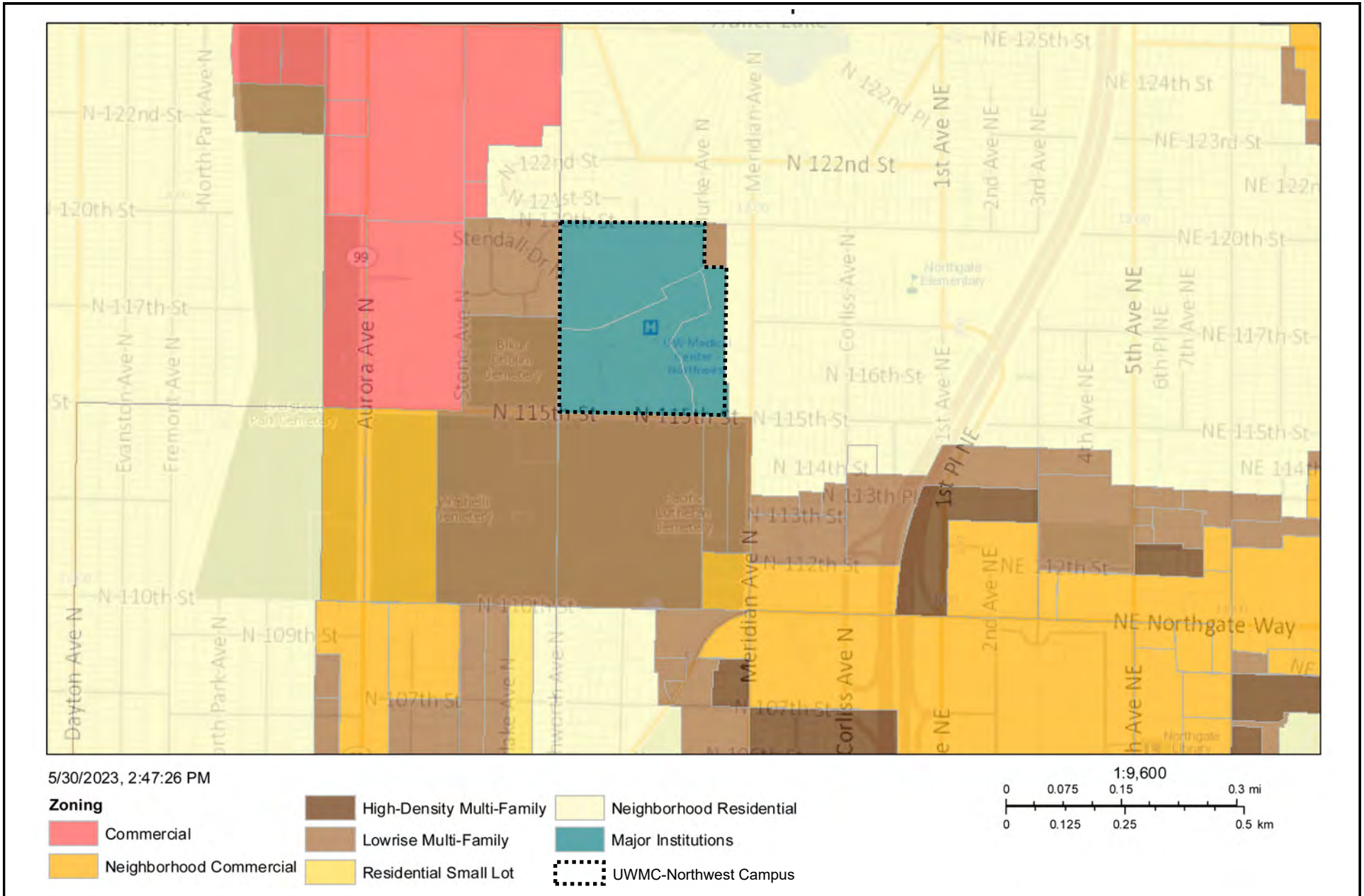


Source: City of Seattle. 2023.



Figure 3.1-2
Comprehensive Plan Map

UWMC-Northwest 2024 Major Institution Master Plan Update Draft EIS



Source: City of Seattle. 2023.

Figure 3.1-3
Zoning Map

Surrounding Area

The Comprehensive Plan identifies the area to the north and east as Neighborhood Residential, Cemetery to the south, and Cemetery and Multifamily Residential to the west (see **Figure 3.1-2**). The area surrounding the UWMC-Northwest campus is all zoned for residential use. The area to the north and east of the campus is zoned NR2 (Neighborhood Residential 2) with a 30-foot height limit. The area to the west and south is primarily zoned LR3 (Lowrise 3) with a 50-foot height limit; the area at the southwest corner of the intersection of N 115th Street/Meridian Avenue N is zoned LR2 (M) with a height limit of 40-feet (see **Figure 3.1-3**).

3.1.2 Impacts of the Alternatives

This section identifies and analyzes potential impacts on existing land uses on the UWMC-Northwest campus and in the surrounding area that could occur with proposed development under the EIS Alternatives. Land use impacts relate to changes in the type, character or pattern of land use, the density of development, and relationship to surrounding uses.

Overall, implementation of the level of development contemplated in the proposed *MIMP Update* would result in an intensification of uses on campus, replacement of some existing buildings, increases in building heights, and increases in activity levels based on the increase in campus population (staff and visitors). The overall mix and types of land uses on campus, and configuration of the campus boundary, would not change under the *MIMP Update*.

The proposed *MIMP Update* does not identify specific project locations. Rather, building development could occur anywhere on campus, subject to the building development envelope established by the building height overlays and building setback areas from the campus perimeter. Although development under the proposed *MIMP Update* could occur anywhere within the building development envelope, the total building square footage (i.e., existing buildings and proposed net new buildings) would only encompass a portion of the building development envelope. For example, the total 1.6 million square feet of building space under the proposed *MIMP Update* (existing and net new space) would encompass approximately 12 to 14 percent of the building envelope¹, depending on the EIS Alternative.

¹ Representing the total square footage envelope established by the building height overlays and perimeter setbacks.

The proposed increase in building heights and changes to perimeter setback areas are intended to provide flexibility to respond to the evolving nature of health care needs in the region as well as uncertainty in the nature of UWMC funding.

Two scenarios for new access driveways to the UWMC-Northwest campus are considered, including a scenario reflecting a new (3rd) access from N 115th Street, and a second scenario reflecting a new access from N 120th Street.

For the purpose of environmental review, two alternatives with differing building height overlays and perimeter building setback areas (resulting in differing building development envelopes) are analyzed in this EIS. These EIS Alternatives are formulated to provide a range of potential development scenarios without having specific building plans. Other than building height overlays and perimeter building setback areas, all other features of Alternatives 1 and 2 (such as types of land uses, total net new building space, vehicular access and parking, etc.) are the same.

ALTERNATIVE 1

Introduction

Alternative 1 would implement the proposed *MIMP Update*, including up to approximately 862,000 sq. ft. of net new building space (in combination with existing buildings, there would be a total of approximately 1.6 million sq. ft. of building space on campus), and up to 515 licensed hospital beds (an increase from the current 353 licensed hospital beds) over the 20-year planning horizon. Depending on where development would occur, up to 301,000 sq. ft. of existing building space could be demolished.

Depending on the specifics of individual projects, it is anticipated that under Alternative 1 the amount of pervious surface on the campus (building footprint, paved driveway and sidewalks, paved plaza, etc.) would range from approximately 23.36 acres to 23.99 acres, with pervious area (landscaped and open space area) ranging from approximately 8.87 to 9.5 acres.

Land Use

Land uses within the UWMC-Northwest campus are intended to provide a range of medical service uses similar to those currently on campus, and development assumed under Alternative 1 would not represent a change in the types of land uses or land use pattern on campus (see Section 3.1.1, Existing Conditions, for further detail).

Building Heights and Densities

Alternative 1 reflects a simplified plan for building height overlays and perimeter building setback areas (i.e., development envelope), with the majority of the campus containing a 175-foot building height overlay, and the remaining portion of campus containing a 65-foot height overlay. This alternative also assumes a range of perimeter building setback areas from 30 to 40 feet in width. **Figure 3.1-4** illustrates the building height overlays and perimeter building setbacks under Alternative 1, along with existing 1991 MIMP building heights and perimeter setbacks).

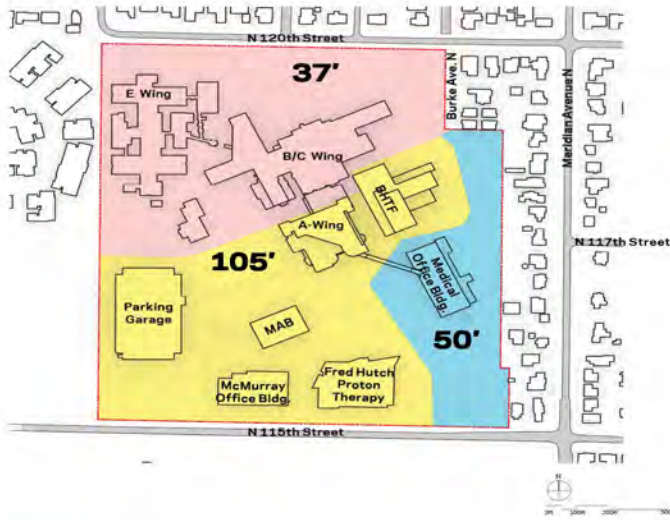
Consistent with the proposed *MIMP Update*, Alternative 1 assumes that the maximum building heights allowed on campus would change from those under the existing 1991 MIMP as illustrated in **Figure 3.1-4** and listed as follows.

- Northern/Central Portion of Campus – from the 37-foot height limit under the existing 1991 MIMP to 65- to 175-foot building height overlays under Alternative 1.
- Southern/Central Portion of Campus – from the 105-foot height limit under the 1991 MIMP to 175-foot building height overlay under Alternative 1.
- Eastern Edge of Campus – from the 50-ft. height limit under the 1991 MIMP to 65-foot building height overlay under Alternative 1

The perimeter building setback areas under Alternative 1 would change as listed below; note that 40-foot-wide perimeter building setbacks are assumed to be located adjacent to residential uses, with the 30-foot-wide perimeter building setback assumed to be located adjacent to existing public rights-of-way (streets).

- Western Campus Edge – from the 30-foot setback under existing 1991 MIMP to 40-foot perimeter building setback area under Alternative 1.
- Southern Campus Edge – the 30-foot perimeter setback under existing 1991 MIMP would be retained under Alternative 1.
- Northern Campus Edge – from the 120-foot setback under the existing 1991 MIMP to 30-foot perimeter building setback area under Alternative 1.
- Eastern Campus Edge – from the 180-, 120-, and 40-foot setbacks under the existing 1991 MIMP to 40-foot perimeter building setback area under Alternative 1.

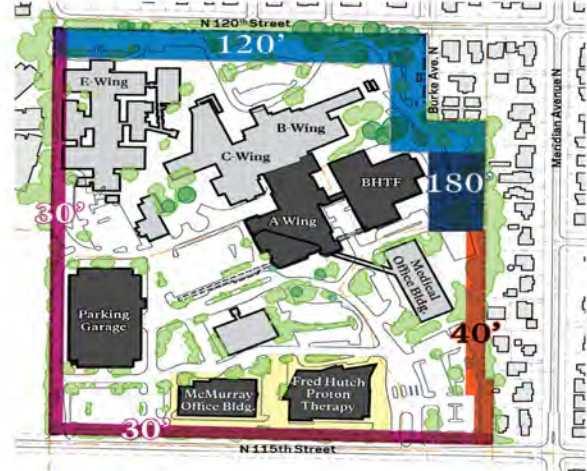
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LEGEND - MIO Heights

- 37 feet
- 50 feet
- 105 feet

EXISTING HEIGHT LIMITS PER 1991 MIMP



LEGEND - Setbacks

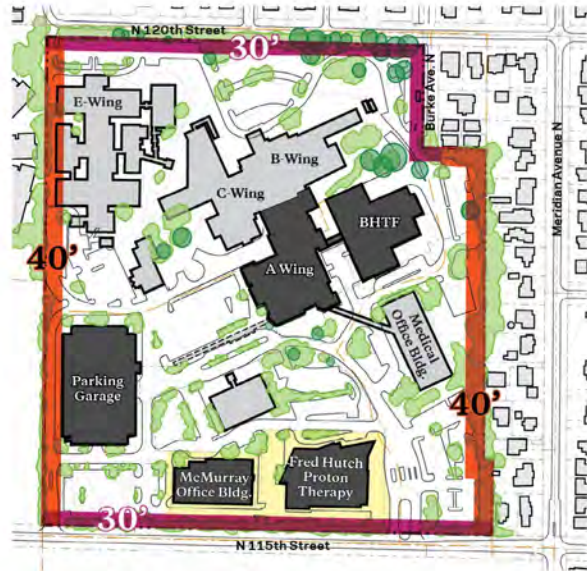
- 180 feet setback
- 120 feet setback
- 40 feet setback
- 30 feet setback

SETBACK DIAGRAM PER 1991 MIMP

Alternative 1



ALTERNATIVE 1 HEIGHT DIAGRAM



- 30' Setback along rights of way
- 40' Setback abutting parcels

ALTERNATIVE 1 SETBACK DIAGRAM

Source: NBBJ 2023.

Figure 3.1-4
Existing MIMP and Alternative 1 Setbacks and Building Heights

The approximately 862,000 sq. ft. of net new development on the UWMC-Northwest campus under Alternative 1 (compared to the approximately 738,600 sq. ft. currently on the campus) would approximately double the density and amount of building space on campus. The proposed increase in building heights would allow for the new building space anticipated to meet regional health care needs to be accommodated in fewer buildings. The increased heights would also allow for efficiencies in medical services and smaller building footprints with associated preservation of outdoor open space and pedestrian circulation.

The proposed development of approximately 862,000 sq. ft. of net new building space under the proposed *MIMP Update*, in combination with the existing 738,600 sq. ft. of building space would result in a total of approximately 1.6 million sq. ft. of building space on campus, which would encompass up to 12 percent of the development envelope established by the building height overlays and perimeter building setback area assumed for Alternative 1.

The proposed increases in building heights under Alternative 1 would allow for taller buildings compared to the majority of buildings currently on the UWMC-Northwest campus and in the immediately surrounding area. Potential development along the northern edge of campus where the 175-foot building height overlay would extend to the campus boundary along N 120th Street would have the potential to locate buildings at this height in proximity to a residential area with one- to two-story buildings. The intervening N 120th Street, along with the proposed 30-ft. wide perimeter setback, would provide a buffer to the potential campus development in this area. Assumed building heights up to 65 feet at the east and west edges of campus would result in an increase in potential building heights in proximity to adjacent residential neighborhoods with one to two-story buildings to the immediate east and west of campus. The proposed 40-foot-wide perimeter setback would provide a buffer to potential development in this area. Implementation of development standards as part of the proposed *MIMP Update* are proposed to minimize potential land use impacts associated with increased building heights and densities; these measures include providing distances and landscape screening between buildings near the campus boundary (see Section 3.4, **Aesthetics/Light & Glare/Shadows**, for additional discussion on aesthetics conditions).

The increased density and building heights of new development assumed under Alternative 1 are not anticipated to impact cemetery land use to the west and south of the UWMC-Northwest campus.

ALTERNATIVE 2

Introduction

As under Alternative 1, Alternative 2 would accommodate approximately 862,000 sq. ft. of net new building space and up to 162 of the new licensed hospital beds proposed under the proposed *MIMP Update*. Depending on where development would occur, up to 301,000 sq. ft. of existing building space could be demolished, the same as Alternative 1.

As under Alternative 1, depending on the specifics of individual projects, it is anticipated that under Alternative 2 the amount of pervious surface on the campus (building footprint, paved driveway and sidewalks, paved plaza, etc.) would range from approximately 23.36 acres to 23.99 acres, with pervious area (landscaped and natural area) ranging from approximately 8.87 to 9.5 acres.

Land Use

As under Alternative 1, land uses within the UWMC-Northwest campus are intended to provide a range of medical service uses similar to those currently on campus, and development assumed under Alternative 2 would not represent a change in the types of land uses or land use pattern on campus.

Building Heights and Densities

Alternative 2 assumes changes to the building height limits and perimeter setbacks from those under the existing 1991 MIMP. Compared to Alternative 1, Alternative 2 assumes lower allowable building heights at the campus perimeter in proximity to adjacent residential neighborhoods. With the lower allowable maximum building heights assumed at the perimeter of campus, Alternative 2 also assumes narrower perimeter setback areas. **Figure 3.1-5** illustrates the building height overlays and perimeter setback areas assumed under Alternative 2 along with the existing standards under the 1991 MIMP.

The proposed height increase would differ from those assumed under Alternative 1 (see **Figure 3.1-5**). The primary differences in assumed building height overlays under Alternative 2 compared to Alternative 1 are: a reduction in the amount of campus in the 175-foot building height overlay (generally confined to the central and southern portion of campus away from adjacent residential areas); extension of the 65-foot building height overlay to campus edges adjacent to residential areas; and retention of the existing 105-foot building height in the southwest portion of campus (see **Figure 3.1-5**).

Commensurate with the restriction on the extent of the 175-foot building height overlay, Alternative 2 assumes reduced perimeter setback width as listed below; note that under

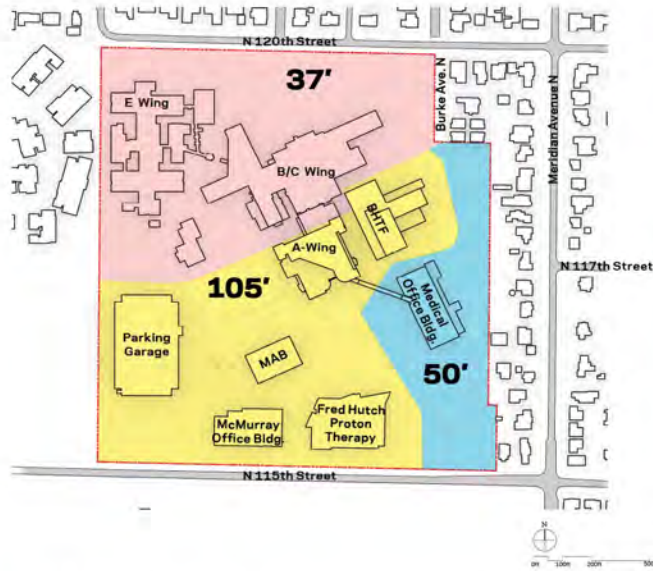
Alternative 2, 30-foot-wide perimeter building setbacks are assumed to be located adjacent residential uses with the 20-foot-wide perimeter building setback assumed to be located adjacent to existing public streets (see **Figure 3.1-5**).

- Western Campus Edge – Compared to the 40-foot-wide perimeter building setback area assumed under Alternative 1, Alternative 2 assumes a 30-foot-wide perimeter building setback area (a 30-foot-wide setback is included in the existing 1991 MIMP).
- Southern Campus Edge – Compared to the 30-foot-wide perimeter building setback area under Alternative 1, Alternative 2 assumes a 20-foot-wide perimeter building setback area (a 30-foot-wide setback is included in the existing 1991 MIMP).
- Northern Campus Edge – Compared to the 30-foot-wide perimeter building setback area under Alternative 1, Alternative 2 assumes a 20-foot-wide perimeter building setback area (a 120-foot-wide setback is included in the existing 1991 MIMP).
- Eastern Campus Edge – Compared to the 40-foot-wide perimeter building setback assumed under Alternative 1, Alternative 2 assumes a 30-foot-wide perimeter building setback area (180-, 120-, and 40-foot-wide setbacks are included in the existing 1991 MIMP).

As under Alternative 1, development under Alternative 2 would be consistent with the proposed *MIMP Update* and would provide approximately 862,000 sq. ft. of net new building space to address regional health care needs; in combination with existing buildings, the campus would contain up to 1.6 million sq. ft. of building space. As under Alternative 1, the amount of building space and density on campus would approximately double under Alternative 2.

Because the building development envelope established by the assumed building height overlays and perimeter building setbacks under Alternative 2 would be smaller than under Alternative 1 due to the reduction in area in building height overlay with the tallest 175-foot building height, the 1.6 million sq. ft. of total building space would encompass approximately 14 percent of the development envelope (compared to 12 percent under Alternative 1).

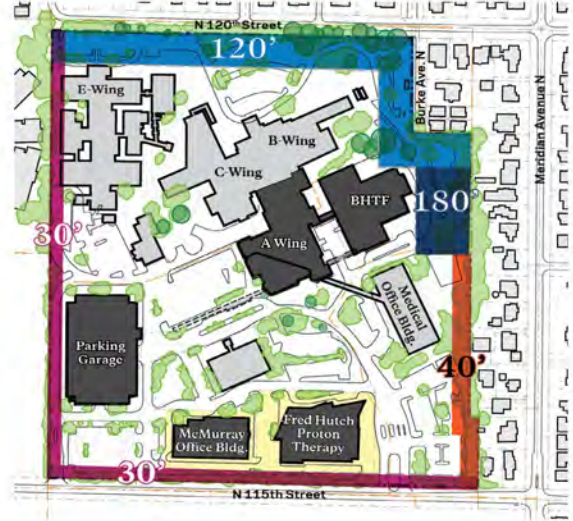
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LEGEND - MIO Heights

- 37 feet
- 50 feet
- 105 feet

EXISTING HEIGHT LIMITS PER 1991 MIMP

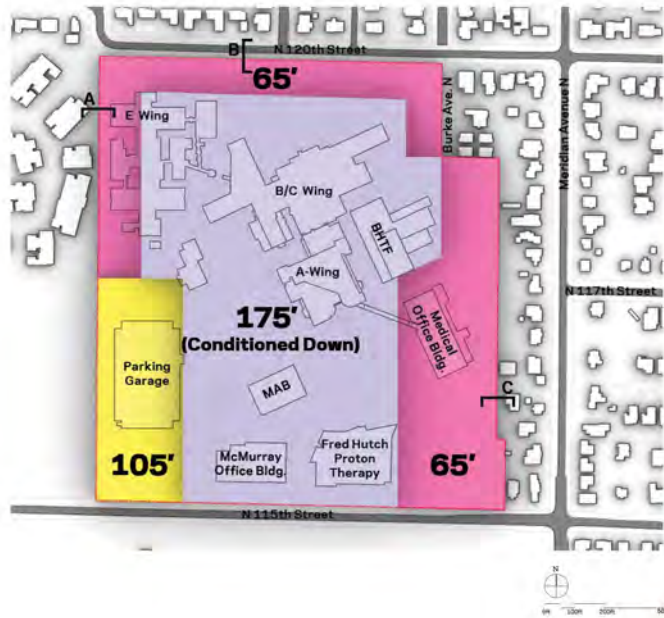


LEGEND - Setbacks

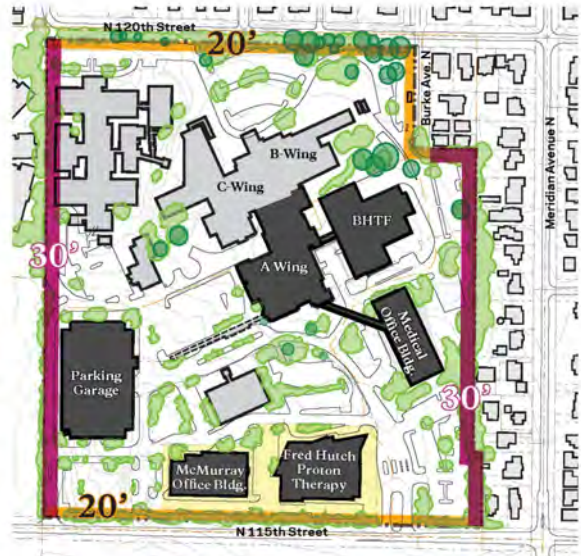
- 180 feet setback
- 120 feet setback
- 40 feet setback
- 30 feet setback

SETBACK DIAGRAM PER 1991 MIMP

Alternative 2



ALTERNATIVE 2 HEIGHT DIAGRAM



- 20' Setback along rights of way
- 30' Setback abutting parcels

ALTERNATIVE 2 SETBACK DIAGRAM

Source: NBBJ 2023.

Figure 3.1-5
Existing MIMP and Alternative 2 Setbacks and Building Heights

Compared to Alternative 1, Alternative 2 focuses potential development of taller buildings to the central portion of campus by limiting the 175-foot Building Height Overlay to this area of campus (refer to **Figure 3.1-5**), with the edges of campus in proximity to residential uses identified as areas where building heights are restricted (i.e., 65-foot Building Height Overlay). Alternative 2 assumes that the edge of campus adjacent to the Bikur Cholim Cemetery to the west retains the 105-foot Building Height Overlay from the 1991 MIMP. As under Alternative 1, the southern edge of campus adjacent to N 115th Street is identified as a 175-foot Building Height Overlay.

Assumed increases in building heights under Alternative 2 would allow for taller buildings compared to the majority of buildings currently on the UWMC-Northwest campus and in the surrounding area. Compared to Alternative 1, the taller buildings up to 175-feet in height would be primarily restricted to the central portion of campus, and taller buildings in this height overlay area would be located farther from residential areas to the west, north and east.

Assumed building heights up to 65 feet under Alternative 2 at the east, north and west edges of campus would result in a potential for buildings up to 65 feet tall in proximity to residential neighborhoods with one and two-story buildings. The assumed 30-foot-wide perimeter building setback from the east and west campus edges adjacent to residential uses, and 20-foot perimeter building setback from north and east campus edges adjacent to residential uses are narrower than assumed under Alternative 1. Significant land use impacts are not anticipated with implementation of proposed MIMP development standards intended to minimize land use impacts such as providing distances and landscape screening between buildings near the campus boundary (refer to **Section 3.4, Aesthetics/Light & Glare/Shadows**).

NO ACTION ALTERNATIVE

Under the No Action Alternative, it is assumed that the approximately 862,000 sq. ft. of net new building development under the proposed *MIMP Update* would not occur and only the remaining approximately 26,000 sq. ft. of remaining development capacity under the 1991 MIMP would be developed. This level of development would accommodate approximately three (3) percent of anticipated need for health care supporting building space over the approximately 20-year planning horizon of the proposed *MIMP Update*. The existing building height limits under the 1991 MIMP would remain. The No Action Alternative would provide a lower level of building heights and building density than under Alternatives 1 and 2.

3.1.3 Mitigation Measures

- Implementation of the proposed design guidance and development standards in the proposed *MIMP* Update would minimize potential land use impacts. These standards include, but are not limited to: building setbacks, visual screening with landscaping at campus edges adjacent to residential land uses, and implementation of the University of Washington (UW) Design and Environmental Review Process, including review by the UW Architectural Commission and SEPA Advisory Committee.

3.1.4 Significant Unavoidable Adverse Impacts

Under Alternatives 1 and 2, intensification in land uses on the UWMC-Northwest campus would occur as a result of increased density and building heights. With proposed mitigation measures, significant unavoidable land use impacts are not anticipated.

3.1.5 Relationship to Plans and Policies

This section identifies the existing plans and policies deemed the most relevant to the proposed *MIMP Update*. The plans and policies analyzed in this section include the following:

- Washington State Growth Management Act;
- City of Seattle Comprehensive Plan; and,
- City of Seattle Land Use and Zoning Code.

Washington State Growth Management Act (RCW 36.70A)

Summary: The Growth Management Act (GMA) was first enacted as ESHB 2929 by the 1990 Washington State Legislature and has been subsequently amended to contain a comprehensive framework for managing growth and coordinating land use planning with the provision of adequate infrastructure. Many provisions of GMA apply to the state's largest and fastest growing jurisdictions, including King County and all of its cities; some provisions of GMA (such as requirements to identify and regulate critical areas) apply to all local jurisdictions. GMA is long and complex, and the following discussion provides a brief summary of key provisions of GMA that are relevant to the City of Seattle.

Among other requirements, jurisdictions subject to GMA must prepare and adopt:

- Countywide planning policies for implementation of GMA;
- Comprehensive land use plans containing specific elements and embodying state-wide goals;
- Regulations consistent with those plans;

- Capital facilities plans (including financing elements) for utilities and transportation systems; and
- Programs designating and regulating critical/sensitive areas (including agricultural and forest lands, wetlands, steep slopes and critical habitat).

The general planning goals of GMA include: directing growth to urban areas; reducing sprawl; providing efficient transportation systems; promoting a range of residential densities and housing types; encouraging affordable housing; promoting economic development throughout the state; protecting private property rights; ensuring timely and fair processing of applications; maintaining and enhancing resource-based industries; encouraging retention of open space and habitat areas; protecting the environment; involving citizens in the planning process; ensuring the siting of essential public facilities (including state educational facilities); and identifying and encouraging the preservation of lands and structures with historical and archaeological significance.

Comprehensive Plans must contain elements dealing with land use, housing, capital facilities, utilities, rural lands, and transportation. Optional elements include conservation, solar energy and recreation, as well as other areas dealing with the physical environment. Sub-area plans (i.e., neighborhood and community plans) are also authorized.

GMA requires that early and continuous public participation be provided for comprehensive land use plans and development regulations implementing such plans.

***Discussion:** The City of Seattle has prepared and adopted a Comprehensive Plan (most recently updated in 2020) to guide future development and fulfill the City’s responsibilities under GMA. The goals and objectives of the GMA have been incorporated into the City’s Comprehensive Plan. The proposed 2024 UWMC-Northwest MIMP Update is consistent with the City’s Comprehensive Plan (see the discussion on the City of Seattle Comprehensive Plan later in this section for further details).*

City of Seattle Comprehensive Plan

The UWMC-Northwest campus has been designated as a major institution in the Seattle Comprehensive Plan and zoned as a major institution overlay (MIO) for several decades. The MIMP and the planning process that UWMC-Northwest is following to draft the Master Plan are consistent with the Land Use goals (LUG) and policies specified in the Seattle Comprehensive Plan, last updated in 2020:

Summary: LU G13 Encourage the benefits that major institutions offer the city and the region, including healthcare, educational services, and significant employment opportunities, while mitigating the adverse impacts associated with their development and geographic expansion.

Discussion: *UWMC-Northwest is one of the eight existing healthcare institutions identified within the City of Seattle.*

Summary: **LU 13.1** Designate the campuses of large hospitals, colleges, and universities as major institutions, making clear that they are defined under a separate public process in terms of their appropriate uses and development standards.

LU 13.2 Support the coordinated growth of major institutions through conceptual master plans and the creation of major institution overlay districts. Use a master plan process to identify development standards for the overlay district that are specifically tailored to the major institution and the surrounding area.

LU 13.3 Balance the need for major institutions to grow and change with the need to maintain the livability and vitality of neighboring areas.

LU 13.4 Establish major institution overlays (MIO) as a designation on the Official Land Use Map and the Future Land Use Map to show areas where development is regulated by the contents of a master plan, rather than by the underlying zoning. Where appropriate, establish MIO boundaries for better integration between major institution areas and less intensive zones.

Discussion: *The UWMC – Northwest campus has long been designated as a major institution. The proposed MIMP Update is following the process defined in the City’s Land Use Code (23.69) and attempts to balance the needs of the institution and the adjacent neighborhoods.*

Summary: **LU 13.5** Encourage community involvement in the development, monitoring, implementation, and amendment of major institution master plans, including the establishment of citizens’ advisory committees that include community and major institution representatives.

Discussion: *UWMC-Northwest is working with the appointed Development Advisory Committee (DAC) members at monthly, public meetings held on the campus to facilitate ease of neighbor involvement. DAC meetings are held on the fourth Monday of every month, with early notification, agendas and presentation materials available online. Public comments are invited during each DAC meeting.*

Summary: **LU 13.6** Allow the MIO to modify underlying zoning provisions and development standards, including use restrictions and parking requirements, in order to accommodate the changing needs of major institutions, provide development flexibility, and encourage a high-quality environment.

Discussion: *The proposed design guidance and development standards are intended to help balance the need for infill and replacement construction at UWMC-Northwest and consider the needs of the adjacent Haller Lake and Northgate neighborhoods.*

Summary: **LU 13.7** Discourage the expansion of established major institution boundaries.

Discussion: *No MIO boundary changes are proposed in the 2024 UWMC-Northwest MIMP Update. The campus limits and zoning boundaries would remain the same.*

Summary: **LU 13.8** Require either that a master plan be prepared or that the existing master plan be revised when a proposed major development that is part of a major institution does not conform to the underlying zoning and is not included in an existing master plan.

Discussion: *The current MIMP Update has been proposed because remaining development capacity in the previous adopted MIMP is extremely limited and does not accommodate current and anticipated future demands.*

Summary: **LU 13.9** Locate new major institutions in areas where their activities are compatible with the surrounding land uses and where the impacts associated with existing and future development can be appropriately mitigated, and provide procedures for considering the establishment of new major institutions.

Discussion: *The UWMC-Northwest campus is not a new major institution; this policy is not applicable for the existing MIO and the MIMP Update.*

Summary: **LU 13.10** Define as major institution uses those that are part of, or substantively related to, the major institution's central mission or that primarily and directly serve institution users, and allow these uses within the MIO district, in accordance with the development standards of the underlying zoning classifications or adopted master plan.

Discussion: *Institutional uses are defined for the UWMC-Northwest campus in Chapter III, Campus Facilities & Uses in the 2024 UWMC-Northwest MIMP Update.*

Summary: **LU 13.11** Apply the development standards of the underlying zoning classification to all major institution development, except for specific standards altered by a master plan.

LU 13.12 Determine appropriate measures to address the need for adequate transition between the major institution and surrounding uses.

Discussion: *The MIMP updates the design guidance and development standards proposed for the campus and all future development. These have been reviewed with the DAC and will be the basis for future Implementation Advisory Committee (IAC) members to oversee proposed construction projects to follow the intent and stated design character to ensure compliance with the adopted MIMP.*

Summary: **LU 13.13** Establish minimum parking requirements in each MIO district to address the needs of the major institution and reduce parking demand in nearby areas. Include maximum parking limits to avoid unnecessary traffic in the surrounding areas and to limit the use of single-occupant vehicles. Allow an increase in the number of permitted spaces only when such an increase is needed to reduce parking demand on surrounding streets and when it will help to minimize traffic congestion in the area.

LU 13.14 Use a transportation-management program to reduce the number of vehicle trips to the major institution and to limit the adverse impacts of traffic and of institution related parking on surrounding streets, especially residential streets. Strive to reduce the number of single-occupant vehicles used for trips to and from major institutions at peak times. Allow short-term or long-term parking space requirements to be modified as part of a transportation-management program.

Discussion: *Transportation analysis conducted as part of the proposed MIMP Update and this EIS has guided the proposal for parking provisions and informed the development of a new Transportation Management Plan (TMP).*

Summary: **LU 13.15** Encourage housing preservation within major institution overlay districts and limit impacts on housing in surrounding areas. Discourage conversion or demolition of housing within a major institution's campus, allowing it only when the institution needs to expand or when the institution replaces the lost housing with new housing. Prohibit the demolition of noninstitutional housing for replacement by principal-use parking that is not necessary to meet the parking requirement. Prohibit development by a major institution outside of the MIO district boundaries when it would result in the demolition or conversion of residential buildings into nonresidential uses, unless authorized by an adopted master plan.

Discussion: *This policy is not applicable to the UWMC-Northwest MIMP given that no housing is located on campus or proposed for conversion or demolition as a result of the proposed MIMP Update.*

Summary: **LU 13.16** Require a master plan whenever a major institution proposes development that could affect the livability of adjacent neighborhoods or that has the potential for significant adverse impacts on the surrounding areas. Use the master plan to

- guide a comprehensive review of potential benefits and impacts of the major institution’s proposed development,
- establish or modify geographic boundaries for the major institution and establish clear guidelines and development standards on which the major institutions and community can rely for long-term planning and development,
- provide the neighborhood with advance notice of the institution’s development plans,
- allow the City to anticipate and plan for public capital or programmatic actions that will be needed to accommodate development,
- provide the basis for determining appropriate mitigating actions to avoid or reduce adverse impacts from major institution growth,
- establish a transportation-management program, and
- define the major institution’s development program for a specified time period.

LU 13.17 Require City Council review and adoption of the master plan after the major institution, the surrounding community, and the City develop the master plan.

Discussion: *Land use policies 13.16 and 13.17 led to the development of the City’s MIMP process, which has guided the UWMC’s development of the proposed MIMP Update. UWMC leadership is using the MIMP process to define a long-term phased development plan with associated design guidance and development standards that seeks to balance institutional needs and those of the adjacent neighborhoods. This EIS is intended to evaluate the potential benefits and impacts of proposed development.*

Summary: LU 13.18 Achieve a better relationship between residential, commercial, or industrial uses and the major institution’s activities when considering rezones, while also trying to reduce or eliminate major land use conflicts.

Discussion: *Refer to the discussion on City of Seattle Land Use Code – Rezone Procedures and Criteria.*

[Note the City is currently working on the One Seattle Comprehensive Plan Update, which is expected to be adopted in third quarter, 2024.]

City of Seattle Land Use Code – Rezone Procedures and Criteria

Summary: SMC 23.34 establishes procedures and criteria for amending the City’s Official Land Use Map (rezones). To the extent that the proposed building heights in the 2024 UWMC-Northwest MIMP Update require amendments to the City’s official land use map,

the relationship to the City of Seattle General Rezone Criteria (SMC 23.34.008) and Major Institution Overly Criteria (SMC 23.34.124) is presented below.

SMC 23.34.008 Criteria A. To be approved, a rezone shall meet the following standards:

1. In urban centers and urban villages, the zoned capacity for the center or village taken as a whole shall be no less than one hundred twenty-five percent (125%) of the growth targets adopted in the Comprehensive Plan for that center or village.
2. For the area within the urban village boundary of hub urban villages and for residential urban villages taken as a whole the zoned capacity shall not be less than the densities established in the Urban Village Element of the Comprehensive Plan.

Discussion: *The City of Seattle Comprehensive Plan was originally adopted in 1994 with the most recent update to the plan occurring in 2020. The Comprehensive Plan identifies the UWMC-Northwest campus as a Major Institution and as part of the Northgate Urban Center.*

Overall, implementation of development contemplated in the 2024 UWMC-Northwest MIMP Update would permit development to meet the evolving nature of health care needs in the region. The proposed MIMP Update anticipates that the development of approximately 862,000 sq. ft. of building area will be necessary to meet the health care building space needs over the planning horizon of the MIMP Update.

Thus, the building height increase under the proposed MIMP Update is intended to provide additional capacity on the campus to accommodate anticipated demand for health care services. The MIMP Update would not result in a reduction of the zoned capacity of the Northgate Urban Center.

Summary: SMC 23.34.008 Criteria B. Match Between Zone Criteria and Area Characteristics. The most appropriate zone designation shall be that for which the provisions for designation of the zone type and the locational criteria for the specific zone match the characteristics of the area to be rezoned better than any other zone designation.

Discussion: *The proposed zone changes under the proposed MIMP Update relate to increase in allowable building height consistent with the Urban Center density intent; no expansion of campus MIO boundary or change in underlying zoning is proposed.*

Summary: SMC 23.34.008 Criteria C. Zoning History and Precedential Effect. Previous and potential zoning changes both in and around the area proposed for rezone shall be examined.

Discussion:

The City approved the Seattle 2035 Comprehensive Plan, which still plans for major institution uses at the UWMC-Northwest site, and rezoned portions of the Northgate area.

The rezone allows for increased building heights and building density in the area. Properties adjacent to the west and south were updated to add Mandatory Housing Affordability requirements in April 2019 (Ordinance 125791). Neighboring properties to the north and east were rezoned in June 2022 (Ordinance 126509).

Rezones occurred for the campus prior to 1991 (when known as Northwest Hospital) to establish the existing MIO-37', 50' and 105' height limits.

Summary: SMC 23.34.008 Criteria D. Neighborhood Plans.

1. For the purposes of this title, the effect of a neighborhood plan, adopted or amended by the City Council after January 1, 1995, shall be as expressly established by the City Council for each such neighborhood plan.
2. Council adopted neighborhood plans that apply to the area proposed for rezone shall be taken into consideration.
3. Where a neighborhood plan adopted or amended by the City Council after January 1, 1995 establishes policies expressly adopted for the purpose of guiding future rezones, but does not provide for rezones of particular sites or areas, rezones shall be in conformance with the rezone policies of such neighborhood plan.
4. If it is intended that rezones of particular sites or areas identified in a Council adopted neighborhood plan are to be required, then the rezones shall be approved simultaneously with the approval of the pertinent parts of the neighborhood plan.

Discussion: *The UWMC-Northwest campus is located within the Northgate Urban Center. The Urban Center, Northgate Area Comprehensive Plan and implementing zoning regulations were first adopted in 1993 by Resolution 28752 and subsequently modified in the Seattle Comprehensive Plan in 2004 (Ordinance 121701).*

The goals and policies from the Northgate Plan most applicable to the proposed 2024 UWMC-Northwest MIMP Update include:

NG-P3 Use a Northgate Overlay District to address the special characteristics of development in the area.

NG-P4 Concentrate employment activity where the infrastructure and transportation system can best accommodate it.

NG-P7 Reduce conflicts between activities and promote a compatible relationship between different scales of development by maintaining a transition between zones where significantly different intensities of development are allowed.

The Northgate Urban Center and the Northgate Overlay District are areas with urban levels of infrastructure and transportation systems. The proposed MIMP Update includes a range of campus perimeter building setback widths and building height overlays intended to provide a sufficient amount of new building space to meet the evolving health care needs of

the region, while providing building height and building density transitions to surrounding areas.

The Northgate Plan does not include policies expressly adopted for the purpose of guiding future rezones.

Summary: SMC 23.34.008 Criteria E. Zoning Principles. The following zoning principles shall be considered:

1. The impact of more intensive zones on less intensive zones or industrial and commercial zones on other zones shall be minimized by the use of transitions or buffers, if possible. A gradual transition between zoning categories, including height limits, is preferred.
2. Physical buffers may provide an effective separation between different uses and intensities of development. The following elements may be considered as buffers: Natural features such as topographic breaks, lakes, rivers, streams, ravines and shorelines; freeways, expressways, other major traffic arterials, and railroad tracks; distinct change in street layout and block orientation; and open space and greenspaces.
3. Zone Boundaries.
 - a. In establishing boundaries, the following elements shall be considered: (1) Physical buffers as described in subsection E2 above; (2) Platted lot lines.
 - b. Boundaries between commercial and residential areas shall generally be established so that commercial uses face each other across the street on which they are located, and face away from adjacent residential areas. An exception may be made when physical buffers can provide a more effective separation between uses.
4. In general, height limits greater than fifty-five (55) feet should be limited to urban villages. Height limits greater than fifty-five (55) feet may be considered outside of urban villages where higher height limits would be consistent with an adopted neighborhood plan, a major institution's adopted master plan, or where the designation would be consistent with the existing built character of the area.

Discussion: *The proposed MIMP Update does not propose any change to the MIO zone boundaries. Uses on the campus would remain related to carrying out the mission of the UWMC-Northwest and would remain compatible with the characteristics of the surrounding area.*

The UWMC-Northwest campus is located within the City of Seattle designated Northgate Urban Center.

The campus is generally separated from other uses along the north, northeast, and south boundary by streets: N 120th Street, Burke Avenue N, and N 115th Street, respectively. The MIO boundary is located on shared property lines along the west and remainder of the east boundary. Along the west side is multi-family residential on the approximate northern half of the western boundary and cemetery on the approximate southern half. Along the east side are single family residential uses on property zoned neighborhood residential.

A significant planted buffer along the east boundary screens both pedestrian level and multi-story buildings with thick stands of bushes and mature evergreen trees. A tall fence along the western boundary adjacent to multi-family residential blocks views and provides privacy to neighboring residential uses. Significant planted buffers along both the north and south boundary exist and were implemented with the existing MIMP some years ago. The Behavioral Health Teaching Facility currently under construction will also entail adding curb, gutter, sidewalks and additional street trees along the north boundary/N 120th Street.

The proposed increase in building heights under the 2024 UWMC-Northwest MIMP Update are intended to provide flexibility to respond to the evolving nature of health care needs in the region as well as uncertainty in the nature of University of Washington/UWMC funding.

*The MIMP Update proposes that the maximum building height limits would be increased from the current range of 37, 50, and 105 feet to the proposed range of 65, 105, and 175 feet; the maximum building height assumed would generally be highest in the center of campus, with lower heights at the perimeter of campus to provide height transition to the edges of campus. The increase in the maximum building height limit is intended to allow for the desired new building space to be accommodated by compact higher density development balanced with opportunities for smaller building footprints enabling the preservation of outdoor open space, integration of mature vegetation and a public realm that provides comfortable circulation routes for all modes of transport. Development on the UWMC-Northwest campus with the proposed increase in allowable building height would not obstruct public scenic or landmark views (refer to Section 3.4 – **Aesthetics/Light & Glare/Shadows** for detail).*

For the purpose of environmental review, two alternatives with differing building height overlays and perimeter building setback areas (resulting in differing building development envelopes) are analyzed in this EIS. These EIS Alternatives are formulated to provide a range of potential development scenarios without having specific building plans. Other than building height overlays and perimeter building setback areas, all other features of Alternatives 1 and 2 (such as types of land uses, total net new building space, vehicular access and parking, etc.) are the same.

Development standards are identified in the proposed MIMP Update and are intended to minimize potential impacts of increased density and increased building height. These

development standards include providing distances and landscape screening between buildings near the campus boundary.

Summary: SMC 23.34.008 Criteria F. Impact Evaluation. The evaluation of a proposed rezone shall consider the possible negative and positive impacts on the area proposed for rezone and its surroundings.

1. Factors to be examined include, but are not limited to, the following: housing, particularly low-income housing; public services; environmental factors, such as noise, air and water quality, terrestrial and aquatic flora and fauna, glare, odor, shadows, and energy conservation; pedestrian safety; manufacturing activity; employment activity; character of areas recognized for architectural or historic value; and shoreline view, public access and recreation.

Further discussion of each of the Criteria F – Impact Evaluation is described below.

Summary: Low Income Housing

Discussion: *No housing is located on the campus and no low-income housing would be permanently displaced under the proposed MIMP Update.*

Summary: Noise, air and water quality, terrestrial and aquatic flora and fauna, glare, odor, shadows, and energy conservation; pedestrian safety; manufacturing activity; employment activity; character of areas recognized for architectural or historic value.

Discussion: *The proposed increase in the allowable building height is intended to allow for the new building space anticipated to be needed to meet the evolving health care needs of the region through the 20-year planning horizon.*

*This Draft EIS includes analysis of conditions both with proposed increase in allowable building heights (Alternatives 1 and 2) and without the Proposed Action, including proposed increase in allowable building heights. The increased building height analyzed under Alternatives 1 and 2 would increase the potential for increased shadows associated with certain buildings compared to existing conditions (see Section 3.4, **Aesthetics/Light & Glare/Shadows**).*

It has been determined that the building development capacity under an alternative with building heights/setbacks according to the 1991 MIMP could not “reasonably attain or approximate” the identified objective of accommodating future clinical care growth requirements while maintaining a positive campus experience for patients, visitors, staff and the community. The limited development capacity with retention of existing height limits would also limit the ability to meet the identified objective of creating flexibility to support the dynamic, ever changing healthcare market that allows project sequencing based on need and funding strategies.

*Conditions associated with noise (construction), air quality (construction), pedestrian safety, employment activity, and historic resources are analyzed in this Draft EIS. In general, conditions for these elements would not be anticipated to be substantially different with proposed allowable building height (Alternatives 1 and 2) and with current allowable building heights. Please refer to the **Construction Impacts, Cultural/Historic Resources, Land Use, and Transportation** sections of this Draft EIS.*

Summary: Shoreline view, public access and recreation.

Discussion: *Neither the UWMC-Northwest campus or immediate surrounding area contains views to shorelines or contain publically accessible recreation facilities. The UWMC-Northwest campus is open for public access to campus grounds.*

Summary: SMC 23.34.008 Criteria F. Impact Evaluation. The evaluation of a proposed rezone shall consider the possible negative and positive impacts on the area proposed for rezone and its surroundings.

2. Service Capacities. Development which can reasonably be anticipated based on the proposed development potential shall not exceed the service capacities which can reasonably be anticipated in the area, including: street access to the area; street capacity in the area; transit service; parking capacity; utility and sewer capacity; and shoreline navigation.

Discussion: *The proposed allowable height increase would provide the opportunity for increased health care employment on the campus. This increased opportunity would increase demands on area streets, transit, parking, utilities and other area services. The proposed MIMP Update does not include any housing and would not increase demand on area schools. Development with the increase in allowable height would not be anticipated to result in significant impacts to area services, streets and utilities. Refer to Sections 3.6, **Transportation** and 3.7, **Utilities**.*

Summary: SMC 23.34.008 Criteria G. Changed Circumstances. Evidence of changed circumstances shall be taken into consideration in reviewing proposed rezones but is not required to demonstrate the appropriateness of a proposed rezone. Consideration of changed circumstances shall be limited to elements or conditions included in the criteria for the relevant zone and/or overlay designations in this chapter.

Discussion: *Since approval of the 1991 MIMP, development on the UWMC-Northwest campus has occurred under that Plan and all but approximately 26,000 sq. ft. of that authorized under the 1991 MIMP has been developed. The proposed MIMP Update, including the proposed increase in allowable building height, is intended to allow a level of new development on the campus to accommodate projected demands for health care services.*

Summary: SMC 23.34.008 Criteria H. Overlay Districts. If the area is located in an overlay district, the purpose and boundaries of the overlay district shall be considered.

1. Critical Areas. If the area is located in or adjacent to a critical area (SMC Chapter 25.09), the effect of the rezone on the critical area shall be considered.
2. Incentive Provisions. If the area is located in a zone with an incentive zoning suffix a rezone shall be approved only if one of the following conditions are met: 1) The rezone includes incentive zoning provisions that would authorize the provision of affordable housing equal to or greater than the amount of affordable housing authorized by the existing zone; or 2) If the rezone does not include incentive zoning provisions that would authorize the provision of affordable housing equal to or greater than the amount of affordable housing authorized by the existing zone, an adopted City housing policy or comprehensive plan provision identifies the area as not a priority area for affordable housing, or as having an adequate existing supply of affordable housing in the immediate vicinity of the area being rezoned.

Discussion: *The only City of Seattle designated Environmentally Critical Areas on the UWMC-Northwest campus are an isolated area of Steep Slope at the existing Medical Office Building and a 1000' methane buffer area (Historical Landfill) in the northwest corner of campus. Any development proposed in this designated critical area would be subject to the City's critical area regulations.*

The campus is zoned MIO-LR2 (M), with the (M) suffix in the underlying LR2 zoning designation indicating that Mandatory Housing Affordability (MHA) provisions apply. It is assumed that the (M) suffix only applies to the underlying LR2 zoning and does not apply to the Major Institution Overlay (MIO), and the MHA provisions do not apply to the MIMP Update.

Summary: C. Height Criteria: The following height criteria shall be used in the selection of appropriate height designations for: 1) proposed new Major Institution Overlay districts; 2) proposed additions to existing MIO districts; and 3) proposed modifications to height limits within existing MIO districts;

1. Increases to height limits may be considered where it is desirable to limit MIO district boundary by expansion.
2. Height limits at the district boundary shall be compatible with those in the adjacent areas.
3. Transitional height limits shall be provided wherever feasible when the maximum permitted height within the overlay district is significantly higher than permitted in areas adjoining the major institution campus.
4. Height limits should generally not be lower than existing development to avoid creating non-conforming structures.

5. Obstruction of public scenic or landmark views to, from or across a major institution campus should be avoided where possible.

Discussion: *The proposed zone changes under the MIMP Update relate to an increase in allowable building height; no expansion of campus boundary or change in underlying zoning is proposed.*

The increased building heights would represent a change in the existing character of land use on the UWMC-Northwest campus to a taller and denser urban environment. Development standards are identified in the proposed MIMP Update and are intended to minimize potential impacts of increased density and increased building height. Implementation of these development standards as part of the proposed MIMP Update would minimize potential impacts associated with increased building heights on the campus. For more information see discussion for SMC 23.34.008 Criteria E. Zoning Principles above.

3.2 AIR QUALITY AND GHG EMISSIONS

This section of the Draft EIS describes the existing air quality conditions on the UWMC-Northwest campus and vicinity and evaluates the potential air quality and greenhouse gas (GHG) impacts that could occur as a result of the proposed *UWMC-Northwest 2024 MIMP Update (MIMP Update)*.

3.2.1 Affected Environment

Air Quality

Air Quality Regulatory Overview

Air quality is generally assessed in terms of whether concentrations of air pollutants are higher or lower than ambient air quality standards set to protect human health and welfare. Ambient air quality standards are set for what are referred to as "criteria" pollutants (e.g., carbon monoxide - CO, particulate matter, nitrogen dioxide - NO₂, and sulfur dioxide - SO₂). Three agencies have jurisdiction over the ambient air quality in the campus area: the U.S. Environmental Protection Agency (EPA), the Washington State Department of Ecology (Ecology), and the Puget Sound Clean Air Agency (PSCAA). These agencies establish regulations that govern both the concentrations of pollutants in the outdoor air and rates of contaminant emissions from air pollution sources. Although their regulations are similar in stringency, each agency has established its own standards. Unless the state or local jurisdiction has adopted more stringent standards, EPA standards apply. These standards have been set at levels that EPA and Ecology have determined will protect human health with a margin of safety, including the health of sensitive individuals like the elderly, the chronically ill, and the very young.

Ecology and PSCAA maintain a network of air quality monitoring stations throughout the Puget Sound area. In general, these stations are located where there may be air quality problems, and so are usually in or near urban areas or close to specific large air pollution sources. Other stations located in more remote areas provide indications of regional or background air pollution levels. Based on monitoring information for criteria air pollutants collected over a period of years, Ecology and EPA designate regions as being "at airmet" or "nonat airmet" areas for particular pollutants. At airmet status is, therefore, a measure of whether air quality in an area complies with the federal health-based ambient air quality standards for criteria pollutants. Once a nonat airmet area achieves compliance with the National Ambient Air Quality Standards (NAAQSs), the area is considered an air quality "maintenance" area. The UWMC-Northwest campus and surrounding area currently meets all air quality standards.

Existing Air Quality Overview

Air emission sources on the UWMC-Northwest campus primarily consist of vehicles traveling on campus and emergency generators which use diesel as a fuel. Emergency generators, which are associated with individual buildings and are not enclosed, only operate in the event of a disruption of primary power, which is a rare occasion. Emergency generators are required to be tested monthly (typically a one-hour test).

Existing sources of air pollution in the area include a variety of institutional, residential, and commercial sources, along with and dominated by local traffic sources. With typical vehicular traffic, the air pollutant of concern is carbon monoxide (CO). Other pollutants include ozone precursors (hydrocarbons and nitrogen oxides – NO_x), coarse and fine particulate matter (PM₁₀ and PM_{2.5}), and SO₂. The amounts of particulate matter generated by well-maintained individual vehicles are minimal compared with other sources (e.g., a wood-burning stove), and concentrations of SO₂ and NO_x are usually not high except near large industrial facilities. Existing air quality in the area is generally considered good and meets all air quality standards.

GHG Emissions

City of Seattle

The Seattle City Council adopted Comprehensive Plan goals and policies in 2007 related to achieving reductions in GHG emissions. To carry out these goals and policies, assessment of GHG emissions from proposed development is required. Under this assessment, developers for projects that trigger environmental review are required to identify the climate change impact of their proposals as shown by calculating the GHG emissions. In April 2011, the City Council adopted Ordinance No. 123575, which amended the City's *Comprehensive Plan* (Section E on Environment) to provide that a forthcoming Climate Action Plan would identify strategies for reducing GHG emissions and would include methods for reducing Vehicle Miles Traveled. The Office of Sustainability & Environment developed a Climate Action Plan to meet the goal of carbon neutrality by 2050; the plan was adopted in July 2013 by the Seattle City Council. In April 2018, the City of Seattle released an updated Climate Action Plan to reduce carbon pollution from transportation and building sectors.

University of Washington

The University of Washington is a signatory on the American College and University Presidents Climate Commitment. The University is also one of the founding partners of the Seattle Climate Partnerships and has prepared an initial quantitative estimate of the University's GHG emissions profile. In October 2007, the University of Washington also released the "2005 Inventory of Greenhouse Gas Emissions Ascribable to the University of Washington," which provided a quantitative estimate of the total GHG emissions produced

on the University of Washington Campus. In 2008, the University of Washington also established the Environmental Stewardship and Sustainability Office to support the University’s Campus Sustainability Fund, coordinate University initiatives such as the Climate Action Plan, and promote campus projects that encourage resource conservation. The UW published its first Climate Action Plan in 2009 and in 2020 they adopted a new, comprehensive Sustainability Action Plan which is updated on an annual basis. The Sustainability Action Plan identifies 10 targets, including a 45 percent reduction in GHG emissions by 2030, 12 percent or fewer single occupancy vehicle commutes by 2028, and 10 percent less solid waste by 2025.

Existing UWMC-Northwest Greenhouse Gas Emissions

In order to provide a context for GHG emissions associated with the *UWMC-Northwest 2024 MIMP Update*, it is useful to consider the existing estimated overall emissions on the UWMC-Northwest campus. For the purposes of discussion of climate change impacts in this EIS, the *SEPA Greenhouse Gas Emissions Worksheet* formulated by the City of Seattle (see **Appendix B** for the completed worksheet) was used to estimate the emissions that are currently generated by existing development on campus. **Table 3.2-1** summarizes the existing lifespan and annual emissions generated by existing campus development¹.

**Table 3.2-1
GREENHOUSE GAS EMISSIONS – 2023 EXISTING CONDITIONS**

| | Square Feet | Lifespan Emissions (MTCO ₂ e) ² | Anticipated Lifespan | Estimated Annual Emissions (MTCO ₂ e) |
|-----------------------------------|----------------|---|----------------------|--|
| Hospital ¹ | 503,700 | 1,288,767 | 62.5 | 20,620 |
| Medical Office ² | 229,232 | 308,628 | 62.5 | 4,938 |
| Daycare Center | 5,611 | 5,063 | 62.5 | 81 |
| Total 2023 Existing Campus | 738,543 | 1,602,458 | 62.5 | 25,639 |

Source: EA Engineering, Science, and Technology, 2023.

Note: any inconsistencies in this table are due to rounding.

¹ Includes A-Wing, B-Wing, C-Wing- Behavioral Health Teaching Facility, and E-Wing.

² Includes Medical Office Building, Medical Arts Building, McMurry Medical Office Building, and Fred Hutchinson Proton Therapy Building.

¹ It should be noted that the calculation of existing GHG emissions on-campus represent a conservative estimate of emissions as the City of Seattle worksheet includes emissions associated with the construction of buildings and these emissions would have already occurred as part of the previous development of the existing campus buildings.

² MTCO₂e is defined as Metric Ton Carbon Dioxide Equivalent which is a standard measure of amount of CO₂ emissions reduced or sequestered.

As shown in **Table 3.2-1**, the existing UWMC-Northwest campus produces approximately 25,600 MTCO₂e annually with the majority of the emissions associated with the existing hospital facilities.

Surrounding Area

The primary sources of air quality pollutants and GHG emissions in the surrounding area are residential and commercial development, as well as major roadways. The area immediately surrounding the UWMC-Northwest campus is primarily residential and open space. To the east are commercial uses associated with the Northgate area and Interstate-5. To the west is Aurora Avenue N and commercial uses along the Aurora Avenue N corridor.

3.2.2 Impacts of the Alternatives

This section of the Draft EIS identifies how development under the EIS Alternatives would relate to air quality and GHG emissions during construction and long-term operation.

ALTERNATIVE 1

Consistent with the proposed *MIMP Update*, Alternative 1 includes approximately 862,000 sq. ft. of net new building space throughout the campus. Development on the campus under Alternative 1 would result in air quality and GHG impacts as described below.

Air Quality

Construction

The development of approximately 862,000 sq. ft. of net new building space on the campus would result in localized short-term increases in particulates (dust) and equipment emissions (carbon monoxide) in the vicinity of construction sites. Key construction activities causing potential impacts include: removal of existing pavement and/or buildings, excavation, grading, stockpiling of soils, soil compaction, and operation of diesel-powered trucks and equipment (i.e., generators and compressors) on the individual potential development sites. Please refer to **Section 3.8**, Construction Impacts, for further discussion on construction-related air quality impacts.

Operation

Overall campus development and associated population growth during the planning horizon would increase the consumption of electricity, fossil fuel, and natural gas on the campus which would contribute to cumulative air quality impacts. However, it is anticipated that new buildings under the proposed *MIMP Update* would be designed to be more energy efficient than existing buildings of similar size on campus. Operation of certain uses on the

campus could result in direct exhaust emissions from enclosed/interior truck loading areas, medical operations, the proposed Central Utility Plant(s) (including emergency generators), and other exhaust venting sources. Exhaust vents would likely be located either near ground level or at elevated positions on buildings (including on the roof). Emissions from any vents near ground level could have the greatest potential to be perceived by pedestrians and users of nearby buildings. While such emissions could, at times, be noticeable, these emissions would be unlikely to result in air quality impacts. Any emissions would be subject to applicable requirements of the University of Washington and the Puget Sound Clean Air Agency.

GHG Emissions

Climate change is a global issue and it is not possible to discern the impact that GHG emissions from a single major institution master plan may have on global climate change.

Neither the EPA, State of Washington, nor City of Seattle currently have regulations in place to provide guidance on analysis of the impacts of climate change and associated GHG emissions. For the purposes of discussion of the climate change impacts of the Proposed Action for this EIS, the *SEPA Greenhouse Gas Emissions Worksheet* formulated by the City of Seattle was used to estimate the emissions footprint of the Proposed Action for the lifecycle of the development, specifically:

- the extraction, processing, transportation, construction and disposal of materials and landscape disturbance (embodied emissions);
- energy demands created by the development after it is completed (energy emissions); and
- transportation demands created by the development after it is completed (transportation emissions) (see **Appendix B** for the completed worksheet).

It is estimated that assumed development under Alternative 1 would generate GHG emissions associated with construction activities (including demolition), production/extraction of construction materials, energy consumption from construction and operation, and vehicle emissions from associated vehicle trips. While the proposed *MIMP Update* identifies a mix of hospital inpatient uses and medical office uses, for the purposes of providing a conservative analysis of potential GHG emissions, it is assumed that development would be hospital inpatient use as that use generates the greatest potential for GHG emissions. However, it should be noted that it is anticipated that new buildings under the proposed *MIMP Update* would be designed to be more energy efficient than existing buildings of similar size on campus. **Table 3.2-2** shows the anticipated lifespan GHG emissions and estimated annual GHG emissions associated with development under the proposed *MIMP Update* under Alternatives 1 and 2 (2,205,514 MTCO₂e and 35,288 MTCO₂e, respectively).

**Table 3.2-2
GREENHOUSE GAS EMISSIONS – ALTERNATIVES 1 AND 2**

| | Net New Building Space (Sq. Ft) | Lifespan Emissions (MTCO₂e)³ | Anticipated Lifespan | Estimated Annual Emissions (MTCO₂e) |
|--|--|---|-----------------------------|---|
| Development Under UWMC-Northwest MIMP Update | 862,000 | 2,205,514 | 62.5 | 35,288 |

Source: EA Engineering, Science, and Technology, 2023.

Note: any inconsistencies in this table are due to rounding.

It should be noted that that emissions identified in **Table 3.2-2** are based on assumptions and mathematical formulas in the *SEPA Greenhouse Gas Emissions Worksheet* and do not take into account anticipated decreases in emissions that could occur with the implementation of current energy code measures that would be required during building development and implementation of sustainability measures that are identified in Section 3.2.3 - Mitigation Measures.

Indirect

Two scenarios for new access driveways to the UWMC-Northwest campus are considered, including a scenario reflecting a new (3rd) access from N 115th Street, and a second scenario reflecting a new driveway from N 120th Street. A new, third driveway access from N 115th Street would provide an additional access option from N 115th Street which would reduce vehicle queueing, idling and associated vehicle emissions from cars travelling to the campus on N 115th Street. A potential new driveway access from N 120th Street would introduce new levels of vehicular traffic in the area to the north of campus. Additional traffic in this area would result in associated vehicular emissions which could be noticeable for residences in this area.

ALTERNATIVE 2

Similar to Alternative 1 and consistent with the proposed *MIMP Update*, approximately 862,000 sq. ft. of net new building space throughout the campus under Alternative 2. The primary difference between Alternative 1 and Alternative 2 is that Alternative 2 assumes additional restrictions on building heights (tallest buildings limited to the central and southwest portions of campus), and narrower perimeter building setback areas.

³ MTCO₂e is defined as Metric Ton Carbon Dioxide Equivalent which is a standard measure of amount of CO₂ emissions reduced or sequestered.

Air Quality

Construction

Development under Alternative 2 would result in similar construction-related air quality impacts as those described under Alternative 1. Construction activities would result in localized short-term increases in particulates (dust), equipment emissions (carbon monoxide) and potential odors in the vicinity of construction sites. The provision of narrower perimeter setbacks under Alternative 2 could mean that construction activity may be located in closer proximity to adjacent properties than under Alternative 1. Periodic traffic delays and construction-related traffic could also contribute to slightly greater vehicle emissions during construction. With implementation of the controls required for the various aspects of construction activities and consistent use of BMPs to minimize emissions, construction under Alternative 2 would not be expected to significantly affect air quality.

Operation

Similar to Alternative 1, overall campus development and population growth would increase the consumption of electricity, fossil fuels and natural gas which would contribute to cumulative air quality impacts. Emissions would be subject to applicable requirements of the University of Washington and the Puget Sound Clean Air Agency.

GHG Emissions

As noted in **Table 3.2-2**, Alternative 2 assumes the same amount of building development as Alternative 1 (approximately 862,000 sq. ft. of net new building space) and GHG emissions associated with development under the proposed *MIMP Update* would also be the same (approximately 2,205,514 MTCO₂e lifespan emissions or 35,288 MTCO₂e annual emissions).

Indirect

Similar to Alternative 1, two scenarios for new access driveways to the UWMC-Northwest campus are considered, including a scenario reflecting a new (3rd) access from N 115th Street, and a second scenario reflecting a new driveway from N 120th Street. The potential for indirect air quality impacts would be the same as described under Alternative 1.

NO ACTION ALTERNATIVE

Under the No Action Alternative, it is assumed that the approximately 862,000 sq. ft. of net new building development under the proposed *MIMP Update* would not occur and only the remaining approximately 26,000 sq. ft. of remaining development capacity under the 1991 MIMP would be developed. Development under the No Action Alternative would result in

additional air quality emissions from construction and operation, but these emissions would be substantially lower than under Alternatives 1 and 2.

Development under the No Action Alternative would also be anticipated to generate approximately 66,524 MTCO₂e lifespan emissions or 1,064 MTCO₂e annual emissions which would also be substantially lower than Alternatives 1 and 2.

3.2.3 Mitigation Measures

The proposed *MIMP Update* includes sustainability design guidelines to create a more sustainable campus environment. These goals would, in part, guide future campus development and would indirectly relate to the overall air quality and GHG environment. In addition to compliance with applicable regulations related to construction and operations (including EPA, PSCAA and City of Seattle regulations), the following potential measures are intended to further reduce the potential for air quality and GHG impacts.

Air Quality – Construction

- Construction-related air quality mitigation measures are identified in **Section 3.8**, Construction Impacts.

Air Quality – Operations

- Air emissions would be consistent with applicable local, State, and Federal regulations, and would be consistent with the University of Washington Environmental Health and Safety Department guidelines.
- Features to minimize the potential for exhaust features in proximity to adjacent residential areas would be considered during the design of individual projects (including the CUP), and would be considered during implementation of the University design and environmental review process.
- Implementation of the proposed Transportation Management Plan would reduce vehicle trips and associated vehicle emissions.

GHG Emissions

- The University of Washington would embrace sustainability as an objective for all development on campus, including LEED provisions. Key measures that could be explored include:

- installation of high performance glazing with low-E coatings to further reduce heat gain;
- considering use of reflective roof surface treatments to reduce 'heat island effect' on building roofs;
- planting of drought resistant and tolerant planting in landscaped areas to minimize irrigation requirements;
- maximizing use of outside air for heating, ventilating, and air conditioning;
- installation of efficient light fixtures, including occupancy and daylight sensors, as well as nighttime sweep controls;
- use of low flow plumbing fixtures, which could result in a 30 percent reduction of water consumption;
- use of low VOC emitting materials for finishes, adhesives primers and sealants;
- incorporation of recycled content and rapidly renewable materials into project designs, including: concrete, steel and fibrous materials (bamboo, straw, jute, etc.);
- salvage of demolished material and construction waste for recycling; and
- Commitment to the Seattle 2030 District pilot program to reduce energy and water consumption, as well as CO₂ emissions from auto and freight traffic.

3.2.4 Significant Unavoidable Adverse Impacts

With implementation of the mitigation measures identified above, no significant unavoidable adverse impacts on air quality would be anticipated under the EIS Alternatives. Climate change and other issues associated with GHG emissions is a global issue, and it is not possible to discern the impacts of the GHG emissions from a single major institution master plan.

3.3 ENVIRONMENTAL HEALTH

This section of the Draft EIS describes the existing environmental health conditions on the UWMC-Northwest campus and in the site vicinity and evaluates the potential impacts that could occur as a result of the proposed *UWMC-Northwest 2024 Major Institution Master Plan Update (MIMP Update)*.

3.3.1 Affected Environment

Hazardous Materials

In its role as a major medical center the UW Medicine uses some material in its medical facilities that are considered to be hazardous due to their toxicity, flammability, radioactivity, or because of contamination with infectious agents. These materials are generated in the course of providing patient care and are typical for medical and hospital facilities.

The existing UWMC-Northwest facility maintains and uses several potentially toxic or hazardous materials for patient care and treatment. Activities at the UWMC-Northwest employ and create limited quantities of hazardous substances and regulated medical waste. Key environmental waste products include medical waste (laboratory waste, human waste, human body fluids, and infected human substances), sharps (needles, syringes, IV tubing with needles, and scalpel blades).

Infectious and biomedical waste is treated in accordance with the University of Washington's Environmental Health & Safety (EH&S) Department "Biohazardous Waste Management Plan" (June 2022). Infectious and biomedical waste are segregated and contained in leak-proof containers/bags for off-site treatment and disposal. All untreated biohazardous waste that is shipped off-site for treatment and disposal by the UWMC-Northwest biohazardous waste contractor is packaged, labeled, secured in locked sheds, and offered for shipment according to Department of Transportation requirements. Liquid wastes are decontaminated in accordance with the University's Biohazard Safety Manual and disposed via sanitary sewer.

Sharps waste is deposited in red leak-proof, rigid, puncture-resistant, durable plastic containers. Reusable sharps containers throughout the hospital are picked up by UWMC-Northwest biohazardous waste contractor. Sharps containers that are disposed of at offsite locations are placed in secured locked shed and picked up by UW biohazardous waste contractor.

All radioactive material used is in Nuclear Medicine, Department of Radiology. All the "waste" or any contaminated items are decayed on-site, nothing is collected or sent out as

radioactive waste. There are no treatments with radioactive material at UWMC-Northwest, only diagnostic tests, so there is very little material generated. Same at the McMurray Building which includes cardiology and utilizes diagnostic tests. Low-level radioactive waste is held onsite for decay and disposed of as part of the infectious/biomedical waste stream.

The UWMC-Northwest also maintains two storage tanks that provide materials that support the operations of the hospital and its hyperbaric unit. Tank #8504219 serves the main hospital building and includes a main tank (3,000 gallons of liquid USP oxygen), a reserve tank (500 gallons of liquid USP oxygen), and three vaporizers (ambient vaporizers that convert liquid oxygen into gas). A second tank (Tank #5669517) serves the hyperbaric unit and includes a main tank (1,500 gallons of liquid USP oxygen), a reserve high pressure hydrogen tank, and two vaporizers (ambient vaporizers that convert liquid oxygen to gas).

In addition, the UWMC-Northwest stores diesel fuel on the campus that is utilized to power the existing backup power generator.

Noise

Noise Regulations

Noise is defined as any sound that is undesirable because of speech and hearing interference or annoyance. The intensity, duration, and character of sounds can have an adverse effect on personal health and welfare. While one of the more serious consequences of noise is hearing loss, other significant effects include interference with sleep, disruption of conversation, and effect on work performance.

Sound level descriptors are ways of measuring and describing noise, including factors that account for sound duration, magnitude, frequency and pitch. Sound is measured in decibels (dB), a logarithmic ratio between pressures caused by a given sound spectrum.

Environmental noise is measured as “A-weighted” sound level in decibels, symbolized as dBA. The A-weighted scale represents noise using the scale corresponding the most closely to the range and characteristics of the human ear. Equivalent sound level, shown as Leq, is a common descriptor for measuring fluctuating sounds. The Leq is the level of a constant sound that, over a given time period, contains the same amount of sound energy as the measured fluctuating sound. People commonly experience sound levels in the range of between 5 to 90 dBA.

Ambient noise is regulated by the City of Seattle under the City’s Noise Ordinance (Seattle Municipal Code, Chapter 25.08). The Noise Ordinance adopts restrictions contained in Washington State’s Maximum Environmental Noise Levels (WAC 173-60). City of Seattle maximum permissible sound levels are shown in **Table 3.3-1**.

**Table 3.3-1
CITY OF SEATTLE MAXIMUM PERMISSIBLE ENVIRONMENTAL SOUND LEVELS (dBA)**

| Land Use of Noise Source | Land Use of Receiving Property | | |
|--------------------------|--------------------------------|------------|------------|
| | Residential Day/Night | Commercial | Industrial |
| Residential | 55/45 | 57 | 60 |
| Commercial | 57/47 | 60 | 65 |
| Industrial | 60/50 | 65 | 70 |

Source: City of Seattle, 2023.

While the City of Seattle’s Noise Ordinance does not directly apply to UWMC-Northwest uses within the campus boundaries, it does serve to regulate noise between on-campus uses and adjacent land uses/properties (i.e., receiving properties). The City of Seattle considers major institutions to be commercial land uses for Noise Ordinance regulation purposes. As indicated by **Table 3.3-1**, the allowable noise level from a commercial source received by another commercial source is 60 dBA; the allowable noise level for residential receiving properties is 57 dBA. For residential receiving properties, there is a 10-dBA reduction (to 47 dBA) during nighttime hours (10 PM to 7 AM on weekdays, and 10 PM to 9 AM on weekends).

Certain provisions of the Noise Ordinance, namely, SMC 25.08.425, regulate construction-related noise in the City of Seattle and the University of Washington and UW Medicine follows those applicable provisions for construction noise. Seattle’s noise standards provide for temporary increases in the maximum permissible sound levels based on equipment type. During daytime hours¹, sound levels from construction equipment (e.g., tractors, dozers, loader, cranes, compactors, compressors, pneumatic equipment, etc.) are allowed a 25 dBA increase in the noise standards; portable powered equipment (e.g., chainsaws, powered hand tools, etc.) are allowed a 20 dBA increase and maintenance equipment (e.g., lawn mowers, powered hand tools, snow blowers, etc.) are allowed a 15 dBA increase. In addition, the Noise Ordinance authorizes noise from impact-type equipment (e.g., pile drivers, pavement breakers, jackhammers, etc.) to temporarily exceed the sound levels associated with other construction equipment up to a maximum of Leq 99 dBA for a period of 7½ minutes. Sounds above a Leq of 99 dBA are prohibited unless a variance is obtained from the City of Seattle .

The University of Washington also considers noise impacts on sensitive campus uses such as hospital areas and patient rooms. As part of previous projects near noise sensitive uses, the University of Washington has implemented measures to minimize impacts on sensitive uses, such as limiting the use of higher noise equipment, limiting construction hours, ensuring

¹ Defined by Chapter 25.08 of the Seattle Code as 7 AM – 10 PM during weekdays and 9 AM – 10 PM on weekends.

properly sized mufflers and silencers, ensuring nighttime activities do not exceed allowable levels, and scheduling some activities at night (in accordance with applicable requirements) to minimize impacts to campus operations.

Existing Noise Conditions

The noise environment surrounding the UWMC-Northwest campus is primarily comprised of vehicular traffic noise, some of which is related to existing campus medical activities. Aside from period construction projects, noise on the UWMC-Northwest campus is generally comprised of vehicle traffic, voice-level sounds associated with pedestrians and outdoor spaces, and building mechanical equipment (including roof top heating/cooling equipment and monthly testing of ground level emergency generators) and other associated building facility noise. N 115th Street and Meridian Avenue N are the most heavily travelled roadways adjacent to the site and typically generate the most vehicle traffic noise in the area surrounding the UWMC-Northwest campus.

3.3.2 Impacts of the Alternatives

This section of the Draft EIS identifies the potential environmental health-related impacts of the proposed *MIMP Update* on the campus and in the surrounding areas that could occur with development under the EIS Alternatives.

ALTERNATIVES 1 AND 2

Consistent with the proposed *MIMP Update*, Alternatives 1 and 2 include approximately 862,000 sq. ft. of net new building space throughout the campus, including new hospital and medical office building space.

Hazardous Materials

Construction

During the construction process, gasoline and other petroleum-based products would be used for the operation of construction vehicles and equipment. Such products would be handled and stored in accordance with applicable standards and regulations. As with any construction activity, accidental spills of hazardous materials from equipment or vehicles

could occur; however, a spill prevention plan would minimize the potential of an accidental release of hazardous materials into the environment.

Operation

Under Alternatives 1 and 2, new development under the proposed *MIMP Update* would include hospital and medical office uses and an associated increase in the use and generation of hazardous materials/chemicals and hazardous waste would be anticipated. It is assumed that new development would utilize and generate similar types of hazardous materials as described above under Affected Environment, but at higher volumes. However, risks to human health would not be anticipated to increase significantly with development as UW Medicine would continue to manage hazardous materials on campus in accordance with existing policies/standards established by the University's Environmental Health and Safety Department, as well as applicable local, state and federal standards/regulations/laws.

Noise

Potential noise impacts associated with Alternatives 1 and 2 would primarily occur during the construction of individual development projects under the proposed *MIMP Update*. Depending on the location of construction activity, construction noise would result in temporary annoyance and possible increased speech interference near potential development areas. Such noise could impact existing on-campus uses (e.g., hospital, patient rooms, etc.) and disturb residential uses that are in the vicinity of potential development sites. These construction-related noise impacts are discussed in further detail in **Section 3.8 Construction Impacts**.

Operational noise associated with development under Alternatives 1 and 2 would primarily be related to building operational systems (e.g., mechanical systems, etc.) and traffic noise. Increased traffic volumes from new development would result in an increase in traffic-related noise on-campus and on surrounding roadways. However, the campus and surrounding area is a highly developed urban area with existing traffic-related noise and the increase in traffic volumes associated with the proposed *MIMP Update* is not anticipated to result in significant noise impacts.

The proposed *MIMP Update* includes a Central Utility Plant (CUP) intended to consolidate and separate Medical Center infrastructure to an enclosed standalone facility. The CUP would both provide needed power redundancy for existing buildings and required power for future buildings. It would also allow UWMC-Northwest to replace the numerous individual systems associated with existing buildings on campus; the majority of the existing equipment is not enclosed.

As under current conditions, the highest noise generating pieces of equipment under the *MIMP Update* are anticipated to be heat pumps and emergency generators. The proposed

CUP(s) would enclose equipment within a structure, which would allow for greater control of noise compared to current conditions.

Emergency generators require air intakes/exhaust which would allow for some noise to escape the enclosed structure. However, because emergency generators are only utilized in the case of power disruption or during required monthly testing (typically one hour of testing per month), the amount of time the emergency generators would be utilized is anticipated to be low and would be similar to current conditions. Sound at enuation measures would be identified during CUP design and implementation of the University design and environmental review process.

Indirect

Two scenarios for new access driveways to the UWMC-Northwest campus are considered, including a scenario reflecting a new (3rd) access from N 115th Street, and a second scenario reflecting a new driveway from N 120th Street. Both access driveway scenarios would not result in any anticipated indirect hazardous materials impacts.

The second scenario of a new driveway from N 120th Street would introduce a new vehicle access point along the north portion of the site that does not currently exist. This new driveway scenario would result in additional vehicle traffic entering and existing the site from N 120th Street which would also result in additional vehicle traffic noise in this area of campus.

NO ACTION ALTERNATIVE

Under the No Action Alternative, it is assumed that the approximately 26,000 sq. ft. of campus building capacity that remains under the 1991 Master Plan would be developed and no other physical improvements or changes to building height overlays and setbacks would occur. Some level of increased campus population would occur which would result in an associated increase in hazardous material usage and generation; however, due to the lower level of development it is anticipated that environmental health-related impacts would be substantially lower under the No Action Alternative. The existing emergency generators would be generally tested and utilized as under current conditions.

3.3.3 Mitigation Measures

The following measures would be available for development under the proposed *MIMP Update*.

Hazardous Materials

- Potential future development projects under the proposed *MIMP Update* should verify the presence, use and/or potential generation of hazardous materials on the project site prior to development.
- Hazardous materials generated and used on campus would continue to be managed in accordance with existing policies/standards established by the University's Environmental Health and Safety Department, as well as applicable local, state and federal standards/regulations.
- Existing facilities that handle hazardous materials could be improved under the proposed *MIMP Update* to meet future needs and standards.

Noise

- Construction-related noise mitigation measures are identified in **Section 3.8, Construction Impacts**.
- Development projects under the proposed *MIMP Update* that are located in areas that are proximate to noise-sensitive uses could require project-specific coordination with adjacent noise-sensitive users to determine potential noise-related issues associated with development on those sites and could require additional noise analysis and mitigation measures (if necessary).

3.3.4 Significant Unavoidable Adverse Impacts

It is anticipated that an increase in hazardous materials and noise would occur as development occurs under the proposed *MIMP Update*. With implementation of the mitigation measures identified above, no significant unavoidable adverse environmental health impacts would be anticipated under the EIS Alternatives.

3.4 AESTHETICS/LIGHT&GLARE/SHADOWS



This section of the Draft EIS describes the existing aesthetics, light & glare, and shadow conditions on the UWMC-Northwest campus and in the site vicinity and evaluates the potential impacts that could occur as a result of the proposed *UWMC-Northwest 2024 Major Institution Master Plan Update (MIMP Update)*. This section is based, in part, on the view simulation and shadow diagrams prepared by NBBJ and included as **Appendix C** and **Appendix D**, respectively.

3.4.1 Affected Environment

Aesthetics

Existing Campus

The visual character of the UWMC-Northwest campus is varied and contains a variety of building types, surface parking lots, drives and open space areas, with an overall visual character of a medical center campus. See Section 3.4.2 for photos of the current visual character of campus, along with simulations of potential development under the EIS Alternatives. The visual character of the UWMC-Northwest campus edges is as follows:

- Southern campus edge of the campus along N 115th Street exhibits an urban medical center visual character, with sidewalk, street trees, driveway entrances, signage, and two- and three-story medical office buildings (with taller building beyond). 
- Southwestern campus edge of campus adjacent to the Bikur Cholim Cemetery is characterized by limited vegetation and a four-story parking structure defining the visual character. Multistory buildings in the center of campus are also visible.
- Northern campus edge along N 120th Street exhibits a visual character dominated by mature trees with only partial views to medical center campus buildings. 
- Northwestern campus edge adjacent to the Stendall Place residential development exhibits a visual character defined by fencing and mature vegetation, with E-Wing in the foreground and limited views of taller medical buildings on the UWMC-Northwest campus beyond.

- Eastern edge of campus adjacent to a residential neighborhood exhibits a visual character reflective of fencing and mature trees, with some view of to the upper portions of buildings in the center of the campus.

Surrounding Area

The visual character of the area surrounding the UWMC-Northwest campus is reflective of the built environment, with a visual character defined by residential areas and cemeteries exhibiting a vegetated open space visual character. Specifically, the visual character of the area to the north and east of the campus is reflective of one- to three-story residences with residential streets and mature landscaping. Two-story multifamily residences (Stendall Place) in a planned setting with mature trees and vegetation, as well as the Bikur Cholim Cemetery, defines the visual character of the area to the west of campus. The Orthodox Brotherly Cemetery of Saint Nicholas and the Evergreen Washelli Cemetery define the visual character of the area to the south and southwest of the campus.

Other prominent built features that influence the visual character of the area consist primarily of transportation routes, including State Route 99 (Aurora Ave. N) and Interstate 5 (I-5). I-5, the major north/south vehicular travel corridor, is located approximately 1,200 feet east of the campus. Aurora Ave. N, another major north/south vehicular travel corridor, is located approximately 1,200 feet west of the campus; the visual character of the area farther to the west, along Aurora Ave. N, is defined by one- to six-story commercial buildings with surface parking. Although these transportation corridors are major built features in the area, neither of these features are visible from the UWMC-Northwest campus.

Seattle Public View Policies

The City of Seattle has several policies related to public views. None of the Seattle view policies are applicable to the UWMC-Northwest campus as discussed below.

- Seattle Municipal Code Chap 25.05.675.P.2.a.i provides public view protection policies intended to “*protect public views of significant natural and human-made features: Mount Rainier, the Olympic and Cascade Mountains, the downtown skyline, and major bodies of water including Lake Washington, Lake Union, and the Ship Canal, from public places consisting of specified viewpoints, parks, scenic routes, and view corridors identified in Attachment 1 to the SEPA code*”. There are no identified viewpoints or other areas in the UWMC-Northwest campus vicinity that could be affected by development on the campus, and this policy does not relate to the *MIMP Update*.
- Seattle Municipal Code Chap 25.05.675.P.2.b.i indicates that it is City policy to “*protect public views of historic landmarks designated by the City’s Landmarks*”

Preservation Board which, because of their prominence of location or contrasts of siting, age, or scale are easily identifiable visual features of their neighborhood or the City and contribute to the distinctive quality or identity of their neighborhood or the City". There are no designated historic landmarks in the campus vicinity that could be affected by development on the campus, and this policy does not relate to the MIMP Update.

- Seattle Municipal Code Chap 25.05.675.P identifies ten viewpoints from which views of the Space Needle are to be protected. There are no designated viewpoints to the Space Needle in the campus vicinity that could be affected by development on the campus, and this policy does not relate to the *MIMP Update*.

Light & Glare

Light

Ambient light on the UWMC-Northwest campus is comprised of stationary and mobile sources. Stationary sources include street lighting associated with internal driveways, and surface parking lots, as well as pedestrian-scale lighting associated with walkways and building entrances. Off-campus stationary light sources include street lighting on City streets (N 115th St., N 120th St, and Burke Avenue N), and lighting associated with area residences and cemeteries.

Mobile sources of light primarily include light from headlights of vehicles traveling on campus, and on area streets surrounding the campus (N 115th St., N 120th St., and Burke Avenue N.).

Glare

There are no buildings on the UWMC-Northwest campus that are clad in highly reflective surfaces that produce substantial amounts of solar glare. Window glazing on campus buildings have a relatively low level of reflectivity, with limited amounts of solar glare. Another source of glare on the campus is related to vehicles traveling and parked in surface lots on campus.

The primary source of glare in the vicinity is vehicles traveling and parked on vicinity streets. The level of glare from adjacent area residential structures is low.

Shadows

Existing Campus

The primary source of shadows on the UWMC-Northwest campus is existing buildings and mature trees. A shadow study was completed for the proposed MIMP Update to document existing shadows on the campus and shadows that would occur under the EIS Alternatives (see **Appendix D** for the full shadow study). Taller buildings on the campus such as the parking garage, A-Wing, and Behavioral Health Teaching Facility cast the greatest shadows, some of which, extend to adjacent properties depending on the time of year and the time of day. Existing mature trees on campus, in particular those along the perimeter of the campus, also are a primary source of shadows. These shadows can extend beyond the campus to adjacent properties, depending on the time of year and time of day.

Surrounding Area

Existing buildings and mature trees are also the primary source of shadows in the area surrounding the UWMC-Northwest campus. The majority of buildings in the vicinity of the campus are one- to three-story residences. Tall, mature trees in the site vicinity typically cast the longest shadows in the area.

3.4.2 Impacts of the Alternatives

This section of the Draft EIS identifies the potential for impacts related to aesthetics, light & glare, and shadows.

AESTHETICS

Overall, implementation of the level of development contemplated in the *MIMP Update* would result in an intensification of uses on campus, replacement of some existing buildings, and increase in building heights. The proposed *MIMP Update* includes building height overlays, perimeter building height setback areas, and development standards intended to allow for a level of development considered adequate to meet future health care needs while maintaining compatibility with the visual character of the campus and minimizing visual impacts.

The proposed *MIMP Update* does not identify specific project locations. Rather, building development could occur anywhere on campus, subject to the development envelope established by the building height overlays, building setback areas from campus perimeter and retained buildings. Although development under the *MIMP Update* could occur anywhere within the development envelope, the total building square footage (i.e. existing buildings and proposed net new buildings) would only encompass a portion of the building

development envelope. For example, the total 1.6 million square feet of building space under the *MIMP Update* (existing and net new space) would encompass approximately 12 to 14 percent of the building envelope¹, depending on the EIS Alternative.

Two scenarios for new access driveways to the UWMC-Northwest campus are considered, including a scenario reflecting a new (3rd) access from N 115th St. and a second scenario reflecting a new access from N 120th St.

Views

Potential development under Alternative 1 and Alternative 2 would modify views to the campus from the surrounding area to reflect increased building density and building heights.

For this EIS, visual massing simulations were prepared for Alternatives 1 and 2 based on photographs of the campus from selected viewpoints and simulations of potential development from these viewpoints. The identification of viewpoints for the visual analysis was based on the availability of views to potential development on campus from publicly accessible areas in the vicinity. Seven viewpoints were selected as being most representative of area views and/or were determined to have the greatest potential for development under the *MIMP Update* to change the character of the view. See **Figure 3.4-1** for a map of the viewpoints. As indicated earlier, there are no City of Seattle viewpoints identified in Seattle Municipal Code Chap 25.05.675 that are applicable to the UWMC-Northwest campus. The viewpoints selected for analysis in this EIS are listed in **Table 3.4-1**.

**TABLE 3.4-1
VIEWPOINT LOCATIONS**

| Viewpoint | Description |
|------------------|--|
| Viewpoint 1 | N 115 th Street/Main Campus Entry (looking north) |
| Viewpoint 2 | Meridian Ave N (looking northwest) |
| Viewpoint 3 | Meridian Ave N/N 120 th St (looking southwest) |
| Viewpoint 4 | Densmore Ave N (looking south) |
| Viewpoint 5 | Ashworth Ave N (looking southeast) |
| Viewpoint 6 | Ashworth Ave N/N 120 th St (looking east) |
| Viewpoint 7 | N 115 th Street (looking east) |

¹ Representing the total square footage envelope established by the building height overlays and perimeter setbacks.

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Source: Google Earth and EA Engineering, 2023.



Figure 3.4-1
Viewpoint Location Map

Based on these viewpoints, photo simulations of development under the EIS Alternatives were prepared. Because the proposed *MIMP Update* does not identify specific project locations, the simulations are intended to represent the building development envelope established by the building height overlays and perimeter building setback areas, with potential building development massing scenarios representing different building configurations that could reasonably occur within the building development envelope. The visual analysis presented in this EIS includes figures that incorporate the following:

- Photographs illustrating the existing visual character as viewed from the representative viewpoints.
- Because specific projects are not defined in the *MIMP Update*, simulations of four building massing scenarios were prepared for each viewpoint representing the extent that potential building massing would be visible from the respective viewpoints, consistent with the assumed total building square footage, building height overlays, and perimeter building setback areas. In general, the massing scenarios simulated for this EIS include: *Scenario 1* with a dispersed development pattern; *Scenario 2* with a development pattern focused in the central and southern portions of campus; *Scenario 3* with a development pattern focused in the central and western portions of campus; and, *Scenario 4* with a development pattern focused in the central and northern portions of campus.

If the viewpoint location is setback sufficiently, the simulations include illustration of the location of the 175-foot, 105-foot, and 65-foot building height overlays considering perimeter building setback areas (i.e. building development envelope).

A description of the existing views to the campus from the identified viewpoints are provided below, along with a description of the potential view from each location under the EIS Alternatives.

Alternative 1

Potential future development under Alternative 1 would intensify the existing medical center visual character which is currently comprised of low- to mid-rise buildings (one to seven stories in height), to a denser environment with taller buildings. Approximately 862,000 sq.ft. of net new development would occur on the campus under Alternative 1, consistent with the proposed *MIMP Update*. Maximum building heights on the campus would range from 175-feet on the majority of the campus, to 65-feet at the northwest and eastern edges of campus.

Increased building heights under Alternative 1 would allow for buildings that are taller than existing buildings on the campus, and taller than existing buildings in the immediate campus vicinity. The proposed increase in building heights is intended to allow for building configurations that best meet health care service efficiencies. Development standards are identified in the *MIMP Update* that are intended to minimize potential impacts of increased density and increased building heights.

Views

Viewpoint 1 – N 115th Street/Main Campus Entry

From Viewpoint 1 looking north, a view to the existing entry drive is prominent with peripheral partial views of the two-story Proton Therapy Building, three-story Medical Office Building, and the seven-story Behavioral Health Teaching Facility available in the background. The overall character of the existing view from this location is reflective of an urban medical center campus. See **Figure 3.4-2** for the existing view from this viewpoint.

Under Alternative 1, views from Viewpoint 1 would continue to include the existing driveway entry and existing buildings, with potential new buildings visible at varying degrees depending in the massing scenario; including 173-foot and 48-foot building massing prominent under massing scenarios 1 and 3, with the view continuing to reflect an urban medical center campus. See **Figure 3.4-2** for views of the massing scenarios from this viewpoint under Alternative 1.

Viewpoint 2 – Meridian Ave N

The existing view from Viewpoint 2 looking northwest is primarily comprised of Meridian Ave N roadway, single-family homes, and mature trees (associated with both the single-family home lots and the UWMC-Northwest campus) prominent in the foreground. A partial view of the upper portion of the BHTF building is available in the background. The overall character of the existing view is of a residential neighborhood. See **Figure 3.4-3** for the existing view from this location.

As illustrated in **Figure 3.4-3**, foreground views from Viewpoint 2 under Alternative 1 would remain as under existing conditions, with background views of the upper portion of buildings associated with the various massing scenarios visible in the background. The scenario 3 massing includes partial views of building massing up to 173-feet in height in the center of campus.

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Existing Condition



UWMC - Northwest View Analysis | Alternative 1 - Scenario 1



UWMC - Northwest View Analysis | Alternative 1 - Scenario 2



UWMC - Northwest View Analysis | Alternative 1 - Scenario 3



UWMC - Northwest View Analysis | Alternative 1 - Scenario 4



Source: NBBJ, 2023.

Figure 3.4-2

Viewpoint 1—N 115th Street/Main Campus Entry (Looking North)

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Draft EIS**

Existing Condition



UWMC - Northwest View Analysis | Alternative 1 - Scenario 1



65' HEIGHT OVERLAY @ 40' SETBACK FROM PROPERTY LINE, @ 250' FROM CAMERA
175' HEIGHT OVERLAY @ 370' FROM CAMERA (APPROX. 160' FROM PROPERTY LINE)
POTENTIAL DEVELOPMENT ALMOST 730' FROM CAMERA

UWMC - Northwest View Analysis | Alternative 1 - Scenario 2



UWMC - Northwest View Analysis | Alternative 1 - Scenario 3



UWMC - Northwest View Analysis | Alternative 1 - Scenario 4



Source: NBBJ, 2023.

Figure 3.4-3

Viewpoint 2—Meridian Ave N (Looking West)

Viewpoint 3 – Meridian Ave N/N 120th Street

From Viewpoint 3 looking southwest, the existing view is primarily comprised of the intersection roadway and vegetation associated with residential properties. Background views of one- to three-story residential buildings and mature trees are also available. The overall character of the view from this location is reflective of a mixed single-family and multifamily residential neighborhood. See **Figure 3.4-4** for the existing view from this location.

As illustrated in **Figure 3.4-4**, under Alternative 1, the foreground views from this viewpoint would remain as under existing conditions, with background views of the upper portions of buildings ranging in height from 96 feet to 11 feet associated with massing scenarios 2, 3 and 4 visible from this viewpoint location. Although partial views to the upper portions of buildings could be visible from this viewpoint.

Viewpoint 4 – Densmore Ave N

The existing view from Viewpoint 4 looking south is primarily comprised of the Densmore Ave N roadway, one- and two-story homes, and landscaping in the foreground. Mature trees lining the southern edge of N 120th St. are prominent in the background. The overall character of the view from this location is reflective of a residential neighborhood. See **Figure 3.4-5** for the existing view from this location.

Figure 3.4-5 illustrates the 65-foot and 175-foot building height overlays, along with building massing scenarios under Alternative 1. From this viewpoint with Alternative 1, the foreground views would remain the same as under existing conditions, with views to the upper portions of buildings under massing scenarios 3 and 4 prominently visible in the background. Although the existing mature trees along N 120th St. would provide some visual screening, building development under Alternative 1 that is similar to massing scenarios 3 or 4 would be visible.

An optional new access from N 120th Street would include clearing of existing trees and increased ability to view building development in the center of campus (see **Figure 3.4-5A**). As indicated in **Figure 3.4-5A**, all of the building massing scenarios include views to building massing, with massing scenarios 3 and 4 being prominent.

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Existing Condition



UWMC - Northwest View Analysis | Alternative 1 - Scenario 1



175' HEIGHT OVERLAY @ 400' FROM CAMERA (APPROX 30' FROM PROPERTY LINE)



UWMC - Northwest View Analysis | Alternative 1 - Scenario 2



UWMC - Northwest View Analysis | Alternative 1 - Scenario 3



UWMC - Northwest View Analysis | Alternative 1 - Scenario 4



Source: NBBJ, 2023.

Figure 3.4-4

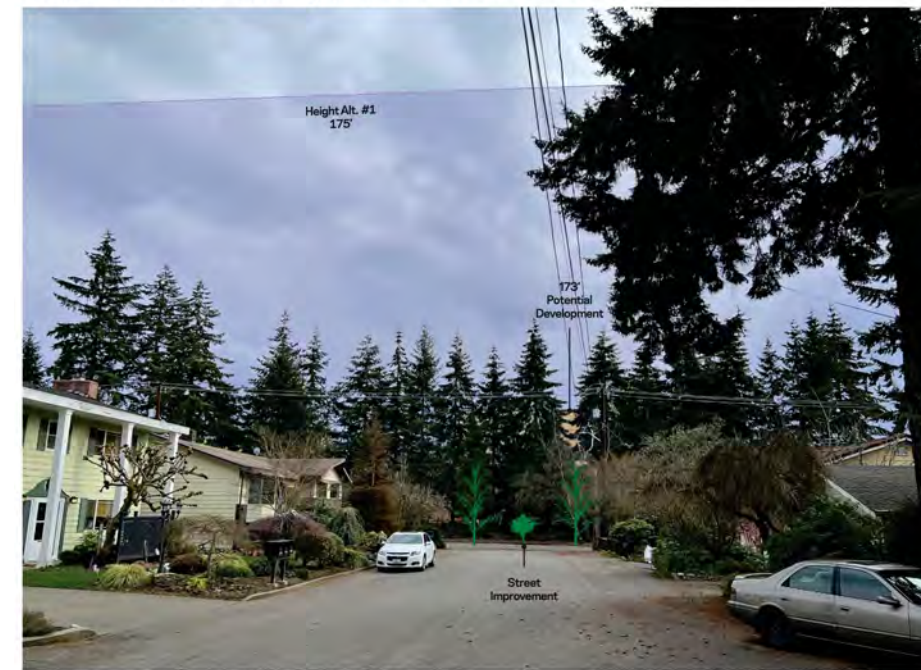
Viewpoint 3—N 120th Street/Meridian Ave N (Looking Southwest)

**UWMC-Northwest 2024 Major Institution Master Plan Update
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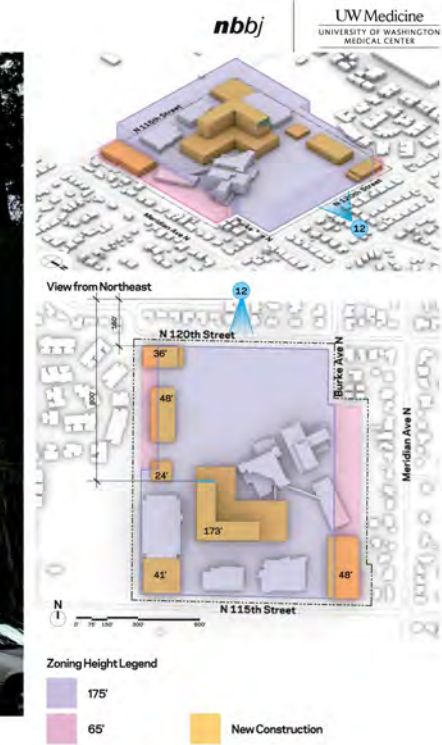
Existing Condition



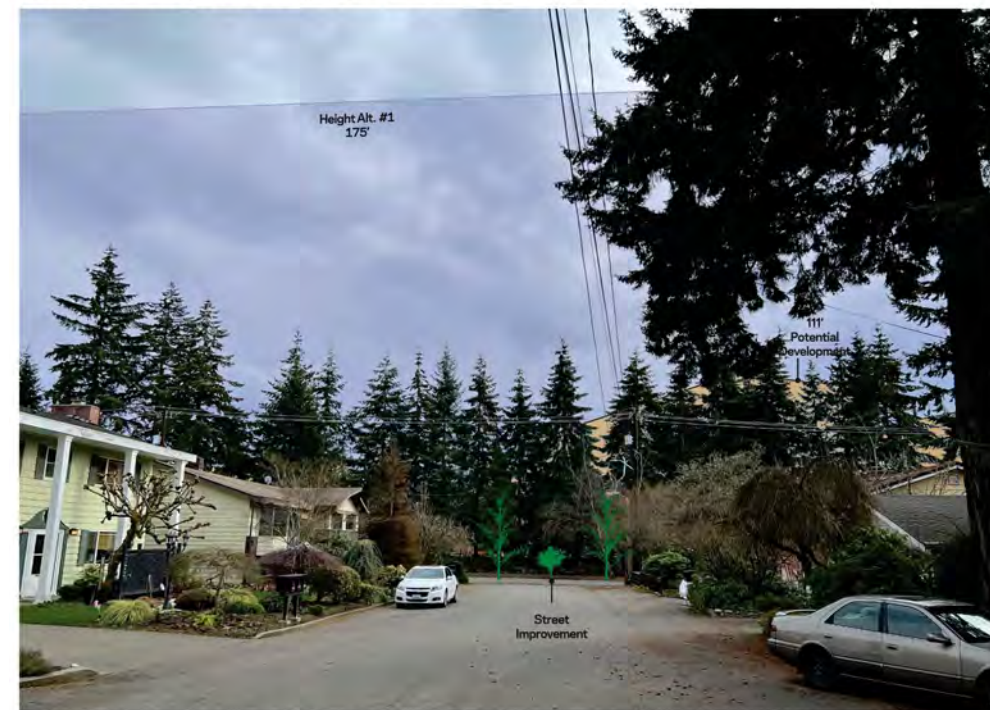
UWMC - Northwest View Analysis | Alternative 1 - Scenario 1



175' HEIGHT OVERLAY @ 30' SETBACK FROM PROPERTY LINE, @ 160' FROM CAMERA
POTENTIAL DEVELOPMENT ALMOST 800' FROM CAMERA



UWMC - Northwest View Analysis | Alternative 1 - Scenario 2



UWMC - Northwest View Analysis | Alternative 1 - Scenario 3



UWMC - Northwest View Analysis | Alternative 1 - Scenario 4



Source: NBBJ, 2023.

Figure 3.4-5

Viewpoint 4—Denmore Ave N (Looking South)

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Existing Condition



UWMC - Northwest View Analysis | Alternative 1 - Scenario 1 with North access



UWMC - Northwest View Analysis | Alternative 1 - Scenario 2 with North access



UWMC - Northwest View Analysis | Alternative 1 - Scenario 3 with North access



UWMC - Northwest View Analysis | Alternative 1 - Scenario 4 with North access



Source: NBBJ, 2023.

Figure 3.4-5A

Viewpoint 4—Densmore Ave N (Looking South) with Optional North Access

Viewpoint 5 – Ashworth Ave N

The existing view from Viewpoint 5 looking southwest consists of the Ashworth Ave N roadway, entry sign and landscaping associated with the Stendall Place residential development, and fencing, mature trees and the one-story E-Wing Building of the UWMC-Northwest campus. The overall character of the view from this location is reflective of mature vegetation with minor presence of built features. See **Figure 3.4-6** for the existing view from this location.

As indicated in **Figure 3.4-6**, from this viewpoint under Alternative 1, the foreground would remain as under existing conditions, with partial views to building massing available (primarily with Massing Scenarios 1, 2 and 3). Existing vegetation would provide some screening of Alternative 1 building massing, although partial views of building development similar to the building massing would be available.

Viewpoint 6 – Ashworth Ave N/N 120th St

The existing view from Viewpoint 6 looking east consists of the Ashworth Ave N/N 120th St roadway with mature trees lining the north and south sides of N 120th St. being visually prominent. The view of the UWMC-Northwest campus is limited to campus perimeter fencing and a small portion of the single-story E-Wing Building. See **Figure 3.4-7** for the existing view from this viewpoint.

As illustrated in **Figure 3.4-7**, from this viewpoint, partial views of building massing is visible, particularly building massing scenarios 1 and 3. Existing mature trees along the south side of N 120th St. would remain and provide substantial screening of building development.

Viewpoint 7 – N 115th St

From Viewpoint 7 looking east, the existing view consists of N 115th St., with the UWMC-Northwest campus prominent, including view of a surface parking lot, the southern end of the four-story parking garage, and the three-story McMurry Medical Office Building. The overall character of the view reflects an urban medical center campus. See **Figure 3.4-8** for the existing view from this viewpoint.

As illustrated in **Figure 3.4-8**, the building massing south of the existing parking structure would extend campus building form closer to N 115th St. under all of the massing scenarios, and would be visually prominent. The upper portion of assumed 173-foot massing in center of campus would be visible in the background under massing scenarios 1 and 3. Although buildings visible from this viewpoint would increase from existing conditions, the view would continue to reflect an urban medical center form.

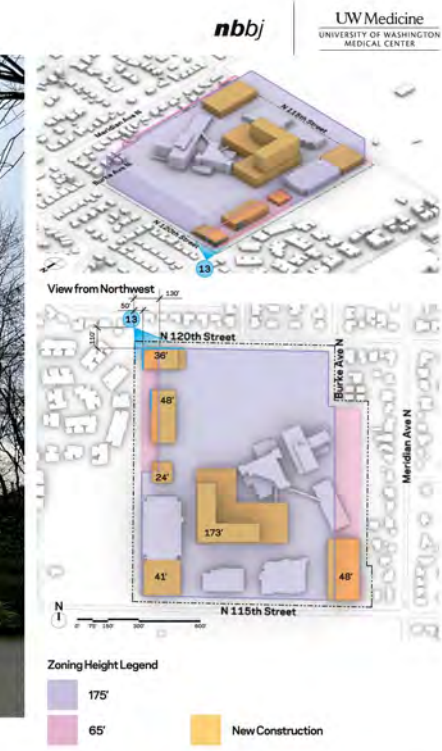
An optional new driveway access from N 115th Street is not prominently noticeable given that primary driveway access is currently provided from N 115th Street.

**UWMC-Northwest 2024 Major Institution Master Plan Update
Draft EIS**

Existing Condition



UWMC - Northwest View Analysis | Alternative 1 - Scenario 1



65' HEIGHT OVERLAY @ 30' SETBACK FROM PROPERTY LINE, @ 50' FROM CAMERA
175' HEIGHT OVERLAY @ 130' EAST FROM CAMERA (APPROX. 120' EAST FROM PROPERTY LINE)
POTENTIAL DEVELOPMENT ALMOST 110' SOUTH FROM CAMERA

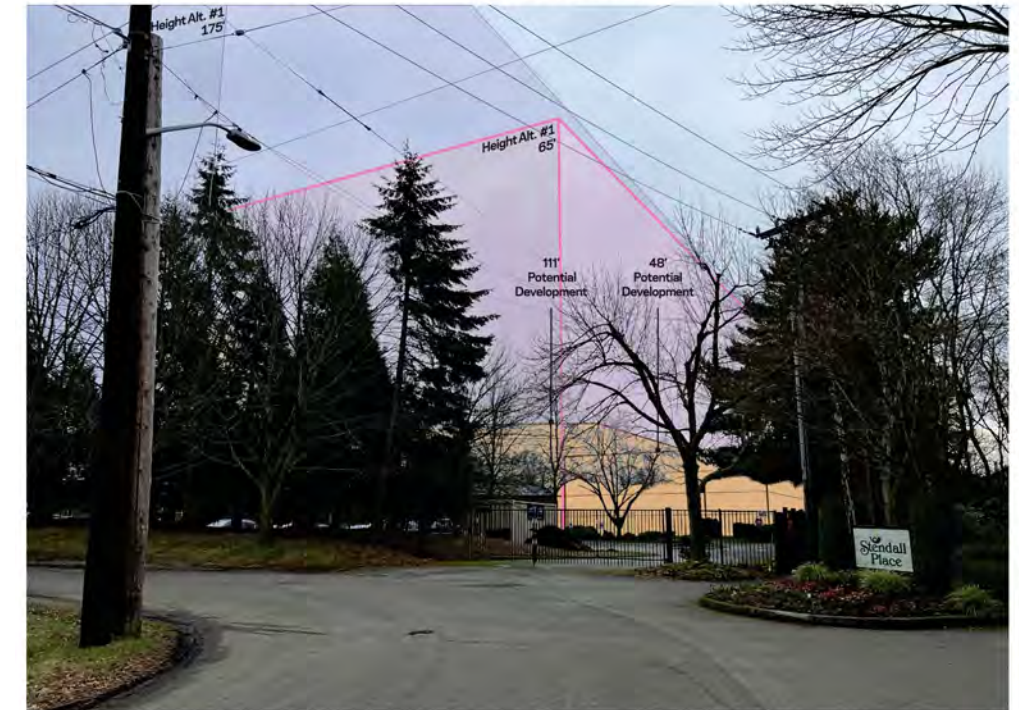
UWMC - Northwest View Analysis | Alternative 1 - Scenario 2



UWMC - Northwest View Analysis | Alternative 1 - Scenario 3



UWMC - Northwest View Analysis | Alternative 1 - Scenario 4



Source: NBBJ, 2023.

Figure 3.4-6

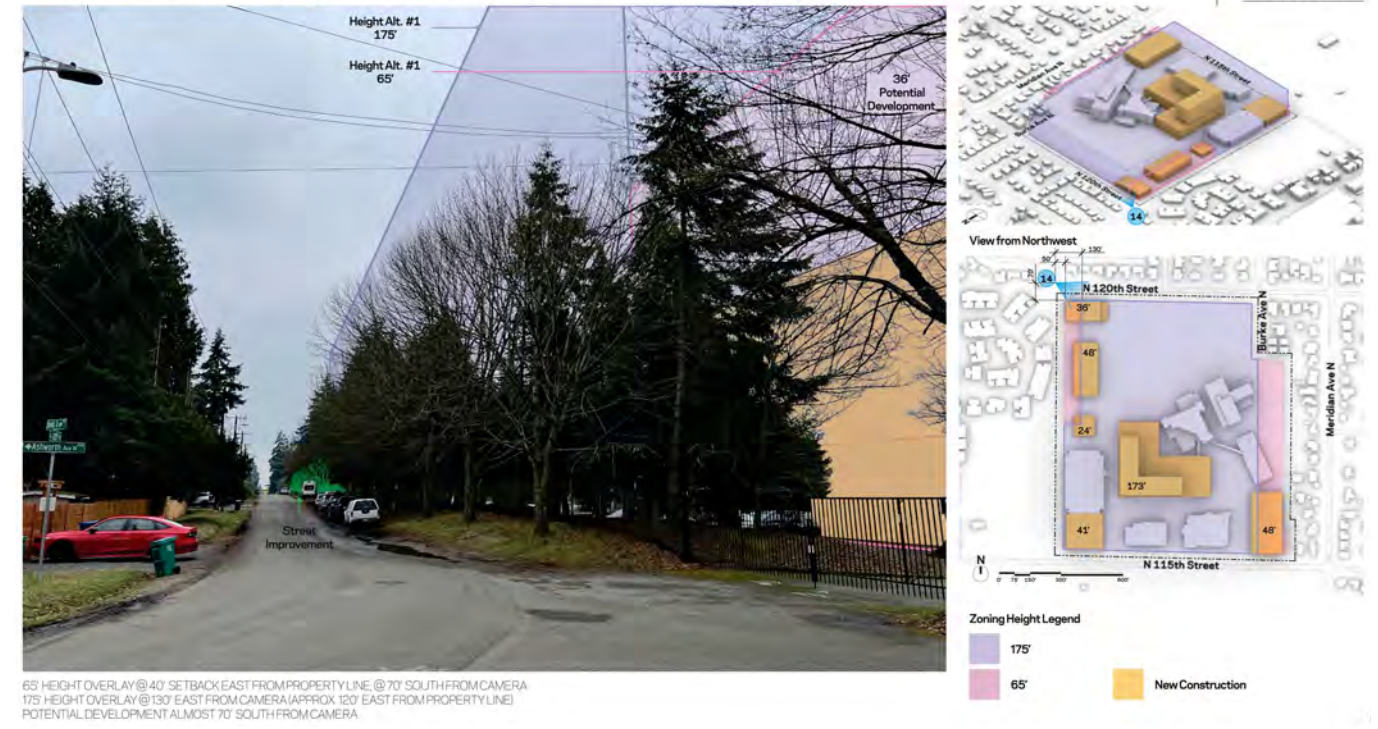
Viewpoint 5—Ashworth Ave N (Looking Southeast)

**UWMC-Northwest 2024 Major Institution Master Plan Update
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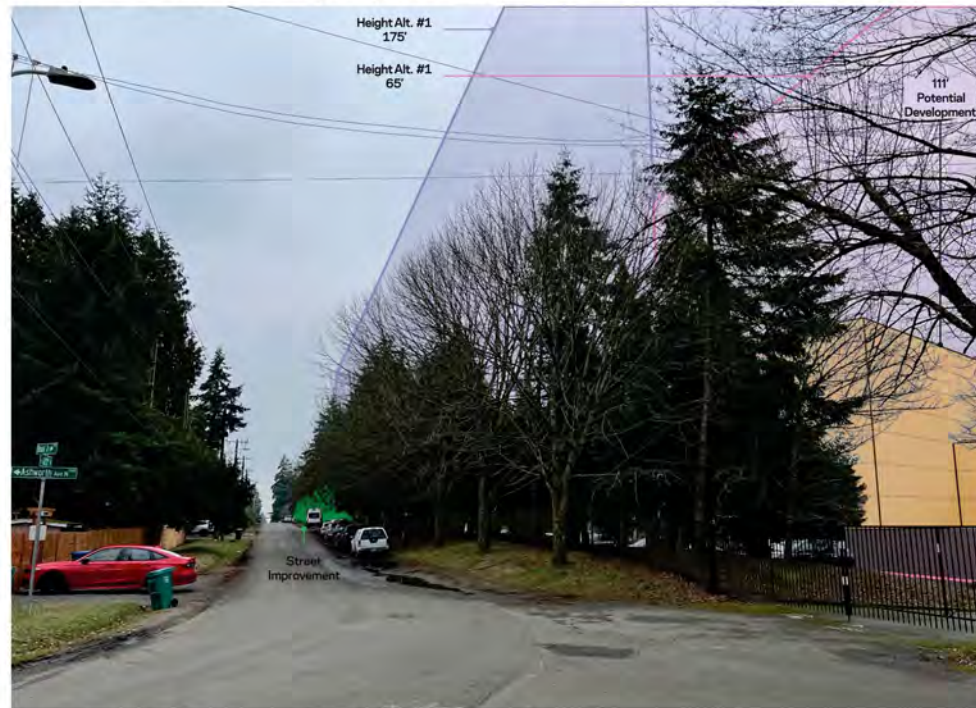
Existing Condition



UWMC - Northwest View Analysis | Alternative 1 - Scenario 1



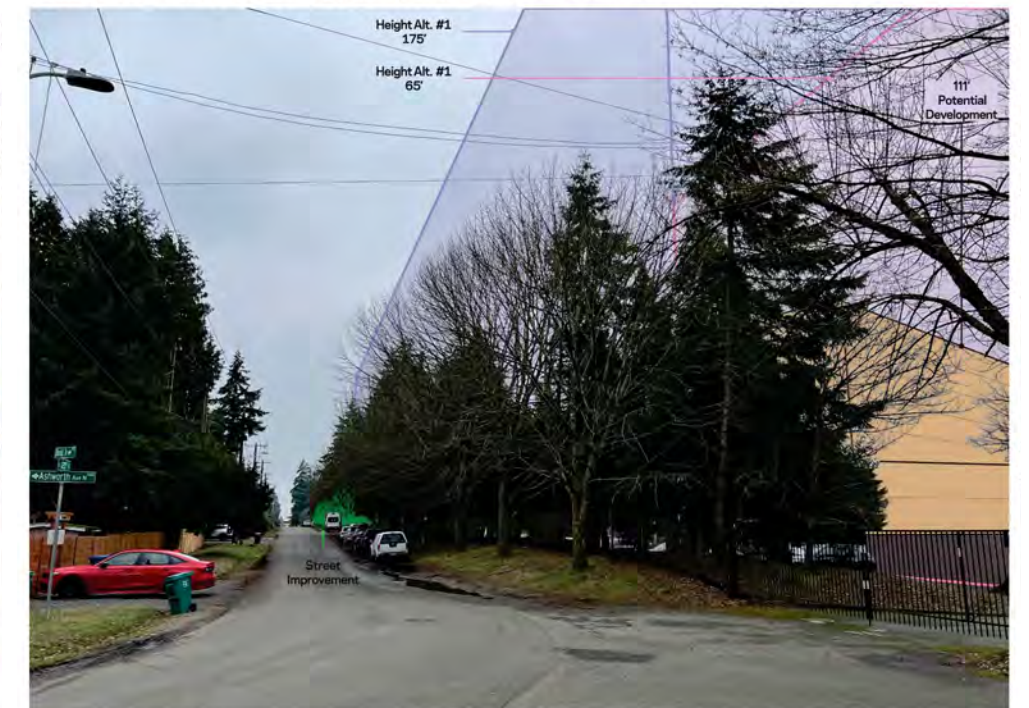
UWMC - Northwest View Analysis | Alternative 1 - Scenario 2



UWMC - Northwest View Analysis | Alternative 1 - Scenario 3



UWMC - Northwest View Analysis | Alternative 1 - Scenario 4



Source: NBBJ, 2023.

Figure 3.4-7

Viewpoint 6—Stendall Drive N (Looking East)

**UWMC-Northwest 2024 Major Institution Master Plan Update
Draft EIS**

Existing Condition



UWMC - Northwest View Analysis | Alternative 1 - Scenario 1 with South access



UWMC - Northwest View Analysis | Alternative 1 - Scenario 2 with South access



UWMC - Northwest View Analysis | Alternative 1 - Scenario 3 with South access



UWMC - Northwest View Analysis | Alternative 1 - Scenario 4 with South access



Source: NBBJ, 2023.

Figure 3.4-8

Viewpoint 7—N 115th Street (Looking Northeast)

Alternative 2

Consistent with the *MIMP Update*, Alternative 2 assumes that the maximum building heights allowed under Alternative 2 would increase from the existing 1991 MIMP. The proposed height increase would differ from those assumed under Alternative 1. The primary differences in assumed building height overlays under Alternative 2 compared to Alternative 1 are: a reduction in the amount of campus in the 175-foot building height overlay (generally confined to the central and southern portion of campus away from adjacent residential areas); extension of the 65-foot building height overlay to campus edges adjacent to residential areas; and retention of the existing 105-foot building height in the southwest portion of campus.

Similar to Alternative 1, Alternative 2 allows for buildings that are taller than existing buildings on the UWMC-Northwest campus. However, given the reduced portion of the campus in the 175-foot building height overlay, the potential for views of taller buildings would be less than under Alternative 1, depending on the viewpoint.

Views

The character of the existing views from the various viewpoints are the same for Alternative 2 as described for Alternative 1, and the character of the existing view is not repeated for Alternative 2.

Viewpoint 1 – N 115th Street/Main Campus Entry

As illustrated in **Figure 3.4-9**, the view from this viewpoint under Alternative 2 would be the same as under Alternative 1, including 173-foot and 43-foot tall building massing prominent under massing scenarios 1 and 3. As under Alternative 1, although the overall amount of building area visible would increase, the view from this viewpoint would continue to reflect an urban medical center.

Viewpoint 2 – Meridian Ave N

As illustrated in **Figure 3.4-10**, the 175-foot building height overlay would be setback farther from the east boundary of campus than under Alternative 1, although the view of building massings under Alternative 2 is the same as illustrated for Alternative 1. As under Alternative 1, massing scenario 3 includes a 173-foot tall building massing in the center of campus with upper portions of the building massing visible.

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Existing Condition



UWMC - Northwest View Analysis | Alternative 2 - Scenario 1



65' HEIGHT OVERLAY @ 30' SETBACK FROM PROPERTY LINE
POTENTIAL DEVELOPMENT ALMOST 300' FROM CAMERA

UWMC - Northwest View Analysis | Alternative 2 - Scenario 2



UWMC - Northwest View Analysis | Alternative 2 - Scenario 3



UWMC - Northwest View Analysis | Alternative 2 - Scenario 4



Source: NBBJ, 2023.

Figure 3.4-9

Viewpoint 1—N 115th Street/Main Campus Entry (Looking North)

**UWMC-Northwest 2024 Major Institution Master Plan Update
Draft EIS**

Existing Condition



UWMC - Northwest View Analysis | Alternative 2 - Scenario 1



65' HEIGHT OVERLAY @ 30' SETBACK FROM PROPERTY LINE @ 240' FROM CAMERA
175' HEIGHT OVERLAY @ 490' FROM CAMERA (APPROX. 280' FROM PROPERTY LINE)
POTENTIAL DEVELOPMENT ALMOST 730' FROM CAMERA

UWMC - Northwest View Analysis | Alternative 2 - Scenario 2



UWMC - Northwest View Analysis | Alternative 2 - Scenario 3



UWMC - Northwest View Analysis | Alternative 2 - Scenario 4



Source: NBBJ, 2023.

Figure 3.4-10

Viewpoint 2—Meridian Ave N (Looking West)

Viewpoint 3 – Meridian Ave N/N 120th Street

Compared to Alternative 1 that assumes a 175-foot building height overlay extending to the north edge of campus abutting N 120th St., Alternative 2 assumes a 65-foot building height overlay along N 120th St. with the 175-foot building height overlay set farther back from N 120th St. As illustrated in **Figure 3.4-11**, the building massing under Alternative 2 are the same as illustrated for Alternative 1.

Viewpoint 4 – Densmore Ave N

Alternative 2 assumes a 65-foot building height overlay along N 120th St. with the 175-foot building height overlay set farther back from N 120th St. than under Alternative 1. As illustrated in **Figure 3.4-12**, the building massings under Alternative 2 are the same as illustrated for Alternative 1 with views to the upper portions of buildings under massing scenarios 3 and 4 prominently visible in the background. Although the existing mature trees along N 120th St. would provide some visual screening, building development under Alternative 2 that is similar to massing scenarios 3 or 4 would be visible. The potential for an optional 3rd driveway access from N 120th St. to provide views to campus development from this viewpoint would be the same as under Alternative 1.

Viewpoint 5 – Ashworth Ave N

As under Alternative 1, Alternative 2 assumes a 65-foot building height overlay along the campus edge with the 175-foot building height overlay behind. Similar to Alternative 1 and illustrated in **Figure 3.4-13**, partial views to building massing available (primarily with massing scenarios 1, 2 and 3) are available from this viewpoint. Existing vegetation would provide some screening of Alternative 2 building massing. Building development reflective of building massing 1, 2 and 3 would be visible from this location.

Viewpoint 6 – Ashworth Ave N/N 120th St

Compared to Alternative 1 that assumes a 175-foot building height overlay extending to the north edge of campus abutting N 120th St., Alternative 2 assumes a 65-foot building height overlay along N 120th St. with the 175-foot building height overlay set farther back from N 120th St. As illustrated in **Figure 3.4-14**, the building massings under Alternative 2 are the same as illustrated for Alternative 1 with partial views of building massing visible, particularly building massing 1 and 3. Existing mature trees along the south side of N 120th St. would remain and provide screening of building development under Alternative 2.

**UWMC-Northwest 2024 Major Institution Master Plan Update
Draft EIS**

Existing Condition



UWMC - Northwest View Analysis | Alternative 2 - Scenario 1



65' HEIGHT OVERLAY @ 20' SETBACK FROM PROPERTY LINE @ 400' FROM CAMERA
175' HEIGHT OVERLAY @ 480' FROM CAMERA (APPROX. 100' FROM PROPERTY LINE)

UWMC - Northwest View Analysis | Alternative 2 - Scenario 2



UWMC - Northwest View Analysis | Alternative 2 - Scenario 3



UWMC - Northwest View Analysis | Alternative 2 - Scenario 4



Source: NBBJ, 2023.

Figure 3.4-11

Viewpoint 3—N 120th Street/Meridian Ave N (Looking Southwest)

UWMC-Northwest 2024 Major Institution Master Plan Update
Draft EIS

Existing Condition



UWMC - Northwest View Analysis | Alternative 2 - Scenario 1



65' HEIGHT OVERLAY @ 20' SETBACK FROM PROPERTY LINE, @ 150' FROM CAMERA
175' HEIGHT OVERLAY @ 230' FROM CAMERA (APPROX. 100' FROM PROPERTY LINE)
POTENTIAL DEVELOPMENT ALMOST 800' FROM CAMERA

UWMC - Northwest View Analysis | Alternative 2 - Scenario 2



UWMC - Northwest View Analysis | Alternative 2 - Scenario 3



UWMC - Northwest View Analysis | Alternative 2 - Scenario 4



Source: NBBJ, 2023.

Figure 3.4-12

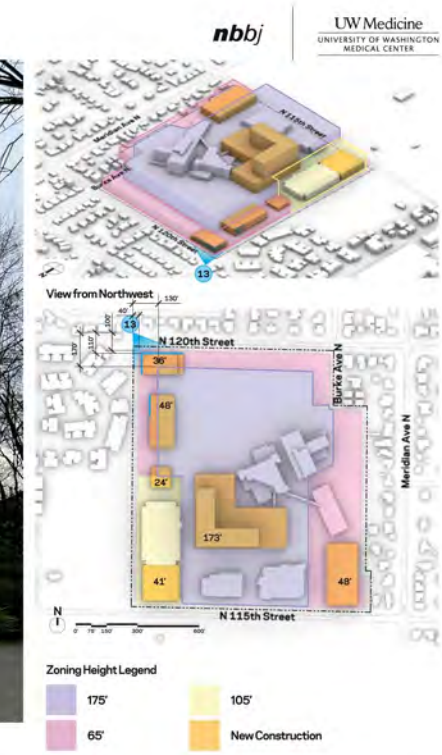
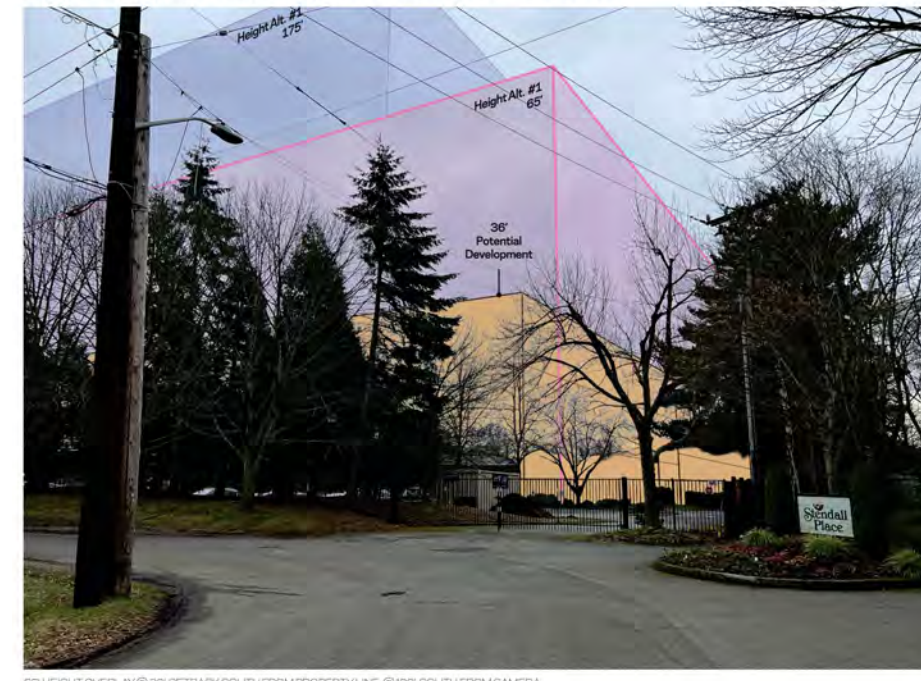
Viewpoint 4—Densmore Ave N (Looking South)

UWMC-Northwest 2024 Major Institution Master Plan Update
Draft EIS

Existing Condition



UWMC - Northwest View Analysis | Alternative 2 - Scenario 1

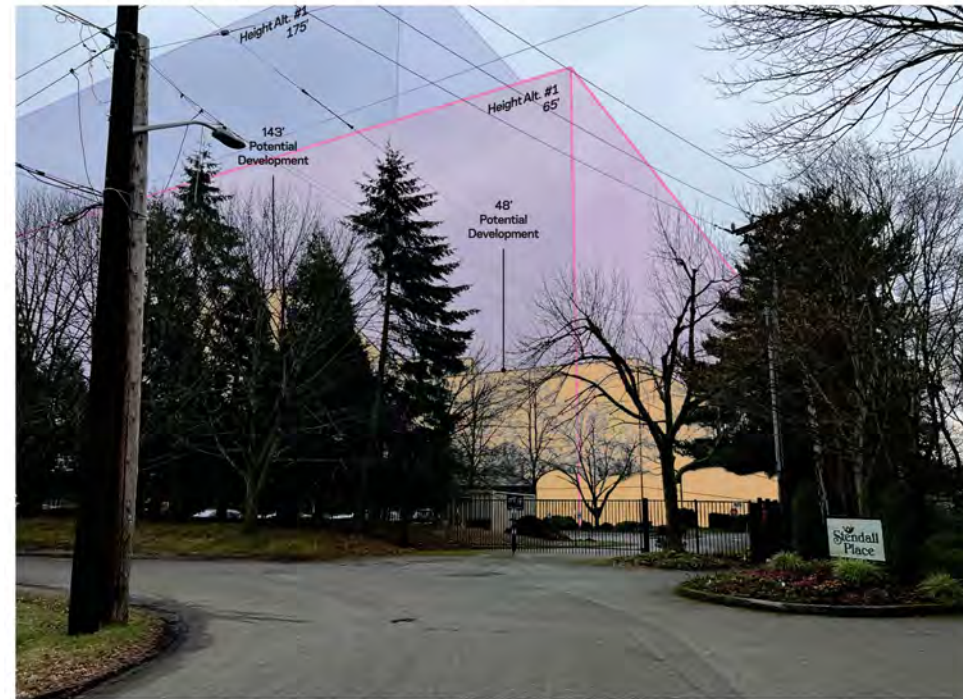


65' HEIGHT OVERLAY @ 20' SETBACK SOUTH FROM PROPERTY LINE, @ 100' SOUTH FROM CAMERA
175' HEIGHT OVERLAY @ 170' FROM CAMERA (APPROX 90' SOUTH FROM PROPERTY LINE)
POTENTIAL DEVELOPMENT ALMOST 100' FROM CAMERA

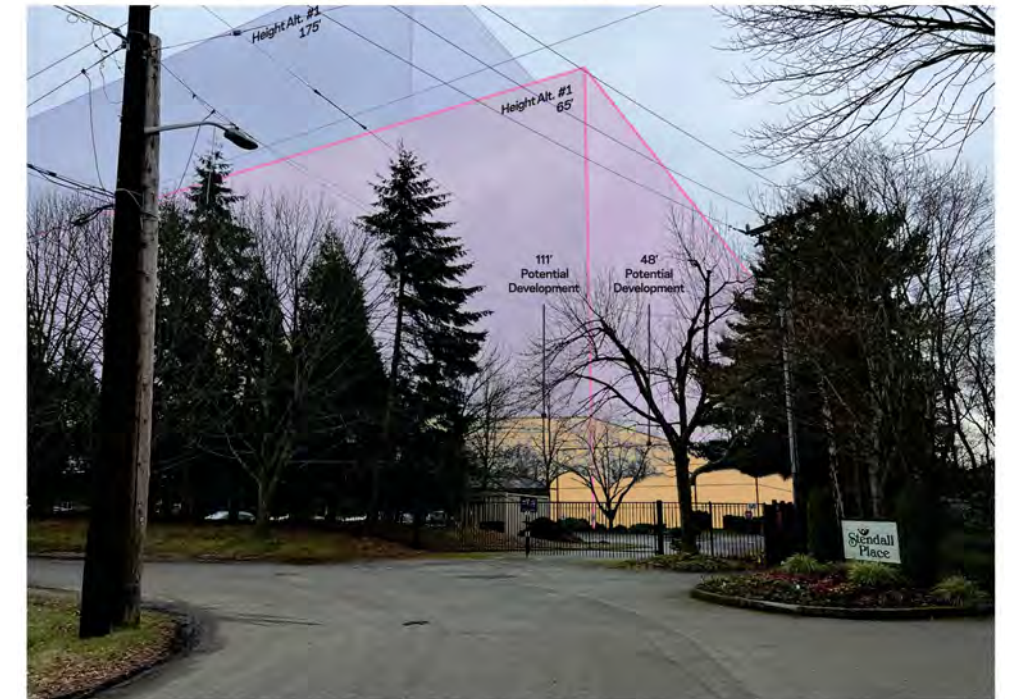
UWMC - Northwest View Analysis | Alternative 2 - Scenario 2



UWMC - Northwest View Analysis | Alternative 2 - Scenario 3



UWMC - Northwest View Analysis | Alternative 2 - Scenario 4



Source: NBBJ, 2023.

Figure 3.4-13

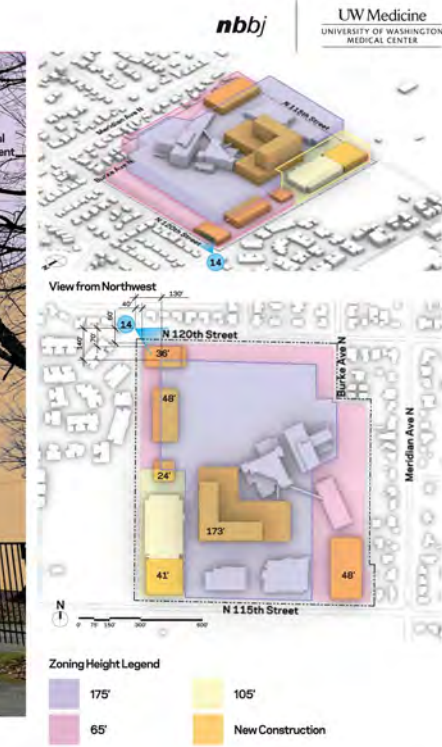
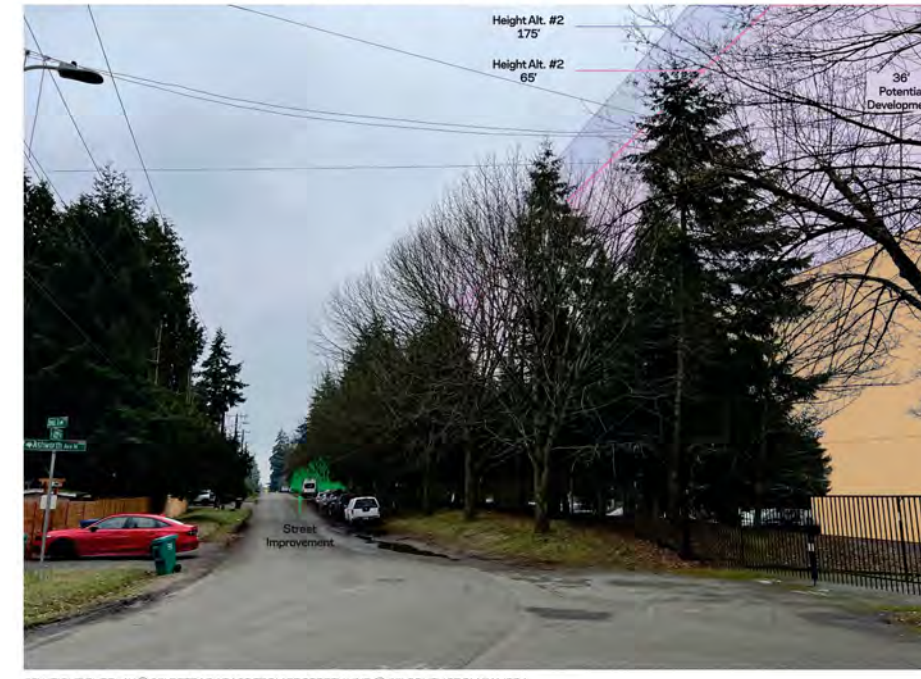
Viewpoint 5—Ashworth Ave N (Looking Southeast)

**UWMC-Northwest 2024 Major Institution Master Plan Update
Draft EIS**

Existing Condition



UWMC - Northwest View Analysis | Alternative 2 - Scenario 1

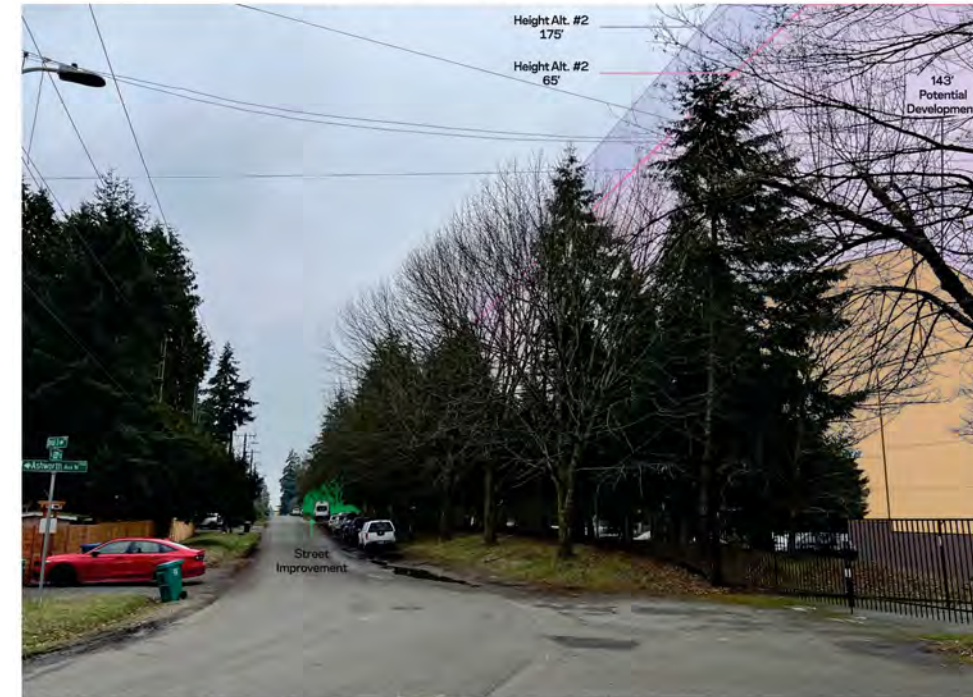


65' HEIGHT OVERLAY @ 30' SETBACK EAST FROM PROPERTY LINE @ 60' SOUTH FROM CAMERA
175' HEIGHT OVERLAY @ 130' EAST FROM CAMERA (APPROX. 110' EAST FROM PROPERTY LINE)
POTENTIAL DEVELOPMENT ALMOST 70' SOUTH FROM CAMERA

UWMC - Northwest View Analysis | Alternative 2 - Scenario 2



UWMC - Northwest View Analysis | Alternative 2 - Scenario 3



UWMC - Northwest View Analysis | Alternative 2 - Scenario 4



Source: NBBJ, 2023.

Figure 3.4-14

Viewpoint 6—Stendall Drive N (Looking East)

Viewpoint 7 – N 115th St

Similar to Alternative 1, Alternative 2 assumes a 175-foot building height overlay along the majority of the campus edge along N 115th St, with the 65-foot building height overlay along N 115th St at the east edge of campus (note that the width of the 65-foot building height under Alternative 2 is greater than under Alternative 1). Similar to Alternative 1, the building massing south of the existing parking structure under Alternative 2 would extend campus building form closer to N 115th St. under all of the massing scenarios and would be visually prominent. The upper portion of assumed 173-foot massing in center of campus would be visible in the background under massing scenarios 1 and 3. Although the amount buildings visible from this viewpoint would increase from existing conditions, the view would continue to reflect an urban medical center. See **Figure 3.4-15** for an illustration of the view from this location under Alternative 2.

No Action Alternative

Under the No Action Alternative, it is assumed that the approximately 862,000 sq. ft. of net new development of building space and proposed building height increases under the *MIMP Update* would not occur, and that only the remaining development capacity under the 1991 MIMP would be developed (approximately 26,000 sq. ft. of building space). Due to the lower level of development compared to Alternatives 1 and 2, the potential for views to new building development would be lower under the No Action Alternative, and the aesthetic and view conditions would remain similar to existing conditions.

LIGHT & GLARE

Alternative 1

Light

Under Alternative 1, potential development under the *MIMP Update* would add new sources of light to the campus including interior/exterior building lighting associated with new buildings, pedestrian-scale lighting along walkways and building entrances, and an increase in mobile sources of lighting such as vehicle headlights. New exterior light fixtures associated with development under the *MIMP Update* would continue to be shielded and sited to focus lighting and direct light away from adjacent off-campus land uses, and the potential for light impacts is anticipated to be low.

Development on the campus under the *MIMP Update* would also likely remove some existing light sources, including the potential to remove existing lighting associated with surface parking lots and certain buildings.

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Existing Condition



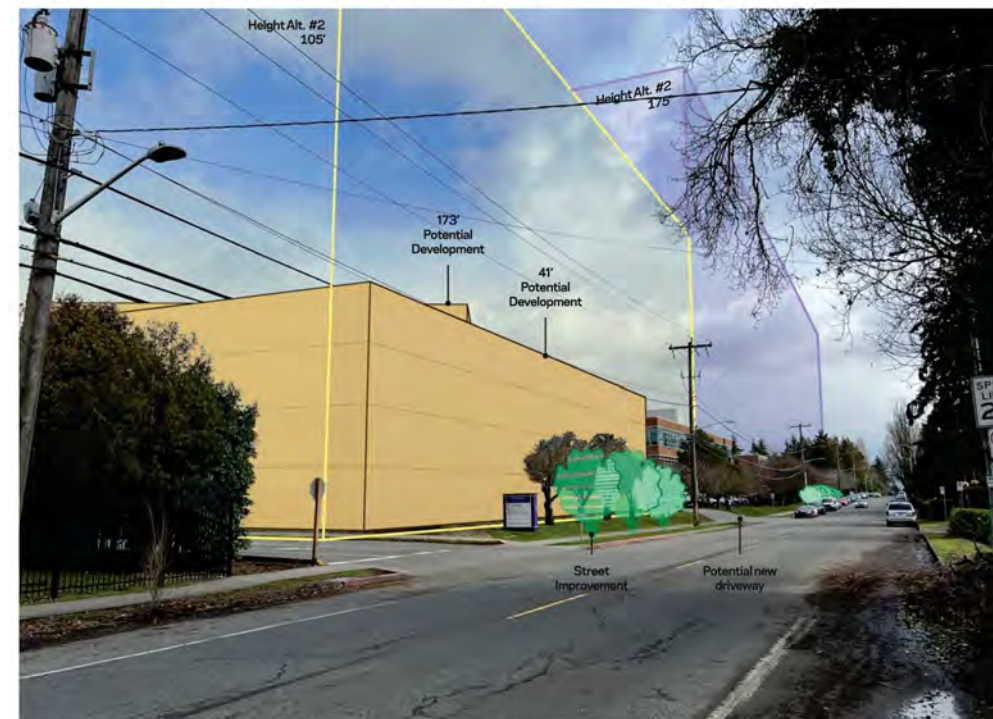
UWMC - Northwest View Analysis | Alternative 2 - Scenario 1 with South access



UWMC - Northwest View Analysis | Alternative 2 - Scenario 2 with South access



UWMC - Northwest View Analysis | Alternative 2 - Scenario 3 with South access



UWMC - Northwest View Analysis | Alternative 2 - Scenario 4 with South access



Source: NBBJ, 2023.

Figure 3.4-15

Viewpoint 7—N 115th Street (Looking Northeast)

Glare

The principal source of glare associated with most potential development projects under the *MIMP Update* would be from sunlight reflected off specular building surfaces. Factors influencing the amount of glare and the effect of glare include weather, time of day, building height, building width, orientation of building facades (particularly south facing facades), percent of glazed reflective material, and proximity of intervening structures and landscaping. All potential development projects under the *MIMP Update* would comply with the University's design review process (i.e., architectural and landscape review, and environmental review) which would include review of potential factors that could influence glare such as façade design, façade materials, and glazing. As a result, the potential for glare impacts under Alternative 1 is anticipated to be low.

Alternative 2

Light and glare conditions under Alternative 2 would be similar to those described for Alternative 1, and light and glare impacts with development under the *MIMP Update* are anticipated to be low.

No Action Alternative

Under the No Action Alternative, it is assumed that the approximately 862,000 sq. ft. of net new development of building space and proposed building height increases under the *MIMP Update* would not occur, and that only the remaining development capacity under the 1991 MIMP would be developed (approximately 26,000 sq. ft. of building space). Due to the lower level of development compared to Alternatives 1 and 2, potential light and glare impacts would be lower under the No Action Alternative, and the light and glare conditions would remain similar to existing conditions.

SHADOWS

Alternative 1

Potential future development and associated landscaping under Alternative 1 would generate shadows over adjacent portions of the campus and surrounding areas. In general, the time of greatest shading would occur during periods when the sun is at a low-angle, including mid- to late afternoon in the winter and late afternoon to early evening in the summer. While there are no existing public park/open spaces adjacent to the campus that would be affected by shadows from potential future development, shadows from the campus would extend to adjacent off-campus areas depending on the time of year and time of day. As noted above, shadow simulations were completed to provide a comparison between existing conditions and potential development under the EIS Alternatives. For the purposes of this analysis, shadows for three times of year are discussed including the Vernal

Equinox, Summer Solstice and Winter Solstice; shadows during the Autumnal Equinox would be the same as those occurring during the Vernal Equinox.

During the Vernal/Autumnal Equinox (**Figure 3.14-16**), development under Alternative 1 would cast shadows to the west during the morning hours (8 AM) and would shift to the north and east as the day progresses to the evening (5 PM). While shadows cast to the west in the morning and to the east in the evening would extend off-campus to adjacent properties, the presence of existing mature trees already casts shadows over these areas adjacent to the campus and as a result, shadows from potential development under Alternative 1 would generally be cast over areas that already receive shadows from existing trees.

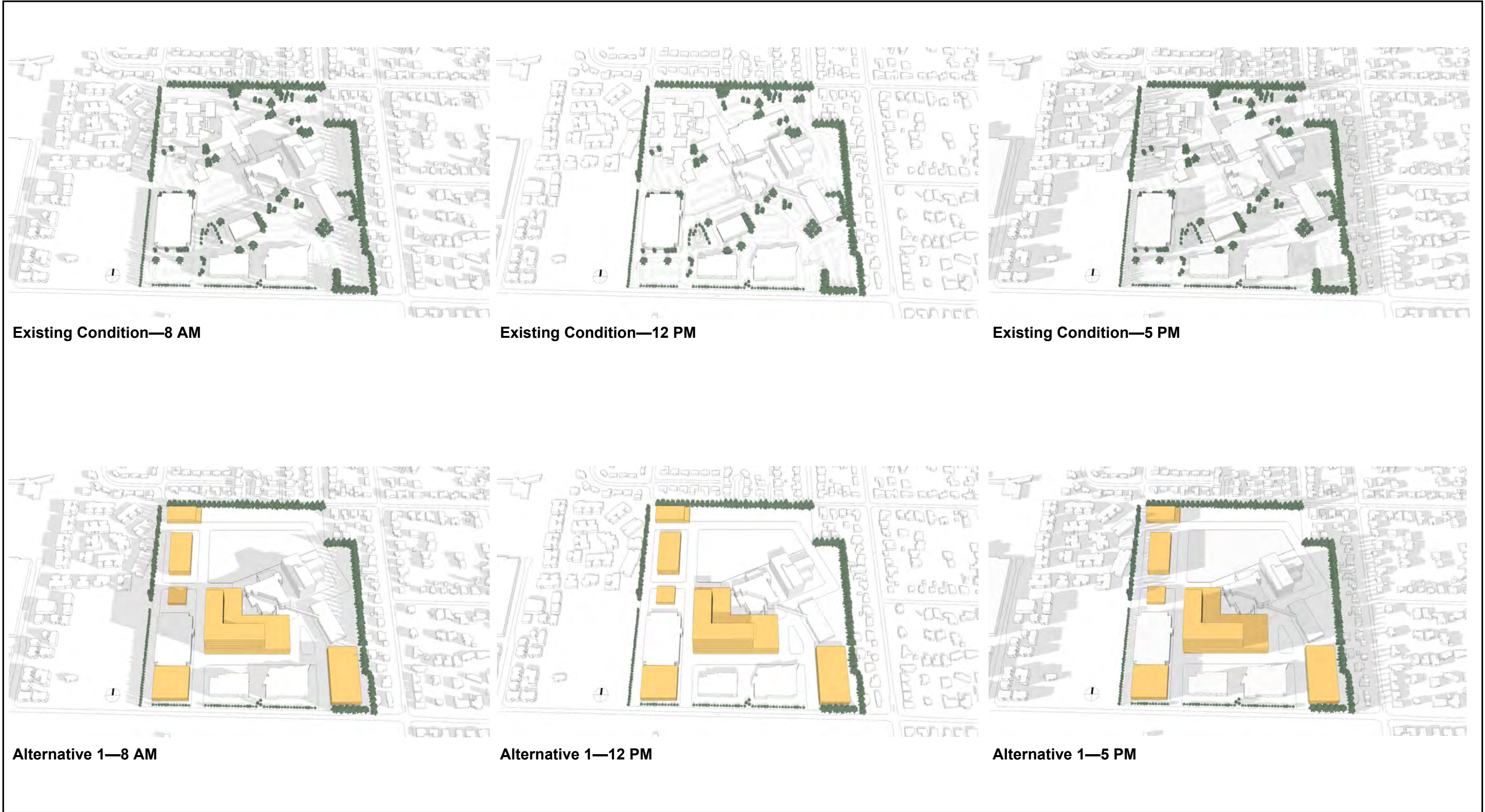
During the Summer Solstice (**Figure 3.14-17**), shadows from potential development under the *MIMP Update* would be cast in similar directions as during the Autumnal Equinox but those shadows would not extend as far. Shadows from potential development would generally remain within the campus boundary and not extend to adjacent properties. Due to the location of potential development in southeast area and the angle of the sun during the Summer Solstice, shadows would extend off-campus toward adjacent properties to the east but would blend with existing shadows that currently occur from mature trees that are located along the east campus boundary.

As under Alternative 1, all potential development projects would comply with the University's design review process and design standards (i.e., architectural and landscape review and environmental review) which would include a review of building orientation, building height, and associated potential shadows.

As illustrated in **Figure 3.14-18**, existing shadows during the Winter Solstice extend further than at any other time of year due to the low angle of the sun. Shadows from existing buildings and mature trees on the perimeter of the campus extend to adjacent areas to the west, north and east as morning transitions to late afternoon/early evening. As shown in **Figure 3.14-18**, shadows from potential development under Alternative 1 would follow a similar pattern as existing conditions and generally be cast over areas to the west, north and east that already receive shadows from existing buildings and mature trees.

All potential development projects would comply with the University's design review process and design standards (i.e., architectural and landscape review and environmental review) which would include a review of building orientation, building height, and associated potential shadows.

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Existing Condition—8 AM

Existing Condition—12 PM

Existing Condition—5 PM

Alternative 1—8 AM

Alternative 1—12 PM

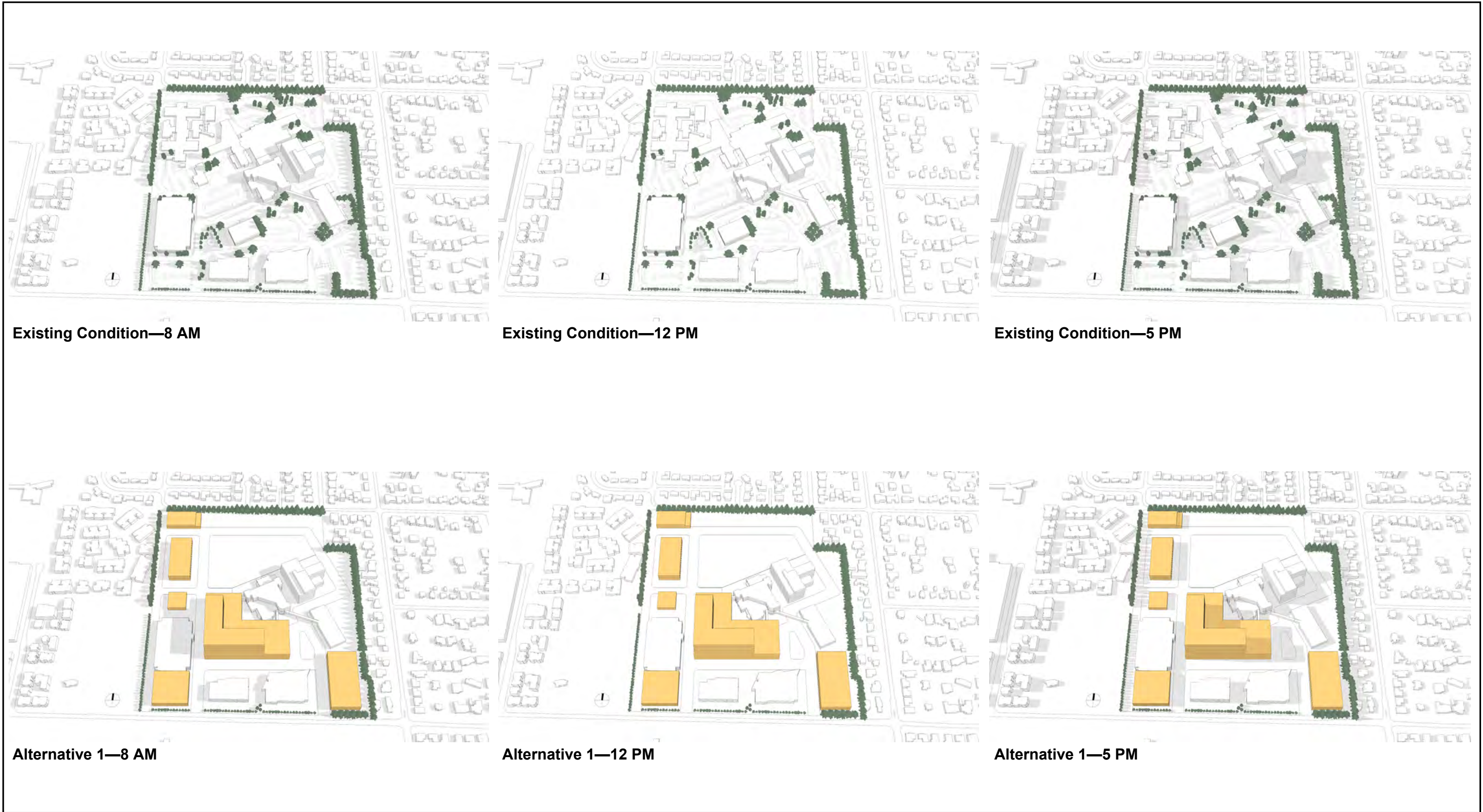
Alternative 1—5 PM

Source: NBBJ, 2023.

Figure 3.4-16

Shadows—Alternative 1 Vernal Equinox

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Existing Condition—8 AM

Existing Condition—12 PM

Existing Condition—5 PM

Alternative 1—8 AM

Alternative 1—12 PM

Alternative 1—5 PM

Source: NBBJ, 2023.

Figure 3.4-17

Shadows—Alternative 1 Summer Solstice

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Existing Condition—9 AM



Existing Condition—12 PM



Existing Condition—3:30 PM



Alternative 1—9 AM



Alternative 1—12 PM



Alternative 1—3:30 PM

Source: NBBJ, 2023.

Figure 3.4-18

Shadows—Alternative 1 Winter Solstice

Alternative 2

Shadows under Alternative 2 would be cast in similar directions and area as Alternative 1 but would reflect lower potential building heights but more expansive development. During the Vernal Equinox (**Figure 3.4-19**), shadows would cast to the west in the morning and to the east in the evening and would extend off-campus to adjacent properties, similar to Alternative 1. Existing mature trees along the perimeter of campus already cast shadows over these areas and as a result, shadows from potential development under Alternative 2 would generally be cast over areas that already receive shadows from existing trees.

Similar to Alternative 1, shadows from potential development during the Summer Solstice (**Figure 3.4-20**) would generally remain with the campus boundary and not extend to adjacent properties. Shadows from development in southeast corner of campus would extend toward adjacent properties to the east but would blend with existing shadows that currently occur from mature trees that are located along the east campus boundary.

During the Winter Solstice, shadows from potential development under Alternative 2 would extend further than at any other time of year due to the low angle of the sun, similar to Alternative 1. As shown in **Figure 3.14-21**, shadows from potential development under Alternative 2 would generally be cast over areas to the west, north and east that already receive shadows from existing buildings and mature trees.

No Action Alternative

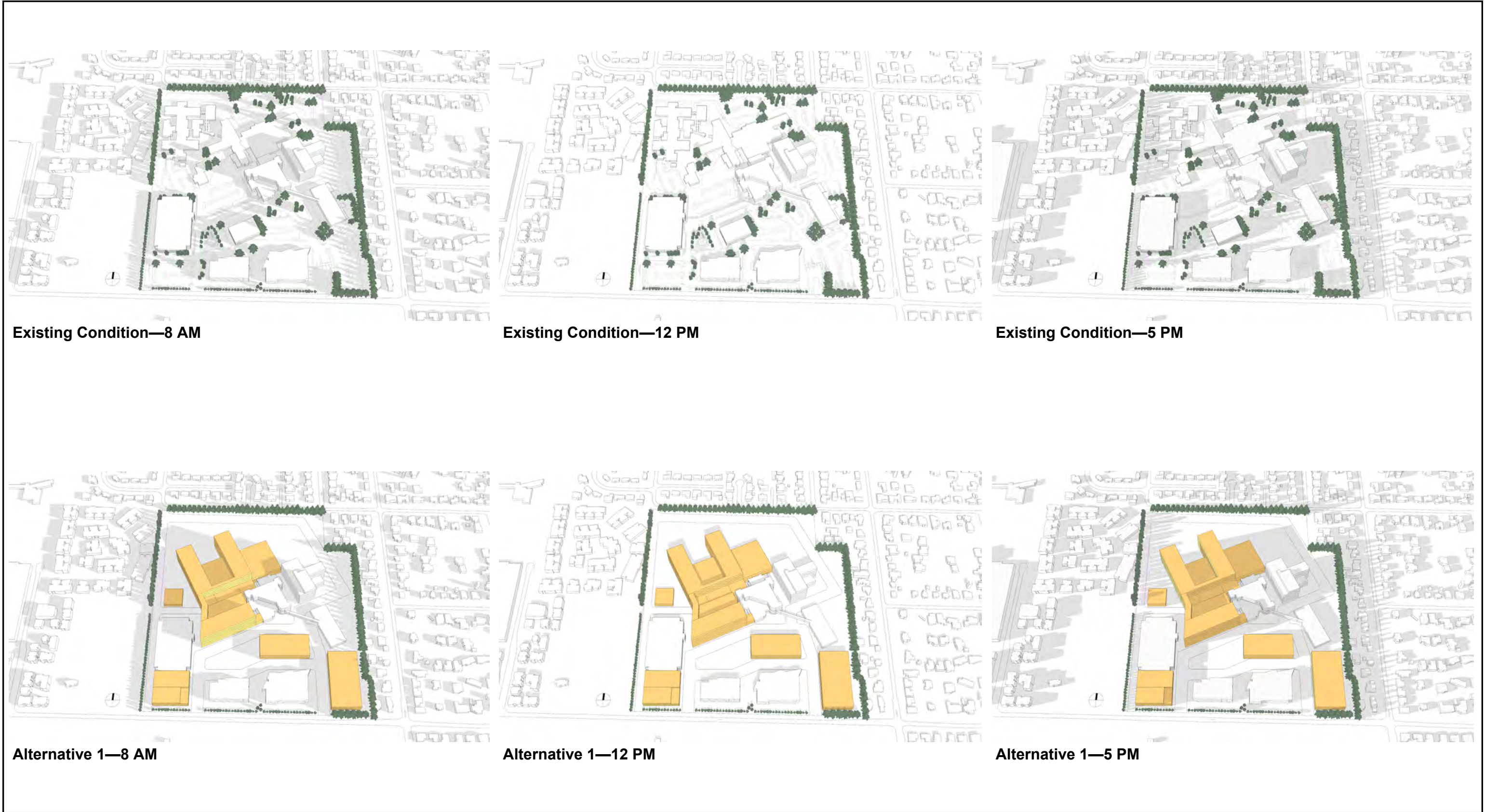
Under the No Action Alternative, it is assumed that the approximately 862,000 sq.ft. of net new development of building space and proposed building height increases under the *MIMP Update* would not occur, and that only the remaining development capacity under the 1991 MIMP would be developed (approximately 26,000 sq. ft. of building space). Due to the lower level of development compared to Alternatives 1 and 2, potential shadows would be lower under the No Action Alternative, and the shadow conditions would remain similar to existing conditions.

3.4.3 Mitigation Measures

Aesthetics

- Potential future development projects would be consistent with the development guidelines and development standards identified in the *MIMP Update*, including:

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Existing Condition—8 AM

Existing Condition—12 PM

Existing Condition—5 PM

Alternative 1—8 AM

Alternative 1—12 PM

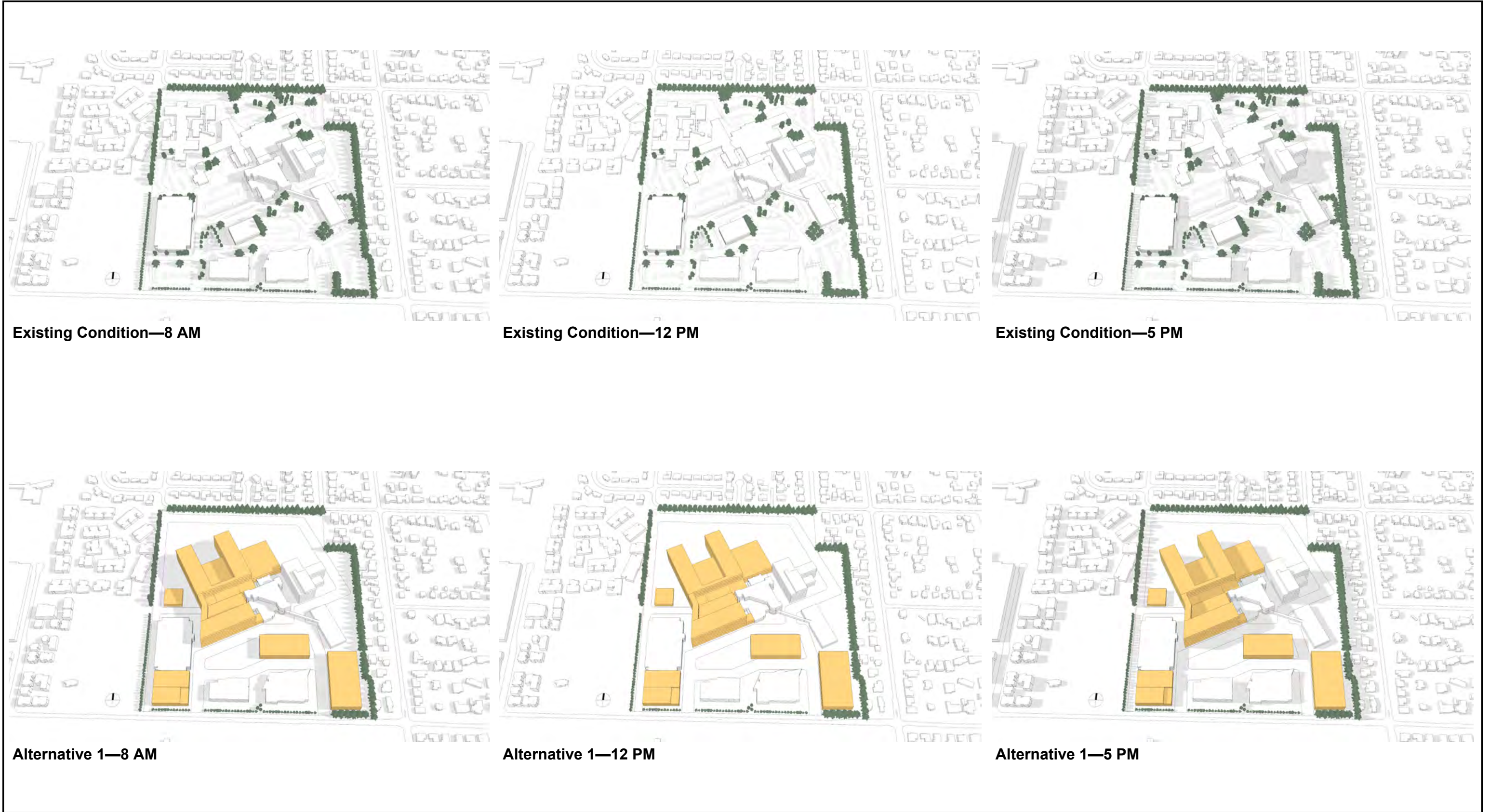
Alternative 1—5 PM

Source: NBBJ, 2023.

Figure 3.4-19

Shadows—Alternative 2 Vernal Equinox

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Existing Condition—8 AM

Existing Condition—12 PM

Existing Condition—5 PM

Alternative 1—8 AM

Alternative 1—12 PM

Alternative 1—5 PM

Source: NBBJ, 2023.

Figure 3.4-20

Shadows—Alternative 2 Summer Solstice

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Existing Condition—9 AM



Existing Condition—12 PM



Existing Condition—3:30 PM



Alternative 1—9 AM



Alternative 1—12 PM



Alternative 1—3:30 PM

Source: NBBJ, 2023.

Figure 3.4-21

Shadows—Alternative 2 Winter Solstice

- Provide visual screening to reasonably obscure a view from adjacent properties to campus utility equipment, support service areas, and/or surface parking operations. Screening shall be implemented through the use of vegetation, trees, fences, walls, and other materials. Screening will be maintained.
- Where the property abuts residential parcels, campus landscaped areas will be maintained to help create a landscape buffer for neighbors. Planting materials will incorporate trees and shrubs to help obscure campus activities and provide privacy.
- The University of Washington’s design review process (architectural and landscape review, and environmental review) would review all building projects and consider aesthetic/views as part of individual projects.

Light & Glare

- The University’s existing design review process (architectural and landscape review, and environmental review) would continue to be used to review all building projects on campus.
- The design of potential future development would consider the use of least reflective glazing available to minimize the effects of reflective solar glare.
- Exterior light fixtures would continue to be shielded and sited to focus lighting and direct light away from adjacent off-campus land uses.

Shadows

- All potential development projects would comply with the University’s design review process and design standards (i.e., architectural review and review and environmental review) which would include a review of building orientation, building height, and associated potential shadows.

3.4.4 Significant Unavoidable Adverse Impacts

Aesthetics

Development under the *MIMP Update* would result in changes to the aesthetic character of the campus, including increased density and building heights. The optional new driveway access from N 120th St. would include clearing of existing trees and increased ability to view building development in the center of campus. Implementation of the mitigation measures identified above are intended to minimize the potential for aesthetic impacts. Although the

potential for views to building development on campus would increase, the change in view could be interpreted as positive or negative depending on the perception of the individual.

Light & Glare

Potential future development under the *MIMP Update* would result in an increase in light and glare on campus associated with new buildings and associated vehicles. With the implementation of the mitigation measures identified above, no significant unavoidable adverse impacts are anticipated.

Shadows

Potential future development under the *MIMP Update* would result in an increase in shadows on campus associated with new buildings and associated campus landscaping. However, in general these shadows would be cast over areas that already receive shadows from existing buildings and mature trees. With the implementation of the mitigation measures identified above, no significant unavoidable adverse impacts would be anticipated.

3.5 HISTORIC & CULTURAL RESOURCES

This section of the Draft EIS describes the existing historic and cultural resource conditions on the UWMC-Northwest campus and in the site vicinity and evaluates the potential impacts that could occur as a result of the proposed *UWMC-Northwest 2024 MIMP Update (MIMP Update)*. This section is based on the *Northwest Hospital Reconnaissance Level Survey* prepared by Northwest Vernacular in January 2022.

3.5.1 Affected Environment

Historic Resources

In 1950, a 32-acre tract of land was purchased for the development of a new hospital west of Meridian Avenue N, between N 115th Street and N 120th Street. After a decade of planning, site clearing for the Northwest Hospital began in 1959 and the hospital opened in September 1960 with two wings (now called B Wing and C Wing) including four major and two minor surgery rooms, an emergency room, and patient rooms. Subsequent to opening in 1960, plans began almost immediately to expand the facility. In 1969, a convalescent center (NW Convalescent Center – now called E Wing) was constructed. The three-story Northwest Medical Arts building was constructed in 1973. A new hospital tower (now called A Wing) was completed in 1983. Additional buildings have been completed in the last two decades including the McMurray Medical Office Building, a parking garage, and the Seattle Cancer Care Alliance Proton Therapy Center. In 2010, the hospital became affiliated with the University of Washington and in 2020 it became officially known as the University of Washington Medical Center-Northwest. **Table 3.5-1** summarizes building development on the campus since its inception.

**Table 3.5-1
UWMC-Northwest Building Development Summary**

| Name | Year Built | Additions |
|---|------------|---------------------------------|
| Northwest Memorial Hospital (B Wing) | 1960 | 2010-2012 |
| Northwest Memorial Hospital (C Wing) | 1960 | 1983-2000, 2021 |
| Northwest Convalescent Center, Center for Medical Rehabilitation (E Wing) | 1969 | 1978-1998, 1980-1998, 2001-2002 |
| Storage | Ca. 1969 | |

| Name | Year Built | Additions |
|--|------------|----------------------------------|
| Day Care Center | Ca. 1978 | 1992 |
| Easy Street Environments (associated walkways and greenhouses) | 1988 | 1989 |
| Hospital Tower (A Wing) | 1983 | 2001-2002, 2003-2005, 2013 |
| Medical Office Building | 1982 | N/A |
| Northwest Professional Center, Medical Arts Building | 1974 | N/A |
| Entrance Kiosks | 2001-2002 | N/A |
| McMurray Medical Office Building | 2003-2005 | N/A |
| Parking Garage | 2003-2005 | N/A |
| Gazebo, Jack and Irene Curran Fountain Plaza | 2005-2007 | N/A |
| Shed | 2008-2009 | N/A |
| Seattle Cancer Care Alliance Proton Therapy Center | 2013 | N/A |

Source: Northwest Vernacular, 2022.

As a whole, the UWMC-Northwest campus does not meet the eligibility for listing as a NRHP historic district, nor does it meet the eligibility for listed as a Seattle Landmark District. There are no existing buildings on the campus that are currently listed on the NRHP or as a City of Seattle Landmark. Eligibility would be determined on a building-by-building basis should redevelopment be initiated.

There are no NRHP listed or Landmark buildings in the immediate vicinity of the UWMC-Northwest campus as well. The closest listed buildings are Ingraham High School which is listed as a Seattle Landmark and is located approximately 0.7 miles to the north of campus, and the James and Pat Chiarelli House which is listed on the NRHP and is located over one mile to the southeast of the campus.

Cultural Resources

The UWMC-Northwest campus is located in the Haller Lake neighborhood of north Seattle. This area and much of the City of Seattle is the ancestral land of the Duwamish Tribe, Seattle First People. Since time immemorial, the Duwamish Tribe have called the land around

Seattle home and frequented Haller Lake via trails connecting it with Green Lake and Licton Springs to the south. The arrival of Euro-Americans in the greater Puget Sound region in the early 1800s led to the colonization and settlement of Seattle and surrounding areas.

John Welch filed the first 160-acre homestead claim around Haller Lake in 1869 (immediately north of the UWMC-Northwest campus). Other claims were filed and plats followed in the surrounding areas. Clare E. Hutson arrived in Seattle in 1918 and acquired nearly 200 acres of real estate near Haller Lake which included the current UWMC-Northwest campus site. She never platted or developed the land and the property remained an open field providing grazing land for animals from surrounding farms until it was acquired as a hospital site in 1950 (*Northwest Vernacular, 2022*).

Archaeological sites are often expected to be found on particular topographic landforms and adjacent to specific resources, and predictive models have been developed that reflect these expectations. Typically, assumptions about potential locations of cultural resources have been derived from previous archaeological data, from ethnographic literature, and from field experience. These models rely on the understanding of past human behavior to select environmental variables such as slope, distance to water, land cover, geology, and proximity to previously mapped sites or historic features. Once pertinent context has been established, it is then determined which variables are most predictive for the occurrence of archaeological sites. The variables are then weighted toward those having the most influence on past human settlement patterns, resource acquisition locations and strategies. The Washington Information System for Architectural and Archaeological Records Data (WISAARD) Archaeological Resources Predictive Model (*DAHP, 2023*) was reviewed for the UWMC-Northwest campus. According to the predictive model, the campus would be considered a moderately low risk for archaeological resources.

3.5.2 Impacts of the Alternatives

This section of the Draft EIS identifies the potential historic and cultural resource impacts of the proposed *MIMP Update* on the campus and in the surrounding areas that could occur with development under the EIS Alternatives.

ALTERNATIVES 1 AND 2

Consistent with the proposed *MIMP Update*, Alternatives 1 and 2 include approximately 862,000 sq. ft. of net new building space throughout the campus, including new hospital space and new medical office building space.

Historic Resources

As noted under the Affected Environment, there are no existing buildings on or adjacent to the campus that are currently listed on the NRHP or as a City of Seattle Landmark and as such, no direct or indirect impacts to listed historic resources would be anticipated with development under the proposed *MIMP Update*.

Project-specific actions under the *MIMP Update* that would affect buildings would include a project-specific historic resources review to determine potential impacts and mitigation measures, if necessary.

The University's planning process for capital projects involves Capital Projects Design Review, review by the University's Architectural Commission, and the Board of Regents. The Board of Regents is ultimately responsible for the stewardship of the University's historic and cultural resources. The University of Washington has several processes that ensure consideration of historic resources. Each review body is responsible for raising issues for consideration and balancing the desirability and means of protecting, enhancing and perpetuating historic, cultural, engineering and architectural campus resources in terms of buildings, spaces and elements of the environment.

While the University of Washington is particularly sensitive to historical structures over 50 years old, these same considerations are applied to all development. The University's Design Review process is an important tool utilized by the University for early, continuous, consistent and documented consideration of the impact of a proposed development on historic features of the campus. Analysis is conducted to assess the architectural context of the site location, its historic context, as well as environmental considerations, Master Plan guidelines, and landscape/open space context. To further ensure that historic resources are considered, the University would prepare an Historic Resources Addendum (HRA) for any project that makes exterior alterations to a building that is over 50 years of age or is located adjacent to campus buildings or features over 50 years of age.

Cultural Resources

Development under Alternatives 1 and 2 could impact cultural resources if any are present within the campus area. However, according to the WISAARD Predictive Model, the entire campus area is considered a moderately low risk (the second lowest predictive designation available under the model) for archaeological resources. Cultural resources surveys are not recommended under this designation but can be performed contingent upon project parameters. In addition, the existing campus area is already highly developed (approximately 62 percent of the site is in impervious surfaces) from prior building and infrastructure projects on the campus and as such, it is likely that prior development of the campus has already disturbed and/or removed native soils that were previously on the site.

As such, the likelihood for cultural resource impacts from development under the proposed *MIMP Update* is anticipated to be low.

Indirect

Two scenarios for new access driveways to the UWMC-Northwest campus are considered, including a scenario reflecting a new (3rd) access from N 115th Street, and a second scenario reflecting a new driveway from N 120th Street. Both access driveway scenarios would not result in any anticipated indirect historic or cultural resource impacts.

NO ACTION ALTERNATIVE

Under the No Action Alternative, it is assumed that the approximately 26,000 sq. ft. of campus building capacity that remains under the 1991 Master Plan would be developed and no other physical improvements or changes to building height overlays and setbacks would occur. Given that the location and extent of development would be controlled by the 1991 Master Plan and the amount of development would be approximately three percent of that under Alternatives 1 and 2, the potential for historic and cultural resource-related impacts may be lower under the No Action Alternative, depending on if any resource were deemed eligible.

3.5.3 Mitigation Measures

The following measures would be available for development under the proposed *MIMP Update*.

Historic Resources

- The University of Washington's existing internal design review processes (architectural, environmental review, and Board or Regents) would continue to review and authorize major building projects in terms of siting, scale, and the use of compatible materials relative to historic structures.
- The University of Washington would continue to follow the Historic Resources Addendum (HRA) process for all proposed projects that include exterior alterations to buildings over 50 years old or are located adjacent to buildings or features over 50 years old. The HRA is intended to ensure that important elements of the campus, its historic character and value, environmental considerations and landscape context are valued.

Cultural Resources

- In the event that archaeological deposits are inadvertently discovered during construction of a development project, ground-disturbing activities would be halted immediately, and the University of Washington shall be notified. The University would then contact DAHP and the interested Coast Salish Native Americans, as appropriate, and as described in the recommended inadvertent discovery plan.
- Any human remains that are discovered during construction at a potential development site would be treated with dignity and respect. DAHP procedures would be followed.
 - If ground-disturbing activities encounter human skeletal remains during the course of construction, then all activity that may cause further disturbance to those remains must cease, and the area of the find must be secured and protected from further disturbance. In addition, the finding of human skeletal remains must be reported to the county coroner and local law enforcement in the most expeditious manner possible. The remains shall not be touched, moved, or further disturbed.
 - The county coroner will assume jurisdiction over the human skeletal remains and make a determination of whether those remains are forensic or non-forensic. If the county coroner determines the remains are non-forensic, they will report that finding to the DAHP. DAHP will then take jurisdiction over those remains and report them to the appropriate cemeteries and affected tribes. The State Physical Anthropologist will make a determination of whether the remains are Indian or non-Indian, and report that finding to any appropriate cemeteries and the affected tribes. The DAHP will then handle all consultation with the affected parties as to the future preservation, excavation, and disposition of the remains.

3.5.4 Significant Unavoidable Adverse Impacts

With implementation of the mitigation measures identified above, no significant unavoidable adverse historic or cultural resource impacts would be anticipated under the EIS Alternatives.

3.6 TRANSPORTATION

This section summarizes existing traffic and transportation conditions on the UWMC-Northwest campus and in the site vicinity and evaluates the potential impacts to traffic and transportation conditions that could occur as a result of the proposed *MIMP Update*. This section summarizes information contained in the Transportation Discipline Report prepared by the Transpo Group (**Appendix E**). Please see **Appendix E** for additional details on the methodology used for collection of data and analysis, and for additional details contained in figures and tables provided to illustrate the information.

The following provides an overview of the alternatives evaluated as part of the EIS, focusing on the transportation aspects of each. A more detailed description of the alternatives is included in Chapter 2.

No Action Alternative – Includes the approved development to date including the existing 549,697 gross square feet (gsf) medical center and the Behavior Health Teaching Facility (BHTF) which is an additional 188,846 gsf (3035557-LU/6757676-CN). An additional 26,000 gsf of development was assumed as the remaining development balance under the current 1991 MIMP. This results in a total of 764,543 gsf for the No Action Alternative. Parking for the No Action condition includes the existing 1,605 on-site parking stalls as well as the net increase of 28 stalls associated with the BHTF project for a total of 1,633 on-site parking stalls. No increase in parking was assumed as part of the 26,000 gsf of remaining development in the MIMP. The two (2) existing access points that exist along N 115th Street will be maintained under the No Action Alternative.

Alternative 1 – Assumes a campus total of up to 1,600,000 gsf, equating to up to 835,457 gsf of net new development. For purposes of the traffic analysis, a total of 800,000 gsf was assumed to be developed by 2030, with the remaining completed by 2040. The campus parking supply for Alternative 1 will be provided per the MIMP development standards which identifies a maximum supply estimated to be up to 3,300 stalls assuming the campus's current SOV goal of 65 percent for employees. Two options for an additional campus access point were evaluated under the MIMP. Access options evaluated for Alternative 1 include maintaining the two (2) existing access points along N 115th Street and providing a third access point via either N 115th Street or N 120th Street. Additionally, as the location of the on-site parking supply has not been fully defined within the MIMP as it is dependent on where development on the campus occurs, the distribution of parking is evaluated for each access option considering a scenario that has parking (a) equally distributed or (b) concentrated to the west side of the campus.

Alternative 2 – The development size, timing, site access, and parking for Alternative 2 are consistent with Alternative 1 with changes limited to building heights, massing, etc. Since

there are no changes in the overall development plan or potential access point locations, no additional analysis for this alternative was conducted.

The scope of the transportation analysis conducted for the DEIS was coordinated with staff from the Seattle Department of Construction and Inspections (SDCI) and the Seattle Department of Transportation (SDOT). The following transportation elements were evaluated, and results are summarized in this section:

- **Trip Generation** – The basis of the existing, No Action, and Alternatives 1 and 2 trip generation for UWMC-Northwest is existing traffic counts conducted during the weekday AM and PM peak periods with the exception of the trip generation of the BHTF which is assumed consistent with the previous study completed for that specific development. Trip generation rates for Alternatives 1 and 2 account for right-sizing the hospital spaces.
- **Street System** – The existing and future planned street system are identified. Impacts to the street system are evaluated based on potential changes to the nearby street network connectivity.
- **Non-Motorized Transportation** – The existing and future pedestrian and bicycle system surrounding the site is evaluated. The number of non-motorized trips are estimated for the Alternatives and any impacts associated with those trips are reviewed.
- **Transit Service** – Transit service near the campus is reviewed including frequency, service area, proximity, and capacity. Future investments in the local transit system have been identified. Impacts to the transit capacity are evaluated based on the estimated number of transit trips.
- **Traffic Volumes** – Existing traffic volumes were collected at the study intersections in January and July 2023 during both the weekday AM (7-9 a.m.) and PM (4-6 p.m.) peak periods. Future (2030 and 2040) forecast traffic volumes for the No Action conditions are comprised of the existing traffic volumes, background traffic growth, traffic generated from the planned “pipeline” developments, and the trips associated with the No Action allowable development. Alternatives 1 and 2 traffic volumes were then estimated by adding the trip generation for Alternatives 1 and 2 to the No Action volumes.
- **Traffic Operations** – The traffic operations are evaluated at the study intersections based on level of service (LOS) based on the existing and forecast traffic volumes of each Alternative.
- **Traffic Safety** – Recent collision records are reviewed within the study area to identify existing traffic safety issues at the study intersections. Potential future traffic impacts are reviewed relative to existing collision history patterns and forecast growth of movements.
- **Site Loading** – The capacity of the loading docks are evaluated based on the planned number of loading docks and overall demand associated with the 1.6M gsf identified in the MIMP.

The transportation analysis included an evaluation of two future horizon years: 2030 and 2040. Based on the net new trip generation estimated for the Action Alternatives, trip distribution assumptions, and coordination with SDCI and SDOT staff, 12 off-site study intersections were identified to be evaluated during the weekday AM and PM peak hours.

1. Aurora Avenue N/N 130th Street
2. 1st Avenue NE/N 130th Street
3. Aurora Avenue N/N 115th Street
4. Meridian Avenue N/N 115th Street
5. Aurora Avenue N/N 105th St/N Northgate Way
6. Meridian Avenue N/Northgate Way
7. I-5 Southbound Ramps/Corliss Avenue N/N Northgate Way
8. I-5 Northbound Ramp/1st Avenue NE/N Northgate Way
9. 1st Avenue NE/I-5 Northbound Ramp/NE 107th Street
10. Meridian Avenue N/N 120th Street
11. 1st Avenue NE/N 117th St
12. Aurora Avenue N/N 125th St

3.6.1 Affected Environment

Campus Overview

The campus currently consists of 549,697 gsf of medical campus uses. This includes conventional hospital functions as well as supportive medical office facilities. Access to the site is provided via two driveways located along N 115th Street. An additional locked access, used primarily for special deliveries or construction access is located along N 120th Street. Currently the Behavioral Health Teaching Facility (BHTF) approved under the previous MIMP is anticipated to open in early 2024. Future activity associated with this facility is captured in the analysis of the No Action conditions.

Trip Generation

Vehicle trip generation for the campus was defined based on weekday AM and PM peak hour counts collected over a two-day period. Average traffic counts for the two day period for the AM and PM peak hour period totaled 606 trips and 516 trips, respectively. Based on the current square footage of the campus, this translates to a weekday AM peak hour rate of 1.10 trips/1,000 gsf and a PM peak hour trip rate of 0.94 trips/1,000 gsf.

Person trips were also estimated for the campus based on the observed vehicle trip generation and results from the UWMC – Northwest Commute Trip Reduction (CTR) survey. Although the survey is conducted for campus employees, the results were applied to the broader campus community. The results of the CTR survey showed an overall non-vehicle model split of 11 percent.

Street System

The campus is bordered to the south by N 115th Street, a Collector Arterial, and to the north with N 120th Street, a non-arterial. Regional access to the site is provided via Aurora Avenue N and Meridian Avenue N. The classification of the other streets in the vicinity of the site are shown below in **Table 3.6-1**.

TABLE 3.6-1
Existing Street Network Summary

| Roadway | Arterial Classification ¹ | Posted Speed Limit | Number of Travel Lanes | Parking? | Sidewalks? | Bicycle Facilities? |
|-------------------|--------------------------------------|---------------------|------------------------|------------------|------------------|---------------------|
| Aurora Avenue N | Principal Arterial | 40 mph ² | 6-7 | No | Intermittent | No |
| N Northgate Way | Principal Arterial | 30 mph | 4 | No | Yes | No |
| Meridian Avenue N | Collector Arterial | 25 mph | 2 | Yes ³ | Yes | Yes ⁴ |
| N 115th Street | Collector Arterial | 25 mph | 2 | Yes | Yes ⁵ | No |
| N 117th Street | Non-Arterial | 25 mph | 2 | Yes | No | No |
| N 120th Street | Non-Arterial | 25 mph | 2 | Yes | Yes ⁶ | No |
| N 125th Street | Collector Arterial | 25 mph | 2 | No | Yes | Yes |
| N 130th Street | Principal Arterial | 30 mph | 4 | No | Yes | No |
| 1st Avenue NE | Collector Arterial | 30 mph | 2 - 4 ⁷ | Yes ⁸ | Yes ⁹ | Yes ¹⁰ |

¹ Based on the Seattle Arterial Classification Map.

² Posted speed limit of 40 mph north of N 115th Street and 35 mph south of N 115th Street.

³ Time restricted parking is only available on the west side between N 122nd Street and N 115th Street.

⁴ Provided only south of N Northgate Way.

⁵ Provided only on the north side between Aurora Avenue N and Meridian Avenue N.

⁶ Provided only on the south side between 1st Avenue NE and Corliss Ave N.

⁷ Two travel lanes present north of I-5.

⁸ Provided only on the east side between NE Northgate Way and NE 112th St, and intermittent north of N 117th St.

⁹ Provided on the east side only south of N 117th St, and west side only north of N 117th St.

¹⁰ Provided only north of NE 115th St and south of NE 103rd St.

Transit Service

Transit service in the immediate vicinity of the site is operated by King County Metro. Stops are provided adjacent to the site along Meridian Avenue N and further west along Aurora Avenue N. There is one stop located onsite serving Route 346. In total, there are four routes that operate in the vicinity of the site operating with varying headways, with the shortest at 5 minutes and the longest at 30 minutes. The shortest headway is associated with the Rapid Ride E-Line operating along Aurora Avenue N, less than ½ mile from the campus.

LINK light rail Northgate Station, operated by Sound Transit, provides connections to regional transit routes operated by King County Metro and Snohomish County. Northgate Station is located approximately 1 mile from the campus. There are currently no routes that connect the UWMC – Northwest campus to the Northgate Station area.

A transit capacity analysis was conducted for those routes operating in the vicinity of the site. This analysis utilized Fall 2022 ridership, capacity, and frequency data provided by King County Metro. The analysis found the onboard utilization on the buses surrounding campus range between 8 and 31 percent, such that all of the routes serving the campus have remaining capacity to accommodate additional riders during the weekday peak periods.

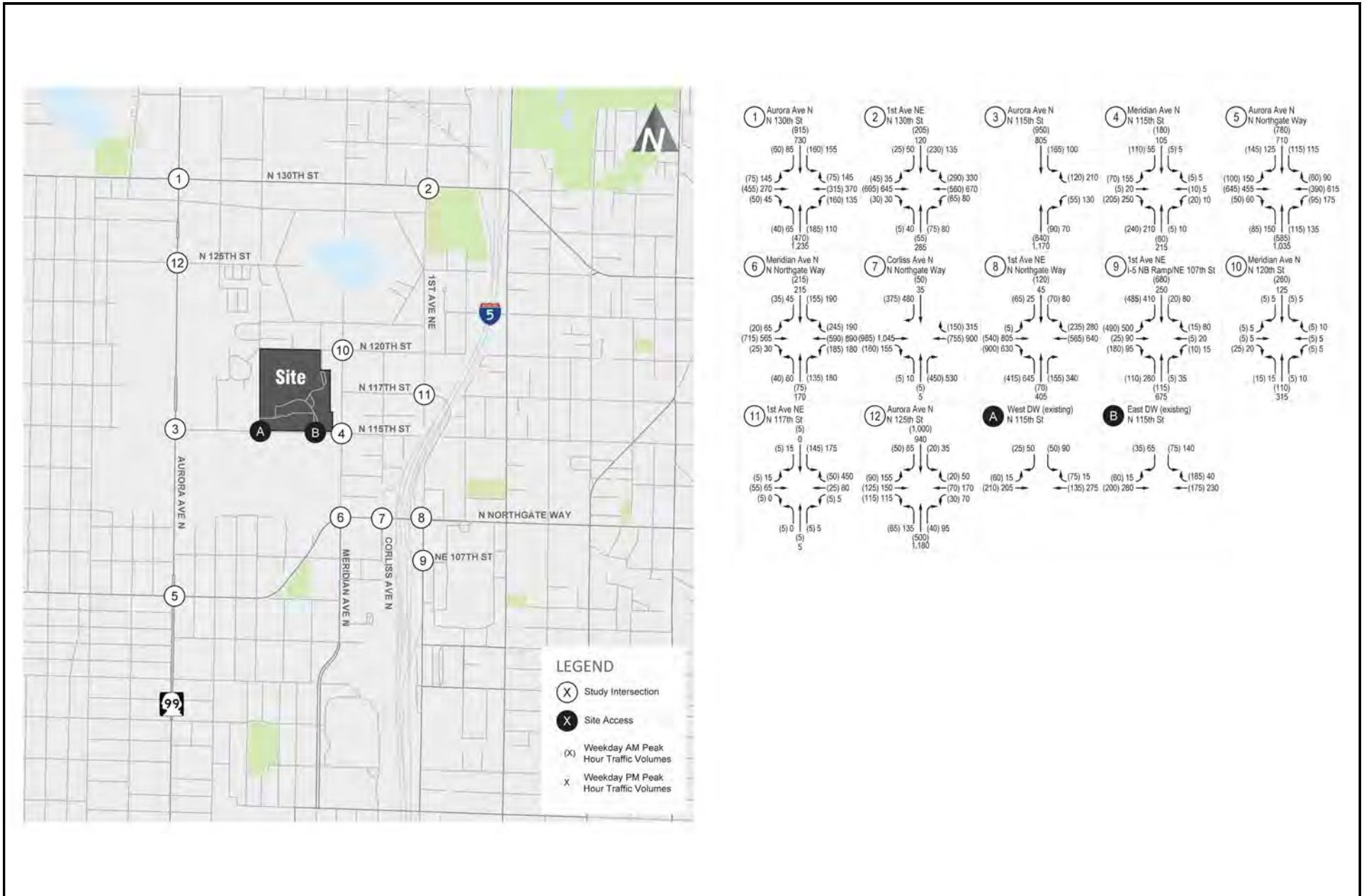
Non-Motorized Facilities

As noted previously sidewalks are provided in the vicinity of the site inclusive of connections to all transit routes located within the vicinity of the site. Bike lanes are provided along Meridian Avenue N, proximate to the campus. Based on the results of the CTR survey, pedestrian and bicycle mode splits for employees was 3 percent.

Traffic Volumes

Existing traffic volumes at the off-site study intersections were based on traffic counts collected in January 2023 and in May 2022. The existing weekday AM and PM peak hour traffic volumes are shown on **Figure 3.6-1**.

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Source: The Transpo Group, 2023.

Figure 3.6-1
Existing Weekday Traffic Volumes

Traffic Operations

Weekday peak hour traffic operations for existing conditions are evaluated at the study intersections. The operational characteristics of an intersection are determined by calculating the intersection level of service (LOS). At signalized and all-way stop controlled intersections, LOS is measured in average control delay per vehicle and is typically reported using the intersection delay. At side-street stop-controlled intersections, LOS is measured in average delay per vehicle and is reported for the worst operating movement of the intersection.

Traffic operations and average vehicle delay for an intersection can be described qualitatively with a range of levels of service (LOS A through LOS F), with LOS A indicating free-flowing traffic and LOS F indicating extreme congestion and long vehicle delays. The City of Seattle's Comprehensive Plan does not define a LOS standard for individual intersections; however, the City generally recognizes LOS E and F as poor operations for signalized locations and LOS F for unsignalized locations. The results of the existing conditions analysis are summarized in **Figure 3.6-2**.

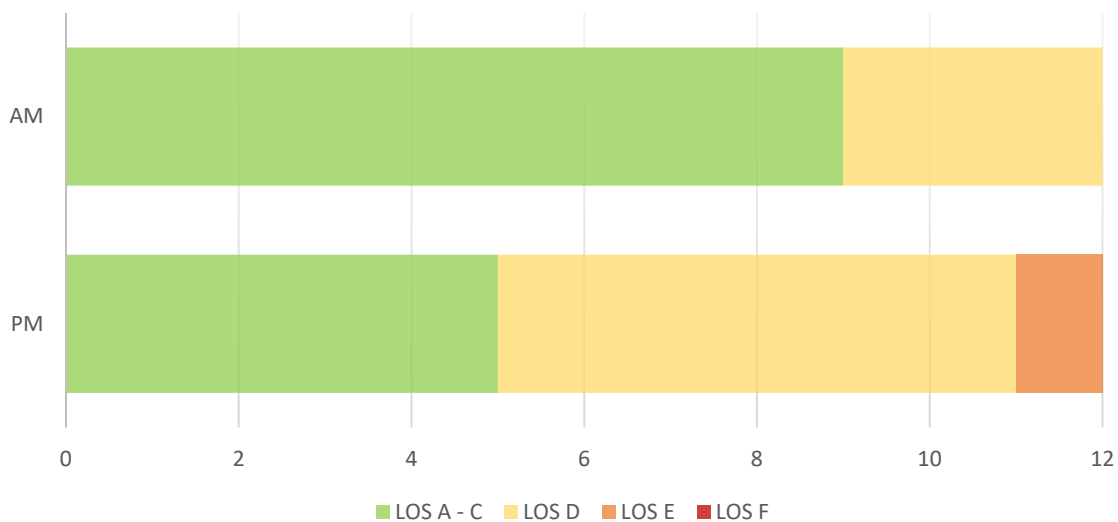


Figure 3.6-2 Existing Conditions LOS Summary

As shown in **Figure 3.6-2**, all intersections are currently operating at LOS D or better during the weekday AM and PM peak hours with the exception of the 1st Avenue S/I-5 NB Ramp/NE 107th Street intersection which is currently operating at LOS E during the weekday PM peak hour.

Traffic Safety

Recent collision records were reviewed within the study area to identify existing traffic safety issues at the study intersections and along the project site frontage. The most recent three-year summary of accident data from the Washington State Department of Transportation (WSDOT) is for the period between January 1, 2019 and December 31, 2021.

SDOT defines High Collision Locations (HCL) as signalized intersections with an average of 10 or more collisions, unsignalized intersections with an average of 5 or more collisions, mid-block locations with an average of 10 or more collisions, and locations with 5 or more pedestrian or bicycle collisions in the previous three years. Intersections designated as high accident locations are targeted for future safety improvements in an effort to reduce the occurrence of accidents.

Based on the collision history at the study area intersections, only the Meridian Ave N/N Northgate Way intersection meets the City of Seattle HCL criteria. The remaining study intersections had an average of fewer than 8 collisions reported per year, with the exception of the Corliss Ave N/N Northgate Way intersection, which averaged just under 10 collisions per year.

Note that the majority of collisions resulted in property damage throughout the study area and there were no reported fatalities. There were 12 collisions involving a pedestrian or bicyclist that occurred at the signalized intersections of N 130th Street, N 125th Street, and N 115th Street along Aurora Avenue N and 1st Avenue NE, Meridian Avenue NE, and Corliss Avenue N along N Northgate Way as well as the unsignalized Meridian Avenue N/N 115th Street intersection. The existing safety concerns along Aurora Avenue N are known and there are planned improvements along the Aurora Avenue North corridor to address safety and mobility issues, which are described in the No Action section.

Loading Berth Analysis

The UWMC – Northwest campus is primarily served by a single loading dock that contains five loading berths, of which three are actively used. The other two berths to accommodate compactors for garbage and recycling. The existing loading dock acts as a centralized location. Existing demands for the loading berths were calculated based on multiple days of observations. Activity, occupancy, and duration of the trucks were recorded for 2 days between the hours of 5:00 AM and 9:00 PM. Considering the total occupancy of the loading berths and the existing campus square footage, a demand rate of 1.13 minutes per 1,000 gsf was calculated. This rate will be used to assess future demands under the proposed *MIMP Update*.

3.6.2 Impacts of the Alternatives

This section summarizes the results of the No Action and Action Alternatives analysis.

No Action Alternative

Trip Generation

Trip generation for the No Action Alternative includes traffic associated with the development of the BHTF as well as development of the 26,000 gsf that would be allowed under the current MIMP. Trip rates used to forecast the No Action are based on the previously approved forecasts for the BHTF as well as the existing observed trip rates applied to the potential 26,000 gsf. A summary of the future campus related vehicle trip generation is shown below in **Table 3.6-2**.

**TABLE 3.6-2
No Action Weekday Vehicle Trip Generation**

| Land Use | Size | AM Peak Hour Trips | | | PM Peak Hour Trips | | |
|--|--------------------|--------------------|------------|------------|-----------------------|------------|------------|
| | | In | Out | Total | In | Out | Total |
| Existing¹ | 549,697 gsf | 407 | 199 | 606 | 113 | 403 | 516 |
| <u>No Action</u> | | | | | | | |
| Additional Development under the current MIMP ¹ | 26,000 gsf | 19 | 10 | 29 | 5 | 19 | 24 |
| <u>BHTF</u> | <u>188,846 gsf</u> | <u>76</u> | <u>44</u> | <u>120</u> | <u>-6²</u> | <u>79</u> | <u>73</u> |
| <i>Subtotal</i> | <i>214,846 gsf</i> | <i>95</i> | <i>54</i> | <i>149</i> | <i>-1</i> | <i>98</i> | <i>97</i> |
| No Action Total | 764,543 gsf | 502 | 253 | 755 | 112 | 501 | 613 |

¹ Vehicle trip rates calculated based on the existing campus observed peak hour trips relative to the existing size (549,697 gsf).

² Reflects net new calculation of trips associated with the BHTF.

Similar to the Affected Environment, person trips for the campus are forecast. Current modal splits are assigned to the No Action vehicle trip generation which is summarized below in **Table 3.6-3**.

**TABLE 3.6-3
No Action Alternative Person Trip Generation**

| Trip Generation | Mode Split | Existing | | | Net New No Action | | | No Action Total | | |
|--|-------------|------------|------------|------------|-------------------|------------|------------|-----------------|------------|------------|
| | | In | Out | Total | In | Out | Total | In | Out | Total |
| Weekday AM Peak Hour | | | | | | | | | | |
| Vehicle Trips¹ | | 407 | 199 | 606 | 95 | 54 | 149 | 502 | 253 | 755 |
| Person Trips | | | | | | | | | | |
| Walk, Bike, Other Trips | 2.5% | 13 | 6 | 19 | 3 | 2 | 5 | 16 | 8 | 24 |
| Transit Trips | 7% | 35 | 17 | 53 | 8 | 5 | 13 | 43 | 22 | 66 |
| Other | 1.5% | 8 | 4 | 11 | 2 | 0 | 2 | 10 | 4 | 13 |
| <u>Person Trips by Vehicle¹</u> | <u>89%</u> | <u>451</u> | <u>220</u> | <u>671</u> | <u>105</u> | <u>60</u> | <u>165</u> | 556 | 280 | 836 |
| Total Person Trips | 100% | 507 | 247 | 754 | 118 | 67 | 185 | 625 | 314 | 939 |
| Weekday PM Peak Hour | | | | | | | | | | |
| Vehicle Trips¹ | | 113 | 403 | 516 | -1 | 98 | 97 | 112 | 501 | 613 |
| Person Trips | | | | | | | | | | |
| Walk, Bike, Other Trips | 2.5% | 4 | 13 | 16 | 0 | 3 | 3 | 4 | 16 | 19 |
| Transit Trips | 7% | 10 | 35 | 45 | 0 | 8 | 8 | 10 | 43 | 53 |
| Other | 1.5% | 1 | 8 | 10 | 0 | 1 | 2 | 1 | 9 | 12 |
| <u>Person Trips by Vehicle¹</u> | <u>89%</u> | <u>125</u> | <u>446</u> | <u>571</u> | <u>-1</u> | <u>109</u> | <u>107</u> | 124 | 555 | 678 |
| Total Person Trips | 100% | 140 | 502 | 642 | -1 | 121 | 120 | 139 | 623 | 762 |

¹The 89 percent person trips by vehicle includes approximately 75 percent SOV and 14 percent associated with carpool and vanpool trips, resulting in a AVO of 1.1. The AVO of 1.1 was multiplied by the vehicles trips to determine the number of person trips by vehicle. The person trip distribution per the CTR was then applied to determine the total person trips.

Street System

No changes to the campus access points are assumed as part of the No Action plans. Based on a review of the City’s adopted transportation plans, there are two improvement projects that will affect intersections within the defined study area.

Aurora Avenue North Safety Improvements – This City project will improve safety and mobility along Aurora Avenue N. The project includes design and construction of new

sidewalks, transit improvements, medians/access management, lighting, signalized crossings, and potential roadway channelization changes. This project is fully funded and anticipated to be completed by 2037. The specific locations along the corridor have not yet been identified.

N 130th Street Vision Zero Safety Corridor - The cross section at N 130th Street currently has four driving lanes with a sidewalk on each side of the road and will be modified into two through-lanes between Stone Avenue N and 1st Avenue NE with bike lanes and a center two-way left turn lane. Speed limits will also be reduced to 25 mph along the corridor. Future extension of the channelization modifications are also a potential which could extend between Linden Avenue N and 5th Avenue NE. The channelization modifications, bike lanes, and speed limit reductions between Stone Avenue N and 1st Avenue NE along N 130th Street are planned to be completed in 2023 and are funded as part of the Vision Zero program. This project results in assumed channelization modifications to the west leg of the 1st Avenue NE/N 130th Street intersection included in the No Action analyses.

N 117th Street and N 120th Street – These City improvements include reconstruction of the ROW to include improved natural drainage features, defined parallel parking on one side of the street, with a single lane for two-way traffic. This project is intended to improve drainage and water quality for Thornton Creek, improve pedestrian facilities, and provide traffic calming features.

Non-Motorized Transportation

Improvements previously identified for Aurora Avenue N, N 117th Street, and N 120th Street will include improvements to the pedestrian network. Additionally, there are bike lanes planned along N 130th Street and Meridian Avenue as well as Neighborhood Greenway planned along Ashworth Avenue N. These improvements will result in an improved non-motorized environment.

Transit Service

Transit service adjustments under No Action conditions predominantly includes the expansion of Sound Transit's Link Light Rail Network which would provide an additional station at NE 130th St, approximately 1 mile north of the campus. With the planned Sound Transit Link Light Rail Lynnwood Extension, King County Metro has identified preliminary service concepts that would adjust routes to account for the added light rail stations. In the vicinity of UWMC-Northwest, this includes current route and service adjustments to serve the Shoreline South/148th Station (no plans have yet identified service alterations to accommodate the NE 130th St Infill Station).

Route adjustments would include revising the service areas of 345 and replacing route 346 with a new route, route 365. Both routes would provide service along Meridian Avenue N, east of UWMC-Northwest with Route 345 continuing to have a stop on-campus and both routes now providing service to the Shoreline South/148th Station. Both routes would be local routes, similar to today's service. With these proposed service revisions, no service changes to the transit frequency or capacities were assumed for the routes being evaluated; however, Route 346 is shown to be replaced with Route 365.

Growth in future ridership was assumed at 1 percent based on increased growth in the region as well as inclusion of transit trips forecast for the No Action condition. Consistent with the Affected Environment analysis, a capacity analysis was conducted for the routes operating in the vicinity of the campus, that could be utilized by UWMC - Northwest staff and likely less extent visitors to the hospital or medical office spaces.

For the No Action analysis, no increases in transit service or change in bus capacity was assumed. The transit vehicle utilization for the 4 routes serving the campus is approximately 36 percent or lower under the No Action condition, with estimated increases in utilization of 8 percent or less relative to existing conditions. There would continue to be available capacity to accommodate additional riders during the weekday peak periods under the No Action Alternative.

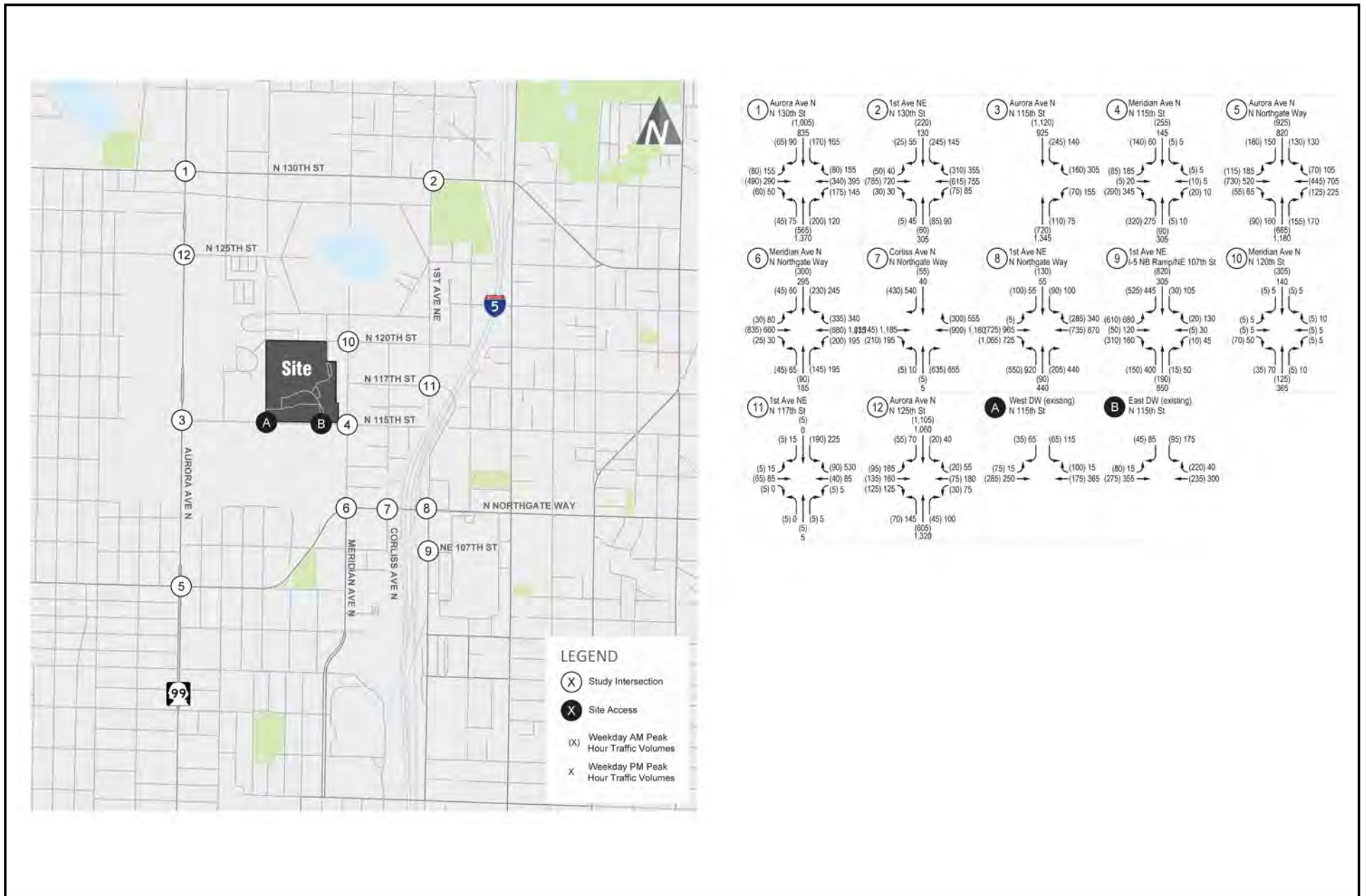
Traffic Volumes

Future 2030 and 2040 traffic volumes were forecast considering the following. The details of each of these areas are described in more detail in the Transportation Discipline Report (**Appendix D**).

- Added traffic associated with the build-out of the UWMC – Northwest campus projects to include the BHTF project and remaining 26,000 gsf of the campus development potential.
- Applied an annual background growth rate of 1 percent to the existing traffic volumes.
- Added in traffic associated with 21 approved, but not yet constructed projects located in the vicinity.

Future 2030 and 2040 volumes are summarized in **Figure 3.6-3** and **Figure 3.6-4**.

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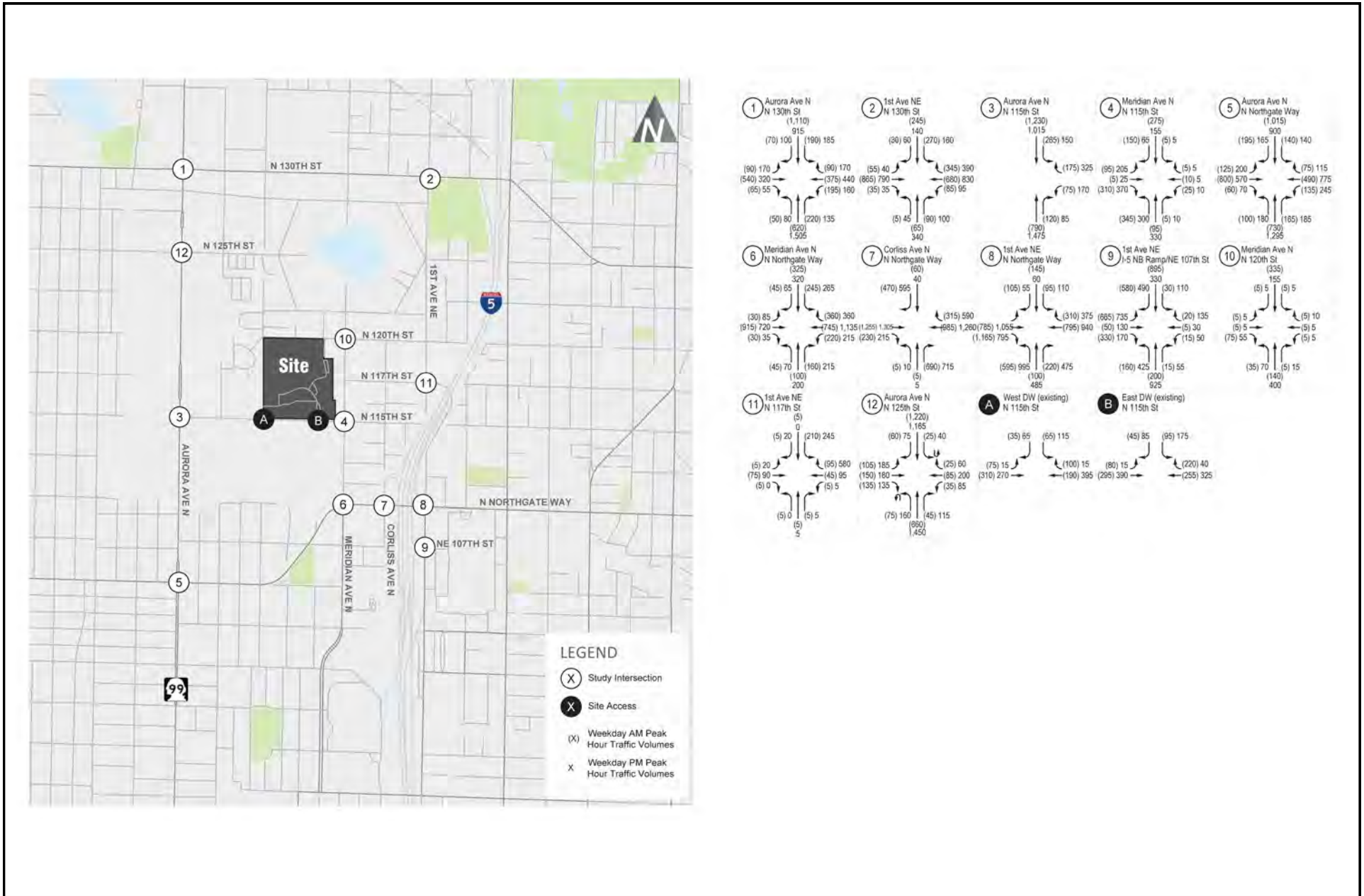


Source: The Transpo Group, 2023.

Figure 3.6-3

No Action (2030) Weekday Peak Hour Traffic Volumes

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Source: The Transpo Group, 2023.

Figure 3.6-4
No Action (2040) Weekday Peak Hour Traffic Volumes

Traffic Operations

An analysis of intersection operations was completed following the same procedures outlined for the Affected Environment.

Adjustments of analysis parameters between the existing and No Action (2030) conditions included optimization of signal timing to reflect the continued growth in traffic volumes as well as review any applicable adjustments of peak hour factors (PHF) at the off-site study intersections to reflect the forecast traffic volumes. The PHF adjustment in the interim condition was made consistent with *National Cooperative Highway Research Program (NCHRP) Report 599: Default Values for Highway Capacity and Level of Service Analyses*.

Additional adjustments for the No Action (2040) conditions included additional optimizations of signal timings (similar to 2030 conditions) and further refinement of the PHF at the off-site study intersections. The adjustment was made consistent with WSDOT Synchro & Simtraffic Protocol – Aug 2018 which identifies assuming a PHF of 1.0 for future analysis conditions, with future analysis typically aligning with a design year condition which is generally an approximately 20-year forecast, consistent with the future 2040 analysis.

The results of the 2030 and 2040 No Action analyses are summarized in **Figure 3.6-5**.

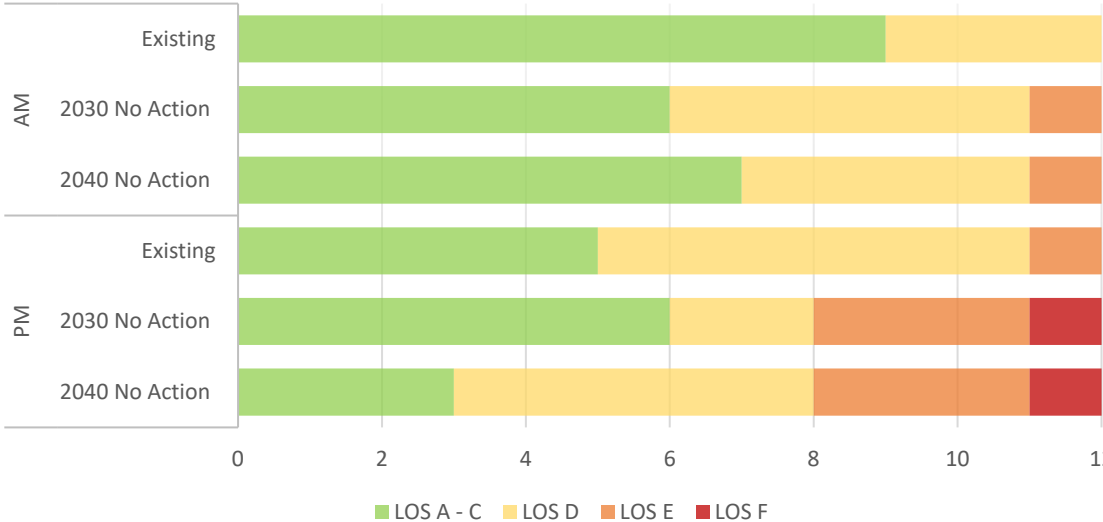


Figure 3.6-5 No Action Conditions LOS Summary

As shown in the figure, by 2030 only one intersection is forecast to operate at LOS E; 1st Ave NE/I-5 NB Ramp/NE 107th St. During the PM peak hour, three signalized intersections are projected to operate at LOS E or LOS F which include the intersections of Aurora Ave N/N Northgate Way, 1st Ave NE/N Northgate Way, and 1st Ave NE/I-5 NB Ramp/NE 107th St. Additionally, the all-way stop controlled Meridian Avenue N/N 115th Street intersection is

forecast to operate at LOS E under future weekday PM peak hour No Action conditions. By 2040 while intersection delays within the study area expected to increase, no additional intersections are forecast to operate at the LOS E or LOS F levels as previously noted for the 2030 conditions.

Traffic Safety

As traffic volumes increase, traffic safety issues could increase proportionally. While there is a High Collision Location defined by SDOT at the intersection of Aurora Avenue N/N 130th Street, corridor improvements along Aurora will address this location.

Loading Berth Analysis

With the development of the BHTF, an additional 5 active loading berths will be added to the campus, resulting in a total supply of 8 active bays. Applying the demand rate observed under existing conditions and a total No Action campus development of 764,543 sf, a total demand of 866 minute per day is forecast. Given the 8 loading berths and 10 hours a day of available capacity per dock, the forecast daily utilization of the docks is only 18 percent.

Alternative 1

Trip Generation

The existing trip rates observed for the campus were adjusted to reflect the “right-sizing” of the institution when considering the square feet per patient. In order to “right-size” the existing hospital space, the hospital area would be expanded by 215,000 gsf without additional patients/staff capacity. An adjusted trip generation rate was then calculated by dividing the observed trips by the existing square footage plus the 215,000 gsf to account for right sizing. The existing and right-size adjusted trip generation rate is summarized in **Table 3.6-4** which reduces the trip rates to 0.79 and 0.67 trips per 1,000 gsf for the AM and PM peak hours, respectively.

**TABLE 3.6-4
Right Sized Vehicular Trip Generation Rate**

| Trip Generation Rate ¹ | Effective Area | Weekday AM Peak Hour | | | Weekday PM Peak Hour | | |
|-----------------------------------|--------------------------|----------------------|-----|-------------|----------------------|-----|-------------|
| | | In | Out | Total | In | Out | Total |
| <i>Average Existing Trips</i> | | 407 | 199 | 606 | 113 | 403 | 516 |
| Existing | 549,697 gsf | | | 1.10 | | | 0.94 |
| Right Size Adjusted | 764,697 ² gsf | | | 0.79 | | | 0.67 |

Note: gsf = gross square feet.

¹ Trip Generation Rate = trips per 1,000 gsf.

² Existing size (549,697 gsf) + right size adjustment (+215,000 gsf).

This adjusted trip generation rate was applied to the expansion area identified under Alternative 1. Note that the current campus is made up of both hospital and medical office uses, which typically have different trip generation rates (with a hospital having a lower trip generation rate than a medical office). The existing allocation of hospital and medical office is approximately 65 percent and 35 percent, respectively. The allocation of hospital and medical office uses for the future development are estimated to be approximately 80 percent and 20 percent, respectively, shifting to have a higher amount of hospital with the future development. With the assumed use of the overall campus size (not allocating per use), the trip generation rates would continue to reflect the current split of hospital and medical office. This provides a conservative estimate of the Action Alternatives trip generation given the anticipated increase in allocation of hospital space which has a lower individual trip generation rate relative to medical office.

The Alternative 1 vehicular trip generation estimates for the weekday AM and PM peak hours for both the future 2030 and 2040 development is summarized in **Table 3.6-5**.

**TABLE 3.6-5
Alternative 1 Weekday Vehicle Trip Generation**

| Land Use | Size | Weekday AM Peak Hour | | | Weekday PM Peak Hour | | |
|---|----------------------|----------------------|------------|--------------|----------------------|------------|--------------|
| | | In | Out | Total | In | Out | Total |
| Existing | 549,697 gsf | 407 | 199 | 606 | 113 | 403 | 516 |
| No Action Total | 764,543 gsf | 502 | 253 | 755 | 112 | 501 | 613 |
| Alternative 1 MIMP Addition | | | | | | | |
| <i>2030 - Interim Buildout</i> | <i>+800,000 gsf</i> | <i>425</i> | <i>208</i> | <i>633</i> | <i>118</i> | <i>421</i> | <i>539</i> |
| Alternative 1 Subtotal | 1,564,543 gsf | 445 | 217 | 662 | 123 | 440 | 563 |
| <i>2040 - Full buildout of the MIMP</i> | <i>+835,457 gsf</i> | <i>927</i> | <i>461</i> | <i>1,388</i> | <i>230</i> | <i>922</i> | <i>1,152</i> |
| Alternative 1 Total | 1,600,000 gsf | 947 | 470 | 1,417 | 235 | 941 | 1,176 |

Note: gsf = gross square feet.

¹ Vehicle trip rates calculated based on the observed peak hour trips relative to the "right sized" size (764,697gsf).

As shown in the table, the campus with the 2030 interim buildout is forecast to generate 1,388 trips occurring during the weekday AM peak hour and 1,152 trips during the weekday PM peak hour. This represents an increase of 633 trips during the weekday AM peak hour and 539 trips during the weekday PM peak hour relative to the No Action condition.

With the full buildout of the proposed *MIMP Update* by 2040, a campus total of up to 1,600,000 gsf, the campus is forecast to generate 1,417 trips occurring during the weekday AM peak hour and 1,176 trips during the weekday PM peak hour. This represents an increase of 662 trips during the weekday AM peak hour and 563 trips during the weekday PM peak hour relative to the No Action condition.

The total person trip generation for the campus assuming the full buildout of the MIMP was estimated for the peak hours based on the same methodology as assumed for the affected environment and No Action with no changes assumed to the mode splits or AVO (see **Table 3.6-6**).

**TABLE 3.6-6
Total Alternative 1 Person Trip Generation**

| Trip Generation | Mode Split | No Action | | | 2040 – Full Buildout of the MIMP | | | Total Alternative 1 (1,600,000 gsf) | | |
|--|-------------|------------|------------|------------|----------------------------------|------------|------------|-------------------------------------|--------------|--------------|
| | | In | Out | Total | In | Out | Total | In | Out | Total |
| Weekday AM Peak Hour | | | | | | | | | | |
| Vehicle Trips¹ | | 502 | 253 | 755 | 445 | 217 | 662 | 947 | 470 | 1,417 |
| Person Trips | | | | | | | | | | |
| Walk, Bike, Other Trips | 2.5% | 16 | 8 | 24 | 14 | 7 | 21 | 30 | 15 | 45 |
| Transit Trips | 7% | 43 | 22 | 66 | 39 | 19 | 58 | 82 | 41 | 124 |
| Other | 1.5% | 10 | 4 | 13 | 8 | 4 | 12 | 18 | 8 | 25 |
| <u>Person Trips by Vehicle¹</u> | <u>89%</u> | <u>556</u> | <u>280</u> | <u>836</u> | <u>493</u> | <u>240</u> | <u>734</u> | 1,049 | 520 | 1,570 |
| Total Person Trips | 100% | 625 | 314 | 939 | 554 | 270 | 824 | 1,179 | 584 | 1,763 |
| Weekday PM Peak Hour | | | | | | | | | | |
| Vehicle Trips¹ | | 112 | 501 | 613 | 123 | 440 | 563 | 235 | 941 | 1,176 |
| Person Trips | | | | | | | | | | |
| Walk, Bike, Other Trips | 2.5% | 4 | 16 | 19 | 4 | 14 | 18 | 8 | 30 | 37 |
| Transit Trips | 7% | 10 | 43 | 53 | 11 | 38 | 49 | 21 | 81 | 102 |
| Other | 1.5% | 1 | 9 | 12 | 2 | 8 | 11 | 3 | 17 | 23 |
| <u>Person Trips by Vehicle¹</u> | <u>89%</u> | <u>124</u> | <u>555</u> | <u>678</u> | <u>136</u> | <u>488</u> | <u>624</u> | 260 | 1,043 | 1,302 |
| Total Person Trips | 100% | 139 | 623 | 762 | 153 | 548 | 701 | 292 | 1,171 | 1,463 |

¹ The 89 percent person trips by vehicle includes approximately 75 percent SOV and 14 percent associated with carpool and vanpool trips, resulting in a AVO of 1.1. The AVO of 1.1 was multiplied by the vehicles trips to determine the number of person trips by vehicle. The person trip distribution per the CTR was then applied to determine the total person trips.

As shown in **Table 3.6-6**, with Alternative 1, there are estimated to be a total of 124 and 102 transit trips in the AM and PM peak hours, respectively and 45 and 37 non-motorized trips (walk, bike, other) in the AM and PM peak hours, respectively.

Transit Service

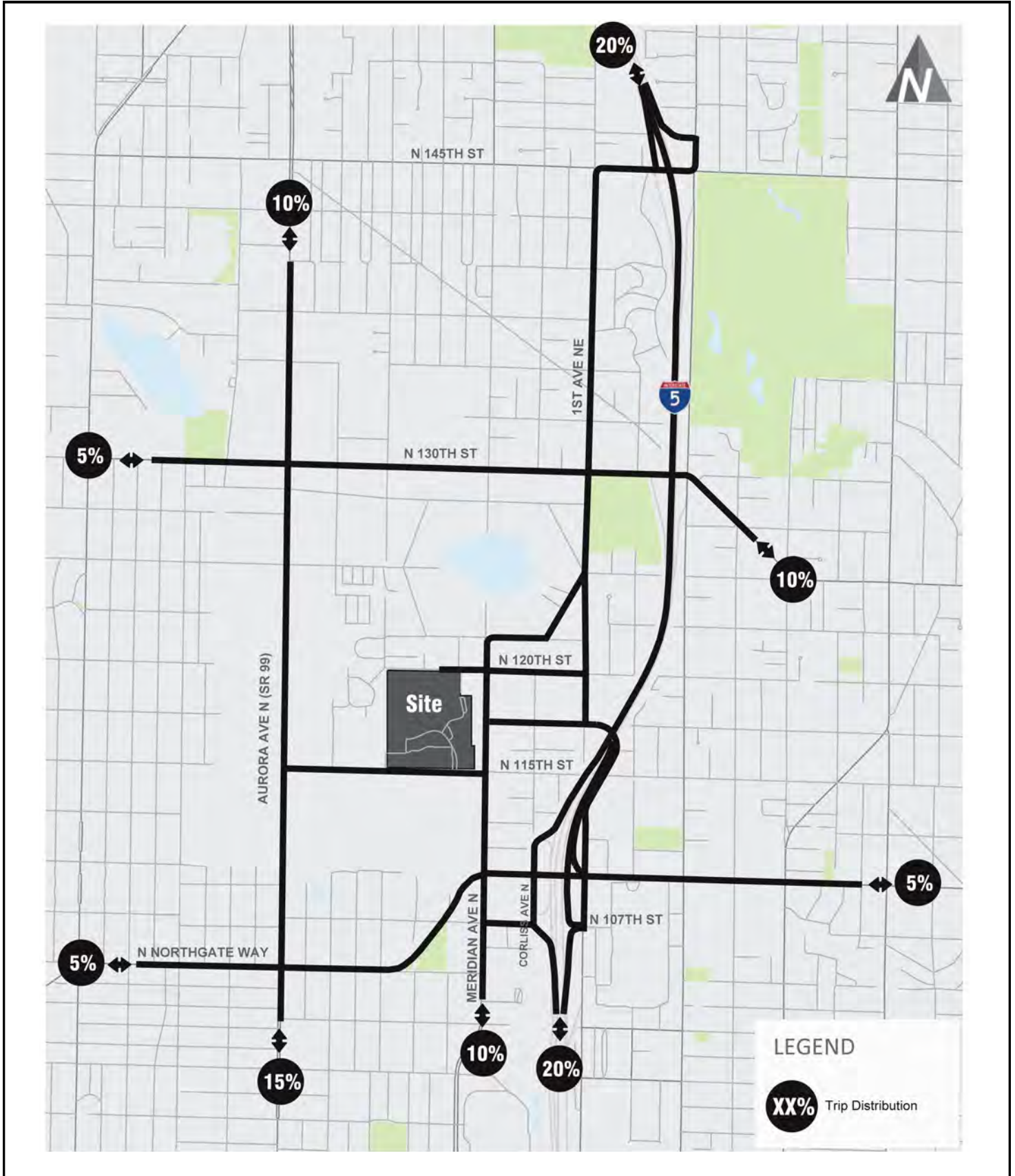
No changes are proposed to transit service as a result of Alternative 1, such that transit capacities are consistent with the No Action condition. The total future (2040) Alternative 1 transit trips were estimated by adding the forecast Alternative 1 additional transit trips to the future (2040) No Action transit trips. The peak hour transit trips associated with Alternative 1 2040 Full Buildout of the MIMP condition are anticipated to be 58 and 49 during the weekday AM and PM peak hours, respectively. The transit vehicle utilization for the 4 routes serving the campus is forecast to be approximately 46 percent or lower under the Alternative 1 condition, with estimated increases in utilization of 23 percent or less relative to No Action conditions. There would continue to be available capacity to accommodate additional riders during the weekday peak periods with Alternative 1 2040 – Full Buildout of the MIMP.

A sensitivity analysis of reduced SOV mode splits of 65 percent and 50 percent was also completed for purposes of estimating potential higher transit trips and associated impacts. With the reduced SOV rates from 75 percent to 65 percent or 50 percent, the transit trips are estimated to increase from 124 to 176 and 264 trips, respectively, in the AM peak hour and increase from 102 to 146 and 219 trips in the PM peak hour. The transit vehicle utilization for the 4 routes serving the campus would continue to have available capacity to accommodate additional riders during the weekday peak periods with Alternative 1 2040 – Full Buildout of the MIMP with reduced SOV of 65 and 50 percent.

Traffic Volumes

The Alternative 1 net new 2030 and 2040 vehicular trip generation are assigned to the transportation network based on the vehicle trip distribution (see **Figure 3.6-6**). The resulting Alternative 1 peak hour traffic volumes are shown on **Figure 3.6-7** and **Figure 3.6-8** for the 2030 and 2040 conditions, respectively.

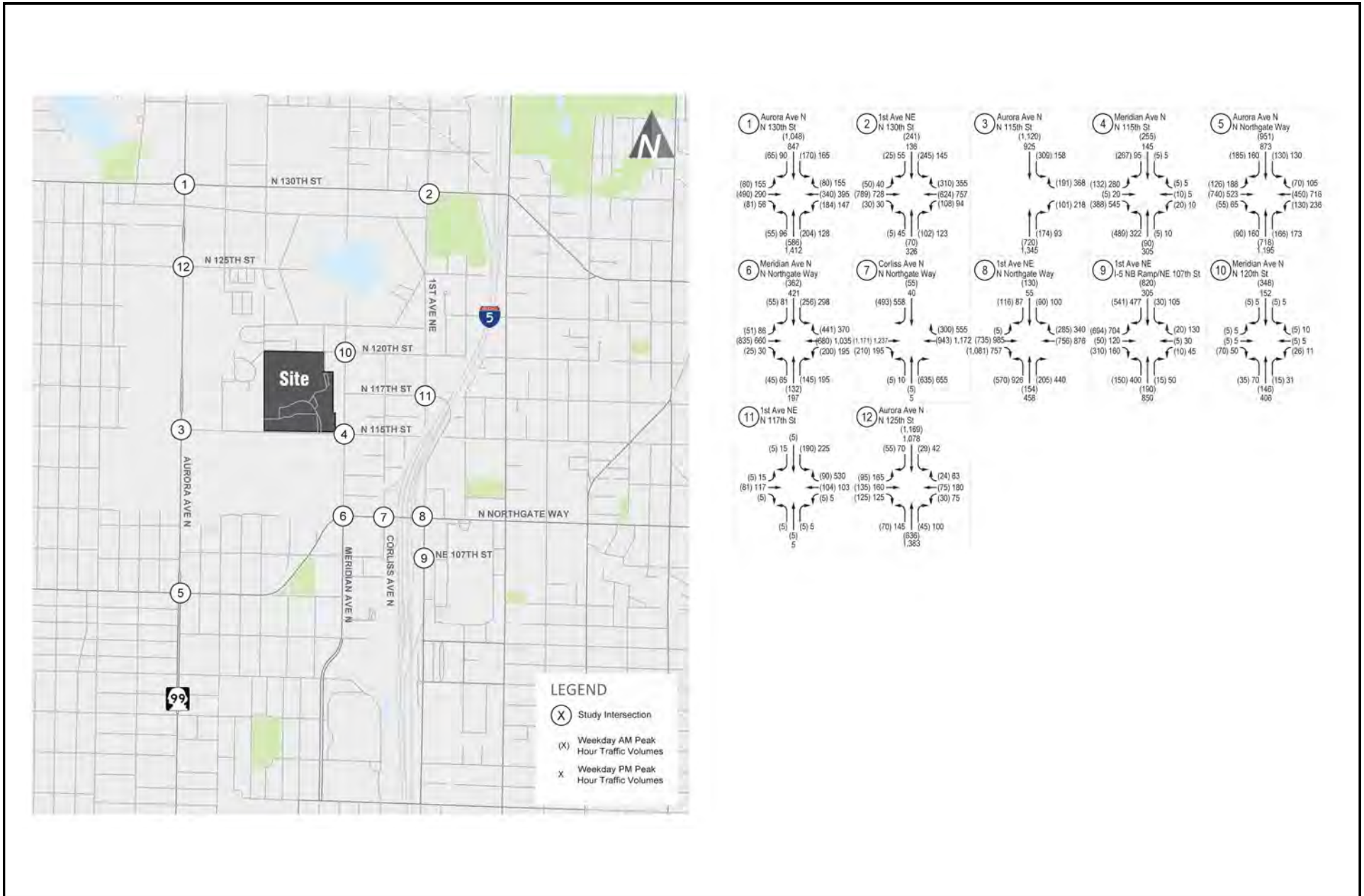
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Source: The Transpo Group 2023

Figure 3.6-6
Trip Distribution Patterns

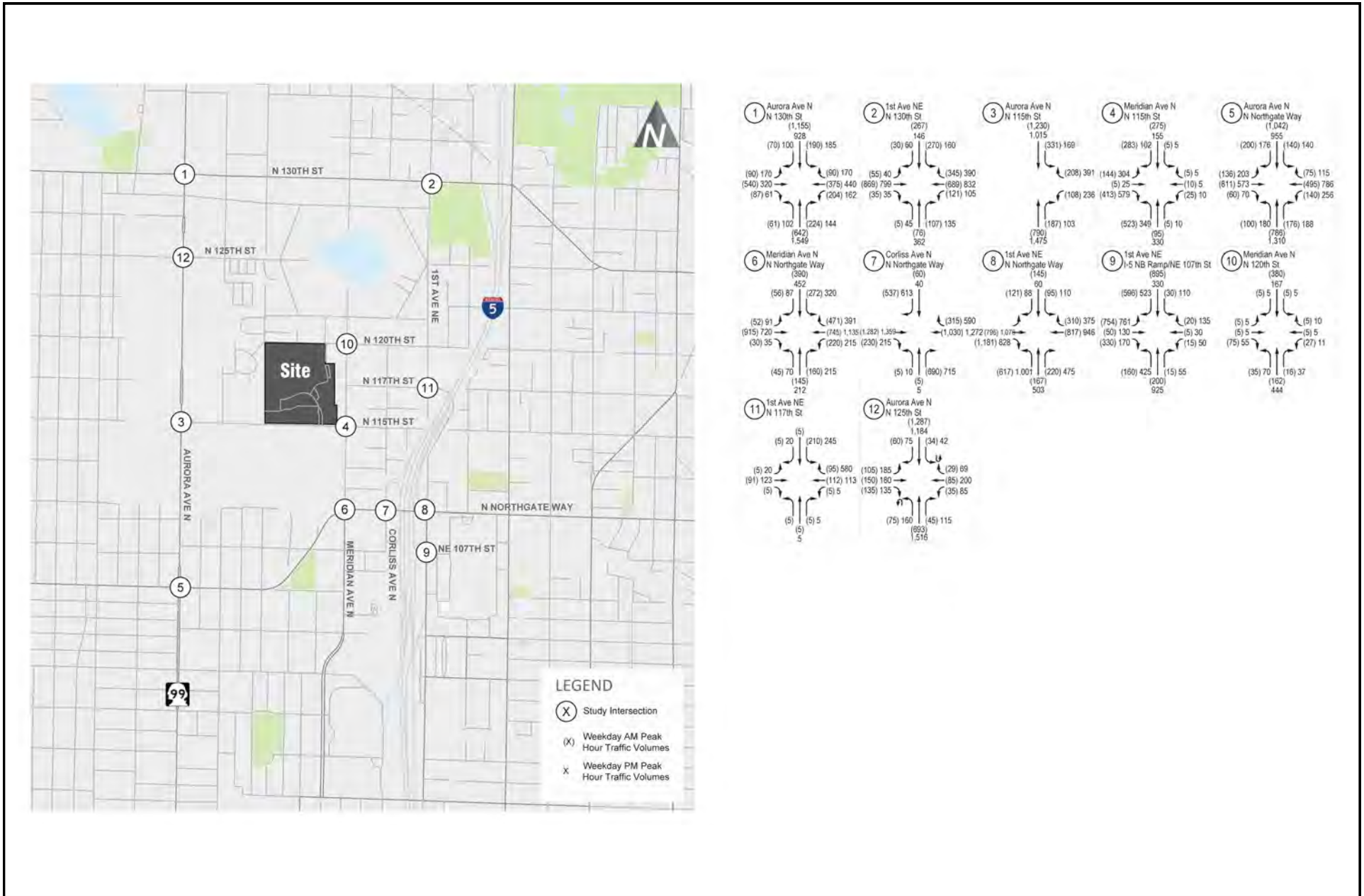
UWMC-Northwest 2024 Major Institution Master Plan Update Draft EIS



Source: The Transpo Group, 2023.

Figure 3.6-7
Alternative 1 (2030) Weekday Peak Hour Traffic Volumes

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Source: The Transpo Group, 2023.

Figure 3.6-8

Alternative 1 (2040) Weekday Peak Hour Traffic Volumes

Traffic Operations

Intersection levels of service were calculated for the study area intersections for the 2030 and 2040 conditions. The level of development assumed in each of the horizon year varies as previously noted. All intersection parameters were held consistent with the No Action analyses. The 2030 and 2040 Alternative 1 LOS at the off-site intersections are summarized in **Figures 3.6-9 and 3.6-10**, respectively.

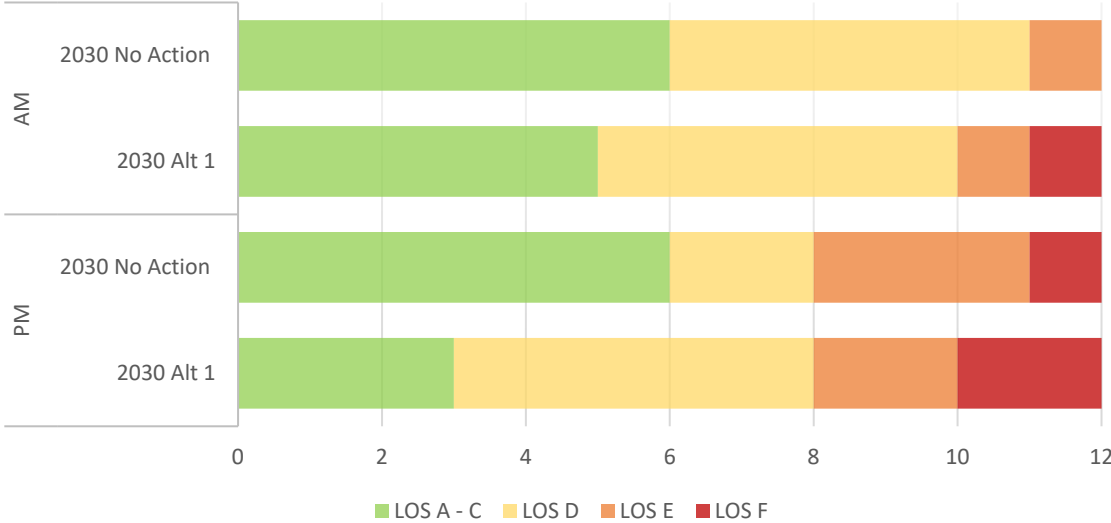


Figure 3.6-9 Alternative 1 2030 Conditions Interim Buildout LOS Summary

As shown in 2030, during the weekday AM and PM peak hour, a total of two intersections are forecast to operate at LOS E/LOS F during the AM peak hour and four intersections during the weekday PM peak hour. These intersections are described in more detail below.

- **Meridian Ave N/N 115th St** – This intersection is forecast to operate at LOS F without or with the MIMP under the weekday PM peak hour conditions. The increase in delay exceeds the five second threshold previously noted. This intersection currently operates as an all-way stop, suggesting that increased levels of traffic control is required.
- **Aurora Ave N/N Northgate Way** – This intersection operates at LOS E without or with the project during the weekday PM peak hour. The increase in delay is less than the five-second threshold identified by the City, so improvements would not be warranted.
- **1st Ave NE/N Northgate Way** – This intersection operates at LOS F without or with the project during the weekday PM peak hour. The increase in delay is less than the five-second threshold identified by the City, so improvements would not be warranted.

- 1st Ave NE/I-5 NB Ramp/NE 107th St** – This intersection is forecast to operate at LOS E without or with the project during the weekday AM and PM peak hours. The increase in delay is less than the five-second threshold identified by the City, so improvements would not be warranted.

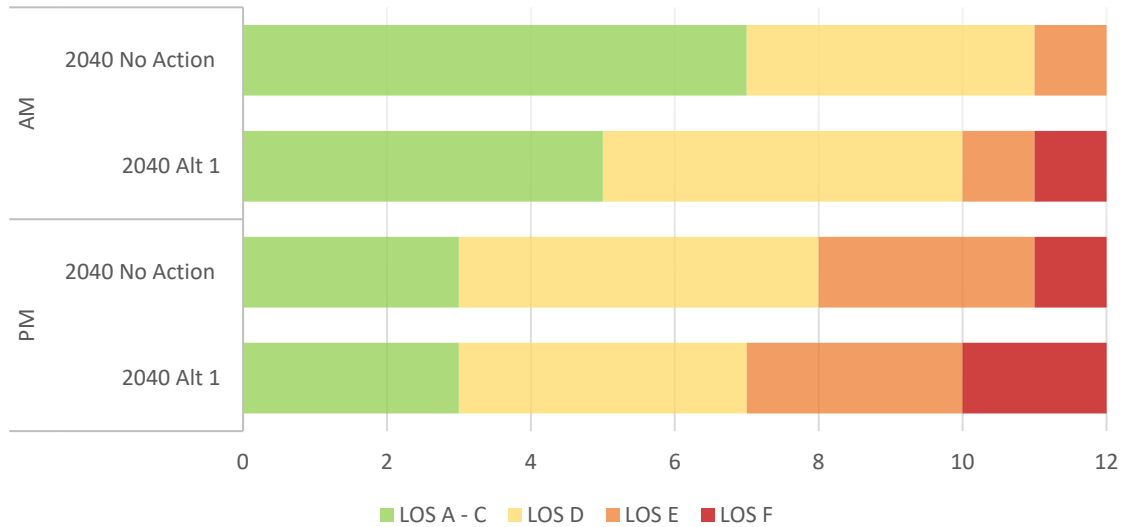


Figure 3.6-10 Alternative 1 2040 Conditions Full Buildout of the MIMP LOS Summary

2040 conditions are similar to those described for the 2030 conditions with one exception, one additional intersection is forecast to degrade to operating at LOS E/F during the weekday PM peak hour with Alternative 1 relative to No Action conditions. These intersections are described in more detail below.

- Meridian Ave N/N 115th St** – This all-way stop controlled intersection is forecast to degrade from operating at LOS C and E during the AM and PM peak hour No Action 2040 conditions, to operate at LOS F during the AM and PM peak hour condition. This increase in delay at the all-way stop controlled intersection is identified as a significant impact which would require mitigation. Additional review of proposed mitigation and timing of improvements is provided in the Mitigation section.
- Aurora Avenue N/N Northgate Way** – This signalized intersection is forecast to operate at LOS D during the AM peak hour and LOS E in the PM peak hour under both future (2040) No Action and Alternative 1 2040 full buildout of the MIMP conditions. The increase in delay is less than the five-second threshold identified by the City, so improvements would not be warranted.
- 1st Avenue NE/N Northgate Way** – This signalized intersection is forecast to operate at LOS D or better during the AM peak hour and LOS F in the PM peak hour under both future (2040) No Action and Alternative 1 2040 full buildout of the MIMP conditions.

The increase in delay is less than the five-second threshold identified by the City, so improvements would not be warranted.

- **1st Avenue NE/I-5 NB Ramp/NE 107th Street** – This signalized intersection is forecast to operate at LOS E during the AM and PM peak hours under both future (2040) No Action and Alternative 1 2040 full buildout of the MIMP conditions. The increase in delay is less than the five-second threshold identified by the City, so improvements would not be warranted.
- **1st Avenue NE/N 130th Street** – There is a proposed channelization revision along the N 130th Street corridor as part of the Vision Zero safety corridor project which prioritizes the implementation of non-motorized facilities including installing bicycle lanes along both sides of the road. This is accomplished by reducing N 130th Street from 4 vehicular lanes to a three-lane road (two through-lanes with a center two-way left turn lane) west of 1st Avenue NE. The reduced vehicular section results in the LOS degrading at the intersection, specifically the LOS at the intersection is forecast to degrade from operating at LOS D under future (2040) No Action weekday PM peak hour conditions to LOS E with Alternative 1. The increase in delay is approximately 7 seconds, exceeding the typical threshold of 5 seconds. Given the planned improvement at this location to reduce the vehicular capacity, prioritizing non-motorized, an improvement to increase vehicle capacity at this location is not recommended.

Site Access Analysis

The campus is currently served by two driveways located on N 115th Street. As noted above a third access point to the campus is being proposed; either located on N 115th Street or N 120th Street. The analysis focused on the 2040 conditions for both the AM and PM peak hours. However, the results of the 2030 analysis are provided in the TDR for comparative purposes.

The analysis also considered potential scenarios for the distribution of parking on the campus. Since the location of the parking has not been determined and this would potentially affect the assignment of traffic at the access points, the analysis considered both parking concentrated on the west side of campus and parking that was more evenly distributed. Ultimately, the site will include an internal loop road connecting all three access points. The access point chosen by a driveway will depend on a number of factors including, origin/destination, parking location, and perceived congestion along the route of travel.

**TABLE 3.6-7
Alternative 1 2040 Weekday Peak Hour Site Access LOS Access Summary**

| Intersection | Traffic Control | Weekday AM Peak Hour | | | | | | Weekday PM Peak Hour | | | | | |
|--|-----------------|-----------------------|--------------------|--------------------|-----------------------|------------|-----------|-----------------------|-----------|----------|-----------------------|------------|-----------|
| | | Option 1 - N 115th St | | | Option 2 - N 120th St | | | Option 1 - N 115th St | | | Option 2 - N 120th St | | |
| | | LOS ¹ | Delay ² | Queue ³ | LOS | Delay | Queue | LOS | Delay | Queue | LOS | Delay | Queue |
| Parking Scenario – Evenly Distributed | | | | | | | | | | | | | |
| West Access/ N 115th St | TWSC | C | 22 | 1 | D | 32 | 2 | C | 24 | 2 | D | 34 | 4 |
| East Access/ N 115th St | TWSC | F | 56 | 3 | F | 170 | 10 | F | 70 | 5 | F | 212 | 18 |
| Central Access/ N 115th St | Signal | A | 7 | - | - | - | - | A | 9 | - | - | - | - |
| North Access/ N 120th St | TWSC | - | - | - | A | 9 | <1 | - | - | - | A | 9 | <1 |
| Parking Scenario – West Concentrated | | | | | | | | | | | | | |
| West Access/ N 115th St | TWSC | D | 27 | 2 | F | 54 | 5 | D | 33 | 3 | F | 88 | 10 |
| East Access/ N 115th St | TWSC | F | 54 | 3 | F | 120 | 6 | F | 69 | 5 | F | 132 | 11 |
| Central Access/ N 115th St | Signal | A | 9 | - | - | - | - | A | 8 | - | - | - | - |
| North Access/ N 120th St | TWSC | - | - | - | A | 9 | <1 | - | - | - | A | 9 | <1 |

Note: TWSC = Two-Way Stop Controlled. **Bold** text indicates operating at LOS E or F if signalized or LOS F for TWSC.

¹ Level of Service (A – F) as defined by the Highway Capacity Manual (HCM) 6th Edition (TRB, 2016).

² Average delay per vehicle in seconds reported for the worst movement at the stop controlled site access points.

³ 95th percentile queue reported for the worst movement at the stop controlled site access points.

As shown in **Table 3.6-7**, the 3rd access proposed under either access option (as either a traffic signal via N 115th Street or two-way stop controlled via N 120th Street) is forecast to operate at LOS A with limited queueing. The two remaining access points are forecast to operate with less overall delay and queueing with Option 1 (via N 115th Street) compared to Option 2 (via N 120th Street) as the traffic signal is able to accommodate additional demand and is generally located where more users are naturally inclined to utilize (consistent with distribution patterns).

Future traffic volumes at the N 115th Street driveways reflect/consider the proposed central access traffic signal. While the east access is shown to operate at LOS F, additional traffic may shift to the central access in the future depending on the configuration of the internal loop road, internal traffic flows, and the ultimate origin/destination of the trip. The current analysis reflects a moderate shift in traffic from the east access to the central driveway.

Traffic Safety

As traffic volumes increase, traffic safety issues could increase proportionally. Based on the existing safety review, there was one HCL as well as 2 locations that averaged 10 or more collisions over the 3-year study period. There is a planned improvement along the Aurora Avenue N corridor within the vicinity of HCL location that includes safety improvements. The remaining 2 locations include the Meridian Avenue N and Corliss Avenue N intersections along Northgate Way which had predominantly rear end and entering at an angle collisions, respectively. Based on the assignment of vehicle trips and review of the existing collision history, no significant impacts from a safety perspective are anticipated at any of the study area intersections.

Loading Berth Analysis

A minimum of 9 loading berths are planned for the campus. These 9 could include the 8 existing or relocated spaces depending on how the site develops. Based on the current observations and associated, the daily utilization of the 9 loading berths is calculated to be 33 percent as shown below. This assumes that each loading berth is operating with 10 hours of capacity.

**TABLE 3.6-8
UWMC – Northwest Loading Berth Utilization Study (MIMP)**

| Scenario | Size | Demand (minutes) ¹ | Number of Loading Berths | Utilization |
|-------------|--------------|-------------------------------|--------------------------|-------------|
| Existing | 549,697 sf | 621 | 3 | 35% |
| No Action | 764,543 sf | 866 | 8 | 18% |
| MIMP Alt #1 | 1,600,000 sf | 1,796 | 9 | 33% |

¹ Demand expressed in minutes as identified above.

Construction Traffic

Alternative 1 would generate construction traffic (e.g. employees and trucks) associated with demolition, excavation, infrastructure and building construction, and landscaping. As noted above, the existing onsite loop road would be reconfigured and improved to serve as the main access route through the site. The construction activity throughout the duration of the project would vary, with the greatest daily trips occurring initially during the import/export phase. Following the import/export phase, activity shifts to construction of structures which typically has lower daily activity levels with workers arriving prior to the weekday AM peak period and departing prior to the PM peak period. Construction haul routes and activities would be coordinated with City staff through a Construction

Management Plan. Internal circulation routes for pedestrians and bicyclists as well as external connections to the City facilities would be provided during any construction activity. No major staging or closure of the City right-of-way is anticipated under the current development plans. Therefore, no significant construction traffic impacts are expected.

Alternative 2

Transportation impacts under Alternative 2 will be similar to those described for Alternative 1 as no change in development totals, development type, or access points are unique to this Alternative.

3.6.3 Mitigation Measures

The following measures would be available for development under the proposed *MIMP Update*.

The **Meridian Avenue N/N 115th Street** all-way stop controlled intersection is forecast to degrade from operating at LOS D and E during the AM and PM peak hour No Action 2030 and 2040 conditions, to operate at LOS F during the AM and PM peak hour Alternative 1 2030 and 2040 conditions. This increase in delay at the all-way stop controlled intersection is identified as a significant impact which will require mitigation. As the current intersection is currently operating as an all-way stop, the proposed mitigation includes the signalization of the intersection. No changes in channelization are proposed with the signalization of the intersection. The timing of this improvement is based on the amount of development occurring and the horizon year that the development is anticipated due to background traffic growth. The following highlights mitigation triggers for this improvement numbers reflect net new square footage to campus.

- 2026 – up to 180,000 gsf
- 2027 – up to 170,000 gsf
- 2028 – up to 155,000 gsf
- 2029 – up to 140,000 gsf
- 2030 – up to 125,000 gsf
- 2031 – up to 110,000 gsf
- 2032 – up to 95,000 gsf
- 2033 – up to 80,000 gsf
- 2034 – up to 60,000 gsf
- 2035 – up to 45,000 gsf

Construction Management Plan. To minimize/reduce impacts to the surrounding neighborhood a Construction Management Plan, consistent with City requirements will be prepared. This plan will include the following elements:

- Construction hours
- Noise generating activities

- Noise sensitive receivers
- Construction noise management
- Construction milestones
- Construction parking
- Right-of-Way use – (e.g. street closures, sidewalk closures, transit stop closures/relocations, etc.)
- Haul Routes

3.6.4 Significant Unavoidable Adverse Impacts

The LOS at the **1st Avenue NE/N 130th Street** intersection is forecast to degrade from operating at LOS D under future (2040) No Action weekday PM peak hour conditions to LOS E with Alternative 1, with an increase in delay of approximately 7 seconds. This exceeds the typical threshold of 5 seconds for identifying significant impacts. The reduced operations are associated with the proposed channelization revision along the N 130th Street corridor as part of the Vision Zero safety corridor project which prioritizes the implementation of non-motorized facilities including installing bicycle lanes along both sides of the road. This is accomplished by reducing N 130th Street from 4 vehicular lanes to a three-lane road (two through-lanes with a center two-way left turn lane) west of 1st Avenue NE. Given the planned improvement at this location to reduce the vehicular capacity, prioritizing non-motorized, an improvement to increase vehicular capacity at this location is not proposed.

No additional significant and unavoidable adverse impacts have been identified through this analysis.

3.7 UTILITIES

This section of the Draft EIS provides a discussion on the existing water, sewer, stormwater drainage systems serving the University of Washington campus, and describes potential impacts that could occur as a result of the proposed *UWMC-Northwest 2024 MIMP Update (MIMP Update)*.

3.7.1 Affected Environment

Water

The existing campus water supply system has two points of connection: a 6-inch pipe and valve which connects with the City of Seattle water system in N 120th Street and a 10-inch pipe and valve that connect with the water system at the corner of N 115th Street and Meridian Avenue N. Both the 6-inch and the 10-inch pipes connect to backflow preventers. **Figure 3.7-1** illustrates the existing campus water map, including existing water services, piping and structures.

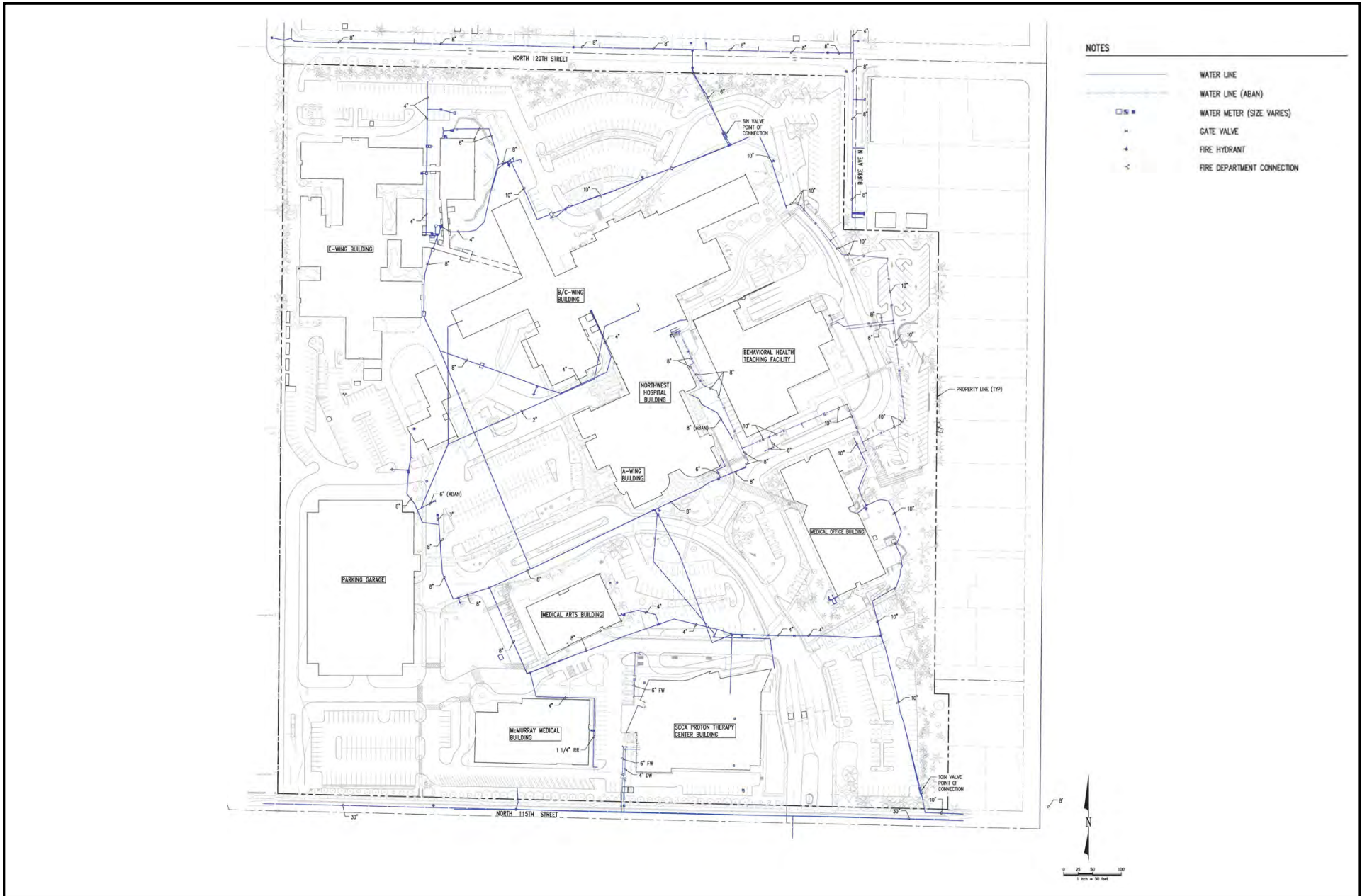
Based on a water model analysis that was completed for the recent UWMC-Northwest Behavioral Health Teaching Facility, the existing water system had capacity to provide the required domestic water flows to that project but there are recommendations to improve the system. The highest priority recommendation is to do a pipe analysis of the existing pipe system to understand the loss of chlorine residuals through the campus system.

Sewer

The UWMC-Northwest campus side sewer system collects and discharges waste from the campus to two public sewer mains, one in N 115th Street and the other in N 120th Street. The sewer main in N 115th Street is a 10-inch diameter pipe that collects sewer discharges from three separate side sewer connections from the campus. The western-most side sewer collects waste from the A-Wing, B & C-Wing, Behavioral Health Teaching Facility, McMurray Medical Building, daycare building and the parking garage. The central side sewer collects from the Fred Hutchinson Proton Therapy Center (formerly the SCCA Center) and the eastern-most connection collects waste from the Medical Office Building.

The sewer main in N 120th Street is an 8-inch diameter pipe that collects discharge from the E-Wing building through pipes that range from 6- to 8-inches and connects to two manholes along the main in N 120th Street. **Figure 3.7-2** shows the existing campus sewer services, pipes and structures.

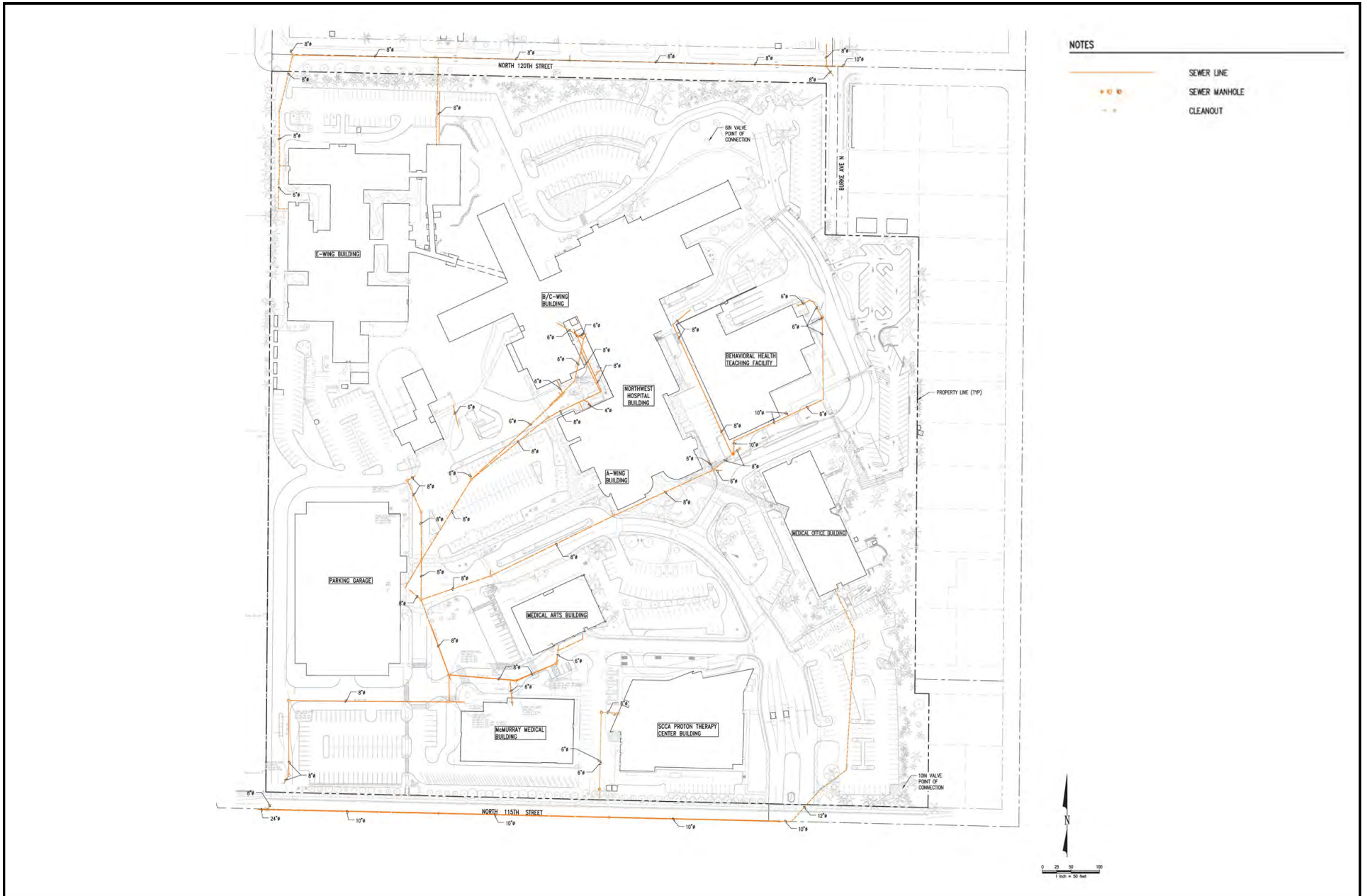
UWMC-Northwest 2024 Major Institution Master Plan Update Draft EIS



Source: KPFF, 2023.

Figure 3.7-1
Existing Water System Map

UWMC-Northwest 2024 Major Institution Master Plan Update Draft EIS



Source: KPFF, 2023.

Figure 3.7-2
Existing Sewer System Map

Stormwater

Stormwater on the existing UWMC-Northwest campus is collected and discharges at a single point to a dedicated storm drain in N 115th Street. The public storm drain enters the adjacent Pacific Lutheran Cemetery site immediately to the south of campus. The pipe crosses the cemetery through a capacity constrained system and outfalls to a wetland on the south side of the cemetery. The wetland overflows into a piped public storm drain in Meridian Avenue N which ultimately discharges to Thornton Creek and outfalls into Lake Washington.

The campus conveys runoff from adjacent properties, including Stendall Place to the west, the residential area to the north, and Burke Avenue N and N 120th Street to the north. As part of the UWMC-Northwest Behavioral Health Teaching Facility project, a right-of-way covenant was recorded in February 2022 approving the right-of-way drainage conveyance through the site. The public-private drainage connection was reconstructed through the Behavioral Health Teaching Facility Street Improvement Permit to improve the right-of-way conveyance and add a structure to separate the right-of-way system from the campus system.

On campus, a detention vault in the parking garage at the southwest corner of the campus provides detention for the entire campus before the campus outfall. The detention vault was constructed around 2004 and was sized to control peak flows tributary to the downstream capacity constrained pipe. Additionally, the Fred Hutchinson Proton Therapy Building and the Behavioral Health Teaching Facility have their own detention systems to meet more stringent standards that were required during their construction to supplement the original campus vault. A full campus storm drainage map that identifies the existing storm drain services, piping, and structures is included as **Figure 3.7-3**.

Other Utilities

The UWMC-Northwest campus is currently served by several other utilities, including telecommunications/data, electrical, and refuse/recycling. There are no known constraints associated with these utilities currently serving the UWMC-Northwest campus.

3.7.2 Impacts of the Alternatives

This section of the Draft EIS identifies the potential utilities impacts from the proposed *MIMP Update* under the EIS Alternatives.

UWMC-Northwest 2024 Major Institution Master Plan Update Draft EIS



Source: KPFF, 2023.

Figure 3.7-3
Existing Stormwater System Map

ALTERNATIVES 1 AND 2

Consistent with the proposed *MIMP Update*, Alternatives 1 and 2 include approximately 862,000 sq. ft. of net new building space throughout the campus, including new hospital space and new medical office building space.

Water

Assumed development under Alternatives 1 and 2 would result in increased demands on the water supply and distribution system. The UWMC has maintained a commitment to reduce water usage on campus and it is anticipated that new development on the campus would include efficient plumbing fixtures; water-conservation landscaping and water reuse opportunities that would meet current standards/regulations and could reduce water demand. As noted above under the Affected Environment, a water model analysis was completed for the recent UWMC-Northwest Behavioral Health Teaching Facility and the existing water system had capacity to provide the required domestic water flows to that project but there are recommendations to improve the system, in particular to analyze the loss in chlorine residuals in the campus system. As development occurs under the proposed *MIMP Update*, specific development projects would require new connections to the existing water system and associated project-specific analysis to determine the requirements to provide water service to each project.

Sewer

Development under Alternatives 1 and 2 would result in greater demands on the sewer systems that serve the UWMC-Northwest campus. It is anticipated that new development would connect to the current sanitary sewer systems within the UWMC-Northwest campus and ultimately Seattle Public Utilities. Any new connections for specific development projects to the onsite side sewers or new connections to the adjacent sewer mains would need to have a side sewer evaluation completed to verify that the system and services have the capacity to serve new development projects.

Stormwater

Stormwater runoff is directly related to the amount of impervious surfaces in a given area and new development under Alternatives 1 and 2 would result in an overall increase in impervious surfaces associated with new buildings and other impervious surfaces (walkways, driveways, etc.). As specific development projects occur under the proposed

MIMP Update, each project would be required to meet the applicable requirements of the City of Seattle's Stormwater Manual (COSSM).

Flow Control

Per the 2020 COSSM, any new development projects that include over 2,000 square feet of new and replaced hard surface will need to meet the wetland protection standard, pre-developed pasture standard, and peak control standard flow control requirements from the COSSM. The pre-developed pasture standard is considered the most stringent and will require a detention vault. This vault should be large enough to meet the peak control standard as well.

The wetland protection standard would be evaluated for each specific project is proposing over 5,000 square feet of new and replaced hard surface, and the daily and monthly discharge volumes must be within a threshold of the predeveloped stormwater volume. The wetland protection standard is intended to be compounding so all future development would add on to previously recorded development (starting with the BHTF project on the campus). If a project requires compliance with the wetland protection standard and additional flow control standards, the wetland protection standard takes precedence over other flow control standards. Because most of the campus is relatively impervious in the existing condition (approximately 20.36 acres of impervious surface), with approximately 3 acres to 3.65 acres of additional impervious surface assumed under Alternatives 1 and 2, it is note anticipated that additional measures would need to be taken for the wetland protection standard.

Water Quality

For specific development projects that would result in greater than 5,000 square feet of new or replaced pollution generating hard surfaces, the project would be required to provide enhanced water quality treatment for those areas. It is important to note that replaced impervious area due solely to utility work does not count toward this total. Water quality can be provided through bioretention planters that are required through onsite stormwater management (OSM). However, if any areas cannot be routed to a bioretention planters, any of the following City of Seattle and DOE approved systems can provide enhanced water quality treatment including (as of today): BioClean Modular Wetland System (used for the Behavioral Health Teaching Facility project), Contech Filterra Systems, or Oldcastle BioPod Biofilter.

Onsite Stormwater Management

Per the COSSM, if a specific project under the proposed *MIMP Update* proposes more than 1,500 square feet of new and replaced hard surface or 7,000 square feet of land disturbing activity, then it would need to meet OSM requirements for the entire project area. The COSSM requires that all new and replaced impervious areas must be mitigated using OSM

best management practices (BMPs) unless it is infeasible to do so. For projects under the proposed MIMP Update, individual geotechnical reports would be prepared to identify geology and soils conditions at the specific site, and determine the feasibility of implementing stormwater infiltration BMPs (including rain gardens and/or other infiltration methods).

Other Utilities

Development under the *MIMP Update* would require service for telecommunications/data, electrical, and refuse/recycling. The need for extensions and upgrades associated with these utilities would be identified through coordination with the utility providers during the design and permitting process of individual projects.

Indirect

Two scenarios for new access driveways to the UWMC-Northwest campus are considered, including a scenario reflecting a new (3rd) access from N 115th Street, and a second scenario reflecting a new driveway from N 120th Street. Both access driveway scenarios would not result in any anticipated indirect utility impacts under Alternatives 1 and 2.

NO ACTION ALTERNATIVE

Under the No Action Alternative, it is assumed that the approximately 26,000 sq. ft. of campus building capacity that remains under the 1991 Master Plan would be developed and no other physical improvements or changes to building height overlays and setbacks would occur. Buildout of the remain capacity under the 1991 Master Plan would result in an increase in utility demand associated with new building space. However, given that the location and extent of development would be controlled by the 1991 Master Plan and the amount of development would be approximately three percent of that under Alternatives 1 and 2, the potential for utility-related impacts would be lower under the No Action Alternative.

3.7.3 Mitigation Measures

The following measures would be available for development under the proposed *MIMP Update*.

Water

- Use of low- or no-flow fixtures and other water saving devices would be utilized as feasible.

- Collection and re-use of stormwater for non-potable uses (i.e., irrigation, etc.) would be utilized as feasible to reduce public water supply demand.
- Drip watering or low precipitation systems would be utilized as feasible for irrigation, and types of ground cover that require less irrigation could continue to be utilized.

Sewer

- New connections to the onsite side sewers or new connections to the adjacent sewer mains would need to have a side sewer evaluation completed to verify that the system and services have the capacity to serve each specific new development project.

Stormwater

- Per the 2020 COSSM, any new development projects that include over 2,000 square feet of new and replaced hard surface will need to meet the wetland protection standard, pre-developed pasture standard, and peak control standard flow control requirements from the COSSM.
- Specific development projects with greater than 5,000 square feet of new or replaced pollution generating hard surfaces would be required to provide enhanced water quality treatment for those areas.
- Specific development projects with more than 1,500 square feet of new and replaced hard surface or 7,000 square feet of land disturbing activity would be required to meet OSM requirements for the entire project area.
- Geotechnical reports would be prepared for individual projects to identify specific geology and soils conditions at the site, and determine the feasibility of implementing stormwater infiltration BMPs (including rain gardens and/or other infiltration methods)
- Low-Impact Demand design features would be considered during design of individual projects to minimize stormwater runoff quantity and would be considered during implementation of the University of Washington (UW) Design and Environmental review process, including review by the UW Architectural Commission and SEPA Advisory Committee.

3.7.4 Significant Unavoidable Adverse Impacts

With implementation of the mitigation measures identified above, no significant unavoidable adverse utilities impacts would be anticipated under the EIS Alternatives.

3.8 CONSTRUCTION IMPACTS

This section of the Draft EIS describes and evaluates the potential impacts associated with construction of the *UWMC-Northwest 2024 MIMP Update (MIMP Update)* under the EIS Alternatives. Construction related impacts associated with earth, air quality, noise, and trees are analyzed in this section. A discussion on transportation conditions during construction are included in Section 3.6, **Transportation**.

3.8.1 Affected Environment

UWMC-Northwest Campus

The UWMC-Northwest campus is located in North Seat le between Highway 99 (Aurora Avenue) and I-5. The campus boundary (also referred to as the Major Institution Overlay (MIO) boundary) encompasses an area of approximately 33 acres. The campus extends from N 115th Street on the south, N 120th Street on the north, approximately Meridian Avenue N on the east, and the Stendall Place residential development and Bikur Cholim Cemetery on the west.

The UWMC-Northwest approximately 33-acre campus currently contains ten buildings connected by vehicular driveways and sidewalks, with a mix of surface and structured parking. Existing buildings range from one to seven stories in height, with the majority of the buildings constructed in the 1960s with subsequent modifications (refer to Figure 2-3). The campus currently contains approximately 738,600 sq. Ft. in building space, including the Acute-Care Hospital (A-Wing), Surgical Services/Childbirth (B-Wing), Administration Building (D-Wing), Extended Care Facility (E-Wing), Specialty Center (Procure), Behavioral Health Teaching Facility, and three medical office buildings (refer to Table 2-2). A structured parking garage, surface parking lots, paved sidewalks and walkways, and interior and perimeter landscaping comprise the remainder of the campus area.

The UWMC-Northwest campus currently contains a total of 1,618 parking stalls distributed throughout the campus in a parking structure and several surface lots. The main public vehicular entrance to the UWMC-Northwest campus is provided from N 115th Street, which provides access for patients, visitors, emergency/service vehicles, and transit. A second access from N 115th Street provides keycard-controlled access for employees. A locked emergency/secondary access is provided from N 120th Street.¹

¹ The emergency/secondary access from N 120th Street is controlled by removable bollards.

Surrounding Area

The area surrounding the UWMC-Northwest campus is primarily residential and open space (cemetery) in character. One- to two-story single family residences comprise the majority of the uses to the north and east of the campus. Two-story multifamily residences (Stendall Place) are located to the west of the campus. Residences in the site vicinity are surrounded by existing mature landscaping and trees. Existing cemeteries are also located to the west and south of the campus, including the Bikur Cholim Cemetery to the west, the Orthodox Brotherly Cemetery of Saint Nicholas to the south and the Evergreen Washelli Cemetery to the southwest (refer to Figure 2-2).

3.8.2 Impacts of the Alternatives

Construction activities would be similar under Alternative 1 and Alternatives 2 and construction impacts associated with Alternative 1 and 2 are described together in this section. Note that the wider perimeter building setbacks under Alternative 1 could provide some additional separation between construction activities and adjacent properties than under Alternative 2.

ALTERNATIVES 1 AND 2

Under the proposed *MIMP Update*, up to approximately 862,000 sq. ft. of net new building space would be developed on the campus; resulting in a total of approximately 1.6 million sq. ft. of building space on campus under Alternative 1. Under Alternative 1, and consistent with the proposed *MIMP Update*, the UWMC-Northwest campus would house up to 515 hospital beds; an increase from the current 353 licensed hospital beds on campus.

Up to a total of 2,500 total parking stalls are identified in the *MIMP Update*, an increase of approximately 882 stalls over existing conditions. The additional parking would be provided as an expansion of the existing parking structure and/or a standalone parking structure at the south side of campus.

The majority of the UWMC-Northwest campus access would continue from driveways from N 115th Street under Alternative 1. It is assumed that the existing driveways on N 115th Street would be reconfigured to enhance the entry/exit movement for all modes of travel, including the eventual removal of the existing toll booths (east entry off N 115th Street) and existing gate arm (west entry off N 115th Street). A new third access point is assumed to be located on N 115th Street immediately west of the McMurray Office Building, near the existing parking garage. An optional location of the new access on N 120th Street is also considered; this optional access would be located on the south side of N 120th Street opposite Densmore Avenue N.

To accommodate proposed development, the proposed *MIMP Update* assumes the potential demolition of approximately 301,000 sq. ft. of building space (depending on the individual projects) as listed in **Table 3.8-1**. The buildings identified for demolition reflect buildings that are considered unlikely to be efficiently renovated and/or are anticipated to require removal to accommodate new health care facilities.

**TABLE 3.8-1
POTENTIAL BUILDING DEMOLITION**

| Existing Building | Number of Stories | Approx. Building Area (Sq.Ft.) |
|--|-------------------|--------------------------------|
| B-Wing | 1 | 92,624 |
| C-Wing | 1 | 39,508 |
| E-Wing | 1 | 54,408 |
| Medical Office Building | 2* | 70,202 |
| Medical Arts Building | 3 | 38,121 |
| Daycare Center | 1 | 5,611 |
| Total Potential Building Demolition | | 300,475 |

Source: UWMC-Northwest. 2023.

**The Medical Office Building includes a basement*

Construction activities associated with the *UWMC-Northwest MIMP Update* would occur throughout the development envelope (established by building height overlay and perimeter building setbacks) and would include: the removal of existing buildings (potentially those identified in Table 3.8-1), pavement and landscaping; excavation and grading; and, construction of health care service buildings totaling approximately 862,000 sq.ft. of net new space.

Earth

The amount of earthwork (excavation and fill) associated with construction under the *MIMP Update* would range from approximately 1,525,000 to 2,950,000 cubic yards of excavation (depending on the nature and location of individual projects) and approximately 365,000 cubic yards of fill over the 20 year planning horizon.

The City of Seattle has designated two areas of Environmentally Critical Areas (ECA) on the UWMC-Northwest campus, including an isolated area of Steep Slope at the east side of the existing Medical Office Building and an area of Landfill (Historical) in the northwest corner of campus. The relationship of development under the *MIMP Update* is as described below.

Steep Slope – Identified Steep Slope Area on the UWMC-Northwest campus is isolated to the east side of the Medical Office Building in the central portion of campus. Given

the isolated nature of the identified steep slopes, the potential to encounter steep slopes with development under the *MIMP Update* is low. However, any proposed development located in proximity to steep slopes would consider slopes in the design process, and all construction would be conducted in compliance with City of Seattle Environmental Critical Areas regulations (SMC 25.09)

Landfill (Historical) – Landfill (Historical) is identified at the northwestern corner of campus (currently comprised of the B-Wing Building), and individual development projects could be proposed for this portion of campus under the *MIMP Update*. Any individual projects proposed for this portion of the campus would be subject to Seattle-King County Health Department requirements related to the prevention of damage from methane gas buildup, ground subsidence, and seismic events (SMC 25.09.220).

The potential for individual projects to encounter earth conditions associated with liquefaction (sudden loss of soil strength due to earthquake) is considered low, and no portion of the site is identified by the City of Seattle as Liquefaction Area. However, any proposed development on the campus under the *MIMP Update* would be required to prepare soils engineering studies consistent with SMC 25.09.100 to confirm liquefaction potential.

Air Quality

The development of approximately 862,000 sq. ft. of net new building space on the campus would result in localized short-term increases in particulates (dust) and equipment emissions (carbon monoxide) in the vicinity of construction sites. Key construction activities causing potential impacts include: removal of existing pavement and/or buildings, excavation, grading, stockpiling of soils, soil compaction, and operation of diesel-powered trucks and equipment (i.e., generators and compressors) on the individual potential development sites.

Demolition of existing structures would require the removal and disposal of building materials, some of which could contain asbestos. If this proves to be the case, demolition contractors would be required to comply with EPA and PSCAA regulations related to the safe removal and disposal of any asbestos-containing materials.

Construction would require the use of heavy trucks, excavators, graders, cranes, pile drivers, and a range of smaller equipment such as generators, pumps, and compressors. During construction, on-campus activity and periodic traffic delays on adjacent streets could also contribute to slightly greater vehicle emissions. Emissions from existing transportation sources (primarily vehicular traffic) around the development areas would very likely outweigh any emissions resulting from construction equipment. Pollution control agencies are nonetheless now urging that emissions from diesel equipment be minimized to the

extent practicable to reduce potential health risks. Construction contractors would minimize emissions from diesel-powered construction equipment to the extent practicable by taking steps such as those discussed in **Section 3.8.3**. With appropriate code and regulation compliance, construction-related diesel emissions would not be likely to substantially affect air quality in the vicinity of any potential development area.

Although some construction could cause odors, particularly during paving operations that involve the use of tar and asphalt, any odors related to construction would be short-term and localized (and in some areas located within a busy traffic area where such odors would likely go unnoticed). Construction contractor(s) would be required to comply with PSCAA regulations that prohibit the emission of any air contaminant in sufficient quantities and of such characteristics and duration as is, or is likely to be, injurious to human health, plant or animal life, or property, or which unreasonably interferes with enjoyment of life and property.

With implementation of the controls required for the various aspects of construction activities and consistent use of best management practices (BMPs) to minimize emissions, construction activities under Alternative 1 would not be expected to significantly affect air quality.

Noise

During construction, localized sound levels would temporarily increase in the vicinity of the individual development projects under the *MIMP Update* and streets used by construction vehicles accessing the construction site. The increase in sound levels would depend upon the type of equipment being used, the duration of such use, and the proximity of the equipment to the campus boundary. Sound levels within 50 feet of construction equipment often exceed the levels typically recommended for residential and institutional land uses and, in general, decrease at a rate of about 6 dBA for each doubling of distance from the noise source. Average noise levels associated with various types of construction equipment are listed in **Table 3.8-2**.

**Table 3.8-2
TYPICAL NOISE LEVELS FROM CONSTRUCTION EQUIPMENT²**

| Equipment | Average Noise Level (dBA measured 50 ft. from the equipment) |
|------------------------------------|---|
| Dump Truck (15-20 cu.yd. capacity) | 91 |
| Scraper | 88 |
| Backhoe | 85 |
| Concrete Mixer | 85 |
| Concrete Pump | 82 |
| Air Compressor | 81 |

² United States EPA, 1971

| Equipment | Average Noise Level (dBA measured 50 ft. from the equipment) |
|-----------------|---|
| Bulldozer (D-8) | 80 |
| Generator | 78 |
| Pump | 76 |

Source: US EPA, 1971.

For a relative comparison, **Table 3.8-3** provides a list of typical sound levels for a variety of activities.

Table 3.8-3
TYPICAL SOUND LEVELS

| Noise Source | dB(A) |
|---|---------|
| Aircraft Carrier Flight Deck Operations | 140 |
| Threshold of Pain | 130-140 |
| Fireworks | 130 |
| Jet Takeoff (200 ft. distance) | 120 |
| Jack Hammer | 120 |
| Auto Horn (3 ft. distance) | 120 |
| Chain Saw/Noisy Snowmobile | 110 |
| Jet Takeoff (2,000 ft. distance) | 105 |
| Noisy Motorcycle (50 ft. distance) | 100 |
| Heavy Truck (50 ft. distance) | 90 |
| Busy Urban Street | 80 |
| Normal Automobile, Commercial Area | 70 |
| Normal Conversation (3 ft. distance) | 60 |
| Moderate Rainfall | 50 |
| Quiet Residence, Library | 40 |
| Bedroom at Night or Whisper | 30 |
| Rustle of Leaves | 10 |
| Threshold of Hearing | 0 |

Source: EPA, 1978; EPA, 1972

Construction noise would result in temporary annoyance and possibly increased speech interference near the individual construction sites. These impacts would temporarily affect adjacent uses in the campus vicinity, particularly where individual construction sites are in proximity to the campus edges and adjacent to residential uses to the west, north and east (N 120th St would provide some additional separation between individual construction projects and residential uses to the north). Construction activities associated with individual projects could also affect visitors to cemeteries to the west and south of campus (N 115th St would provide some additional separation between individual construction projects and cemetery use to the south). In addition, construction associated with individual projects under the *MIMP Update* could also affect existing health care uses on

campus that are sensitive to construction-related noise, depending on the location of the individual project. To minimize the potential for construction activities to interfere with residential, health care, cemetery and other on and adjacent to the UWMC-Northwest campus, measures such as limiting the use of higher noise equipment, ensuring properly sized/maintained mufflers and other silencers, and limiting the hours of construction would be implemented. See **Section 3.8.3**, Mitigation Measures, for detail.

Trees

The UWMC-Northwest campus currently contains approximately 12 acres of landscape and lawn areas dispersed across campus, including mature evergreen and deciduous trees. An intentionally designed buffer along the perimeter of the campus has a mixture of native and non-native species of trees, bushes, and ground cover.

The campus currently contains approximately 597 trees. Tree species on campus include but are not limited to: red oak (*Quercus rubra*), western red cedar (*Thuja plicata*), cherry plum (*Prunus cerasifera*), Douglas fir (*Pseudotsuga menziesii*), lodgepole pine (*Pinus contorta*), Japanese maple (*Acer palmatum*), paper birch (*Betula papyrifera*), river birch (*Betula nigra*), Hinoki cypress (*Chamaecyparis obtuse*), Katsura tree (*Cercidiphyllum japonicum*), southern magnolia (*Magnolia grandiflora*), and Leyland cypress (*X Cuprocyparis leylandii*).

The City of Seattle Municipal Code (SMC) 25.11 – Tree Protection, includes provisions for Exceptional trees. Exceptional trees are defined as “a tree or group of trees that because of its unique historical, ecological, or aesthetic value constitutes an important natural resource”. Of the approximately 597 trees on the UWMC-Northwest campus, approximately 69 were determined by an arborist to meet the City of Seattle definition of Exceptional tree.

Under Alternative 1 approximately 293 of the approximately 597 trees on campus are located with the proposed perimeter setback area, including approximately 16 Exceptional trees. Under Alternative 2 approximately 237 trees are located within the proposed perimeter setback area, including approximately 14 Exceptional trees. It is assumed that the majority of the existing trees located within the perimeter building setback areas would be retained under the *MIMP Update*. Any applicable Exceptional tree removed with development under the *MIMP Update* would be replaced consistent with City of Seattle requirements (SMC 25.11).

Although any tree outside of the proposed perimeter building setback areas could potentially be removed under the *MIMP Update*, it is considered unlikely that existing trees in proximity to buildings anticipated to be retained under the *MIMP Update* would be removed, including trees in the vicinity of the Parking Garage, McMurray Office Building, Fred Hutch Cancer Center Building, and the Medical Office Building.

The *MIMP Update* intends to identify and maintain open spaces throughout the campus that will be connected and accessible. A detailed Urban Forestry Management Plan is being developed for the campus that will document existing trees and provide standards for preservation and enhancement of trees on campus.

NO ACTION ALTERNATIVE

Under the No Action Alternative, construction-related impacts would primarily be related to building development that would be constructed under the existing 1991 MIMP. The No Action Alternative assumes approximately 26,000 gsf of building development. Temporary construction activities could also include earthwork, demolition, vegetation removal, and equipment operation. The potential for construction related impacts on the UWMC-Northwest campus would be substantially less than under Alternatives 1 and 2.

3.8.3 Mitigation Measures

Earth

- All earthwork and site preparation on the UWMC-Northwest campus would be conducted in compliance with relevant grading criteria of the Seattle Municipal Code (Sections 22.170 and 22.802).
- The following Temporary Erosion and Sedimentation Control (TESC) measures would be implemented, as appropriate for the individual sites, as part of code compliance to reduce the risk of construction-related erosion:
 - The ground surface in the construction area would be sloped and sealed to reduce water infiltration, to promote rapid runoff, and to prevent water ponding.
 - To prevent soil disturbance, the size or type of construction equipment may have to be limited.
 - No soil would be left uncompacted and exposed to moisture. A smooth-drum vibratory roller, or equivalent, would be used to seal the ground surface.
 - Work areas and soil stockpiles would be covered with plastic. Bales of straw and/or geotextile silt fences would be used as appropriate to control soil erosion.
 - During periods of wet weather, excavation and fill placement would be observed by a geotechnical engineer (or engineer's representative) experienced in wet weather earthwork to determine that unsuitable materials are removed and that suitable compaction and site drainage is achieved.

- Excavation slopes would be protected from infiltration and erosion by directing water away from excavations and covering slopes with impermeable membranes, such as plastic sheeting.
 - Excavated materials, stockpiles, and equipment would be placed away from the top edge of excavations a distance equal to at least the depth of the excavation.
 - To prevent an accumulation of dust and/or mud on campus during construction activities, the tires of construction equipment and trucks could be washed before they leave construction sites and streets could be swept as necessary.
- Site specific geotechnical recommendations would be provided as individual projects are proposed. Typical measures that could be implemented as part of code compliance, based on the specific conditions at the individual sites, include:
 - Excavations greater than four feet in height would be adequately sloped or braced to prevent localized sloughing and spalling.
 - Temporary shoring would be implemented during construction and would consist of a conventional soldier pile and lagging system.
 - All soil excavated from the site would be tested for contamination. All soil would be disposed of consistent with applicable University of Washington, State and local regulations.
 - Soldier piles and/or other slope stability techniques could be used as necessary in areas of unstable soils.
 - Structures could be designed with structural systems capable of supporting code-required floor loading and resisting lateral forces generated by earthquakes and wind.
 - Whenever possible, construction could be scheduled to minimize overlapping of excavation periods for projects.
 - Construction activities conducted in portions of the campus identified as containing earth-related environmentally critical areas (in the northwest corner of campus and in proximity to the Medical Office Building in central campus) identified by the City of Seattle Municipal Code (SMC) would comply with applicable development standards for: Steep Slope Areas (SMC 25.09.180); and, Landfills (Historical) (SMC 25.09.220)

Air Quality

- During construction, applicable best management practices (BMPs) to control dust, vehicle and equipment emissions would be implemented.

- Building construction and demolition would be conducted in compliance with Seattle Municipal Code Section 15.22.060B which provides criteria related to suppression of dust-generating activities.
- Where appropriate, temporary asphalt roadways would be provided as part of construction to reduce the amount of dust and dirt that would be generated.
- As applicable, a Construction Management Plan would be prepared for each individual construction project to establish parking areas, construction staging areas, truck haul routes, and provisions for maintaining pedestrian and vehicle routes. These measures are intended to, among other things, minimize traffic delays and associated vehicle idling.
- As applicable, control measures in the Washington Associated General Contractors *Guide to Handling Fugitive Dust from Construction Projects* would be used, including:
 - using only equipment and trucks that are maintained in optimal operational condition;
 - requiring all off-road equipment to have emission reduction equipment (e.g., require participation in Puget Sound Region Diesel Solutions, a program designed to reduce air pollution from diesel, by project sponsors and contractors);
 - implementing restrictions on construction truck and other vehicle idling (e.g., limit idling to a maximum of 5 minutes);
 - spraying exposed soil with water or other suppressant to reduce emissions of PM and deposition of particulate matter;
 - covering all trucks transporting materials, wetting materials in trucks, or providing adequate freeboard (space from the top of the material to the top of the truck bed), to reduce PM emissions and deposition during transport;
 - providing wheel washers to remove particulate matter that would otherwise be carried off-site by vehicles in order to decrease deposition of particulate matter on area roadways; and
 - covering dirt, gravel, and debris piles as needed to reduce dust and wind-blown debris.

Noise

- Construction activities would comply with the City of Seattle Noise Ordinance (SMC 25.08.425) which allows for temporary increases in the maximum permissible sound levels based on equipment type.

- The UWMC-Northwest also has additional conditions/considerations that project-specific contractors meet the following noise control criteria:
 - The use of electric equipment and machinery is preferred. If noise levels on any equipment or device cannot reasonably be reduced to criteria levels, either that equipment or device will not be allowed on the job or use times will have to be scheduled subject to approval.
 - The sound pressure level of each piece of equipment cannot be greater than 85 dBA at a distance of 50 feet. Rubber-tired equipment is to be used whenever possible instead of equipment with metal tracks. Mufflers for stationary engines are to be used in the hospital areas and areas within 100 feet of the campus boundary. Construction traffic should be routed through the nearest campus exit.
 - Air compressors are to be equipped with silencing packages.
 - Jack hammers and roto hammers may be used where no other alternative is available; core drilling and saw cutting equipment is preferred.
 - Specific scheduling of construction-related noise activities is required at the UWMC-Northwest Hospital.

Trees

- A detailed Urban Forest Management Plan is under development for the campus that will document existing trees and provide standards for preservation and enhancement of trees on campus.
- Replacement of each Exceptional tree removed associated with development with a tree or trees that will provide the same canopy coverage at maturity unless the removed tree qualifies as a hazardous tree.

3.8.4 Significant Unavoidable Adverse Impacts

With implementation of the identified mitigation measures, significant impacts associated with construction activities are not anticipated.

CHAPTER 4

REFERENCES

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- Washington State Department of Archaeology and Historic Preservation. *Washington Information System for Architectural and Archaeological Records Data*. Accessed May 2023.
- Washington State Department of Ecology. *Washington Air Quality Standards Areas*:
<https://ecology.wa.gov/Regulations-Permits/Plans-policies/Areas-meeting-and-not-meeting-air-standards>. Accessed June 2023.

DISTRIBUTION LIST

Appendix A

UWMC-Northwest MIMP Draft EIS Distribution List

Publications

Daily Journal of Commerce
Seattle Times
UW Today

Agencies

Muckleshoot Tribe
Seattle Department of Construction and Inspections
Seattle Department of Neighborhoods
Seattle Department of Transportation
Seattle Fire Department
Seattle City Light
Seattle Public Utilities
Washington Department of Ecology SEPA Center

Community Organizations

UWMC-Northwest Development Advisory Committee (10 member committee representing surrounding neighborhoods)

Libraries

Seattle Libraries – Northgate and Broadview Branches

University of Washington

UW Facilities, Asset Management
UW Facilities, Real Estate
UW Medical Center

All Property Owners within 300 feet of the campus boundary.

GHG EMISSIONS WORKSHEET

City of Seattle Department of Planning and Development
SEPA GHG Emissions Worksheet
Version 1.7 12/26/07

Introduction

The Washington State Environmental Policy Act (SEPA) requires environmental review of development proposals that may have a significant adverse impact on the environment. If a proposed development is subject to SEPA, the project proponent is required to complete the SEPA Checklist. The Checklist includes questions relating to the development's air emissions. The emissions that have traditionally been considered cover smoke, dust, and industrial and automobile emissions. With our understanding of the climate change impacts of GHG emissions, the City of Seattle requires the applicant to also estimate these emissions.

Emissions created by Development

GHG emissions associated with development come from multiple sources:

- The extraction, processing, transportation, construction and disposal of materials and landscape disturbance (Embodied Emissions)
- Energy demands created by the development after it is completed (Energy Emissions)
- Transportation demands created by the development after it is completed (Transportation Emissions)

GHG Emissions Worksheet

This GHG Emissions Worksheet has been developed to assist applicants in answering the SEPA Checklist question relating to GHG emissions. The worksheet was originally developed by King County, but the City of Seattle and King County are working together on future updates to maintain consistency of methodologies across jurisdictions.

The SEPA GHG Emissions worksheet estimates all GHG emissions that will be created over the life span of a project. This includes emissions associated with obtaining construction materials, fuel used during construction, energy consumed during a buildings operation, and transportation by building occupants.

Using the Worksheet

1. Descriptions of the different residential and commercial building types can be found on the second tabbed worksheet ("Definition of Building Types"). If a development proposal consists of multiple projects, e.g. both single family and multi-family residential structures or a commercial development that consists of more than one type of commercial activity, the appropriate information should be estimated for each type of building or activity.

2. For paving, estimate the total amount of paving (in thousands of square feet) of the project.
3. The Worksheet will calculate the amount of GHG emissions associated with the project and display the amount in the "Total Emissions" column on the worksheet. The applicant should use this information when completing the SEPA checklist.
4. The last three worksheets in the Excel file provide the background information that is used to calculate the total GHG emissions.
5. The methodology of creating the estimates is transparent; if there is reason to believe that a better estimate can be obtained by changing specific values, this can and should be done. Changes to the values should be documented with an explanation of why and the sources relied upon.
6. Print out the "Total Emissions" worksheet and attach it to the SEPA checklist. If the applicant has made changes to the calculations or the values, the documentation supporting those changes should also be attached to the SEPA checklist.

UWMC-Northwest - Alternative 1 and 2

Section I: Buildings

| Type (Residential) or Principal Activity (Commercial) | # Units | Square Feet (in thousands of square feet) | Emissions Per Unit or Per Thousand Square Feet (MTCO ₂ e) | | | Lifespan Emissions (MTCO ₂ e) |
|--|---------|---|---|--------|----------------|--|
| | | | Embodied | Energy | Transportation | |
| Single-Family Home..... | 0 | | 98 | 672 | 792 | 0 |
| Multi-Family Unit in Large Building | 0 | | 33 | 357 | 766 | 0 |
| Multi-Family Unit in Small Building | 0 | | 54 | 681 | 766 | 0 |
| Mobile Home..... | 0 | | 41 | 475 | 709 | 0 |
| Education | | 0.0 | 39 | 646 | 361 | 0 |
| Food Sales | | 0.0 | 39 | 1,541 | 282 | 0 |
| Food Service | | 0.0 | 39 | 1,994 | 561 | 0 |
| Health Care Inpatient | | 862.0 | 39 | 1,938 | 582 | 2205514 |
| Health Care Outpatient | | 0.0 | 39 | 737 | 571 | 0 |
| Lodging | | 0.0 | 39 | 777 | 117 | 0 |
| Retail (Other Than Mall)..... | | 0.0 | 39 | 577 | 247 | 0 |
| Office | | 0.0 | 39 | 723 | 588 | 0 |
| Public Assembly | | 0.0 | 39 | 733 | 150 | 0 |
| Public Order and Safety | | 0.0 | 39 | 899 | 374 | 0 |
| Religious Worship | | 0.0 | 39 | 339 | 129 | 0 |
| Service | | 0.0 | 39 | 599 | 266 | 0 |
| Warehouse and Storage | | 0.0 | 39 | 352 | 181 | 0 |
| Other | | 0.0 | 39 | 1,278 | 257 | 0 |
| Vacant | | 0.0 | 39 | 162 | 47 | 0 |

Section II: Pavement.....

| | | | | | | |
|---------------|--|------|--|--|--|---|
| Pavement..... | | 0.00 | | | | 0 |
|---------------|--|------|--|--|--|---|

Total Project Emissions:

2205514

UWMC-Northwest - No Action Alternative

Section I: Buildings

| Type (Residential) or Principal Activity (Commercial) | # Units | Square Feet (in thousands of square feet) | Emissions Per Unit or Per Thousand Square Feet (MTCO ₂ e) | | | Lifespan Emissions (MTCO ₂ e) |
|--|---------|---|---|--------|----------------|--|
| | | | Embodied | Energy | Transportation | |
| Single-Family Home..... | 0 | | 98 | 672 | 792 | 0 |
| Multi-Family Unit in Large Building | 0 | | 33 | 357 | 766 | 0 |
| Multi-Family Unit in Small Building | 0 | | 54 | 681 | 766 | 0 |
| Mobile Home..... | 0 | | 41 | 475 | 709 | 0 |
| Education | | 0.0 | 39 | 646 | 361 | 0 |
| Food Sales | | 0.0 | 39 | 1,541 | 282 | 0 |
| Food Service | | 0.0 | 39 | 1,994 | 561 | 0 |
| Health Care Inpatient | | 26.0 | 39 | 1,938 | 582 | 66524 |
| Health Care Outpatient | | 0.0 | 39 | 737 | 571 | 0 |
| Lodging | | 0.0 | 39 | 777 | 117 | 0 |
| Retail (Other Than Mall)..... | | 0.0 | 39 | 577 | 247 | 0 |
| Office | | 0.0 | 39 | 723 | 588 | 0 |
| Public Assembly | | 0.0 | 39 | 733 | 150 | 0 |
| Public Order and Safety | | 0.0 | 39 | 899 | 374 | 0 |
| Religious Worship | | 0.0 | 39 | 339 | 129 | 0 |
| Service | | 0.0 | 39 | 599 | 266 | 0 |
| Warehouse and Storage | | 0.0 | 39 | 352 | 181 | 0 |
| Other | | 0.0 | 39 | 1,278 | 257 | 0 |
| Vacant | | 0.0 | 39 | 162 | 47 | 0 |

Section II: Pavement.....

| | | | | | | |
|---------------|--|------|--|--|--|---|
| Pavement..... | | 0.00 | | | | 0 |
|---------------|--|------|--|--|--|---|

Total Project Emissions:

| |
|--------------|
| 66524 |
|--------------|

Definition of Building Types

| Type (Residential) or Principal Activity (Commercial) | Description |
|---|---|
| Single-Family Home..... | Unless otherwise specified, this includes both attached and detached buildings |
| Multi-Family Unit in Large Building | Apartments in buildings with more than 5 units |
| Multi-Family Unit in Small Building | Apartments in building with 2-4 units |
| Mobile Home..... | |
| Education | Buildings used for academic or technical classroom instruction, such as elementary, middle, or high schools, and classroom buildings on college or university campuses. Buildings on education campuses for which the main use is not classroom are included in the category relating to their use. For example, administration buildings are part of "Office," dormitories are "Lodging," and libraries are "Public Assembly." |
| Food Sales | Buildings used for retail or wholesale of food. |
| Food Service | Buildings used for preparation and sale of food and beverages for consumption. |
| Health Care Inpatient | Buildings used as diagnostic and treatment facilities for inpatient care. |
| Health Care Outpatient | Buildings used as diagnostic and treatment facilities for outpatient care. Doctor's or dentist's office are included here if they use any type of diagnostic medical equipment (if they do not, they are categorized as an office building). |
| Lodging | Buildings used to offer multiple accommodations for short-term or long-term residents, including skilled nursing and other residential care buildings. |
| Retail (Other Than Mall)..... | Buildings used for the sale and display of goods other than food. |
| Office | Buildings used for general office space, professional office, or administrative offices. Doctor's or dentist's office are included here if they do not use any type of diagnostic medical equipment (if they do, they are categorized as an outpatient health care building). |
| Public Assembly | Buildings in which people gather for social or recreational activities, whether in private or non-private meeting halls. |
| Public Order and Safety | Buildings used for the preservation of law and order or public safety. |
| Religious Worship | Buildings in which people gather for religious activities, (such as chapels, churches, mosques, synagogues, and temples). |
| Service | Buildings in which some type of service is provided, other than food service or retail sales of goods |
| Warehouse and Storage | Buildings used to store goods, manufactured products, merchandise, raw materials, or personal belongings (such as self-storage). |
| Other | Buildings that are industrial or agricultural with some retail space; buildings having several different commercial activities that, together, comprise 50 percent or more of the floorspace, but whose largest single activity is agricultural, industrial/ manufacturing, or residential; and all other miscellaneous buildings that do not fit into any other category. |
| Vacant | Buildings in which more floorspace was vacant than was used for any single commercial activity at the time of interview. Therefore, a vacant building may have some occupied floorspace. |

Sources:

Residential 2001 Residential Energy Consumption Survey
 Square footage measurements and comparisons
<http://www.eia.doe.gov/emeu/recs/sqft-measure.html>

Commercial Commercial Buildings Energy Consumption Survey (CBECS),
 Description of CBECS Building Types
<http://www.eia.doe.gov/emeu/cbeecs/pba99/bldgtypes.html>

Embodied Emissions Worksheet

Section I: Buildings

| Type (Residential) or Principal Activity (Commercial) | # thousand sq feet/ unit or building | Life span related embodied GHG missions (MTCO2e/ unit) | Life span related embodied GHG missions (MTCO2e/ thousand square feet) - See calculations in table below |
|---|--------------------------------------|--|--|
| Single-Family Home..... | 2.53 | 98 | 39 |
| Multi-Family Unit in Large Building | 0.85 | 33 | 39 |
| Multi-Family Unit in Small Building | 1.39 | 54 | 39 |
| Mobile Home..... | 1.06 | 41 | 39 |
| Education | 25.6 | 991 | 39 |
| Food Sales | 5.6 | 217 | 39 |
| Food Service | 5.6 | 217 | 39 |
| Health Care Inpatient | 241.4 | 9,346 | 39 |
| Health Care Outpatient | 10.4 | 403 | 39 |
| Lodging | 35.8 | 1,386 | 39 |
| Retail (Other Than Mall)..... | 9.7 | 376 | 39 |
| Office | 14.8 | 573 | 39 |
| Public Assembly | 14.2 | 550 | 39 |
| Public Order and Safety | 15.5 | 600 | 39 |
| Religious Worship | 10.1 | 391 | 39 |
| Service | 6.5 | 252 | 39 |
| Warehouse and Storage | 16.9 | 654 | 39 |
| Other | 21.9 | 848 | 39 |
| Vacant | 14.1 | 546 | 39 |

Section II: Pavement.....

| | | | |
|----------------------------|--|--|----|
| All Types of Pavement..... | | | 50 |
|----------------------------|--|--|----|

| | Columns and Beams | Intermediate Floors | Exterior Walls | Windows | Interior Walls | Roofs | Total Embodied Emissions (MTCO2e) | Total Embodied Emissions (MTCO2e/ thousand sq feet) |
|---|-------------------|---------------------|----------------|---------|----------------|--------|-----------------------------------|---|
| Average GWP (lbs CO2e/sq ft): Vancouver, Low Rise Building | 5.3 | 7.8 | 19.1 | 51.2 | 5.7 | 21.3 | | |
| Average Materials in a 2,272-square foot single family home | 0.0 | 2269.0 | 3206.0 | 285.0 | 6050.0 | 3103.0 | | |
| MTCO2e | 0.0 | 8.0 | 27.8 | 6.6 | 15.6 | 30.0 | 88.0 | 38.7 |

Sources

All data in black text

King County, DNRP. Contact: Matt Kuharic, matt.kuharic@kingcounty.gov

Residential floorspace per unit

2001 Residential Energy Consumption Survey (National Average, 2001)
 Square footage measurements and comparisons
<http://www.eia.doe.gov/emeu/recs/sqft-measure.html>

Floorspace per building

EIA, 2003 Commercial Buildings Energy Consumption Survey (National Average, 2003)
 Table C3. Consumption and Gross Energy Intensity for Sum of Major Fuels for Non-Mall Buildings, 2003
http://www.eia.doe.gov/emeu/cbecs/cbecs2003/detailed_tables_2003/2003set9/2003excel/c3.xls

Average GWP (lbs CO2e/sq ft): Vancouver, Low Rise Building

Athena EcoCalculator
 Athena Assembly Evaluation Tool v2.3- Vancouver Low Rise Building
 Assembly Average GWP (kg) per square meter
<http://www.athenasmi.ca/tools/ecoCalculator/index.html>
 Lbs per kg 2.20
 Square feet per square meter 10.76

Average Materials in a 2,272-square foot single family home

Buildings Energy Data Book: 7.3 Typical/Average Household
 Materials Used in the Construction of a 2,272-Square-Foot Single-Family Home, 2000
http://buildingsdatabook.eren.doe.gov/?id=view_book_table&TableID=2036&t=xls
 See also: NAHB, 2004 Housing Facts, Figures and Trends, Feb. 2004, p. 7.

Average window size

Energy Information Administration/Housing Characteristics 1993
 Appendix B, Quality of the Data. Pg. 5.
<ftp://ftp.eia.doe.gov/pub/consumption/residential/rx93hcf.pdf>

Embodied GHG Emissions.....Worksheet Background Information

Buildings

Embodied GHG emissions are emissions that are created through the extraction, processing, transportation, construction and disposal of building materials as well as emissions created through landscape disturbance (by both soil disturbance and changes in above ground biomass).

Estimating embodied GHG emissions is new field of analysis; the estimates are rapidly improving and becoming more inclusive of all elements of construction and development.

The estimate included in this worksheet is calculated using average values for the main construction materials that are used to create a typical family home. In 2004, the National Association of Home Builders calculated the average materials that are used in a typical 2,272 square foot single-family household. The quantity of materials used is then multiplied by the average GHG emissions associated with the life-cycle GHG emissions for each material.

This estimate is a rough and conservative estimate; the actual embodied emissions for a project are likely to be higher. For example, at this stage, due to a lack of comprehensive data, the estimate does not include important factors such as landscape disturbance or the emissions associated with the interior components of a building (such as furniture).

King County realizes that the calculations for embodied emissions in this worksheet are rough. For example, the emissions associated with building 1,000 square feet of a residential building will not be the same as 1,000 square feet of a commercial building. However, discussions with the construction community indicate that while there are significant differences between the different types of structures, this method of estimation is reasonable; it will be improved as more data become available.

Additionally, if more specific information about the project is known, King County recommends two online embodied emissions calculators that can be used to obtain a more tailored estimate for embodied emissions: www.buildcarbonneutral.org and www.athenasmi.ca/tools/ecoCalculator/.

Pavement

Four recent life cycle assessments of the environmental impacts of roads form the basis for the per unit embodied emissions of pavement. Each study is constructed in slightly different ways; however, the aggregate results of the reports represent a reasonable estimate of the GHG emissions that are created from the manufacture of paving materials, construction related emissions, and maintenance of the pavement over its expected life cycle. For specifics, see the worksheet.

Special Section: Estimating the Embodied Emissions for Pavement

Four recent life cycle assessments of the environmental impacts of roads form the basis for the per unit embodied emissions of pavement. Each study is constructed in slightly different ways; however, the aggregate results of the reports represent a reasonable estimate of the GHG emissions that are created from the manufacture of paving materials, construction related emissions, and maintenance of the pavement over its expected life cycle.

The results of the studies are presented in different units and measures; considerable effort was undertaken to be able to compare the results of the studies in a reasonable way. For more details about the below methodology, contact matt.kuharic@kingcounty.gov.

The four studies, Meil (2001), Park (2003), Stripple (2001) and Treolar (2001) produced total GHG emissions of 4-34 MTCO₂e per thousand square feet of finished paving (for similar asphalt and concrete based pavements). This estimate does not including downstream maintenance and repair of the highway. The average (for all concrete and asphalt pavements in the studies, assuming each study gets one data point) is ~17 MTCO₂e/thousand square feet.

Three of the studies attempted to thoroughly account for the emissions associated with long term maintenance (40 years) of the roads. Stripple (2001), Park et al. (2003) and Treolar (2001) report 17, 81, and 68 MTCO₂e/thousand square feet, respectively, after accounting for maintenance of the roads.

Based on the above discussion, King County makes the conservative estimate that 50 MTCO₂e/thousand square feet of pavement (over the development's life cycle) will be used as the embodied emission factor for pavement until better estimates can be obtained. This is roughly equivalent to 3,500 MTCO₂e per lane mile of road (assuming the lane is 13 feet wide).

It is important to note that these studies estimate the embodied emissions for roads. Paving that does not need to stand up to the rigors of heavy use (such as parking lots or driveways) would likely use less materials and hence have lower embodied emissions.

Sources:

Meil, J. A Life Cycle Perspective on Concrete and Asphalt Roadways: Embodied Primary Energy and Global Warming Potential. 2006. Available: [http://www.cement.ca/cement.nsf/eee9ec7bbd630126852566c40052107b/6ec79dc8ae03a782852572b90061b914/\\$FILE/ATTK0WE3/athena%20report%20Feb.%202%202007.pdf](http://www.cement.ca/cement.nsf/eee9ec7bbd630126852566c40052107b/6ec79dc8ae03a782852572b90061b914/$FILE/ATTK0WE3/athena%20report%20Feb.%202%202007.pdf)

Park, K, Hwang, Y., Seo, S., M.ASCE, and Seo, H. , "Quantitative Assessment of Environmental Impacts on Life Cycle of Highways," Journal of Construction Engineering and Management , Vol 129, January/February 2003, pp 25-31, (DOI: 10.1061/(ASCE)0733-9364(2003)129:1(25)).

Stripple, H. Life Cycle Assessment of Road. A Pilot Study for Inventory Analysis. Second Revised Edition. IVL Swedish Environmental Research Institute Ltd. 2001. Available: <http://www.ivl.se/rapporter/pdf/B1210E.pdf>

Treolar, G., Love, P.E.D., and Crawford, R.H. Hybrid Life-Cycle Inventory for Road Construction and Use. Journal of Construction Engineering and Management. P. 43-49. January/February 2004.

Energy Emissions Worksheet

| Type (Residential) or Principal Activity (Commercial) | Energy consumption per building per year (million Btu) | Carbon Coefficient for Buildings | MTCO2e per building per year | Floorspace per Building (thousand square feet) | MTCE per thousand square feet per year | MTCO2e per thousand square feet per year | Average Building Life Span | Lifespan Energy Related MTCO2e emissions per unit | Lifespan Energy Related MTCO2e emissions per thousand square feet |
|---|--|----------------------------------|------------------------------|--|--|--|----------------------------|---|---|
| Single-Family Home..... | 107.3 | 0.108 | 11.61 | 2.53 | 4.6 | 16.8 | 57.9 | 672 | 266 |
| Multi-Family Unit in Large Building | 41.0 | 0.108 | 4.44 | 0.85 | 5.2 | 19.2 | 80.5 | 357 | 422 |
| Multi-Family Unit in Small Building | 78.1 | 0.108 | 8.45 | 1.39 | 6.1 | 22.2 | 80.5 | 681 | 489 |
| Mobile Home..... | 75.9 | 0.108 | 8.21 | 1.06 | 7.7 | 28.4 | 57.9 | 475 | 448 |
| Education | 2,125.0 | 0.124 | 264.2 | 25.6 | 10.3 | 37.8 | 62.5 | 16,526 | 646 |
| Food Sales | 1,110.0 | 0.124 | 138.0 | 5.6 | 24.6 | 90.4 | 62.5 | 8,632 | 1,541 |
| Food Service | 1,436.0 | 0.124 | 178.5 | 5.6 | 31.9 | 116.9 | 62.5 | 11,168 | 1,994 |
| Health Care Inpatient | 60,152.0 | 0.124 | 7,479.1 | 241.4 | 31.0 | 113.6 | 62.5 | 467,794 | 1,938 |
| Health Care Outpatient | 985.0 | 0.124 | 122.5 | 10.4 | 11.8 | 43.2 | 62.5 | 7,660 | 737 |
| Lodging | 3,578.0 | 0.124 | 444.9 | 35.8 | 12.4 | 45.6 | 62.5 | 27,826 | 777 |
| Retail (Other Than Mall)..... | 720.0 | 0.124 | 89.5 | 9.7 | 9.2 | 33.8 | 62.5 | 5,599 | 577 |
| Office | 1,376.0 | 0.124 | 171.1 | 14.8 | 11.6 | 42.4 | 62.5 | 10,701 | 723 |
| Public Assembly | 1,338.0 | 0.124 | 166.4 | 14.2 | 11.7 | 43.0 | 62.5 | 10,405 | 733 |
| Public Order and Safety | 1,791.0 | 0.124 | 222.7 | 15.5 | 14.4 | 52.7 | 62.5 | 13,928 | 899 |
| Religious Worship | 440.0 | 0.124 | 54.7 | 10.1 | 5.4 | 19.9 | 62.5 | 3,422 | 339 |
| Service | 501.0 | 0.124 | 62.3 | 6.5 | 9.6 | 35.1 | 62.5 | 3,896 | 599 |
| Warehouse and Storage | 764.0 | 0.124 | 95.0 | 16.9 | 5.6 | 20.6 | 62.5 | 5,942 | 352 |
| Other | 3,600.0 | 0.124 | 447.6 | 21.9 | 20.4 | 74.9 | 62.5 | 27,997 | 1,278 |
| Vacant | 294.0 | 0.124 | 36.6 | 14.1 | 2.6 | 9.5 | 62.5 | 2,286 | 162 |

Sources

All data in black text

King County, DNRP. Contact: Matt Kuharic, matt.kuharic@kingcounty.gov

Energy consumption for residential buildings

2007 Buildings Energy Data Book: 6.1 Quad Definitions and Comparisons (National Average, 2001)
 Table 6.1.4: Average Annual Carbon Dioxide Emissions for Various Functions
<http://buildingsdatabook.eren.doe.gov/>
 Data also at: http://www.eia.doe.gov/emeu/recs/recs2001_ce/ce1-4c_housingunits2001.html

Energy consumption for commercial buildings and Floorspace per building

EIA, 2003 Commercial Buildings Energy Consumption Survey (National Average, 2003)
 Table C3. Consumption and Gross Energy Intensity for Sum of Major Fuels for Non-Mall Buildings, 2003
http://www.eia.doe.gov/emeu/cbecs/cbecs2003/detailed_tables_2003/2003set9/2003excel/c3.xls

Note: Data in plum color is found in both of the above sources (buildings energy data book and commercial buildings energy consumption survey).

Carbon Coefficient for Buildings

Buildings Energy Data Book (National average, 2005)
 Table 3.1.7. 2005 Carbon Dioxide Emission Coefficients for Buildings (MMTCE per Quadrillion Btu)
http://buildingsdatabook.eere.energy.gov/?id=view_book_table&TableID=2057
 Note: Carbon coefficient in the Energy Data book is in MTCE per Quadrillion Btu.
 To convert to MTCO2e per million Btu, this factor was divided by 1000 and multiplied by 44/12.

Residential floorspace per unit

2001 Residential Energy Consumption Survey (National Average, 2001)
 Square footage measurements and comparisons
<http://www.eia.doe.gov/emeu/recs/sqft-measure.html>

average life span of buildings,
estimated by replacement time method

| | Single Family Homes | Multi-Family Units in Large and Small Buildings | All Residential Buildings |
|--------------------------------|---------------------|---|---------------------------|
| New Housing Construction, 2001 | 1,273,000 | 329,000 | 1,602,000 |
| Existing Housing Stock, 2001 | 73,700,000 | 26,500,000 | 100,200,000 |
| Replacement time: | 57.9 | 80.5 | 62.5 |

(national average, 2001)

Note: Single family homes calculation is used for mobile homes as a best estimate life span.

Note: At this time, KC staff could find no reliable data for the average life span of commercial buildings.

Therefore, the average life span of residential buildings is being used until a better approximation can be ascertained.

Sources:

New Housing Construction,

2001 Quarterly Starts and Completions by Purpose and Design - US and Regions (Excel)
http://www.census.gov/const/quarterly_starts_completions_cust.xls
 See also: <http://www.census.gov/const/www/newresconstindex.html>

Existing Housing Stock,

2001 Residential Energy Consumption Survey (RECS) 2001
 Tables HC1:Housing Unit Characteristics, Million U.S. Households 2001
 Table HC1-4a. Housing Unit Characteristics by Type of Housing Unit, Million U.S. Households, 2001
 Million U.S. Households, 2001
http://www.eia.doe.gov/emeu/recs/recs2001/hc_pdf/housunits/hc1-4a_housingunits2001.pdf

Transportation Emissions Worksheet

| Type (Residential) or Principal Activity (Commercial) | # people/ unit or building | # thousand sq feet/ unit or building | # people or employees/ thousand square feet | vehicle related GHG emissions (metric tonnes CO2e per person per year) | MTCO2e/ year/ unit | MTCO2e/ year/ thousand square feet | Average Building Life Span | Life span transportation related GHG emissions (MTCO2e/ per unit) | Life span transportation related GHG emissions (MTCO2e/ thousand sq feet) |
|---|----------------------------|--------------------------------------|---|--|--------------------|------------------------------------|----------------------------|---|---|
| Single-Family Home..... | 2.8 | 2.53 | 1.1 | 4.9 | 13.7 | 5.4 | 57.9 | 792 | 313 |
| Multi-Family Unit in Large Building | 1.9 | 0.85 | 2.3 | 4.9 | 9.5 | 11.2 | 80.5 | 766 | 904 |
| Multi-Family Unit in Small Building | 1.9 | 1.39 | 1.4 | 4.9 | 9.5 | 6.8 | 80.5 | 766 | 550 |
| Mobile Home..... | 2.5 | 1.06 | 2.3 | 4.9 | 12.2 | 11.5 | 57.9 | 709 | 668 |
| Education | 30.0 | 25.6 | 1.2 | 4.9 | 147.8 | 5.8 | 62.5 | 9247 | 361 |
| Food Sales | 5.1 | 5.6 | 0.9 | 4.9 | 25.2 | 4.5 | 62.5 | 1579 | 282 |
| Food Service | 10.2 | 5.6 | 1.8 | 4.9 | 50.2 | 9.0 | 62.5 | 3141 | 561 |
| Health Care Inpatient | 455.5 | 241.4 | 1.9 | 4.9 | 2246.4 | 9.3 | 62.5 | 140506 | 582 |
| Health Care Outpatient | 19.3 | 10.4 | 1.9 | 4.9 | 95.0 | 9.1 | 62.5 | 5941 | 571 |
| Lodging | 13.6 | 35.8 | 0.4 | 4.9 | 67.1 | 1.9 | 62.5 | 4194 | 117 |
| Retail (Other Than Mall)..... | 7.8 | 9.7 | 0.8 | 4.9 | 38.3 | 3.9 | 62.5 | 2394 | 247 |
| Office | 28.2 | 14.8 | 1.9 | 4.9 | 139.0 | 9.4 | 62.5 | 8696 | 588 |
| Public Assembly | 6.9 | 14.2 | 0.5 | 4.9 | 34.2 | 2.4 | 62.5 | 2137 | 150 |
| Public Order and Safety | 18.8 | 15.5 | 1.2 | 4.9 | 92.7 | 6.0 | 62.5 | 5796 | 374 |
| Religious Worship | 4.2 | 10.1 | 0.4 | 4.9 | 20.8 | 2.1 | 62.5 | 1298 | 129 |
| Service | 5.6 | 6.5 | 0.9 | 4.9 | 27.6 | 4.3 | 62.5 | 1729 | 266 |
| Warehouse and Storage | 9.9 | 16.9 | 0.6 | 4.9 | 49.0 | 2.9 | 62.5 | 3067 | 181 |
| Other | 18.3 | 21.9 | 0.8 | 4.9 | 90.0 | 4.1 | 62.5 | 5630 | 257 |
| Vacant | 2.1 | 14.1 | 0.2 | 4.9 | 10.5 | 0.7 | 62.5 | 657 | 47 |

Sources

All data in black text

King County, DNRP. Contact: Matt Kuharic, matt.kuharic@kingcounty.gov

people/ unit

Estimating Household Size for Use in Population Estimates (WA state, 2000 average)
 Washington State Office of Financial Management
 Kimpel, T. and Lowe, T. Research Brief No. 47. August 2007
<http://www.ofm.wa.gov/researchbriefs/brief047.pdf>
 Note: This analysis combines Multi Unit Structures in both large and small units into one category; the average is used in this case although there is likely a difference

Residential floorspace per unit

2001 Residential Energy Consumption Survey (National Average, 2001)
 Square footage measurements and comparisons
<http://www.eia.doe.gov/emeu/recs/sqft-measure.html>

employees/thousand square feet

Commercial Buildings Energy Consumption Survey commercial energy uses and costs (National Median, 2003)
 Table B2 Totals and Medians of Floorspace, Number of Workers, and Hours of Operation for Non-Mall Buildings, 2003
http://www.eia.doe.gov/emeu/cbeccs/cbeccs2003/detailed_tables_2003/2003set1/2003excel/b2.xls

Note: Data for # employees/thousand square feet is presented by CBECS as square feet/employee.
 In this analysis employees/thousand square feet is calculated by taking the inverse of the CBECS number and multiplying by 1000.

vehicle related GHG emissions

Estimate calculated as follows (Washington state, 2006)_

56,531,930,000 2006 Annual WA State Vehicle Miles Traveled

Data was daily VMT. Annual VMT was 365*daily VMT.

<http://www.wsdot.wa.gov/mapsdata/tdo/annualmileage.htm>

6,395,798 2006 WA state population

<http://quickfacts.census.gov/qfd/states/53000.html>

8839 vehicle miles per person per year

0.0506 gallon gasoline/mile

This is the weighted national average fuel efficiency for all cars and 2 axle, 4 wheel light trucks in 2005. This includes pickup trucks, vans and SUVs. The 0.051 gallons/mile used here is the inverse of the more commonly known term "miles/per gallon" (which is 19.75 for these cars and light trucks).

Transportation Energy Data Book. 26th Edition. 2006. Chapter 4: Light Vehicles and Characteristics. Calculations based on weighted average MPG efficiency of cars and light trucks.

http://cta.ornl.gov/data/tedb26/Edition26_Chapter04.pdf

Note: This report states that in 2005, 92.3% of all highway VMT were driven by the above described vehicles.

http://cta.ornl.gov/data/tedb26/Spreadsheets/Table3_04.xls

24.3 lbs CO2e/gallon gasoline

The CO2 emissions estimates for gasoline and diesel include the extraction, transport, and refinement of petroleum as well as their combustion.

Life-Cycle CO2 Emissions for Various New Vehicles. RENew Northfield.

Available: <http://renewnorthfield.org/wpcontent/uploads/2006/04/CO2%20emissions.pdf>

Note: This is a conservative estimate of emissions by fuel consumption because diesel fuel, with a emissions factor of 26.55 lbs CO2e/gallon was not estimated.

2205

4.93 lbs/metric tonne

vehicle related GHG emissions (metric tonnes CO2e per person per year)

average life span of buildings, estimated by replacement time method

See Energy Emissions Worksheet for Calculations

Commercial floorspace per unit

EIA, 2003 Commercial Buildings Energy Consumption Survey (National Average, 2003)

Table C3. Consumption and Gross Energy Intensity for Sum of Major Fuels for Non-Mall Buildings, 2003

http://www.eia.doe.gov/emeu/cbecs/cbecs2003/detailed_tables_2003/2003set9/2003excel/c3.xls

VISUAL SIMULATION DIAGRAMS

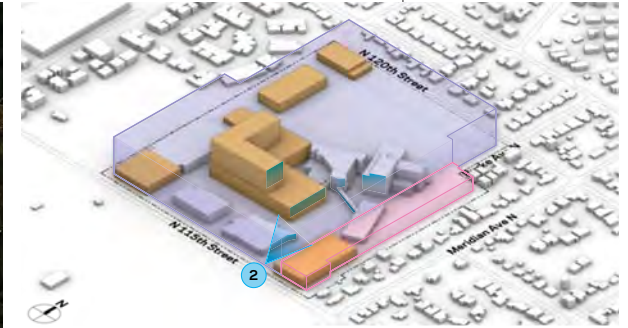
UWMC - Northwest View Analysis | Alternative 1 - Scenario 1

nbbj

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175' HEIGHT OVERLAY @ 30' SETBACK FROM PROPERTY LINE
POTENTIAL DEVELOPMENT ALMOST 300' FROM CAMERA



View from Southeast



Zoning Height Legend



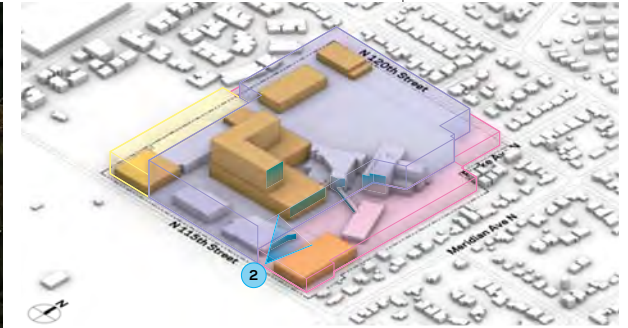
UWMC - Northwest View Analysis | Alternative 2 - Scenario 1

nbbj

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65' HEIGHT OVERLAY @ 30' SETBACK FROM PROPERTY LINE
POTENTIAL DEVELOPMENT ALMOST 300' FROM CAMERA



View from Southeast



Zoning Height Legend



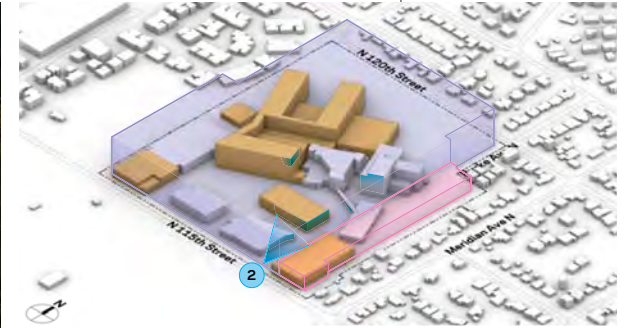
UWMC - Northwest View Analysis | Alternative 1 - Scenario 2

nbbj

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175' HEIGHT OVERLAY @ 30' SETBACK FROM PROPERTY LINE
POTENTIAL DEVELOPMENT ALMOST 300' FROM CAMERA



View from Southeast



Zoning Height Legend



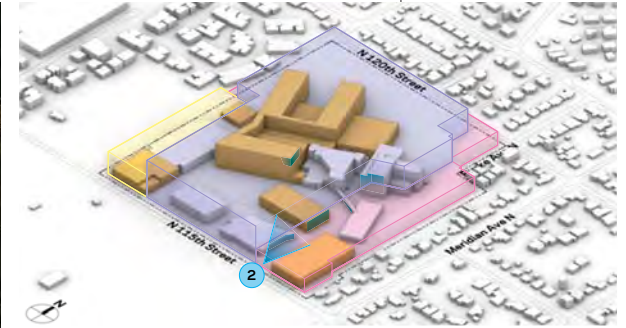
UWMC - Northwest View Analysis | Alternative 2 - Scenario 2

nbbj

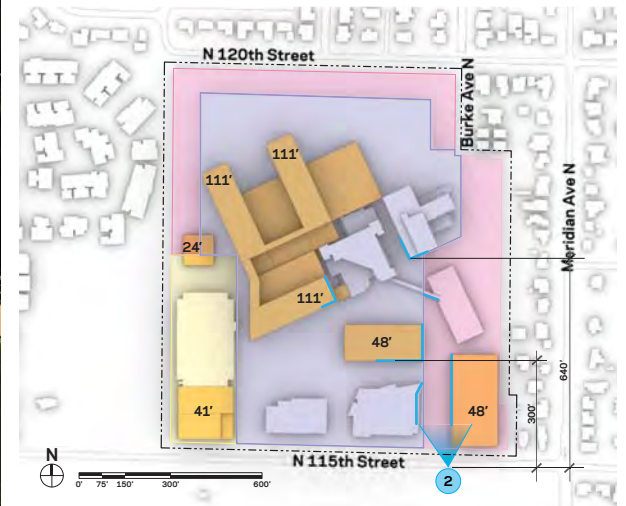
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65' HEIGHT OVERLAY @ 30' SETBACK FROM PROPERTY LINE
POTENTIAL DEVELOPMENT ALMOST 300' FROM CAMERA



View from Southeast



Zoning Height Legend

| | |
|------|------------------|
| 175' | 105' |
| 65' | New Construction |

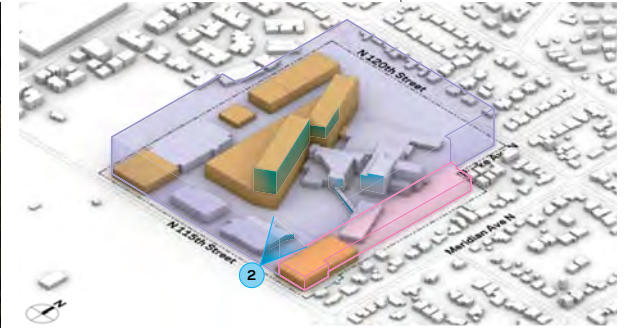
UWMC - Northwest View Analysis | Alternative 1 - Scenario 3

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175' HEIGHT OVERLAY @ 30' SETBACK FROM PROPERTY LINE
POTENTIAL DEVELOPMENT ALMOST 300' FROM CAMERA



View from Southeast



Zoning Height Legend



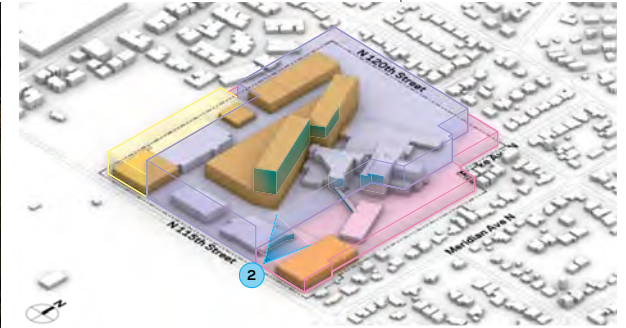
UWMC - Northwest View Analysis | Alternative 2 - Scenario 3

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65' HEIGHT OVERLAY @ 30' SETBACK FROM PROPERTY LINE
POTENTIAL DEVELOPMENT ALMOST 300' FROM CAMERA



View from Southeast



Zoning Height Legend



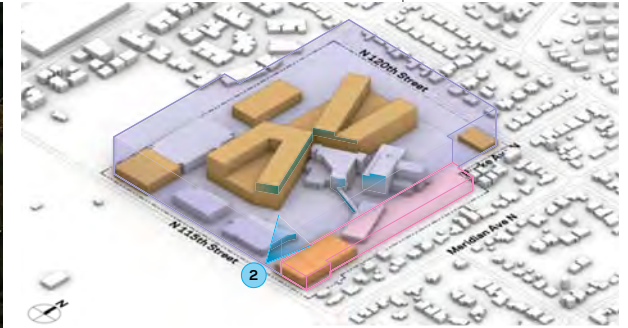
UWMC - Northwest View Analysis | Alternative 1 - Scenario 4

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175' HEIGHT OVERLAY @ 30' SETBACK FROM PROPERTY LINE
POTENTIAL DEVELOPMENT ALMOST 290' FROM CAMERA



View from Southeast



Zoning Height Legend



UWMC - Northwest View Analysis | Alternative 2 - Scenario 4

nbbj

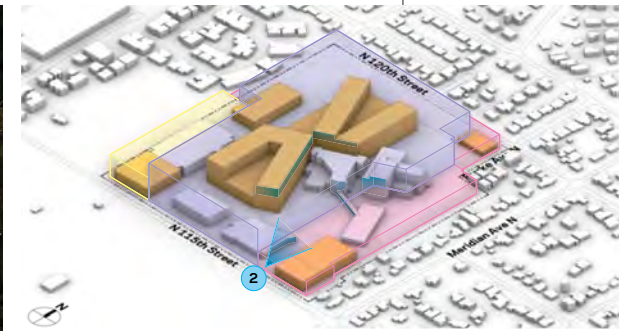
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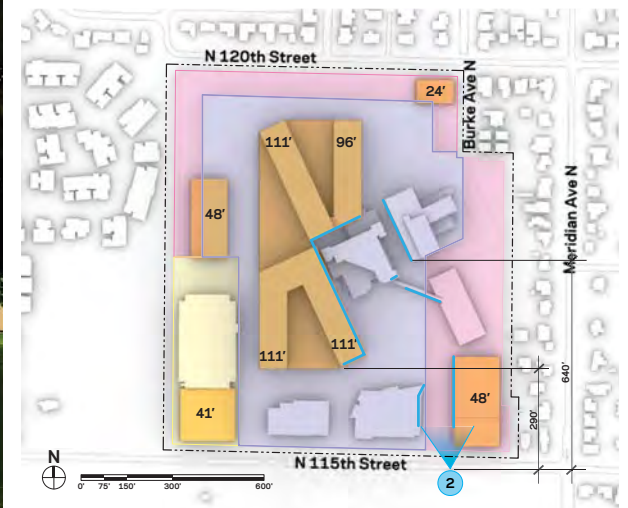
175' HEIGHT OVERLAY @ 30' SETBACK FROM PROPERTY LINE
POTENTIAL DEVELOPMENT ALMOST 290' FROM CAMERA

111'
Potential
Development

48'
Potential
Development



View from Southeast



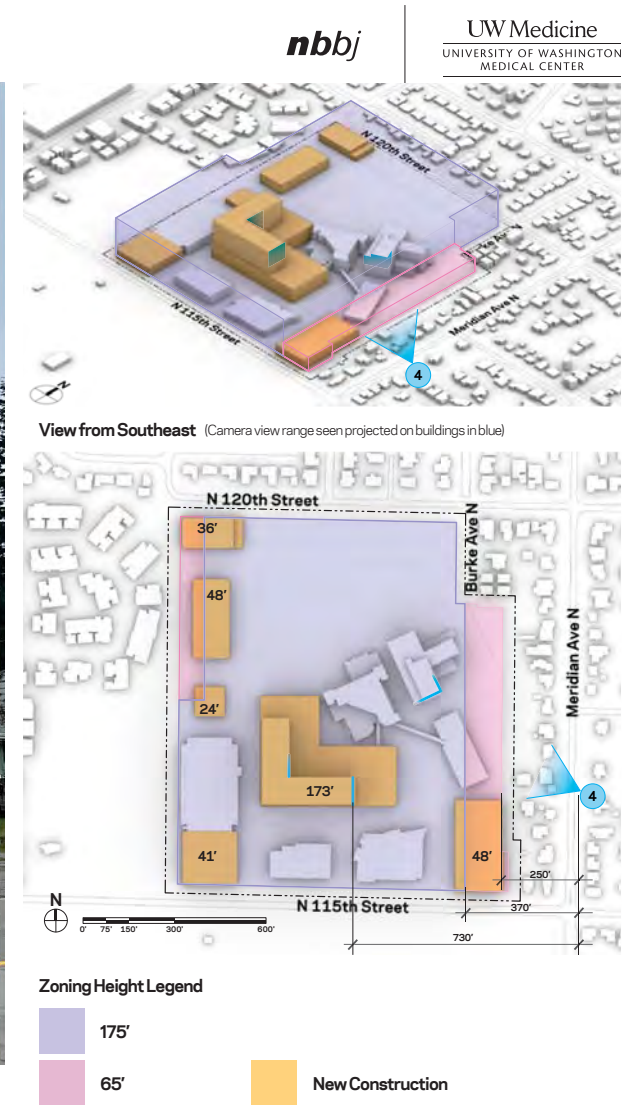
Zoning Height Legend

| | | | |
|--|------|--|------------------|
| | 175' | | 105' |
| | 65' | | New Construction |

UWMC - Northwest View Analysis | Alternative 1 - Scenario 1



65' HEIGHT OVERLAY @ 40' SETBACK FROM PROPERTY LINE, @ 250' FROM CAMERA
 175' HEIGHT OVERLAY @ 370' FROM CAMERA (APPROX. 160' FROM PROPERTY LINE)
 POTENTIAL DEVELOPMENT ALMOST 730' FROM CAMERA



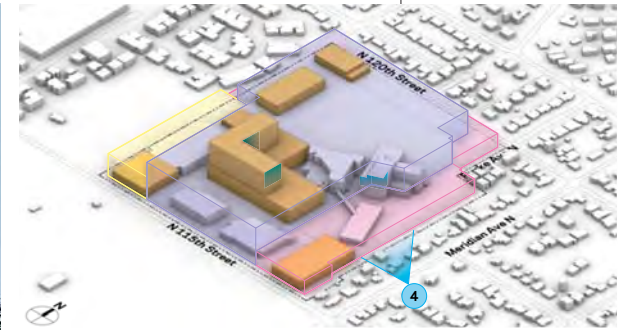
UWMC - Northwest View Analysis | Alternative 2 - Scenario 1



65' HEIGHT OVERLAY @ 30' SETBACK FROM PROPERTY LINE, @ 240' FROM CAMERA
 175' HEIGHT OVERLAY @ 490' FROM CAMERA (APPROX. 280' FROM PROPERTY LINE)
 POTENTIAL DEVELOPMENT ALMOST 730' FROM CAMERA

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View from Southeast (Camera view range seen projected on buildings in blue)



Zoning Height Legend

| | | | |
|--|------|--|------------------|
| | 175' | | 105' |
| | 65' | | New Construction |

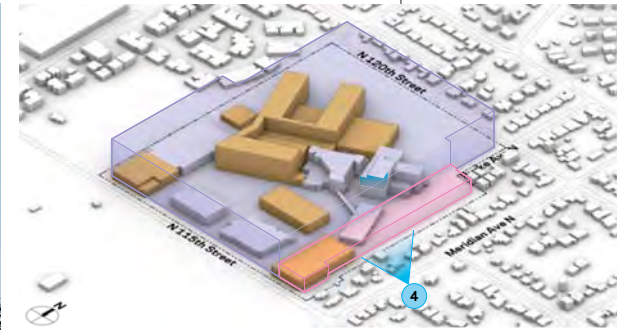
UWMC - Northwest View Analysis | Alternative 1 - Scenario 2



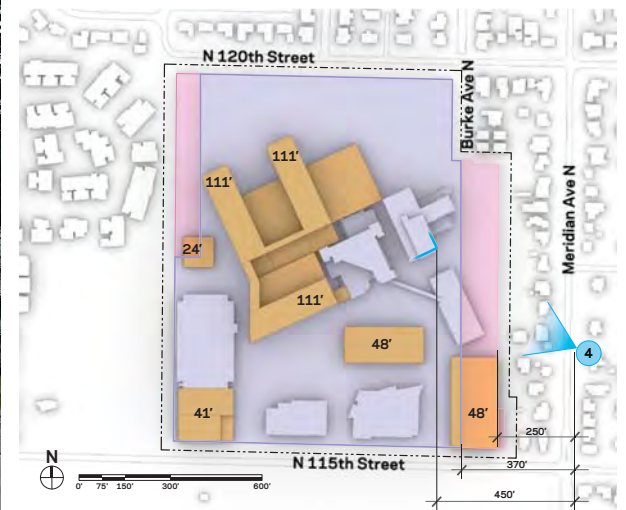
65' HEIGHT OVERLAY @ 40' SETBACK FROM PROPERTY LINE, @ 250' FROM CAMERA
 175' HEIGHT OVERLAY @ 370' FROM CAMERA (APPROX. 160' FROM PROPERTY LINE)

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View from Southeast



Zoning Height Legend



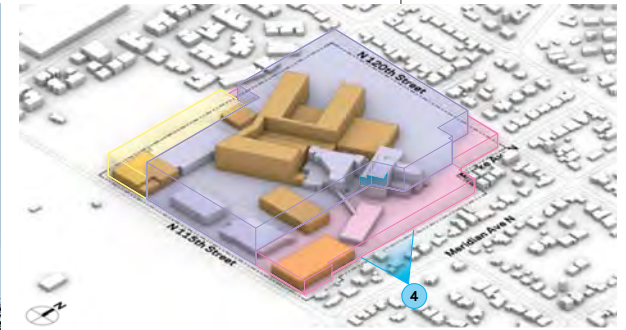
UWMC - Northwest View Analysis | Alternative 2 - Scenario 2



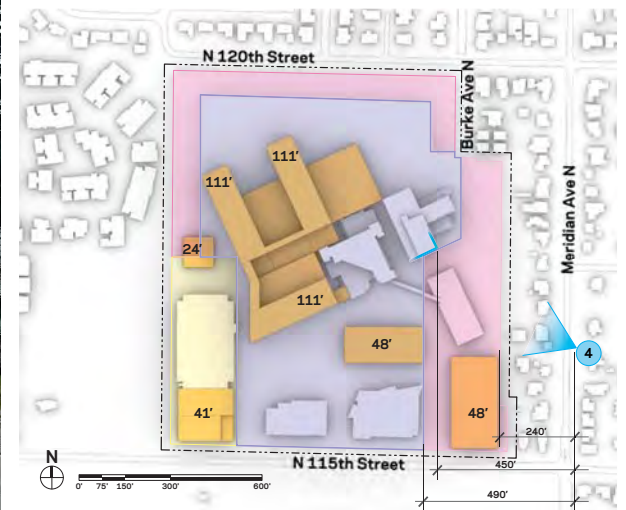
65' HEIGHT OVERLAY @ 30' SETBACK FROM PROPERTY LINE, @ 240' FROM CAMERA
 175' HEIGHT OVERLAY @ 490' FROM CAMERA (APPROX. 280' FROM PROPERTY LINE)

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View from Southeast



Zoning Height Legend



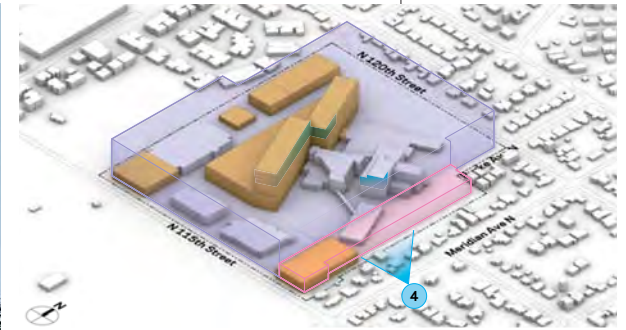
UWMC - Northwest View Analysis | Alternative 1 - Scenario 3



65' HEIGHT OVERLAY @ 40' SETBACK FROM PROPERTY LINE, @ 250' FROM CAMERA
 175' HEIGHT OVERLAY @ 370' FROM CAMERA (APPROX. 160' FROM PROPERTY LINE)
 POTENTIAL DEVELOPMENT ALMOST 690' FROM CAMERA

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View from Southeast



Zoning Height Legend



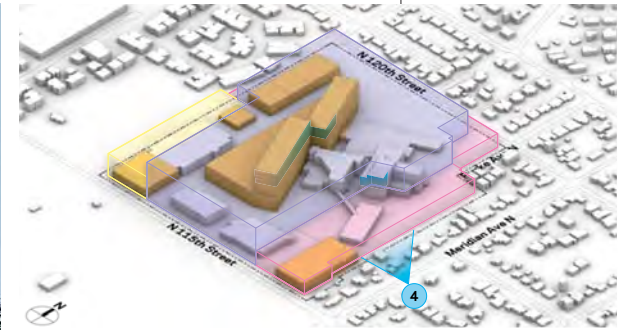
UWMC - Northwest View Analysis | Alternative 2 - Scenario 3



65' HEIGHT OVERLAY @ 30' SETBACK FROM PROPERTY LINE, @ 240' FROM CAMERA
 175' HEIGHT OVERLAY @ 490' FROM CAMERA (APPROX. 280' FROM PROPERTY LINE)
 POTENTIAL DEVELOPMENT ALMOST 690' FROM CAMERA

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View from Southeast



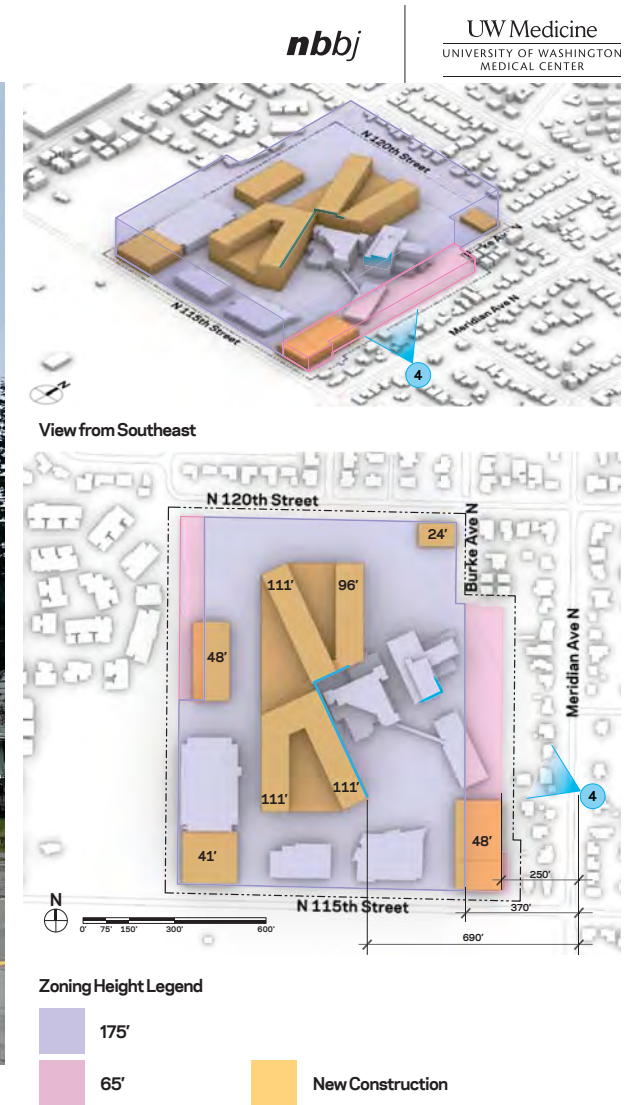
Zoning Height Legend



UWMC - Northwest View Analysis | Alternative 1 - Scenario 4



65' HEIGHT OVERLAY @ 40' SETBACK FROM PROPERTY LINE, @ 250' FROM CAMERA
 175' HEIGHT OVERLAY @ 370' FROM CAMERA (APPROX. 160' FROM PROPERTY LINE)
 POTENTIAL DEVELOPMENT ALMOST 690' FROM CAMERA



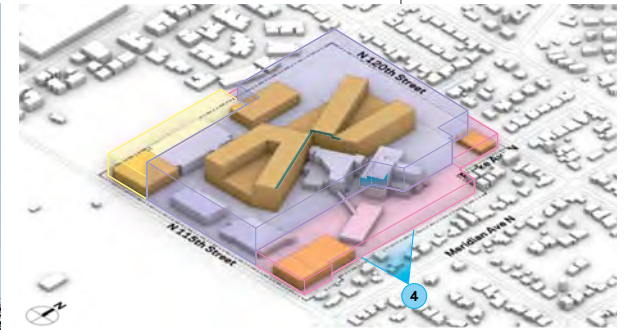
UWMC - Northwest View Analysis | Alternative 2 - Scenario 4



65' HEIGHT OVERLAY @ 30' SETBACK FROM PROPERTY LINE, @ 240' FROM CAMERA
 175' HEIGHT OVERLAY @ 490' FROM CAMERA (APPROX. 280' FROM PROPERTY LINE)
 POTENTIAL DEVELOPMENT ALMOST 690' FROM CAMERA

nbbj

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View from Southeast



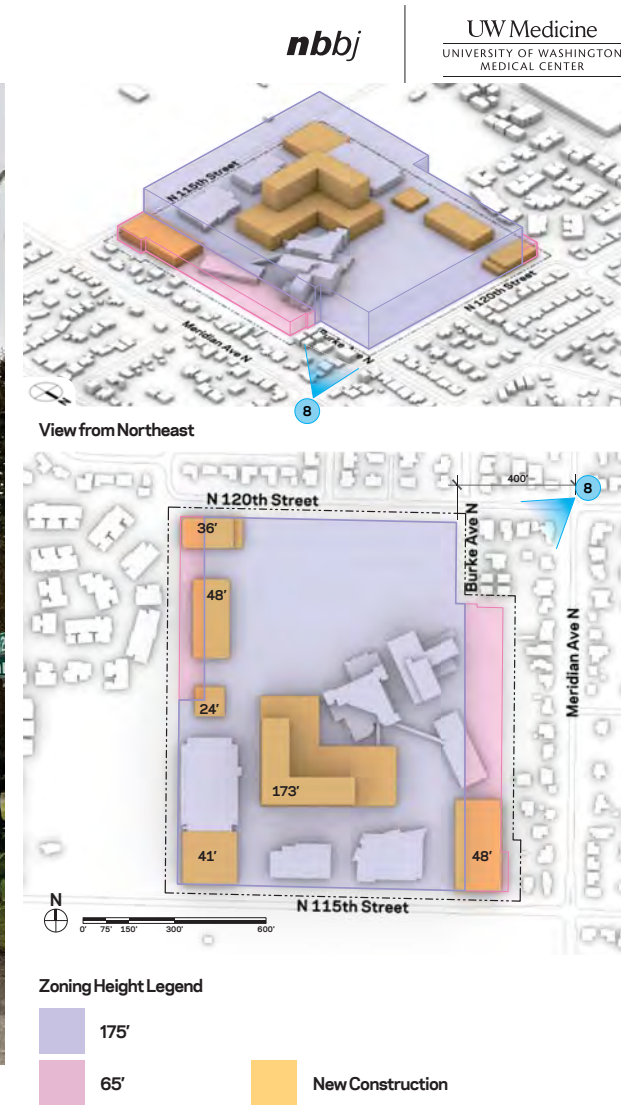
Zoning Height Legend



UWMC - Northwest View Analysis | Alternative 1 - Scenario 1



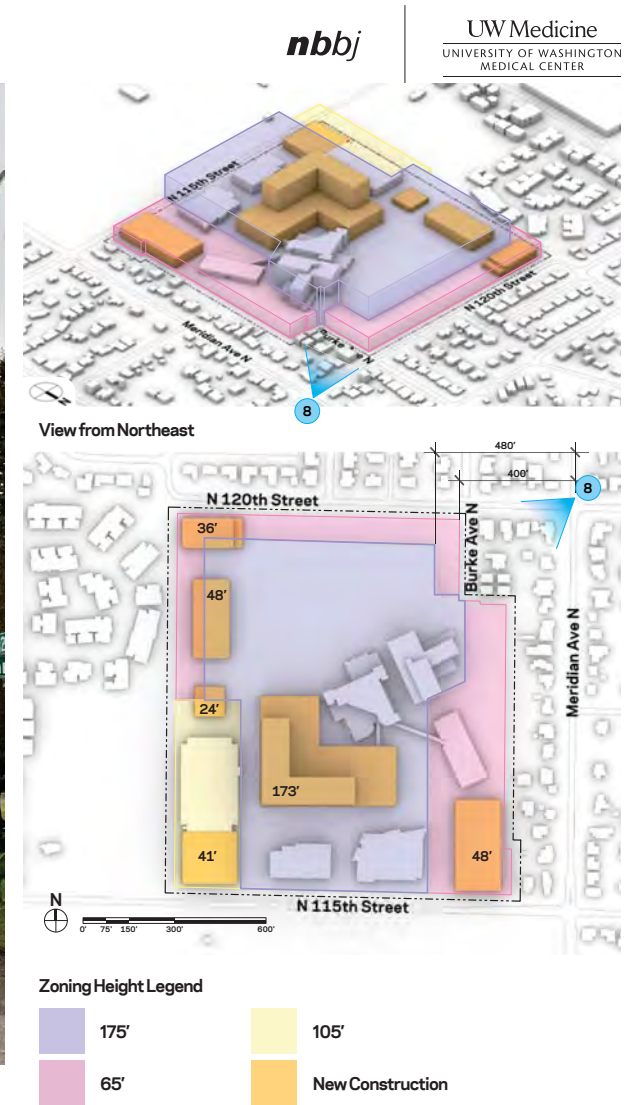
175' HEIGHT OVERLAY @ 400' FROM CAMERA (APPROX. 30' FROM PROPERTY LINE)



UWMC - Northwest View Analysis | Alternative 2 - Scenario 1



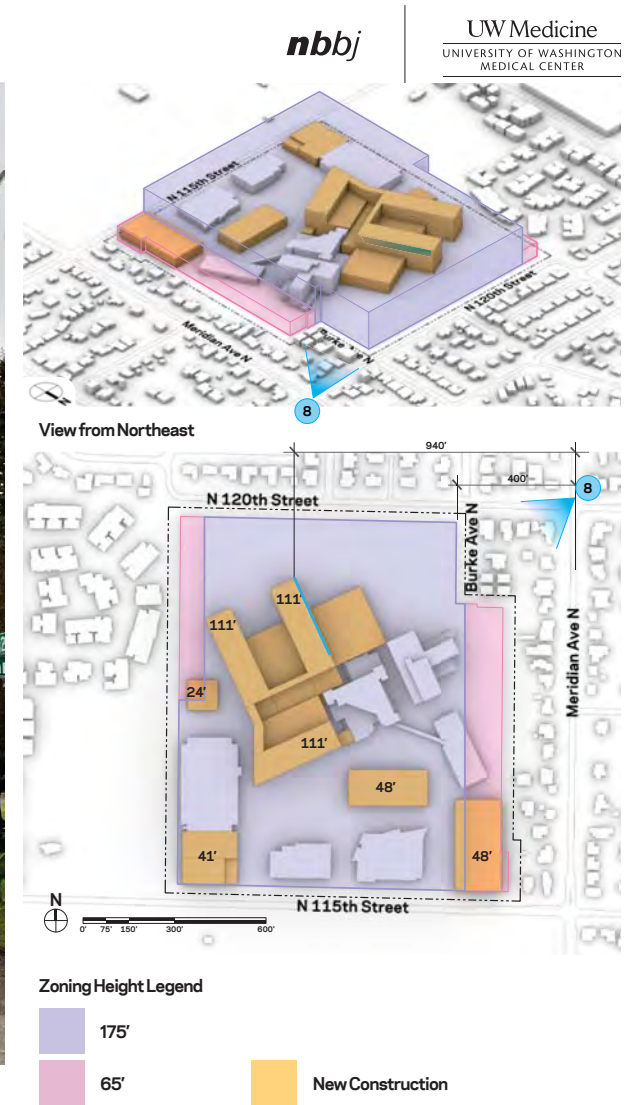
65' HEIGHT OVERLAY @ 20' SETBACK FROM PROPERTY LINE, @ 400' FROM CAMERA
 175' HEIGHT OVERLAY @ 480' FROM CAMERA (APPROX. 100' FROM PROPERTY LINE)



UWMC - Northwest View Analysis | Alternative 1 - Scenario 2



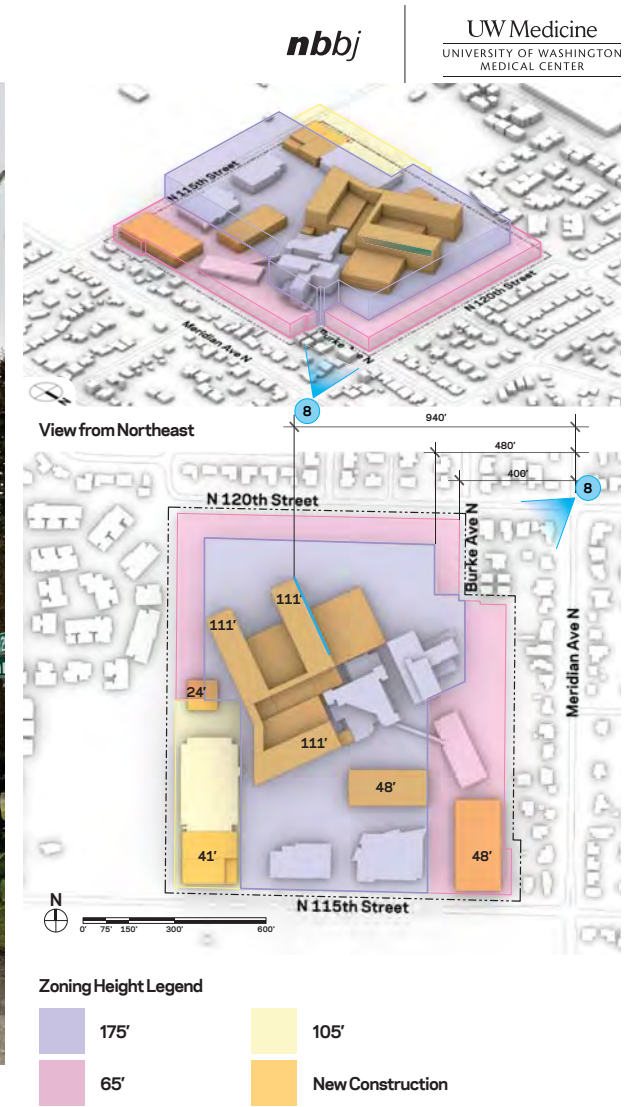
175' HEIGHT OVERLAY @ 30' SETBACK FROM PROPERTY LINE; @ 400' FROM CAMERA
 POTENTIAL DEVELOPMENT ALMOST 940' FROM CAMERA



UWMC - Northwest View Analysis | Alternative 2 - Scenario 2



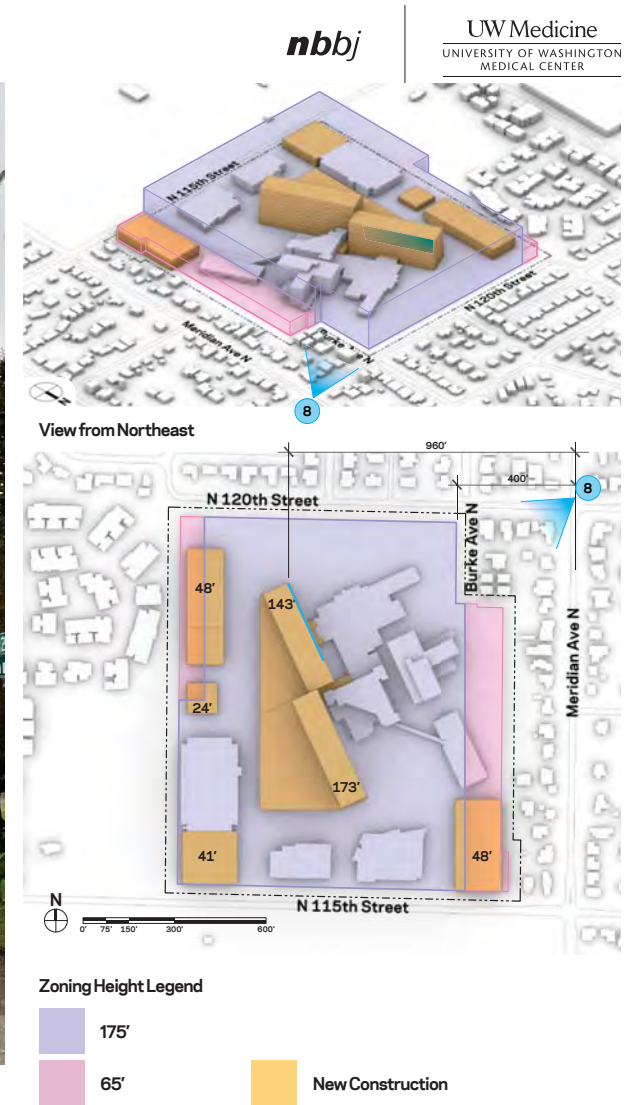
65' HEIGHT OVERLAY @ 20' SETBACK FROM PROPERTY LINE, @ 400' FROM CAMERA
 175' HEIGHT OVERLAY @ 480' FROM CAMERA (APPROX. 100' FROM PROPERTY LINE)
 POTENTIAL DEVELOPMENT ALMOST 940' FROM CAMERA



UWMC - Northwest View Analysis | Alternative 1 - Scenario 3



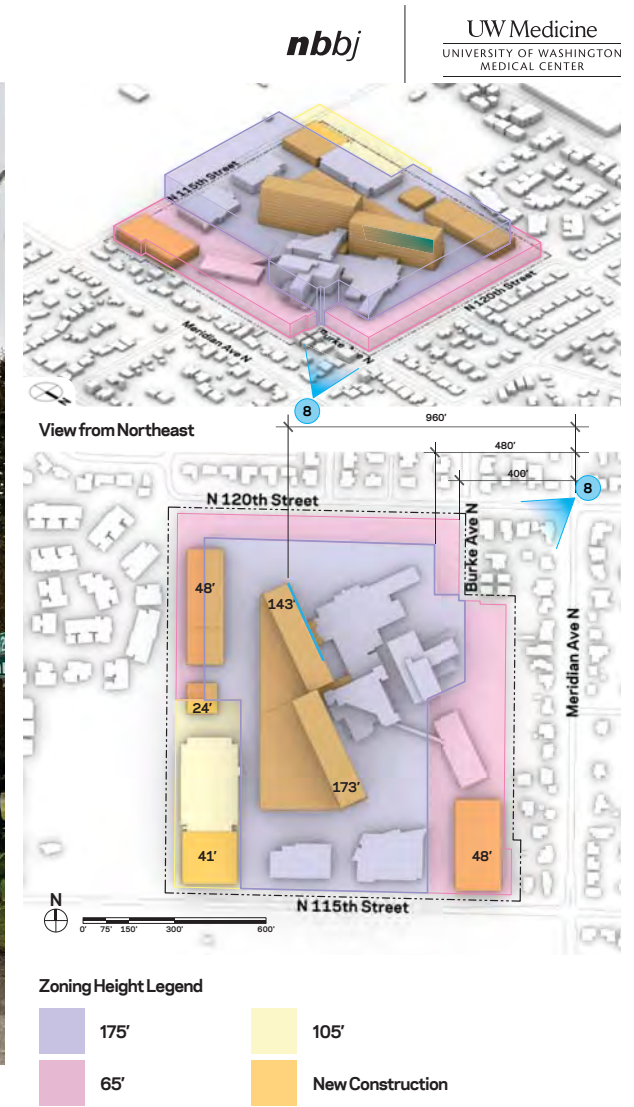
175' HEIGHT OVERLAY @ 30' SETBACK FROM PROPERTY LINE; @ 400' FROM CAMERA
 POTENTIAL DEVELOPMENT ALMOST 960' FROM CAMERA



UWMC - Northwest View Analysis | Alternative 2 - Scenario 3



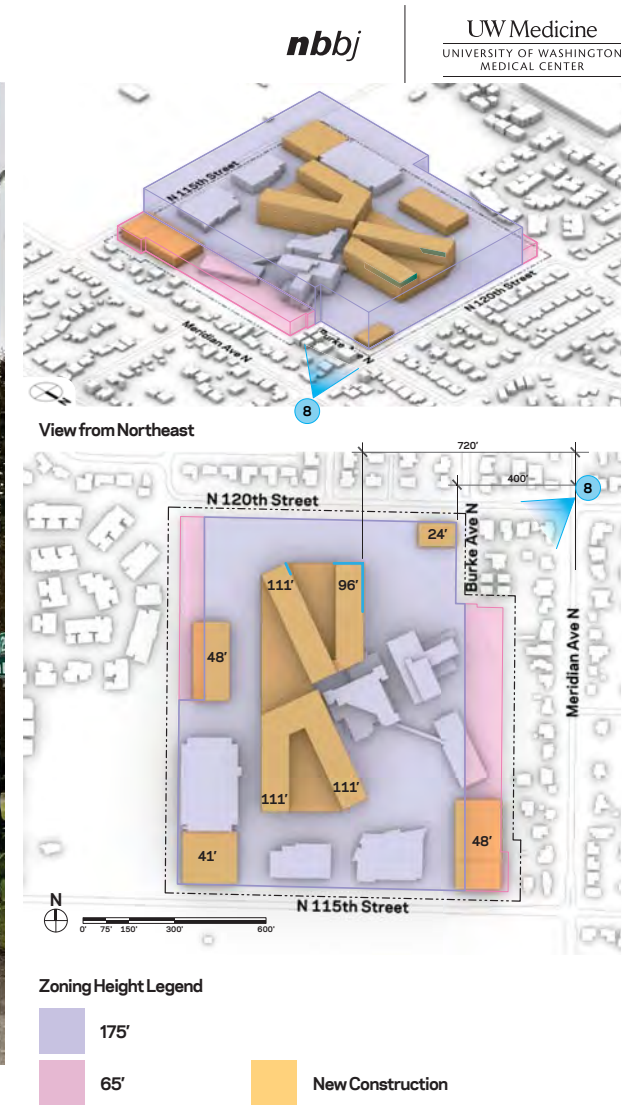
65' HEIGHT OVERLAY @ 20' SETBACK FROM PROPERTY LINE, @ 400' FROM CAMERA
 175' HEIGHT OVERLAY @ 480' FROM CAMERA (APPROX. 100' FROM PROPERTY LINE)
 POTENTIAL DEVELOPMENT ALMOST 960' FROM CAMERA



UWMC - Northwest View Analysis | Alternative 1 - Scenario 4



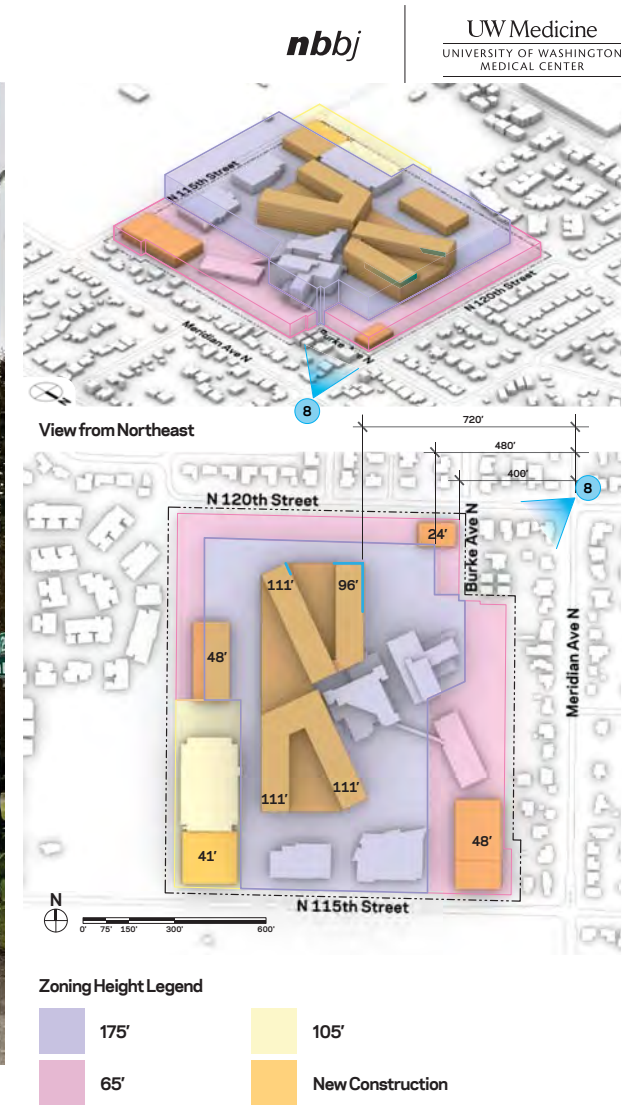
175' HEIGHT OVERLAY @ 30' SETBACK FROM PROPERTY LINE; @ 400' FROM CAMERA
 POTENTIAL DEVELOPMENT ALMOST 720' FROM CAMERA



UWMC - Northwest View Analysis | Alternative 2 - Scenario 4



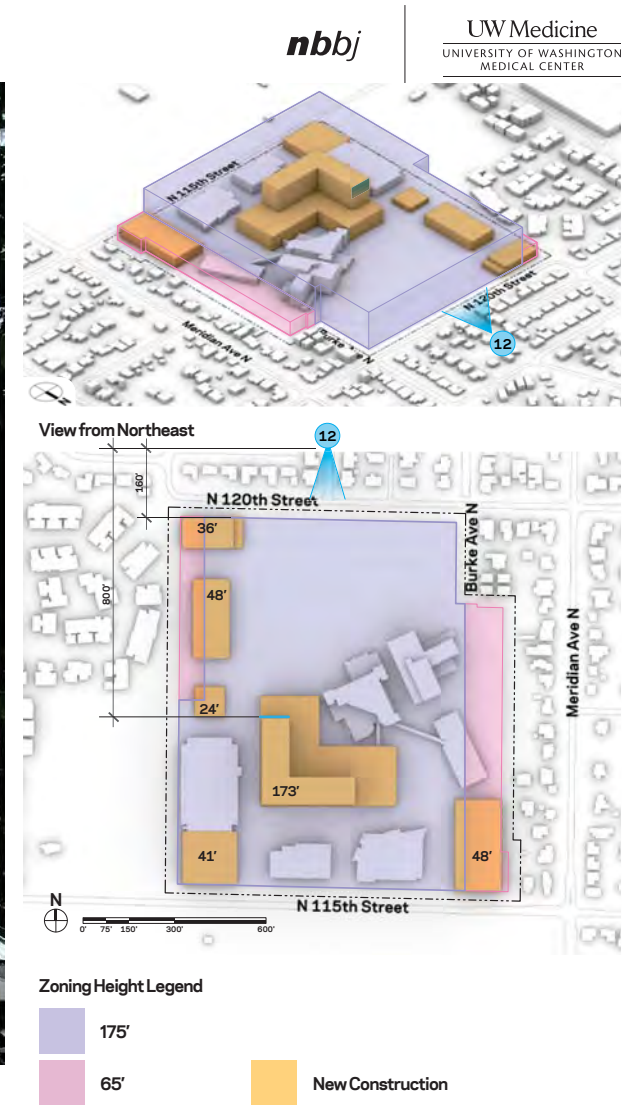
65' HEIGHT OVERLAY @ 20' SETBACK FROM PROPERTY LINE, @ 400' FROM CAMERA
 175' HEIGHT OVERLAY @ 480' FROM CAMERA (APPROX. 100' FROM PROPERTY LINE)
 POTENTIAL DEVELOPMENT ALMOST 720' FROM CAMERA



UWMC - Northwest View Analysis | Alternative 1 - Scenario 1



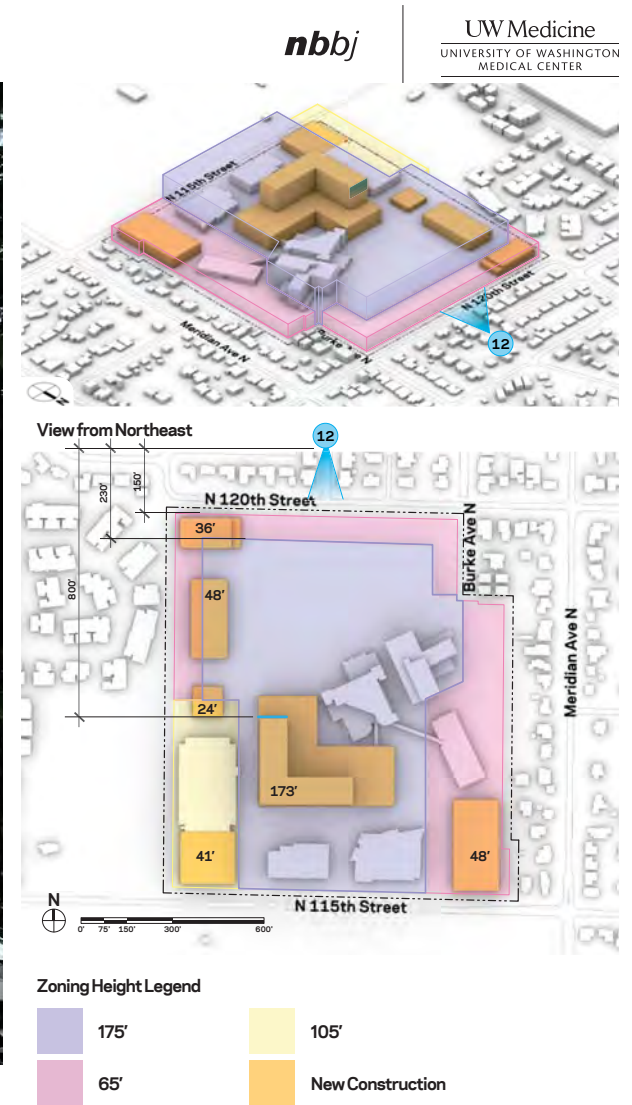
175' HEIGHT OVERLAY @ 30' SETBACK FROM PROPERTY LINE; @ 160' FROM CAMERA
 POTENTIAL DEVELOPMENT ALMOST 800' FROM CAMERA



UWMC - Northwest View Analysis | Alternative 2 - Scenario 1



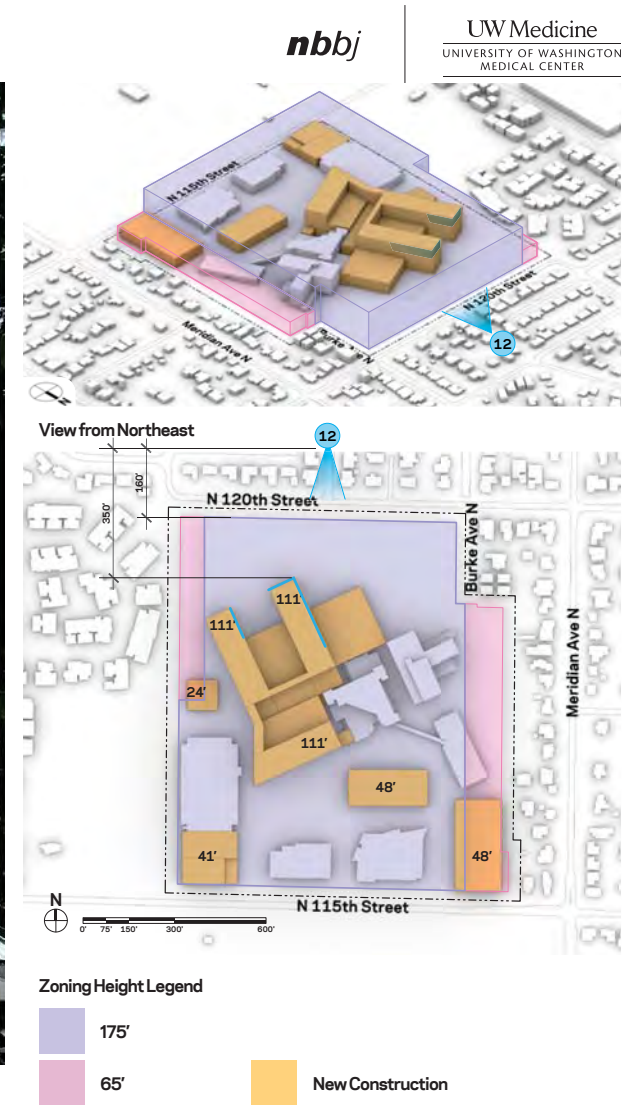
65' HEIGHT OVERLAY @ 20' SETBACK FROM PROPERTY LINE, @ 150' FROM CAMERA
 175' HEIGHT OVERLAY @ 230' FROM CAMERA (APPROX. 100' FROM PROPERTY LINE)
 POTENTIAL DEVELOPMENT ALMOST 800' FROM CAMERA



UWMC - Northwest View Analysis | Alternative 1 - Scenario 2



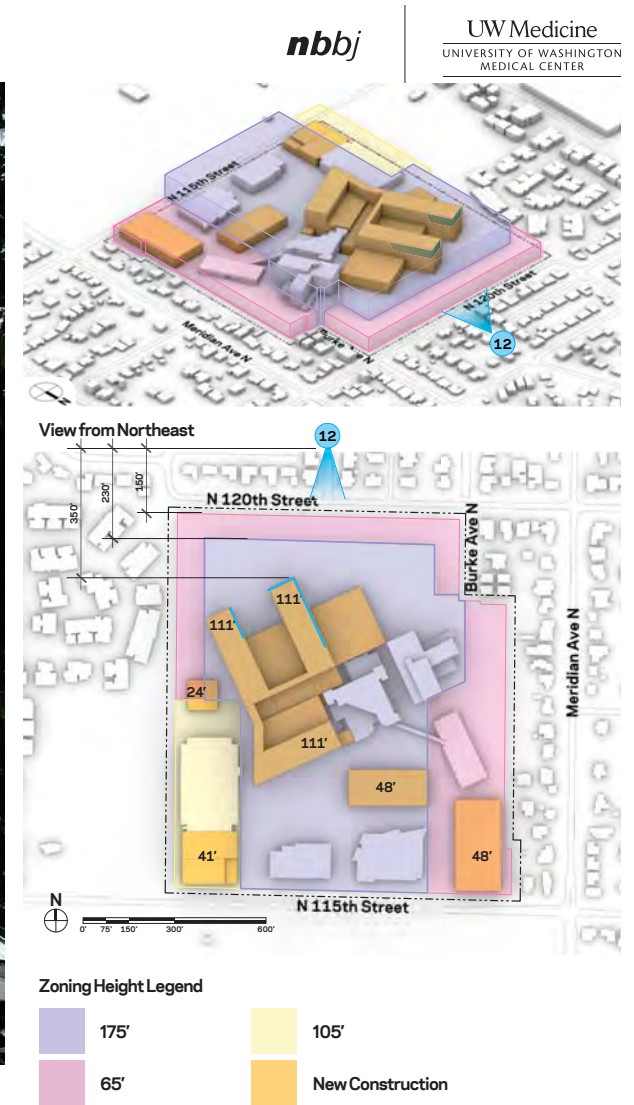
175' HEIGHT OVERLAY @ 30' SETBACK FROM PROPERTY LINE; @ 160' FROM CAMERA
POTENTIAL DEVELOPMENT ALMOST 350' FROM CAMERA



UWMC - Northwest View Analysis | Alternative 2 - Scenario 2



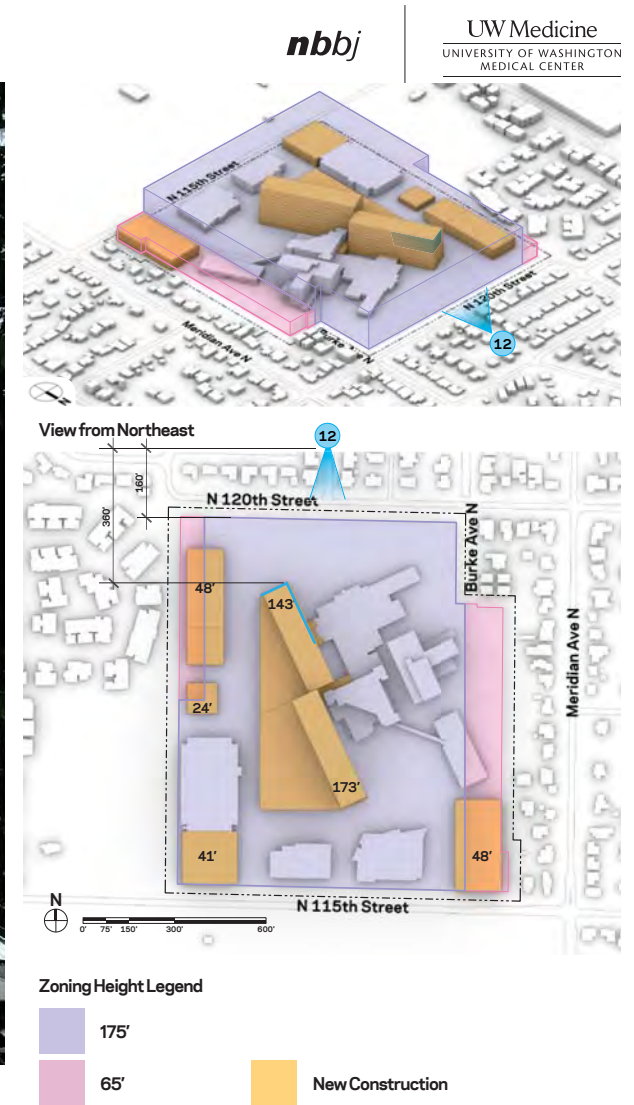
65' HEIGHT OVERLAY @ 20' SETBACK FROM PROPERTY LINE, @ 150' FROM CAMERA
 175' HEIGHT OVERLAY @ 230' FROM CAMERA (APPROX. 100' FROM PROPERTY LINE)
 POTENTIAL DEVELOPMENT ALMOST 350' FROM CAMERA



UWMC - Northwest View Analysis | Alternative 1 - Scenario 3



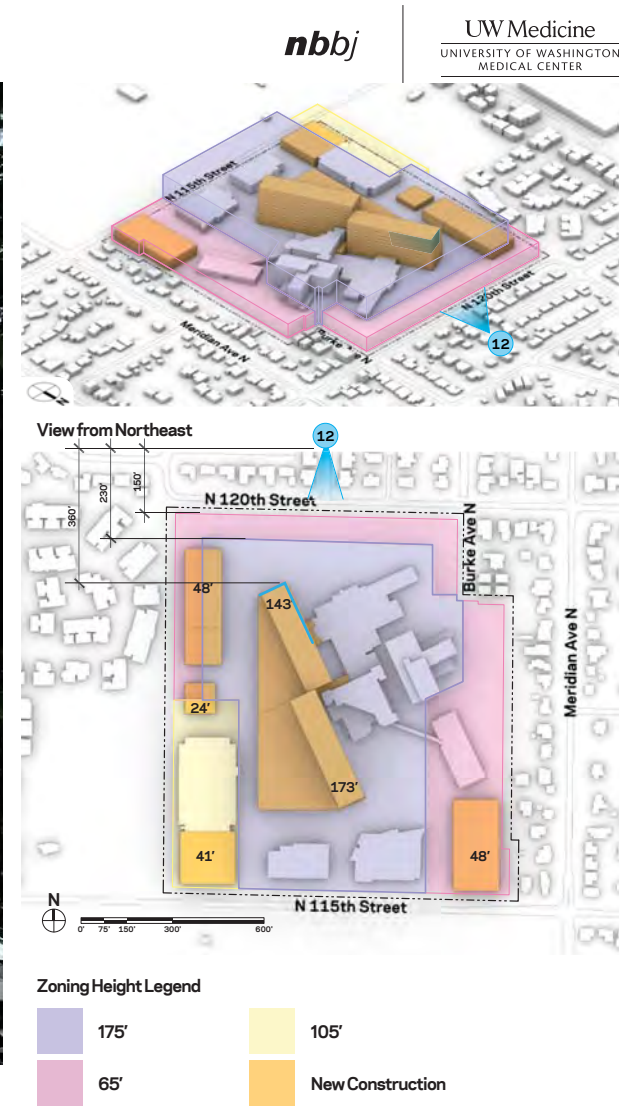
175' HEIGHT OVERLAY @ 30' SETBACK FROM PROPERTY LINE; @ 160' FROM CAMERA
 POTENTIAL DEVELOPMENT ALMOST 360' FROM CAMERA



UWMC - Northwest View Analysis | Alternative 2 - Scenario 3



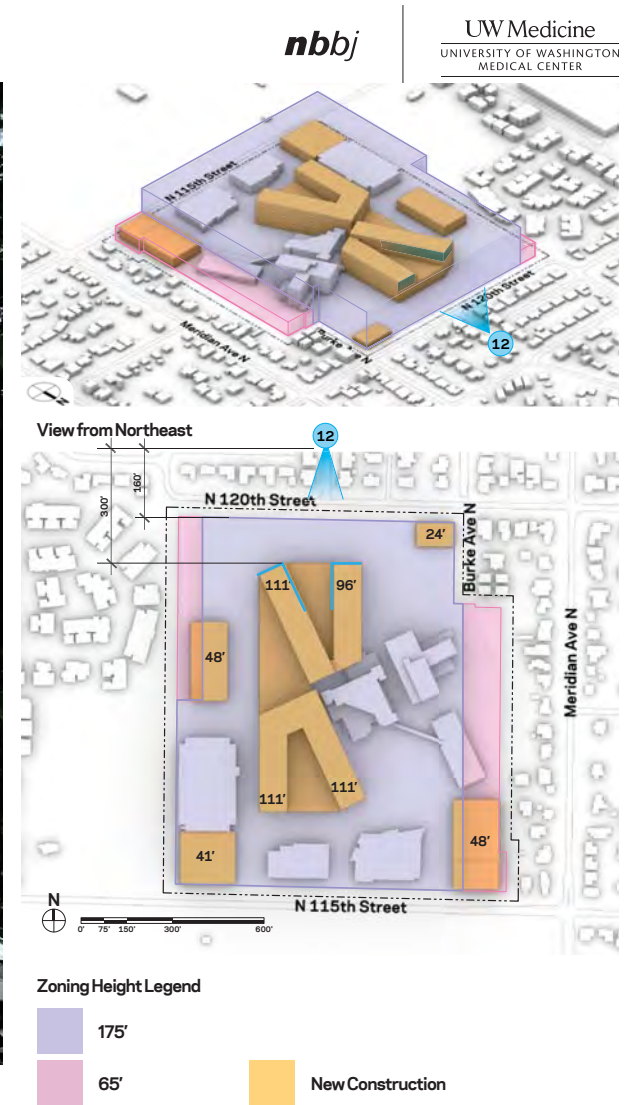
65' HEIGHT OVERLAY @ 20' SETBACK FROM PROPERTY LINE, @ 150' FROM CAMERA
 175' HEIGHT OVERLAY @ 230' FROM CAMERA (APPROX. 100' FROM PROPERTY LINE)
 POTENTIAL DEVELOPMENT ALMOST 360' FROM CAMERA



UWMC - Northwest View Analysis | Alternative 1 - Scenario 4



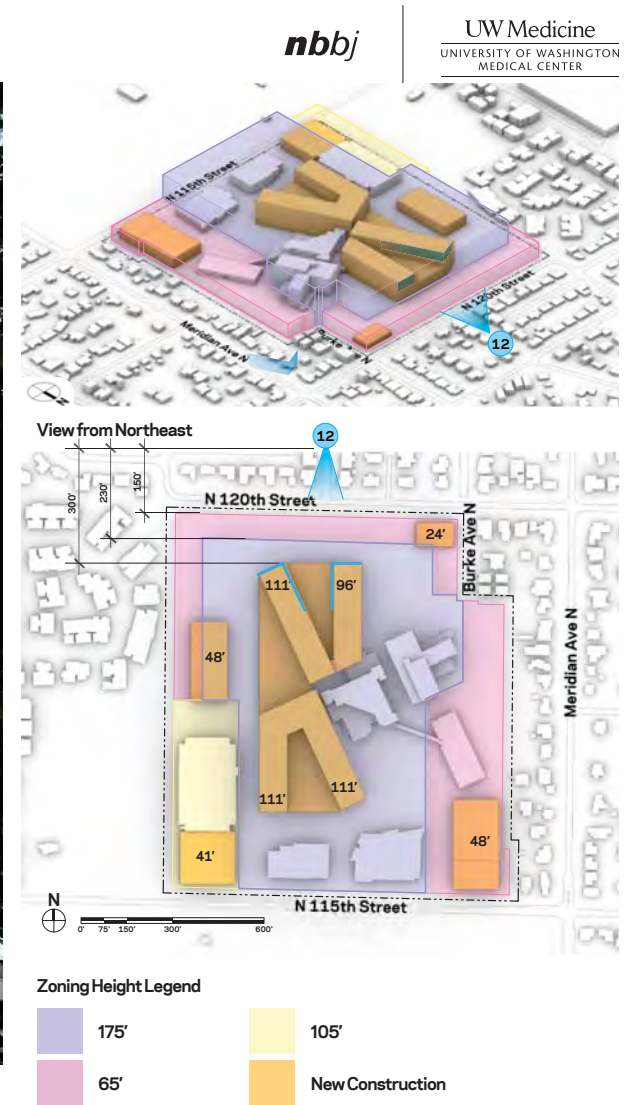
175' HEIGHT OVERLAY @ 30' SETBACK FROM PROPERTY LINE; @ 160' FROM CAMERA
 POTENTIAL DEVELOPMENT ALMOST 300' FROM CAMERA



UWMC - Northwest View Analysis | Alternative 2 - Scenario 4

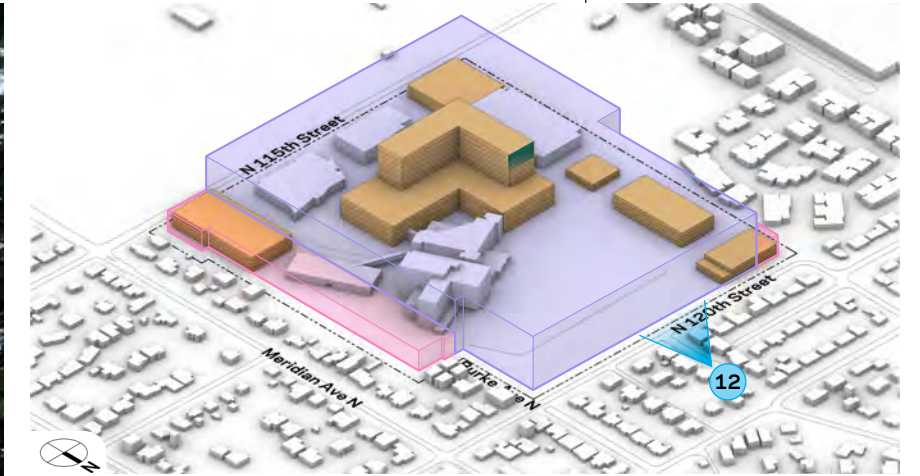


65' HEIGHT OVERLAY @ 20' SETBACK FROM PROPERTY LINE, @ 150' FROM CAMERA
 175' HEIGHT OVERLAY @ 230' FROM CAMERA (APPROX. 100' FROM PROPERTY LINE)
 POTENTIAL DEVELOPMENT ALMOST 300' FROM CAMERA

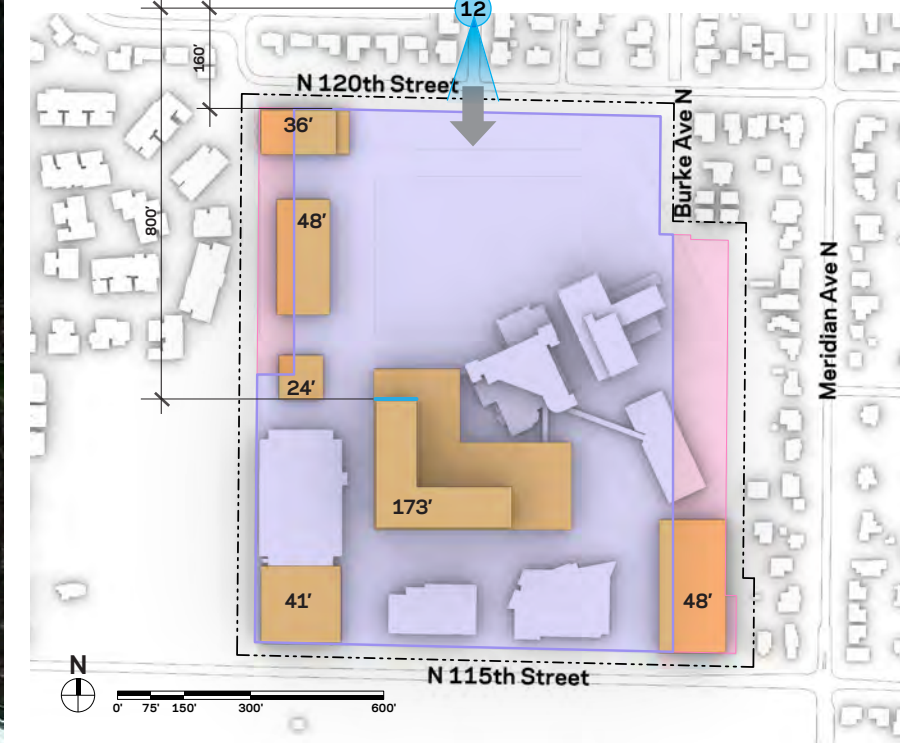




175' HEIGHT OVERLAY @ 30' SETBACK FROM PROPERTY LINE; @ 160' FROM CAMERA
POTENTIAL DEVELOPMENT ALMOST 800' FROM CAMERA



View from Northeast (Camera view range seen projected on buildings in blue)

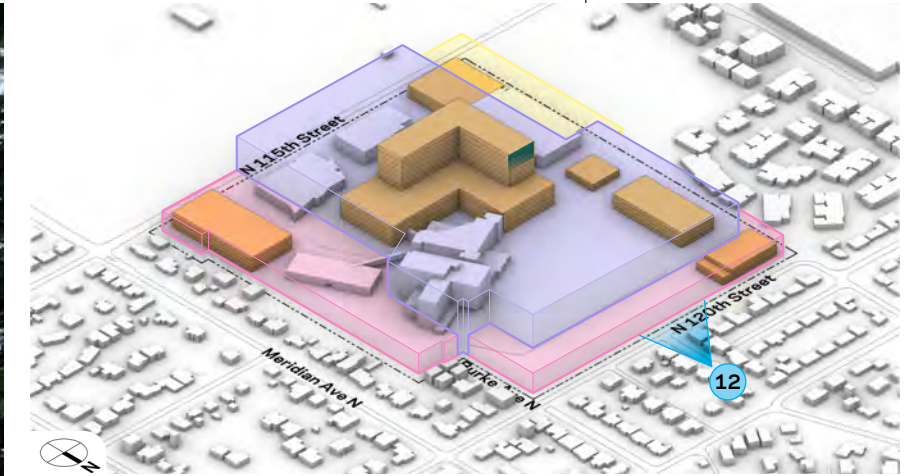


Zoning Height Legend

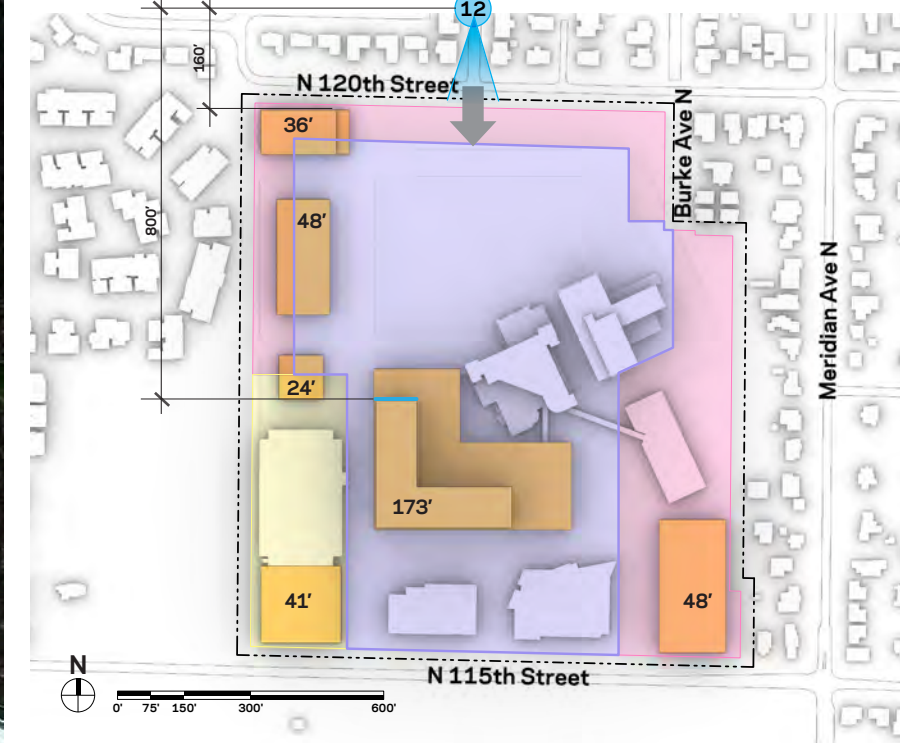




175' HEIGHT OVERLAY @ 30' SETBACK FROM PROPERTY LINE; @ 160' FROM CAMERA
POTENTIAL DEVELOPMENT ALMOST 800' FROM CAMERA



View from Northeast (Camera view range seen projected on buildings in blue)

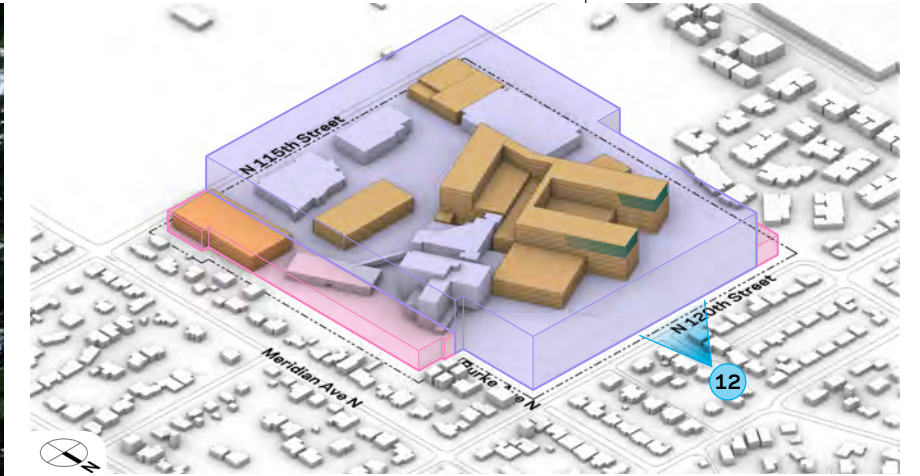


Zoning Height Legend

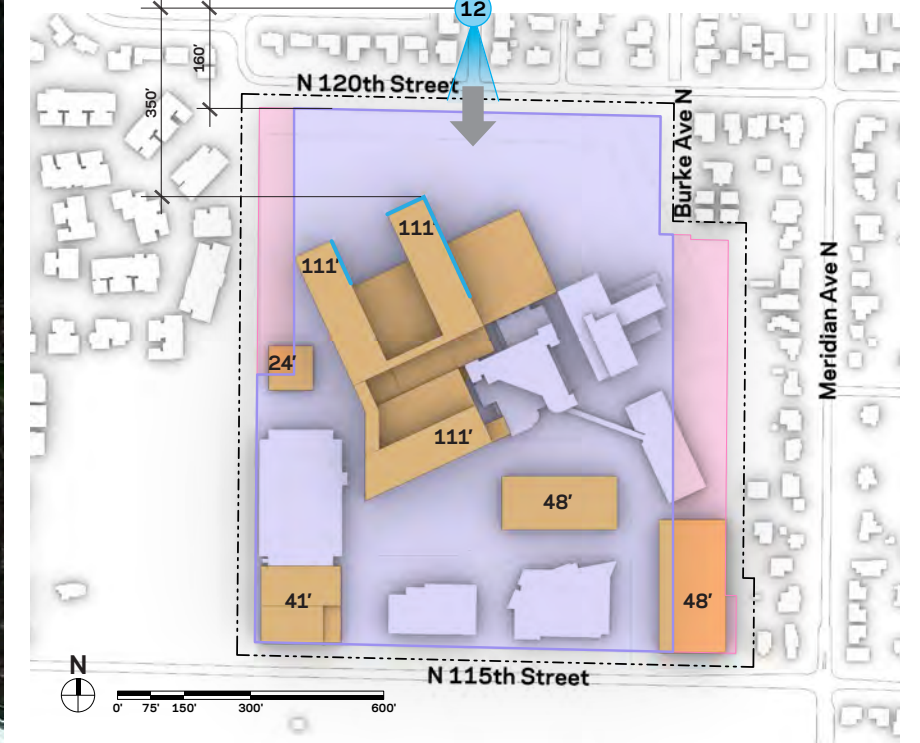




175' HEIGHT OVERLAY @ 30' SETBACK FROM PROPERTY LINE; @ 160' FROM CAMERA
POTENTIAL DEVELOPMENT ALMOST 350' FROM CAMERA



View from Northeast (Camera view range seen projected on buildings in blue)

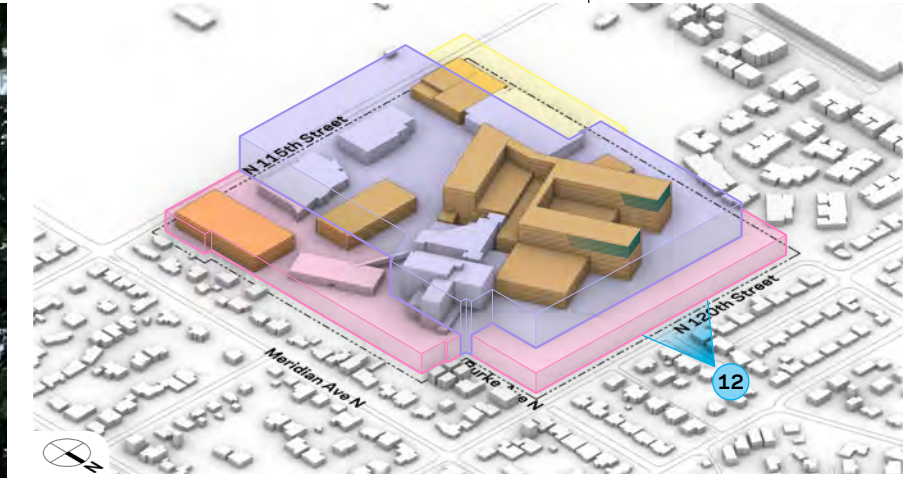


Zoning Height Legend

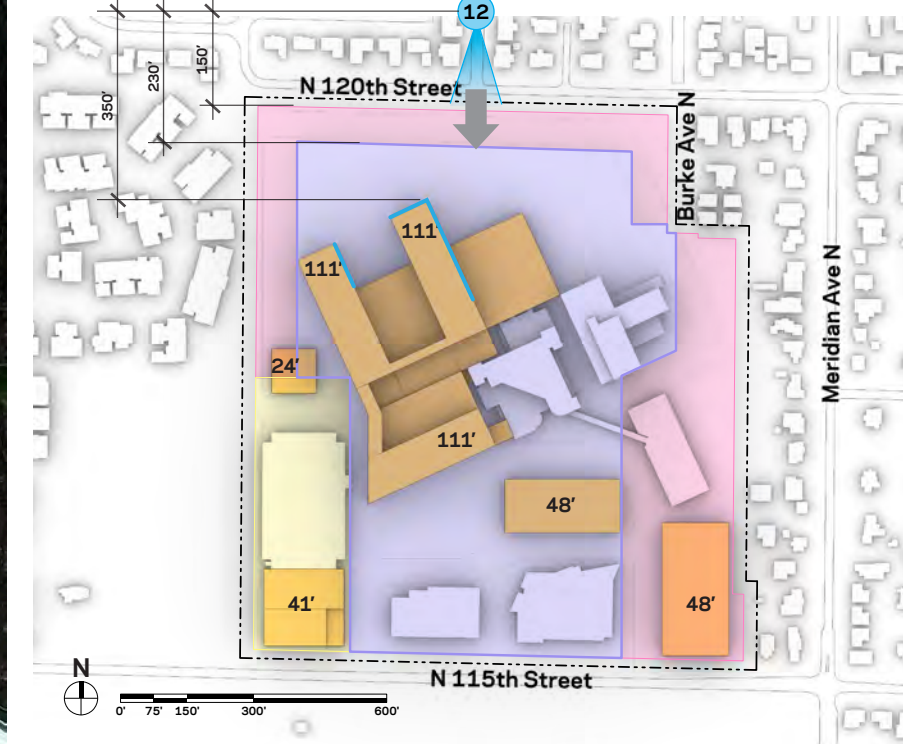




65' HEIGHT OVERLAY @ 20' SETBACK FROM PROPERTY LINE; @ 150' FROM CAMERA
175' HEIGHT OVERLAY @ 230' FROM CAMERA (APPROX. 100' FROM PROPERTY LINE)
POTENTIAL DEVELOPMENT ALMOST 350' FROM CAMERA

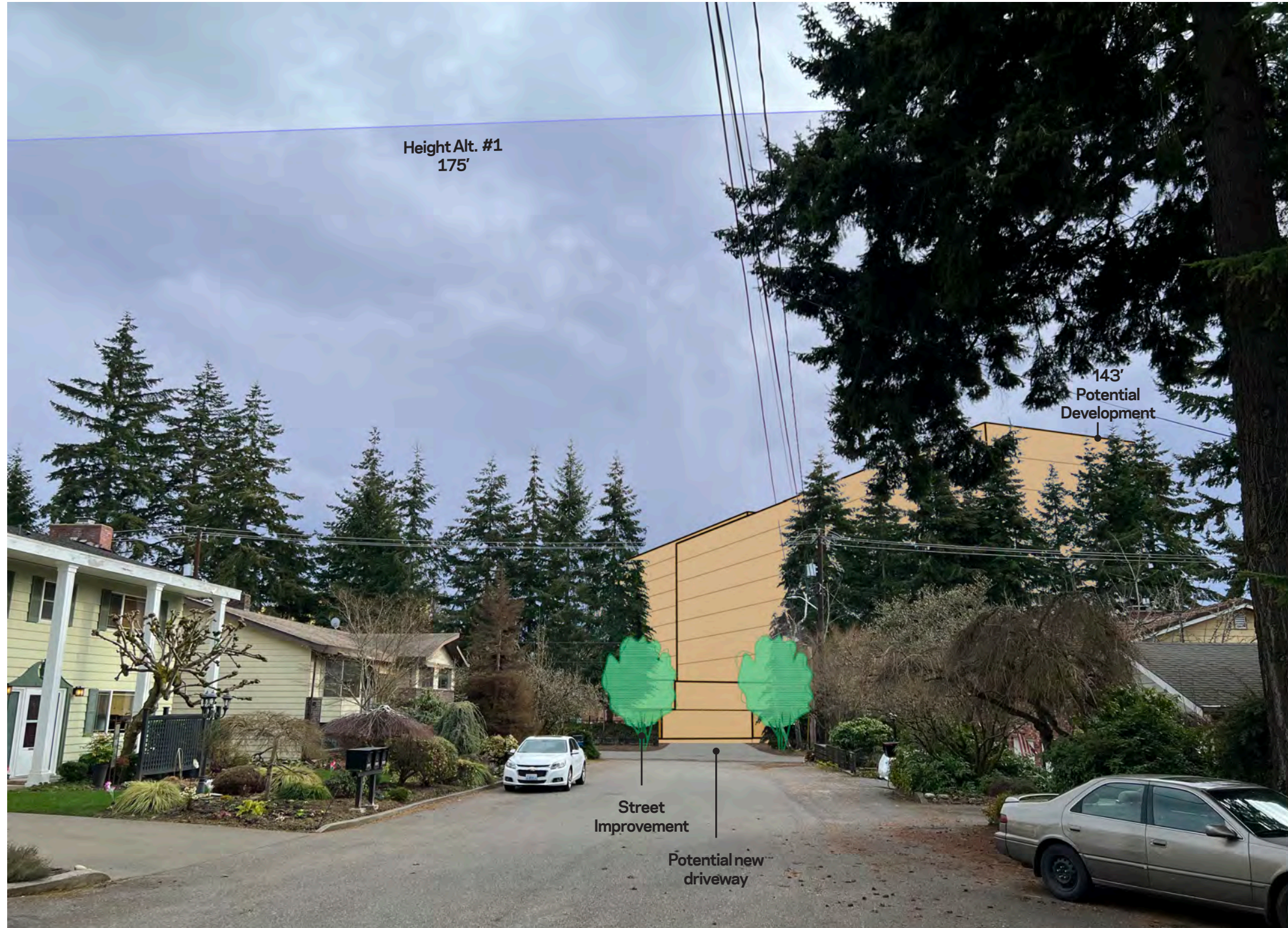


View from Northeast (Camera view range seen projected on buildings in blue)



Zoning Height Legend

| | | | |
|--|------|--|------------------|
| | 175' | | 105' |
| | 65' | | New Construction |



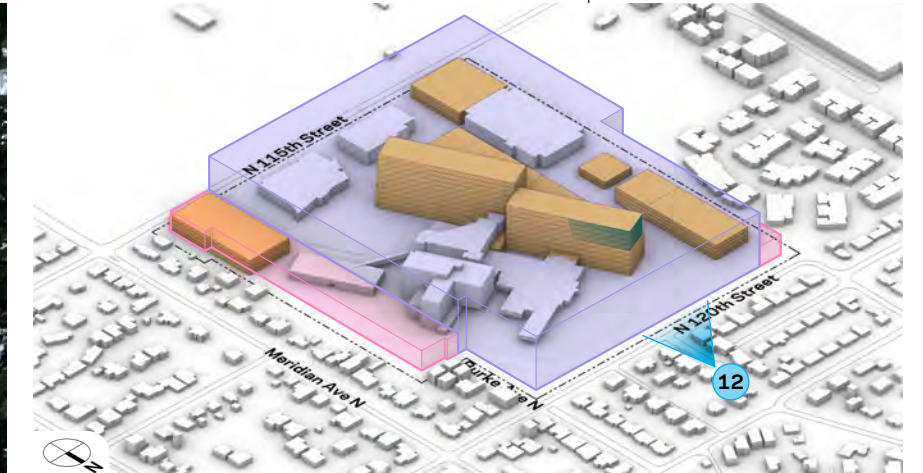
Height Alt. #1
175'

143'
Potential
Development

Street
Improvement

Potential new
driveway

175' HEIGHT OVERLAY @ 30' SETBACK FROM PROPERTY LINE; @ 160' FROM CAMERA
POTENTIAL DEVELOPMENT ALMOST 360' FROM CAMERA

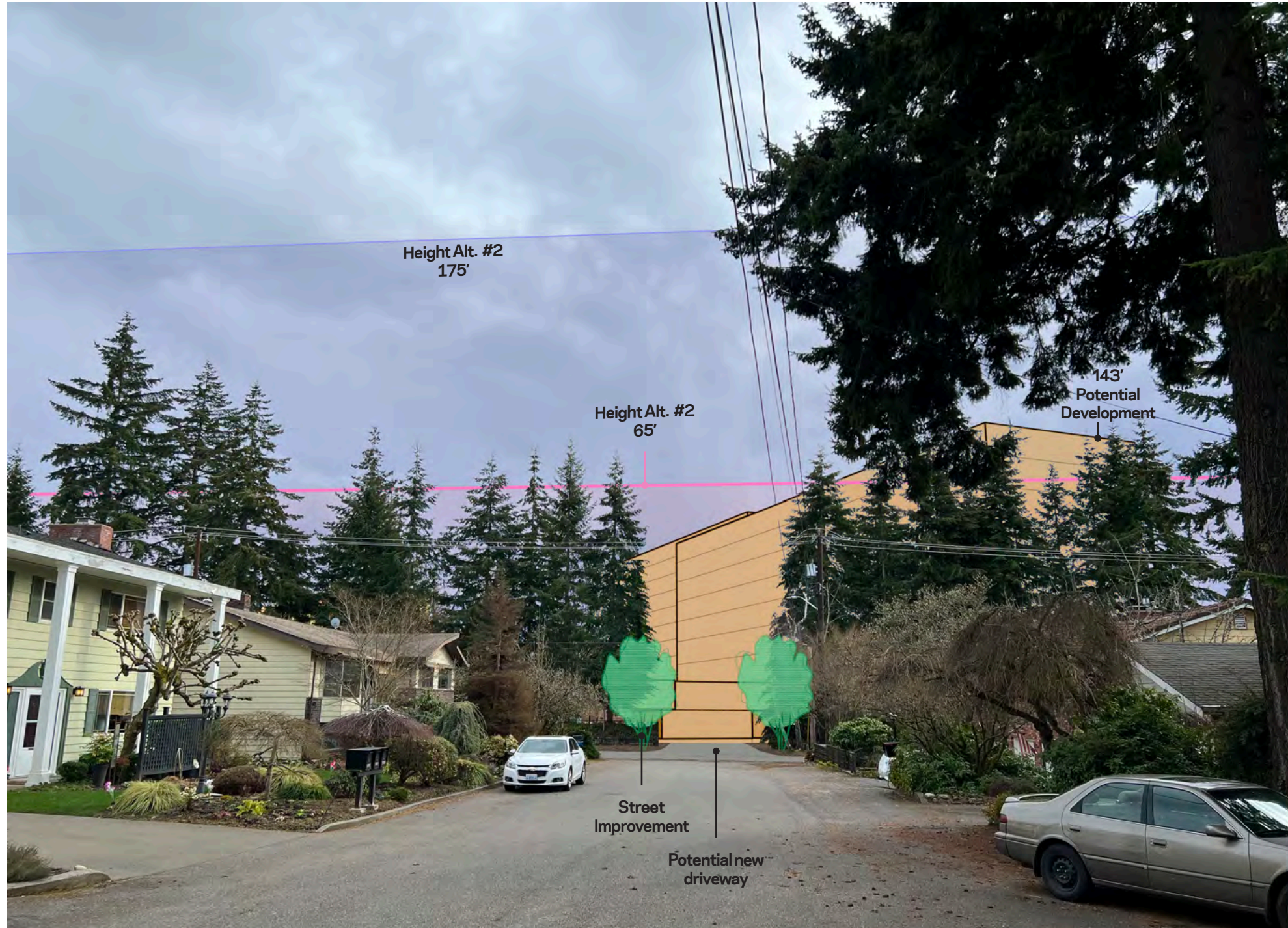


View from Northeast (Camera view range seen projected on buildings in blue)

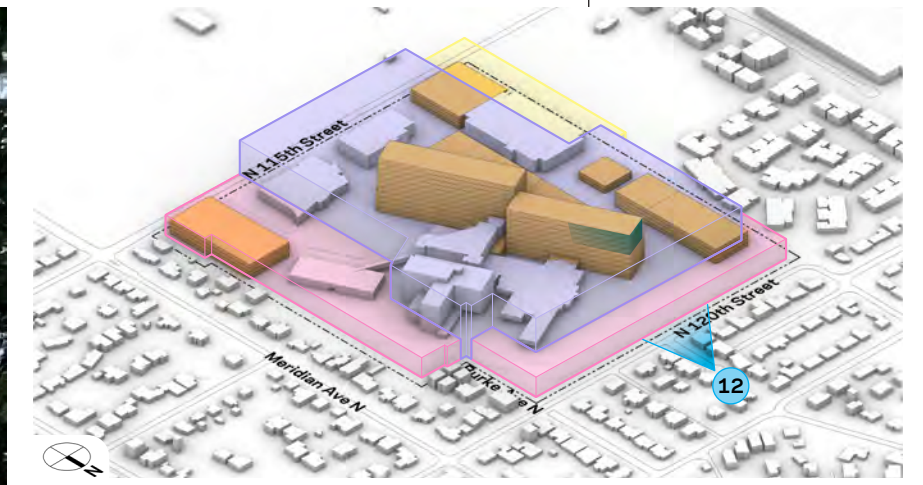


Zoning Height Legend

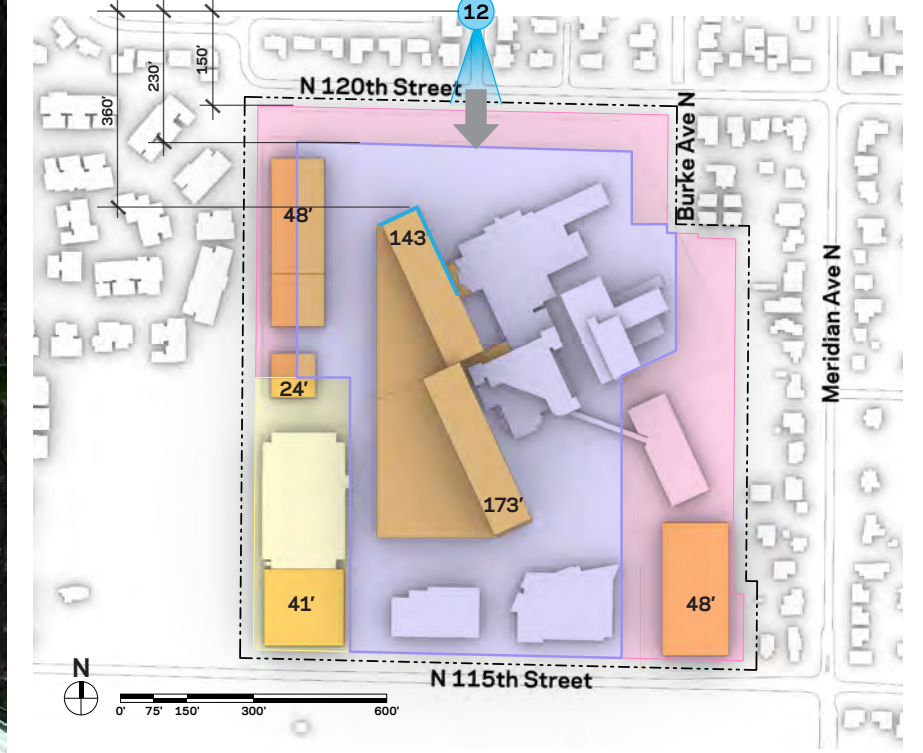
- 175'
- 65'
- New Construction



65' HEIGHT OVERLAY @ 20' SETBACK FROM PROPERTY LINE; @ 150' FROM CAMERA
175' HEIGHT OVERLAY @ 230' FROM CAMERA (APPROX. 100' FROM PROPERTY LINE)
POTENTIAL DEVELOPMENT ALMOST 360' FROM CAMERA

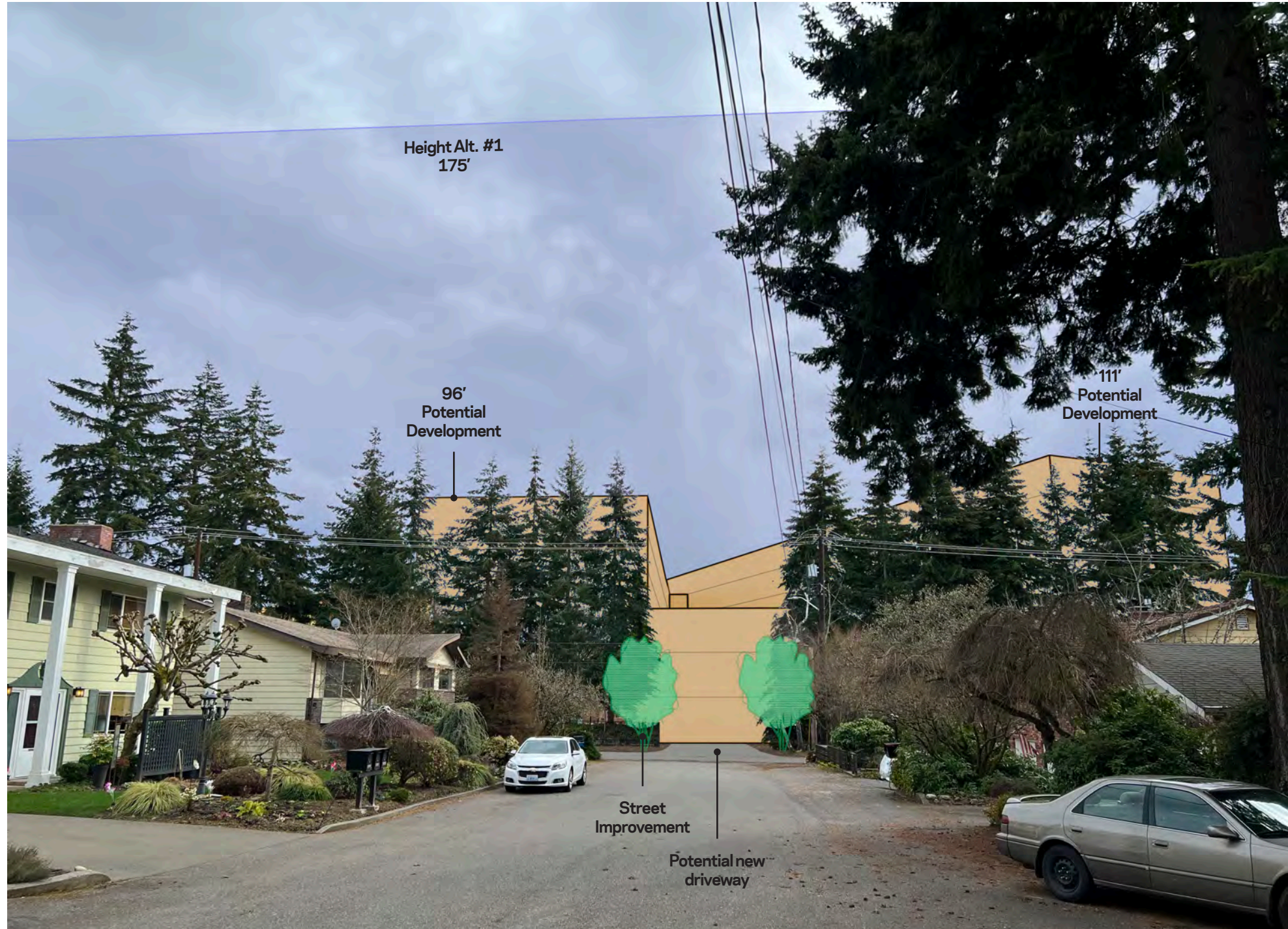


View from Northeast (Camera view range seen projected on buildings in blue)

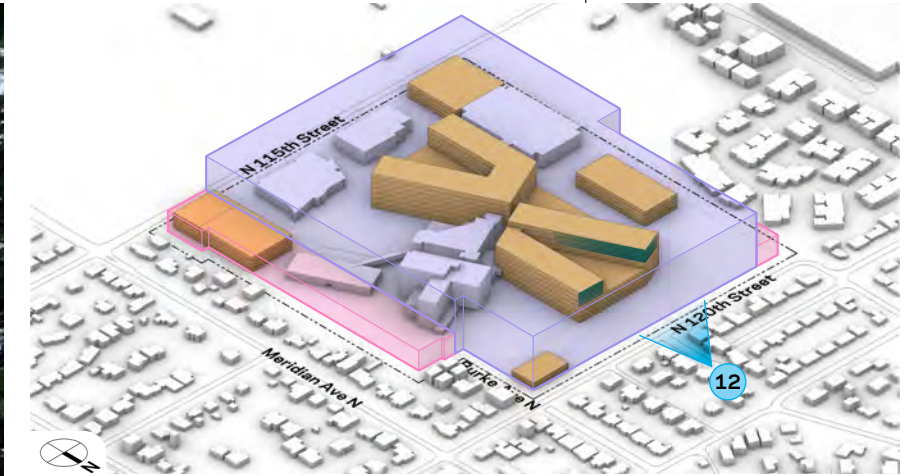


Zoning Height Legend

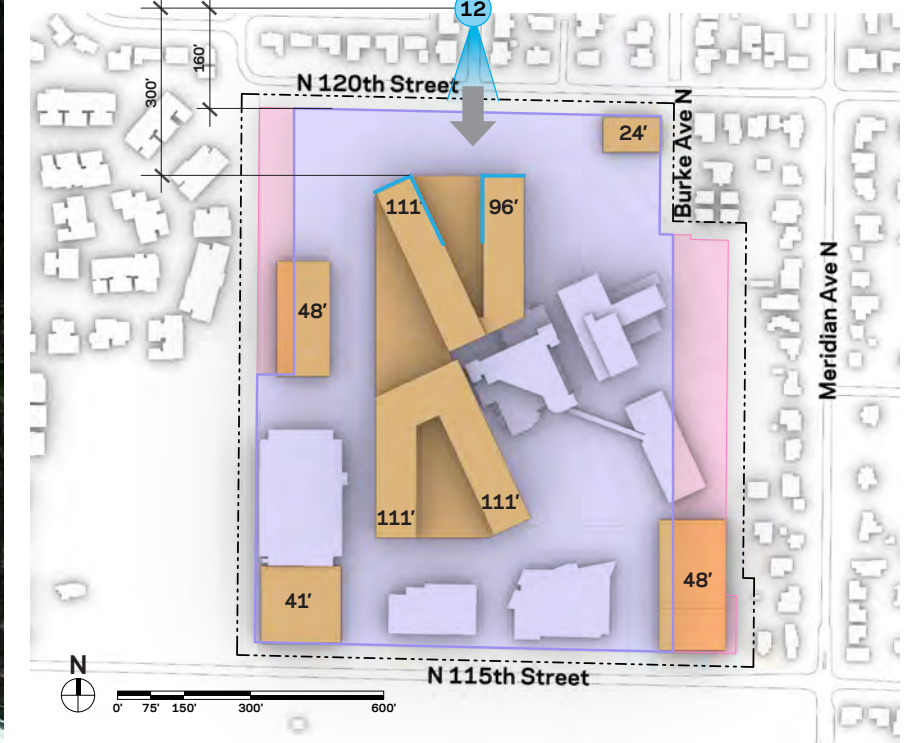
| | | | |
|--|------|--|------------------|
| | 175' | | 105' |
| | 65' | | New Construction |



175' HEIGHT OVERLAY @ 30' SETBACK FROM PROPERTY LINE; @ 160' FROM CAMERA
POTENTIAL DEVELOPMENT ALMOST 300' FROM CAMERA

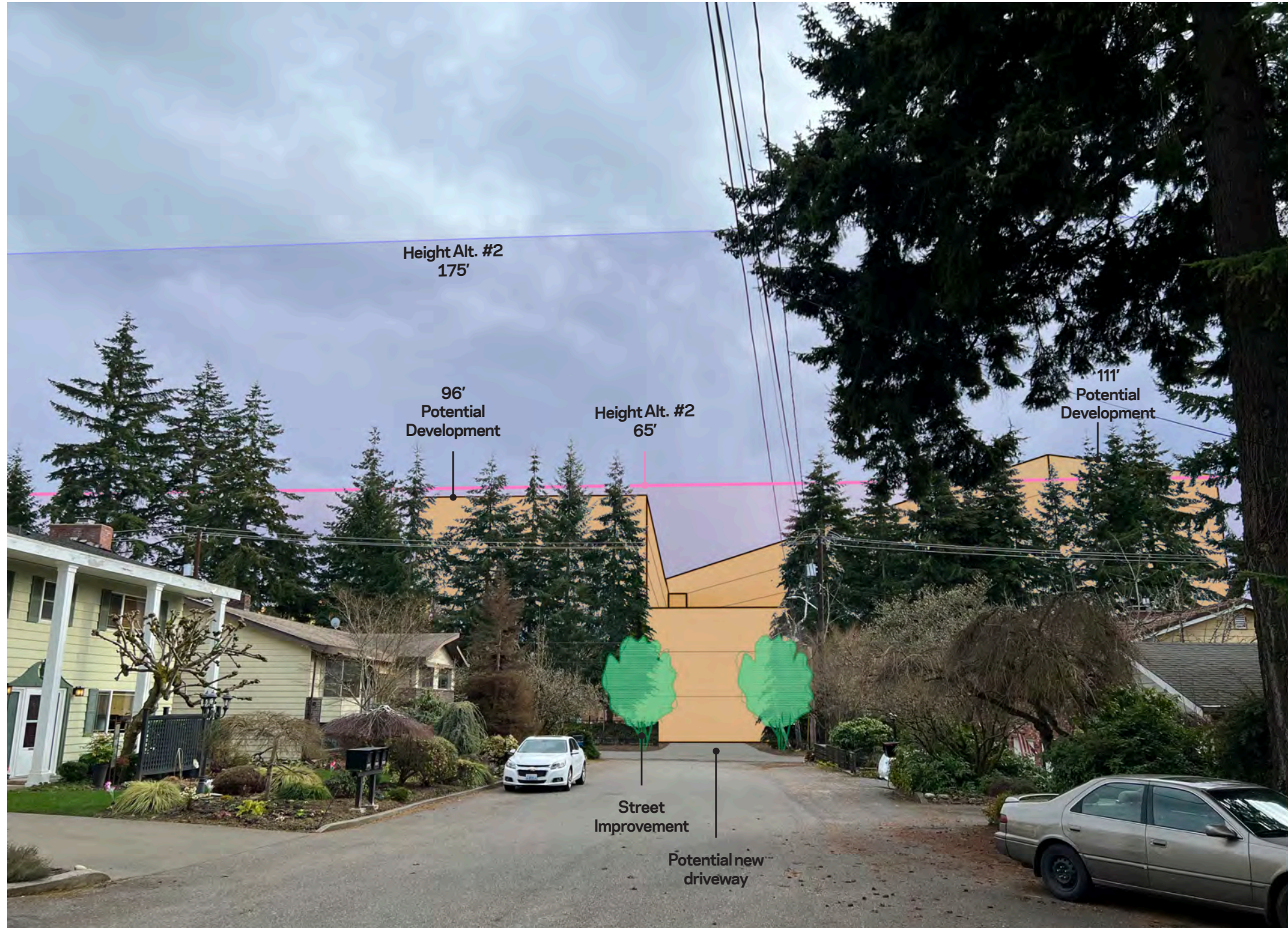


View from Northeast (Camera view range seen projected on buildings in blue)

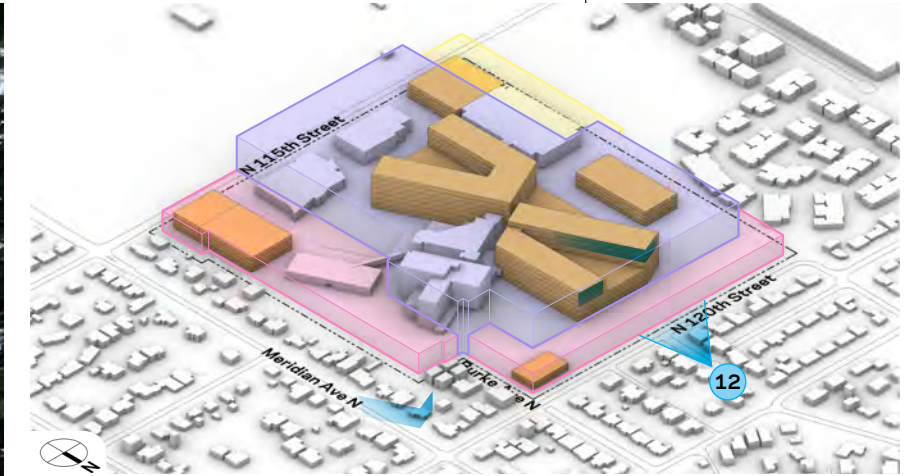


Zoning Height Legend

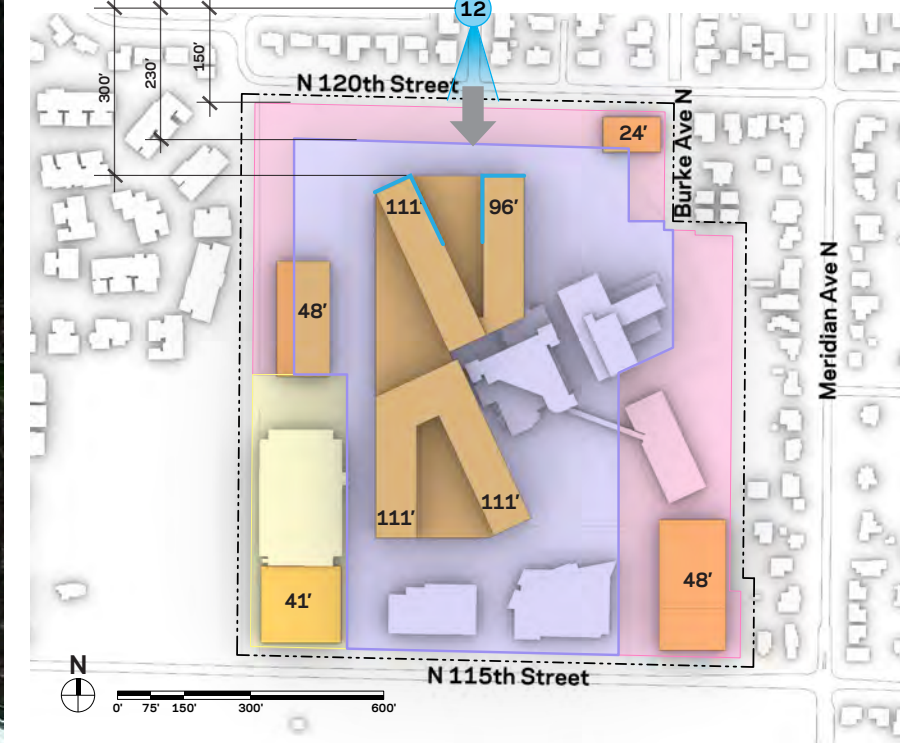




65' HEIGHT OVERLAY @ 20' SETBACK FROM PROPERTY LINE; @ 150' FROM CAMERA
175' HEIGHT OVERLAY @ 230' FROM CAMERA (APPROX. 100' FROM PROPERTY LINE)
POTENTIAL DEVELOPMENT ALMOST 300' FROM CAMERA



View from Northeast (Camera view range seen projected on buildings in blue)



Zoning Height Legend



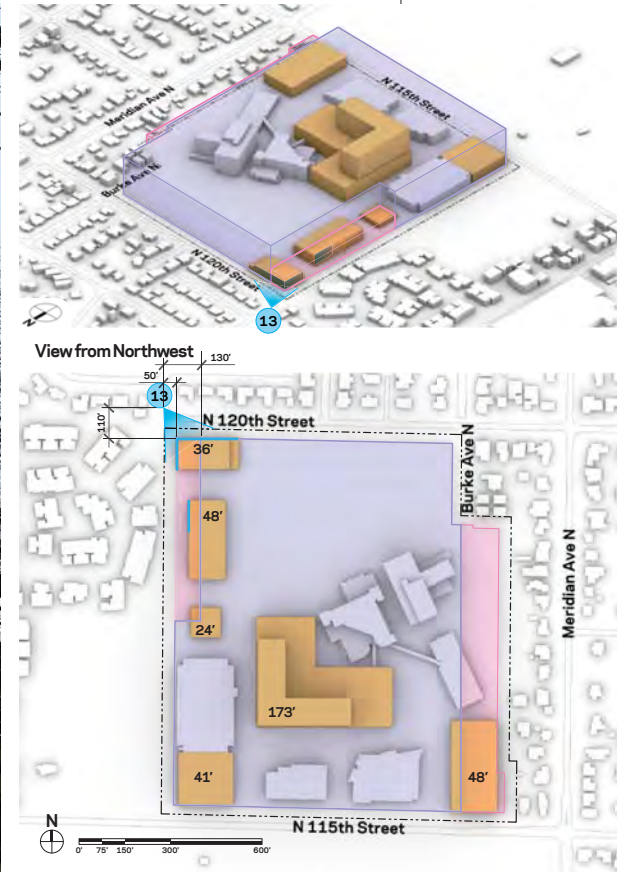
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65' HEIGHT OVERLAY @ 30' SETBACK FROM PROPERTY LINE, @ 50' FROM CAMERA
175' HEIGHT OVERLAY @ 130' EAST FROM CAMERA (APPROX. 120' EAST FROM PROPERTY LINE)
POTENTIAL DEVELOPMENT ALMOST 110' SOUTH FROM CAMERA



Zoning Height Legend



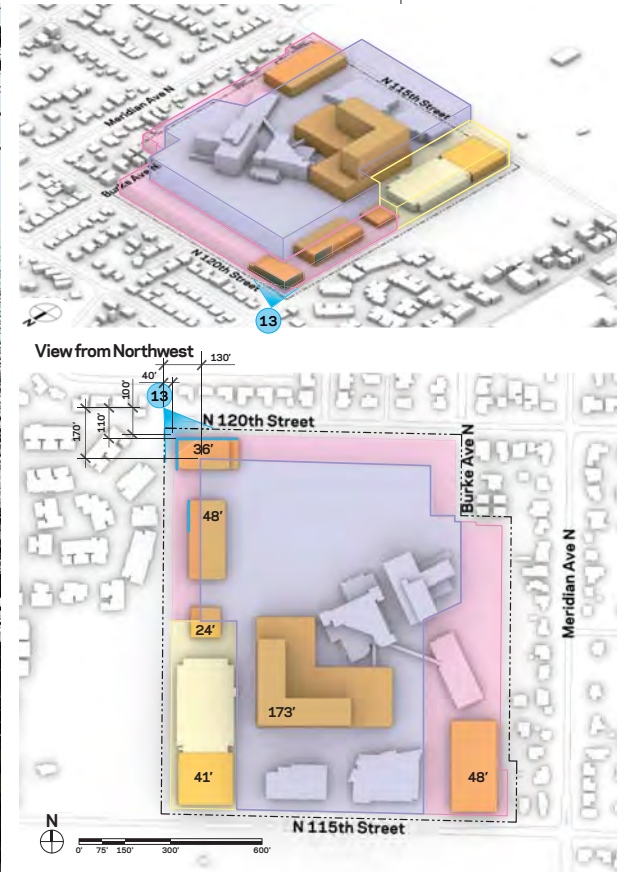
UWMC - Northwest View Analysis | Alternative 2 - Scenario 1



65' HEIGHT OVERLAY @ 20' SETBACK SOUTH FROM PROPERTY LINE; @ 100' SOUTH FROM CAMERA
 175' HEIGHT OVERLAY @ 170' FROM CAMERA (APPROX. 90' SOUTH FROM PROPERTY LINE)
 POTENTIAL DEVELOPMENT ALMOST 110' FROM CAMERA

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Zoning Height Legend

| | | | |
|--|------|--|------------------|
| | 175' | | 105' |
| | 65' | | New Construction |

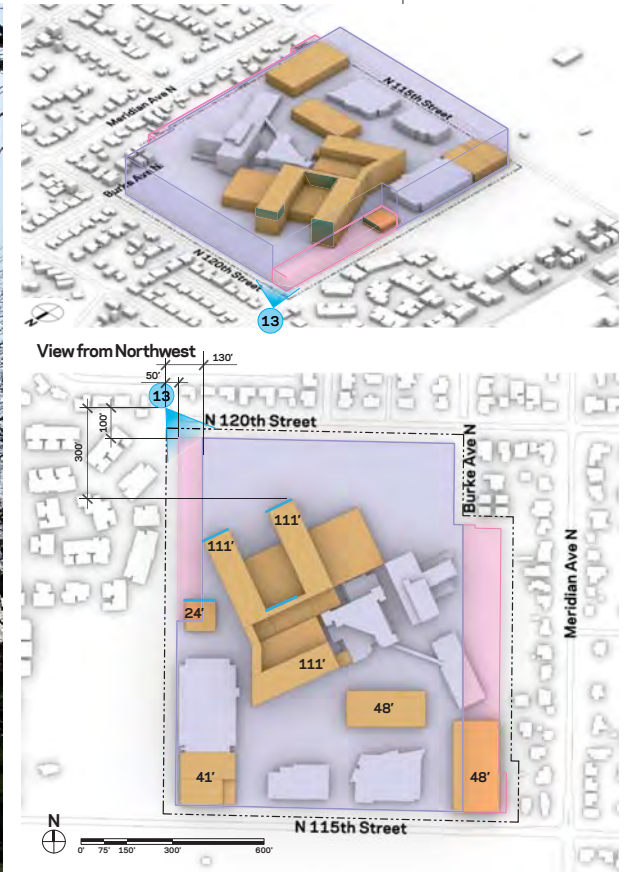
UWMC - Northwest View Analysis | Alternative 1 - Scenario 2

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65' HEIGHT OVERLAY @ 30' SETBACK EAST FROM PROPERTY LINE; @40' EAST FROM CAMERA
175' HEIGHT OVERLAY @ 130' EAST FROM CAMERA (APPROX. 120' EAST FROM PROPERTY LINE)
POTENTIAL DEVELOPMENT ALMOST 300' SOUTH FROM CAMERA



Zoning Height Legend



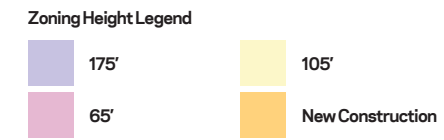
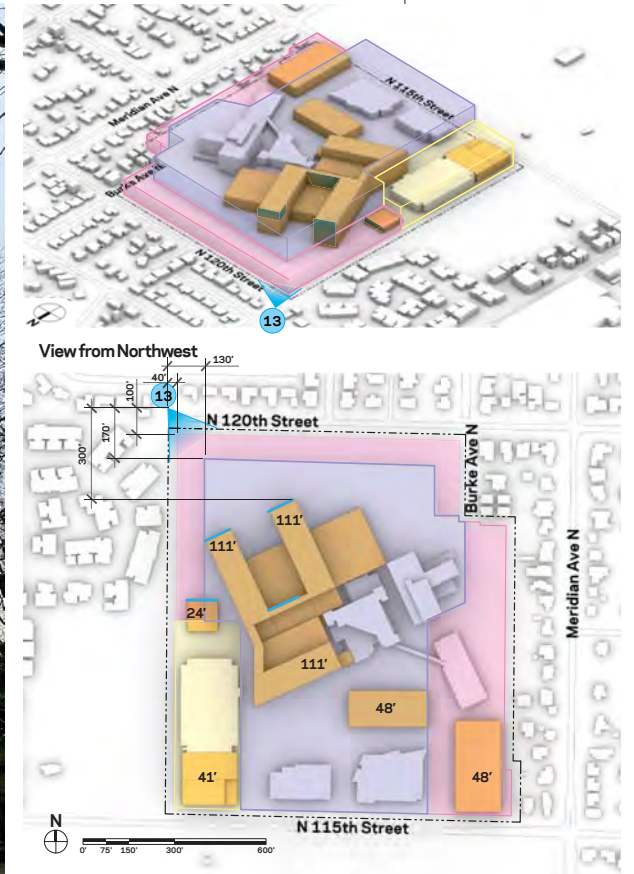
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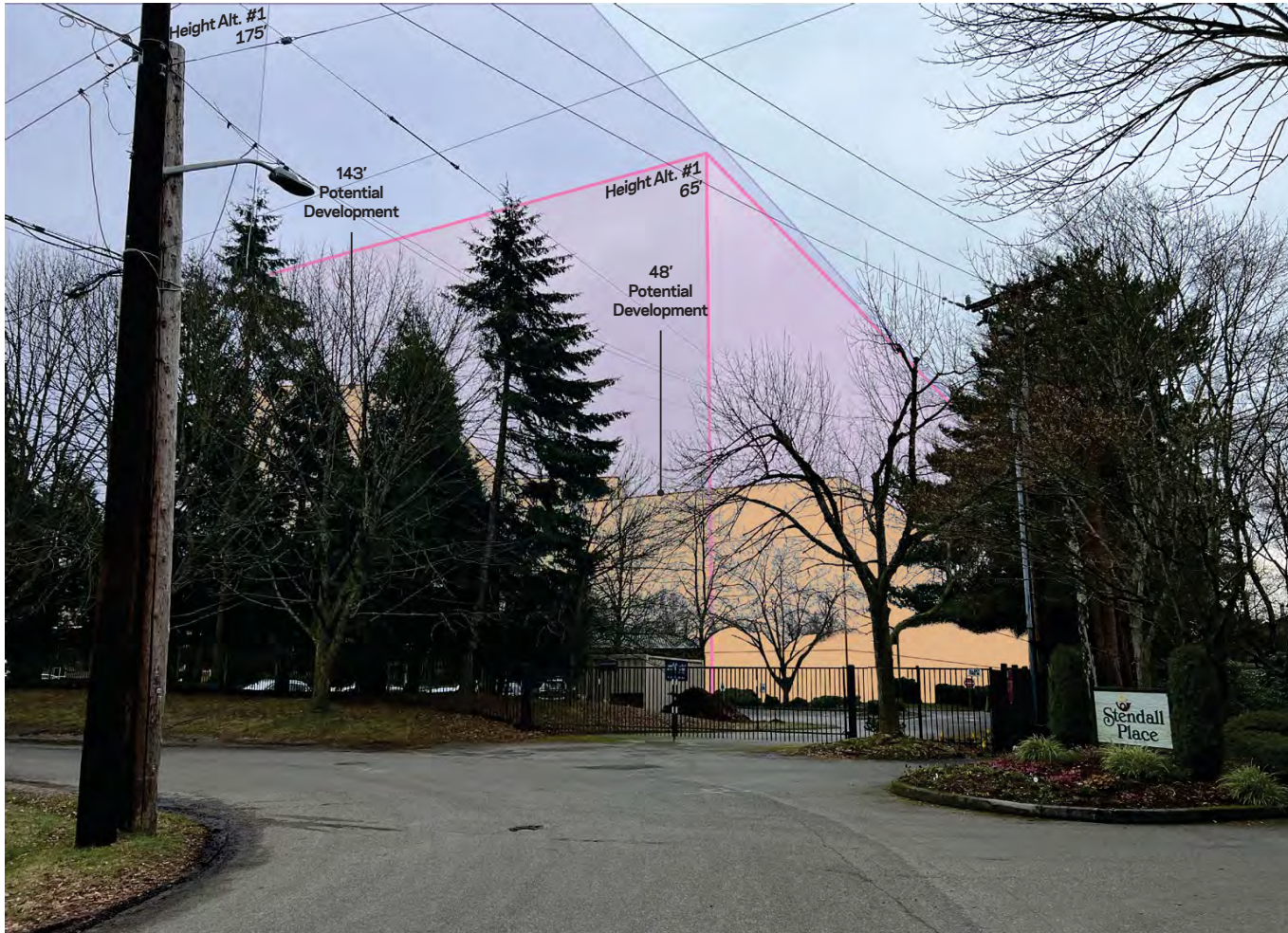
65' HEIGHT OVERLAY @ 20' SETBACK SOUTH FROM PROPERTY LINE; @ 100' SOUTH FROM CAMERA
175' HEIGHT OVERLAY @ 170' SOUTH FROM CAMERA (APPROX. 90' SOUTH FROM PROPERTY LINE)
POTENTIAL DEVELOPMENT ALMOST 110' FROM CAMERA



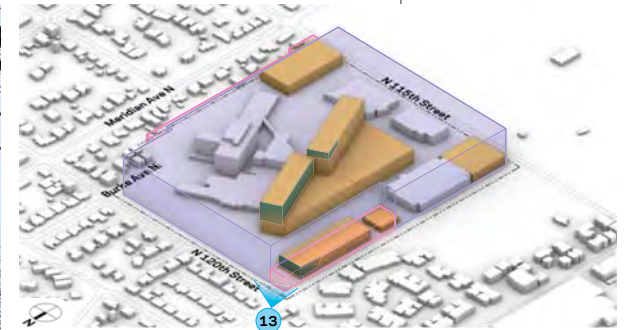
UWMC - Northwest View Analysis | Alternative 1 - Scenario 3

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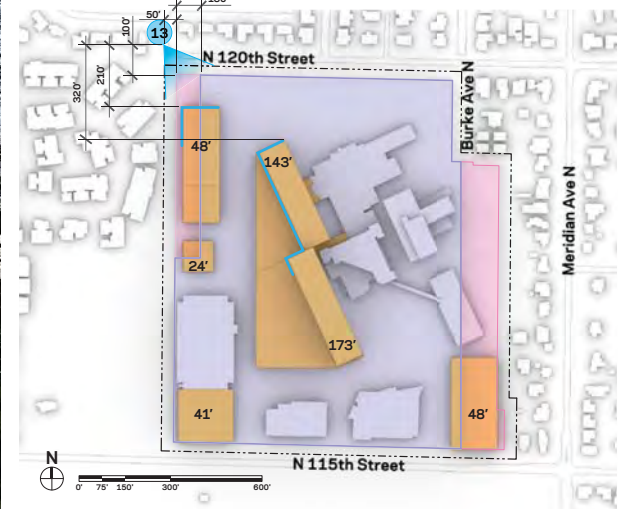
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65' HEIGHT OVERLAY @ 30' SETBACK EAST FROM PROPERTY LINE; @40' EAST FROM CAMERA
175' HEIGHT OVERLAY @ 130' EAST FROM CAMERA (APPROX. 120' EAST FROM PROPERTY LINE)
POTENTIAL DEVELOPMENT ALMOST 210' SOUTH FROM CAMERA



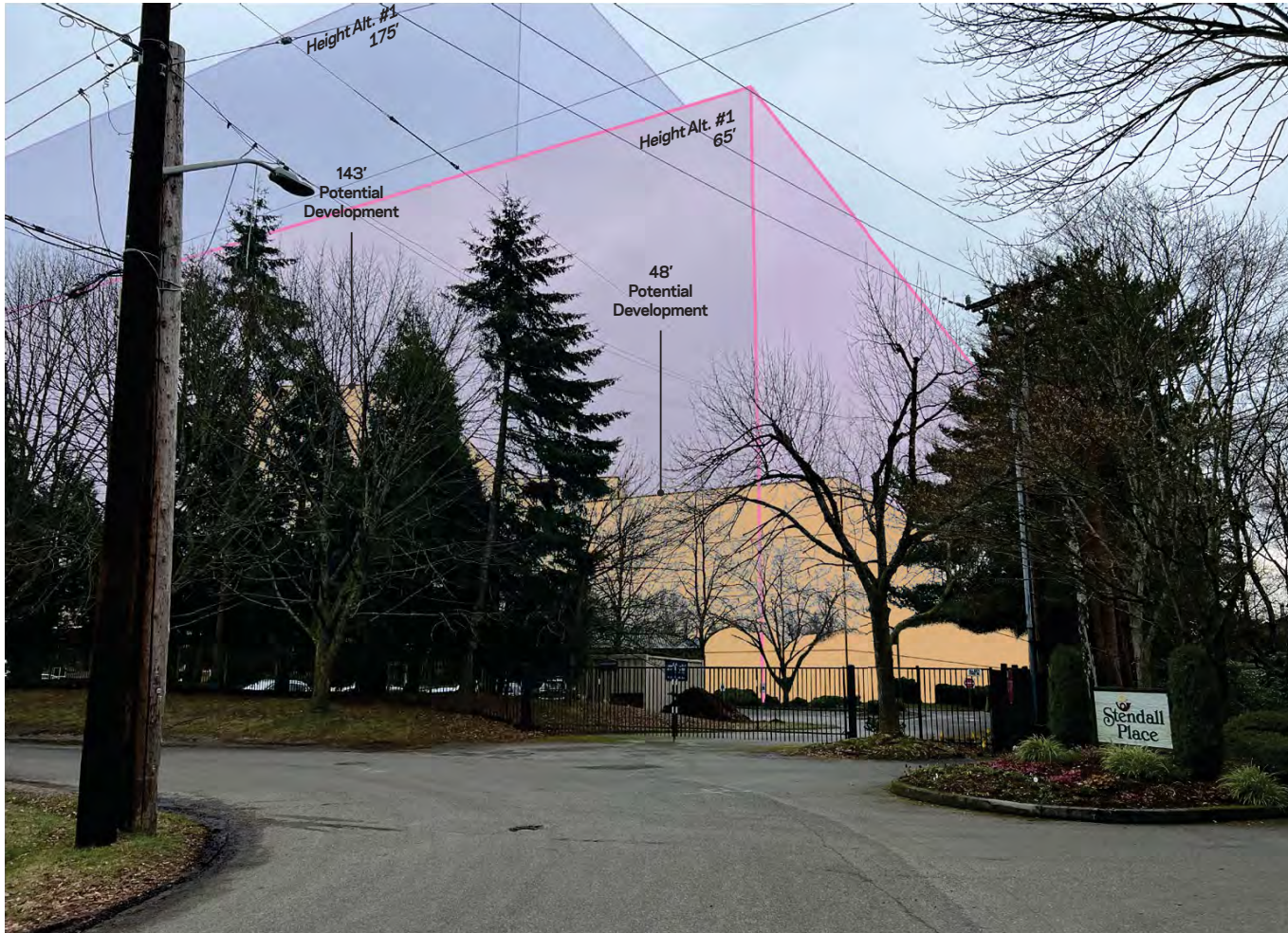
View from Northwest



Zoning Height Legend



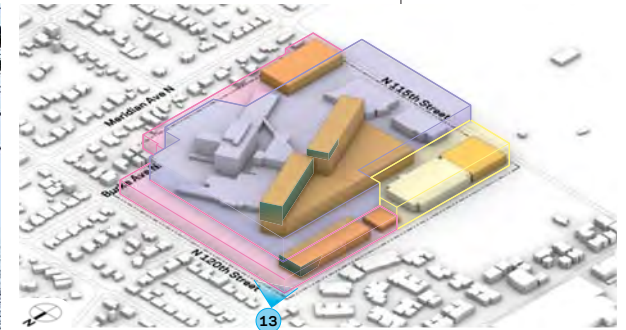
UWMC - Northwest View Analysis | Alternative 2 - Scenario 3



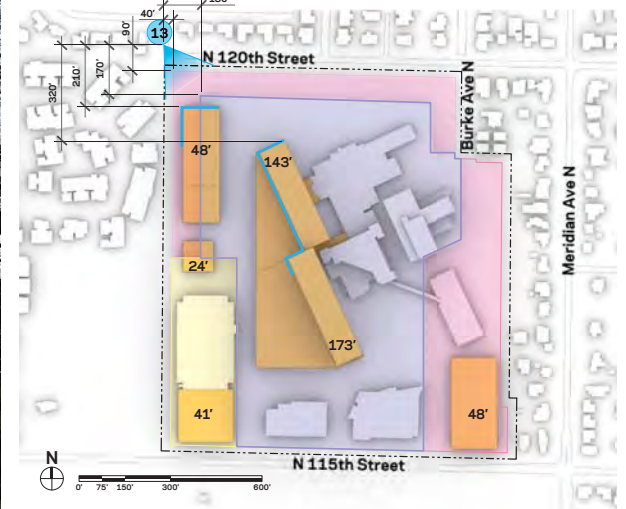
65' HEIGHT OVERLAY @ 20' SETBACK SOUTH FROM PROPERTY LINE; @ 100' SOUTH FROM CAMERA
 175' HEIGHT OVERLAY @ 170' SOUTH FROM CAMERA (APPROX. 90' SOUTH FROM PROPERTY LINE)
 POTENTIAL DEVELOPMENT ALMOST 210' FROM CAMERA

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View from Northwest



Zoning Height Legend



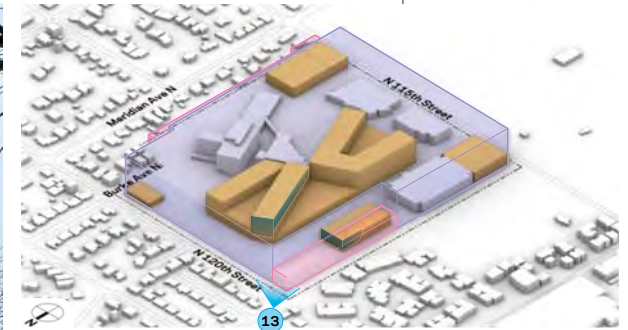
UWMC - Northwest View Analysis | Alternative 1 - Scenario 4

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65' HEIGHT OVERLAY @ 30' SETBACK EAST FROM PROPERTY LINE; @40' EAST FROM CAMERA
175' HEIGHT OVERLAY @ 130' EAST FROM CAMERA (APPROX. 120' EAST FROM PROPERTY LINE)
POTENTIAL DEVELOPMENT ALMOST 260' SOUTH FROM CAMERA



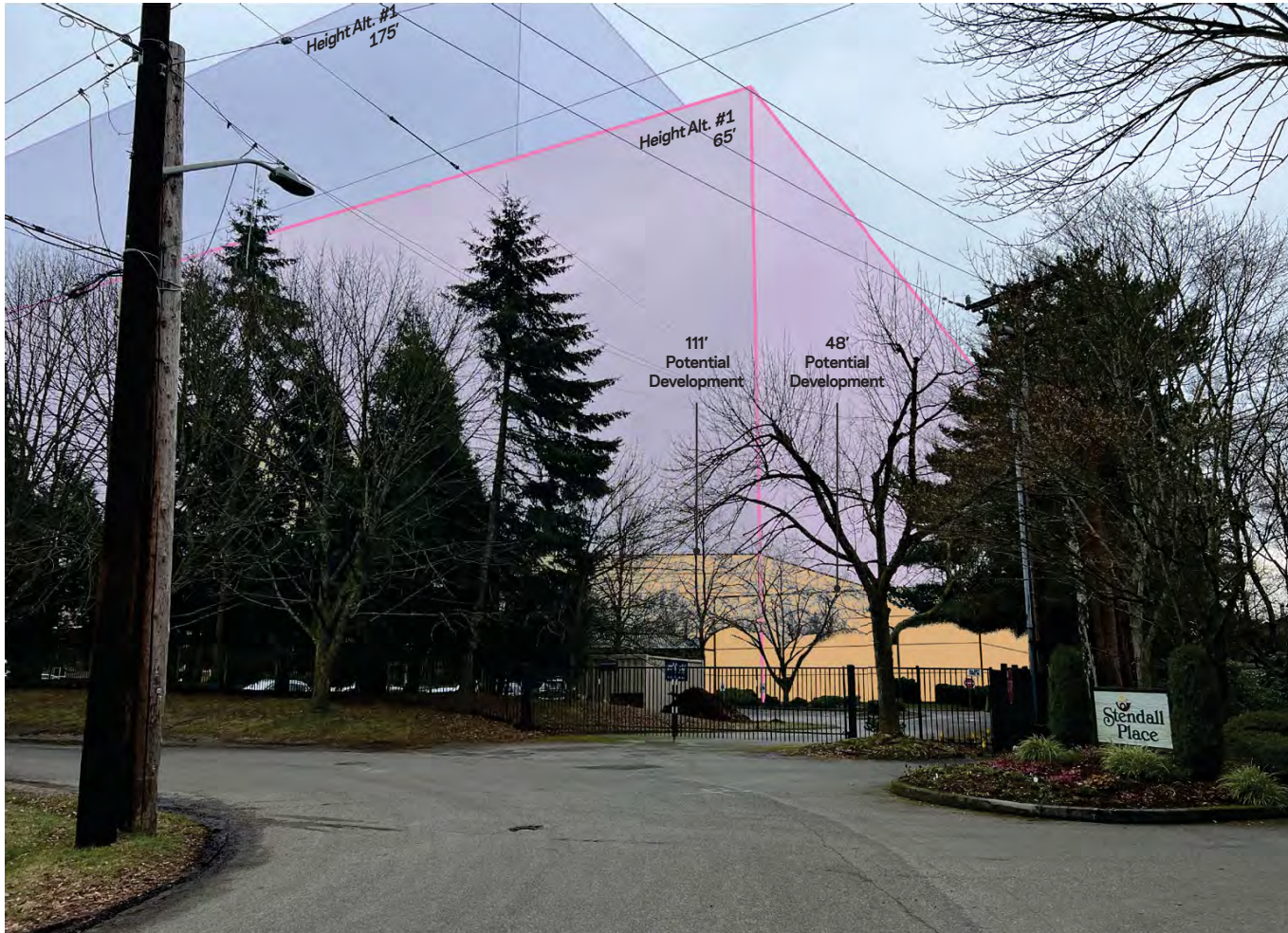
View from Northwest



Zoning Height Legend



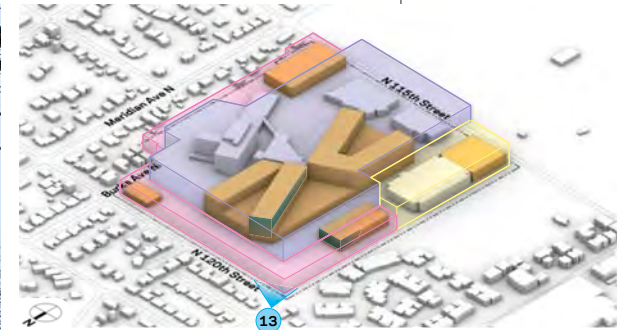
UWMC - Northwest View Analysis | Alternative 2 - Scenario 4



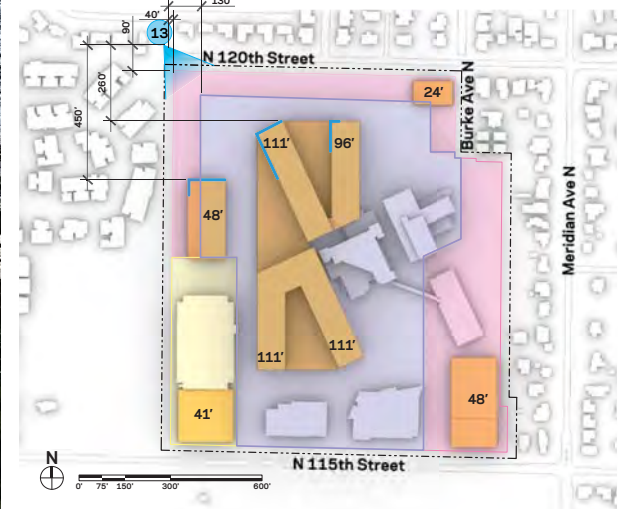
65' HEIGHT OVERLAY @ 20' SETBACK SOUTH FROM PROPERTY LINE; @ 100' SOUTH FROM CAMERA
 175' HEIGHT OVERLAY @ 170' SOUTH FROM CAMERA (APPROX. 90' SOUTH FROM PROPERTY LINE)
 POTENTIAL DEVELOPMENT ALMOST 260' FROM CAMERA

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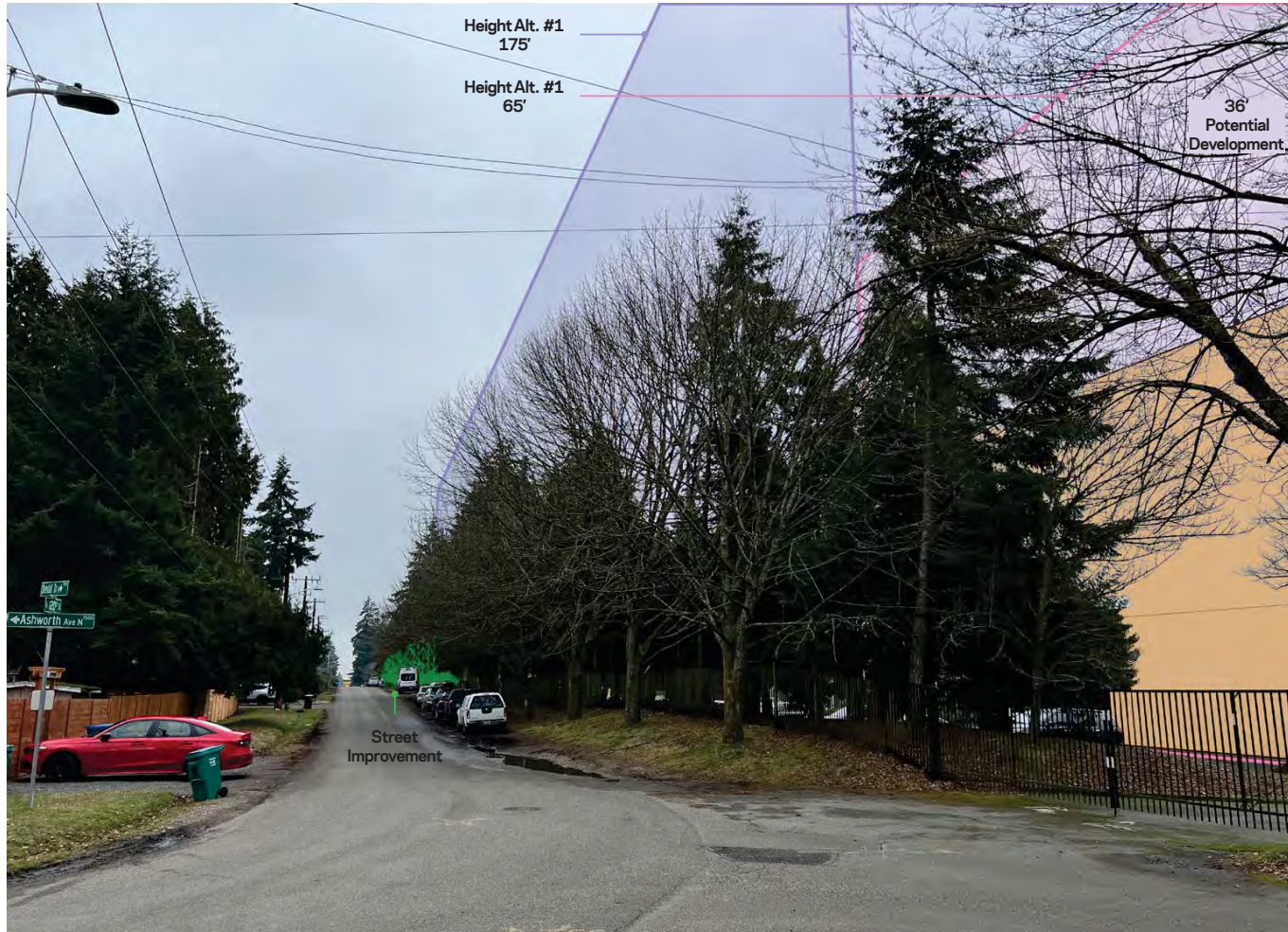
View from Northwest



Zoning Height Legend



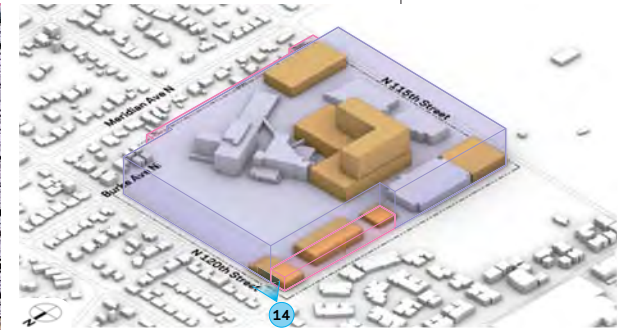
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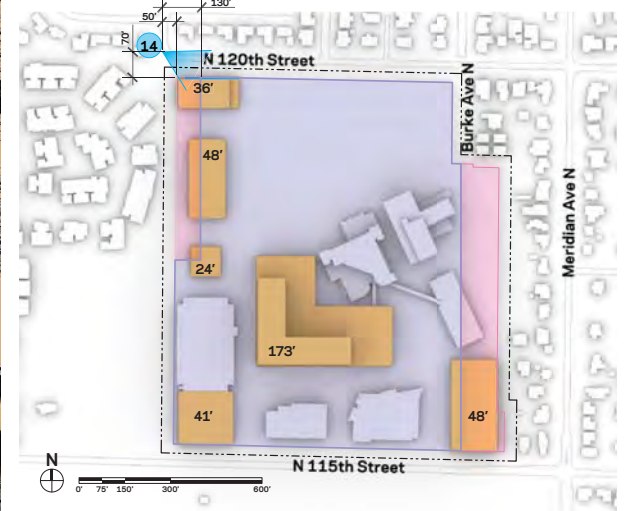
65' HEIGHT OVERLAY @ 40' SETBACK EAST FROM PROPERTY LINE; @ 70' SOUTH FROM CAMERA
 175' HEIGHT OVERLAY @ 130' EAST FROM CAMERA (APPROX. 120' EAST FROM PROPERTY LINE)
 POTENTIAL DEVELOPMENT ALMOST 70' SOUTH FROM CAMERA

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View from Northwest



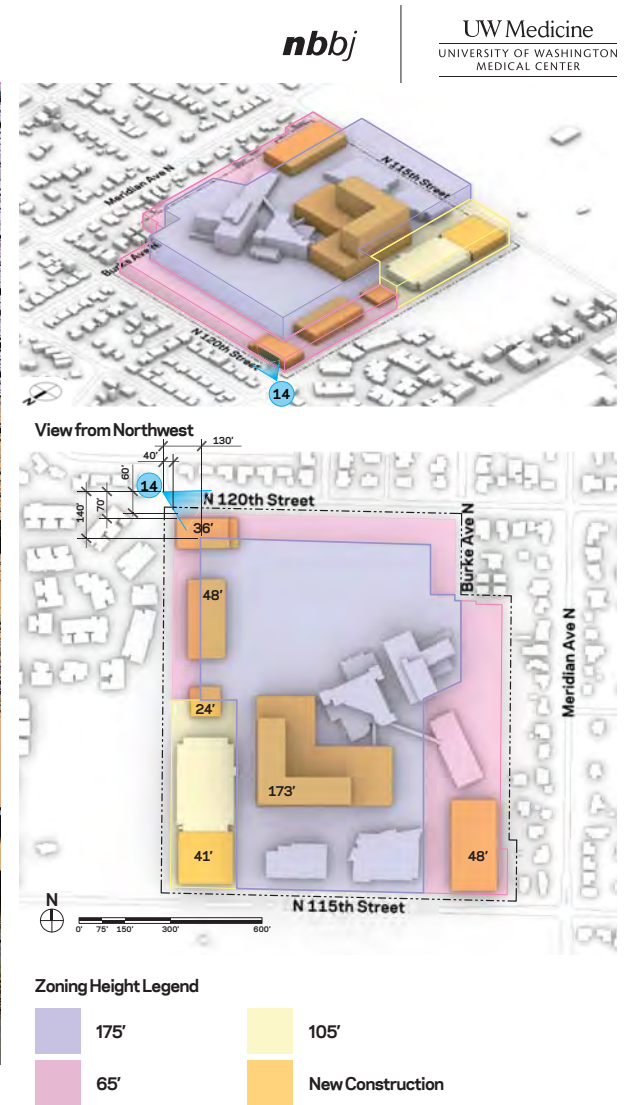
Zoning Height Legend



UWMC - Northwest View Analysis | Alternative 2 - Scenario 1



65' HEIGHT OVERLAY @ 30' SETBACK EAST FROM PROPERTY LINE; @ 60' SOUTH FROM CAMERA
 175' HEIGHT OVERLAY @ 130' EAST FROM CAMERA (APPROX 110' EAST FROM PROPERTY LINE)
 POTENTIAL DEVELOPMENT ALMOST 70' SOUTH FROM CAMERA



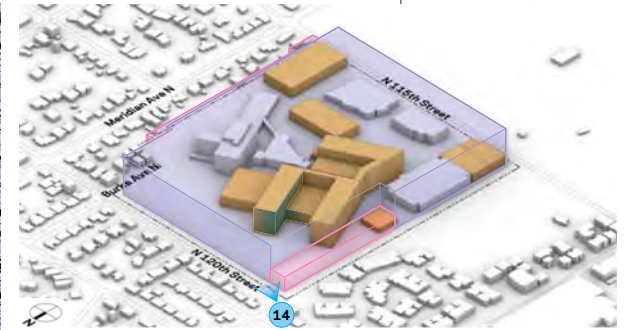
UWMC - Northwest View Analysis | Alternative 1 - Scenario 2



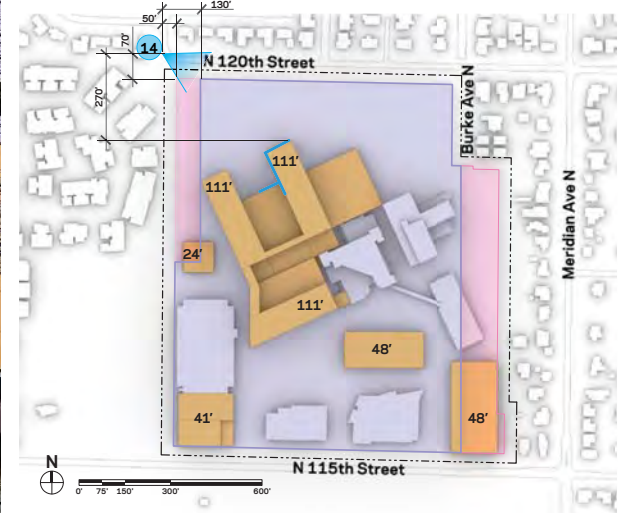
65' HEIGHT OVERLAY @ 40' SETBACK EAST FROM PROPERTY LINE; @ 70' SOUTH FROM CAMERA
 175' HEIGHT OVERLAY @ 130' EAST FROM CAMERA (APPROX. 120' EAST FROM PROPERTY LINE)
 POTENTIAL DEVELOPMENT ALMOST 270' SOUTH FROM CAMERA

nbbj

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 UNIVERSITY OF WASHINGTON
 MEDICAL CENTER



View from Northwest



Zoning Height Legend



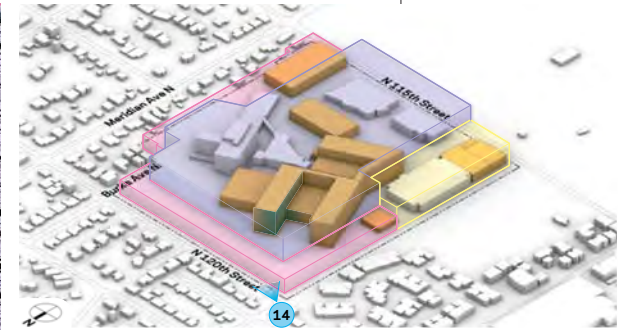
UWMC - Northwest View Analysis | Alternative 2 - Scenario 2



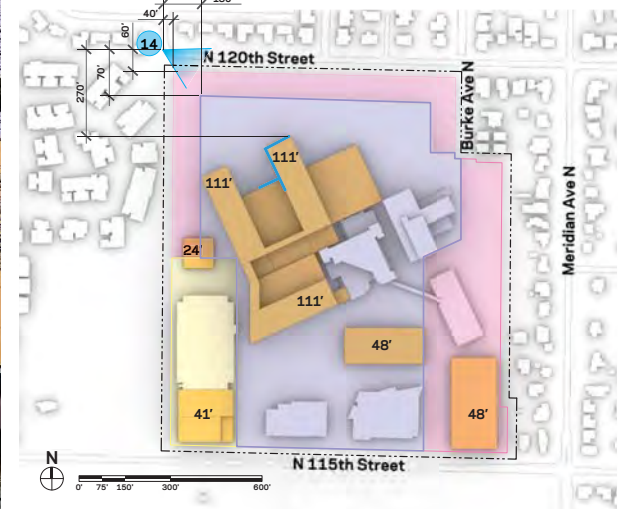
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 175' HEIGHT OVERLAY @ 130' EAST FROM CAMERA (APPROX. 120' EAST FROM PROPERTY LINE)
 POTENTIAL DEVELOPMENT ALMOST 270' SOUTH FROM CAMERA

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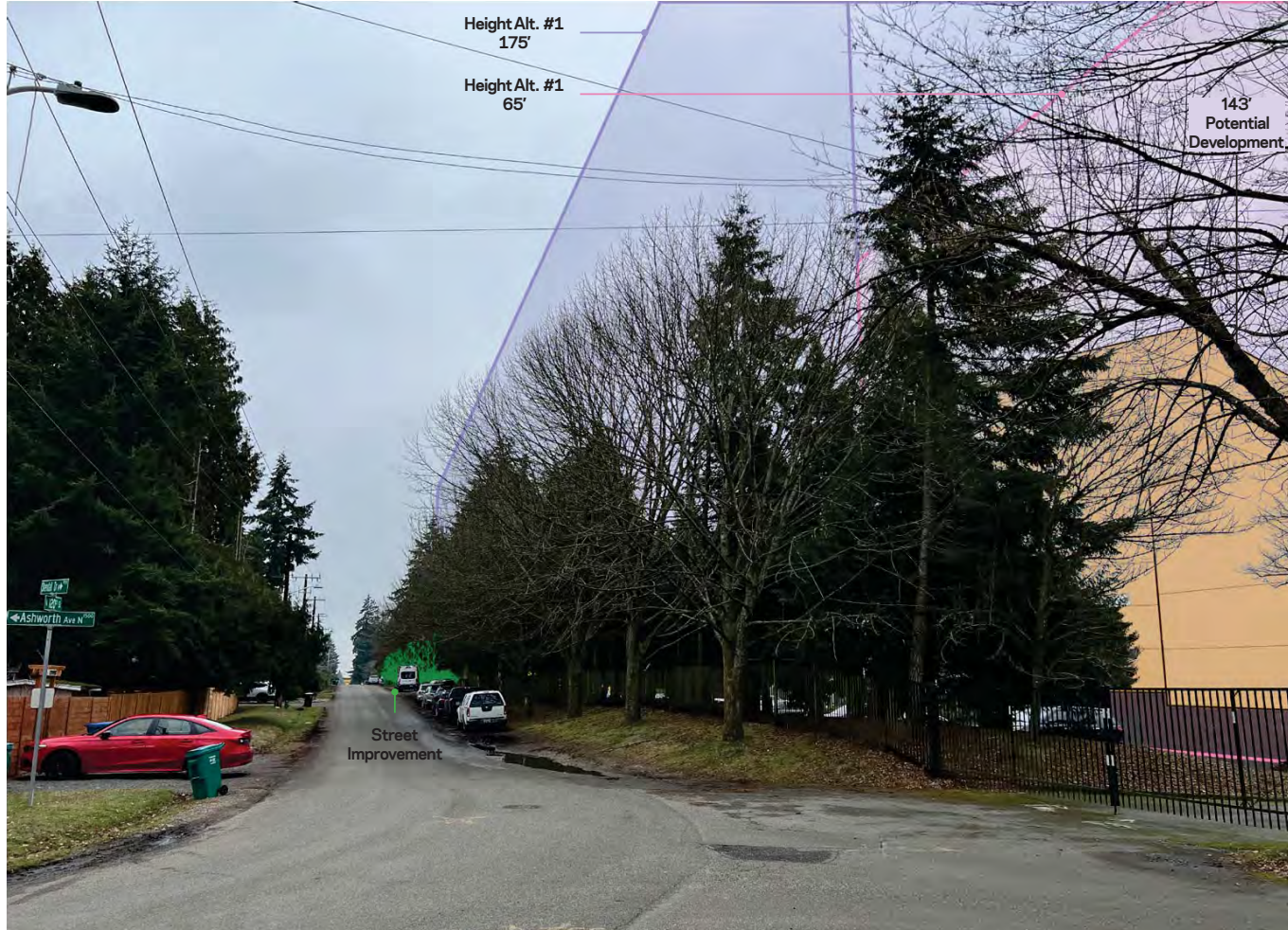
View from Northwest



Zoning Height Legend



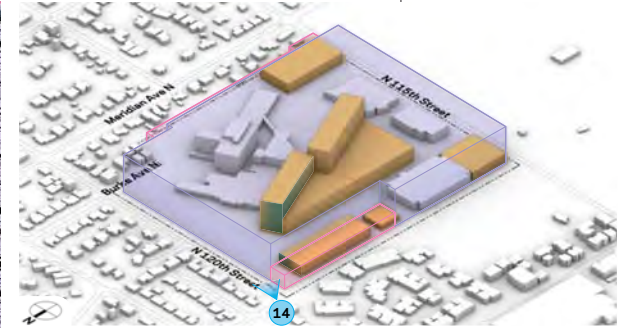
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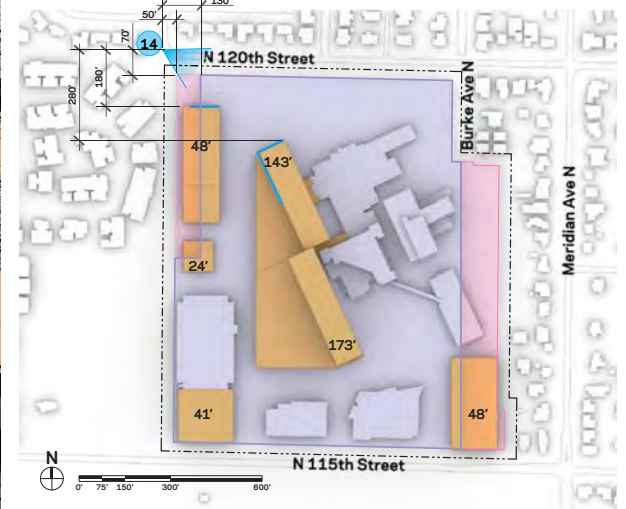
65' HEIGHT OVERLAY @ 40' SETBACK EAST FROM PROPERTY LINE; @ 70' SOUTH FROM CAMERA
 175' HEIGHT OVERLAY @ 130' EAST FROM CAMERA (APPROX. 120' EAST FROM PROPERTY LINE)
 POTENTIAL DEVELOPMENT ALMOST 180' SOUTH FROM CAMERA

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View from Northwest



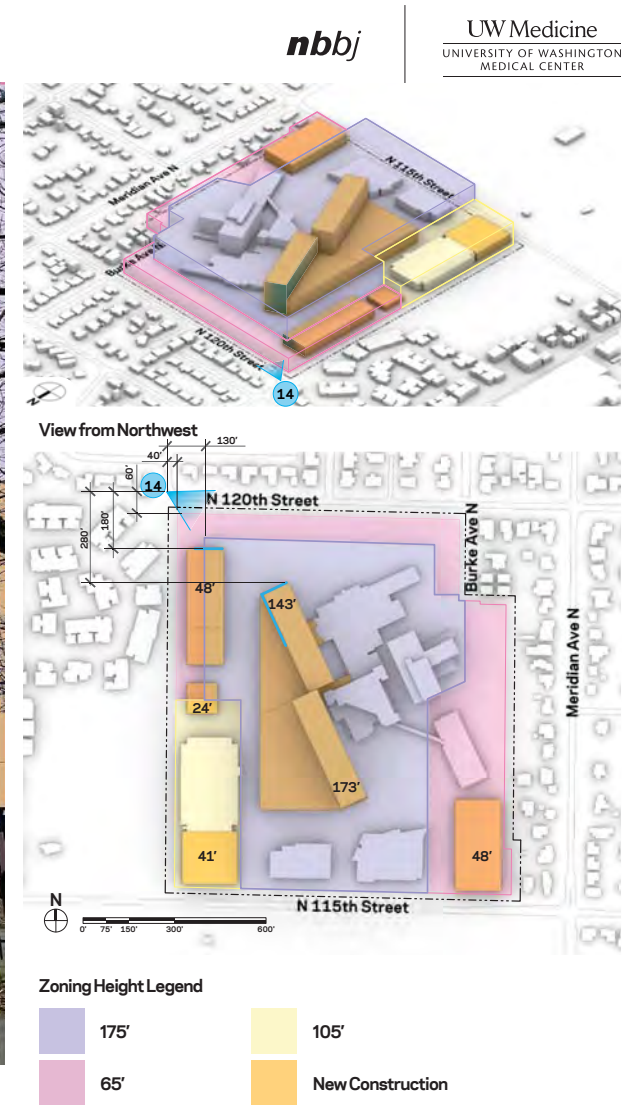
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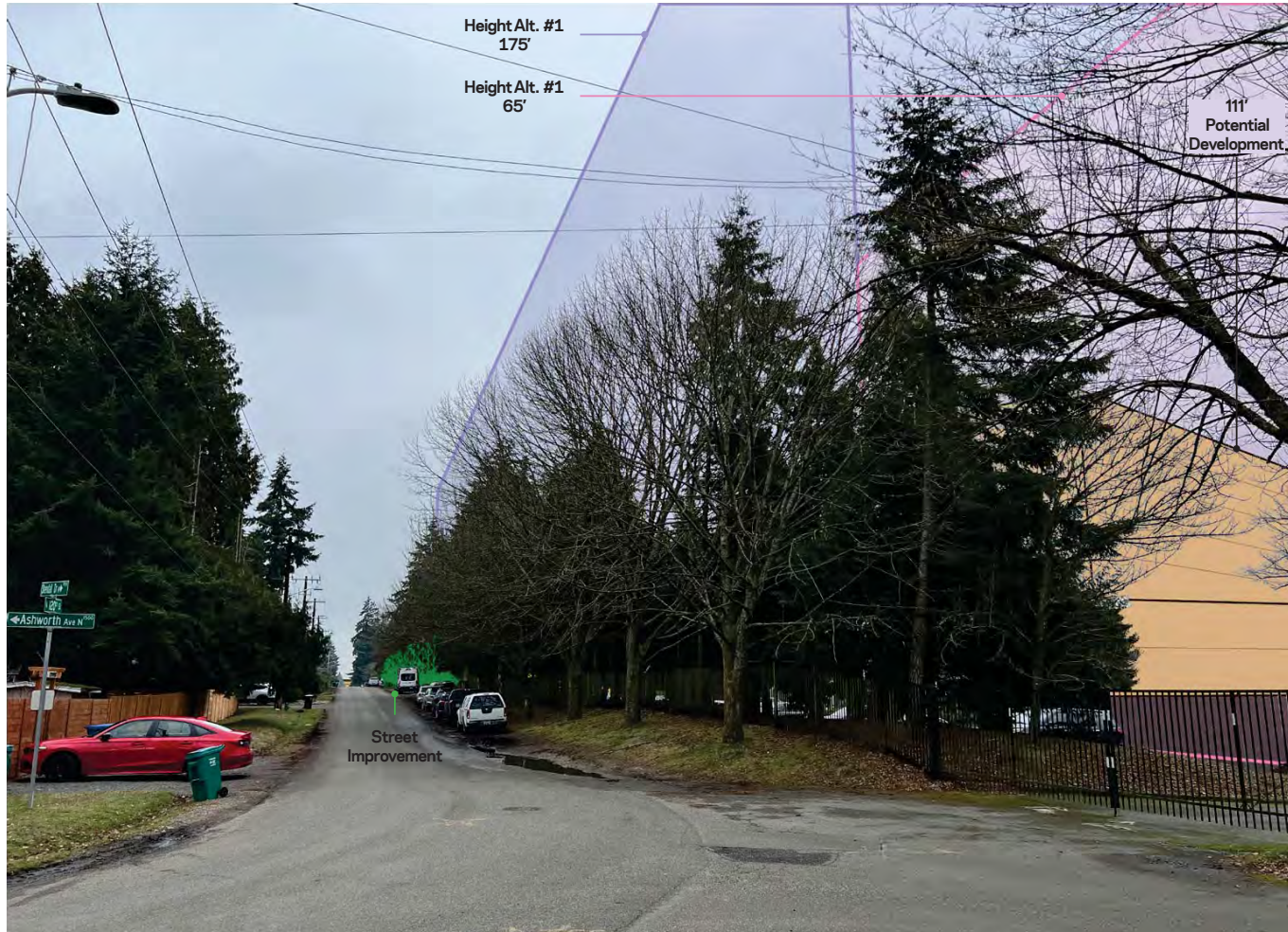
UWMC - Northwest View Analysis | Alternative 2 - Scenario 3



65' HEIGHT OVERLAY @ 40' SETBACK EAST FROM PROPERTY LINE; @ 60' SOUTH FROM CAMERA
 175' HEIGHT OVERLAY @ 130' EAST FROM CAMERA (APPROX. 120' EAST FROM PROPERTY LINE)
 POTENTIAL DEVELOPMENT ALMOST 180' SOUTH FROM CAMERA



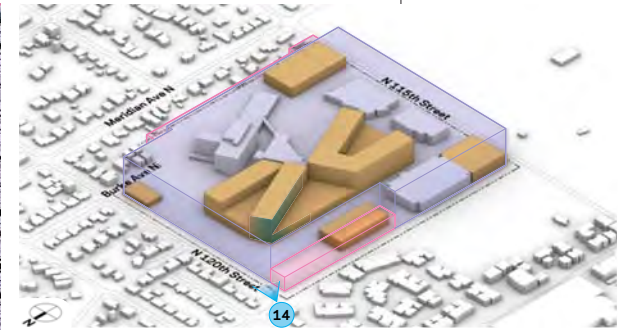
UWMC - Northwest View Analysis | Alternative 1 - Scenario 4



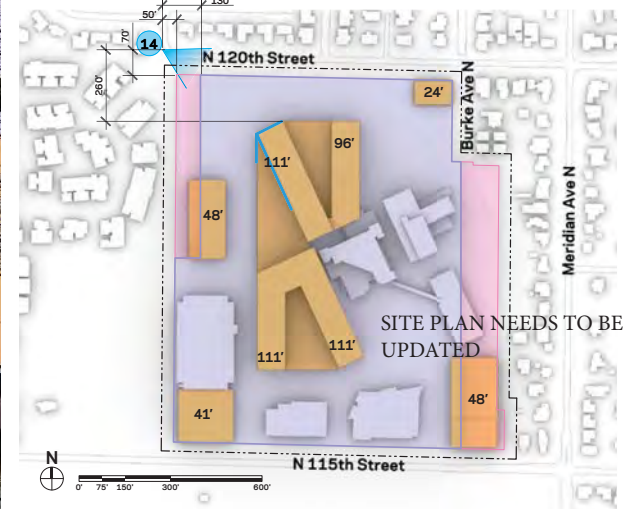
65' HEIGHT OVERLAY @ 40' SETBACK EAST FROM PROPERTY LINE; @ 70' SOUTH FROM CAMERA
 175' HEIGHT OVERLAY @ 130' EAST FROM CAMERA (APPROX. 120' EAST FROM PROPERTY LINE)
 POTENTIAL DEVELOPMENT ALMOST 260' SOUTH FROM CAMERA

nbbj

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View from Northwest



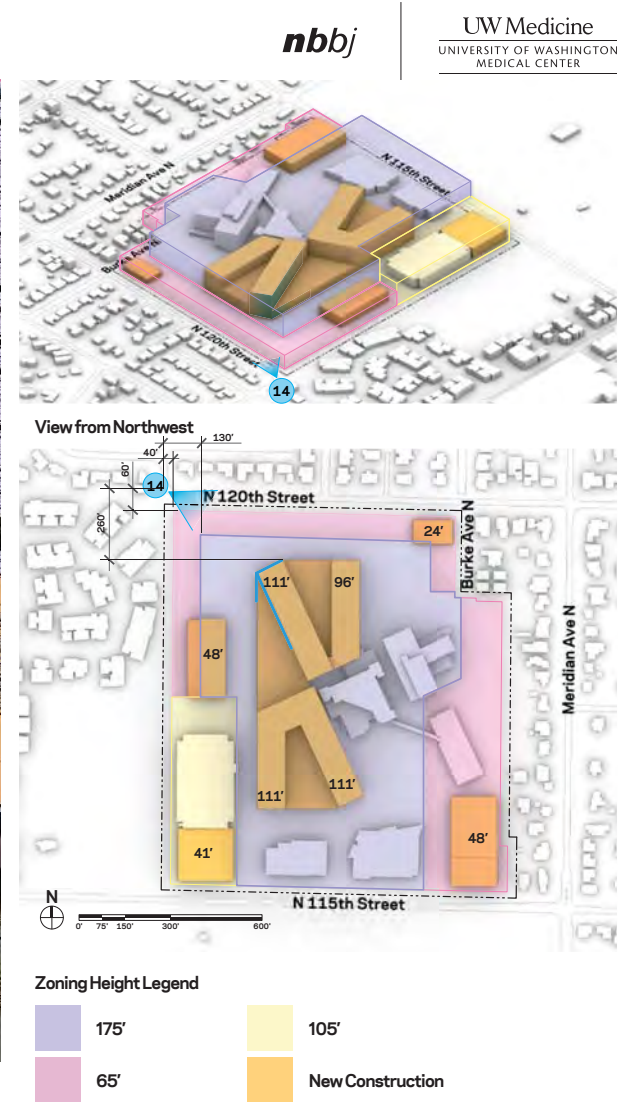
Zoning Height Legend

- 175'
- 65'
- New Construction

UWMC - Northwest View Analysis | Alternative 2 - Scenario 4

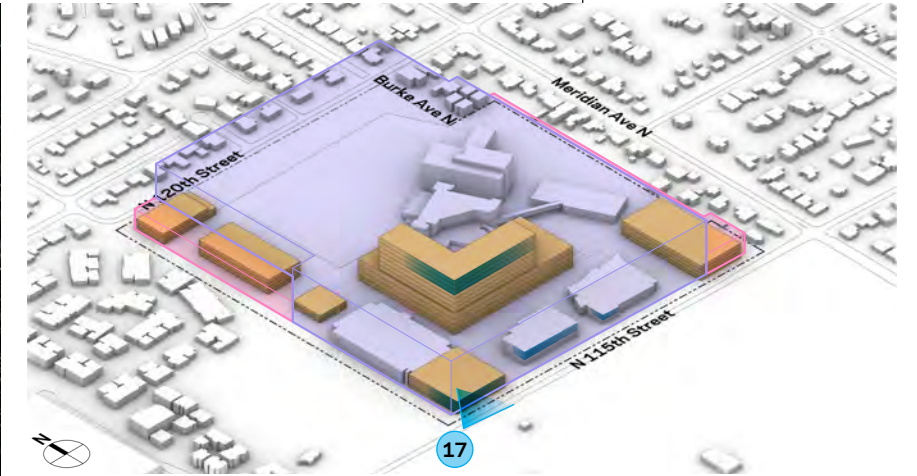


65' HEIGHT OVERLAY @ 40' SETBACK EAST FROM PROPERTY LINE; @ 60' SOUTH FROM CAMERA
 175' HEIGHT OVERLAY @ 130' EAST FROM CAMERA (APPROX. 120' EAST FROM PROPERTY LINE)
 POTENTIAL DEVELOPMENT ALMOST 260' SOUTH FROM CAMERA





175' HEIGHT OVERLAY @100' EAST FROM CAMERA (APPROX. 40' EAST FROM PROPERTY LINE)
POTENTIAL DEVELOPMENT ALMOST 370' EAST FROM CAMERA



View from Southwest (Camera view range seen projected on buildings in blue)

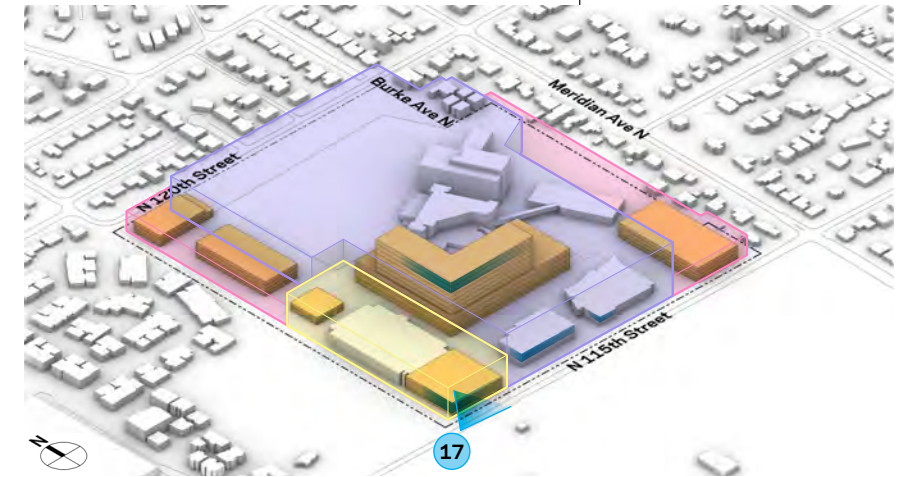


Zoning Height Legend





100' HEIGHT OVERLAY @ 90' EAST FROM CAMERA (APPROX. 30' EAST FROM PROPERTY LINE)
175' HEIGHT OVERLAY @ 310' EAST FROM CAMERA (APPROX. 250' EAST FROM PROPERTY LINE)
POTENTIAL DEVELOPMENT ALMOST 110' EAST FROM CAMERA



View from Southwest (Camera view range seen projected on buildings in blue)

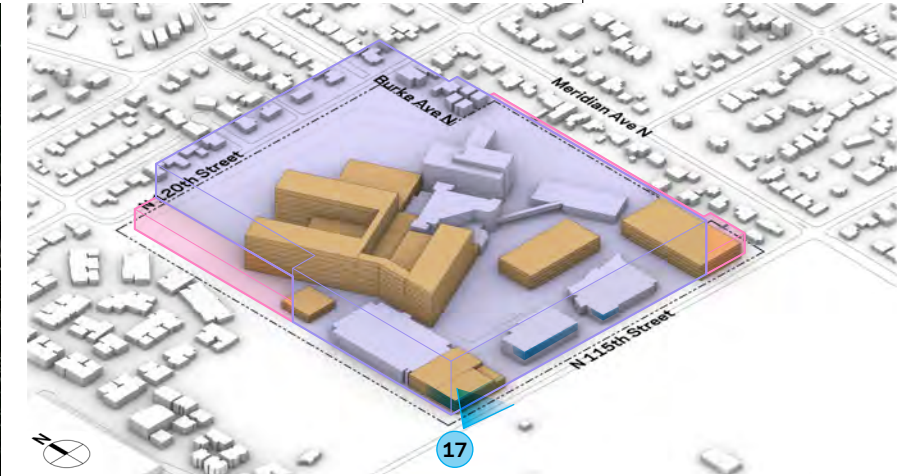


Zoning Height Legend

| | | | |
|--|------|--|------------------|
| | 175' | | 105' |
| | 65' | | New Construction |



175' HEIGHT OVERLAY @100' EAST FROM CAMERA (APPROX. 40' EAST FROM PROPERTY LINE)
POTENTIAL DEVELOPMENT ALMOST 110' EAST FROM CAMERA



View from Southwest (Camera view range seen projected on buildings in blue)

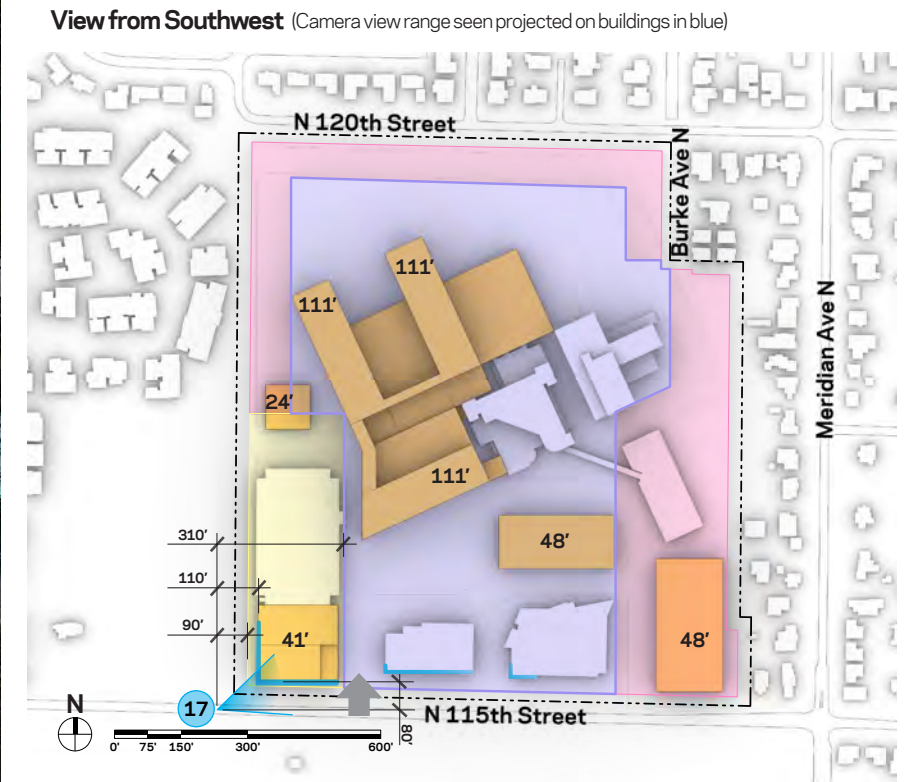
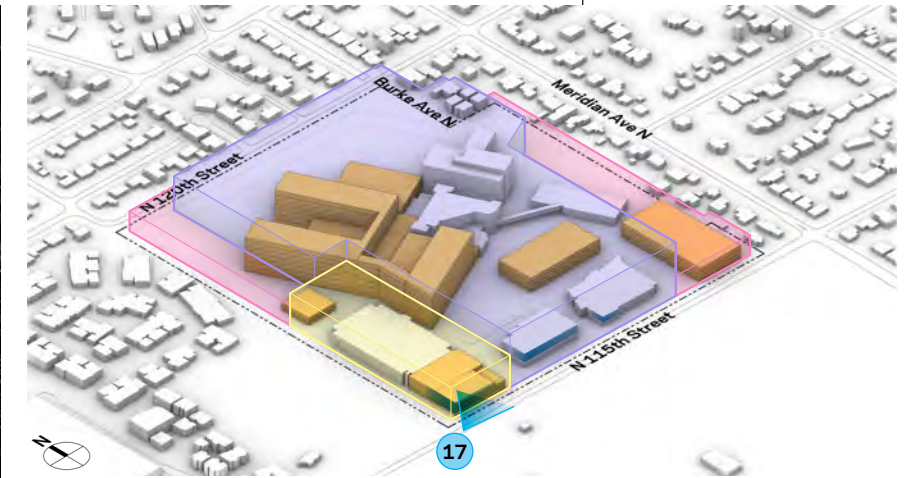


Zoning Height Legend

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- 65'
- New Construction



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175' HEIGHT OVERLAY @ 310' EAST FROM CAMERA (APPROX. 250' EAST FROM PROPERTY LINE)
POTENTIAL DEVELOPMENT ALMOST 110' EAST FROM CAMERA

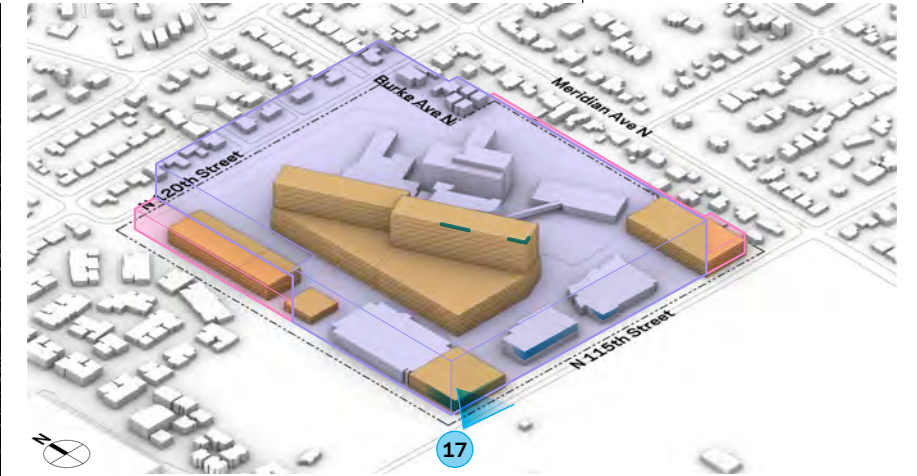


Zoning Height Legend

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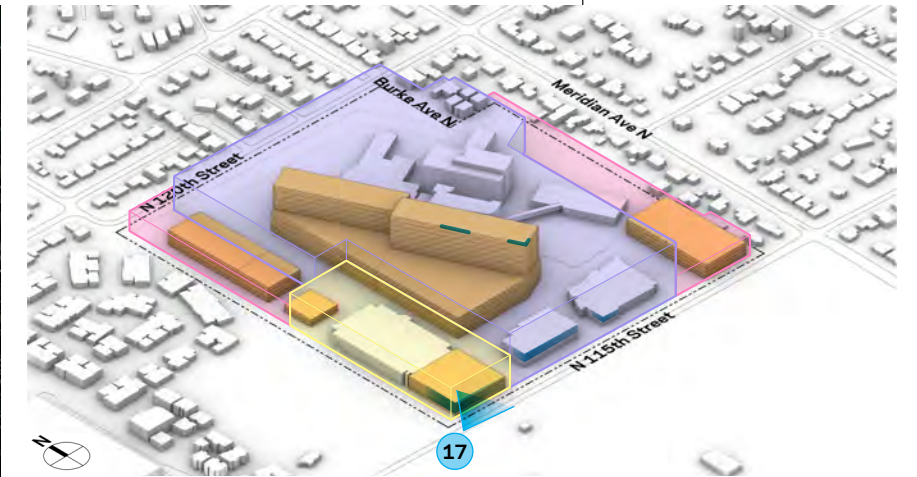


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| | 175' | | 105' |
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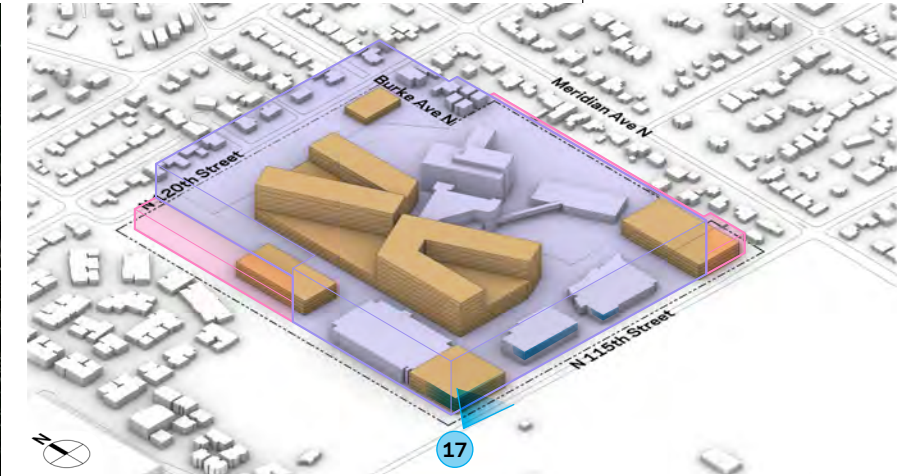


Height Alt. #1
175'

41'
Potential
Development

Street
Improvement

175' HEIGHT OVERLAY @100' EAST FROM CAMERA (APPROX. 40' EAST FROM PROPERTY LINE)
POTENTIAL DEVELOPMENT ALMOST 110' EAST FROM CAMERA



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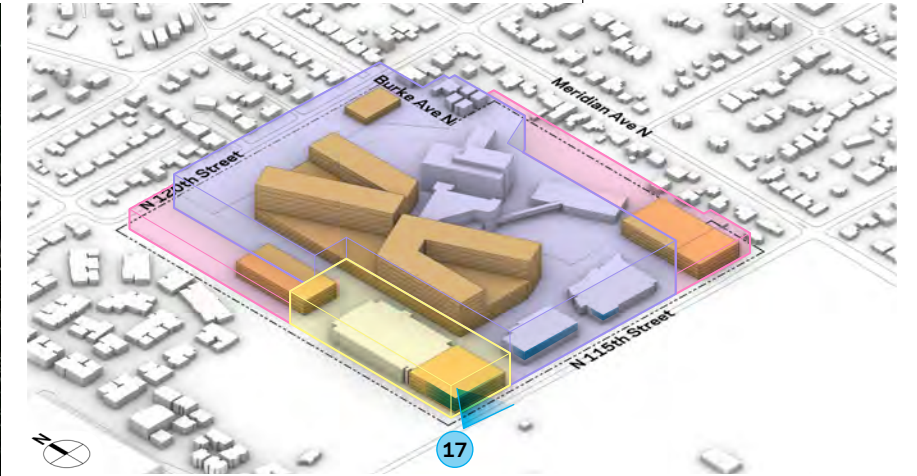


Zoning Height Legend

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- New Construction



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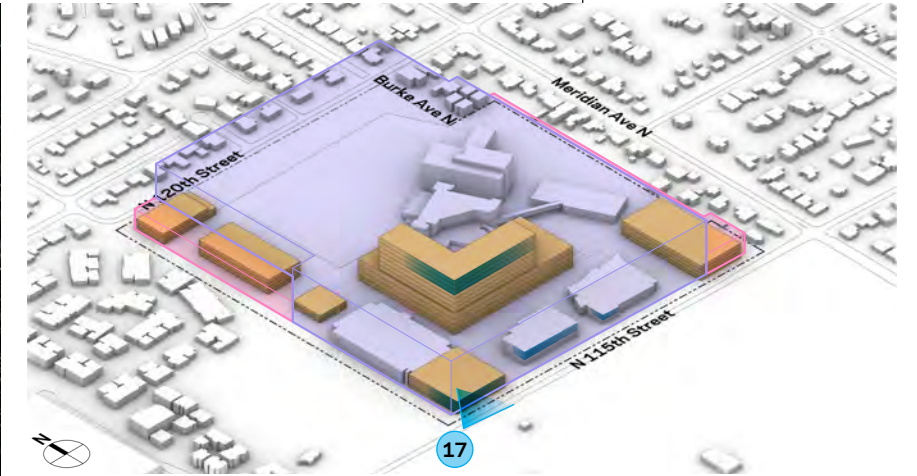
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| <div style="display: inline-block; width: 20px; height: 20px; background-color: #f06292; border: 1px solid black; margin-right: 5px;"></div> 65' | <div style="display: inline-block; width: 20px; height: 20px; background-color: #ff9800; border: 1px solid black; margin-right: 5px;"></div> New Construction |

UWMC - Northwest View Analysis | Alternative 1 - Scenario 1 with South access



175' HEIGHT OVERLAY @100' EAST FROM CAMERA (APPROX. 40' EAST FROM PROPERTY LINE)
POTENTIAL DEVELOPMENT ALMOST 370' EAST FROM CAMERA



View from Southwest (Camera view range seen projected on buildings in blue)

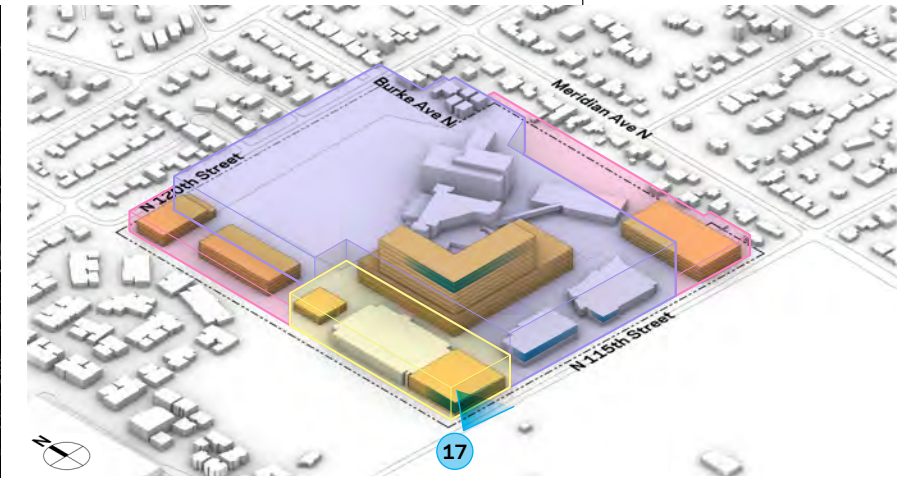


Zoning Height Legend





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POTENTIAL DEVELOPMENT ALMOST 110' EAST FROM CAMERA



View from Southwest (Camera view range seen projected on buildings in blue)



Zoning Height Legend

| | | | |
|--|------|--|------------------|
| | 175' | | 105' |
| | 65' | | New Construction |

UWMC - Northwest View Analysis | Alternative 1 - Scenario 2 with South access



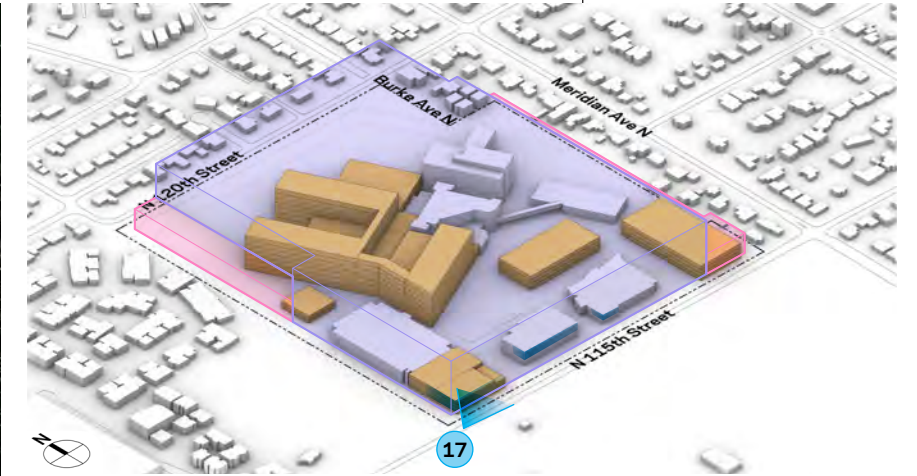
Height Alt. #1
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Potential
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Street
Improvement

Potential new
driveway

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POTENTIAL DEVELOPMENT ALMOST 110' EAST FROM CAMERA



View from Southwest (Camera view range seen projected on buildings in blue)

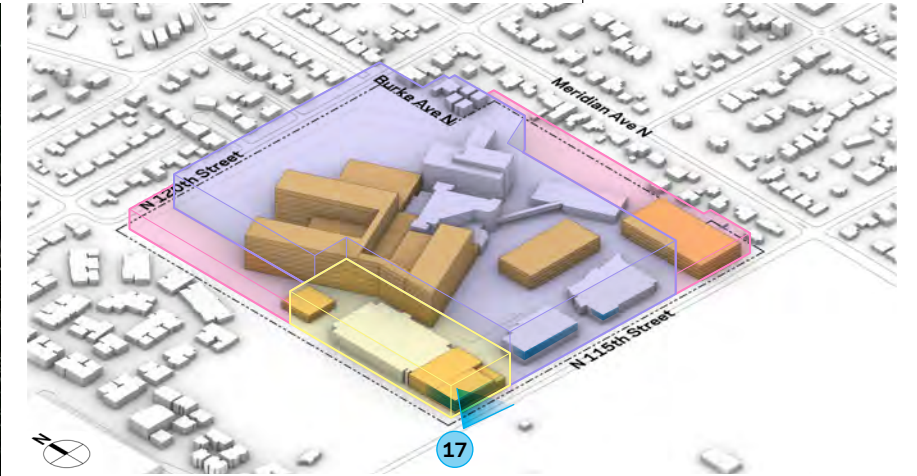


Zoning Height Legend

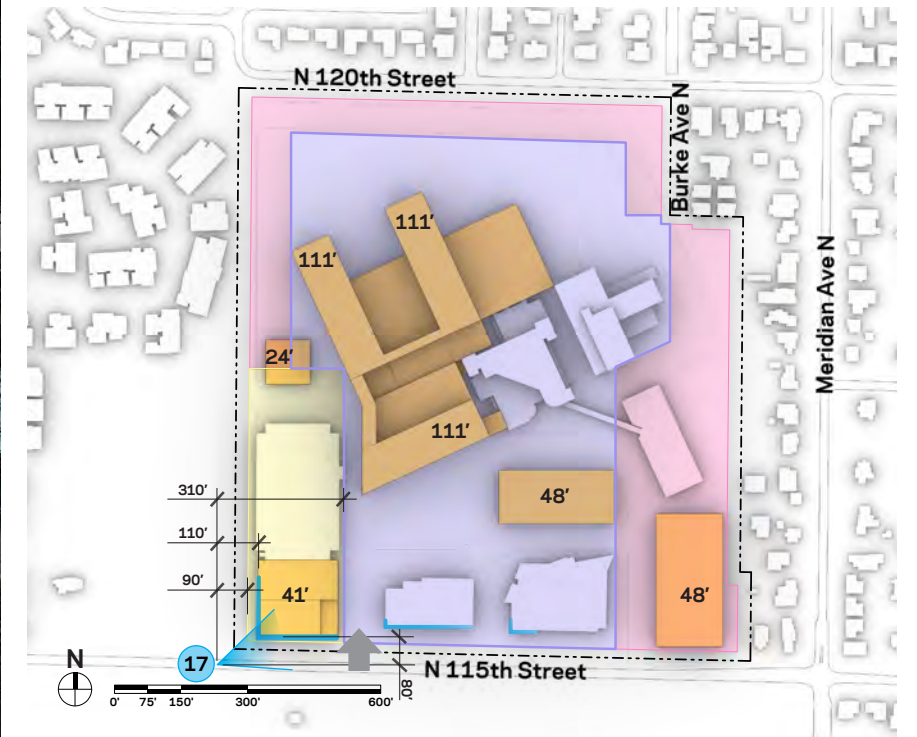
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POTENTIAL DEVELOPMENT ALMOST 110' EAST FROM CAMERA



View from Southwest (Camera view range seen projected on buildings in blue)

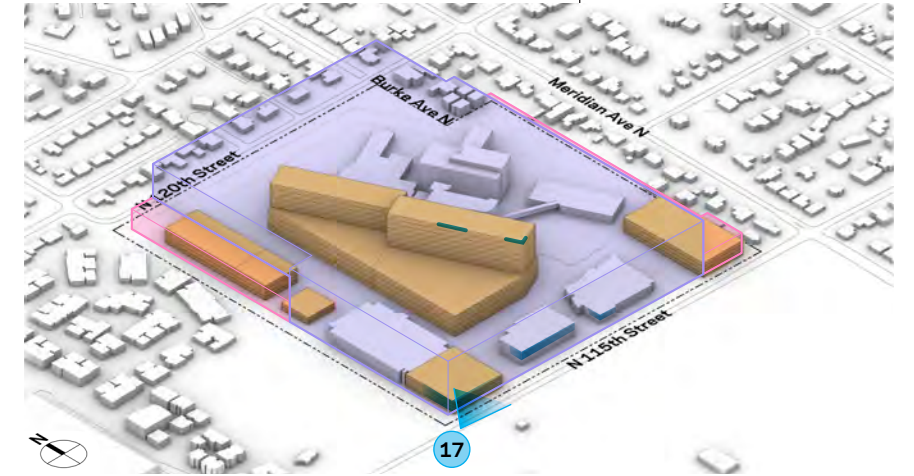


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175' HEIGHT OVERLAY @100' EAST FROM CAMERA (APPROX. 40' EAST FROM PROPERTY LINE)
POTENTIAL DEVELOPMENT ALMOST 110' EAST FROM CAMERA



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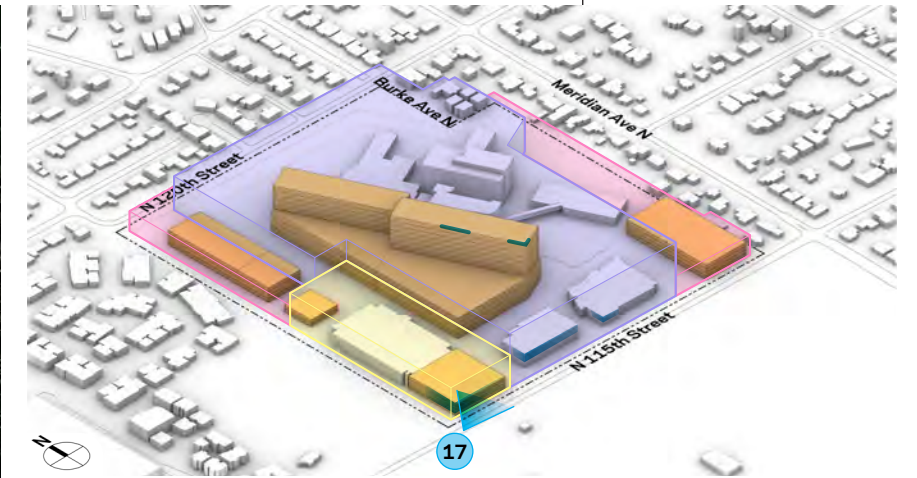


Zoning Height Legend





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POTENTIAL DEVELOPMENT ALMOST 110' EAST FROM CAMERA



View from Southwest (Camera view range seen projected on buildings in blue)



Zoning Height Legend

| | | | |
|--|------|--|------------------|
| | 175' | | 105' |
| | 65' | | New Construction |

UWMC - Northwest View Analysis | Alternative 1 - Scenario 4 with South access



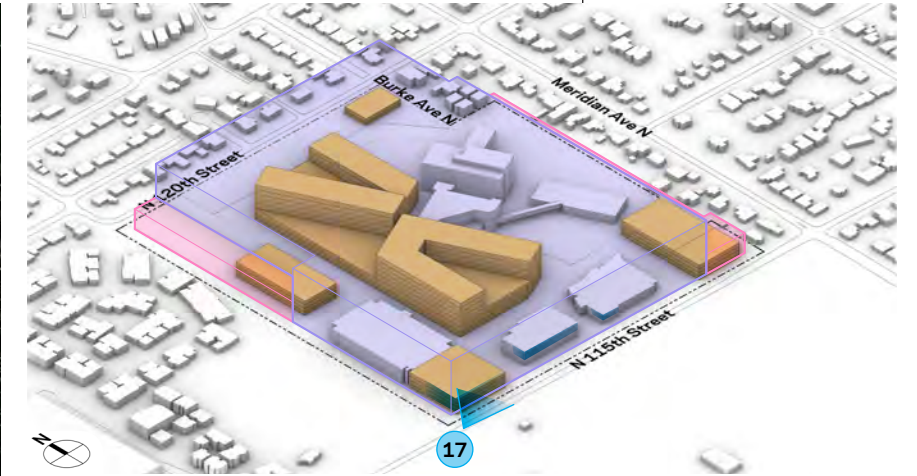
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Potential
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Street
Improvement

Potential new
driveway

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POTENTIAL DEVELOPMENT ALMOST 110' EAST FROM CAMERA



View from Southwest (Camera view range seen projected on buildings in blue)

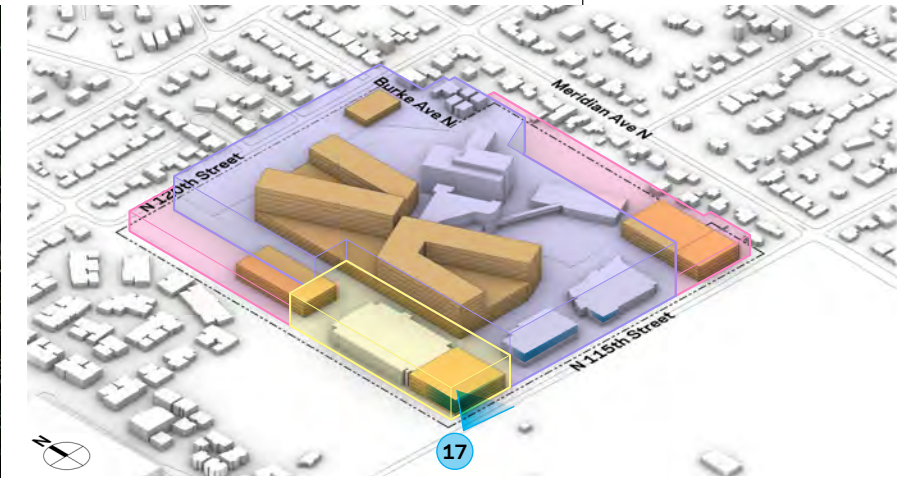


Zoning Height Legend

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POTENTIAL DEVELOPMENT ALMOST 110' EAST FROM CAMERA



View from Southwest (Camera view range seen projected on buildings in blue)



Zoning Height Legend



SHADOW DIAGRAMS

Vernal Equinox
March 20nd
8:00 am



Vernal Equinox
March 20nd
12:00 pm



Vernal Equinox
March 20nd
5:00 pm



Autumnal Equinox
September 22nd
8:00 am



Autumnal Equinox
September 22nd
12:00 pm



Autumnal Equinox
September 22nd
5:00 pm



Summer Solstice

June 21st
8:00 am



Summer Solstice

June 21st
12:00 pm



Summer Solstice

June 21st
5:00 pm



Winter Solstice
December 21st
9:00 am



Winter Solstice
December 21st
12:00 pm



Winter Solstice
December 21st
3:30 pm



Vernal Equinox
March 20nd
8:00 am



Vernal Equinox
March 20nd
12:00 pm



Vernal Equinox
March 20nd
5:00 pm



Autumnal Equinox
September 22nd
8:00 am



Autumnal Equinox
September 22nd
12:00 pm



Autumnal Equinox
September 22nd
5:00 pm



Summer Solstice

June 21st
8:00 am



Summer Solstice

June 21st
12:00 pm



Summer Solstice

June 21st
5:00 pm



Winter Solstice
December 21st
9:00 am



Winter Solstice
December 21st
12:00 pm



Winter Solstice
December 21st
3:30 pm



Vernal Equinox
March 20nd
8:00 am



Vernal Equinox
March 20nd
12:00 pm



Vernal Equinox
March 20nd
5:00 pm



Autumnal Equinox
September 22nd
8:00 am



Autumnal Equinox
September 22nd
12:00 pm



Autumnal Equinox
September 22nd
5:00 pm



Summer Solstice

June 21st
8:00 am



Summer Solstice

June 21st
12:00 pm



Summer Solstice

June 21st
5:00 pm



Winter Solstice
December 21st
9:00 am



Winter Solstice
December 21st
12:00 pm



Winter Solstice
December 21st
3:30 pm



Vernal Equinox
March 20nd
8:00 am



Vernal Equinox
March 20nd
12:00 pm



Vernal Equinox
March 20nd
5:00 pm



Autumnal Equinox
September 22nd
8:00 am



Autumnal Equinox
September 22nd
12:00 pm



Autumnal Equinox
September 22nd
5:00 pm



Summer Solstice

June 21st
8:00 am



Summer Solstice

June 21st
12:00 pm



Summer Solstice

June 21st

5:00 pm



Winter Solstice
December 21st
9:00 am



Winter Solstice
December 21st
12:00 pm



Winter Solstice
December 21st
3:30 pm



Vernal Equinox
March 20nd
8:00 am



Vernal Equinox
March 20nd
12:00 pm



Vernal Equinox
March 20nd
5:00 pm



Autumnal Equinox
September 22nd
8:00 am



Autumnal Equinox
September 22nd
12:00 pm



Autumnal Equinox
September 22nd
5:00 pm



Summer Solstice

June 21st
8:00 am



Summer Solstice

June 21st
12:00 pm



Summer Solstice

June 21st
5:00 pm



Winter Solstice
December 21st
9:00 am



Winter Solstice
December 21st
12:00 pm



Winter Solstice
December 21st
3:30 pm



Vernal Equinox
March 20nd
8:00 am



Vernal Equinox
March 20nd
12:00 pm



Vernal Equinox
March 20nd
5:00 pm



Autumnal Equinox
September 22nd
8:00 am



Autumnal Equinox
September 22nd
12:00 pm



Autumnal Equinox
September 22nd
5:00 pm



Summer Solstice

June 21st
8:00 am



Summer Solstice

June 21st
12:00 pm



Summer Solstice

June 21st
5:00 pm



Winter Solstice
December 21st
9:00 am



Winter Solstice
December 21st
12:00 pm



Winter Solstice
December 21st
3:30 pm



TRANSPORTATION DISCIPLINE REPORT

DRAFT Transportation Discipline Report

UWMC – NORTHWEST MAJOR INSTITUTION MASTER PLAN

Prepared for:
UWMC - Northwest

August 2023

Prepared by:



12131 113th Avenue NE Suite 203
Kirkland, WA 98034-7120
Phone: 425-821-3665
Fax: 425-825-8434
www.transpogroup.com

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Introduction

This report summarizes the results of the transportation impact analysis conducted evaluating the transportation impacts of the proposed UWMC – Northwest Major Institution Master Plan (MIMP). This report is organized into the following sections:

- **Introduction** – This section outlines project alternatives, the overall approach and scope, and provides the methodology of the transportation analysis completed for the project.
- **Affected Environment** – This section documents the existing transportation conditions within the study area defined for this analysis.
- **Impacts of No Action Alternative** – This section describes the No Action transportation conditions within the study area defined for this analysis.
- **Impacts of Action Alternative 1**– This section describes the impacts of Action Alternative 1. Transportation impacts are identified through a comparison of Alternative 1 to the No Action Alternative.
- **Impacts of Action Alternative 2**– This section describes the impacts of Action Alternative 2 on the transportation elements noted above. Transportation impacts are identified through a comparison of Alternative 2 to the No Action Alternative.
- **Mitigation** – This section describes the potential transportation mitigation measures to mitigate Alternative-related impacts.
- **Secondary and Cumulative Impacts** – This section describes secondary and cumulative impacts that could occur with development of the project.
- **Significant and Unavoidable Adverse Impacts** – This section documents adverse transportation-related impacts that could not be fully mitigated with the Alternatives.

Alternatives Evaluated

Three alternatives are evaluated in this DRAFT Environmental Impact Statement (DEIS), including one (1) No Action Alternative and two (2) development alternatives. The Alternatives include:

- **No Action Alternative** – Includes the approved development to date including the existing 549,697 gross square feet (gsf) medical center as well as the Behavior Health Training Facility (BHTF) which will construct an additional 188,846 gsf (3035557-LU/6757676-CN). An additional 26,000 gsf of development was assumed as the remaining balance of development under the current MIMP. This results in a total No Action size of 764,543 gsf. Parking for the No Action condition includes the existing 1,605 on-site parking stalls as well as the net increase of 28 stalls associated with the BHTF project for a total of 1,633 on-site parking stalls. No increase in parking was assumed as part of the 26,000 gsf of reminding development in the MIMP. The two (2) existing access points that exist along N 115th Street will be maintained under the No Action Alternative.
- **Action Alternative 1** – Assumes a campus total of up to 1,600,000 gsf, equating to development of up to 835,457 gsf. For purposes of the traffic analysis, a total of 800,000 gsf was assumed to be developed by 2030, with the remaining completed by 2040. The campus parking supply for Alternative 1 will be provided per the MIMP development standards which identifies a maximum supply estimated to be up to 3,300 stalls assuming the campus's current SOV goal of 65 percent for employees. Two options for an additional campus access point were evaluated under the MIMP. Access options evaluated for Alternative 1 include maintaining the two (2) existing access points along N 115th Street and providing a third access point via either N 115th Street or N 120th Street. Additionally, as the location of the on-site parking supply has not been fully defined within the MIMP as it is dependent on where development on the campus occurs, the distribution of parking is evaluated for each access option considering a scenario that has parking (a) equally distributed or (b) concentrated to the west side of the campus.

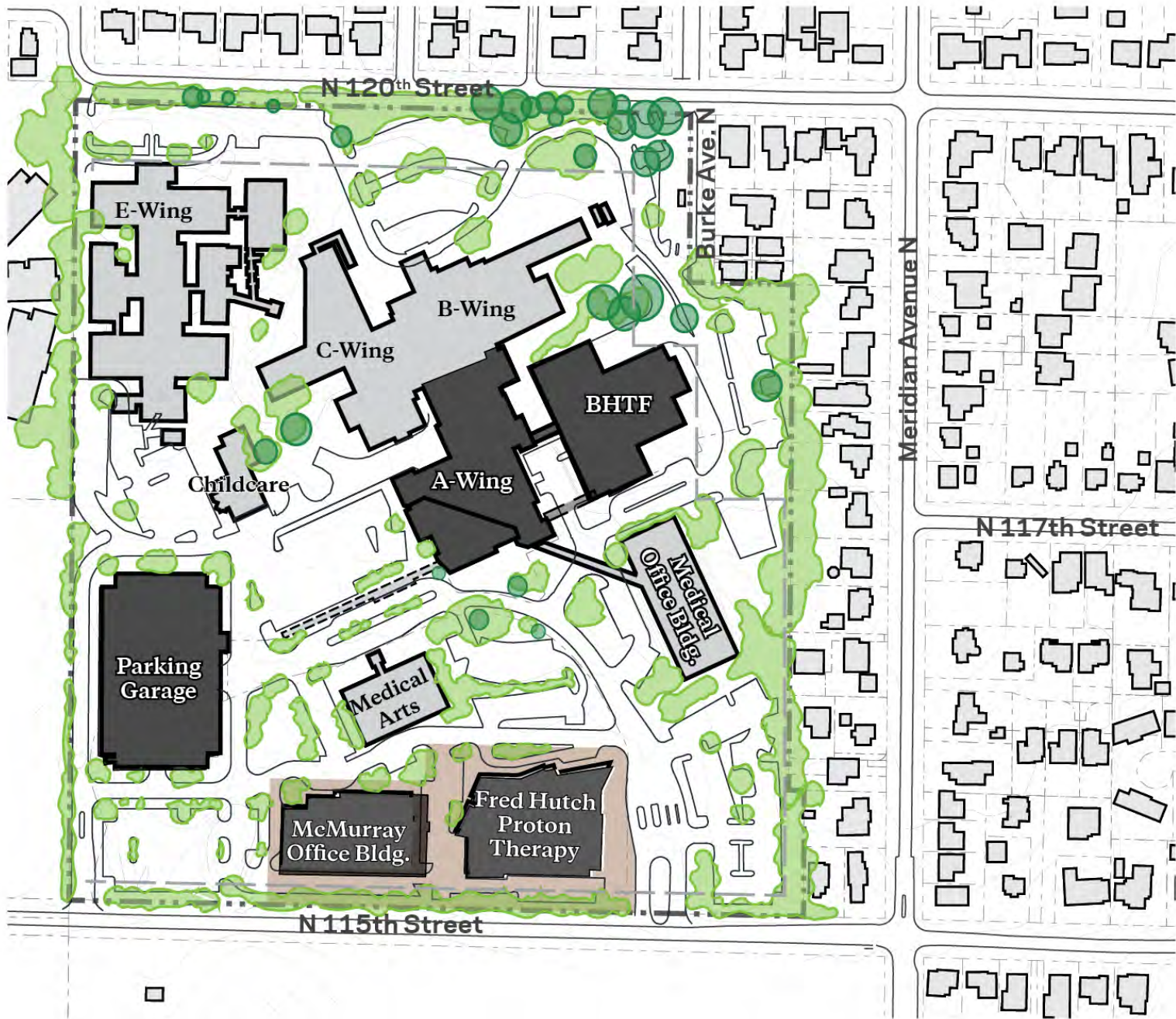
- **Action Alternative 2** – The development size, timing, site access, and parking for Alternative 2 are consistent with Alternative 1 with changes limited to building heights, massing, etc. Since there are no changes in the overall development plan or potential access point locations, no additional analysis for this alternative was conducted.

The summary of development for the Alternatives is summarized in Table 1. The site plans for the No Action and Action Alternatives are included in Tables 1 through 3.

Table 1. Detailed Summary of Development – EIS Alternatives

| Condition | No Action | Alternatives 1 and 2 |
|--|--------------------|-----------------------------|
| Existing | 549,697 gsf | 549,697 gsf |
| Behavior Health Training Facility (BHTF) | 188,846 gsf | 188,846 gsf |
| Additional Development under the current MIMP | 26,000 gsf | 26,000 gsf |
| Additional Development Area with MIMP (2030 & 2040) | | 835,457 gsf |
| <i>By 2030</i> | | 800,000 gsf |
| <i>Additional by 2040</i> | | 35,457 gsf |
| Total Development Size of Alternative | 764,543 gsf | 1,600,000 gsf |

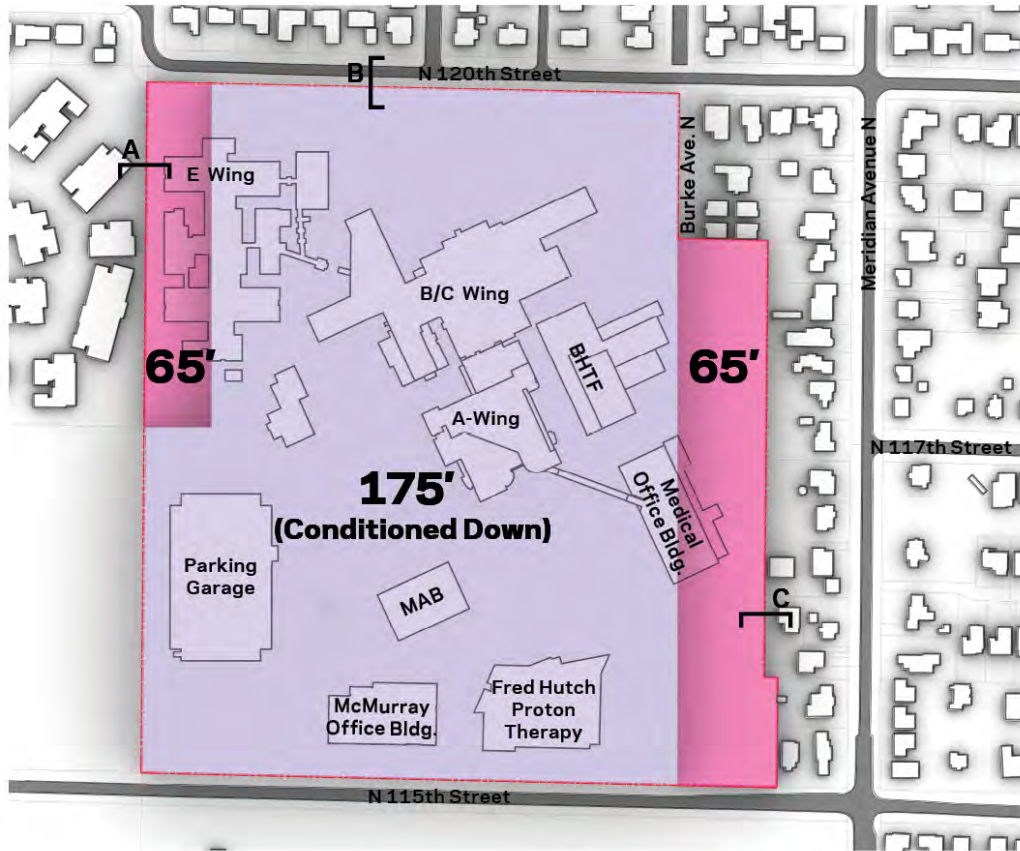
Notes: gsf = gross square feet. Shading shows potential timing of development of the additional development area with MIMP.



No Action Site Plan

UWMC NW TDR

FIGURE



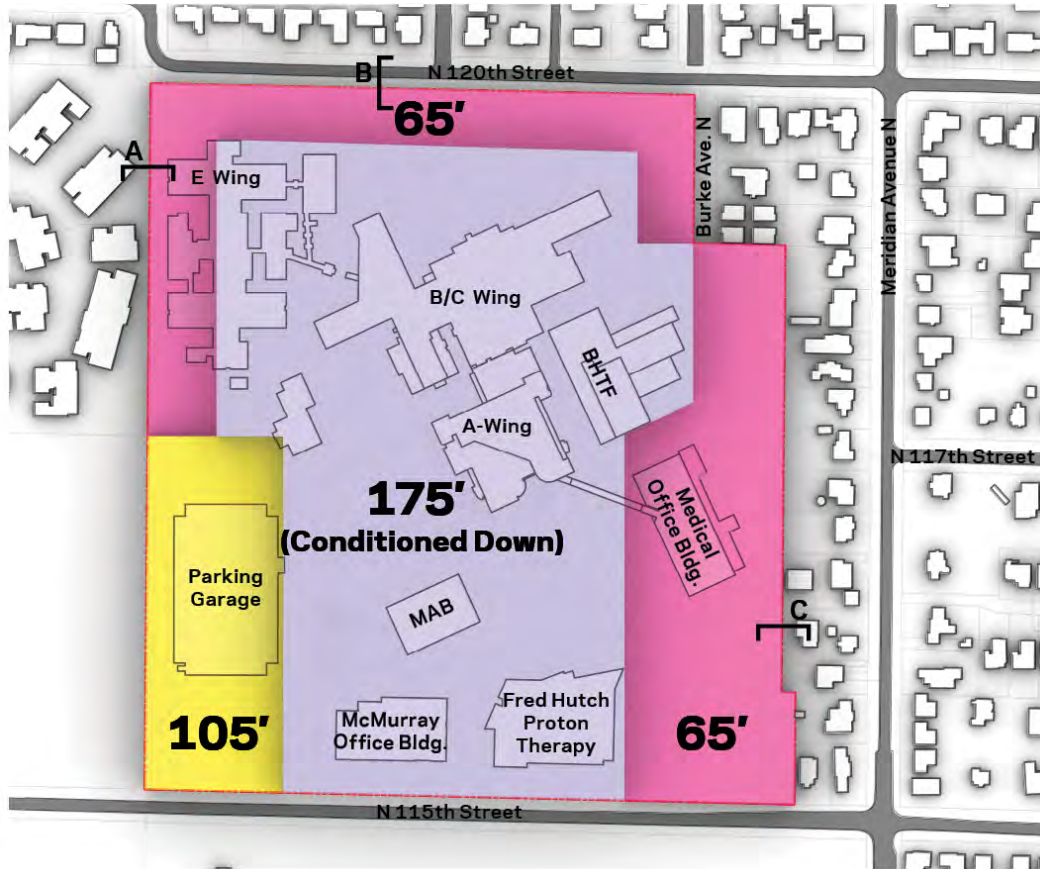
Alternative 1 Site Plan

UWMC NW TDR

FIGURE

2





Alternative 2 Site Plan

UWMC NW TDR

FIGURE

3



Study Approach and Area

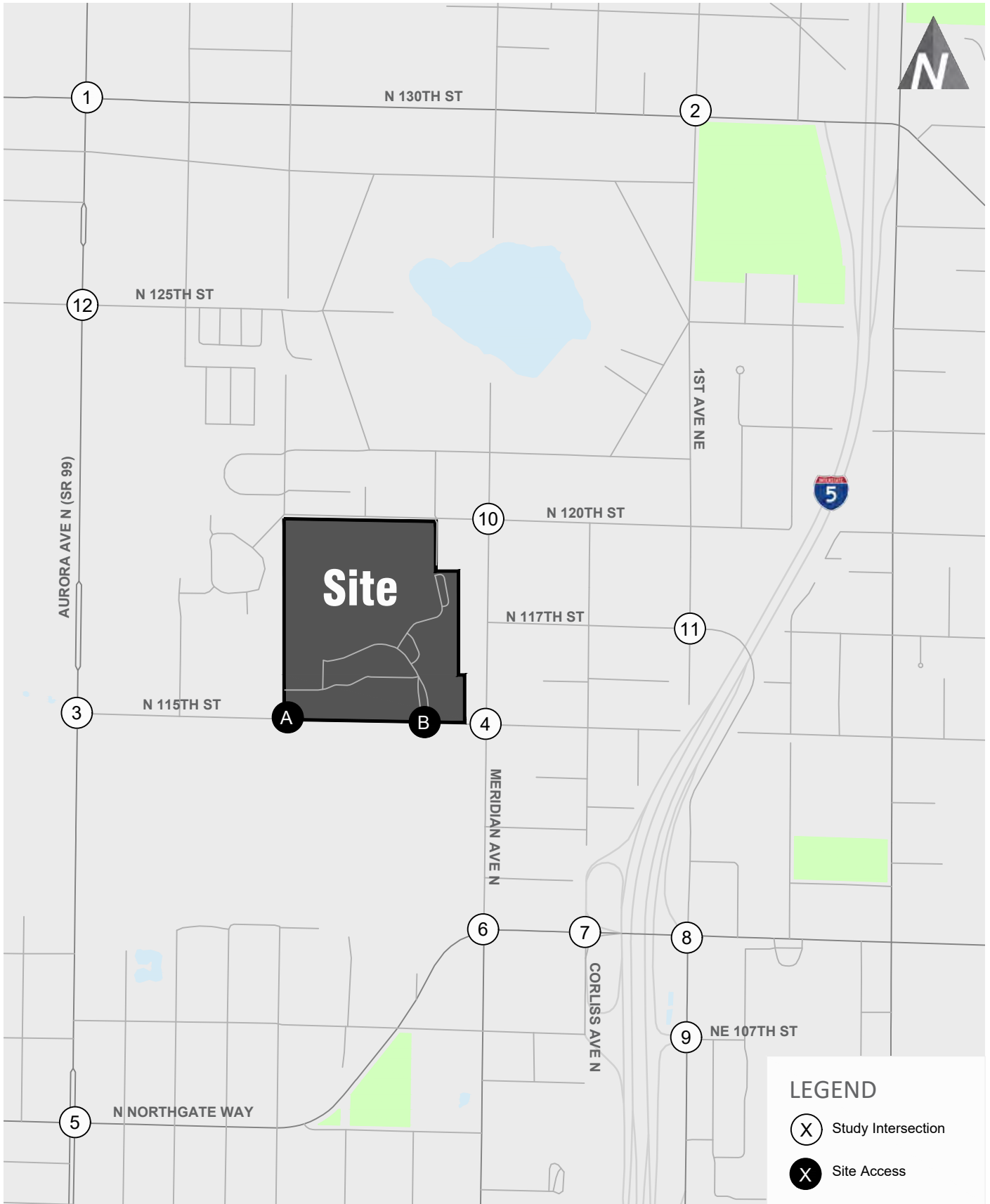
The scope of the transportation analysis conducted for the DEIS was coordinated with staff from the Seattle Department of Construction and Inspections (SDCI) and the Seattle Department of Transportation (SDOT). The following transportation elements were evaluated, and results are summarized in this report:

- **Trip Generation** – The basis of the existing, No Action, and Alternatives trip generation for UWMC is existing traffic counts conducted for the existing campus during the weekday AM and PM peak periods with the exception of the trip generation of the BHTF which is assumed consistent with the previous study completed for that development. Adjustments to the trip generation rates for the Action Alternatives accounting for right-sizing the hospital spaces was included in the analysis.
- **Street System** – The existing and future planned street system are identified. Alternative impacts to the street system are evaluated based on potential changes to the nearby street network connectivity.
- **Non-Motorized Transportation** – The existing and future pedestrian and bicycle system surrounding the site is evaluated. The number of non-motorized trips are estimated for the Alternatives and any impacts associated with those trips are reviewed.
- **Transit Service** – The transit service of transit near the campus is reviewed including frequency, service area, proximity, and capacity. Future investments in the local transit system have been identified. Alternative impacts to the transit capacity are evaluated based on the estimated number of transit trips.
- **Traffic Volumes** – Existing traffic volumes were collected at the study intersections in January 2023 and July 2023 during both the weekday AM (7-9 a.m.) and PM (4-6 p.m.) peak periods. Future (2030 and 2040) forecast traffic volumes for the No Action conditions are comprised of the existing traffic volumes, background traffic growth, traffic generated from the planned “pipeline” developments, and the trips associated with the No Action allowable development (see Table 1). Action Alternatives traffic volumes were then estimated by adding the trip generation for the Action Alternatives to the No Action volumes.
- **Traffic Operations** – The traffic operations are evaluated at the study intersections based on level of service (LOS) relative to the existing and forecast traffic volumes of each Alternative.
- **Traffic Safety** - Recent collision records are reviewed within the study area to identify existing traffic safety issues at the study intersections. Future traffic impacts are reviewed relative to existing collision history patterns and forecast growth of movements.
- **Site Loading** – The capacity of the loading docks are evaluated based on the planned number of loading docks and overall demand associated with the 1.6 M gsf identified in the MIMP.

The transportation analysis included an evaluation of two future horizon years: 2030 and 2040. Based on the net new trip generation estimated for the Action Alternatives, trip distribution assumptions, and coordination with SDCI and SDOT staff, 12 off-site study intersections were identified to be evaluated during the weekday AM and PM peak hours.

- | | |
|--|---|
| 1. Aurora Ave N/N 130th St | 7. I-5 SB Ramps/Corliss Ave N/N Northgate Way |
| 2. 1st Avenue NE/N 130th St | 8. I-5 NB Ramp/1st Avenue NE/N Northgate Way |
| 3. Aurora Avenue N/N 115th St | 9. 1st Ave NE/I-5 Northbound Ramp/NE 107th St |
| 4. Meridian Avenue N/N 115th St | 10. Meridian Ave N/N 120th St |
| 5. Aurora Ave N/N 105th St/N Northgate Way | 11. 1st Avenue NE/N 117th St |
| 6. Meridian Ave N/Northgate Way | 12. Aurora Avenue N/N 125th St |

The study intersections are shown on Figure 4. Note that in addition to the off-site study intersections, the existing and future access points were evaluated as well.



Site Vicinity and Study Intersections

FIGURE

UWMC NW TDR



4

Affected Environment

This section provides an overview of the existing conditions within the defined study area. The existing transportation system including trip generation, street system, transit service, non-motorized transportation, traffic volumes, traffic operations, traffic safety and loading are described below.

Trip Generation

Weekday AM and PM peak hour trip generation for the campus was estimated based on traffic volumes collected for two (2) midweek-days in May 2022 during the weekday AM (7-9 a.m.) and PM (4-6 p.m.) peak periods at the access points as well as observations of on-street parking along the campus N 115th Street frontage. The existing trip generation¹ of the site as observed during the counts is 561 and 424 during the AM and PM peak hours, respectively. The detailed counts are provided in Appendix A.

Table 2. Existing Vehicular Trip Generation

| | Existing Size | Weekday Daily | Weekday AM Peak Hour | | | Weekday PM Peak Hour | | |
|--|---------------|--------------------------|----------------------|------------|-------------|----------------------|------------|-------------|
| | | | In | Out | Total | In | Out | Total |
| <i>Tuesday, May 10, 2022</i> | | | 389 | 189 | 578 | 92 | 354 | 446 |
| <i>Wednesday, May 11, 2022</i> | | | 365 | 178 | 543 | 74 | 327 | 401 |
| Average Existing Access Point Trips ¹ | 549,697 gsf | | 377 | 184 | 561 | 83 | 341 | 424 |
| Trips along N 115th Street | | | 30 | 15 | 45 | 30 | 62 | 92 |
| Total Existing Trips | | 7,300⁴ | 407 | 199 | 606 | 113 | 403 | 516 |
| Existing Rate (Trips/1,000 gsf) | | 13.20⁴ | | | 1.10 | | | 0.94 |
| ITE Rate (Trips/1,000 gsf)² | | | | | | | | |
| <i>Hospital (610)</i> | | 10.77 | | | 0.82 | | | 0.86 |
| <i>Medical-Dental near Hospital (720)</i> | | 31.86 | | | 2.68 | | | 2.84 |
| ITE Weighted average³ | | 18.15 | | | 1.47 | | | 1.55 |

Note: sf = square feet

1. Counts conducted from 7-9 a.m. and 4-6 p.m. for the 2 midweek days.
2. Rates per Institute of Transportation Engineers (ITE) *Trip Generation Manual* (11th Edition, 2021).
3. Weighted average assumes the existing allocation of hospital and medical office of approximately 65 percent and 35 percent, respectively.
4. Existing daily trip generation rate and trips estimated by comparing the ITE rates in the AM peak hour to the daily for the hospital, medical-dental, and weighted average rates. The comparison showed the daily was approximately 12 times the AM peak hour which was assumed for the campus. AM was assumed as the observations showed that was the greater trip generator for the campus of the 2 peak periods.

The existing site trip generation rate was calculated by dividing the average weekday AM and PM peak hour access point trips by the existing site development area of 549,697 gsf. The resulting weekday AM and PM peak rates are 1.10 and 0.94 trips per 1,000 square feet, respectively. The summary of the existing counts and resulting rates is provided in Table 2. The detailed trip generation calculations are provided in Appendix B.

The observed vehicular trip generation for the campus were also compared to standard rates provided in the Institute of Transportation Engineers (ITE) *Trip Generation Manual* (11th Edition, 2021) for the two existing uses on campus including Hospital (LU 610) and Medical-Dental on Hospital campus (LU 720). These rates are summarized in Table 2 for comparison along with a weighted average rate based on the current split of uses. Comparing the observed rates to the weighted average ITE rate for the campus, the AM and PM peak hour observed trip generation rates are approximately 25 percent and 40 percent less than of the ITE rates, respectively. Although the existing data collected is less than ITE, ITE recommends the use of existing data when available, thus the local data was utilized. Additionally, the ITE rates were used to estimate the weekday daily trips for the campus, which were estimated to be approximately 7,300 trips.

¹ Represented by the average of the two-day counts.

Trip generation reflected in the counts represent a combination of UWMC – Northwest staff, visitors and patients to the campus, clinic staff and patients, and service vehicles and deliveries to the campus. Based on data collection means and methods, it is not feasible to separate out the individual user groups in the existing data. The Commute Trip Reduction (CTR) survey conducted for campus staff identifies mode-split information including the number of trips associated with vehicles, non-motorized, transit, etc. The CTR data indicates a high vehicle SOV mode share. Although the CTR is specific to employees of the campus and trip generation encompasses all trips, the CTR is applied to the entire campus population. Given the nature of the visitors to campus and users of the medical care provided, it is unlikely that much of that population accesses the campus via means not related to a vehicle trip.

The most recent CTR study completed for the campus (2019)² showed 75 percent of the employee trips to/from the site were single occupancy vehicle (SOV) with an additional 14 percent associated with carpool and vanpool trips resulting in an average vehicle occupancy (AVO) of 1.1 (see Figure 5). Additionally, transit trips accounted for approximately 7 percent of the trips to/from the campus with the remaining 4 percent of trips associated with non-motorized trips (i.e. walking, biking, telework, other).

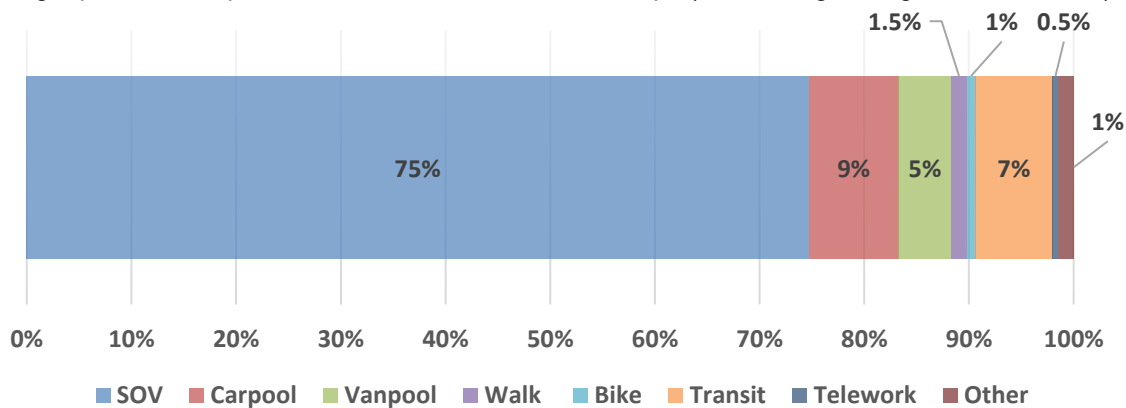


Figure 5. Existing CTR for the Campus

The total person trip generation for the campus was estimated for the peak hours including the estimation of transit and non-motorized trips based on applying the existing CTR trip type distribution and AVO estimates to the vehicular trip generation. The estimated existing person trip generation is summarized in Table 3.

Table 3. Existing Person Trip Generation (per 2019 CTR)

| Trip Generation | Mode Split | Weekday AM Peak Hour | | | Weekday PM Peak Hour | | |
|---|-------------|----------------------|------------|------------|----------------------|------------|------------|
| | | In | Out | Total | In | Out | Total |
| Existing Vehicle Trips (75% SOV)¹ | | 407 | 199 | 606 | 113 | 403 | 516 |
| Person Trips | | | | | | | |
| Walk and Bike Trips | 2.5% | 13 | 6 | 19 | 4 | 13 | 16 |
| Transit Trips | 7% | 35 | 17 | 53 | 10 | 35 | 45 |
| Other | 1.5% | 8 | 4 | 11 | 1 | 8 | 10 |
| Person Trips by Vehicle¹ | 89% | 451 | 220 | 671 | 125 | 446 | 571 |
| Total Person Trips | 100% | 507 | 247 | 754 | 140 | 502 | 642 |

1. The 89 percent person trips by vehicle includes approximately 75 percent SOV and 14 percent associated with carpool and vanpool trips, resulting in a AVO of 1.1. The AVO of 1.1 was multiplied by the vehicles trips to determine the number of person trips by vehicle. The person trip distribution per the CTR was then applied to determine the total person trips.

As shown in Table 3, there are estimated to be 53 and 45 transit trips in the AM and PM peak hours, respectively and 19 and 16 non-motorized trips (walk, bike) in the AM and PM peak hours, respectively.

² The 2019 data is the most recent completed CTR survey for the campus.

Street System

The campus is bounded to the south by N 115th Street, (a collector arterial) and to the north by N 120th Street (a non-arterial roadway). North/south connectivity near the site is provided by Meridian Avenue N (a collector arterial) located in close proximity east of the site as well as further to the west of the site via Aurora Avenue N (a principal arterial). Additional characteristics of the existing street network in the proposed project vicinity are shown in Table 4.

Table 4. Existing Street Network Summary

| Roadway | Arterial Classification ¹ | Posted Speed Limit | Number of Travel Lanes | Parking? | Sidewalks? | Bicycle Facilities? |
|-------------------|--------------------------------------|---------------------|------------------------|------------------|------------------|---------------------|
| Aurora Avenue N | Principal Arterial | 40 mph ² | 6-7 | No | Intermittent | No |
| N Northgate Way | Principal Arterial | 30 mph | 4 | No | Yes | No |
| Meridian Avenue N | Collector Arterial | 25 mph | 2 | Yes ³ | Yes | Yes ⁴ |
| N 115th Street | Collector Arterial | 25 mph | 2 | Yes | Yes ⁵ | No |
| N 117th Street | Non-Arterial | 25 mph | 2 | Yes | No | No |
| N 120th Street | Non-Arterial | 25 mph | 2 | Yes | Yes ⁶ | No |
| N 125th Street | Collector Arterial | 25 mph | 2 | No | Yes | Yes |
| N 130th Street | Principal Arterial | 30 mph | 4 | No | Yes | No |
| 1st Avenue NE | Collector Arterial | 30 mph | 2 - 4 ⁷ | Yes ⁸ | Yes ⁹ | Yes ¹⁰ |

1. Based on the Seattle Arterial Classification Map.
2. Posted speed limit of 40 mph north of N 115th Street and 35 mph south of N 115th Street.
3. Time restricted parking is only available on the west side between N 122nd Street and N 115th Street.
4. Provided only south of N Northgate Way.
5. Provided only on the north side between Aurora Avenue N and Meridian Avenue N.
6. Provided only on the south side between 1st Avenue NE and Corliss Ave N.
7. Two travel lanes present north of I-5.
8. Provided only on the east side between NE Northgate Way and NE 112th St, and intermittent north of N 117th St.
9. Provided on the east side only south of N 117th St, and west side only north of N 117th St.
10. Provided only north of NE 115th St and south of NE 103rd St.

Transit Service

Transit service in the study area is provided by King County Metro. The nearest bus stop to the campus is located on campus, north of the eastern site access. Outside of the medical center, the nearest bus stops are located approximately 350 feet east of the site entrance at the Meridian Avenue N/N 115th Street intersection. Local transit routes with stops within the vicinity of the project site are shown in Figure 6.

A summary of the routes, headways, and hours of operation are summarized in Table 5.

Table 5. Transit Routes Summary

| Route | Days of Operation | Hours of Operation | | Headway ¹ |
|---|-------------------|-----------------------|--|----------------------|
| | | Weekdays | Weekends | |
| 40 – Northgate TC to Crown Hill to Ballard to Downtown Seattle | Mon-Sun | 5:00 a.m. – 2:00 a.m. | 6:00 a.m. – 1:50 a.m. | 15-30 |
| 345 – Shoreline Community College to Northgate TC to Downtown Seattle | Mon-Sun | 6:30 a.m.-11:30 p.m. | Sat: 7:30 a.m.-9:00 p.m. Sun: 6:00 a.m.-11:00 p.m. | 25-30 |
| 346 (with 41) – Aurora Village TC to Northgate TC to Downtown Seattle | Mon-Sun | 5:30 a.m.-11:15 p.m. | Sat: 6:15 a.m.-11:15 p.m. Sun: 6:45 a.m.-11:45 p.m. | 30 |
| RapidRide E-Line – Aurora Village to Downtown Seattle | Mon-Sun | 4:30 a.m.-3:45 a.m. | Sat: 4:50 a.m.-3:45 a.m. Sun: 4:50 a.m.-3:45 a.m. | 5-10 |

Source: King County Metro (March 2023)

1. Headways in minutes during weekday AM and PM Peak periods.



Figure 6. Transit Routes Evaluated and Stop Locations

Further from the site, Sound Transit’s Northgate Link Light Rail Station is located approximately 1 mile southeast from the site between NE 103rd Street and NE 100th Street. The Light Rail provides service to Downtown Seattle, Capitol Hill, the University of Washington, and SeaTac Airport.

Existing transit demand is estimated based on the average weekday AM and PM peak periods ridership Fall 2022 data provided by King County Metro.³ As summarized in Table 3 above, there are estimated to be 49 and 37 transit trips in the AM and PM peak hours, respectively, which would be captured in the Fall 2022 ridership data provided. The typical vehicle type for each route and capacity of the vehicle was also provided in the Fall 2022 data.

Four routes were analyzed around the campus to assess how weekday transit capacity compares to transit demand. Each route is evaluated by direction for the weekday AM and PM peak hour. Using the vehicle capacity identified in the Fall 2022 data for each route and applying the frequency of service (trips per peak period) for the weekday AM and PM peak periods, transit capacities per peak period were defined for each route.

The total available capacity and ridership for each route is summarized in Table 6 for the weekday peak periods. The detailed calculations are included in Appendix F. As shown in the table, the utilization on the buses surrounding campus range between 8 and 31 percent, such that all of the routes serving the campus have remaining capacity to accommodate additional riders during the weekday peak periods.

³ The peak periods for the transit analysis are assumed to be 5-9 a.m. and 3-7 p.m.

Table 6. Existing Transit Capacity Analysis

| Route # / Nearest Stop Location | Direction of Travel | AM Peak Period | | | PM Peak Period | | |
|---|---------------------|-----------------------|------------------------|-------------|-----------------------|------------------------|-------------|
| | | Capacity ¹ | Ridership ¹ | Utilization | Capacity ¹ | Ridership ¹ | Utilization |
| 345 On Campus, north of eastern access point | S | 296 | 45 | 15% | 444 | 84 | 19% |
| | N | 296 | 54 | 18% | 407 | 101 | 25% |
| 346 At the Meridian Avenue N/N 115th Street Intersection | S | 370 | 77 | 21% | 407 | 102 | 25% |
| | N | 333 | 77 | 23% | 370 | 114 | 31% |
| 40 At the SR 99/N 115th Street Intersection | S | 1,520 | 116 | 8% | 1,672 | 255 | 15% |
| | N | 988 | 126 | 13% | 1,672 | 202 | 12% |
| E Line At the SR 99/N 115th Street Intersection | N | 1,404 | 355 | 25% | 2,808 | 727 | 26% |
| | S | 2,496 | 550 | 22% | 2,028 | 546 | 27% |

1. Based on bus frequencies, ridership, and typical capacity data provided by King County Metro for Fall 2022.

Non-Motorized Transportation

All streets in the project vicinity provide sidewalks on one or both sides of the roadway. Marked crosswalks and curb ramps exist at the adjacent Meridian Avenue N/N 115th Street all-way stop controlled intersection as well as at all signalized study intersections. The existing pedestrian facilities include complete connections to all transit routes located within the vicinity of the site as described in the transit section above and shown in Figure 6. The connections to each route include:

- **Route 345** – The nearest stop is located on-campus accessed via the eastern access point. There are sidewalks and crosswalks provided throughout campus connecting to the transit stop.
- **Route 346** – The nearest stops are located along Meridian Avenue N, north and south of N 115th Street. Sidewalks are provided along the north side of N 115th Street, connecting to the crosswalk at the Meridian Avenue N all way stop controlled intersection with sidewalk along Meridian Avenue N connecting to both directional stops.
- **Route 40** – The nearest stops are located along N Northgate Way, north and west of Meridian Avenue N. Sidewalks are provided along the north side of N 115th Street, connecting to the crosswalk at the Meridian Avenue N all way stop controlled intersection. Sidewalks are provided along Meridian Avenue N and N Northgate Way connecting to both directional stops with a signalized crossing provided at the Meridian Avenue N/N Northgate Way intersection.
- **E Line** – The nearest stops are located along Aurora Avenue N, north and south of N 115th Street. Sidewalks are provided along the north side of N 115th Street, connecting to the signalized crossing at the Aurora Avenue N intersection with sidewalk along Aurora Avenue N connecting to both directional stops.
- **Link Light Rail Station** – Although further from the site (greater than 1 mile walking), there are continuous sidewalk connections from the site along Meridian Avenue N then connecting to the south via the John Lewis Memorial Bridge.

Bicycle facilities within the vicinity of the project include a signed bike route along Meridian Avenue N, located east of the site which connects to sharrows to the north along N 125th Street and a protected bike lane south of N Northgate Way (see Figure 7).

Additionally, the Interurban Trail is located west of Aurora Avenue N which is a 24-mile multipurpose trail running from Seattle to Everett.

As reported in the campus’s most recent (2019) CTR study, pedestrian and bicycle percentages of approximately 2 percent and 1 percent of employee trips. Given the site being a hospital and discussed above, it is assumed that most patients would similarly have lower non-motorized percentage. These percentages are estimated to equate to approximately 17 and 13 non-motorized trips during the weekday AM and PM peak hours, respectively.

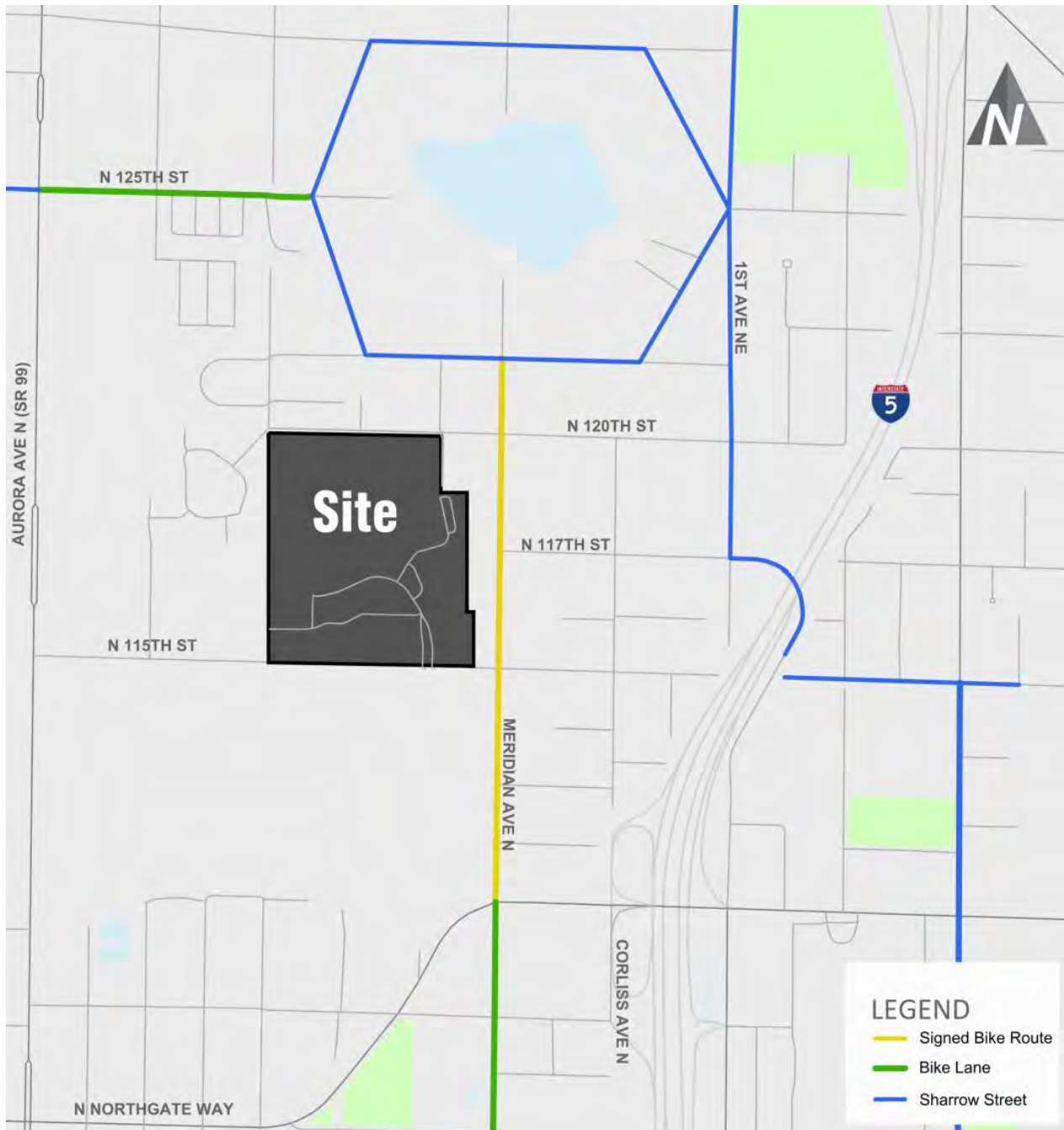
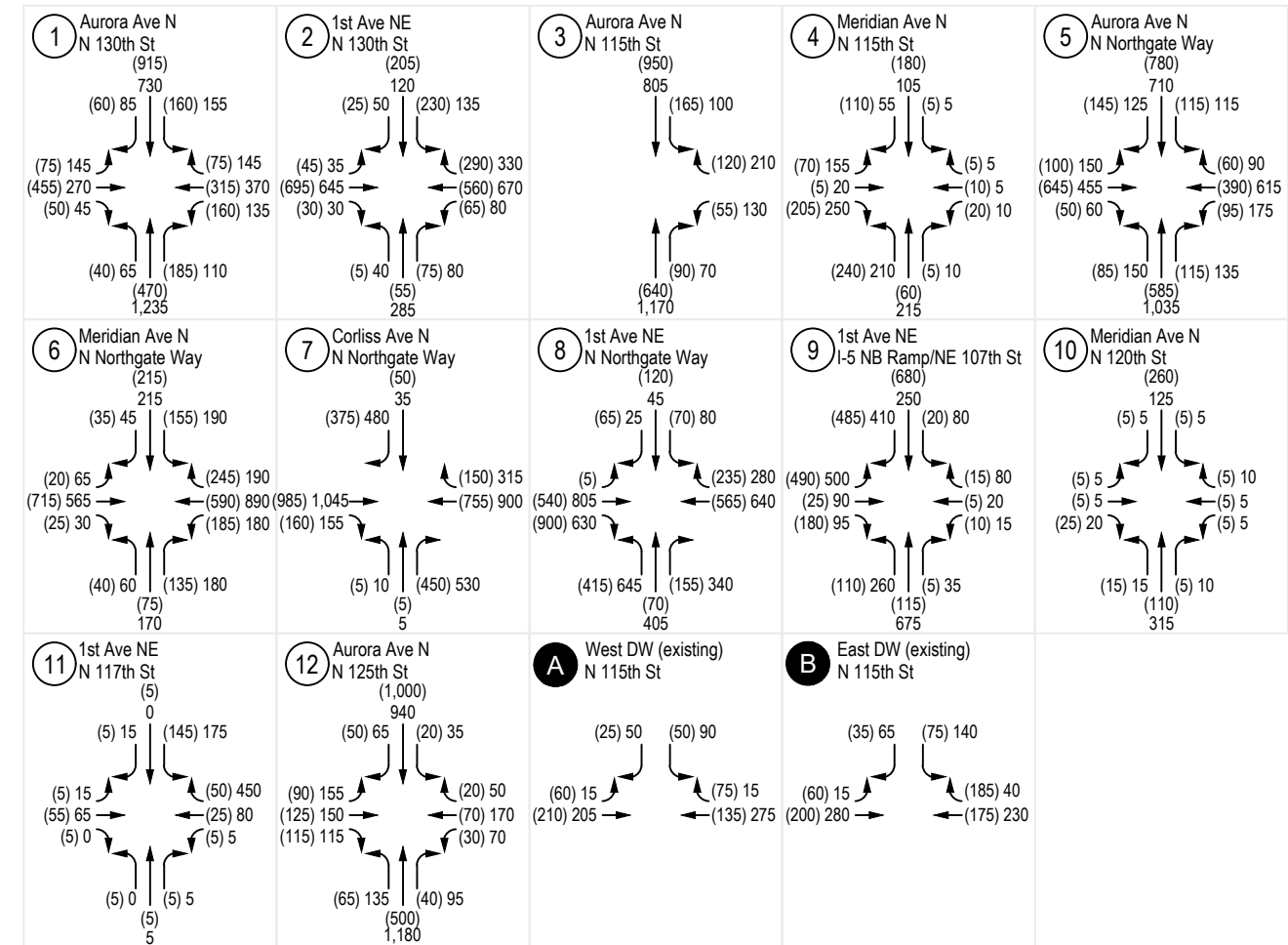
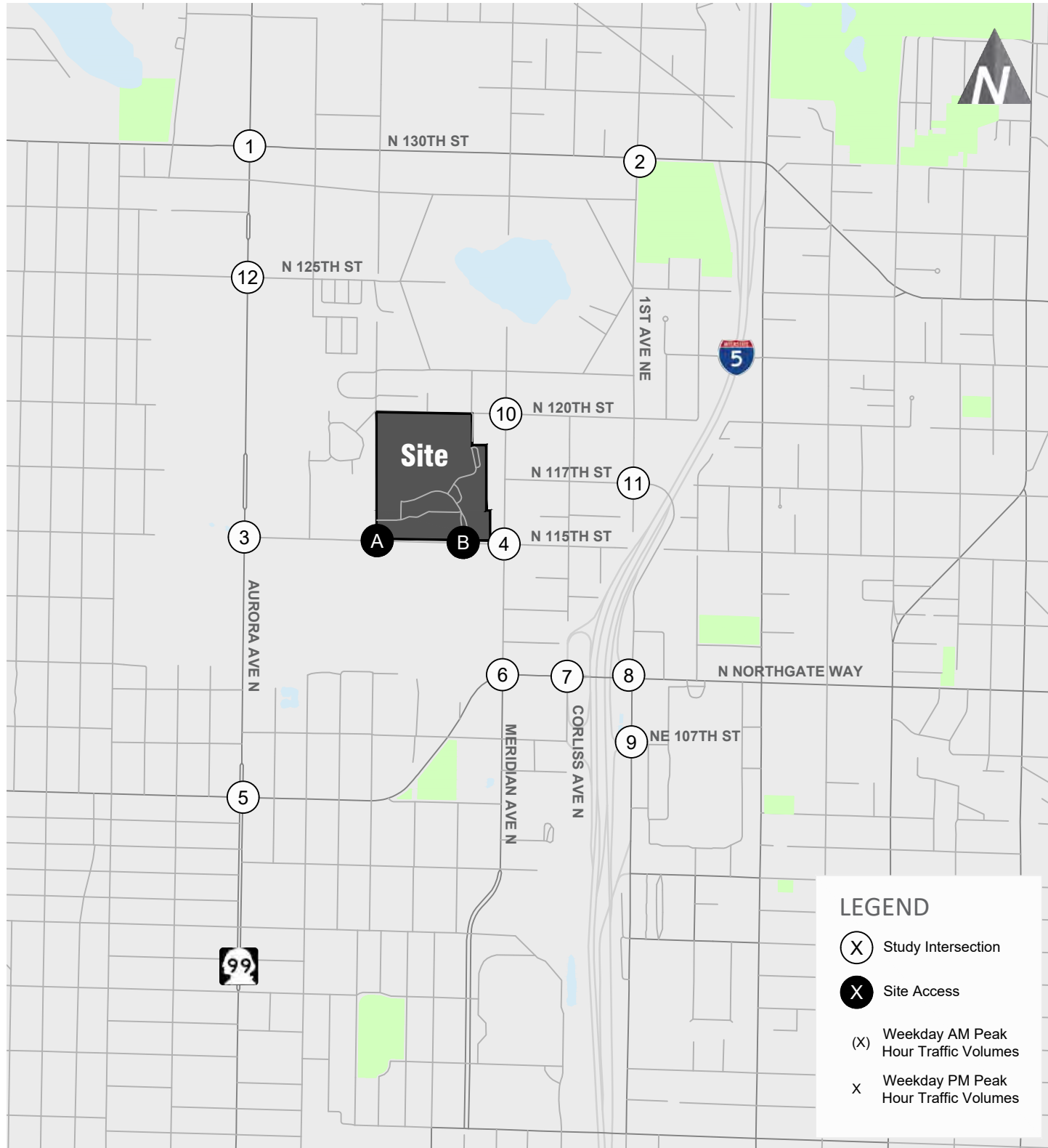


Figure 7. Existing Bike Facilities

Traffic Volumes

Existing traffic volumes at the off-site study intersections were based on traffic counts collected in January 2023 and July 2023 with the existing campus counted in May 2022. The estimated existing weekday AM and PM peak hour traffic volumes are shown on Figure 8. The traffic volumes are rounded to the nearest five vehicles to account for daily fluctuations in traffic. The detailed weekday peak period traffic counts are included in Appendix A.



Existing Weekday Peak Hour Traffic Volumes

UWMC NW TDR

FIGURE

8

Traffic Operations

Weekday peak hour traffic operations for existing conditions are evaluated at the study intersections. The operational characteristics of an intersection are determined by calculating the intersection level of service (LOS). At signalized and all-way stop controlled intersections, LOS is measured in average control delay per vehicle and is typically reported using the intersection delay. At side-street stop-controlled intersections, LOS is measured in average delay per vehicle and is reported for the worst operating movement of the intersection. Traffic operations and average vehicle delay for an intersection can be described qualitatively with a range of levels of service (LOS A through LOS F), with LOS A indicating free-flowing traffic and LOS F indicating extreme congestion and long vehicle delays. Appendix D contains a detailed explanation of LOS criteria and definitions.

Signal timing and phasing information is obtained from the Seattle Department of Transportation (SDOT). Weekday AM and PM peak hour traffic operations are evaluated based on the procedures identified in the *Highway Capacity Manual, 6th Edition* (HCM 6) as available and HCM 2000 for the signalized intersections that are unable to be evaluated in 6th edition due to the limitations of the methodology. *Synchro 11* was used for the analysis which is a software program that uses HCM methodology to evaluate intersection LOS and average vehicle delay. The worst movement is reported for the unsignalized intersections.

The City of Seattle’s Comprehensive Plan does not define a LOS standard for individual intersections; however, the City generally recognizes LOS E and F as poor operations for signalized locations and LOS F for unsignalized locations. Results for the existing operations analyses are summarized in Table 7. Detailed LOS worksheets for each intersection analysis are included in Appendix E. As noted in the Analysis Methods section, the City generally recognizes LOS E and F as poor operations for signalized locations and LOS F for unsignalized locations.

Table 7. Existing Peak Hour Level of Service Summary

| Intersection | Traffic Control | Weekday AM Peak Hour | | | Weekday PM Peak Hour | | |
|--|-----------------|----------------------|--------------------|-----------------|----------------------|-----------|-----------|
| | | LOS ¹ | Delay ² | WM ³ | LOS | Delay | WM or v/c |
| 1. Aurora Ave N/N 130th St | Signal | D | 44 | - | D | 42 | - |
| 2. 1st Ave NE/N 130th St | Signal | C | 29 | - | D | 35 | - |
| 3. Aurora Ave N/N 115th St | Signal | A | 9 | - | B | 14 | - |
| 4. Meridian Ave N/N 115th St | AWSC | B | 15 | - | C | 17 | - |
| 5. Aurora Ave N/N Northgate Way | Signal | D | 46 | - | D | 49 | - |
| 6. Meridian Ave N/N Northgate Way | Signal | D | 44 | - | D | 48 | - |
| 7. Corliss Ave N/N Northgate Way | Signal | C | 23 | - | C | 23 | - |
| 8. 1st Ave NE/N Northgate Way | Signal | C | 24 | - | D | 37 | - |
| 9. 1st Ave NE/I-5 NB Ramp/NE 107th St | Signal | C | 32 | - | E | 65 | - |
| 10. Meridian Ave N/N 120th St | TWSC | B | 12 | WB | B | 12 | WB |
| 11. 1st Ave NE/N 117th St | AWSC | A | 8 | - | B | 13 | - |
| 12. Aurora Ave N/N 125th St | Signal | C | 27 | - | D | 36 | - |
| A. Existing Western Site Access/N 115th St | TWSC | C | 15 | SBL | C | 16 | SBL |
| B. Existing Eastern Site Access/N 115th St | TWSC | C | 18 | SBL | C | 19 | SBL |

Note: TWSC = Two-Way Stop Controlled, AWSC = All-Way Stop=Controlled. **Bold** text indicates operating at LOS E or F if signalized or LOS F for stop controlled.

1. Level of Service (A – F) as defined by the Highway Capacity Manual (TRB, 6th Edition).

2. Average delay per vehicle in seconds

3. Worst movement reported for TWSC intersections. WB = westbound, SBL = southbound left-turn.

Table 7 shows the study intersections currently operate acceptably at LOS D or better during the weekday AM and PM peak hours, with the exception of the 1st Avenue NE/I-5 NB Ramp/NE 107th Street intersection. The intersection is shown to currently operate at LOS C during the AM peak hour and LOS E during the weekday PM peak hour.

Traffic Safety

Recent collision records were reviewed within the study area to identify existing traffic safety issues at the study intersections and along the project site frontage. The most recent three-year summary of accident data from the Washington State Department of Transportation (WSDOT) is for the period between January 1, 2019 and December 31, 2021. This information is summarized in Table 8.

Table 8. Three-Year Collision Summary – 2019 to 2021

| Location | Traffic Control | Number of Collisions | | | Total | Annual Average | Collisions involving a pedestrian or bicyclist over the previous 3 Years |
|--|-----------------|----------------------|------|------|-------|----------------|--|
| | | 2019 | 2020 | 2021 | | | |
| <u>Intersections</u> | | | | | | | |
| 1. Aurora Ave N/N 130th St | Signal | 7 | 5 | 10 | 22 | 7.33 | 1 |
| 2. 1st Ave NE/N 130th St | Signal | 3 | 1 | 1 | 5 | 1.67 | 0 |
| 3. Aurora Ave N/N 115th St | Signal | 7 | 0 | 6 | 13 | 4.33 | 3 |
| 4. Meridian Ave N/N 115th St | AWSC | 0 | 1 | 1 | 2 | 0.67 | 1 |
| 5. Aurora Ave N/N Northgate Way | Signal | 3 | 1 | 6 | 10 | 3.33 | 0 |
| 6. Meridian Ave N/N Northgate Way | Signal | 11 | 11 | 9 | 31 | 10.33 | 2 |
| 7. Corliss Ave N/N Northgate Way | Signal | 9 | 12 | 8 | 29 | 9.67 | 2 |
| 8. 1st Ave NE/N Northgate Way | Signal | 3 | 6 | 4 | 13 | 4.33 | 1 |
| 9. 1st Ave NE/I-5 NB Ramp/NE 107th St | Signal | 2 | 1 | 2 | 5 | 1.67 | 0 |
| 10. Meridian Ave N/N 120th St | TWSC | 1 | 0 | 0 | 1 | 0.33 | 0 |
| 11. 1st Ave NE/N 117th St | AWSC | 0 | 1 | 0 | 1 | 0.33 | 0 |
| 12. Aurora Ave N/N 125th St | Signal | 4 | 7 | 12 | 23 | 7.67 | 2 |
| A. Existing Western Site Access/N 115th St | TWSC | 0 | 0 | 0 | 0 | 0.00 | 0 |
| B. Existing Eastern Site Access/N 115th St | TWSC | 0 | 0 | 2 | 2 | 0.67 | 0 |
| <u>Roadway Segment</u> | | | | | | | |
| Site Frontage/N 115th Street | - | 0 | 2 | 5 | 7 | 2.33 | 0 |
| Site Frontage/N 120th Street | - | 0 | 0 | 0 | 0 | 0.00 | 0 |

Source: WSDOT, 2022.

Note: TWSC = Two-Way Stop Controlled, AWSC = All-Way Stop=Controlled.

SDOT defines High Collision Locations (HCL) as signalized intersections with an average of 10 or more collisions, unsignalized intersections with an average 5 or more collisions, mid-block locations with an average of 10 or more collisions, and locations with 5 or more pedestrian or bicycle collisions in the previous 3 years. Intersections designated as high accident locations are targeted for future safety improvements in an effort to reduce the occurrence of accidents. As shown in Table 8, only the Meridian Ave N/N Northgate Way intersection meets the City of Seattle HCL criteria. The remaining study intersections had an average of fewer than 8 collisions reported per year, with the exception of the Corliss Ave N/N Northgate Way intersection, which averaged just under 10 collisions per year. Additional details regarding the collision history for the 2 locations are provided below.

Meridian Avenue N/N Northgate Way intersection – This location met the City’s HAL criteria with an average of 10 collisions per year. This intersection is located approximately 0.3 miles southeast of the campus. The types of collisions at this intersection varied and included a range of collision types, however, the most common collision type was rear-end. Additionally, there were 2 collisions reported involving a pedestrian.

Corliss Avenue N/N Northgate Way/I-5 SB Ramp intersection – This location had an average of just under 10 collisions per year. The most common collision type at this location was entering at an angle. Additionally, there was 1 collision reported involving a pedestrian as well as 1 collision reported involving a bicyclist.

At the remaining 10 study intersections, there were 8 additional collisions involving a pedestrian or bicyclist that occurred at the signalized intersections of N 130th Street, N 125th Street, and N 115th

Street along Aurora Avenue N and 1st Avenue NE/N Northgate Way as well as the unsignalized Meridian Avenue N/N 115th Street intersection. The existing safety concerns along Aurora Avenue N are known and there are planned improvements along the Aurora Avenue North corridor to address safety and mobility issues, which are described in the No Action section.

Note that the majority of collisions resulted in property damage throughout the study area and there were no reported fatalities.

There was an average of less than 1 collision reported per year at the existing campus access points, which resulted in property damage only. Along the campus frontages, there were no reported collisions to the north along N 120th Street and an average of 2 collisions reported per year to the south along N 115th Street. The collisions along N 115th Street were predominately associated with on-street parking with the majority resulting in property damage only. No fatalities nor collisions involving a pedestrian or bicyclist were reported adjacent to the campus during the review period.

Loading

The UWMC – Northwest campus functions primarily with a single loading dock that contains five loading berths, of which three are actively used. The other two berths accommodate compactors for garbage and recycling. The existing loading dock acts as a centralized location for all hospital deliveries.

Observations were completed at the existing loading dock in order to identify the current campus demands and to establish rates to be used in identifying the future needs of the campus. Observations were conducted for a two-day period between the hours of 5:00 a.m. and 9:00 p.m. Quiet hours of the campus result in very limited deliveries outside this time period. All parcel deliveries were recorded that utilized the loading dock area. Other vehicle classes that accessed the loading docks were passenger cars, panel vans, larger box-trucks, maintenance vehicles, and/or smaller tractor trailers. All vehicle classes were included in the calculations to estimate a conservative rate inclusive of all vehicles accessing the loading dock. A summary of the existing site attributes and an overview of the observations is included in Table 9.

Table 9. Loading Berth Survey Building Attributes and Observation Periods

| Building | Date of Observations | Number of Observation Days | Campus Development Area (gsf) | Number of Berths |
|------------------|----------------------|----------------------------|-------------------------------|---|
| UWMC - Northwest | April 2023 | 2 | 549,697 sf | 3 active loading berths, with 2 separate berths for garbage and recycling |

A summary of the average delivery activity during the study period at the existing UWMC-Northwest facility is provided in Table 10. As this information will be used to identify the overall loading dock requirements for the MIMP, an overall demand rate was calculated based on the total occupancy of each loading dock, during the observation periods and the total development area of the campus.

Table 10. Loading Berth Weekday Activity Summary

| | Day 1 (4/26/2023) | Day 2 (4/27/2023) | Average |
|-----------------------------------|-------------------|-------------------|---------|
| Activity | | | |
| Deliveries per Day (all vehicles) | 27 | 31 | 28.9 |
| Duration | | | |
| Average Duration (min) | 18.1 | 23.8 | 21.1 |
| Total Delivery Time (min) | 489 | 736 | 621 |
| Delivery Time (min) per 1,000 sf | 0.89 | 1.34 | 1.13 |

Notes: sf = square-feet
 Source: Transpo Group, April 2023

As shown in Table 10, the weighted average delivery demand for the existing campus equates to 1.13 minutes per 1,000 square feet.

Impacts of the No Action Alternative

This chapter describes the transportation conditions for the future (2030 and 2040) No Action Alternative. The No Action Alternative is the metric by which the Action Alternatives impacts are measured against to identify the transportation impacts of the proposal.

The No Action Alternative assumes the approved development to date including the existing 549,697 gsf medical center, the Behavior Health Training Facility (BHTF) which will construct an additional 188,846 gsf, and the additional 26,000 gsf of development assumed as the remaining balance of development under the current MIMP. The No Action total is estimated to be 764,543 gsf. The two (2) existing access points that exist along N 115th Street will be maintained under the No Action Alternative.

Trip Generation

The two No Action approved developments include the BHTF as well as the remaining balance of development under the current MIMP (an additional 26,000 gsf). The weekday AM and PM peak hour trip generation for each component of the No Action condition is described below.

- BHTF - Assumed consistent with the previous traffic analysis completed for that specific development
- Additional Development under the current MIMP – The additional 26,000 gsf of hospital space was estimated based on the existing campus trip generation rates as shown in Table 2.

Table 11 summarizes the trip generation for the No Action Alternative.

| Land Use | Size | Weekday Daily Trips | AM Peak Hour Trips | | | PM Peak Hour Trips | | |
|--|--------------------|---------------------|--------------------|------------|------------|--------------------|------------|------------|
| | | | In | Out | Total | In | Out | Total |
| Existing¹ | 549,697 gsf | 7,300 | 407 | 199 | 606 | 113 | 403 | 516 |
| No Action | | | | | | | | |
| Additional Development under the current MIMP ¹ | 26,000 gsf | 1,400 | 19 | 10 | 29 | 5 | 19 | 24 |
| <u>BHTF²</u> | <u>188,846 gsf</u> | 350 | <u>76</u> | <u>44</u> | <u>120</u> | <u>-6</u> | <u>79</u> | <u>73</u> |
| <i>Subtotal</i> | <i>214,846 gsf</i> | <i>1,750</i> | <i>95</i> | <i>54</i> | <i>149</i> | <i>-1</i> | <i>98</i> | <i>97</i> |
| No Action Total | 764,543 gsf | 9,050 | 502 | 253 | 755 | 112 | 501 | 613 |

1. Vehicle peak hour trip rates calculated based on the existing campus observed peak hour trips relative to the existing size (549,697 gsf). Daily trip rate estimated based on similar ITE uses.
 2. Behavioral Health Teaching Facility

As shown in the table, under the No Action Alternative the campus is forecast to generate 755 trips occurring during the weekday AM peak hour and 613 trips during the weekday PM peak hour. This represents an increase of 149 trips during the weekday AM peak hour and 97 trips during the weekday PM peak hour.

The total person trip generation for the campus was estimated for the peak hours based on the same methodology as assumed for the affected environment with no changes assumed to the mode splits or AVO. The estimated No Action person trip generation is summarized in Table 12.

Table 12. No Action Person Trip Generation

| Trip Generation | Mode Split | Existing | | | Net New No Action | | | No Action Total | | |
|--------------------------------------|-------------|------------|------------|------------|-------------------|------------|------------|-----------------|------------|------------|
| | | In | Out | Total | In | Out | Total | In | Out | Total |
| Weekday AM Peak Hour | | | | | | | | | | |
| Vehicle Trips¹ | | 407 | 199 | 606 | 95 | 54 | 149 | 502 | 253 | 755 |
| Person Trips | | | | | | | | | | |
| Walk and Bike Trips | 2.5% | 13 | 6 | 19 | 3 | 2 | 5 | 16 | 8 | 24 |
| Transit Trips | 7% | 35 | 17 | 53 | 8 | 5 | 13 | 43 | 22 | 66 |
| Other | 1.5% | 8 | 4 | 11 | 2 | 0 | 2 | 10 | 4 | 13 |
| Person Trips by Vehicle ¹ | 89% | 451 | 220 | 671 | 105 | 60 | 165 | 556 | 280 | 836 |
| Total | 100% | 507 | 247 | 754 | 118 | 67 | 185 | 625 | 314 | 939 |
| Weekday PM Peak Hour | | | | | | | | | | |
| Vehicle Trips¹ | | 113 | 403 | 516 | -1 | 98 | 97 | 112 | 501 | 613 |
| Person Trips | | | | | | | | | | |
| Walk and Bike Trips | 2.5% | 4 | 13 | 16 | 0 | 3 | 3 | 4 | 16 | 19 |
| Transit Trips | 7% | 10 | 35 | 45 | 0 | 8 | 8 | 10 | 43 | 53 |
| Other | 1.5% | 1 | 8 | 10 | 0 | 1 | 2 | 1 | 9 | 12 |
| Person Trips by Vehicle ¹ | 89% | 125 | 446 | 571 | -1 | 109 | 107 | 124 | 555 | 678 |
| Total | 100% | 140 | 502 | 642 | -1 | 121 | 120 | 139 | 623 | 762 |

2. The 89 percent person trips by vehicle includes approximately 75 percent SOV and 14 percent associated with carpool and vanpool trips, resulting in a AVO of 1.1. The AVO of 1.1 was multiplied by the vehicles trips to determine the number of person trips by vehicle. The person trip distribution per the CTR was then applied to determine the total person trips.

As shown in Table 12, with the No Action, there are estimated to be a total of 66 and 53 transit trips in the AM and PM peak hours, respectively and 24 and 19 non-motorized trips (walk, bike, other) in the AM and PM peak hours, respectively.

Street System

The No Action Alternative assumes no change in UWMC-Northwest vehicle access and circulation. The existing access including two primary access points along N 115th Street will be maintained with the No Action Alternative. A review of local and regional capital improvement programs and long-range transportation plans was conducted to identify planned funded and unfunded transportation projects that would impact the off-site study area within the study period. The City of Seattle 2023 – 2028 *Proposed Capital Improvement Program (CIP)* and Comprehensive Plan was reviewed and two projects were identified: (1) Aurora Avenue North Safety Improvements project and (2) N 130th Street Vision Zero Safety Corridor. Both projects are described below.

Aurora Avenue North Safety Improvements project - This project will improve safety and mobility along Aurora Avenue N. The project includes design and construction of new sidewalks, transit improvements, medians/access management, lighting, signalized crossings, and potential roadway channelization changes. This project is fully funded and anticipated to be completed by 2037. The specific locations along the corridor have not yet been identified.

N 130th Street Vision Zero Safety Corridor - The cross section at N 130th Street currently has four driving lanes with a sidewalk on each side of the road and will be modified into two through-lanes between Stone Avenue N and 1st Avenue NE with bike lanes and a center two-way left turn lane. Speed limits will also be reduced to 25 mph along the corridor. Future extension of the channelization modifications are also a potential which could extend between Linden Avenue N and 5th Avenue NE. The channelization modifications, bike lanes, and speed limit reductions between Stone Avenue N and 1st Avenue NE along N 130th Street are planned to be completed in 2023 and are funded as part of the Vision Zero program. This project results in assumed channelization modifications to the west leg of the 1st Avenue NE/N 130th Street intersection included in the No Action analyses.

Seattle Public Utilities (SPU) is also planning improvements along N 117th Street and N 120th Street between Meridian and 1st Avenues. These improvements include reconstruction of the ROW to include improved natural drainage features, defined parallel parking on one side of the street, with a single lane for two-way traffic. This project is intended to improve drainage and water quality for Thornton Creek, improve pedestrian facilities and provide traffic calming features.

Improvements to the south side of N 120th Street, along the campus frontage are also being completed as part of the BHTF project. These improvements include construction of curb, gutter, sidewalk, and a landscaping strip.

Non-Motorized Transportation

Based on a review of the City's CIP⁴ four planned improvements have been identified with changes to existing non-motorized system in the vicinity of the campus. These include:

- Safety improvements along Aurora Avenue will construct new non-motorized facilities including new sidewalks and signalized crossings.
- Bike lanes are proposed to be added along both sides of N 130th Street between Stone Avenue N and 1st Avenue NE as part of the Vision Zero Safety Corridor project by 2023.
- The Ashworth Avenue N Neighborhood Greenway is planned to be completed by 2024 and would extend from N 135th Street to N 120th Street connecting to Northgate Elementary School and Ingraham High School. Within the study area at the Meridian Avenue N/N 120th Street intersection, the project would install curb ramps at 4 corners, full concrete curbs at NE and NW corners to connect to the existing bus pads, add a marked crosswalk on the north leg, and paint two curb bulbs at the SE and SW corners.
- Painted bike lanes are proposed to be added along Meridian Avenue between N 117th Street and N 120th Street as noted on SDOT's Planned Bike Facilities map.
- The improvements planned by SPU along N 117th Street and N 120th Street will improve pedestrian connections for those sections. These improvements are anticipated to be completed by 2023.

Non-motorized trips associated with the No Action condition are anticipated to be limited with 5 or fewer non-motorized trips estimates for the AM and PM peak hours for a total No Action non-motorized trips associated with the campus to be 24 and 19 trips during the weekday AM and PM peak hours, respectively.

Transit Service

Transit service changes in the vicinity of the UWMC-Northwest predominantly include the expansion of Sound Transit's Link Light Rail Network. Future planned transit improvements include the Sound Transit Link Light Rail Lynnwood Extension. Sound Transit's Link Light Rail Lynnwood Extension is extending light rail from the Northgate station to Lynnwood and constructing four additional stations: Shoreline South/148th Station, Shoreline North/185th Station, Mountlake Terrace Station, Lynnwood City Center Station. The Lynnwood Extension is due to open by end of 2024. Following the opening of the Lynnwood Extension, the NE 130th St Infill Station is planned to be added for operation along the Lynnwood Extension for service by 2026.

With the planned Sound Transit Link Light Rail Lynnwood Extension, King County Metro has identified preliminary service concepts that would adjust routes to account for the added light rail stations. In the vicinity of UWMC-Northwest, this includes current route and service adjustments to serve the Shoreline South/148th Station (no plans have yet identified service alterations to accommodate the NE 130th St Infill Station). Route adjustments would include revising the service areas of 345 and replacing route 346

⁴ 2023-2028 Proposed Capital Improvement Program

with a new route, route 365. Both routes would provide service along Meridian Avenue N, east of UWMC-Northwest with Route 345 continuing to have a stop on-campus and both routes now providing service to the Shoreline South/148th Station. Both routes would be local routes, similar to today’s service.

With these proposed service revisions, no service changes to the transit frequency or capacities were assumed for the routes being evaluated; however, Route 346 is shown to be replaced with Route 365.

Future No Action ridership was estimated for the future 2040 horizon year by applying an annual 1.0 percent growth rate (consistent with the traffic volume forecasts as discussed in greater detail in a subsequent section) to the existing ridership and adding transit trips for the campus specific to the No Action condition. The peak hour transit trips associated with the No Action condition as summarized in Table 12, are anticipated to be 13 and 8 during the weekday AM and PM peak hours, respectively. Note that the transit trip generation estimates are for the peak hour, whereas the transit analysis is for the peak transit periods (4-hour periods, 5-9 am and 3-7 pm). The peak hour transit trips were converted to the 4-hour transit period by multiplying the trips by 4, which conservatively assumes that peak hour transit trips for the campus occur continuously throughout the 4-hour transit period.

Based on the ridership forecasts, the resulting No Action capacity analysis is summarized in Table 13 for the 2040 future condition during the AM and PM peak periods relative to the existing utilization. The detailed transit capacity analysis is included in Appendix F. As shown in the table, the transit vehicle utilization for the 4 routes serving the campus is approximately 36 percent or less under the No Action condition, with estimated increases in utilization of 8 percent or less relative to existing conditions. This analysis indicates that there would continue to be available capacity to accommodate additional riders during the weekday peak periods under the No Action Alternative.

Table 13. No Action (2040) Transit Capacity Analysis

| Route # / Nearest Stop Location | Direction of Travel | AM Peak Period Utilization ¹ | | | PM Peak Period Utilization | | |
|---|---------------------|---|-----------|--------|----------------------------|-----------|--------|
| | | Existing | No Action | Change | Existing | No Action | Change |
| 345 On Campus, north of eastern access point | S | 15% | 23% | + 8% | 19% | 24% | + 5% |
| | N | 18% | 25% | + 7% | 25% | 31% | + 6% |
| 365 ³ At the Meridian Ave N/ N 115th St Intersection | S | 21% | 26% | + 5% | 25% | 30% | + 5% |
| | N | 23% | 29% | + 6% | 31% | 36% | + 5% |
| 40 At the SR 99/N 115th St Intersection | S | 8% | 9% | + 1% | 15% | 18% | + 3% |
| | N | 13% | 16% | + 3% | 12% | 15% | + 3% |
| E Line At the SR 99/N 115th St Intersection | N | 25% | 30% | + 5% | 26% | 31% | + 5% |
| | S | 22% | 26% | + 4% | 27% | 32% | + 5% |

1. Capacity for each route/stop assumed for the utilization calculation unchanged for No Action relative to existing conditions. Based on bus frequencies, ridership, and typical capacity data provided by King County Metro for Fall 2022. Existing Route 346 to be replaced with new Route 365. Both are local routes such that capacity and existing utilization were assumed to be consistent.

Traffic Volumes

Future (2030 and 2040) forecast traffic volumes for the No Action conditions are comprised of the existing traffic volumes, background traffic growth, and traffic generated from the planned “pipeline” developments. An annual growth rate of 1.0 percent was applied to the existing traffic counts as coordinated with City staff during scoping which is consistent with the growth rate assumed for previously approved for projects throughout Seattle and tends to be conservative with the additional inclusion of growth from pipeline projects. In addition to the background growth rate, which accounts for the general growth in the area, traffic from specific pipeline development projects in the vicinity were added to the forecasts. Pipeline projects included in the analysis were based on information from the SDCI website and confirmed through coordination with City staff. A total of 21 pipeline projects are included. The pipeline projects are listed in Appendix C. The trips associated with the BHTF are included as well as identified above and consistent with the traffic analysis completed for that project. The trips associated with the remaining MIMP development size (26,000 gsf) were distributed and assigned to the network

based on existing vehicle travel patterns as well as review of where employees are working for the existing campus. The distribution patterns are illustrated in Figure 9.

The resulting No Action weekday peak hour traffic volumes are shown for the future 2030 and 2040 conditions in Figure 10 and Figure 11, respectively.

Traffic Operations

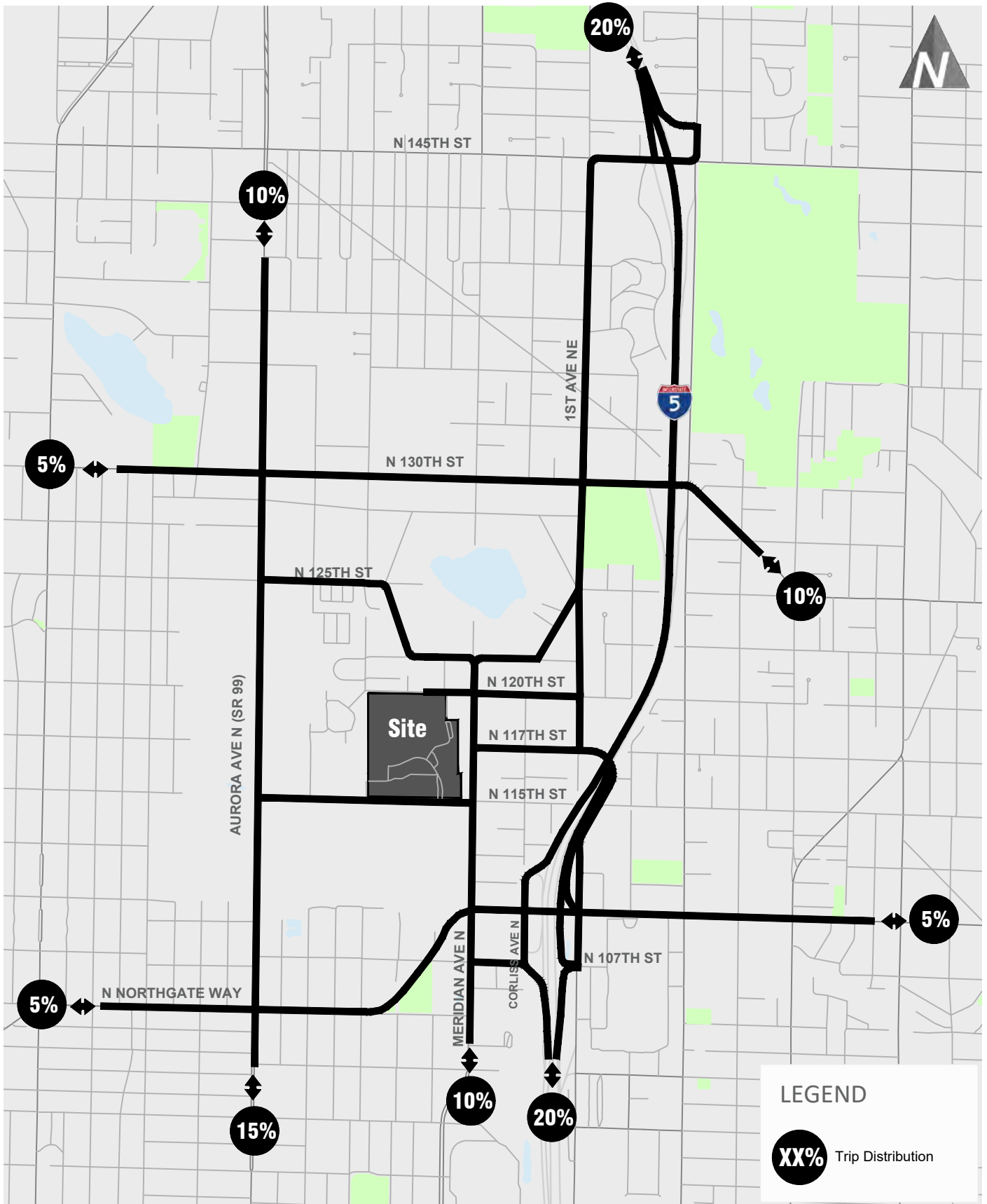
The future 2030 and 2040 No Action operations analysis was conducted using the consistent methodology as described for the existing conditions. Adjustments of analysis parameters between the existing and No Action (2030) conditions included optimization⁵ of signal timing to reflect the continued growth in traffic volumes as well as review any applicable adjustments of peak hour factors (PHF) at the off-site study intersections to reflect the forecast traffic volumes. The PHF adjustment in the interim condition was made consistent with National Cooperative Highway Research Program (NCHRP) Report 599: Default Values for Highway Capacity and Level of Service Analyses.⁶

Additional adjustments for the No Action (2040) conditions included additional optimization of signal timings (similar to 2030 conditions) as well as further refinement of the PHF at the off-site study intersections. The 2040 PHF adjustment was made consistent with *WSDOT Synchro & Simtraffic Protocol – Aug 2018* which identifies assuming a PHF of 1.0 for future analysis conditions, with future analysis typically aligning with a design year condition which is generally an approximately 20-year forecast, consistent with the future 2040 analysis.⁷

⁵ Optimization included adjusting the splits and offsets. The existing cycle lengths were maintained for the coordination along the corridor.

⁶ NCHRP's Report 599 Table 19 provides guidance on the applicable PHF relative to the total entering vehicles of an intersection.

⁷ WSDOT's criteria identifies adjustment for the PHF for design year conditions.

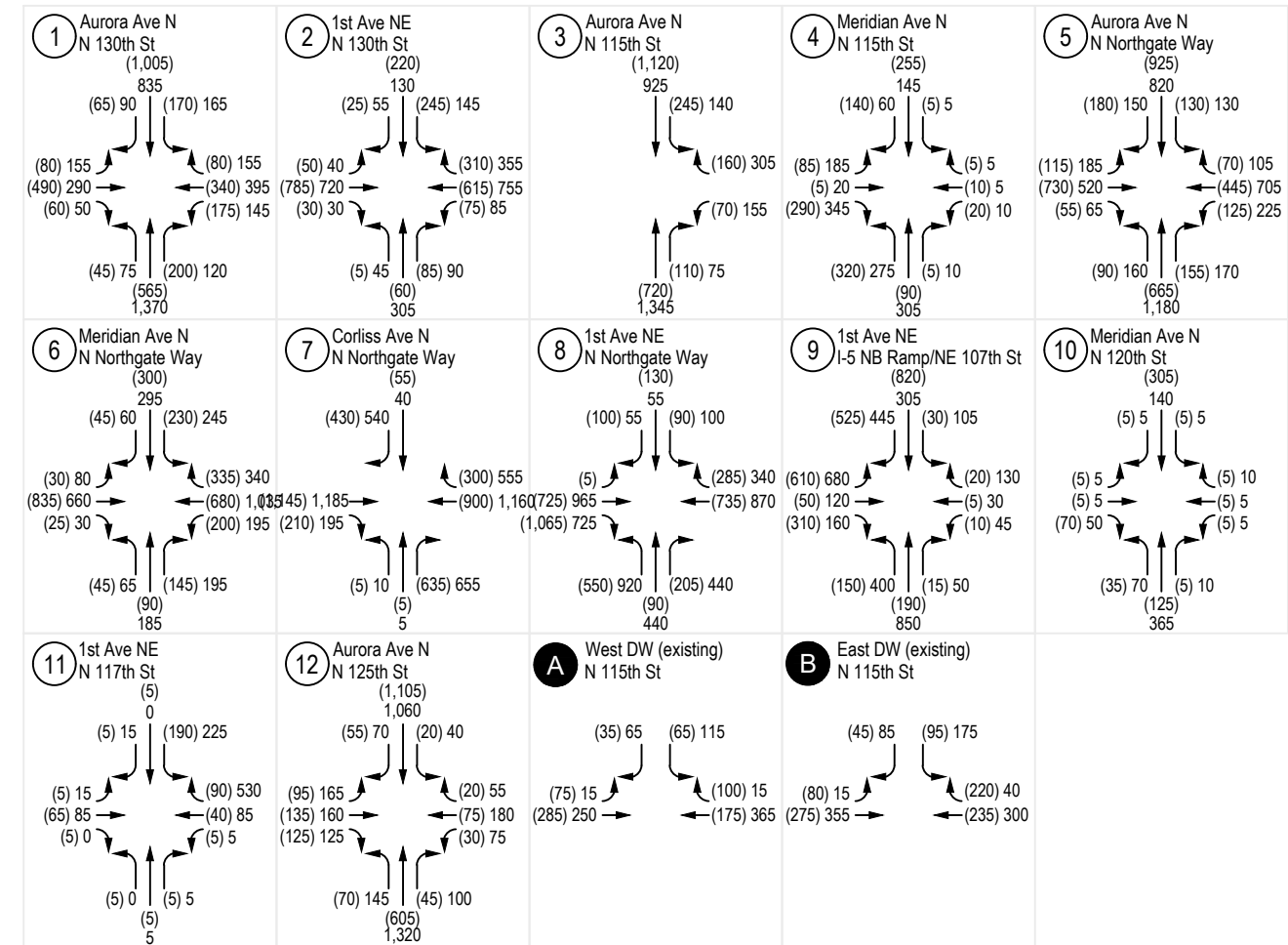
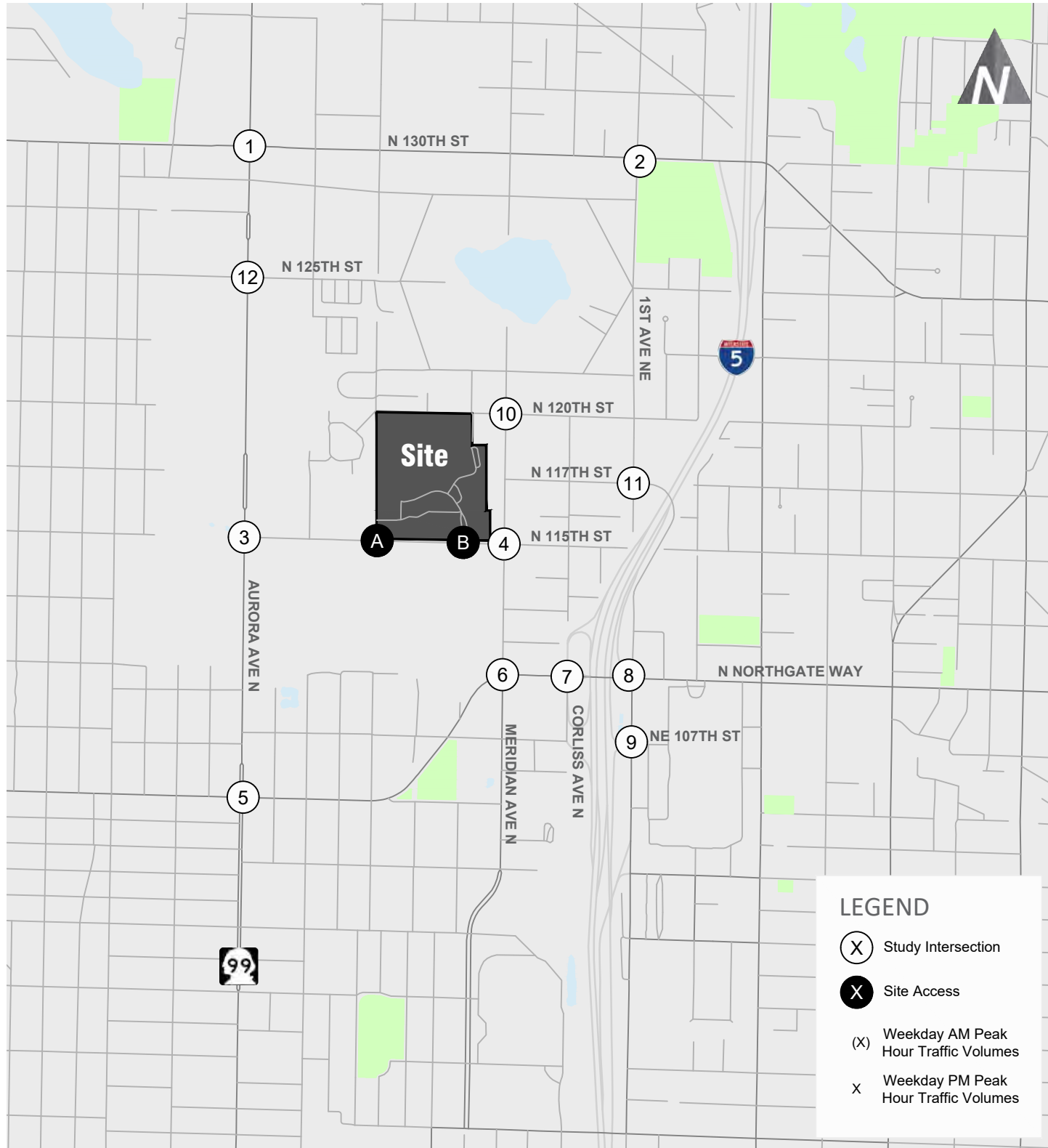


Project Trip Distribution

UWMC NW TDR

FIGURE

9

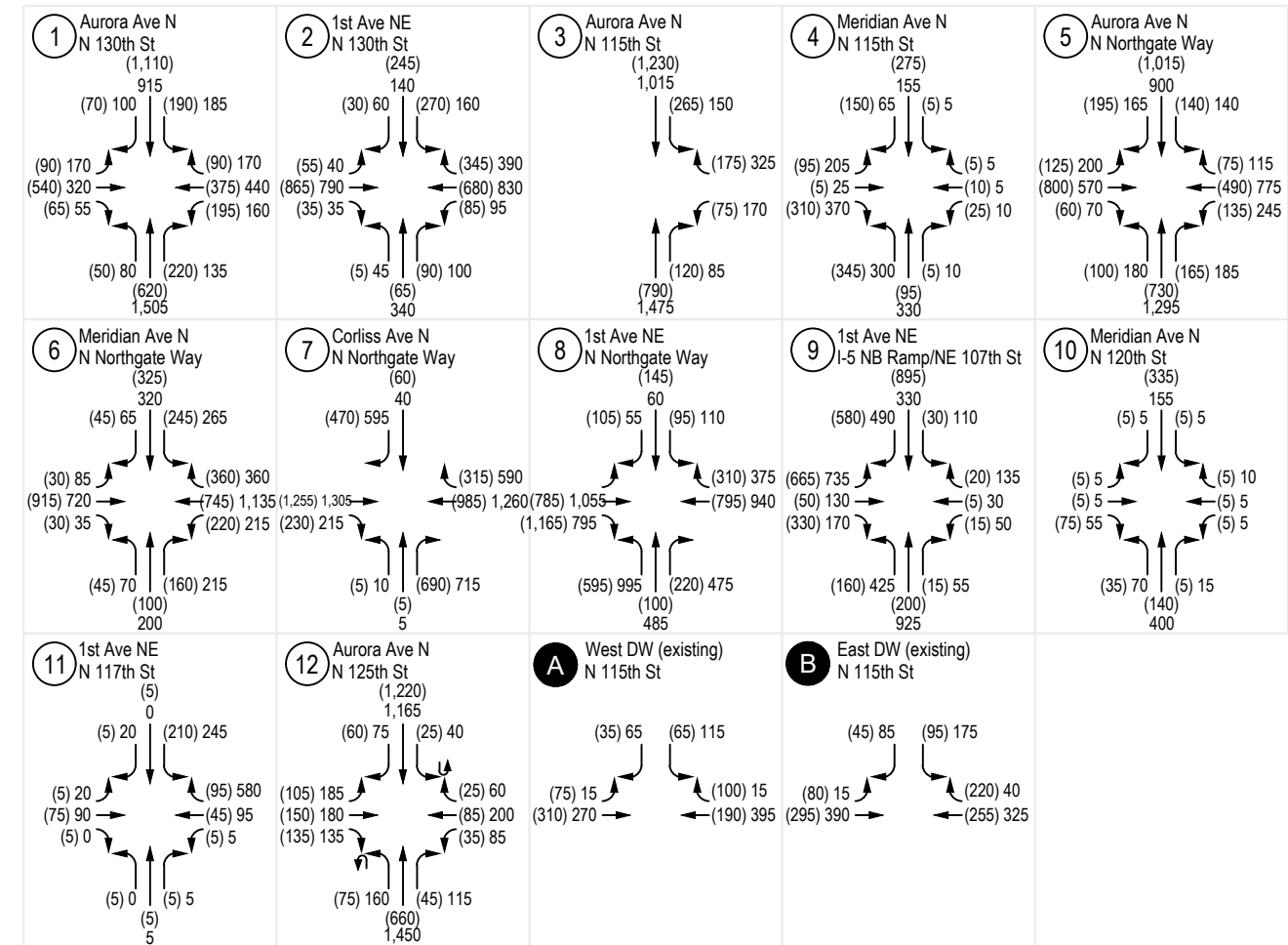
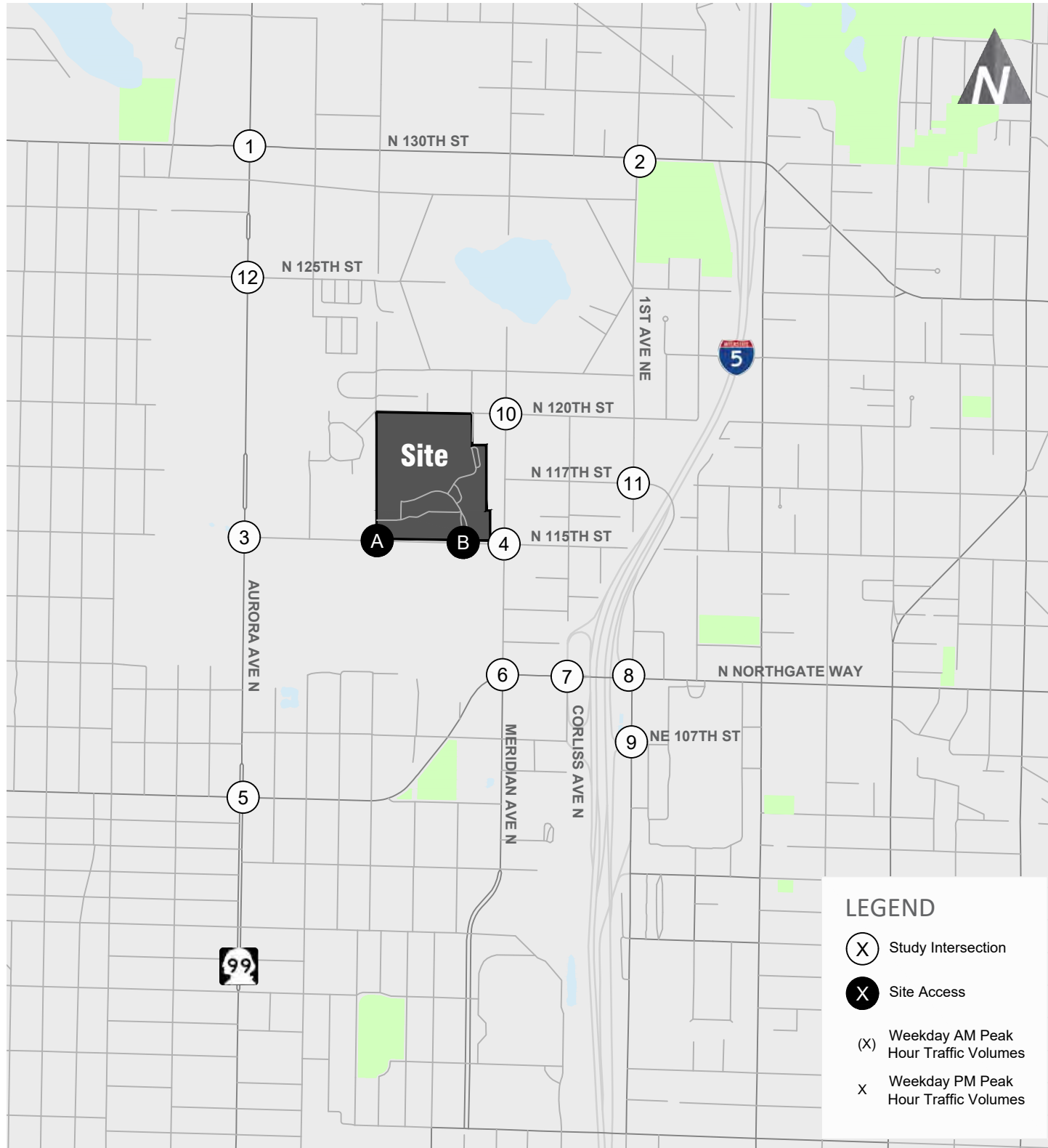


No Action Alternative (2030) Weekday Peak Hour Traffic Volumes

UWMC NW TDR

FIGURE
10





No Action Alternative (2040) Weekday Peak Hour Traffic Volumes

UWMC NW TDR

FIGURE
11



The future 2030 and 2040 No Action weekday peak hour intersection operations are shown in Table 14.

Table 14. Existing and No Action (2030 and 2040) Weekday Peak Hour LOS Summary

| Intersection | Traffic Control | Existing | | | No Action (2030) | | | No Action (2040) | | |
|---------------------------------------|-----------------|------------------|--------------------|-----------------|------------------|-----------|----|------------------|------------|-----|
| | | LOS ¹ | Delay ² | WM ³ | LOS | Delay | WM | LOS | Delay | WM |
| AM Peak Hour | | | | | | | | | | |
| 1. Aurora Ave N/N 130th St | Signal | D | 44 | - | D | 47 | - | D | 47 | - |
| 2. 1st Ave NE/N 130th St | Signal | C | 29 | - | D | 37 | - | D | 40 | - |
| 3. Aurora Ave N/N 115th St | Signal | A | 9 | - | B | 12 | - | B | 13 | - |
| 4. Meridian Ave N/N 115th St | AWSC | B | 15 | - | D | 26 | - | C | 24 | - |
| 5. Aurora Ave N/N Northgate Way | Signal | D | 46 | - | D | 51 | - | D | 44 | - |
| 6. Meridian Ave N/N Northgate Way | Signal | D | 44 | - | D | 43 | - | D | 42 | - |
| 7. Corliss Ave N/N Northgate Way | Signal | C | 23 | - | B | 10 | - | B | 13 | - |
| 8. 1st Ave NE/N Northgate Way | Signal | C | 24 | - | C | 29 | - | C | 30 | - |
| 9. 1st Ave NE/I-5 NB Ramp/NE 107th St | Signal | C | 32 | - | E | 58 | - | E | 67 | - |
| 10. Meridian Ave N/N 120th St | TWSC | B | 12 | WB | B | 14 | WB | B | 13 | WB |
| 11. 1st Ave NE/N 117th St | AWSC | A | 8 | - | A | 9 | - | A | 9 | - |
| 12. Aurora Ave N/N 125th St | Signal | C | 27 | - | C | 29 | - | C | 31 | - |
| A. Western Site Access/N 115th St | TWSC | C | 15 | SBL | C | 20 | SB | C | 17 | SBL |
| B. Eastern Site Access/N 115th St | TWSC | C | 18 | SBL | D | 30 | SB | C | 23 | SBL |
| PM Peak Hour | | | | | | | | | | |
| 1. Aurora Ave N/N 130th St | Signal | D | 42 | - | D | 44 | - | D | 49 | - |
| 2. 1st Ave NE/N 130th St | Signal | D | 35 | - | D | 46 | - | D | 53 | - |
| 3. Aurora Ave N/N 115th St | Signal | B | 14 | - | B | 18 | - | B | 18 | - |
| 4. Meridian Ave N/N 115th St | AWSC | C | 17 | - | E | 39 | - | E | 37 | - |
| 5. Aurora Ave N/N Northgate Way | Signal | D | 49 | - | E | 56 | - | E | 60 | - |
| 6. Meridian Ave N/N Northgate Way | Signal | D | 48 | - | C | 33 | - | D | 42 | - |
| 7. Corliss Ave N/N Northgate Way | Signal | C | 23 | - | B | 13 | - | B | 14 | - |
| 8. 1st Ave NE/N Northgate Way | Signal | D | 37 | - | F | 97 | - | F | 103 | - |
| 9. 1st Ave NE/I-5 NB Ramp/NE 107th St | Signal | E | 65 | - | E | 57 | - | E | 62 | - |
| 10. Meridian Ave N/N 120th St | TWSC | B | 12 | WB | B | 15 | WB | B | 14 | WB |
| 11. 1st Ave NE/N 117th St | AWSC | B | 13 | - | C | 18 | - | C | 21 | - |
| 12. Aurora Ave N/N 125th St | Signal | D | 36 | - | D | 40 | - | D | 47 | - |
| A. Western Site Access/N 115th St | TWSC | C | 16 | SBL | C | 21 | SB | C | 19 | SBL |
| B. Eastern Site Access/N 115th St | TWSC | C | 19 | SBL | D | 30 | SB | D | 26 | SBL |

Note: TWSC = Two-Way Stop Controlled, AWSC = All-Way Stop=Controlled. **Bold** text indicates operating at LOS E or F if signalized or LOS F for stop controlled.

1. Level of Service (A – F) as defined by the Highway Capacity Manual (TRB, 6th Edition).

2. Average delay per vehicle in seconds

3. Worst movement reported for TWSC intersections. WB = westbound, SBL = southbound left turn.

As shown in Table 14, with the addition of background traffic growth, pipeline development and the approved No Action development, 3 of the off-site study intersections are forecast to operate at LOS E or F under the future 2030 and 2040 No Action conditions during either the AM and/or PM peak hours. Additional discussion for the 3 intersections operating at LOS E or F is provided below.

Aurora Avenue N/N Northgate Way – This signalized intersection is forecast to operate at LOS D during the AM peak hour and LOS E in the PM peak hour under both 2030 and 2040 conditions.

1st Avenue NE/N Northgate Way – This signalized intersection is forecast to operate at LOS C during the AM peak hour and LOS F in the PM peak hour under both 2030 and 2040 conditions.

1st Avenue NE/I-5 NB Ramp/NE 107th Street - This signalized intersection is forecast to operate at LOS E during both the weekday AM and PM peak hours under both 2030 and 2040 conditions.

The remaining off-site study intersections and access points are forecast to continue to operate acceptably at LOS D or better. Note that the all-way stop controlled Meridian Avenue N/N 115th Street intersection is forecast to operate at LOS E under future weekday PM peak hour No Action conditions; however, as this is a stop-controlled intersection, it was not identified. Also, note that minor reductions in delay comparing 2040 to 2030 conditions at some off-site study intersections is associated with the change in the PHF to 1.0 as described above, which reflects operations with an even distribution of vehicles throughout the hour consistent with travel patterns as congestion increases.

Traffic Safety

As traffic volumes increase, traffic safety issues could increase proportionally. However, there are no significant safety concerns identified within the study area under existing conditions.

Loading

The No Action condition reflects the construction of the BHTF and infrastructure associated with that construction. Based on current SMC criteria, the BHTF project was required to construct 7 loading berths. 5 of these are expected to be active as two are being used for garbage and recycling compactors. With these additional loading berths, the campus includes a total of 8 active loading berths. Projected demand and utilization of the existing berths is outlined in Table 15. The overall capacity of the loading berths is determined based on the number of berths as well as the period of time that the loading dock is open. As this is a medical institution there are core delivery hours, with evening restrictions for quiet hours. Based on the observations, the majority of the activity was observed between 7:00 a.m. and 5:00 p.m. for a total of 10 hours. This was applied for the campus, resulting in a capacity of 600 minutes (10 hours * 60 minutes) per loading berth.

Table 15. UWMC – Northwest Loading Berth Utilization Study (MIMP)

| Scenario | Size | Demand (minutes) ¹ | Number of Loading Berths | Utilization |
|-----------|------------|-------------------------------|--------------------------|-------------|
| Existing | 549,697 sf | 621 | 3 | 35% |
| No Action | 764,543 sf | 866 | 8 | 18% |

1. Demand expressed in minutes as identified above.

Based on the 764,543 sf of total development, there is estimated to be approximately 866 delivery-minutes or 41 deliveries per day using the existing observed rates.

Assuming the loading berths operate for 10 hours per day similar to the existing data, the total loading berths operational capacity under this scenario is 4,800 minutes (8 berths * 600 minutes per berth). Based on the 866 delivery-minutes, the percent utilization of the loading berths is 18 percent under this scenario. This number shows that the 8 loading berths expected with the completion of the BHTF project are more than adequate to accommodate the projected delivery demands.

Impacts of Action Alternative 1

This section describes the impacts of the future 2030 and 2040 Action Alternative 1. The impacts of Action Alternative 1 are identified through a comparison to the respective future 2030 and 2040 No Action Alternative.

With Action Alternative 1, the campus development would increase to up to 1,600,000 gsf, reflecting an increase of 835,457 gsf with Alternative 1. For purposes of the traffic analysis, a total of 800,000 gsf was assumed to be developed by 2030, with the remaining balance completed by 2040. The campus parking supply for Alternative 1 will be provided per the MIMP development standards. Two options for an additional campus access point were evaluated under the MIMP. Access options evaluated for Alternative 1 include maintaining the 2 existing access points as well as a third access via either N 115th Street or N 120th Street.

A comparison of the 2030 and 2040 Action Alternative 1 to the respective No Action Alternative is provided in the sections below.

Trip Generation

The trip generation estimates for the additional Alternative 1 development was based on the existing campus trip generation rates but refined to reflect current medical industry standards. Since the existing hospital was constructed, the medical industry has evolved resulting in increased space allocated to each patient. Factors that result in additional area per patient include, eliminating double occupancy rooms, increased medical equipment in each room, and this is a teaching hospital/campus, additional teaching areas will be provided adding to the overall sf per patient calculations. In order to “right-size” the existing hospital space, the hospital area would be expanded by 215,000 gsf provide without additional patients/staff capacity. An adjusted trip generation rate was then calculated by dividing the observed trips by the existing square footage plus the 215,000 gsf to account for right sizing. The existing and right-size adjusted trip generation rate is summarized in Table 16 which reduces the trip rates to 0.79 and 0.67 trips per 1,000 gsf for the AM and PM peak hours, respectively.

Table 16. Right Sized Vehicular Trip Generation Rate

| Trip Generation Rate ¹ | Effective Area | Weekday Daily | Weekday AM Peak Hour | | | Weekday PM Peak Hour | | |
|-----------------------------------|--------------------------|---------------|----------------------|-----|-------------|----------------------|-----|-------------|
| | | | In | Out | Total | In | Out | Total |
| <i>Average Existing Trips</i> | | 7,300 | 407 | 199 | 606 | 113 | 403 | 516 |
| Existing | 549,697 gsf | 13.2 | | | 1.10 | | | 0.94 |
| Right Size Adjusted | 764,697 ² gsf | 9.5 | | | 0.79 | | | 0.67 |

Note: gsf = gross square feet

1. Trip Generation Rate = trips per 1,000 gsf.

2. Existing size (549,697 gsf) + right size adjustment (+215,000 gsf).

This adjusted trip generation rate was applied to the expansion area identified under Alternative 1. Note that the current campus is made up of both hospital and medical office uses, which typically have different trip generation rates (with a hospital having a lower trip generation rate than a medical office). The existing allocation of hospital and medical office is approximately 65 percent and 35 percent, respectively. The allocation of hospital and medical office uses for the future development are estimated to be approximately 80 percent and 20 percent, respectively, shifting to have a higher amount of hospital with the future development. With the assumed use of the overall campus size (not allocating per use), the trip generation rates would continue to reflect the current split of hospital and medical office. This provides a conservative estimate of the Action Alternatives trip generation given the anticipated increase in allocation of hospital space which has a lower individual trip generation rate relative to medical office.

The Alternative 1 vehicular trip generation estimates for the weekday AM and PM peak hours for both the future 2030 and 2040 development is summarized in Table 17.

Table 17. Alternative 1 Weekday Vehicle Trip Generation

| Land Use | Size | Weekday Daily | AM Peak-Hour Trips | | | PM Peak-Hour Trips | | |
|------------------------------------|----------------------|---------------|--------------------|------------|--------------|--------------------|------------|--------------|
| | | | In | Out | Total | In | Out | Total |
| Existing | 549,697 gsf | 7,300 | 407 | 199 | 606 | 113 | 403 | 516 |
| No Action Total | 764,543 gsf | 9,050 | 502 | 253 | 755 | 112 | 501 | 613 |
| Alternative 1 MIMP Addition | | | | | | | | |
| 2030 - Interim Buildout | +800,000 gsf | 7,600 | 425 | 208 | 633 | 118 | 421 | 539 |
| Alternative 1 Subtotal | 1,564,543 gsf | 7,950 | 445 | 217 | 662 | 123 | 440 | 563 |
| 2040 - Full buildout of the MIMP | +835,457 gsf | 16,650 | 927 | 461 | 1,388 | 230 | 922 | 1,152 |
| Alternative 1 Total | 1,600,000 gsf | 17,000 | 947 | 470 | 1,417 | 235 | 941 | 1,176 |

1. Vehicle trip rates calculated based on the observed peak hour trips relative to the "right sized" size (764,697gsf).

As shown in the table, the campus with the 2030 interim buildout is forecast to generate 1,388 trips occurring during the weekday AM peak hour and 1,152 trips during the weekday PM peak hour. This represents an increase of 633 trips during the weekday AM peak hour and 539 trips during the weekday PM peak hour relative to the No Action condition.

With the full buildout of the MIMP by 2040, a campus total of up to 1,600,000 gsf, the campus is forecast to generate 1,417 trips occurring during the weekday AM peak hour and 1,176 trips during the weekday PM peak hour. This represents an increase of 662 trips during the weekday AM peak hour and 563 trips during the weekday PM peak hour relative to the No Action condition.

The total person trip generation for the campus assuming the Full buildout of the MIMP was estimated for the peak hours based on the same methodology as assumed for the affected environment and No Action with no changes assumed to the mode splits or AVO (see Table 18).

Table 18. Total Alternative 1 Person Trip Generation

| Trip Generation | Mode Split | No Action | | | 2040 - Full buildout of the MIMP | | | Total Alternative 1 (1,600,000 gsf) | | |
|--|-------------|-----------|-----|-------|----------------------------------|------------|------------|-------------------------------------|------------|--------------|
| | | In | Out | Total | In | Out | Total | In | Out | Total |
| Weekday AM Peak Hour | | | | | | | | | | |
| Vehicle Trips¹ | | 502 | 253 | 755 | 445 | 217 | 662 | 947 | 470 | 1,417 |
| Person Trips | | | | | | | | | | |
| Walk or Bike Trips | 2.5% | 16 | 8 | 24 | 14 | 7 | 21 | 30 | 15 | 45 |
| Transit Trips | 7% | 43 | 22 | 66 | 39 | 19 | 58 | 82 | 41 | 124 |
| Other | 1.5% | 10 | 4 | 13 | 8 | 4 | 12 | 18 | 8 | 25 |
| Person Trips by Vehicle¹ | 89% | 556 | 280 | 836 | 493 | 240 | 734 | 1,049 | 520 | 1,570 |
| Total | 100% | 625 | 314 | 939 | 554 | 270 | 824 | 1,179 | 584 | 1,763 |
| Weekday PM Peak Hour | | | | | | | | | | |
| Vehicle Trips¹ | | 112 | 501 | 613 | 123 | 440 | 563 | 235 | 941 | 1,176 |
| Person Trips | | | | | | | | | | |
| Walk or Bike Trips | 2.5% | 4 | 16 | 19 | 4 | 14 | 18 | 8 | 30 | 37 |
| Transit Trips | 7% | 10 | 43 | 53 | 11 | 38 | 49 | 21 | 81 | 102 |
| Other | 1.5% | 1 | 9 | 12 | 2 | 8 | 11 | 3 | 17 | 23 |
| Person Trips by Vehicle¹ | 89% | 124 | 555 | 678 | 136 | 488 | 624 | 260 | 1,043 | 1,302 |
| Total | 100% | 139 | 623 | 762 | 153 | 548 | 701 | 292 | 1,171 | 1,463 |

1. The 89 percent person trips by vehicle includes approximately 75 percent SOV and 14 percent associated with carpool and vanpool trips, resulting in a AVO of 1.1. The AVO of 1.1 was multiplied by the vehicles trips to determine the number of person trips by vehicle. The person trip distribution per the CTR was then applied to determine the total person trips.

As shown in Table 18, with Alternative 1, there are estimated to be a total of 124 and 102 transit trips in the AM and PM peak hours, respectively and 45 and 37 non-motorized trips (walk, bike, other) in the AM and PM peak hours, respectively.

Street System

No changes are proposed to the off-site street network as a result of Action Alternative 1 relative to the No Action condition. The two existing access points along N 115th Street will be maintained with Alternative 1. A third access is proposed to serve the campus which would be provided via either N 115th Street or N 120th Street. Additional review of the access points is provided in the Site Access Review section below.

Non-Motorized Transportation

No frontage improvements are expected to be completed with the proposed MIMP as frontage improvements have all been completed. As noted in the No Action section, improvements to N 120th Street, Burke Avenue N, and N 115th Street are being completed as part of the BHTF project.

Non-motorized trips associated with the Alternative 1 2040 Full buildout of the MIMP are anticipated to be limited with approximately 20 non-motorized trips estimated for the AM and PM peak hours. This equates to a total Alternative 1 non-motorized trips associated with the campus to be 45 and 37 trips during the weekday AM and PM peak hours, respectively, under the future (2040) condition.

Transit

No changes are proposed to transit service as a result of Action Alternative 1, such that transit capacities are consistent with the No Action condition as described above. The total future (2040) Alternative 1 transit trips were estimated by adding the forecast Alternative 1 additional transit trips to the future (2040) No Action transit trips. The peak hour transit trips associated with Alternative 1 2040 Full Buildout of the MIMP condition as summarized in Table 18, are anticipated to be 58 and 49 during the weekday AM and PM peak hours, respectively. As noted above, the peak hour transit trips were converted to the 4-hour transit period by multiplying the trips by 4, which conservatively assumes that peak hour transit trips for the campus occur continuously throughout the 4-hour transit period.

Based on the transit forecasts, the resulting Alternative 1 vehicle capacity analysis is summarized in Table 19 for the 2040 future condition during the AM and PM peak periods relative to the No Action utilization. The detailed transit capacity analysis is included in Appendix F.

Table 19. Alternative 1 Transit Capacity Analysis

| Route # / Nearest Stop Location | Direction of Travel | AM Peak Period Utilization ¹ | | | PM Peak Period Utilization | | |
|--|---------------------|---|---------------|--------|----------------------------|---------------|--------|
| | | No Action | Alternative 1 | Change | No Action | Alternative 1 | Change |
| 345 On Campus, north of eastern access point | S | 23% | 46% | 23% | 24% | 38% | 14% |
| | N | 25% | 44% | 19% | 31% | 43% | 12% |
| 346 At the Meridian Ave N/ N 115th St Intersection | S | 26% | 29% | 3% | 30% | 32% | 2% |
| | N | 29% | 30% | 1% | 36% | 39% | 3% |
| 40 At the SR 99/N 115th St Intersection | S | 9% | 10% | 1% | 18% | 19% | 1% |
| | N | 16% | 17% | 1% | 15% | 15% | 0% |
| E Line At the SR 99/N 115th St Intersection | N | 30% | 31% | 1% | 31% | 31% | 0% |
| | S | 26% | 27% | 1% | 32% | 33% | 1% |

1. Capacity for each route/stop assumed for the utilization calculation unchanged for Alternative 1 relative to No Action conditions for future (2040) conditions.

As shown in the table, the transit vehicle utilization for the 4 routes serving the campus is approximately 46 percent or lower under the Alternative 1 condition, with estimated increases in utilization of 23 percent or less relative to No Action conditions. There would continue to be available capacity to accommodate additional riders during the weekday peak periods with Alternative 1 2040 – Full Buildout of the MIMP.

SOV Sensitivity

A sensitivity analysis of reduced SOV mode splits of 65 percent and 50 percent is provided below for purposes of estimating potential higher transit trips and associated impacts. Note that the estimate of vehicular trips is the highest when assuming the existing 2019 CTR SOV rate of 75 percent as evaluated above. Since this results in a conservative estimate of traffic vehicular operations, no additional vehicular operations analysis was completed with the reduced SOV percentages.

The change in SOV percentage was applied to the overall person trip generation of the campus. The Transportation Management Plan (TMP) which identifies the TMP goals for the campus apply only to staff of the institution and not to patients and visitors. However, as noted above it was assumed that the campus population follows the same general trend as the CTR survey. The following table summarizes the Alternative 1 person trip generation reflecting the SOV sensitivity analysis of both 65 percent and 50 percent compared to the 2019 CTR SOV rate of 75 percent.

| Trip Generation | 75% SOV ² | | | 65% SOV ³ | | | 50% SOV ⁴ | | | | | |
|--------------------------------|----------------------|-----|----------------------------------|----------------------|-------------|----------------------------------|----------------------|-------|----------------------------------|--------------------------|-----|-------|
| | Mode Split | NA | 2040 – Full buildout of the MIMP | Mode Split | NA | 2040 – Full buildout of the MIMP | Mode Split | NA | 2040 – Full buildout of the MIMP | Total Alt 1 ¹ | | |
| Weekday AM Peak Hour | | | | | | | | | | | | |
| Vehicle Trips | | 755 | 662 | 1,417 | | 689 | 593 | 1,282 | | 593 | 494 | 1,087 |
| Person Trips | | | | | | | | | | | | |
| Walk or Bike Trips | 2.5% | 24 | 21 | 45 | 3% | 29 | 25 | 53 | 4.5% | 42 | 37 | 79 |
| Transit Trips | 7% | 66 | 58 | 124 | 10% | 94 | 82 | 176 | 15% | 141 | 124 | 264 |
| Other | 1.5% | 13 | 12 | 25 | 3% | 29 | 25 | 53 | 3.5% | 32 | 29 | 61 |
| Person Trips by Vehicle | 89% | 836 | 734 | 1,570 | 84% | 788 | 691 | 1,480 | 77% | 723 | 635 | 1,358 |
| Total | 100% | 939 | 824 | 1,763 | 100% | 939 | 824 | 1,763 | 100% | 939 | 824 | 1,763 |
| Weekday PM Peak Hour | | | | | | | | | | | | |
| Vehicle Trips | | 613 | 563 | 1,176 | | 558 | 506 | 1,064 | | 476 | 421 | 897 |
| Person Trips | | | | | | | | | | | | |
| Walk or Bike Trips | 2.5% | 19 | 18 | 37 | 3% | 23 | 21 | 44 | 4.5% | 34 | 32 | 66 |
| Transit Trips | 7% | 53 | 49 | 102 | 10% | 76 | 70 | 146 | 15% | 114 | 105 | 219 |
| Other | 1.5% | 12 | 11 | 23 | 3% | 23 | 21 | 44 | 3.5% | 26 | 25 | 51 |
| Person Trips by Vehicle | 89% | 678 | 624 | 1,302 | 84% | 641 | 590 | 1,231 | 77% | 587 | 541 | 1,128 |
| Total | 100% | 762 | 701 | 1,463 | 100% | 762 | 701 | 1,463 | 100% | 762 | 701 | 1,463 |

Note: SOV = single occupancy vehicle

1. Total Alternative (Alt) 1 = 1,600,000 gsf
2. The 89 percent person trips by vehicle includes approximately 75 percent SOV and 14 percent associated with carpool and vanpool trips, resulting in a AVO of 1.1. The AVO of 1.1 was multiplied by the vehicles trips to determine the number of person trips by vehicle. The person trip distribution per the CTR was then applied to determine the total person trips.
3. The 84 percent person trips by vehicle includes approximately 65 percent SOV and 19 percent associated with carpool and vanpool trips, resulting in a AVO of 1.17. The AVO of 1.17 was multiplied by the vehicles trips to determine the number of person trips by vehicle. The person trip distribution per the CTR was then applied to determine the total person trips.
4. The 77 percent person trips by vehicle includes approximately 50 percent SOV and 27 percent associated with carpool and vanpool trips, resulting in a AVO of 1.28. The AVO of 1.28 was multiplied by the vehicles trips to determine the number of person trips by vehicle. The person trip distribution per the CTR was then applied to determine the total person trips.

With the reduced SOV rates from 75 percent to 65 percent or 50 percent, Table 20 shows the transit trips are estimated to increase from 124 to 176 and 264 trips, respectively, in the AM peak hour and increase from 102 to 146 and 219 trips in the PM peak hour. The transit utilization with the higher transit usage for the lower SOV rates is reflected in the table below.

Table 21. Alternative 1 Transit Capacity Analysis – Sensitivity

| Route # / Nearest Stop Location | Direction of Travel | Alternative 1 AM Peak Period Utilization ¹ | | | Alternative 1 PM Peak Period Utilization | | |
|--|---------------------|--|---------|---------|---|---------|---------|
| | | 75% SOV | 65% SOV | 50% SOV | 75% SOV | 65% SOV | 50% SOV |
| 345 On Campus, north of eastern access point | S | 46% | 60% | 80% | 38% | 44% | 55% |
| | N | 44% | 55% | 73% | 43% | 50% | 61% |
| 346 At the Meridian Ave N/ N 115th St Intersection | S | 29% | 29% | 31% | 32% | 34% | 35% |
| | N | 32% | 32% | 35% | 39% | 41% | 42% |
| 40 At the SR 99/N 115th St Intersection | S | 10% | 11% | 11% | 19% | 19% | 20% |
| | N | 17% | 18% | 19% | 15% | 16% | 16% |
| E Line At the SR 99/N 115th St Intersection | N | 31% | 32% | 32% | 31% | 31% | 32% |
| | S | 27% | 27% | 28% | 33% | 33% | 33% |

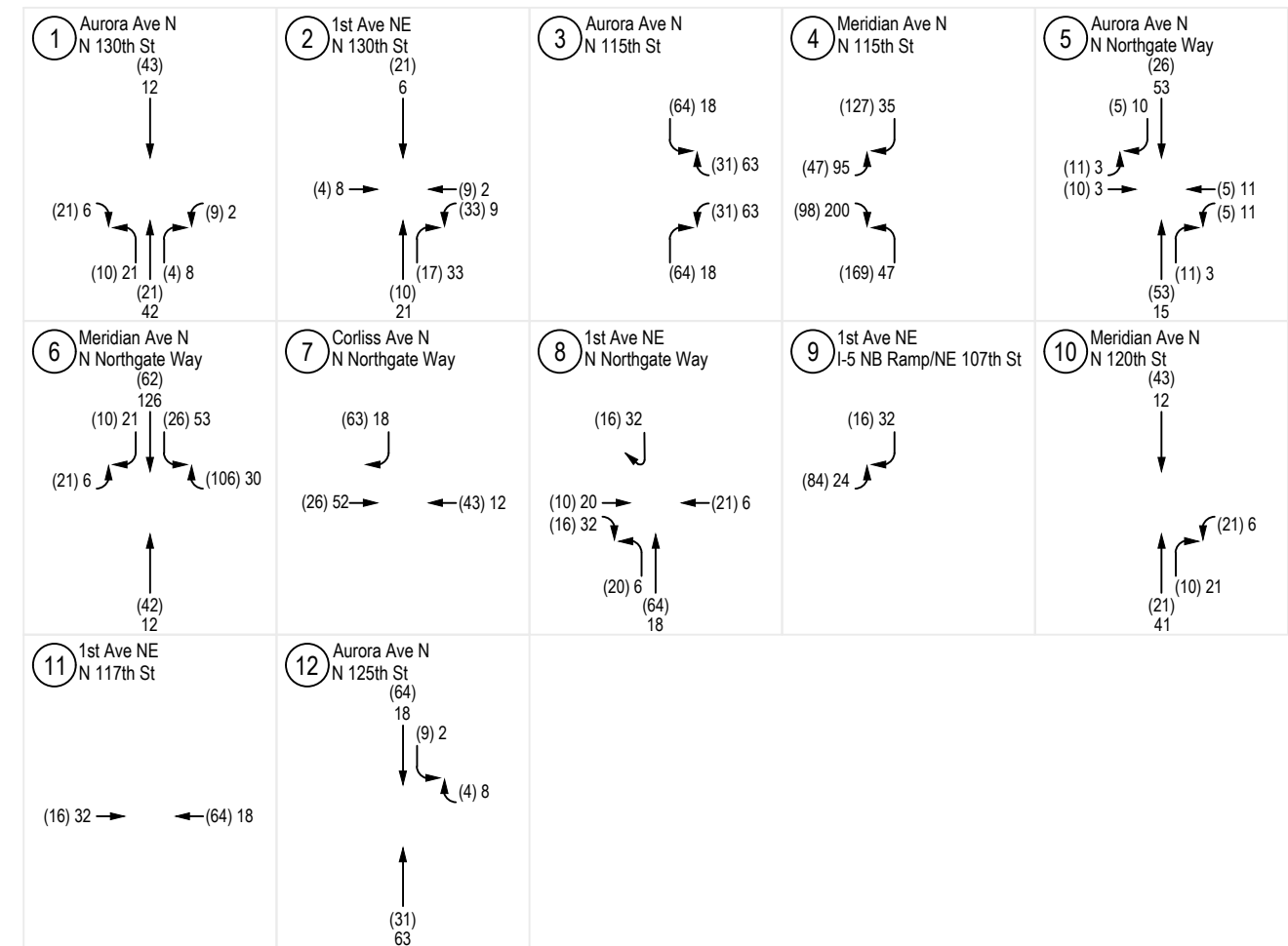
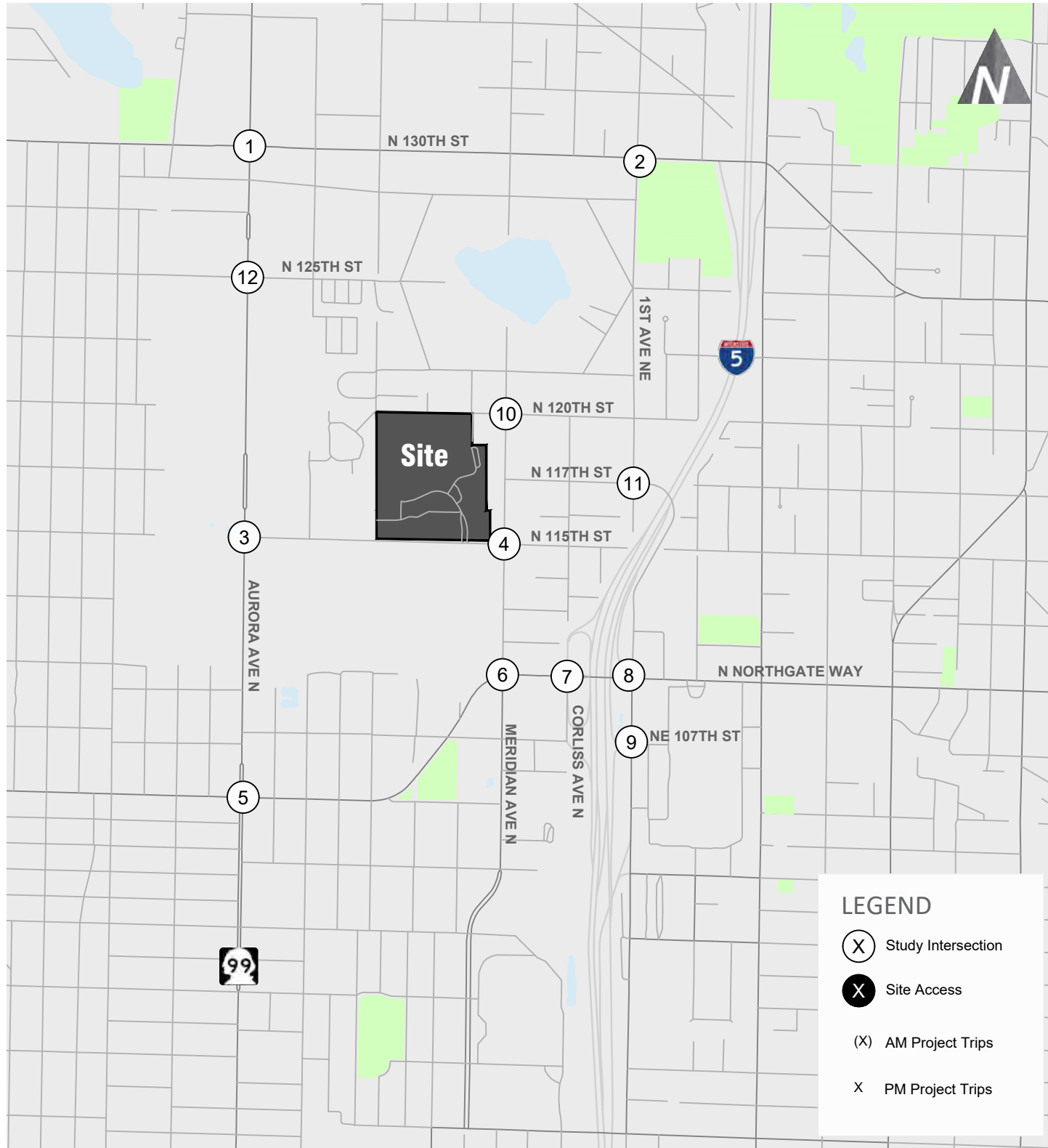
Note: SOV = single occupancy vehicle

1. Capacity for each route/stop assumed for the utilization calculation unchanged for Alternative 1 relative to No Action conditions for future (2040) conditions.

As shown in Table 21, the transit vehicle utilization for the 4 routes serving the campus would continue to have available capacity to accommodate additional riders during the weekday peak periods with Alternative 1 2040 – Full Buildout of the MIMP with reduced SOV of 65 and 50 percent.

Traffic Volumes

The Alternative 1 net new 2030 and 2040 vehicular trip generation (see Table 17) was assigned to the transportation network based on the vehicle trip distribution (see Figure 9). The Alternative 1 peak hour trip assignment is shown in Figure 12 and Figure 13 for the 2030 and 2040 conditions, respectively. The resulting Alternative 1 peak hour traffic volumes are shown on Figure 14 and Figure 15 for the 2030 and 2040 conditions, respectively.

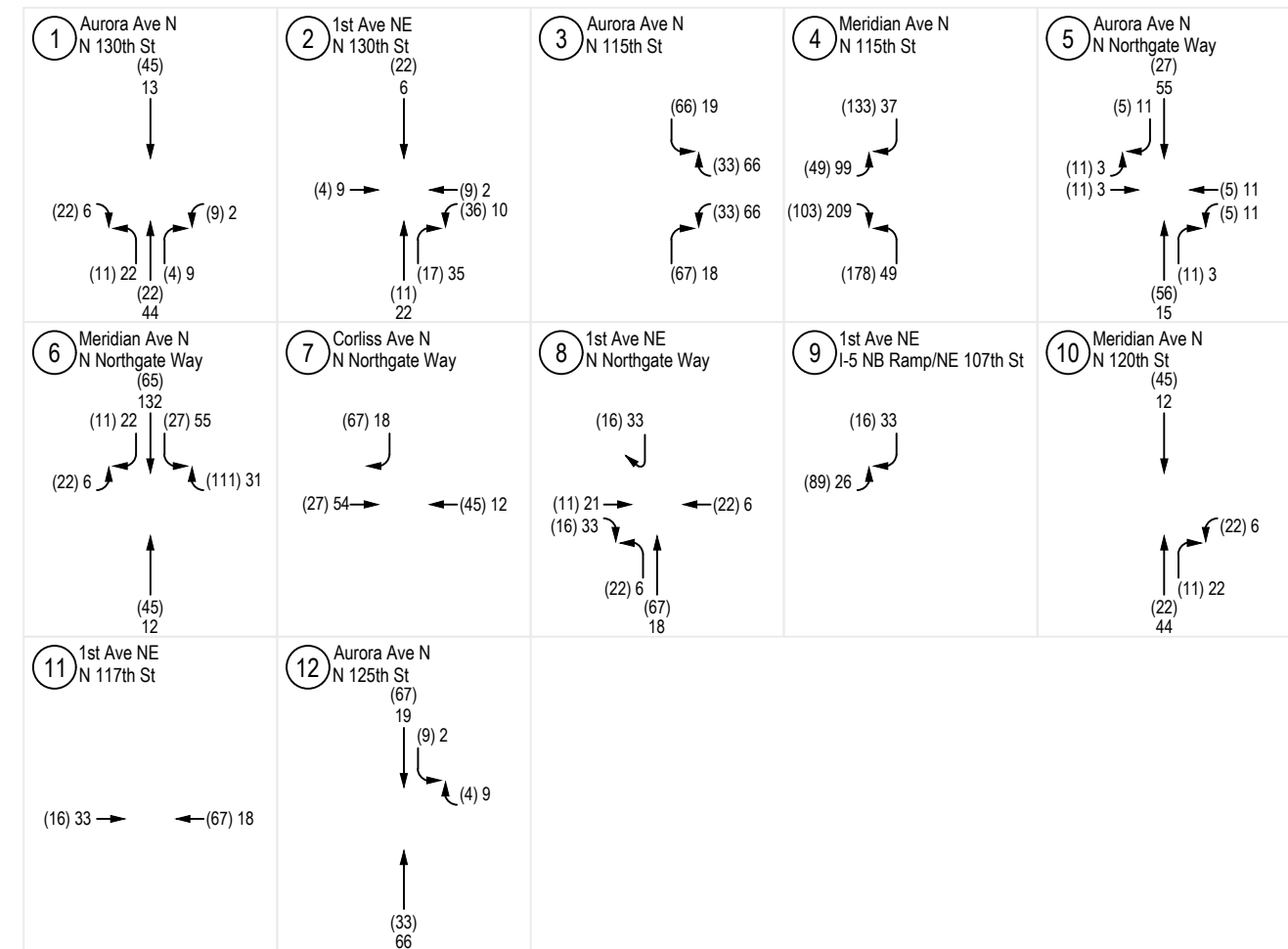
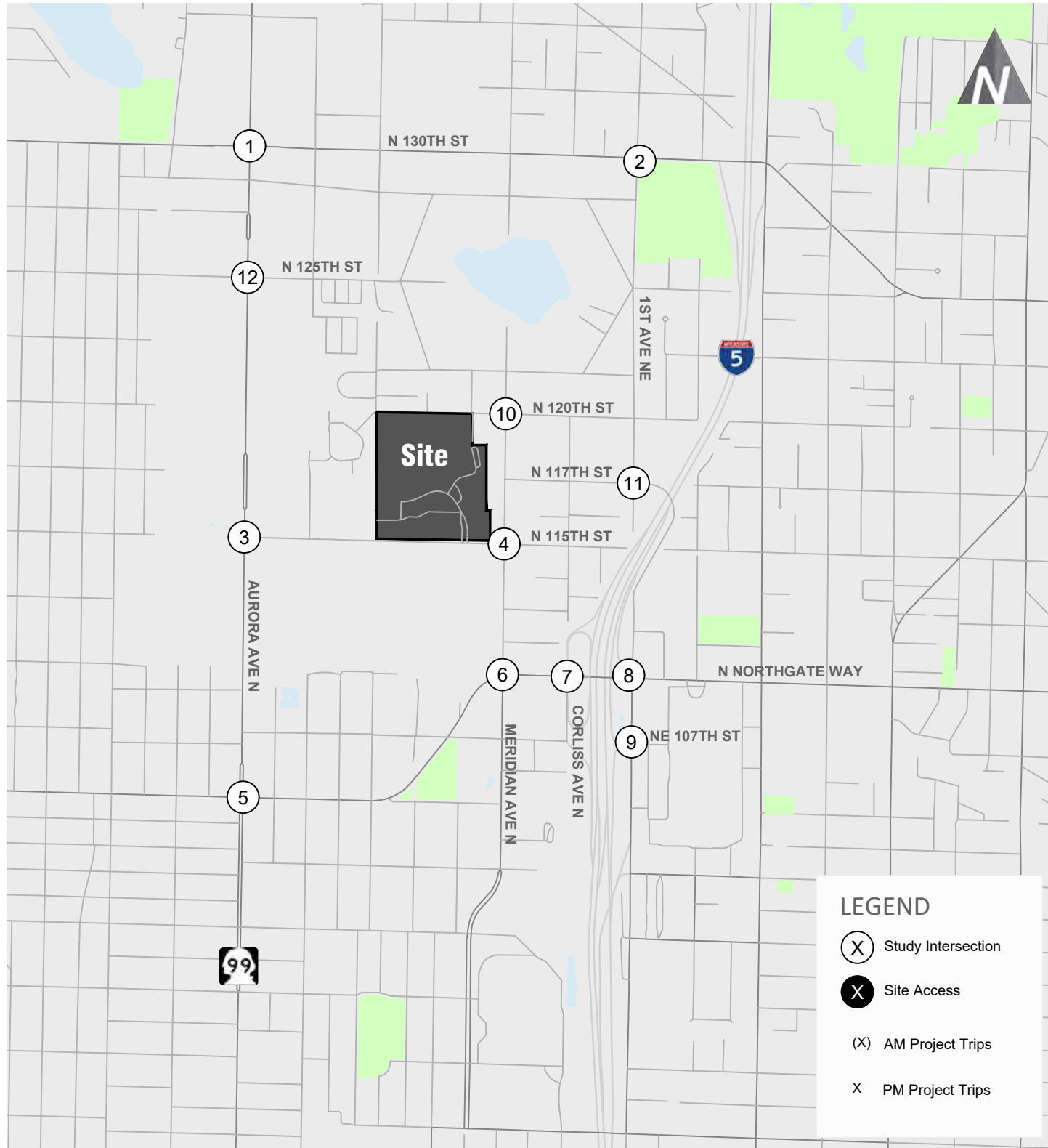


Alternative 1 2030 - Interim Buildout Peak Hour Trip Assignment

UWMC NW TDR

FIGURE 12



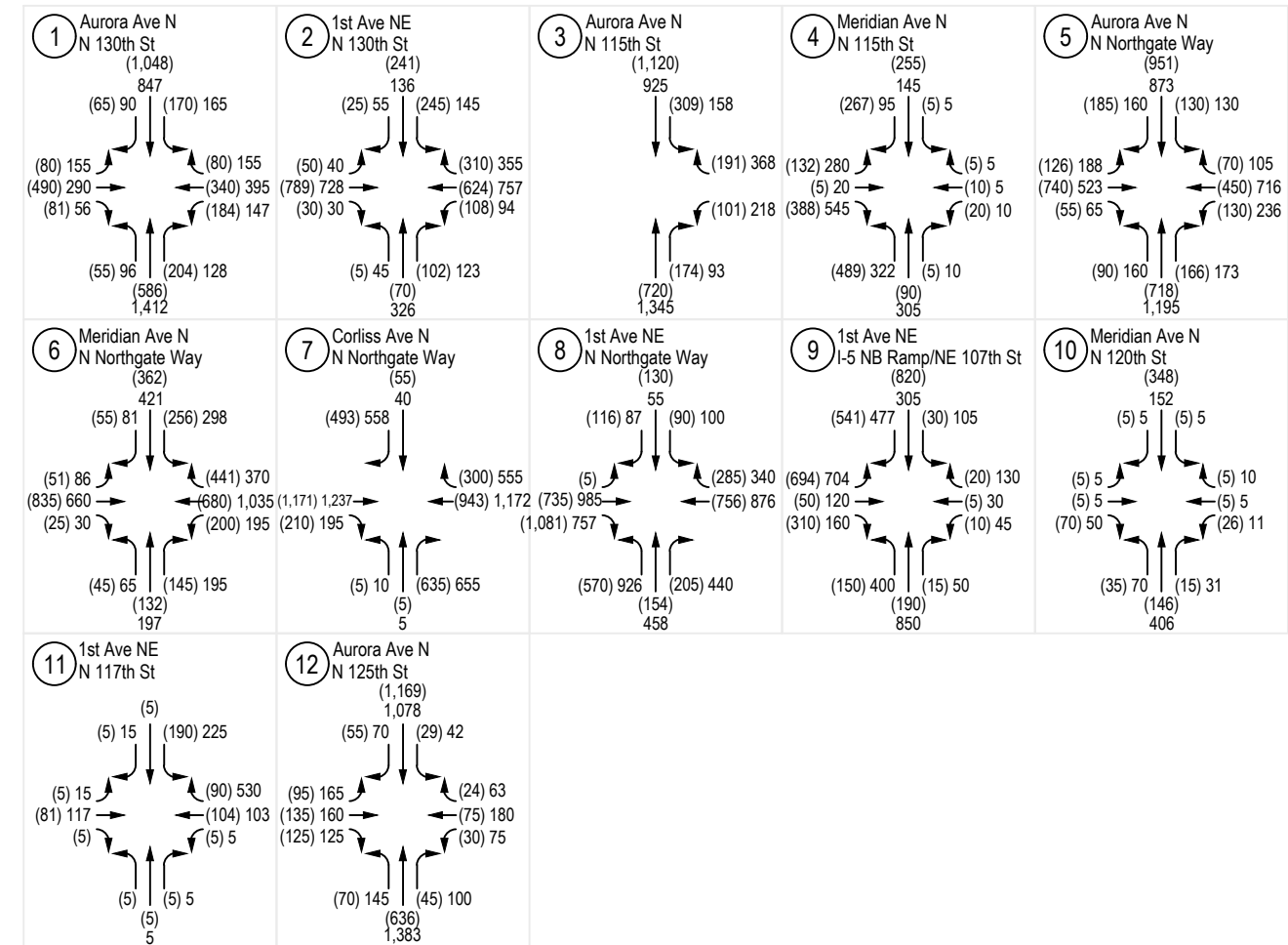
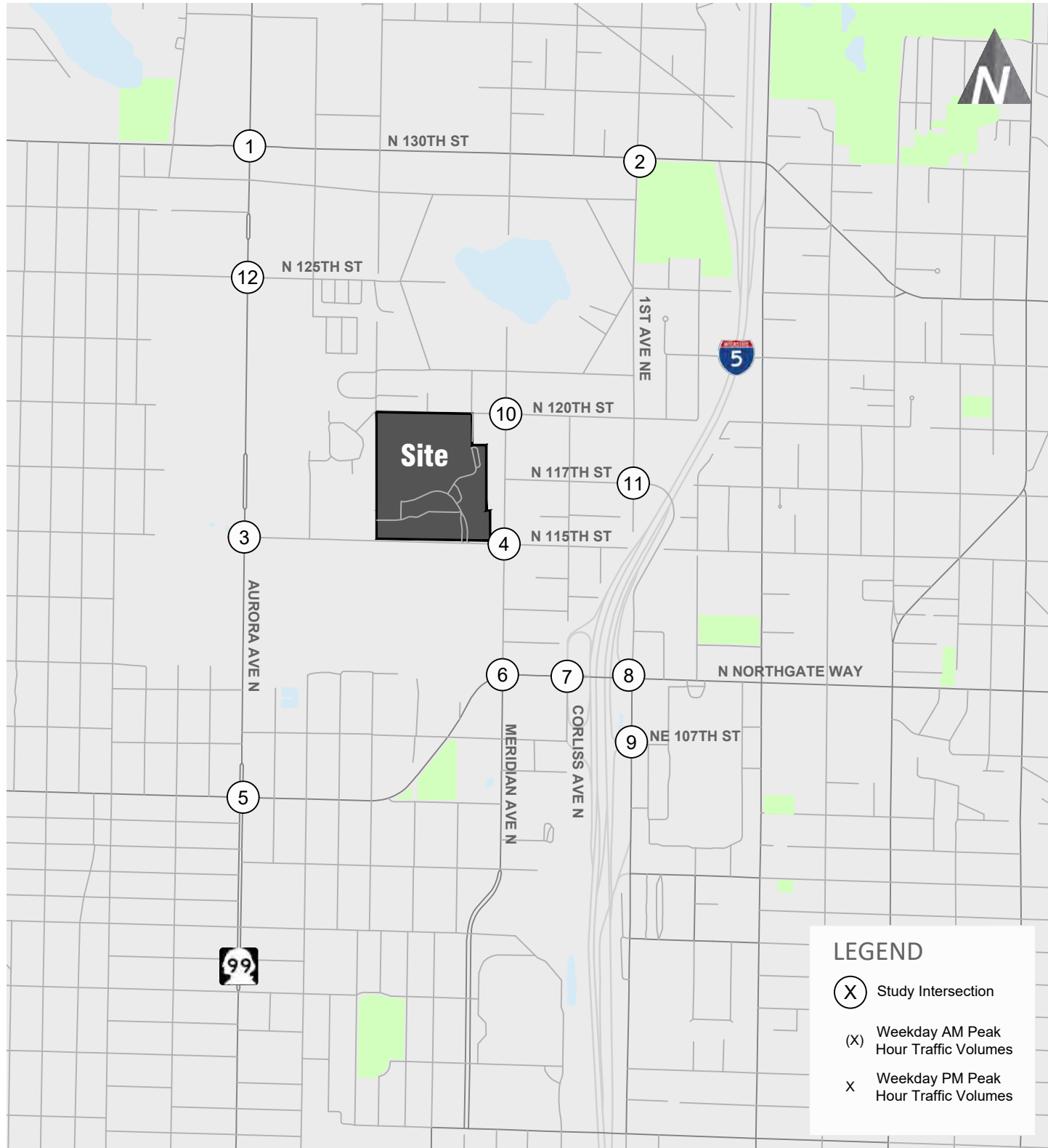


Alternative 1 2040 - Full Buildout of the MIMP Peak Hour Trip Assignment

UWMC NW TDR

FIGURE
13



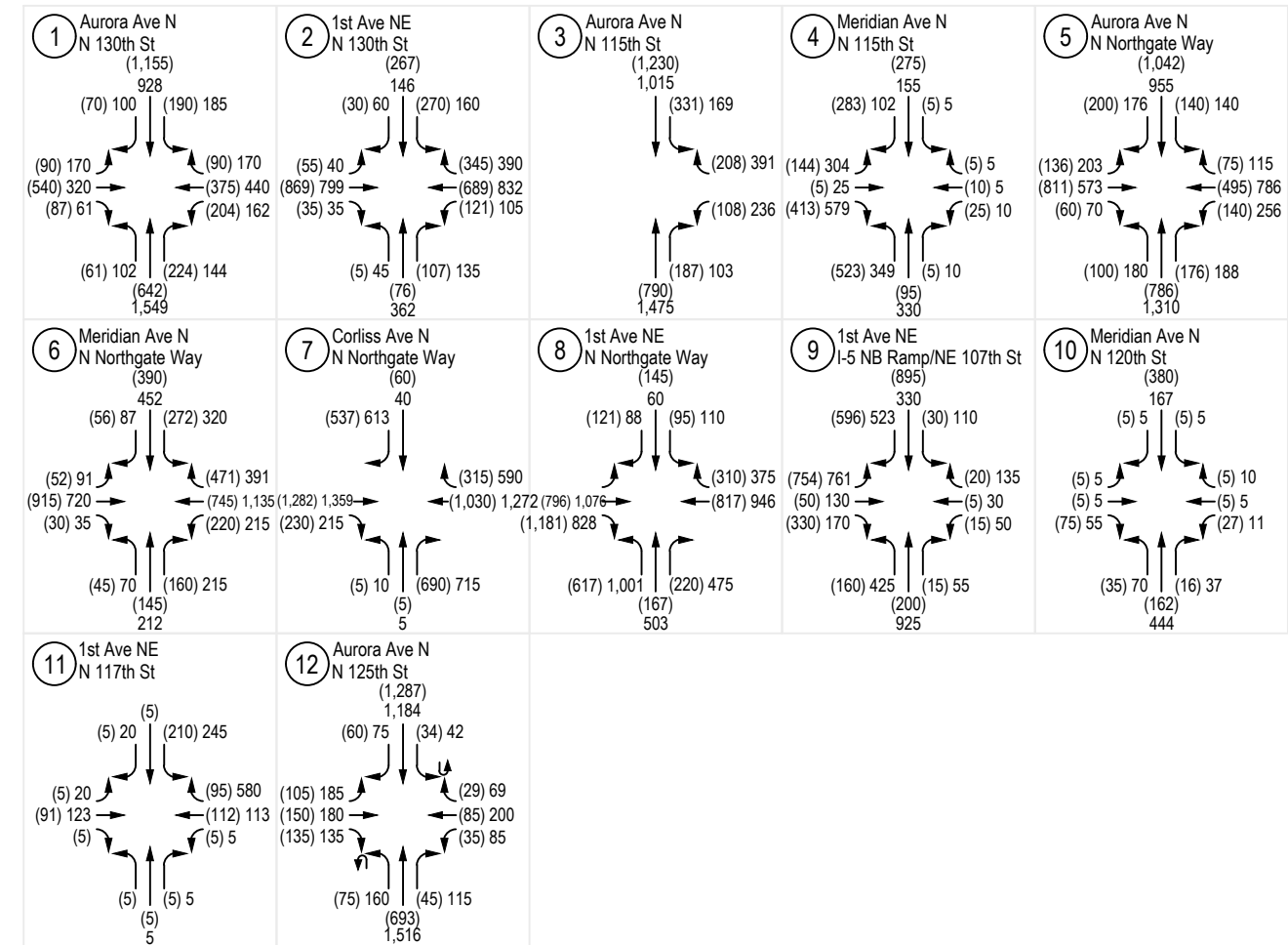
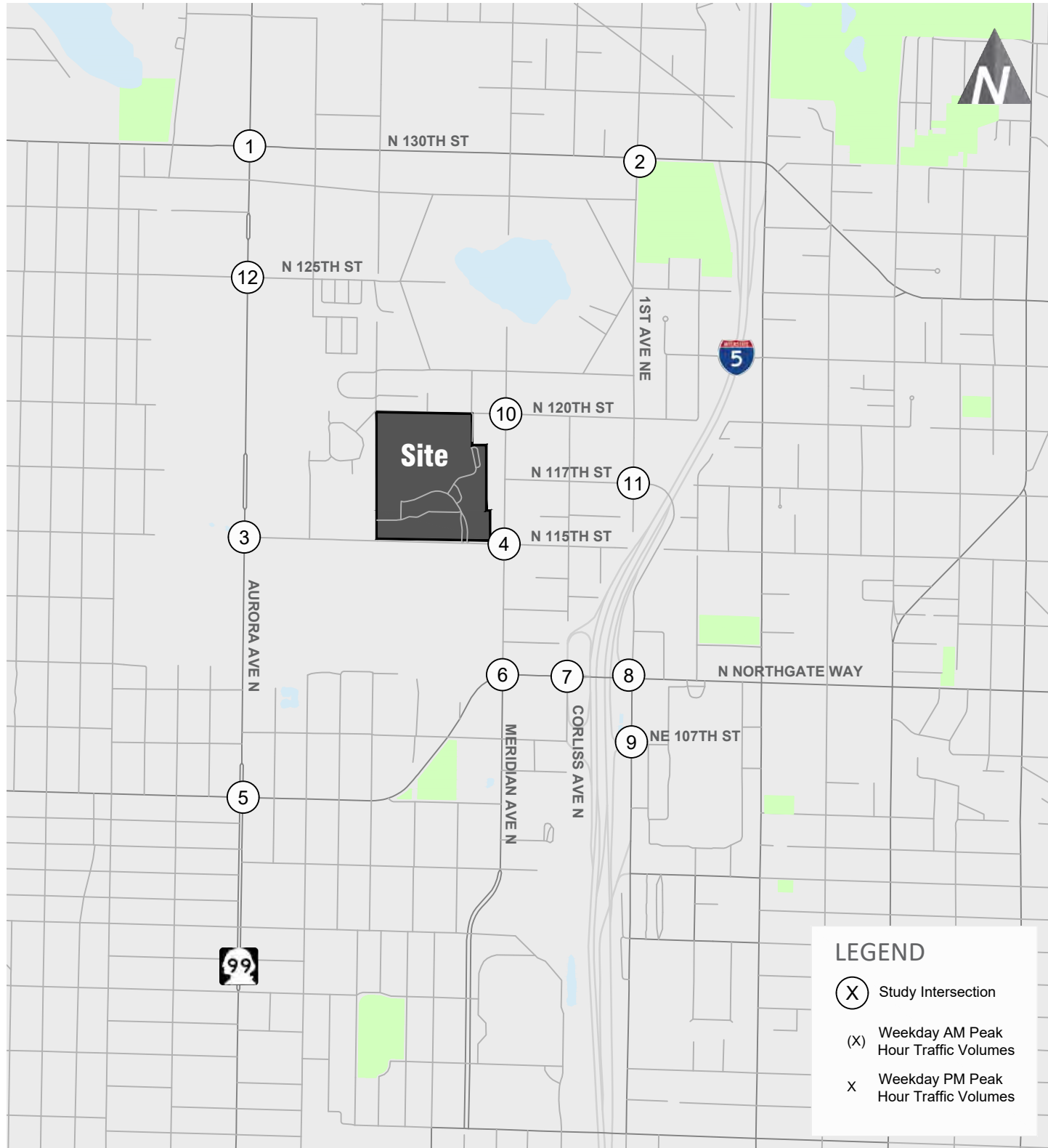


Alternative 1 2030 - Interim Buildout Weekday Peak Hour Traffic Volumes

UWMC NW TDR

FIGURE
14





Alternative 1 2040 - Full Buildout of the MIMP Weekday Peak Hour Traffic Volumes

UWMC NW TDR

Traffic Operations

The Alternative 1 LOS analysis utilized the same methodology as the Existing and No Action conditions. All intersection parameters such as channelization, intersection control, and signal timing for the Alternative 1 are consistent with those used in the evaluation of future No Action conditions. A comparison of the No Action and Alternative 1 weekday peak hour operations at the off-site study intersections are summarized in Table 22 and Table 23 for the 2030 and 2040 conditions, respectively. Note that the site access points are reviewed separately given the proposed access additions with Alternative 1.

Table 22. Alternative 1 (2030) Weekday Peak Hour Off-Site Study Intersections LOS Summary

| Intersection | Traffic Control | No Action – 2030 | | | Alternative 1 – 2030 Interim Buildout | | |
|--|-----------------|------------------|--------------------|-----------------|---------------------------------------|------------|----|
| | | LOS ¹ | Delay ² | WM ³ | LOS | Delay | WM |
| AM Peak Hour | | | | | | | |
| 1. Aurora Ave N/N 130th St | Signal | D | 47 | - | D | 50 | - |
| 2. 1st Ave NE/N 130th St | Signal | D | 37 | - | D | 43 | - |
| 3. Aurora Ave N/N 115th St | Signal | B | 12 | - | B | 16 | - |
| 4. Meridian Ave N/N 115th St ⁴ | AWSC | D | 26 | - | F | 112 | - |
| 5. Aurora Ave N/N Northgate Way | Signal | D | 51 | - | D | 52 | - |
| 6. Meridian Ave N/N Northgate Way | Signal | D | 43 | - | D | 50 | - |
| 7. Corliss Ave N/N Northgate Way | Signal | B | 10 | - | B | 12 | - |
| 8. 1st Ave NE/N Northgate Way | Signal | C | 29 | - | D | 42 | - |
| 9. 1st Ave NE/I-5 NB Ramp/NE 107th St | Signal | E | 58 | - | E | 63 | - |
| 10. Meridian Ave N/N 120th St ⁴ | TWSC | B | 14 | WB | C | 18 | WB |
| 11. 1st Ave NE/N 117th St | TWSC | A | 9 | - | A | 10 | - |
| 12. Aurora Ave N/N 125th St | Signal | C | 29 | - | C | 29 | - |
| PM Peak Hour | | | | | | | |
| 1. Aurora Ave N/N 130th St | Signal | D | 44 | - | D | 45 | - |
| 2. 1st Ave NE/N 130th St | Signal | D | 46 | - | D | 53 | - |
| 3. Aurora Ave N/N 115th St | Signal | B | 18 | - | D | 36 | - |
| 4. Meridian Ave N/N 115th St ⁴ | AWSC | E | 39 | - | F | 150 | - |
| 5. Aurora Ave N/N Northgate Way | Signal | E | 56 | - | E | 57 | - |
| 6. Meridian Ave N/N Northgate Way | Signal | C | 33 | - | D | 46 | - |
| 7. Corliss Ave N/N Northgate Way | Signal | B | 13 | - | B | 13 | - |
| 8. 1st Ave NE/N Northgate Way | Signal | F | 97 | - | F | 99 | - |
| 9. 1st Ave NE/I-5 NB Ramp/NE 107th St | Signal | E | 57 | - | E | 61 | - |
| 10. Meridian Ave N/N 120th St ⁴ | TWSC | B | 15 | WB | C | 18 | WB |
| 11. 1st Ave NE/N 117th St | TWSC | C | 18 | - | C | 22 | - |
| 12. Aurora Ave N/N 125th St | Signal | D | 40 | - | D | 40 | - |

Note: TWSC = Two-Way Stop Controlled. AWSC = All Way Stop Controlled **Bold** text indicates operating at LOS E or F if signalized or LOS F for stop controlled.

1. Level of Service (A – F) as defined by the *Highway Capacity Manual* (HCM) 6th Edition (TRB, 2016) as available.
2. Average delay per vehicle in seconds.
3. Worst movement reported for TWSC intersections. WB = westbound.
4. The operations assume all access to/from the campus via N 115th Street, consistent with access as it exists today. See additional discussion in the Site Access section below.

As described previously, the City of Seattle’s Comprehensive Plan does not define a LOS standard for individual intersections; however, the City generally recognizes LOS E and F as poor operations for signalized locations and LOS F for unsignalized locations. In addition, the project impacts may be considered significant if the intersection delay at a signalized intersection increases by 5 or more seconds.

As shown in Table 22, with the 2030 Alternative 1 interim buildout, the off-site study intersections are forecast to continue to operate at LOS D or better during the AM and PM peak hours with exception of 4 intersections which are discussed below.

Meridian Ave N/N 115th St – This all-way stop controlled intersection is forecast to degrade from operating at LOS D and E during the AM and PM peak hour No Action 2030 conditions, to operate at LOS F during the AM and PM peak hour Alternative 1 2030 interim buildout condition. This increase in delay at the all-way stop controlled intersection is identified as a significant impact which will require mitigation. Additional review of proposed mitigation and timing of improvements is provided in the Mitigation section.

Aurora Avenue N/N Northgate Way – This signalized intersection is forecast to operate at LOS D during the AM peak hour and LOS E in the PM peak hour under both future (2030) No Action and Alternative 1 2030 interim buildout conditions. The increase in delay is 1 second with Alternative 1 relative to No Action conditions during the PM peak hour when the intersection is forecast to operate at LOS E; therefore, Alternative 1 2030 Interim Buildout does not have a significant adverse impact at the intersection.

1st Avenue NE/N Northgate Way – This signalized intersection is forecast to operate at LOS D or better during the AM peak hour and LOS F in the PM peak hour under both future (2030) No Action and Alternative 1 2030 interim buildout conditions. The increase in delay is 1 second with Alternative 1 relative to No Action conditions during the PM peak hour when the intersection is forecast to operate at LOS F; therefore, Alternative 1 2030 Interim Buildout does not have a significant adverse impact at the intersection.

1st Avenue NE/I-5 NB Ramp/NE 107th Street – This signalized intersection is forecast to operate at LOS E during the AM and PM peak hours under both future (2030) No Action and Alternative 1 2030 interim buildout conditions. The increase in delay is approximately 4 seconds or less with Alternative 1 relative to No Action conditions during both peak hours; therefore, Alternative 1 2030 Interim Buildout does not have a significant adverse impact at the intersection.

Table 23. Alternative 1 (2040) Weekday Peak Hour Off-Site Study Intersections LOS Summary

| Intersection | Traffic Control | No Action – 2040 | | | Alternative 1 – 2040 Buildout | | |
|--|-----------------|------------------|--------------------|-----------------|-------------------------------|------------|----|
| | | LOS ¹ | Delay ² | WM ³ | LOS | Delay | WM |
| AM Peak Hour | | | | | | | |
| 1. Aurora Ave N/N 130th St | Signal | D | 47 | - | D | 49 | - |
| 2. 1st Ave NE/N 130th St | Signal | D | 40 | - | D | 48 | - |
| 3. Aurora Ave N/N 115th St | Signal | B | 13 | - | B | 18 | - |
| 4. Meridian Ave N/N 115th St ⁴ | AWSC | C | 24 | - | F | 107 | - |
| 5. Aurora Ave N/N Northgate Way | Signal | D | 44 | - | D | 44 | - |
| 6. Meridian Ave N/N Northgate Way | Signal | D | 42 | - | D | 48 | - |
| 7. Corliss Ave N/N Northgate Way | Signal | B | 13 | - | B | 16 | - |
| 8. 1st Ave NE/N Northgate Way | Signal | C | 30 | - | D | 44 | - |
| 9. 1st Ave NE/I-5 NB Ramp/NE 107th St | Signal | E | 67 | - | E | 70 | - |
| 10. Meridian Ave N/N 120th St ⁴ | TWSC | B | 13 | WB | C | 17 | WB |
| 11. 1st Ave NE/N 117th St | TWSC | A | 10 | - | B | 10 | - |
| 12. Aurora Ave N/N 125th St | Signal | C | 31 | - | C | 32 | - |
| PM Peak Hour | | | | | | | |
| 1. Aurora Ave N/N 130th St | Signal | D | 49 | - | D | 49 | - |
| 2. 1st Ave NE/N 130th St | Signal | D | 53 | - | E | 60 | - |
| 3. Aurora Ave N/N 115th St | Signal | B | 18 | - | C | 33 | - |
| 4. Meridian Ave N/N 115th St ⁴ | AWSC | E | 37 | - | F | 145 | - |
| 5. Aurora Ave N/N Northgate Way | Signal | E | 60 | - | E | 62 | - |
| 6. Meridian Ave N/N Northgate Way | Signal | D | 42 | - | D | 55 | - |
| 7. Corliss Ave N/N Northgate Way | Signal | B | 14 | - | B | 16 | - |
| 8. 1st Ave NE/N Northgate Way | Signal | F | 103 | - | F | 107 | - |
| 9. 1st Ave NE/I-5 NB Ramp/NE 107th St | Signal | E | 62 | - | E | 67 | - |
| 10. Meridian Ave N/N 120th St ⁴ | TWSC | B | 14 | WB | C | 17 | WB |
| 11. 1st Ave NE/N 117th St | TWSC | D | 28 | - | D | 32 | - |
| 12. Aurora Ave N/N 125th St | Signal | D | 47 | - | D | 43 | - |

Note: TWSC = Two-Way Stop Controlled. AWSC = All Way Stop Controlled **Bold** text indicates operating at LOS E or F if signalized or LOS F for stop controlled.

1. Level of Service (A – F) as defined by the *Highway Capacity Manual* (HCM) 6th Edition (TRB, 2016) as available.
2. Average delay per vehicle in seconds.
3. Worst movement reported for TWSC intersections. WB = westbound.
4. The operations assume all access to/from the campus via N 115th Street, consistent with access as it exists today. See additional discussion in Site Access section below.

Similar to the Alternative 1 2030 Interim Buildout, the off-site study intersections with Alternative 1 2040 Full Buildout of the MIMP are generally forecast to continue to operate at LOS D or better during the AM and PM peak hours with the exception of 5 intersections which are discussed below.

Meridian Ave N/N 115th St – This all-way stop controlled intersection is forecast to degrade from operating at LOS C and E during the AM and PM peak hour No Action 2040 conditions, to operate at LOS F during the AM and PM peak hour Alternative 1 2040 – full buildout of the MIMP condition. This increase in delay at the all-way stop controlled intersection is identified as a significant impact which will require mitigation. Additional review of proposed mitigation and timing of improvements is provided in the Mitigation section.

Aurora Avenue N/N Northgate Way – This signalized intersection is forecast to operate at LOS D during the AM peak hour and LOS E in the PM peak hour under both future (2040) No Action and Alternative 1 2040 full buildout of the MIMP conditions. The increase in delay is 1 second with Alternative 1 relative to No Action conditions during the PM peak hour when the intersection is forecast to operate at LOS E; therefore, Alternative 1 2040 – full buildout of the MIMP condition does not have a significant adverse impact at the intersection.

1st Avenue NE/N Northgate Way – This signalized intersection is forecast to operate at LOS D or better during the AM peak hour and LOS F in the PM peak hour under both future (2040) No Action and Alternative 1 2040 full buildout of the MIMP conditions. The increase in delay is approximately 4 seconds with Alternative 1 relative to No Action conditions during the PM peak hour when the intersection is forecast to operate at LOS F; therefore, Alternative 1 2040 – full buildout of the MIMP condition does not have a significant adverse impact at the intersection.

1st Avenue NE/I-5 NB Ramp/NE 107th Street – This signalized intersection is forecast to operate at LOS E during the AM and PM peak hours under both future (2040) No Action and Alternative 1 2040 full buildout of the MIMP conditions. The increase in delay is approximately 4 seconds or less with Alternative 1 relative to No Action conditions during both peak hours; therefore, Alternative 1 2040 – full buildout of the MIMP condition does not have a significant adverse impact at the intersection.

1st Avenue NE/N 130th Street – There is a proposed channelization revision along the N 130th Street corridor as part of the Vision Zero safety corridor project which prioritizes the implementation of non-motorized facilities including installing bicycle lanes along both sides of the road. This is accomplished by reducing N 130th Street from 4 vehicular lanes to a three-lane road (two through-lanes with a center two-way left turn lane) west of 1st Avenue NE. The reduced vehicular section results in the LOS degrading at the intersection, specifically the LOS at the intersection is forecast to degrade from operating at LOS D under future (2040) No Action weekday PM peak hour conditions to LOS E with Alternative 1. The increase in delay is approximately 7 seconds, exceeding the typical threshold of 5 seconds. Given the planned improvement at this location to reduce the vehicular capacity, prioritizing non-motorized, an improvement to increase vehicle capacity at this location is not recommended.

Also, note that minor reductions in delay comparing 2040 to 2030 conditions at some off-site study intersections is associated with the change in the PHF to 1.0 as described above, which reflects operations with an even distribution of vehicle demand throughout the hour consistent with travel patterns as congestion increases.

Site Access Review

As noted above, access for Alternative 1 would maintain the 2 existing access points along N 115th Street as well as include a third access point located via either N 115th Street or N 120th Street. The following describes assumptions related to these two options in more detail.

- **Access Option 1** (3rd Access via N 115th Street) – The N 115th Street access would be located between the 2 existing access points and is assumed to be signalized which was warranted.⁸ Therefore, the shift in trips is limited to the access points along 115th, so no change at off-site study intersections.
- **Access Options 2** (3rd access via N 120th Street) – By providing a 3rd access on the north side of the site, there would be localized shift at the adjacent off-site study intersections; however, the general off-site distribution patterns as reflected in Figure 9 would be consistent. As shown in the distribution figure, the majority of trips are to/from the south. Additionally, the roadways north of the site are circuitous if destined for areas northeast or northwest of the campus. Navigating around Haller Lake is less convenient than connecting to the area street system to the south. Given these factors, the anticipated use of the northern access via N 120th Street is limited, estimated to be up to 15 percent of the total campus trips.

The location of the on-site parking supply has not been fully defined within the MIMP as it is dependent on where development on the campus actually occurs. For that reason, each option is evaluated with two possible parking scenarios; (a) equally distributed or (b) concentrated on the west side of the campus.

⁸ A signal warrant analysis was completed for the site access (see Appendix G) and was shown to be warranted. See Mitigation section below for additional details on methodology.

The LOS and 95th percentile queues of the worst movement of the stop-controlled access points were evaluated at the site access points focusing on the Alternative 1 2040 – Full Buildout of the MIMP conditions (see Table 24). The AM and PM peak hour traffic volumes at the site access points for the Alternative 1 2040 conditions are provided in Figure 16. Note that additional review of the 2030 conditions was conducted and the results included in Appendix H. The results of the 2030 analysis do not change the conclusions as presented for the full buildout analysis below or change the identified mitigation needs at the Meridian Avenue N/N 115th Street intersection (see Mitigation section below).

Table 24. Alternative 1 2040 Weekday Peak Hour Site Access LOS Access Summary

| Intersection | Traffic Control | AM Peak Hour | | | | | | PM Peak Hour | | | | | |
|--|-----------------|-----------------------|--------------------|--------------------|-----------------------|------------|-----------|-----------------------|-----------|----------|-----------------------|------------|-----------|
| | | Option 1 - N 115th St | | | Option 2 - N 120th St | | | Option 1 - N 115th St | | | Option 2 - N 120th St | | |
| | | LOS ¹ | Delay ² | Queue ³ | LOS | Delay | Queue | LOS | Delay | Queue | LOS | Delay | Queue |
| Parking Scenario – Evenly Distributed | | | | | | | | | | | | | |
| A. West Access/N 115th St | TWSC | C | 22 | 1 | D | 32 | 2 | C | 24 | 2 | D | 34 | 4 |
| B. East Access/N 115th St | TWSC | F | 56 | 3 | F | 170 | 10 | F | 70 | 5 | F | 212 | 18 |
| C. Central Access/N 115th St | Signal | A | 7 | - | - | - | - | A | 9 | - | - | - | - |
| D. North Access/N 120th St | TWSC | - | - | - | A | 9 | <1 | - | - | - | A | 9 | <1 |
| Parking Scenario – West Concentrated | | | | | | | | | | | | | |
| A. West Access/N 115th St | TWSC | D | 27 | 2 | F | 54 | 5 | D | 33 | 3 | F | 88 | 10 |
| B. East Access/N 115th St | TWSC | F | 54 | 3 | F | 120 | 6 | F | 69 | 5 | F | 132 | 11 |
| C. Central Access/N 115th St | Signal | A | 9 | - | - | - | - | A | 8 | - | - | - | - |
| D. North Access/N 120th St | TWSC | - | - | - | A | 9 | <1 | - | - | - | A | 9 | <1 |

Note: TWSC = Two-Way Stop Controlled. **Bold** text indicates operating at LOS E or F if signalized or LOS F for TWSC.

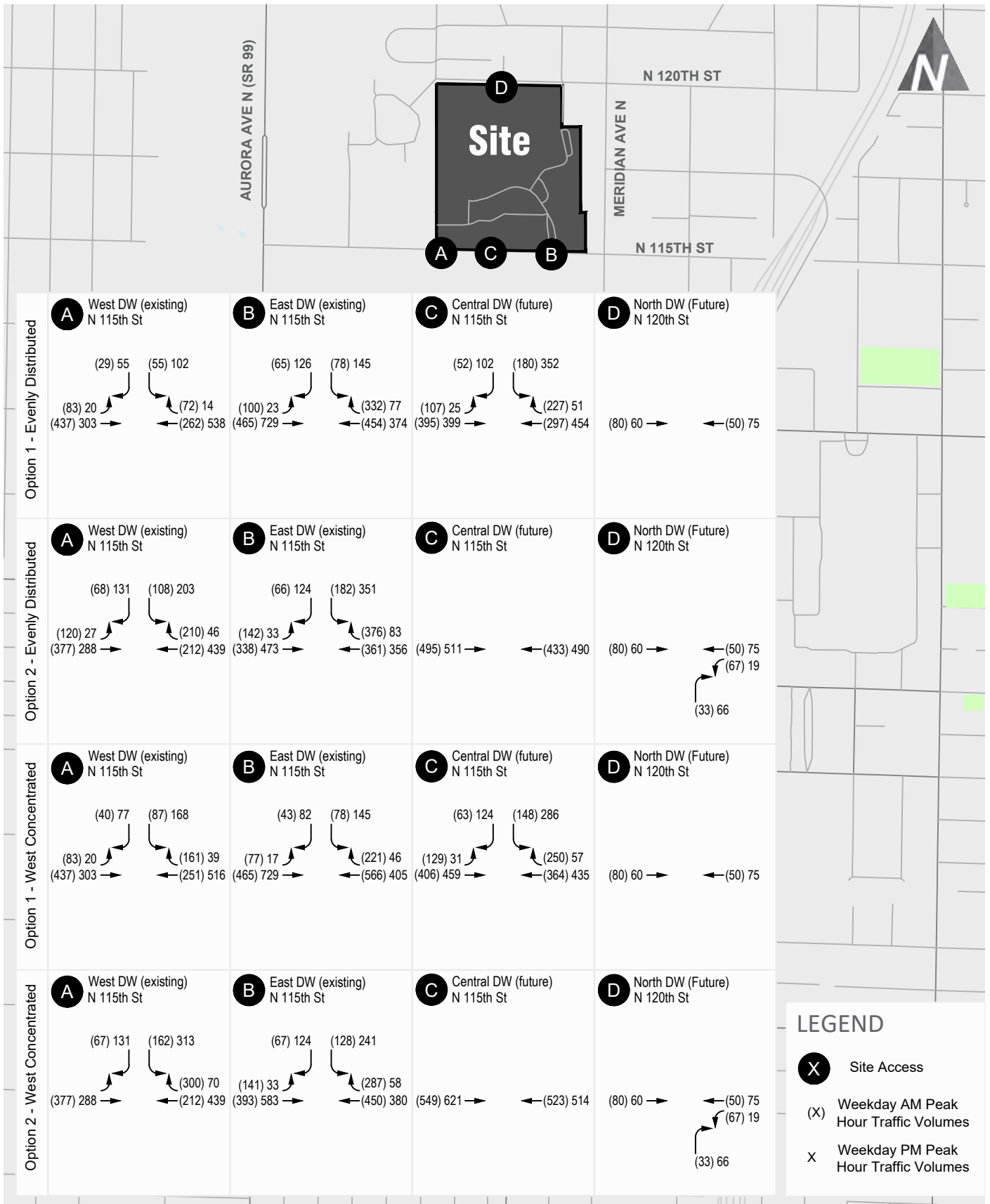
1. Level of Service (A – F) as defined by the *Highway Capacity Manual* (HCM) 6th Edition (TRB, 2016).

2. Average delay per vehicle in seconds reported for the worst movement at the stop-controlled site access points.

3. 95th percentile queue reported for the worst movement at the stop-controlled site access points.

As shown in Table 24, the 3rd access proposed under either access option (as either a traffic signal via N 115th Street or two-way stop controlled via N 120th Street) is forecast to operate at LOS A with limited queueing. The two remaining access points are forecast to operate with less overall delay and queueing with Option 1 (via N 115th Street) compared to Option 2 (via N 120th Street) as the traffic signal is able to accommodate additional demand and is generally located where more users are naturally inclined to utilize (consistent with distribution patterns).

Consideration was given to not providing an additional access for the site; however, this results in challenges exiting the site with access limited to the 2 existing access points via N 115th Street. Without additional access, the existing 2 access points would function more poorly than shown in Table 24 for Option 2 (via N 120th Street) which is estimated to have limited use (only 15 percent of campus trips).



Alternative 1 2040 Full Buildout of MIMP Access Review Traffic Volumes FIGURE

Traffic Safety

As traffic volumes increase, traffic safety issues could increase proportionally. As shown in the trip generation table above (see Table 17), the total vehicle trips are forecast to increase with Action Alternative 1 relative to the No Action condition with the change in use and additional development. Based on the existing safety review, there was one HCL as well as 2 locations that averaged 10 or more collisions over the 3-year study period. There is a planned improvement along the Aurora Avenue N corridor within the vicinity of HCL location that includes safety improvements. The remaining 2 locations include the Meridian Avenue N and Corliss Avenue N intersections along Northgate Way which had predominantly rear end and entering at an angle collisions, respectively. Based on the assignment of vehicle trips and review of the existing collision history, no significant impacts from a safety perspective are anticipated at any of the study area intersections.

Loading

Campus deliveries are expected to continue to be managed at a campus-wide level. This will likely include one or two primary dock locations. The future needs of the campus have been identified based on the existing demand rates and a targeted utilization of less than 40 percent. As noted above the current utilization is 35 percent and the campus has not indicated any operational issues. There are very few times through the day, based on observations that all three existing berths are utilized. While several berths were added with the BHTF project, the location of these may change as a result of the MIMP development plans.

With Alternative 1, the incremental increase in project size, relative to the No Action condition, is 835,457 sf. The master plan has identified a minimum of 9 active loading spaces; 1 additional active loading berth is planned as part of the MIMP. A summary of the forecast demand and utilization is included below in Table 25. The Existing and No Action conditions are included for comparative purposes.

Table 25. UW Medical Center – Northwest Loading Berth Utilization Study (MIMP)

| Scenario | Size | Demand (minutes) ¹ | Number of Loading Berths | Utilization |
|-------------|------------|-------------------------------|--------------------------|-------------|
| Existing | 549,697 sf | 621 | 3 | 35% |
| No Action | 764,543 sf | 866 | 8 | 18% |
| MIMP Alt #1 | 1,600,000 | 1796 | 9 | 33% |

1. Demand expressed in minutes as identified above.

Based on the 1,600,000 sf total campus size, there is estimated to be approximately 1,796 min delivery-minutes or 85 deliveries per day using the projected rates from Table 3. Assuming the loading berths operate for 10 hours per day similar to the existing data, the total loading berths operation capacity under this scenario is 5400 minutes (9 berths * 600 minutes per berth). Based on the 1796 delivery-minutes, the percent utilization of the loading berths is 33 percent, under this scenario. This number shows that the 9 loading berths operating at 10 hours per day are more than enough to accommodate the deliveries made to the site and will utilize only 33 percent of their future capacity. The forecast utilization of 33 percent is less than the existing conditions. Expansion of the core delivery hours, or increasing the acceptable utilization could reduce the numbers of bays needed. The acceptable hours, in consideration of patient care, are dependent on the location of the dock relative to patient facilities. If the assumed delivery hours per day were increased, the number of loading berths could be reduced while still maintaining the same 33 percent utilization forecasted under the MIMP.

Construction Traffic

Alternative 1 would generate construction traffic (e.g. employees and trucks) associated with demolition, excavation, infrastructure and building construction, and landscaping. As noted above, the existing on-site loop road would be reconfigured and improved to serve as the main access route through the site. The construction activity throughout the duration of the project will vary, with the greatest daily trips occurring

initially during the import/export phase. Following the import/export phase, activity shifts to construction of structures which typically have lower daily activity levels with workers arriving prior to the weekday AM peak period and departing prior to the PM peak period. Construction haul routes and activities would be coordinated with City staff through a Construction Management Plan (CMP). Internal circulation routes for pedestrians and bicyclists as well as external connections to the City facilities will be provided during any construction activity. No major staging or closure of the City ROW is anticipated in the current development plans. Therefore, no significant construction traffic impacts are expected.

Impacts of Action Alternative 2

The development size of Alternative 2 is consistent with Alternative 1, such that the associated estimated trip generation and resulting impacts for Alternative 2 are consistent those identified for Alternative 1.

Mitigation

This chapter presents mitigation measures that would offset or reduce potential impacts of the Action Alternatives.

Intersection Improvements

The **Meridian Avenue N/N 115th Street** all-way stop controlled intersection is forecast to degrade from operating at LOS D and E during the AM and PM peak hour No Action 2030 and 2040 conditions, to operate at LOS F during the AM and PM peak hour Alternative 1 2030 and 2040 conditions. This increase in delay at the all-way stop controlled intersection is identified as a significant impact which will require mitigation. Note that the operations for the Alternative 2 condition are consistent with Alternative 1.

A signal warrant analysis was completed at the Meridian Avenue N/N 115th Street intersection based on the *HCS7 Software*. The four-hour and eight-hour signal warrants were evaluated. Warrants were run for the 2030 horizon year.⁹ Hourly traffic volumes were developed using the weekday PM peak hour traffic volumes and applying the hourly distribution from the National Cooperative Highway Research Program (NCHRP) Report 365 *Travel Estimation Techniques for Urban Planning*. A traffic signal should not be installed unless one or more of the signal warrants are met. The satisfaction of a traffic signal warrant or warrants does not itself require the installation of traffic control signal; however, locations that would meet a warrant or warrants and would benefit with operational and safety improvements are candidates for installation of a traffic signal. The signal warrant is included in Appendix G. The signal warrant is shown to be met and is proposed as mitigation at the intersection.

The LOS with the proposed traffic signal installation at the Meridian Avenue N/N 115th Street intersection is summarized in Table 26 below.

Table 26. Meridian Ave N/N 115th St Weekday Peak Hour Mitigation LOS Summary

| Analysis Year | Meridian Ave N/N 115th St No Action | | Meridian Ave N/N 115th St Alternative 1 WITHOUT Mitigation | | Meridian Ave N/N 115th St Alternative 1 WITH Mitigation (Traffic Signal) | |
|---------------|--|--------------------|--|------------|--|-----------|
| | LOS ¹ | Delay ² | LOS | Delay | LOS | Delay |
| 2030 | | | | | | |
| AM Peak Hour | D | 26 | F | 112 | E | 76 |
| PM Peak Hour | E | 39 | F | 150 | D | 50 |
| 2040 | | | | | | |
| AM Peak Hour | C | 24 | F | 107 | E | 71 |
| PM Peak Hour | E | 37 | F | 145 | D | 55 |

Note: TWSC = Two-Way Stop Controlled. **Bold** text indicates operating at LOS E or F if signalized or LOS F for TWSC.

1. Level of Service (A – F) as defined by the *Highway Capacity Manual* (HCM) 6th Edition (TRB, 2016).

2. Average delay per vehicle in seconds.

As shown in the table, the Meridian Avenue N/N 115th Street is forecast to operate at LOS D and LOS E in the PM and AM peak hours, respectively under future Alternative 1 conditions (both 2030 and 2040) with the installation of the traffic signal at the intersection. Comparing the operations under future Alternative 1 conditions with and without the traffic signal, delay is forecast to be reduced by 36 to 100 seconds. Note that feasibility of the addition of turn lanes as well was reviewed; however, in order to maintain the maneuverability of transit and surrounding the non motorized facilities, no turn lanes were able to be accommodated within the available right-of-way.

The timing of the amount of development that would require the installation of the identified traffic signal was reviewed. The allowable development prior to the Meridian Avenue N/N 115th Street intersection

⁹ The warrant was evaluated for the near-term horizon year as if warranted, it would also be warranted at the later horizon year as volumes are forecast to continue to grow.

degrading to operate at LOS F is identified below by year (reviewed for a 10-year period). Note the annual background growth rate of 1.0 percent was applied per the identified year and all pipeline development and No Action development as assumed in the No Action condition analysis above was included in the forecasts. These years reflect years of occupancy of the development and represent the maximum amount of development allowable by that year prior requiring the mitigation. The allowable development is shown to reduce over time prior to triggering the mitigation due to continued growth in background traffic conditions also adding vehicles and delay to the intersection.

- 2026 – up to 180,000 gsf
- 2027 – up to 170,000 gsf
- 2028 – up to 155,000 gsf
- 2029 – up to 140,000 gsf
- 2030 – up to 125,000 gsf
- 2031 – up to 110,000 gsf
- 2032 – up to 95,000 gsf
- 2033 – up to 80,000 gsf
- 2034 – up to 60,000 gsf
- 2035 – up to 45,000 gsf

Construction Management Plan (CMP)

As part of any future development to occur under this MIMP, the contractor would develop a Construction Management Plan (CMP) through coordination with City staff. Elements anticipated to be included in the CMP are identified below:

- Construction hours
- Noise generating activities
- Noise sensitive receivers
- Construction noise management
- Construction milestones
- Construction parking
- Right-of-Way use – (e.g. street closures, sidewalk closures, transit stop closures/relocations, etc.)
- Haul Routes

Secondary and Cumulative Impacts

Secondary and cumulative impacts on area transportation system are included in the analysis of direct impacts. In addition, there is a potential for cumulative impacts due to the combined effects of traffic being generated by the proposed development and construction activities on the UWMC – Northwest Campus and in the surrounding vicinity. This potential impact could be mitigated by scheduling construction activities such that arrival and departure of construction traffic occurs outside the peak hours.

Significant and Unavoidable Adverse Impacts

As identified above, the LOS at the **1st Avenue NE/N 130th Street** intersection is forecast to degrade from operating at LOS D under future (2040) No Action weekday PM peak hour conditions to LOS E with Alternative 1, with an increase in delay of approximately 7 seconds. This exceeds the typical threshold of 5 seconds for identifying significant impacts. The reduced operations are associated with the proposed channelization revision along the N 130th Street corridor as part of the Vision Zero safety corridor project which prioritizes the implementation of non-motorized facilities including installing bicycle lanes along both sides of the road. This is accomplished by reducing N 130th Street from 4 vehicular lanes to a three-lane road (two through-lanes with a center two-way left turn lane) west of 1st Avenue NE. Given the planned improvement at this location to reduce the vehicular capacity, prioritizing non-motorized, an improvement to increase vehicular capacity at this location is not proposed.

No additional significant and unavoidable adverse impacts have been identified through this analysis.

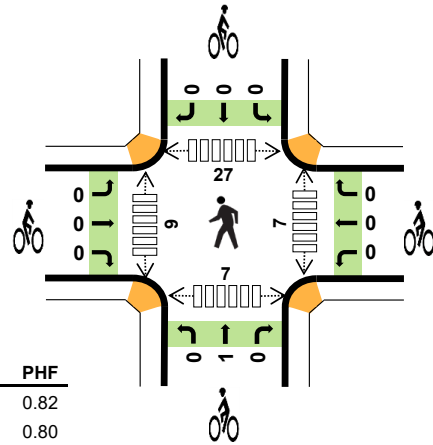
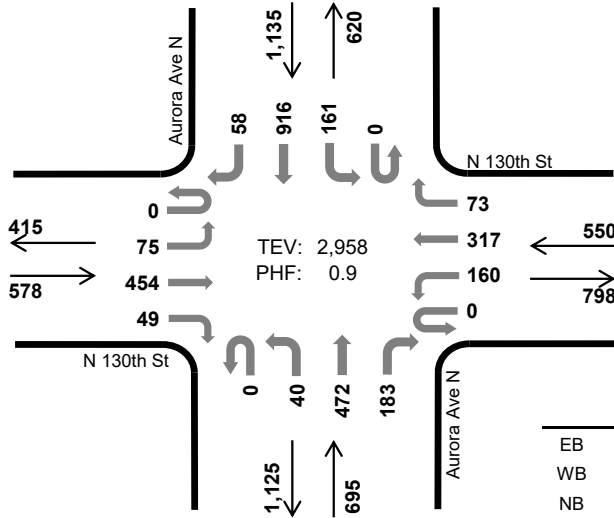
Appendix A Traffic Volumes

Aurora Ave N N 130th St



Peak Hour

Date: 01/24/2023
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 8:00 AM to 9:00 AM



| | HV %: | PHF |
|-------|-------|------|
| EB | 3.6% | 0.82 |
| WB | 4.9% | 0.80 |
| NB | 7.2% | 0.82 |
| SB | 5.9% | 0.90 |
| TOTAL | 5.6% | 0.90 |

Two-Hour Count Summaries

| Interval Start | N 130th St Eastbound | | | | N 130th St Westbound | | | | Aurora Ave N Northbound | | | | Aurora Ave N Southbound | | | | 15-min Total | Rolling One Hour | |
|----------------|----------------------|-----|-----|-----|----------------------|-----|-----|-----|-------------------------|----|-----|-----|-------------------------|-----|-------|-----|--------------|------------------|---|
| | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | | | |
| 7:00 AM | 0 | 8 | 54 | 23 | 0 | 9 | 34 | 18 | 0 | 7 | 49 | 5 | 0 | 30 | 188 | 9 | 434 | 0 | |
| 7:15 AM | 0 | 10 | 64 | 10 | 0 | 11 | 38 | 17 | 0 | 7 | 82 | 23 | 0 | 28 | 234 | 10 | 534 | 0 | |
| 7:30 AM | 0 | 22 | 78 | 12 | 0 | 21 | 56 | 20 | 0 | 8 | 103 | 18 | 0 | 55 | 206 | 11 | 610 | 0 | |
| 7:45 AM | 0 | 17 | 91 | 18 | 0 | 37 | 50 | 20 | 0 | 9 | 117 | 49 | 0 | 26 | 248 | 24 | 706 | 2,284 | |
| 8:00 AM | 0 | 17 | 116 | 7 | 0 | 31 | 76 | 17 | 0 | 6 | 113 | 25 | 0 | 44 | 216 | 11 | 679 | 2,529 | |
| 8:15 AM | 0 | 21 | 104 | 16 | 0 | 38 | 53 | 17 | 0 | 15 | 134 | 43 | 0 | 36 | 218 | 13 | 708 | 2,703 | |
| 8:30 AM | 0 | 16 | 149 | 11 | 0 | 41 | 93 | 12 | 0 | 8 | 79 | 59 | 0 | 39 | 226 | 18 | 751 | 2,844 | |
| 8:45 AM | 0 | 21 | 85 | 15 | 0 | 50 | 95 | 27 | 0 | 11 | 146 | 56 | 0 | 42 | 256 | 16 | 820 | 2,958 | |
| Count Total | 0 | 132 | 741 | 112 | 0 | 238 | 495 | 148 | 0 | 71 | 823 | 278 | 0 | 300 | 1,792 | 112 | 5,242 | 0 | |
| Peak Hour | All | 0 | 75 | 454 | 49 | 0 | 160 | 317 | 73 | 0 | 40 | 472 | 183 | 0 | 161 | 916 | 58 | 2,958 | 0 |
| | HV | 0 | 3 | 14 | 4 | 0 | 9 | 17 | 1 | 0 | 3 | 36 | 11 | 0 | 3 | 58 | 6 | 165 | 0 |
| | HV% | - | 4% | 3% | 8% | - | 6% | 5% | 1% | - | 8% | 8% | 6% | - | 2% | 6% | 10% | 6% | 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 |
| 7:00 AM | 5 | 7 | 3 | 12 | 27 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 2 | 0 | 7 |
| 7:15 AM | 3 | 4 | 9 | 18 | 34 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 1 | 5 |
| 7:30 AM | 1 | 11 | 8 | 14 | 34 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 3 |
| 7:45 AM | 5 | 4 | 9 | 19 | 37 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 3 |
| 8:00 AM | 4 | 6 | 13 | 20 | 43 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 3 | 0 | 7 |
| 8:15 AM | 5 | 6 | 13 | 20 | 44 | 0 | 0 | 1 | 0 | 1 | 2 | 4 | 11 | 0 | 17 |
| 8:30 AM | 9 | 8 | 8 | 11 | 36 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 7 | 5 | 13 |
| 8:45 AM | 3 | 7 | 16 | 16 | 42 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 6 | 2 | 13 |
| Count Total | 35 | 53 | 79 | 130 | 297 | 0 | 0 | 2 | 0 | 2 | 14 | 12 | 32 | 10 | 68 |
| Peak Hour | 21 | 27 | 50 | 67 | 165 | 0 | 0 | 1 | 0 | 1 | 7 | 9 | 27 | 7 | 50 |

| Two-Hour Count Summaries - Heavy Vehicles | | | | | | | | | | | | | | | | | | |
|--|------------|----|----|----|------------|----|----|----|--------------|----|----|----|--------------|----|-----|----|--------------|------------------|
| Interval Start | N 130th St | | | | N 130th St | | | | Aurora Ave N | | | | Aurora Ave N | | | | 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 | | |
| 7:00 AM | 0 | 0 | 3 | 2 | 0 | 2 | 4 | 1 | 0 | 1 | 2 | 0 | 0 | 1 | 10 | 1 | 27 | 0 |
| 7:15 AM | 0 | 0 | 2 | 1 | 0 | 1 | 2 | 1 | 0 | 1 | 5 | 3 | 0 | 1 | 15 | 2 | 34 | 0 |
| 7:30 AM | 0 | 1 | 0 | 0 | 0 | 4 | 4 | 3 | 0 | 0 | 6 | 2 | 0 | 1 | 12 | 1 | 34 | 0 |
| 7:45 AM | 0 | 0 | 4 | 1 | 0 | 1 | 2 | 1 | 0 | 1 | 4 | 4 | 0 | 1 | 17 | 1 | 37 | 132 |
| 8:00 AM | 0 | 0 | 3 | 1 | 0 | 2 | 4 | 0 | 0 | 1 | 9 | 3 | 0 | 1 | 18 | 1 | 43 | 148 |
| 8:15 AM | 0 | 1 | 2 | 2 | 0 | 3 | 2 | 1 | 0 | 1 | 10 | 2 | 0 | 1 | 17 | 2 | 44 | 158 |
| 8:30 AM | 0 | 2 | 6 | 1 | 0 | 1 | 7 | 0 | 0 | 0 | 5 | 3 | 0 | 1 | 7 | 3 | 36 | 160 |
| 8:45 AM | 0 | 0 | 3 | 0 | 0 | 3 | 4 | 0 | 0 | 1 | 12 | 3 | 0 | 0 | 16 | 0 | 42 | 165 |
| Count Total | 0 | 4 | 23 | 8 | 0 | 17 | 29 | 7 | 0 | 6 | 53 | 20 | 0 | 7 | 112 | 11 | 297 | 0 |
| Peak Hour | 0 | 3 | 14 | 4 | 0 | 9 | 17 | 1 | 0 | 3 | 36 | 11 | 0 | 3 | 58 | 6 | 165 | 0 |

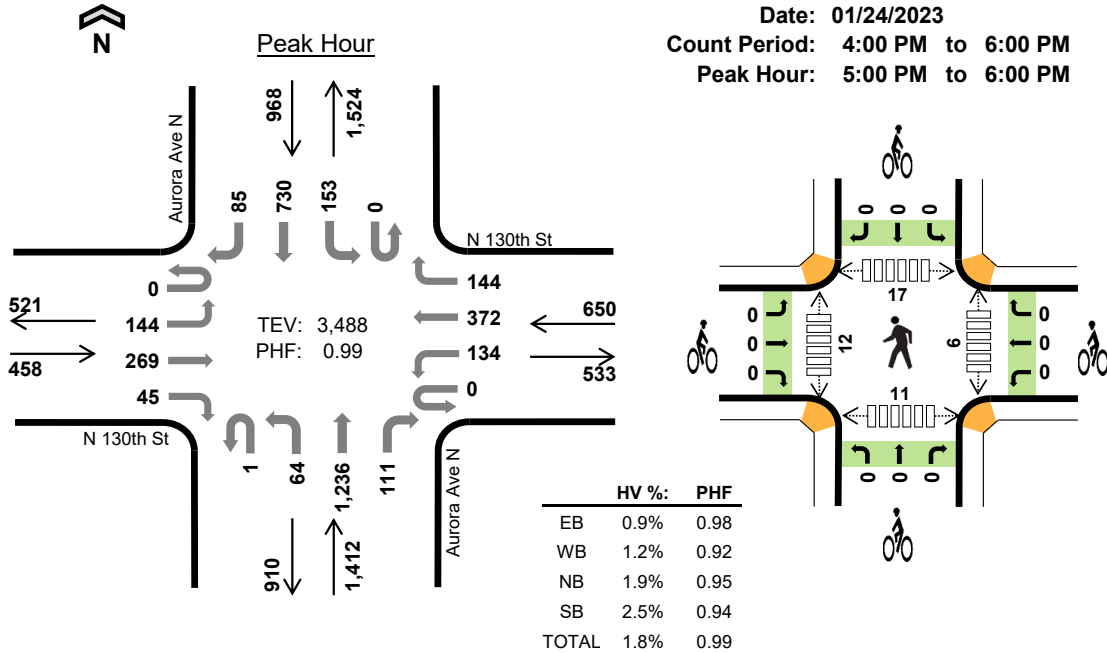
| Two-Hour Count Summaries - Bikes | | | | | | | | | | | | | | | | | | |
|---|------------|----|----|------------|----|----|--------------|----|----|--------------|----|----|--------------|------------------|---|---|---|---|
| Interval Start | N 130th St | | | N 130th St | | | Aurora Ave N | | | Aurora Ave N | | | 15-min Total | Rolling One Hour | | | | |
| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | | | | | | |
| | LT | TH | RT | LT | TH | RT | LT | TH | RT | LT | TH | RT | | | | | | |
| 7:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 8:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 |
| 8:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 8:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Count Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| Peak Hour | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Aurora Ave N N 130th St



Date: 01/24/2023
 Count Period: 4:00 PM to 6:00 PM
 Peak Hour: 5:00 PM to 6:00 PM



Two-Hour Count Summaries

| Interval Start | N 130th St Eastbound | | | | N 130th St Westbound | | | | Aurora Ave N Northbound | | | | Aurora Ave N 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 | 40 | 89 | 11 | 0 | 35 | 94 | 30 | 0 | 10 | 268 | 26 | 0 | 36 | 206 | 17 | 862 | 0 | |
| 4:15 PM | 0 | 27 | 62 | 14 | 0 | 40 | 76 | 44 | 1 | 17 | 282 | 30 | 0 | 32 | 149 | 17 | 791 | 0 | |
| 4:30 PM | 0 | 35 | 57 | 11 | 0 | 42 | 77 | 32 | 1 | 12 | 297 | 30 | 0 | 30 | 173 | 23 | 820 | 0 | |
| 4:45 PM | 0 | 39 | 80 | 10 | 0 | 38 | 110 | 35 | 0 | 24 | 255 | 32 | 0 | 41 | 179 | 15 | 858 | 3,331 | |
| 5:00 PM | 0 | 28 | 72 | 9 | 0 | 37 | 86 | 35 | 0 | 20 | 317 | 24 | 0 | 33 | 200 | 24 | 885 | 3,354 | |
| 5:15 PM | 0 | 36 | 68 | 13 | 0 | 35 | 102 | 39 | 0 | 13 | 291 | 20 | 0 | 46 | 183 | 20 | 866 | 3,429 | |
| 5:30 PM | 0 | 37 | 66 | 13 | 0 | 30 | 96 | 29 | 1 | 14 | 309 | 31 | 0 | 42 | 189 | 18 | 875 | 3,484 | |
| 5:45 PM | 0 | 43 | 63 | 10 | 0 | 32 | 88 | 41 | 0 | 17 | 319 | 36 | 0 | 32 | 158 | 23 | 862 | 3,488 | |
| Count Total | 0 | 285 | 557 | 91 | 0 | 289 | 729 | 285 | 3 | 127 | 2,338 | 229 | 0 | 292 | 1,437 | 157 | 6,819 | 0 | |
| Peak Hour | All | 0 | 144 | 269 | 45 | 0 | 134 | 372 | 144 | 1 | 64 | 1,236 | 111 | 0 | 153 | 730 | 85 | 3,488 | 0 |
| | HV | 0 | 1 | 2 | 1 | 0 | 1 | 5 | 2 | 0 | 1 | 23 | 3 | 0 | 0 | 24 | 0 | 63 | 0 |
| | HV% | - | 1% | 1% | 2% | - | 1% | 1% | 1% | 0% | 2% | 2% | 3% | - | 0% | 3% | 0% | 2% | 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 | 2 | 15 | 7 | 31 | 0 | 0 | 0 | 0 | 0 | 15 | 9 | 13 | 11 | 48 |
| 4:15 PM | 5 | 1 | 11 | 11 | 28 | 0 | 0 | 0 | 0 | 0 | 3 | 6 | 9 | 6 | 24 |
| 4:30 PM | 1 | 3 | 11 | 5 | 20 | 0 | 0 | 0 | 0 | 0 | 5 | 1 | 2 | 7 | 15 |
| 4:45 PM | 4 | 5 | 6 | 5 | 20 | 0 | 0 | 0 | 0 | 0 | 6 | 5 | 8 | 4 | 23 |
| 5:00 PM | 2 | 3 | 13 | 10 | 28 | 0 | 0 | 0 | 0 | 0 | 5 | 8 | 5 | 2 | 20 |
| 5:15 PM | 1 | 3 | 3 | 3 | 10 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 3 | 3 | 8 |
| 5:30 PM | 0 | 1 | 7 | 5 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 2 | 8 |
| 5:45 PM | 1 | 1 | 4 | 6 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 4 | 10 |
| Count Total | 21 | 19 | 70 | 52 | 162 | 0 | 0 | 0 | 0 | 0 | 35 | 33 | 49 | 39 | 156 |
| Peak Hour | 4 | 8 | 27 | 24 | 63 | 0 | 0 | 0 | 0 | 0 | 6 | 12 | 17 | 11 | 46 |

| Two-Hour Count Summaries - Heavy Vehicles | | | | | | | | | | | | | | | | | | |
|--|------------|----------|----------|----------|------------|----------|----------|----------|--------------|----------|-----------|----------|--------------|----------|-----------|----------|--------------|------------------|
| Interval Start | N 130th St | | | | N 130th St | | | | Aurora Ave N | | | | Aurora Ave N | | | | 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 | 0 | 6 | 1 | 0 | 1 | 1 | 0 | 0 | 2 | 12 | 1 | 0 | 0 | 6 | 1 | 31 | 0 |
| 4:15 PM | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 10 | 1 | 0 | 0 | 10 | 1 | 28 | 0 |
| 4:30 PM | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 9 | 2 | 0 | 0 | 5 | 0 | 20 | 0 |
| 4:45 PM | 0 | 0 | 3 | 1 | 0 | 3 | 0 | 2 | 0 | 1 | 5 | 0 | 0 | 1 | 4 | 0 | 20 | 99 |
| 5:00 PM | 0 | 1 | 1 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 13 | 0 | 0 | 0 | 10 | 0 | 28 | 96 |
| 5:15 PM | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 3 | 0 | 0 | 0 | 3 | 0 | 10 | 78 |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 6 | 1 | 0 | 0 | 5 | 0 | 13 | 71 |
| 5:45 PM | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 6 | 0 | 12 | 63 |
| Count Total | 0 | 1 | 17 | 3 | 0 | 6 | 7 | 6 | 0 | 4 | 59 | 7 | 0 | 1 | 49 | 2 | 162 | 0 |
| Peak Hour | 0 | 1 | 2 | 1 | 0 | 1 | 5 | 2 | 0 | 1 | 23 | 3 | 0 | 0 | 24 | 0 | 63 | 0 |

| Two-Hour Count Summaries - Bikes | | | | | | | | | | | | | | | | | |
|---|------------|----------|----------|------------|----------|----------|--------------|----------|----------|--------------|----------|----------|--------------|------------------|----------|----------|---|
| Interval Start | N 130th St | | | N 130th St | | | Aurora Ave N | | | Aurora Ave N | | | 15-min Total | Rolling One Hour | | | |
| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | | | | | |
| | 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 | 0 | 0 | 0 |
| 4:15 PM | 0 | 0 | 0 | 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 | 0 | 0 | 0 |
| 4:45 PM | 0 | 0 | 0 | 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 | 0 | 0 | 0 |
| 5:15 PM | 0 | 0 | 0 | 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 | 0 | 0 | 0 |
| 5:45 PM | 0 | 0 | 0 | 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 | 0 | 0 | 0 |
| Peak Hour | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

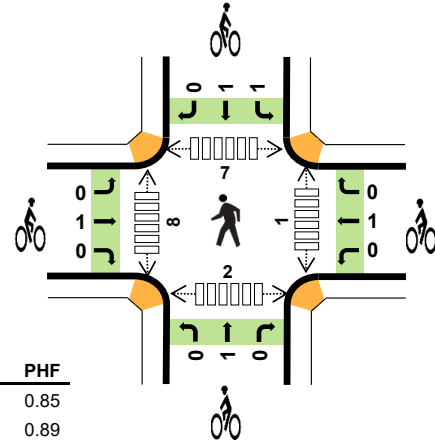
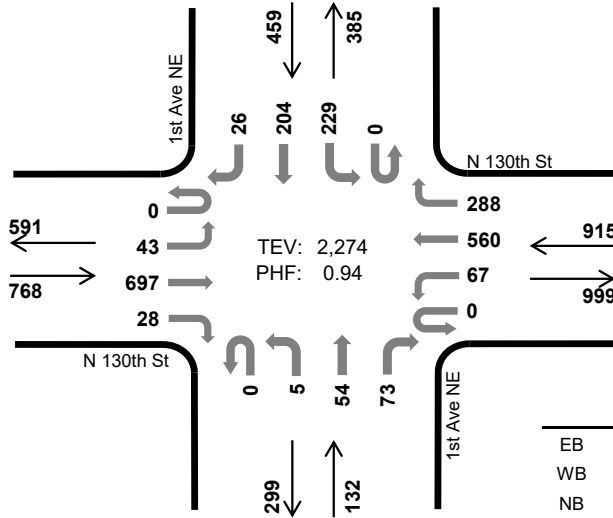
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

1st Ave NE N 130th St



Peak Hour

Date: 01/24/2023
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 8:00 AM to 9:00 AM



| | HV %: | PHF |
|-------|-------|------|
| EB | 3.4% | 0.85 |
| WB | 3.0% | 0.89 |
| NB | 3.8% | 0.87 |
| SB | 1.7% | 0.89 |
| TOTAL | 2.9% | 0.94 |

Two-Hour Count Summaries

| Interval Start | N 130th St Eastbound | | | | N 130th St Westbound | | | | 1st Ave NE Northbound | | | | 1st 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 | | | |
| 7:00 AM | 0 | 2 | 100 | 3 | 0 | 10 | 70 | 21 | 0 | 1 | 6 | 9 | 0 | 17 | 28 | 7 | 274 | 0 | |
| 7:15 AM | 0 | 3 | 147 | 6 | 0 | 3 | 83 | 20 | 0 | 0 | 11 | 23 | 0 | 29 | 32 | 4 | 361 | 0 | |
| 7:30 AM | 0 | 7 | 185 | 7 | 0 | 17 | 112 | 38 | 0 | 1 | 23 | 16 | 0 | 47 | 27 | 6 | 486 | 0 | |
| 7:45 AM | 0 | 14 | 155 | 9 | 0 | 17 | 95 | 63 | 0 | 5 | 30 | 16 | 0 | 37 | 49 | 6 | 496 | 1,617 | |
| 8:00 AM | 0 | 19 | 201 | 7 | 0 | 13 | 129 | 96 | 0 | 0 | 17 | 18 | 0 | 59 | 40 | 6 | 605 | 1,948 | |
| 8:15 AM | 0 | 10 | 168 | 8 | 0 | 21 | 128 | 108 | 0 | 2 | 10 | 14 | 0 | 51 | 41 | 6 | 567 | 2,154 | |
| 8:30 AM | 0 | 8 | 147 | 5 | 0 | 15 | 165 | 56 | 0 | 2 | 14 | 22 | 0 | 58 | 60 | 9 | 561 | 2,229 | |
| 8:45 AM | 0 | 6 | 181 | 8 | 0 | 18 | 138 | 28 | 0 | 1 | 13 | 19 | 0 | 61 | 63 | 5 | 541 | 2,274 | |
| Count Total | 0 | 69 | 1,284 | 53 | 0 | 114 | 920 | 430 | 0 | 12 | 124 | 137 | 0 | 359 | 340 | 49 | 3,891 | 0 | |
| Peak Hour | All | 0 | 43 | 697 | 28 | 0 | 67 | 560 | 288 | 0 | 5 | 54 | 73 | 0 | 229 | 204 | 26 | 2,274 | 0 |
| | HV | 0 | 0 | 26 | 0 | 0 | 0 | 24 | 3 | 0 | 1 | 1 | 3 | 0 | 1 | 5 | 2 | 66 | 0 |
| | HV% | - | 0% | 4% | 0% | - | 0% | 4% | 1% | - | 20% | 2% | 4% | - | 0% | 2% | 8% | 3% | 0 |

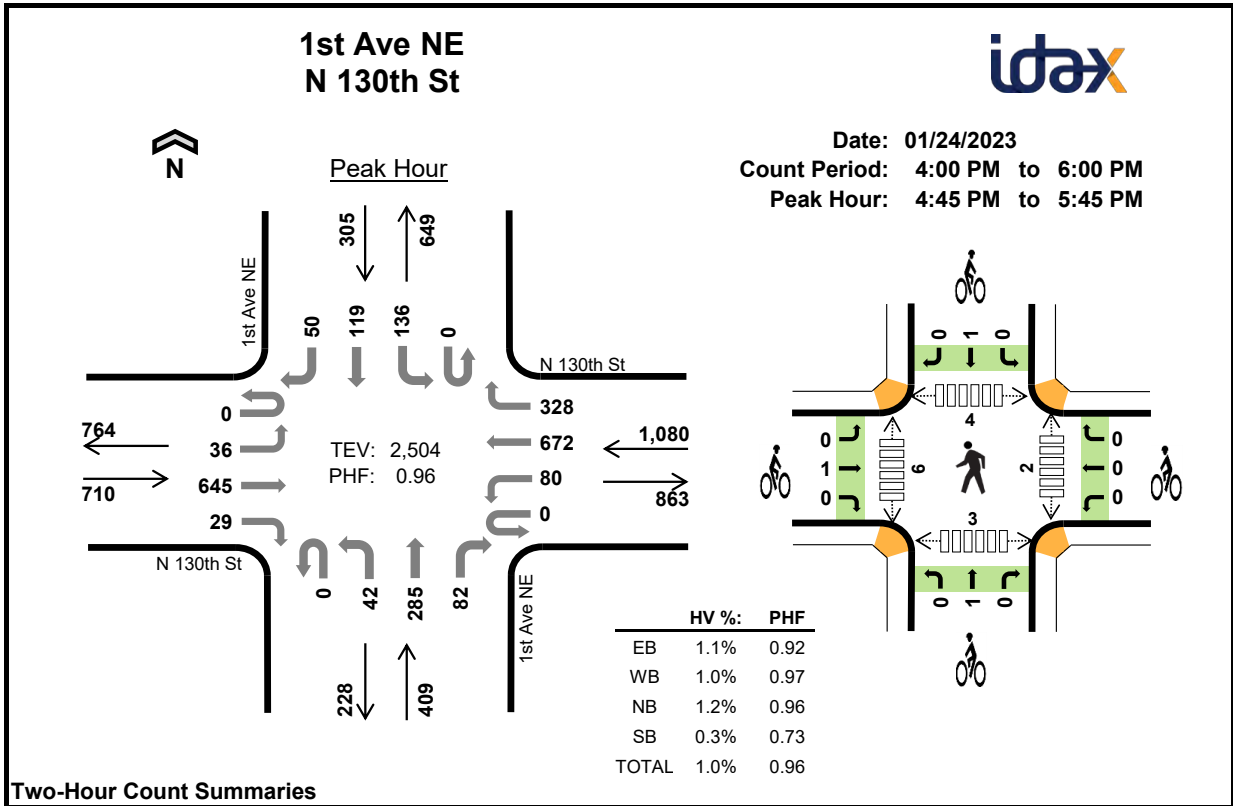
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

| Interval Start | Heavy Vehicle Totals | | | | | Bicycles | | | | | Pedestrians (Crossing Leg) | | | | |
|----------------|----------------------|-----------|----------|----------|-----------|----------|----------|----------|----------|----------|----------------------------|----------|----------|----------|----------|
| | EB | WB | NB | SB | Total | EB | WB | NB | SB | Total | East | West | North | South | Total |
| 7:00 AM | 7 | 8 | 0 | 1 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| 7:15 AM | 7 | 5 | 2 | 3 | 17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 |
| 7:30 AM | 11 | 11 | 1 | 4 | 27 | 0 | 1 | 0 | 3 | 4 | 0 | 2 | 0 | 0 | 2 |
| 7:45 AM | 8 | 7 | 0 | 4 | 19 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 |
| 8:00 AM | 3 | 10 | 2 | 1 | 16 | 0 | 0 | 0 | 2 | 2 | 1 | 2 | 2 | 0 | 5 |
| 8:15 AM | 8 | 9 | 3 | 5 | 25 | 0 | 1 | 1 | 0 | 2 | 0 | 5 | 3 | 2 | 10 |
| 8:30 AM | 6 | 5 | 0 | 1 | 12 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 2 | 0 | 3 |
| 8:45 AM | 9 | 3 | 0 | 1 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Count Total | 59 | 58 | 8 | 20 | 145 | 1 | 2 | 1 | 5 | 9 | 3 | 11 | 8 | 3 | 25 |
| Peak Hour | 26 | 27 | 5 | 8 | 66 | 1 | 1 | 1 | 2 | 5 | 1 | 8 | 7 | 2 | 18 |

| Two-Hour Count Summaries - Heavy Vehicles | | | | | | | | | | | | | | | | | | |
|--|------------|----------|----------|----------|------------|----------|----------|----------|------------|----------|----------|----------|------------|----------|----------|----------|--------------|------------------|
| Interval Start | N 130th St | | | | N 130th St | | | | 1st Ave NE | | | | 1st Ave NE | | | | 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 | | |
| 7:00 AM | 0 | 0 | 7 | 0 | 0 | 1 | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 16 | 0 |
| 7:15 AM | 0 | 1 | 6 | 0 | 0 | 0 | 4 | 1 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 2 | 17 | 0 |
| 7:30 AM | 0 | 0 | 10 | 1 | 0 | 2 | 8 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 2 | 1 | 27 | 0 |
| 7:45 AM | 0 | 0 | 8 | 0 | 0 | 1 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 1 | 19 | 79 |
| 8:00 AM | 0 | 0 | 3 | 0 | 0 | 0 | 8 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 16 | 79 |
| 8:15 AM | 0 | 0 | 8 | 0 | 0 | 0 | 9 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 2 | 2 | 25 | 87 |
| 8:30 AM | 0 | 0 | 6 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 12 | 72 |
| 8:45 AM | 0 | 0 | 9 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 13 | 66 |
| Count Total | 0 | 1 | 57 | 1 | 0 | 4 | 46 | 8 | 0 | 1 | 2 | 5 | 0 | 5 | 9 | 6 | 145 | 0 |
| Peak Hour | 0 | 0 | 26 | 0 | 0 | 0 | 24 | 3 | 0 | 1 | 1 | 3 | 0 | 1 | 5 | 2 | 66 | 0 |

| Two-Hour Count Summaries - Bikes | | | | | | | | | | | | | | | | | | |
|---|------------|----------|----------|------------|----------|----------|------------|----------|----------|------------|----------|----------|--------------|------------------|----------|----------|----------|----------|
| Interval Start | N 130th St | | | N 130th St | | | 1st Ave NE | | | 1st Ave NE | | | 15-min Total | Rolling One Hour | | | | |
| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | | | | | | |
| | LT | TH | RT | LT | TH | RT | LT | TH | RT | LT | TH | RT | | | | | | |
| 7:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 4 | 0 | 0 |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 2 | 6 | 6 |
| 8:15 AM | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 8 | 8 |
| 8:30 AM | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5 | 5 |
| 8:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 5 |
| Count Total | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 4 | 0 | 9 | 0 | 0 |
| Peak Hour | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 5 | 0 | 0 |

Note: U-Turn volumes for bikes are included in Left-Turn, if any.



Two-Hour Count Summaries

| Interval Start | N 130th St Eastbound | | | | N 130th St Westbound | | | | 1st Ave NE Northbound | | | | 1st 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 | 9 | 146 | 7 | 0 | 9 | 152 | 58 | 0 | 5 | 55 | 16 | 0 | 46 | 28 | 6 | 537 | 0 | |
| 4:15 PM | 0 | 12 | 150 | 4 | 0 | 31 | 165 | 55 | 0 | 7 | 60 | 28 | 0 | 34 | 23 | 11 | 580 | 0 | |
| 4:30 PM | 0 | 7 | 157 | 7 | 0 | 17 | 150 | 77 | 0 | 14 | 64 | 17 | 0 | 36 | 20 | 7 | 573 | 0 | |
| 4:45 PM | 0 | 8 | 151 | 8 | 0 | 25 | 171 | 82 | 0 | 9 | 68 | 24 | 0 | 43 | 42 | 19 | 650 | 2,340 | |
| 5:00 PM | 0 | 12 | 167 | 6 | 0 | 23 | 168 | 83 | 0 | 8 | 75 | 23 | 0 | 32 | 35 | 10 | 642 | 2,445 | |
| 5:15 PM | 0 | 9 | 177 | 7 | 0 | 18 | 172 | 89 | 0 | 12 | 68 | 16 | 0 | 31 | 17 | 12 | 628 | 2,493 | |
| 5:30 PM | 0 | 7 | 150 | 8 | 0 | 14 | 161 | 74 | 0 | 13 | 74 | 19 | 0 | 30 | 25 | 9 | 584 | 2,504 | |
| 5:45 PM | 0 | 11 | 157 | 5 | 1 | 26 | 166 | 60 | 0 | 18 | 53 | 16 | 0 | 20 | 26 | 10 | 569 | 2,423 | |
| Count Total | 0 | 75 | 1,255 | 52 | 1 | 163 | 1,305 | 578 | 0 | 86 | 517 | 159 | 0 | 272 | 216 | 84 | 4,763 | 0 | |
| Peak Hour | All | 0 | 36 | 645 | 29 | 0 | 80 | 672 | 328 | 0 | 42 | 285 | 82 | 0 | 136 | 119 | 50 | 2,504 | 0 |
| | HV | 0 | 0 | 8 | 0 | 0 | 0 | 11 | 0 | 0 | 1 | 3 | 1 | 0 | 0 | 0 | 1 | 25 | 0 |
| | HV% | - | 0% | 1% | 0% | - | 0% | 2% | 0% | - | 2% | 1% | 1% | - | 0% | 0% | 2% | 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 | 8 | 3 | 1 | 3 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 2 | 1 | 9 |
| 4:15 PM | 9 | 1 | 5 | 2 | 17 | 1 | 0 | 0 | 1 | 2 | 1 | 3 | 1 | 5 | 10 |
| 4:30 PM | 7 | 6 | 2 | 0 | 15 | 0 | 1 | 1 | 0 | 2 | 0 | 1 | 1 | 1 | 3 |
| 4:45 PM | 3 | 5 | 0 | 0 | 8 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 2 |
| 5:00 PM | 2 | 3 | 2 | 1 | 8 | 1 | 0 | 0 | 0 | 1 | 1 | 2 | 1 | 1 | 5 |
| 5:15 PM | 0 | 2 | 2 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 3 |
| 5:30 PM | 3 | 1 | 1 | 0 | 5 | 0 | 0 | 1 | 0 | 1 | 0 | 3 | 1 | 1 | 5 |
| 5:45 PM | 1 | 0 | 0 | 2 | 3 | 1 | 0 | 0 | 0 | 1 | 0 | 7 | 0 | 3 | 10 |
| Count Total | 33 | 21 | 13 | 8 | 75 | 3 | 1 | 2 | 2 | 8 | 3 | 23 | 8 | 13 | 47 |
| Peak Hour | 8 | 11 | 5 | 1 | 25 | 1 | 0 | 1 | 1 | 3 | 2 | 6 | 4 | 3 | 15 |

| Two-Hour Count Summaries - Heavy Vehicles | | | | | | | | | | | | | | | | | | |
|--|------------|----------|----------|----------|------------|----------|----------|----------|------------|----------|----------|----------|------------|----------|----------|----------|--------------|------------------|
| Interval Start | N 130th St | | | | N 130th St | | | | 1st Ave NE | | | | 1st Ave NE | | | | 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 | 0 | 8 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 15 | 0 |
| 4:15 PM | 0 | 0 | 9 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 4 | 0 | 2 | 0 | 0 | 17 | 0 |
| 4:30 PM | 0 | 0 | 7 | 0 | 0 | 1 | 4 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 15 | 0 |
| 4:45 PM | 0 | 0 | 3 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 55 |
| 5:00 PM | 0 | 0 | 2 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 8 | 48 |
| 5:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 4 | 35 |
| 5:30 PM | 0 | 0 | 3 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 5 | 25 |
| 5:45 PM | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 3 | 20 |
| Count Total | 0 | 0 | 33 | 0 | 0 | 1 | 19 | 1 | 0 | 1 | 7 | 5 | 0 | 4 | 1 | 3 | 75 | 0 |
| Peak Hour | 0 | 0 | 8 | 0 | 0 | 0 | 11 | 0 | 0 | 1 | 3 | 1 | 0 | 0 | 0 | 1 | 25 | 0 |

| Two-Hour Count Summaries - Bikes | | | | | | | | | | | | | | | | | | |
|---|------------|----------|----------|------------|----------|----------|------------|----------|----------|------------|----------|----------|--------------|------------------|----------|----------|----------|----------|
| Interval Start | N 130th St | | | N 130th St | | | 1st Ave NE | | | 1st Ave NE | | | 15-min Total | Rolling One Hour | | | | |
| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | | | | | | |
| | 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 | 0 | 0 | 0 | 0 |
| 4:15 PM | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 |
| 4:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 5 | 5 |
| 5:00 PM | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 6 | 6 |
| 5:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 4 |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 3 |
| 5:45 PM | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 3 |
| Count Total | 0 | 3 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 1 | 1 | 0 | 0 | 8 | 0 | 0 |
| Peak Hour | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 3 | 0 | 0 |

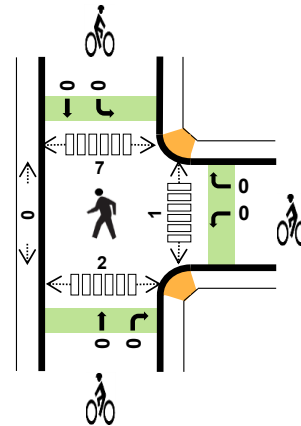
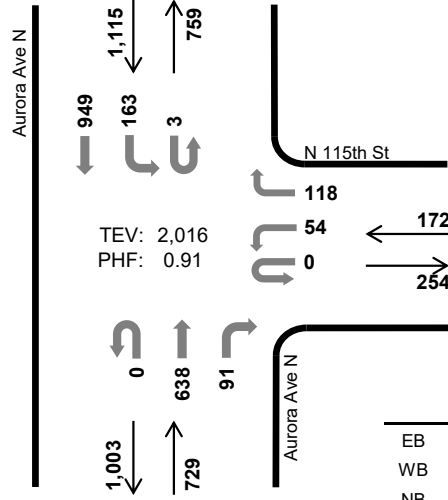
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Aurora Ave N N 115th St



Peak Hour

Date: 01/24/2023
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 8:00 AM to 9:00 AM



| | HV %: | PHF |
|-------|-------|------|
| EB | - | - |
| WB | 7.6% | 0.91 |
| NB | 8.6% | 0.84 |
| SB | 6.5% | 0.89 |
| TOTAL | 7.3% | 0.91 |

Two-Hour Count Summaries

| Interval Start | 0 | | | | N 115th St | | | | Aurora Ave N | | | | Aurora Ave N | | | | 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 | | | |
| 7:00 AM | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 16 | 0 | 0 | 59 | 12 | 0 | 25 | 156 | 0 | 273 | 0 | |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 16 | 0 | 0 | 96 | 12 | 0 | 52 | 190 | 0 | 369 | 0 | |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | 17 | 0 | 31 | 0 | 0 | 106 | 13 | 0 | 37 | 216 | 0 | 420 | 0 | |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 14 | 0 | 19 | 0 | 0 | 127 | 31 | 0 | 39 | 237 | 0 | 467 | 1,529 | |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 31 | 0 | 0 | 146 | 18 | 0 | 33 | 217 | 0 | 454 | 1,710 | |
| 8:15 AM | 0 | 0 | 0 | 0 | 0 | 17 | 0 | 23 | 0 | 0 | 161 | 25 | 0 | 38 | 225 | 0 | 489 | 1,830 | |
| 8:30 AM | 0 | 0 | 0 | 0 | 0 | 17 | 0 | 30 | 0 | 0 | 143 | 19 | 2 | 53 | 257 | 0 | 521 | 1,931 | |
| 8:45 AM | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 34 | 0 | 0 | 188 | 29 | 1 | 39 | 250 | 0 | 552 | 2,016 | |
| Count Total | 0 | 0 | 0 | 0 | 0 | 93 | 0 | 200 | 0 | 0 | 1,026 | 159 | 3 | 316 | 1,748 | 0 | 3,545 | 0 | |
| Peak Hour | All | 0 | 0 | 0 | 0 | 0 | 54 | 0 | 118 | 0 | 0 | 638 | 91 | 3 | 163 | 949 | 0 | 2,016 | 0 |
| | HV | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 7 | 0 | 0 | 57 | 6 | 0 | 2 | 70 | 0 | 148 | 0 |
| | HV% | - | - | - | - | - | 11% | - | 6% | - | - | 9% | 7% | 0% | 1% | 7% | - | 7% | 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 |
| 7:00 AM | 0 | 1 | 6 | 9 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 3 |
| 7:15 AM | 0 | 3 | 9 | 9 | 21 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 1 | 4 |
| 7:30 AM | 0 | 0 | 11 | 14 | 25 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 2 | 0 | 2 |
| 7:45 AM | 0 | 2 | 4 | 19 | 25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 3 | 8 |
| 8:00 AM | 0 | 4 | 15 | 20 | 39 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 2 |
| 8:15 AM | 0 | 1 | 17 | 17 | 35 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 4 |
| 8:30 AM | 0 | 5 | 13 | 25 | 43 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 8:45 AM | 0 | 3 | 18 | 10 | 31 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 3 |
| Count Total | 0 | 19 | 93 | 123 | 235 | 0 | 0 | 1 | 0 | 1 | 2 | 0 | 19 | 6 | 27 |
| Peak Hr | 0 | 13 | 63 | 72 | 148 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 7 | 2 | 10 |

| Two-Hour Count Summaries - Heavy Vehicles | | | | | | | | | | | | | | | | | | |
|--|-----------|----|----|----|------------|----|----|----|--------------|----|----|----|--------------|----|-----|----|--------------|------------------|
| Interval Start | 0 | | | | N 115th St | | | | Aurora Ave N | | | | Aurora Ave N | | | | 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 | | |
| 7:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 6 | 0 | 0 | 0 | 9 | 0 | 16 | 0 |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 9 | 0 | 0 | 0 | 9 | 0 | 21 | 0 |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 0 | 1 | 13 | 0 | 25 | 0 |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 4 | 0 | 0 | 1 | 18 | 0 | 25 | 87 |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 3 | 0 | 0 | 15 | 0 | 0 | 0 | 20 | 0 | 39 | 110 |
| 8:15 AM | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 12 | 5 | 0 | 0 | 17 | 0 | 35 | 124 |
| 8:30 AM | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 2 | 0 | 0 | 12 | 1 | 0 | 2 | 23 | 0 | 43 | 142 |
| 8:45 AM | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 18 | 0 | 0 | 0 | 10 | 0 | 31 | 148 |
| Count Total | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 13 | 0 | 0 | 87 | 6 | 0 | 4 | 119 | 0 | 235 | 0 |
| Peak Hour | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 7 | 0 | 0 | 57 | 6 | 0 | 2 | 70 | 0 | 148 | 0 |

| Two-Hour Count Summaries - Bikes | | | | | | | | | | | | | | |
|---|-----------|----|----|------------|----|----|--------------|----|----|--------------|----|----|--------------|------------------|
| Interval Start | 0 | | | N 115th St | | | Aurora Ave N | | | Aurora Ave N | | | 15-min Total | Rolling One Hour |
| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | | |
| | LT | TH | RT | LT | TH | RT | LT | TH | RT | LT | TH | RT | | |
| 7:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 8:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 8:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Count Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 |
| Peak Hour | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

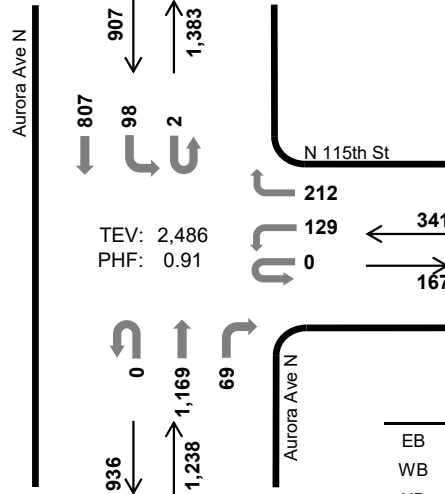
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Aurora Ave N N 115th St

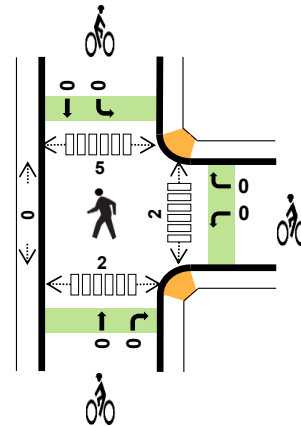


Peak Hour

Date: 01/24/2023
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:30 PM to 5:30 PM



TEV: 2,486
PHF: 0.91



| | HV %: | PHF |
|-------|-------|------|
| EB | - | - |
| WB | 0.6% | 0.86 |
| NB | 2.7% | 0.86 |
| SB | 3.6% | 0.94 |
| TOTAL | 2.7% | 0.91 |

Two-Hour Count Summaries

| Interval Start | 0 | | | N 115th St | | | Aurora Ave N | | | Aurora Ave N | | | 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 | 0 | 0 | 0 | 0 | 20 | 0 | 56 | 0 | 0 | 242 | 17 | 0 | 13 | 242 | 0 | 590 | 0 | |
| 4:15 PM | 0 | 0 | 0 | 0 | 0 | 25 | 0 | 52 | 0 | 0 | 271 | 22 | 0 | 19 | 214 | 0 | 603 | 0 | |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 | 33 | 0 | 66 | 0 | 0 | 262 | 13 | 1 | 21 | 183 | 0 | 579 | 0 | |
| 4:45 PM | 0 | 0 | 0 | 0 | 0 | 22 | 0 | 53 | 0 | 0 | 246 | 12 | 0 | 28 | 213 | 0 | 574 | 2,346 | |
| 5:00 PM | 0 | 0 | 0 | 0 | 0 | 38 | 0 | 48 | 0 | 0 | 335 | 25 | 0 | 35 | 205 | 0 | 686 | 2,442 | |
| 5:15 PM | 0 | 0 | 0 | 0 | 0 | 36 | 0 | 45 | 0 | 0 | 326 | 19 | 1 | 14 | 206 | 0 | 647 | 2,486 | |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 20 | 0 | 47 | 0 | 0 | 266 | 17 | 0 | 20 | 179 | 0 | 549 | 2,456 | |
| 5:45 PM | 0 | 0 | 0 | 0 | 1 | 21 | 0 | 44 | 0 | 0 | 250 | 15 | 1 | 20 | 187 | 0 | 539 | 2,421 | |
| Count Total | 0 | 0 | 0 | 0 | 1 | 215 | 0 | 411 | 0 | 0 | 2,198 | 140 | 3 | 170 | 1,629 | 0 | 4,767 | 0 | |
| Peak Hour | All | 0 | 0 | 0 | 0 | 0 | 129 | 0 | 212 | 0 | 0 | 1,169 | 69 | 2 | 98 | 807 | 0 | 2,486 | 0 |
| | HV | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 33 | 0 | 0 | 2 | 31 | 0 | 68 | 0 |
| | HV% | - | - | - | - | - | 1% | - | 0% | - | - | 3% | 0% | 0% | 2% | 4% | - | 3% | 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 | 2 | 17 | 10 | 29 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 2 | 8 |
| 4:15 PM | 0 | 1 | 12 | 9 | 22 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 1 | 5 |
| 4:30 PM | 0 | 0 | 15 | 7 | 22 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 2 | 5 |
| 4:45 PM | 0 | 1 | 4 | 6 | 11 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 2 |
| 5:00 PM | 0 | 0 | 9 | 12 | 21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 5:15 PM | 0 | 1 | 5 | 8 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 5:30 PM | 0 | 1 | 6 | 2 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 |
| 5:45 PM | 0 | 3 | 3 | 5 | 11 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 3 |
| Count Total | 0 | 9 | 71 | 59 | 139 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 15 | 7 | 27 |
| Peak Hr | 0 | 2 | 33 | 33 | 68 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 5 | 2 | 9 |

| Two-Hour Count Summaries - Heavy Vehicles | | | | | | | | | | | | | | | | | | |
|---|-----------|----|----|----|------------|----|----|----|--------------|----|----|----|--------------|----|----|----|--------------|------------------|
| Interval Start | 0 | | | | N 115th St | | | | Aurora Ave N | | | | Aurora Ave N | | | | 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 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 17 | 0 | 0 | 1 | 9 | 0 | 29 | 0 |
| 4:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 11 | 1 | 0 | 0 | 9 | 0 | 22 | 0 |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 0 | 0 | 1 | 6 | 0 | 22 | 0 |
| 4:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 4 | 0 | 0 | 0 | 6 | 0 | 11 | 84 |
| 5:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 1 | 11 | 0 | 21 | 76 |
| 5:15 PM | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 8 | 0 | 14 | 68 |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 6 | 0 | 0 | 0 | 2 | 0 | 9 | 55 |
| 5:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 5 | 0 | 11 | 55 |
| Count Total | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 8 | 0 | 0 | 70 | 1 | 0 | 3 | 56 | 0 | 139 | 0 |
| Peak Hour | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 33 | 0 | 0 | 2 | 31 | 0 | 68 | 0 |

| Two-Hour Count Summaries - Bikes | | | | | | | | | | | | | | | | | |
|----------------------------------|-----------|----|----|------------|----|----|--------------|----|----|--------------|----|----|--------------|------------------|---|---|---|
| Interval Start | 0 | | | N 115th St | | | Aurora Ave N | | | Aurora Ave N | | | 15-min Total | Rolling One Hour | | | |
| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | | | | | |
| | 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 | 0 | 0 | 0 |
| 4:15 PM | 0 | 0 | 0 | 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 | 0 | 0 | 0 |
| 4:45 PM | 0 | 0 | 0 | 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 | 0 | 0 | 0 |
| 5:15 PM | 0 | 0 | 0 | 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 | 0 | 0 | 0 |
| 5:45 PM | 0 | 0 | 0 | 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 | 0 | 0 | 0 |
| Peak Hour | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

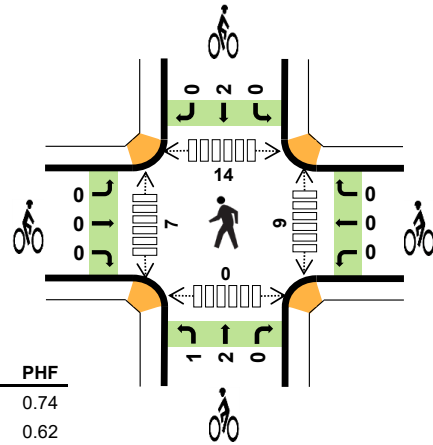
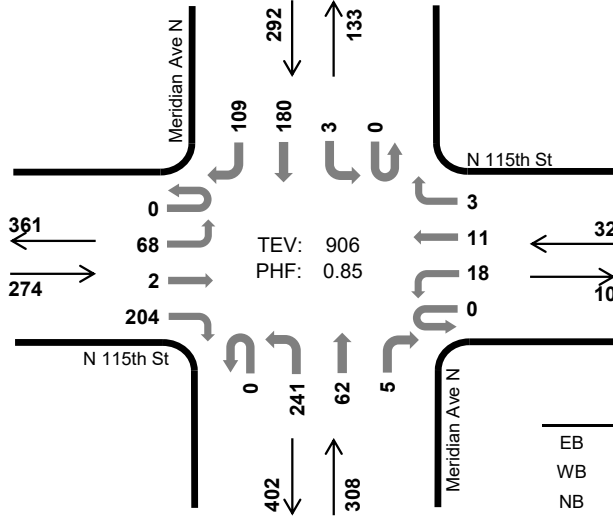
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Meridian Ave N N 115th St



Peak Hour

Date: 01/24/2023
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:30 AM to 8:30 AM



| | HV %: | PHF |
|-------|-------|------|
| EB | 5.1% | 0.74 |
| WB | 9.4% | 0.62 |
| NB | 5.8% | 0.90 |
| SB | 3.8% | 0.87 |
| TOTAL | 5.1% | 0.85 |

Two-Hour Count Summaries

| Interval Start | N 115th St Eastbound | | | | N 115th St Westbound | | | | Meridian Ave N Northbound | | | | Meridian Ave N Southbound | | | | 15-min Total | Rolling One Hour | |
|----------------|----------------------|----|-----|-----|----------------------|----|-----|----|---------------------------|-----|-----|----|---------------------------|----|-----|-----|--------------|------------------|---|
| | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | | | |
| 7:00 AM | 0 | 7 | 0 | 25 | 0 | 1 | 2 | 0 | 0 | 55 | 12 | 0 | 0 | 1 | 26 | 15 | 144 | 0 | |
| 7:15 AM | 0 | 5 | 1 | 52 | 0 | 1 | 2 | 0 | 0 | 64 | 8 | 0 | 0 | 1 | 35 | 17 | 186 | 0 | |
| 7:30 AM | 0 | 23 | 0 | 69 | 0 | 5 | 2 | 1 | 0 | 55 | 12 | 2 | 0 | 2 | 39 | 22 | 232 | 0 | |
| 7:45 AM | 0 | 25 | 2 | 55 | 0 | 6 | 6 | 1 | 0 | 66 | 18 | 2 | 0 | 0 | 43 | 41 | 265 | 827 | |
| 8:00 AM | 0 | 14 | 0 | 43 | 0 | 5 | 2 | 1 | 0 | 60 | 14 | 1 | 0 | 0 | 49 | 28 | 217 | 900 | |
| 8:15 AM | 0 | 6 | 0 | 37 | 0 | 2 | 1 | 0 | 0 | 60 | 18 | 0 | 0 | 1 | 49 | 18 | 192 | 906 | |
| 8:30 AM | 0 | 6 | 1 | 40 | 0 | 2 | 3 | 1 | 0 | 60 | 27 | 0 | 0 | 1 | 27 | 24 | 192 | 866 | |
| 8:45 AM | 0 | 11 | 4 | 53 | 0 | 2 | 3 | 1 | 0 | 61 | 27 | 6 | 0 | 1 | 62 | 35 | 266 | 867 | |
| Count Total | 0 | 97 | 8 | 374 | 0 | 24 | 21 | 5 | 0 | 481 | 136 | 11 | 0 | 7 | 330 | 200 | 1,694 | 0 | |
| Peak Hour | All | 0 | 68 | 2 | 204 | 0 | 18 | 11 | 3 | 0 | 241 | 62 | 5 | 0 | 3 | 180 | 109 | 906 | 0 |
| | HV | 0 | 7 | 0 | 7 | 0 | 2 | 0 | 1 | 0 | 13 | 5 | 0 | 0 | 1 | 4 | 6 | 46 | 0 |
| | HV% | - | 10% | 0% | 3% | - | 11% | 0% | 33% | - | 5% | 8% | 0% | - | 33% | 2% | 6% | 5% | 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 |
| 7:00 AM | 2 | 0 | 4 | 4 | 10 | 0 | 0 | 1 | 0 | 1 | 2 | 3 | 2 | 0 | 7 |
| 7:15 AM | 2 | 1 | 2 | 1 | 6 | 0 | 0 | 1 | 1 | 2 | 2 | 0 | 2 | 0 | 4 |
| 7:30 AM | 3 | 1 | 1 | 5 | 10 | 0 | 0 | 1 | 2 | 3 | 2 | 3 | 4 | 0 | 9 |
| 7:45 AM | 3 | 0 | 5 | 1 | 9 | 0 | 0 | 1 | 0 | 1 | 2 | 1 | 7 | 0 | 10 |
| 8:00 AM | 2 | 1 | 6 | 2 | 11 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 3 |
| 8:15 AM | 6 | 1 | 6 | 3 | 16 | 0 | 0 | 1 | 0 | 1 | 4 | 2 | 2 | 0 | 8 |
| 8:30 AM | 4 | 0 | 2 | 3 | 9 | 0 | 1 | 0 | 3 | 4 | 5 | 0 | 4 | 0 | 9 |
| 8:45 AM | 4 | 0 | 6 | 3 | 13 | 0 | 1 | 0 | 0 | 1 | 4 | 1 | 2 | 0 | 7 |
| Count Total | 26 | 4 | 32 | 22 | 84 | 0 | 2 | 5 | 6 | 13 | 22 | 11 | 24 | 0 | 57 |
| Peak Hour | 14 | 3 | 18 | 11 | 46 | 0 | 0 | 3 | 2 | 5 | 9 | 7 | 14 | 0 | 30 |

| Two-Hour Count Summaries - Heavy Vehicles | | | | | | | | | | | | | | | | | | |
|--|------------|----|----|----|------------|----|----|----|----------------|----|----|----|----------------|----|----|----|--------------|------------------|
| Interval Start | N 115th St | | | | N 115th St | | | | Meridian Ave N | | | | Meridian Ave N | | | | 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 | | |
| 7:00 AM | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 0 | 0 | 0 | 2 | 2 | 10 | 0 |
| 7:15 AM | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 6 | 0 |
| 7:30 AM | 0 | 0 | 0 | 3 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 3 | 10 | 0 |
| 7:45 AM | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 3 | 2 | 0 | 0 | 0 | 0 | 1 | 9 | 35 |
| 8:00 AM | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 5 | 1 | 0 | 0 | 0 | 1 | 1 | 11 | 36 |
| 8:15 AM | 0 | 5 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 4 | 2 | 0 | 0 | 0 | 2 | 1 | 16 | 46 |
| 8:30 AM | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 3 | 9 | 45 |
| 8:45 AM | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 0 | 0 | 2 | 1 | 13 | 49 |
| Count Total | 0 | 11 | 0 | 15 | 0 | 2 | 1 | 1 | 0 | 23 | 9 | 0 | 0 | 1 | 9 | 12 | 84 | 0 |
| Peak Hour | 0 | 7 | 0 | 7 | 0 | 2 | 0 | 1 | 0 | 13 | 5 | 0 | 0 | 1 | 4 | 6 | 46 | 0 |

| Two-Hour Count Summaries - Bikes | | | | | | | | | | | | | | | | | |
|---|------------|----|----|------------|----|----|----------------|----|----|----------------|----|----|--------------|------------------|---|---|---|
| Interval Start | N 115th St | | | N 115th St | | | Meridian Ave N | | | Meridian Ave N | | | 15-min Total | Rolling One Hour | | | |
| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | | | | | |
| | LT | TH | RT | LT | TH | RT | LT | TH | RT | LT | TH | RT | | | | | |
| 7:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 2 | 0 |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 3 | 0 | |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 7 | |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | |
| 8:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5 | |
| 8:30 AM | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 4 | 6 | | |
| 8:45 AM | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 6 | | |
| Count Total | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 1 | 4 | 0 | 0 | 6 | 0 | 13 | 0 | | |
| Peak Hour | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 2 | 0 | 5 | 0 | | |

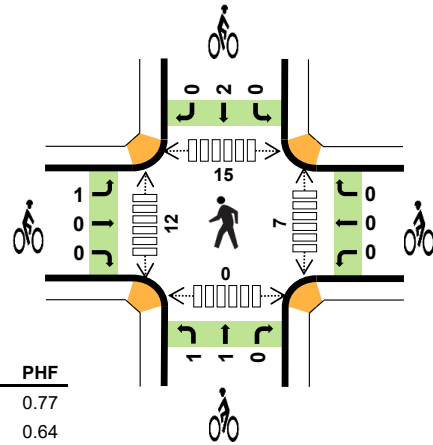
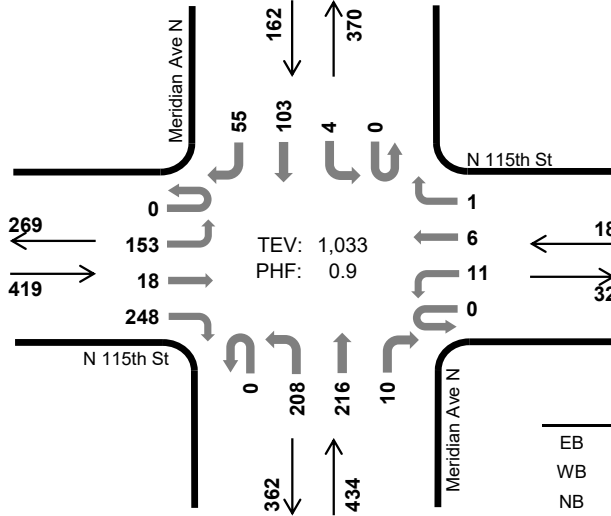
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Meridian Ave N N 115th St



Peak Hour

Date: 01/24/2023
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:15 PM to 5:15 PM



| | HV %: | PHF |
|-------|-------|------|
| EB | 2.1% | 0.77 |
| WB | 5.6% | 0.64 |
| NB | 3.0% | 0.94 |
| SB | 4.9% | 0.86 |
| TOTAL | 3.0% | 0.90 |

Two-Hour Count Summaries

| Interval Start | N 115th St Eastbound | | | | N 115th St Westbound | | | | Meridian Ave N Northbound | | | | Meridian Ave N 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 | 30 | 0 | 55 | 0 | 3 | 0 | 1 | 0 | 46 | 45 | 6 | 0 | 0 | 27 | 18 | 231 | 0 | |
| 4:15 PM | 0 | 29 | 4 | 49 | 0 | 2 | 1 | 0 | 0 | 57 | 57 | 1 | 0 | 2 | 27 | 13 | 242 | 0 | |
| 4:30 PM | 0 | 46 | 7 | 75 | 0 | 5 | 1 | 1 | 0 | 54 | 50 | 0 | 0 | 0 | 25 | 9 | 273 | 0 | |
| 4:45 PM | 0 | 33 | 4 | 36 | 0 | 3 | 4 | 0 | 0 | 54 | 50 | 7 | 0 | 1 | 24 | 14 | 230 | 976 | |
| 5:00 PM | 0 | 45 | 3 | 88 | 0 | 1 | 0 | 0 | 0 | 43 | 59 | 2 | 0 | 1 | 27 | 19 | 288 | 1,033 | |
| 5:15 PM | 0 | 31 | 4 | 54 | 0 | 2 | 5 | 2 | 0 | 48 | 45 | 3 | 0 | 0 | 23 | 18 | 235 | 1,026 | |
| 5:30 PM | 0 | 33 | 1 | 43 | 0 | 3 | 5 | 0 | 0 | 50 | 58 | 7 | 0 | 0 | 26 | 12 | 238 | 991 | |
| 5:45 PM | 0 | 29 | 4 | 38 | 0 | 1 | 2 | 0 | 0 | 43 | 48 | 0 | 0 | 0 | 30 | 8 | 203 | 964 | |
| Count Total | 0 | 276 | 27 | 438 | 0 | 20 | 18 | 4 | 0 | 395 | 412 | 26 | 0 | 4 | 209 | 111 | 1,940 | 0 | |
| Peak Hour | All | 0 | 153 | 18 | 248 | 0 | 11 | 6 | 1 | 0 | 208 | 216 | 10 | 0 | 4 | 103 | 55 | 1,033 | 0 |
| | HV | 0 | 3 | 1 | 5 | 0 | 1 | 0 | 0 | 0 | 6 | 7 | 0 | 0 | 0 | 6 | 2 | 31 | 0 |
| | HV% | - | 2% | 6% | 2% | - | 9% | 0% | 0% | - | 3% | 3% | 0% | - | 0% | 6% | 4% | 3% | 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 | 2 | 4 | 11 | 0 | 0 | 1 | 1 | 2 | 4 | 2 | 2 | 0 | 8 |
| 4:15 PM | 1 | 1 | 5 | 2 | 9 | 0 | 0 | 0 | 1 | 1 | 3 | 1 | 7 | 0 | 11 |
| 4:30 PM | 3 | 0 | 2 | 2 | 7 | 1 | 0 | 0 | 0 | 1 | 1 | 3 | 2 | 0 | 6 |
| 4:45 PM | 2 | 0 | 3 | 2 | 7 | 0 | 0 | 0 | 1 | 1 | 3 | 5 | 5 | 0 | 13 |
| 5:00 PM | 3 | 0 | 3 | 2 | 8 | 0 | 0 | 2 | 0 | 2 | 0 | 3 | 1 | 0 | 4 |
| 5:15 PM | 0 | 0 | 1 | 2 | 3 | 1 | 0 | 0 | 0 | 1 | 2 | 2 | 3 | 0 | 7 |
| 5:30 PM | 3 | 0 | 4 | 1 | 8 | 0 | 0 | 1 | 0 | 1 | 3 | 0 | 1 | 0 | 4 |
| 5:45 PM | 2 | 0 | 7 | 2 | 11 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 1 |
| Count Total | 18 | 2 | 27 | 17 | 64 | 2 | 0 | 5 | 3 | 10 | 17 | 16 | 21 | 0 | 54 |
| Peak Hour | 9 | 1 | 13 | 8 | 31 | 1 | 0 | 2 | 2 | 5 | 7 | 12 | 15 | 0 | 34 |

| Two-Hour Count Summaries - Heavy Vehicles | | | | | | | | | | | | | | | | | | | |
|--|------------|----|----|----|------------|----|----|----|----------------|----|----|----|----------------|----|----|----|--------------|------------------|----|
| Interval Start | N 115th St | | | | N 115th St | | | | Meridian Ave N | | | | Meridian Ave N | | | | 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 | 1 | 0 | 3 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 11 | 0 |
| 4:15 PM | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 3 | 0 | 0 | 0 | 1 | 1 | 9 | 0 |
| 4:30 PM | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 2 | 0 | 7 | 0 |
| 4:45 PM | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 2 | 0 | 7 | 34 |
| 5:00 PM | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 1 | 1 | 8 | 31 |
| 5:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 3 | 25 |
| 5:30 PM | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 0 | 0 | 0 | 1 | 0 | 8 | 26 |
| 5:45 PM | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 1 | 0 | 0 | 0 | 1 | 1 | 11 | 30 |
| Count Total | 0 | 7 | 1 | 10 | 0 | 2 | 0 | 0 | 0 | 0 | 18 | 9 | 0 | 0 | 0 | 10 | 7 | 64 | 0 |
| Peak Hour | 0 | 3 | 1 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 6 | 7 | 0 | 0 | 0 | 6 | 2 | 31 | 0 |

| Two-Hour Count Summaries - Bikes | | | | | | | | | | | | | | | | | |
|---|------------|----|----|------------|----|----|----------------|----|----|----------------|----|----|--------------|------------------|---|---|--|
| Interval Start | N 115th St | | | N 115th St | | | Meridian Ave N | | | Meridian Ave N | | | 15-min Total | Rolling One Hour | | | |
| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | | | | | |
| | LT | TH | RT | LT | TH | RT | LT | TH | RT | LT | TH | RT | | | | | |
| 4:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | |
| 4:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | |
| 4:30 PM | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | |
| 4:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 5 | |
| 5:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 5 | |
| 5:15 PM | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5 | |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 5 | |
| 5:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 5 | |
| Count Total | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 0 | 0 | 3 | 0 | 10 | 0 | | |
| Peak Hour | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 2 | 0 | 5 | 0 | | |

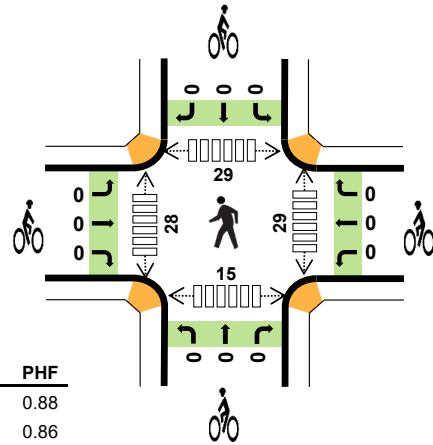
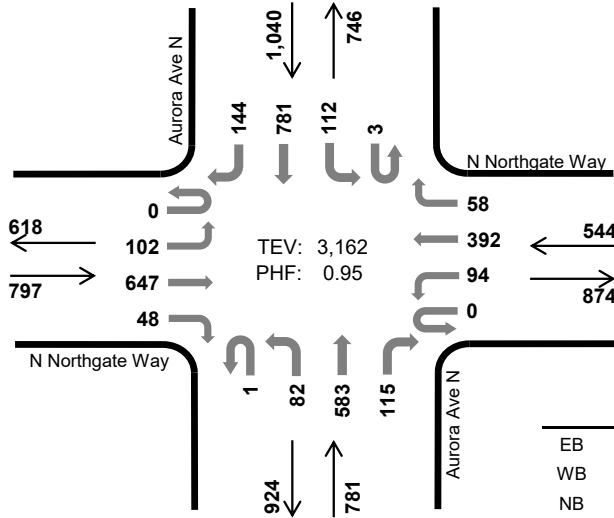
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Aurora Ave N N Northgate Way



Peak Hour

Date: 01/24/2023
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 8:00 AM to 9:00 AM



| | HV %: | PHF |
|-------|-------|------|
| EB | 4.6% | 0.88 |
| WB | 5.7% | 0.86 |
| NB | 7.4% | 0.96 |
| SB | 8.4% | 0.91 |
| TOTAL | 6.7% | 0.95 |

Two-Hour Count Summaries

| Interval Start | N Northgate Way | | | | N Northgate Way | | | | Aurora Ave N | | | | Aurora Ave N | | | | 15-min Total | Rolling One Hour | |
|----------------|-----------------|-----|-----------|-----|-----------------|-----|------------|-----|--------------|-----|-----|-----|--------------|-----|-------|-----|--------------|------------------|---|
| | Eastbound | | Westbound | | Northbound | | Southbound | | UT | LT | TH | RT | UT | LT | TH | RT | | | |
| 7:00 AM | 0 | 15 | 137 | 9 | 0 | 17 | 77 | 1 | 0 | 8 | 62 | 21 | 0 | 23 | 132 | 18 | 520 | 0 | |
| 7:15 AM | 0 | 17 | 147 | 8 | 0 | 18 | 103 | 12 | 0 | 6 | 72 | 29 | 0 | 13 | 165 | 24 | 614 | 0 | |
| 7:30 AM | 0 | 18 | 162 | 12 | 0 | 18 | 93 | 6 | 0 | 13 | 94 | 30 | 0 | 31 | 197 | 29 | 703 | 0 | |
| 7:45 AM | 0 | 29 | 195 | 4 | 0 | 27 | 111 | 11 | 0 | 24 | 123 | 35 | 0 | 35 | 179 | 26 | 799 | 2,636 | |
| 8:00 AM | 0 | 20 | 150 | 11 | 0 | 17 | 106 | 18 | 0 | 23 | 144 | 31 | 1 | 27 | 176 | 30 | 754 | 2,870 | |
| 8:15 AM | 0 | 22 | 172 | 10 | 0 | 27 | 114 | 17 | 0 | 15 | 144 | 31 | 1 | 31 | 184 | 37 | 805 | 3,061 | |
| 8:30 AM | 0 | 21 | 157 | 8 | 0 | 27 | 89 | 8 | 0 | 20 | 141 | 28 | 0 | 22 | 214 | 32 | 767 | 3,125 | |
| 8:45 AM | 0 | 39 | 168 | 19 | 0 | 23 | 83 | 15 | 1 | 24 | 154 | 25 | 1 | 32 | 207 | 45 | 836 | 3,162 | |
| Count Total | 0 | 181 | 1,288 | 81 | 0 | 174 | 776 | 88 | 1 | 133 | 934 | 230 | 3 | 214 | 1,454 | 241 | 5,798 | 0 | |
| Peak Hour | All | 0 | 102 | 647 | 48 | 0 | 94 | 392 | 58 | 1 | 82 | 583 | 115 | 3 | 112 | 781 | 144 | 3,162 | 0 |
| | HV | 0 | 7 | 27 | 3 | 0 | 4 | 22 | 5 | 0 | 4 | 49 | 5 | 0 | 10 | 68 | 9 | 213 | 0 |
| | HV% | - | 7% | 4% | 6% | - | 4% | 6% | 9% | 0% | 5% | 8% | 4% | 0% | 9% | 9% | 6% | 7% | 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 |
| 7:00 AM | 3 | 8 | 5 | 6 | 22 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 2 | 0 | 8 |
| 7:15 AM | 2 | 7 | 7 | 12 | 28 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 5 |
| 7:30 AM | 7 | 8 | 11 | 10 | 36 | 0 | 0 | 1 | 0 | 1 | 9 | 3 | 2 | 4 | 18 |
| 7:45 AM | 6 | 12 | 6 | 18 | 42 | 0 | 0 | 0 | 0 | 0 | 5 | 2 | 1 | 7 | 15 |
| 8:00 AM | 6 | 9 | 15 | 26 | 56 | 0 | 0 | 0 | 0 | 0 | 7 | 6 | 5 | 1 | 19 |
| 8:15 AM | 10 | 7 | 15 | 21 | 53 | 0 | 0 | 0 | 0 | 0 | 10 | 9 | 8 | 8 | 35 |
| 8:30 AM | 13 | 8 | 12 | 27 | 60 | 0 | 0 | 0 | 0 | 0 | 8 | 5 | 6 | 5 | 24 |
| 8:45 AM | 8 | 7 | 16 | 13 | 44 | 0 | 0 | 0 | 0 | 0 | 4 | 8 | 10 | 1 | 23 |
| Count Total | 55 | 66 | 87 | 133 | 341 | 0 | 0 | 1 | 0 | 1 | 51 | 36 | 34 | 26 | 147 |
| Peak Hour | 37 | 31 | 58 | 87 | 213 | 0 | 0 | 0 | 0 | 0 | 29 | 28 | 29 | 15 | 101 |

| Two-Hour Count Summaries - Heavy Vehicles | | | | | | | | | | | | | | | | | | |
|--|-----------------|----|----|----|-----------------|----|----|----|--------------|----|----|----|--------------|----|-----|----|--------------|------------------|
| Interval Start | N Northgate Way | | | | N Northgate Way | | | | Aurora Ave N | | | | Aurora Ave N | | | | 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 | | |
| 7:00 AM | 0 | 0 | 3 | 0 | 0 | 2 | 6 | 0 | 0 | 1 | 4 | 0 | 0 | 0 | 5 | 1 | 22 | 0 |
| 7:15 AM | 0 | 0 | 2 | 0 | 0 | 1 | 4 | 2 | 0 | 1 | 6 | 0 | 0 | 0 | 9 | 3 | 28 | 0 |
| 7:30 AM | 0 | 1 | 5 | 1 | 0 | 1 | 6 | 1 | 0 | 1 | 8 | 2 | 0 | 1 | 8 | 1 | 36 | 0 |
| 7:45 AM | 0 | 1 | 5 | 0 | 0 | 2 | 9 | 1 | 0 | 0 | 4 | 2 | 0 | 1 | 15 | 2 | 42 | 128 |
| 8:00 AM | 0 | 0 | 5 | 1 | 0 | 0 | 6 | 3 | 0 | 1 | 13 | 1 | 0 | 2 | 23 | 1 | 56 | 162 |
| 8:15 AM | 0 | 1 | 7 | 2 | 0 | 2 | 5 | 0 | 0 | 1 | 12 | 2 | 0 | 2 | 16 | 3 | 53 | 187 |
| 8:30 AM | 0 | 5 | 8 | 0 | 0 | 2 | 6 | 0 | 0 | 0 | 10 | 2 | 0 | 3 | 21 | 3 | 60 | 211 |
| 8:45 AM | 0 | 1 | 7 | 0 | 0 | 0 | 5 | 2 | 0 | 2 | 14 | 0 | 0 | 3 | 8 | 2 | 44 | 213 |
| Count Total | 0 | 9 | 42 | 4 | 0 | 10 | 47 | 9 | 0 | 7 | 71 | 9 | 0 | 12 | 105 | 16 | 341 | 0 |
| Peak Hour | 0 | 7 | 27 | 3 | 0 | 4 | 22 | 5 | 0 | 4 | 49 | 5 | 0 | 10 | 68 | 9 | 213 | 0 |

| Two-Hour Count Summaries - Bikes | | | | | | | | | | | | | | | | | |
|---|-----------------|----|----|-----------------|----|----|--------------|----|----|--------------|----|----|--------------|------------------|---|---|---|
| Interval Start | N Northgate Way | | | N Northgate Way | | | Aurora Ave N | | | Aurora Ave N | | | 15-min Total | Rolling One Hour | | | |
| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | | | | | |
| | LT | TH | RT | LT | TH | RT | LT | TH | RT | LT | TH | RT | | | | | |
| 7:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 8:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 8:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:45 AM | 0 | 0 | 0 | 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 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Peak Hour | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

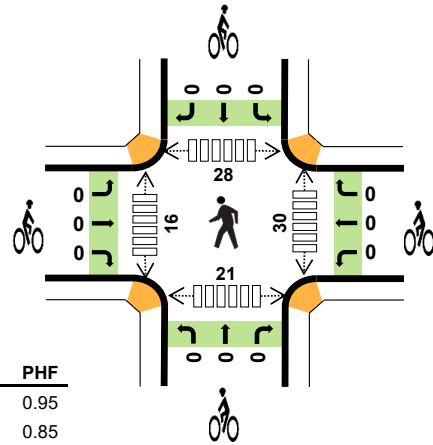
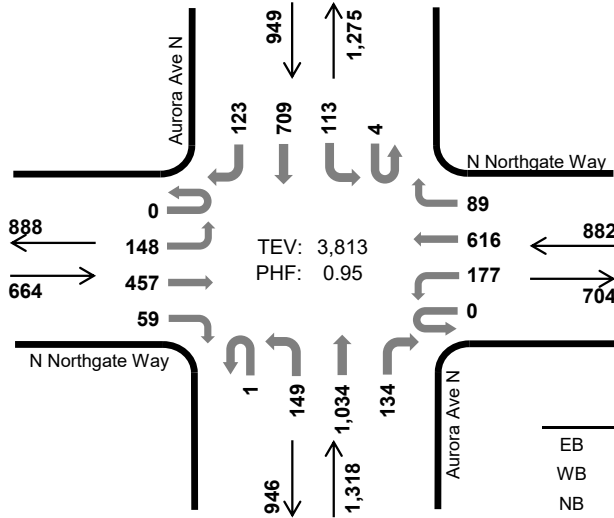
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Aurora Ave N N Northgate Way



Peak Hour

Date: 01/24/2023
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 5:00 PM to 6:00 PM



| | HV %: | PHF |
|-------|-------|------|
| EB | 1.4% | 0.95 |
| WB | 0.9% | 0.85 |
| NB | 2.0% | 0.89 |
| SB | 2.8% | 0.86 |
| TOTAL | 1.9% | 0.95 |

Two-Hour Count Summaries

| Interval Start | N Northgate Way | | | | N Northgate Way | | | | Aurora Ave N | | | | Aurora Ave N | | | | 15-min Total | Rolling One Hour | |
|----------------|-----------------|-----------|------------|-----------|-----------------|-----------|------------|-----------|--------------|-----------|------------|-----------|--------------|-----------|------------|-----------|--------------|------------------|---|
| | Eastbound | | Westbound | | Northbound | | Southbound | | UT | LT | TH | RT | UT | LT | TH | RT | | | |
| 4:00 PM | 0 | 39 | 108 | 9 | 0 | 36 | 169 | 11 | 1 | 22 | 210 | 22 | 0 | 26 | 201 | 37 | 891 | 0 | |
| 4:15 PM | 0 | 35 | 126 | 8 | 0 | 39 | 145 | 24 | 0 | 39 | 261 | 36 | 3 | 25 | 183 | 49 | 973 | 0 | |
| 4:30 PM | 0 | 30 | 100 | 12 | 0 | 42 | 157 | 15 | 1 | 30 | 262 | 38 | 2 | 29 | 177 | 31 | 926 | 0 | |
| 4:45 PM | 0 | 28 | 117 | 17 | 0 | 39 | 155 | 23 | 1 | 37 | 216 | 23 | 0 | 22 | 163 | 30 | 871 | 3,661 | |
| 5:00 PM | 0 | 36 | 110 | 11 | 0 | 40 | 139 | 21 | 1 | 35 | 305 | 30 | 1 | 27 | 208 | 39 | 1,003 | 3,773 | |
| 5:15 PM | 0 | 39 | 113 | 23 | 0 | 48 | 191 | 19 | 0 | 34 | 247 | 39 | 0 | 18 | 166 | 30 | 967 | 3,767 | |
| 5:30 PM | 0 | 35 | 111 | 18 | 0 | 35 | 149 | 26 | 0 | 42 | 243 | 38 | 3 | 35 | 174 | 28 | 937 | 3,778 | |
| 5:45 PM | 0 | 38 | 123 | 7 | 0 | 54 | 137 | 23 | 0 | 38 | 239 | 27 | 0 | 33 | 161 | 26 | 906 | 3,813 | |
| Count Total | 0 | 280 | 908 | 105 | 0 | 333 | 1,242 | 162 | 4 | 277 | 1,983 | 253 | 9 | 215 | 1,433 | 270 | 7,474 | 0 | |
| Peak Hour | All | 0 | 148 | 457 | 59 | 0 | 177 | 616 | 89 | 1 | 149 | 1,034 | 134 | 4 | 113 | 709 | 123 | 3,813 | 0 |
| | HV | 0 | 1 | 6 | 2 | 0 | 0 | 8 | 0 | 0 | 1 | 23 | 3 | 0 | 2 | 24 | 1 | 71 | 0 |
| | HV% | - | 1% | 1% | 3% | - | 0% | 1% | 0% | 0% | 1% | 2% | 2% | 0% | 2% | 3% | 1% | 2% | 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 | 6 | 10 | 18 | 13 | 47 | 0 | 0 | 0 | 0 | 0 | 11 | 25 | 13 | 10 | 59 |
| 4:15 PM | 7 | 6 | 15 | 6 | 34 | 0 | 0 | 0 | 0 | 0 | 13 | 12 | 10 | 6 | 41 |
| 4:30 PM | 5 | 4 | 13 | 8 | 30 | 0 | 0 | 0 | 1 | 1 | 5 | 6 | 7 | 8 | 26 |
| 4:45 PM | 5 | 5 | 3 | 5 | 18 | 0 | 0 | 0 | 1 | 1 | 10 | 11 | 10 | 9 | 40 |
| 5:00 PM | 2 | 2 | 11 | 12 | 27 | 0 | 0 | 0 | 0 | 0 | 10 | 9 | 5 | 8 | 32 |
| 5:15 PM | 3 | 1 | 4 | 8 | 16 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 8 | 1 | 14 |
| 5:30 PM | 1 | 2 | 6 | 3 | 12 | 0 | 0 | 0 | 0 | 0 | 9 | 3 | 6 | 3 | 21 |
| 5:45 PM | 3 | 3 | 6 | 4 | 16 | 0 | 0 | 0 | 0 | 0 | 9 | 1 | 9 | 9 | 28 |
| Count Total | 32 | 33 | 76 | 59 | 200 | 0 | 0 | 0 | 2 | 2 | 69 | 70 | 68 | 54 | 261 |
| Peak Hour | 9 | 8 | 27 | 27 | 71 | 0 | 0 | 0 | 0 | 0 | 30 | 16 | 28 | 21 | 95 |

| Two-Hour Count Summaries - Heavy Vehicles | | | | | | | | | | | | | | | | | | |
|--|-----------------|----------|----------|----------|-----------------|----------|----------|----------|--------------|----------|-----------|----------|--------------|----------|-----------|----------|--------------|------------------|
| Interval Start | N Northgate Way | | | | N Northgate Way | | | | Aurora Ave N | | | | Aurora Ave N | | | | 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 | 2 | 4 | 0 | 0 | 2 | 6 | 2 | 0 | 1 | 16 | 1 | 0 | 1 | 10 | 2 | 47 | 0 |
| 4:15 PM | 0 | 1 | 6 | 0 | 0 | 0 | 5 | 1 | 0 | 0 | 14 | 1 | 0 | 0 | 4 | 2 | 34 | 0 |
| 4:30 PM | 0 | 2 | 2 | 1 | 0 | 1 | 3 | 0 | 0 | 0 | 11 | 2 | 0 | 0 | 8 | 0 | 30 | 0 |
| 4:45 PM | 0 | 0 | 4 | 1 | 0 | 1 | 4 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 4 | 1 | 18 | 129 |
| 5:00 PM | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 11 | 0 | 0 | 1 | 11 | 0 | 27 | 109 |
| 5:15 PM | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 8 | 0 | 16 | 91 |
| 5:30 PM | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 6 | 0 | 0 | 1 | 1 | 1 | 12 | 73 |
| 5:45 PM | 0 | 0 | 2 | 1 | 0 | 0 | 3 | 0 | 0 | 1 | 2 | 3 | 0 | 0 | 4 | 0 | 16 | 71 |
| Count Total | 0 | 6 | 22 | 4 | 0 | 4 | 26 | 3 | 0 | 2 | 67 | 7 | 0 | 3 | 50 | 6 | 200 | 0 |
| Peak Hour | 0 | 1 | 6 | 2 | 0 | 0 | 8 | 0 | 0 | 1 | 23 | 3 | 0 | 2 | 24 | 1 | 71 | 0 |

| Two-Hour Count Summaries - Bikes | | | | | | | | | | | | | | | | | | |
|---|-----------------|----------|----------|-----------------|----------|----------|--------------|----------|----------|--------------|----------|----------|--------------|------------------|----------|----------|----------|---|
| Interval Start | N Northgate Way | | | N Northgate Way | | | Aurora Ave N | | | Aurora Ave N | | | 15-min Total | Rolling One Hour | | | | |
| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | | | | | | |
| | 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 | 0 | 0 | 0 | 0 |
| 4:15 PM | 0 | 0 | 0 | 0 | 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 | 1 | 0 | 0 | 1 | 0 |
| 4:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 2 |
| 5:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 5:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 5:45 PM | 0 | 0 | 0 | 0 | 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 | 2 | 0 | 0 | 2 | 0 |
| Peak Hour | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

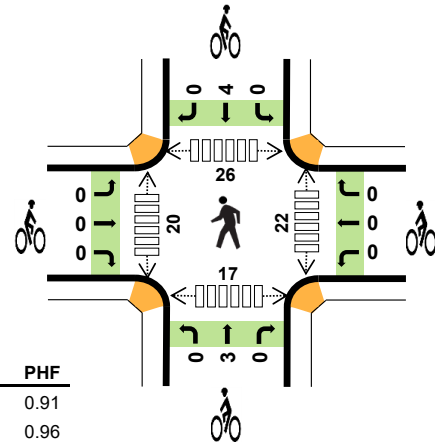
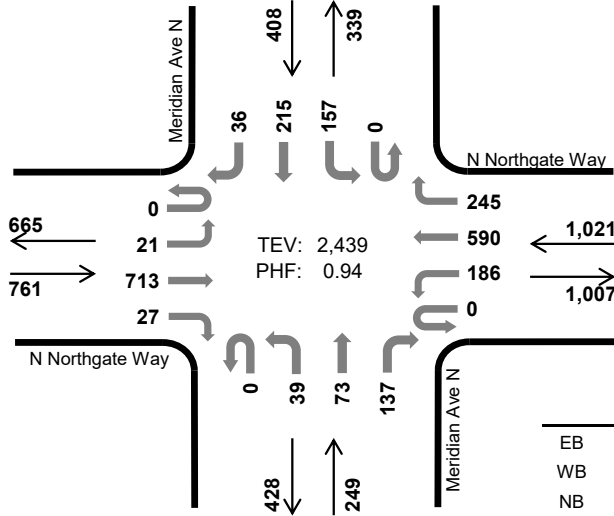
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Meridian Ave N N Northgate Way



Peak Hour

Date: 01/24/2023
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:30 AM to 8:30 AM



| | HV %: | PHF |
|-------|-------|------|
| EB | 4.2% | 0.91 |
| WB | 4.4% | 0.96 |
| NB | 7.2% | 0.80 |
| SB | 4.4% | 0.82 |
| TOTAL | 4.6% | 0.94 |

Two-Hour Count Summaries

| Interval Start | N Northgate Way | | | | N Northgate Way | | | | Meridian Ave N | | | | Meridian Ave N | | | | 15-min Total | Rolling One Hour | |
|----------------|-----------------|----|-----------|-----|-----------------|-----|------------|-----|----------------|----|-----|-----|----------------|-----|-----|-----|--------------|------------------|---|
| | Eastbound | | Westbound | | Northbound | | Southbound | | UT | LT | TH | RT | UT | LT | TH | RT | | | |
| 7:00 AM | 0 | 3 | 130 | 8 | 0 | 35 | 123 | 52 | 0 | 4 | 16 | 20 | 0 | 20 | 38 | 8 | 457 | 0 | |
| 7:15 AM | 0 | 2 | 143 | 12 | 0 | 28 | 143 | 61 | 0 | 17 | 7 | 25 | 0 | 38 | 40 | 4 | 520 | 0 | |
| 7:30 AM | 0 | 4 | 184 | 10 | 0 | 41 | 136 | 56 | 0 | 7 | 10 | 28 | 0 | 46 | 69 | 10 | 601 | 0 | |
| 7:45 AM | 0 | 6 | 196 | 7 | 0 | 44 | 151 | 65 | 0 | 9 | 22 | 47 | 0 | 37 | 57 | 5 | 646 | 2,224 | |
| 8:00 AM | 0 | 4 | 167 | 5 | 0 | 57 | 148 | 60 | 0 | 13 | 23 | 38 | 0 | 42 | 50 | 10 | 617 | 2,384 | |
| 8:15 AM | 0 | 7 | 166 | 5 | 0 | 44 | 155 | 64 | 0 | 10 | 18 | 24 | 0 | 32 | 39 | 11 | 575 | 2,439 | |
| 8:30 AM | 0 | 10 | 156 | 10 | 0 | 58 | 118 | 59 | 0 | 7 | 30 | 32 | 0 | 31 | 76 | 9 | 596 | 2,434 | |
| 8:45 AM | 0 | 8 | 148 | 8 | 0 | 72 | 106 | 69 | 0 | 10 | 29 | 47 | 0 | 42 | 78 | 8 | 625 | 2,413 | |
| Count Total | 0 | 44 | 1,290 | 65 | 0 | 379 | 1,080 | 486 | 0 | 77 | 155 | 261 | 0 | 288 | 447 | 65 | 4,637 | 0 | |
| Peak Hour | All | 0 | 21 | 713 | 27 | 0 | 186 | 590 | 245 | 0 | 39 | 73 | 137 | 0 | 157 | 215 | 36 | 2,439 | 0 |
| | HV | 0 | 3 | 25 | 4 | 0 | 5 | 31 | 9 | 0 | 9 | 9 | 0 | 0 | 7 | 9 | 2 | 113 | 0 |
| | HV% | - | 14% | 4% | 15% | - | 3% | 5% | 4% | - | 23% | 12% | 0% | - | 4% | 4% | 6% | 5% | 0 |

Note: Two-hour count summary 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 |
| 7:00 AM | 2 | 12 | 3 | 4 | 21 | 0 | 0 | 0 | 1 | 1 | 3 | 8 | 4 | 1 | 16 |
| 7:15 AM | 3 | 6 | 5 | 2 | 16 | 0 | 0 | 1 | 1 | 2 | 5 | 5 | 3 | 2 | 15 |
| 7:30 AM | 8 | 9 | 3 | 7 | 27 | 0 | 0 | 2 | 1 | 3 | 4 | 9 | 6 | 4 | 23 |
| 7:45 AM | 9 | 13 | 4 | 3 | 29 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 9 | 5 | 18 |
| 8:00 AM | 8 | 12 | 7 | 4 | 31 | 0 | 0 | 0 | 0 | 0 | 5 | 4 | 7 | 3 | 19 |
| 8:15 AM | 7 | 11 | 4 | 4 | 26 | 0 | 0 | 1 | 3 | 4 | 10 | 6 | 4 | 5 | 25 |
| 8:30 AM | 11 | 9 | 2 | 6 | 28 | 0 | 0 | 1 | 1 | 2 | 3 | 6 | 5 | 3 | 17 |
| 8:45 AM | 9 | 6 | 8 | 3 | 26 | 0 | 0 | 0 | 0 | 0 | 5 | 7 | 5 | 5 | 22 |
| Count Total | 57 | 78 | 36 | 33 | 204 | 0 | 0 | 5 | 7 | 12 | 38 | 46 | 43 | 28 | 155 |
| Peak Hour | 32 | 45 | 18 | 18 | 113 | 0 | 0 | 3 | 4 | 7 | 22 | 20 | 26 | 17 | 85 |

| Two-Hour Count Summaries - Heavy Vehicles | | | | | | | | | | | | | | | | | | |
|--|-----------------|----|----|----|-----------------|----|----|----|----------------|----|----|----|----------------|----|----|----|--------------|------------------|
| Interval Start | N Northgate Way | | | | N Northgate Way | | | | Meridian Ave N | | | | Meridian Ave N | | | | 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 | | |
| 7:00 AM | 0 | 0 | 1 | 1 | 0 | 2 | 8 | 2 | 0 | 2 | 1 | 0 | 0 | 0 | 3 | 1 | 21 | 0 |
| 7:15 AM | 0 | 0 | 2 | 1 | 0 | 1 | 4 | 1 | 0 | 4 | 1 | 0 | 0 | 1 | 1 | 0 | 16 | 0 |
| 7:30 AM | 0 | 0 | 6 | 2 | 0 | 3 | 6 | 0 | 0 | 2 | 1 | 0 | 0 | 2 | 4 | 1 | 27 | 0 |
| 7:45 AM | 0 | 0 | 8 | 1 | 0 | 0 | 9 | 4 | 0 | 1 | 3 | 0 | 0 | 1 | 2 | 0 | 29 | 93 |
| 8:00 AM | 0 | 2 | 5 | 1 | 0 | 1 | 8 | 3 | 0 | 4 | 3 | 0 | 0 | 2 | 2 | 0 | 31 | 103 |
| 8:15 AM | 0 | 1 | 6 | 0 | 0 | 1 | 8 | 2 | 0 | 2 | 2 | 0 | 0 | 2 | 1 | 1 | 26 | 113 |
| 8:30 AM | 0 | 0 | 7 | 4 | 0 | 1 | 6 | 2 | 0 | 1 | 1 | 0 | 0 | 2 | 4 | 0 | 28 | 114 |
| 8:45 AM | 0 | 1 | 8 | 0 | 0 | 1 | 4 | 1 | 0 | 3 | 4 | 1 | 0 | 0 | 3 | 0 | 26 | 111 |
| Count Total | 0 | 4 | 43 | 10 | 0 | 10 | 53 | 15 | 0 | 19 | 16 | 1 | 0 | 10 | 20 | 3 | 204 | 0 |
| Peak Hour | 0 | 3 | 25 | 4 | 0 | 5 | 31 | 9 | 0 | 9 | 9 | 0 | 0 | 7 | 9 | 2 | 113 | 0 |

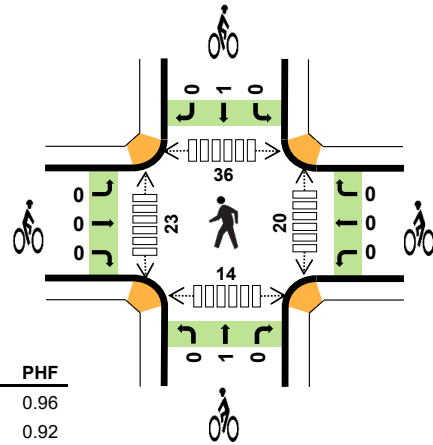
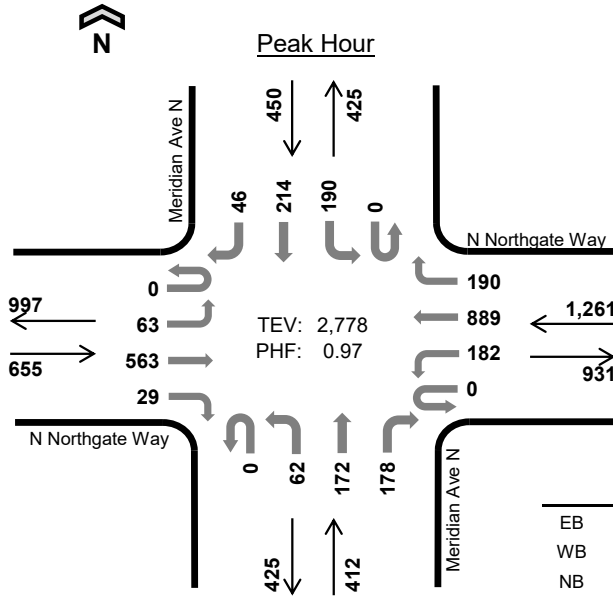
| Two-Hour Count Summaries - Bikes | | | | | | | | | | | | | | | | | |
|---|-----------------|----|----|-----------------|----|----|----------------|----|----|----------------|----|----|--------------|------------------|----|---|--|
| Interval Start | N Northgate Way | | | N Northgate Way | | | Meridian Ave N | | | Meridian Ave N | | | 15-min Total | Rolling One Hour | | | |
| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | | | | | |
| | LT | TH | RT | LT | TH | RT | LT | TH | RT | LT | TH | RT | | | | | |
| 7:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 3 | 0 | |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 8:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 3 | 0 | 4 | 7 | |
| 8:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 2 | 6 | |
| 8:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Count Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 7 | 0 | 12 | 0 | |
| Peak Hour | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 4 | 0 | 7 | 0 | |

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Meridian Ave N N Northgate Way



Date: 01/24/2023
 Count Period: 4:00 PM to 6:00 PM
 Peak Hour: 4:30 PM to 5:30 PM



| | HV %: | PHF |
|-------|-------|------|
| EB | 3.1% | 0.96 |
| WB | 1.0% | 0.92 |
| NB | 3.2% | 0.93 |
| SB | 2.0% | 0.85 |
| TOTAL | 1.9% | 0.97 |

Two-Hour Count Summaries

| Interval Start | N Northgate Way | | | | N Northgate Way | | | | Meridian Ave N | | | | Meridian Ave N | | | | 15-min Total | Rolling One Hour | |
|----------------|-----------------|----|-----------|-----|-----------------|-----|------------|-----|----------------|-----|-----|-----|----------------|-----|-----|-----|--------------|------------------|---|
| | Eastbound | | Westbound | | Northbound | | Southbound | | UT | LT | TH | RT | UT | LT | TH | RT | | | |
| 4:00 PM | 0 | 8 | 147 | 5 | 0 | 42 | 213 | 46 | 0 | 23 | 41 | 48 | 0 | 49 | 60 | 12 | 694 | 0 | |
| 4:15 PM | 0 | 12 | 147 | 9 | 0 | 57 | 213 | 54 | 0 | 10 | 50 | 45 | 0 | 43 | 48 | 6 | 694 | 0 | |
| 4:30 PM | 0 | 20 | 142 | 8 | 0 | 34 | 215 | 43 | 0 | 11 | 44 | 47 | 0 | 50 | 70 | 13 | 697 | 0 | |
| 4:45 PM | 0 | 10 | 134 | 5 | 0 | 57 | 231 | 53 | 0 | 15 | 43 | 36 | 0 | 40 | 40 | 7 | 671 | 2,756 | |
| 5:00 PM | 0 | 18 | 143 | 9 | 0 | 40 | 207 | 51 | 0 | 19 | 42 | 44 | 0 | 54 | 53 | 12 | 692 | 2,754 | |
| 5:15 PM | 0 | 15 | 144 | 7 | 0 | 51 | 236 | 43 | 0 | 17 | 43 | 51 | 0 | 46 | 51 | 14 | 718 | 2,778 | |
| 5:30 PM | 0 | 5 | 156 | 9 | 0 | 65 | 228 | 53 | 0 | 10 | 48 | 29 | 0 | 22 | 45 | 14 | 684 | 2,765 | |
| 5:45 PM | 0 | 9 | 141 | 9 | 0 | 35 | 211 | 44 | 0 | 7 | 36 | 33 | 0 | 29 | 41 | 9 | 604 | 2,698 | |
| Count Total | 0 | 97 | 1,154 | 61 | 0 | 381 | 1,754 | 387 | 0 | 112 | 347 | 333 | 0 | 333 | 408 | 87 | 5,454 | 0 | |
| Peak Hour | All | 0 | 63 | 563 | 29 | 0 | 182 | 889 | 190 | 0 | 62 | 172 | 178 | 0 | 190 | 214 | 46 | 2,778 | 0 |
| | HV | 0 | 1 | 11 | 8 | 0 | 7 | 5 | 0 | 0 | 7 | 6 | 0 | 0 | 1 | 6 | 2 | 54 | 0 |
| | HV% | - | 2% | 2% | 28% | - | 4% | 1% | 0% | - | 11% | 3% | 0% | - | 1% | 3% | 4% | 2% | 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 | 10 | 15 | 2 | 5 | 32 | 0 | 0 | 0 | 1 | 1 | 13 | 12 | 13 | 10 | 48 |
| 4:15 PM | 7 | 10 | 7 | 4 | 28 | 0 | 0 | 0 | 0 | 0 | 5 | 2 | 5 | 3 | 15 |
| 4:30 PM | 10 | 3 | 2 | 4 | 19 | 0 | 0 | 0 | 0 | 0 | 5 | 7 | 3 | 6 | 21 |
| 4:45 PM | 5 | 6 | 4 | 1 | 16 | 0 | 0 | 0 | 1 | 1 | 4 | 7 | 9 | 0 | 20 |
| 5:00 PM | 3 | 1 | 5 | 3 | 12 | 0 | 0 | 1 | 0 | 1 | 7 | 7 | 15 | 6 | 35 |
| 5:15 PM | 2 | 2 | 2 | 1 | 7 | 0 | 0 | 0 | 0 | 0 | 4 | 2 | 9 | 2 | 17 |
| 5:30 PM | 3 | 4 | 2 | 3 | 12 | 0 | 0 | 1 | 0 | 1 | 8 | 8 | 8 | 5 | 29 |
| 5:45 PM | 3 | 7 | 4 | 1 | 15 | 0 | 0 | 1 | 0 | 1 | 2 | 8 | 9 | 1 | 20 |
| Count Total | 43 | 48 | 28 | 22 | 141 | 0 | 0 | 3 | 2 | 5 | 48 | 53 | 71 | 33 | 205 |
| Peak Hour | 20 | 12 | 13 | 9 | 54 | 0 | 0 | 1 | 1 | 2 | 20 | 23 | 36 | 14 | 93 |

| Two-Hour Count Summaries - Heavy Vehicles | | | | | | | | | | | | | | | | | | |
|--|-----------------|----|----|----|-----------------|----|----|----|----------------|----|----|----|----------------|----|----|----|--------------|------------------|
| Interval Start | N Northgate Way | | | | N Northgate Way | | | | Meridian Ave N | | | | Meridian Ave N | | | | 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 | 0 | 9 | 1 | 0 | 3 | 9 | 3 | 0 | 2 | 0 | 0 | 0 | 1 | 4 | 0 | 32 | 0 |
| 4:15 PM | 0 | 0 | 5 | 2 | 0 | 5 | 4 | 1 | 0 | 2 | 4 | 1 | 0 | 1 | 3 | 0 | 28 | 0 |
| 4:30 PM | 0 | 1 | 7 | 2 | 0 | 0 | 3 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 2 | 1 | 19 | 0 |
| 4:45 PM | 0 | 0 | 3 | 2 | 0 | 5 | 1 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 1 | 16 | 95 |
| 5:00 PM | 0 | 0 | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 2 | 3 | 0 | 0 | 0 | 3 | 0 | 12 | 75 |
| 5:15 PM | 0 | 0 | 0 | 2 | 0 | 1 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 7 | 54 |
| 5:30 PM | 0 | 0 | 2 | 1 | 0 | 1 | 1 | 2 | 0 | 1 | 1 | 0 | 0 | 1 | 2 | 0 | 12 | 47 |
| 5:45 PM | 0 | 0 | 1 | 2 | 0 | 1 | 5 | 1 | 0 | 0 | 3 | 1 | 0 | 0 | 1 | 0 | 15 | 46 |
| Count Total | 0 | 1 | 28 | 14 | 0 | 17 | 24 | 7 | 0 | 12 | 14 | 2 | 0 | 4 | 16 | 2 | 141 | 0 |
| Peak Hour | 0 | 1 | 11 | 8 | 0 | 7 | 5 | 0 | 0 | 7 | 6 | 0 | 0 | 1 | 6 | 2 | 54 | 0 |

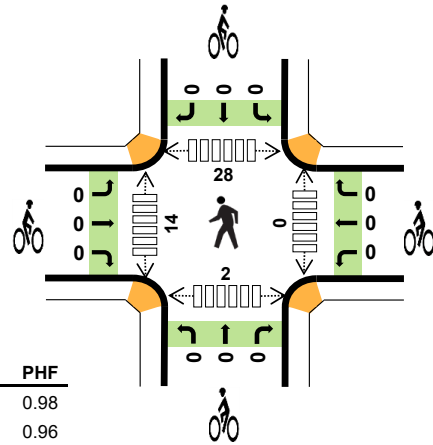
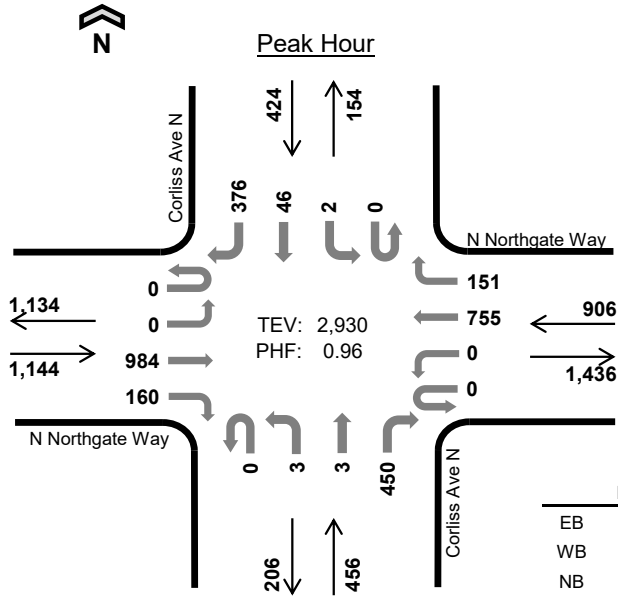
| Two-Hour Count Summaries - Bikes | | | | | | | | | | | | | | | | | |
|---|-----------------|----|----|-----------------|----|----|----------------|----|----|----------------|----|----|--------------|------------------|---|---|--|
| Interval Start | N Northgate Way | | | N Northgate Way | | | Meridian Ave N | | | Meridian Ave N | | | 15-min Total | Rolling One Hour | | | |
| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | | | | | |
| | 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 | 1 | 0 | 1 | 0 | |
| 4:15 PM | 0 | 0 | 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 | 0 | 0 | |
| 4:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 2 | |
| 5:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | |
| 5:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | |
| 5:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | |
| Count Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 2 | 0 | 5 | 0 | | |
| Peak Hour | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 2 | 0 | | |

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Corliss Ave N N Northgate Way



Date: 02/07/2023
 Count Period: 7:00 AM to 9:00 AM
 Peak Hour: 7:45 AM to 8:45 AM



| | HV %: | PHF |
|-------|-------|------|
| EB | 3.1% | 0.98 |
| WB | 3.4% | 0.96 |
| NB | 6.1% | 0.88 |
| SB | 4.0% | 0.91 |
| TOTAL | 3.8% | 0.96 |

Two-Hour Count Summaries

| Interval Start | N Northgate Way | | | | N Northgate Way | | | | Corliss Ave N | | | | Corliss Ave N | | | | 15-min Total | Rolling One Hour | |
|----------------|-----------------|----------|------------|-----------|-----------------|----------|------------|-----------|---------------|----------|------------|------------|---------------|----------|-----------|-----------|--------------|------------------|---|
| | Eastbound | | Westbound | | Westbound | | Northbound | | Northbound | | Southbound | | Southbound | | | | | | |
| | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | | | |
| 7:00 AM | 0 | 0 | 152 | 49 | 0 | 0 | 116 | 51 | 0 | 1 | 0 | 132 | 0 | 0 | 7 | 118 | 626 | 0 | |
| 7:15 AM | 1 | 0 | 189 | 42 | 0 | 0 | 135 | 45 | 0 | 0 | 2 | 120 | 0 | 0 | 5 | 101 | 640 | 0 | |
| 7:30 AM | 0 | 0 | 219 | 51 | 0 | 0 | 167 | 56 | 0 | 0 | 3 | 115 | 0 | 0 | 5 | 97 | 713 | 0 | |
| 7:45 AM | 0 | 0 | 255 | 32 | 0 | 0 | 187 | 48 | 0 | 0 | 1 | 129 | 0 | 0 | 17 | 91 | 760 | 2,739 | |
| 8:00 AM | 0 | 0 | 250 | 37 | 0 | 0 | 190 | 31 | 0 | 1 | 0 | 106 | 0 | 0 | 7 | 90 | 712 | 2,825 | |
| 8:15 AM | 0 | 0 | 234 | 45 | 0 | 0 | 185 | 32 | 0 | 2 | 0 | 106 | 0 | 1 | 10 | 91 | 706 | 2,891 | |
| 8:30 AM | 0 | 0 | 245 | 46 | 0 | 0 | 193 | 40 | 0 | 0 | 2 | 109 | 0 | 1 | 12 | 104 | 752 | 2,930 | |
| 8:45 AM | 0 | 0 | 216 | 42 | 0 | 0 | 180 | 32 | 0 | 0 | 1 | 129 | 0 | 0 | 24 | 119 | 743 | 2,913 | |
| Count Total | 1 | 0 | 1,760 | 344 | 0 | 0 | 1,353 | 335 | 0 | 4 | 9 | 946 | 0 | 2 | 87 | 811 | 5,652 | 0 | |
| Peak Hour | All | 0 | 0 | 984 | 160 | 0 | 0 | 755 | 151 | 0 | 3 | 3 | 450 | 0 | 2 | 46 | 376 | 2,930 | 0 |
| | HV | 0 | 0 | 28 | 8 | 0 | 0 | 26 | 5 | 0 | 0 | 3 | 25 | 0 | 1 | 0 | 16 | 112 | 0 |
| | HV% | - | - | 3% | 5% | - | - | 3% | 3% | - | 0% | 100% | 6% | - | 50% | 0% | 4% | 4% | 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 |
| 7:00 AM | 4 | 13 | 9 | 5 | 31 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 3 | 0 | 4 |
| 7:15 AM | 2 | 8 | 9 | 4 | 23 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6 | 0 | 8 |
| 7:30 AM | 7 | 4 | 7 | 10 | 28 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 8 | 0 | 9 |
| 7:45 AM | 8 | 10 | 7 | 2 | 27 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 4 | 0 | 7 |
| 8:00 AM | 5 | 8 | 7 | 5 | 25 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 10 | 2 | 18 |
| 8:15 AM | 11 | 5 | 8 | 6 | 30 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 11 | 0 | 14 |
| 8:30 AM | 12 | 8 | 6 | 4 | 30 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 0 | 5 |
| 8:45 AM | 17 | 2 | 11 | 9 | 39 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 8 | 1 | 10 |
| Count Total | 66 | 58 | 64 | 45 | 233 | 0 | 0 | 0 | 1 | 1 | 0 | 19 | 53 | 3 | 75 |
| Peak Hour | 36 | 31 | 28 | 17 | 112 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 28 | 2 | 44 |

| Two-Hour Count Summaries - Heavy Vehicles | | | | | | | | | | | | | | | | | | |
|--|-----------------|----------|----------|----------|-----------------|----------|----------|----------|---------------|----------|----------|----------|---------------|----------|----------|----------|--------------|------------------|
| Interval Start | N Northgate Way | | | | N Northgate Way | | | | Corliss Ave N | | | | Corliss Ave N | | | | 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 | | |
| 7:00 AM | 0 | 0 | 2 | 2 | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 1 | 4 | 31 | 0 |
| 7:15 AM | 0 | 0 | 1 | 1 | 0 | 0 | 4 | 4 | 0 | 0 | 2 | 7 | 0 | 0 | 0 | 4 | 23 | 0 |
| 7:30 AM | 0 | 0 | 6 | 1 | 0 | 0 | 3 | 1 | 0 | 0 | 1 | 6 | 0 | 0 | 0 | 10 | 28 | 0 |
| 7:45 AM | 0 | 0 | 6 | 2 | 0 | 0 | 9 | 1 | 0 | 0 | 1 | 6 | 0 | 0 | 0 | 2 | 27 | 109 |
| 8:00 AM | 0 | 0 | 3 | 2 | 0 | 0 | 6 | 2 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 5 | 25 | 103 |
| 8:15 AM | 0 | 0 | 10 | 1 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 8 | 0 | 1 | 0 | 5 | 30 | 110 |
| 8:30 AM | 0 | 0 | 9 | 3 | 0 | 0 | 6 | 2 | 0 | 0 | 2 | 4 | 0 | 0 | 0 | 4 | 30 | 112 |
| 8:45 AM | 0 | 0 | 15 | 2 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 10 | 0 | 0 | 0 | 9 | 39 | 124 |
| Count Total | 0 | 0 | 52 | 14 | 0 | 0 | 47 | 11 | 0 | 0 | 7 | 57 | 0 | 1 | 1 | 43 | 233 | 0 |
| Peak Hour | 0 | 0 | 28 | 8 | 0 | 0 | 26 | 5 | 0 | 0 | 3 | 25 | 0 | 1 | 0 | 16 | 112 | 0 |

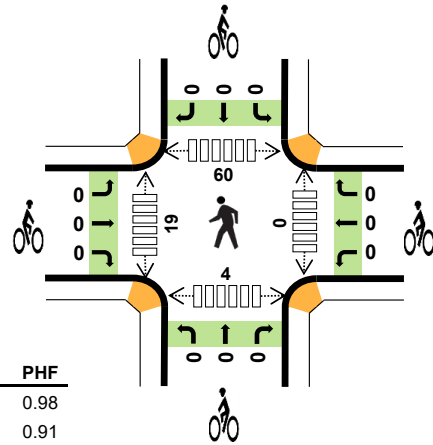
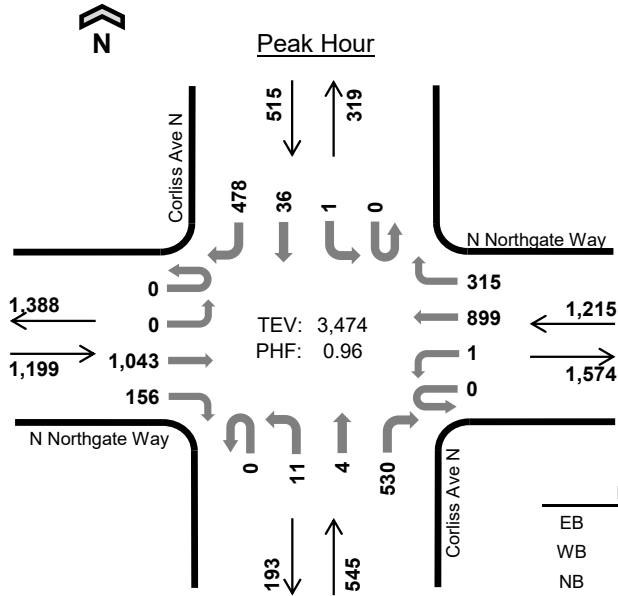
| Two-Hour Count Summaries - Bikes | | | | | | | | | | | | | | | | | |
|---|-----------------|----------|----------|-----------------|----------|----------|---------------|----------|----------|---------------|----------|----------|--------------|------------------|----------|----------|---|
| Interval Start | N Northgate Way | | | N Northgate Way | | | Corliss Ave N | | | Corliss Ave N | | | 15-min Total | Rolling One Hour | | | |
| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | | | | | |
| | LT | TH | RT | LT | TH | RT | LT | TH | RT | LT | TH | RT | | | | | |
| 7:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:45 AM | 0 | 0 | 0 | 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 | 1 | 0 | 1 | 0 | 0 |
| Peak Hour | 0 | 0 | 0 | 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.

Corliss Ave N N Northgate Way



Date: 02/07/2023
 Count Period: 4:00 PM to 6:00 PM
 Peak Hour: 4:30 PM to 5:30 PM



| | HV %: | PHF |
|-------|-------|------|
| EB | 1.1% | 0.98 |
| WB | 0.9% | 0.91 |
| NB | 6.1% | 0.88 |
| SB | 1.7% | 0.89 |
| TOTAL | 1.9% | 0.96 |

Two-Hour Count Summaries

| Interval Start | N Northgate Way Eastbound | | | | N Northgate Way Westbound | | | | Corliss Ave N Northbound | | | | Corliss Ave N 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 | 221 | 48 | 0 | 0 | 210 | 83 | 0 | 1 | 2 | 120 | 0 | 0 | 11 | 118 | 814 | 0 | |
| 4:15 PM | 0 | 0 | 237 | 36 | 0 | 0 | 192 | 72 | 0 | 0 | 1 | 106 | 0 | 1 | 11 | 136 | 792 | 0 | |
| 4:30 PM | 0 | 0 | 263 | 31 | 0 | 1 | 237 | 95 | 0 | 0 | 0 | 137 | 0 | 0 | 9 | 117 | 890 | 0 | |
| 4:45 PM | 0 | 0 | 260 | 35 | 0 | 0 | 220 | 67 | 0 | 1 | 1 | 112 | 0 | 0 | 10 | 134 | 840 | 3,336 | |
| 5:00 PM | 0 | 0 | 255 | 48 | 0 | 0 | 214 | 75 | 0 | 6 | 0 | 133 | 0 | 1 | 5 | 102 | 839 | 3,361 | |
| 5:15 PM | 0 | 0 | 265 | 42 | 0 | 0 | 228 | 78 | 0 | 4 | 3 | 148 | 0 | 0 | 12 | 125 | 905 | 3,474 | |
| 5:30 PM | 0 | 0 | 223 | 51 | 0 | 0 | 206 | 69 | 0 | 6 | 1 | 108 | 0 | 0 | 10 | 138 | 812 | 3,396 | |
| 5:45 PM | 0 | 0 | 213 | 34 | 0 | 0 | 217 | 79 | 0 | 2 | 0 | 123 | 0 | 0 | 18 | 116 | 802 | 3,358 | |
| Count Total | 0 | 0 | 1,937 | 325 | 0 | 1 | 1,724 | 618 | 0 | 20 | 8 | 987 | 0 | 2 | 86 | 986 | 6,694 | 0 | |
| Peak Hour | All | 0 | 0 | 1,043 | 156 | 0 | 1 | 899 | 315 | 0 | 11 | 4 | 530 | 0 | 1 | 36 | 478 | 3,474 | 0 |
| | HV | 0 | 0 | 13 | 0 | 0 | 0 | 8 | 3 | 0 | 4 | 3 | 26 | 0 | 0 | 4 | 5 | 66 | 0 |
| | HV% | - | - | 1% | 0% | - | 0% | 1% | 1% | - | 36% | 75% | 5% | - | 0% | 11% | 1% | 2% | 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 | 6 | 12 | 2 | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 7 | 0 | 8 |
| 4:15 PM | 8 | 3 | 4 | 3 | 18 | 0 | 1 | 0 | 1 | 2 | 0 | 7 | 16 | 2 | 25 |
| 4:30 PM | 6 | 0 | 8 | 3 | 17 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 12 | 4 | 20 |
| 4:45 PM | 2 | 5 | 4 | 1 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 8 | 0 | 11 |
| 5:00 PM | 1 | 6 | 11 | 0 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 22 | 0 | 32 |
| 5:15 PM | 4 | 0 | 10 | 5 | 19 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 18 | 0 | 20 |
| 5:30 PM | 8 | 5 | 7 | 1 | 21 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 15 | 0 | 22 |
| 5:45 PM | 1 | 2 | 6 | 1 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 10 | 0 | 18 |
| Count Total | 34 | 27 | 62 | 16 | 139 | 0 | 1 | 0 | 1 | 2 | 0 | 42 | 108 | 6 | 156 |
| Peak Hour | 13 | 11 | 33 | 9 | 66 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | 60 | 4 | 83 |

| Two-Hour Count Summaries - Heavy Vehicles | | | | | | | | | | | | | | | | | | |
|--|-----------------|----|----|----|-----------------|----|----|----|---------------|----|----|----|---------------|----|----|----|--------------|------------------|
| Interval Start | N Northgate Way | | | | N Northgate Way | | | | Corliss Ave N | | | | Corliss Ave N | | | | 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 | 0 | 2 | 2 | 0 | 0 | 5 | 1 | 0 | 0 | 2 | 10 | 0 | 0 | 1 | 1 | 24 | 0 |
| 4:15 PM | 0 | 0 | 7 | 1 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 3 | 18 | 0 |
| 4:30 PM | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 1 | 2 | 17 | 0 |
| 4:45 PM | 0 | 0 | 2 | 0 | 0 | 0 | 4 | 1 | 0 | 0 | 1 | 3 | 0 | 0 | 0 | 1 | 12 | 71 |
| 5:00 PM | 0 | 0 | 1 | 0 | 0 | 0 | 4 | 2 | 0 | 1 | 0 | 10 | 0 | 0 | 0 | 0 | 18 | 65 |
| 5:15 PM | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 2 | 5 | 0 | 0 | 3 | 2 | 19 | 66 |
| 5:30 PM | 0 | 0 | 8 | 0 | 0 | 0 | 3 | 2 | 0 | 0 | 0 | 7 | 0 | 0 | 1 | 0 | 21 | 70 |
| 5:45 PM | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 1 | 10 | 68 |
| Count Total | 0 | 0 | 30 | 4 | 0 | 0 | 19 | 8 | 0 | 4 | 5 | 53 | 0 | 0 | 6 | 10 | 139 | 0 |
| Peak Hour | 0 | 0 | 13 | 0 | 0 | 0 | 8 | 3 | 0 | 4 | 3 | 26 | 0 | 0 | 4 | 5 | 66 | 0 |

| Two-Hour Count Summaries - Bikes | | | | | | | | | | | | | | | | | | |
|---|-----------------|----|----|-----------------|----|----|---------------|----|----|---------------|----|----|--------------|------------------|---|---|---|---|
| Interval Start | N Northgate Way | | | N Northgate Way | | | Corliss Ave N | | | Corliss Ave N | | | 15-min Total | Rolling One Hour | | | | |
| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | | | | | | |
| | 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 | 0 | 0 | 0 | 0 |
| 4:15 PM | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 2 | 0 | 0 |
| 4:30 PM | 0 | 0 | 0 | 0 | 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 | 0 | 0 | 0 | 2 |
| 5:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 5:15 PM | 0 | 0 | 0 | 0 | 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 | 0 | 0 | 0 | 0 |
| 5:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Count Total | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 2 | 0 | 0 |
| Peak Hour | 0 | 0 | 0 | 0 | 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.



Date: 01/24/2023

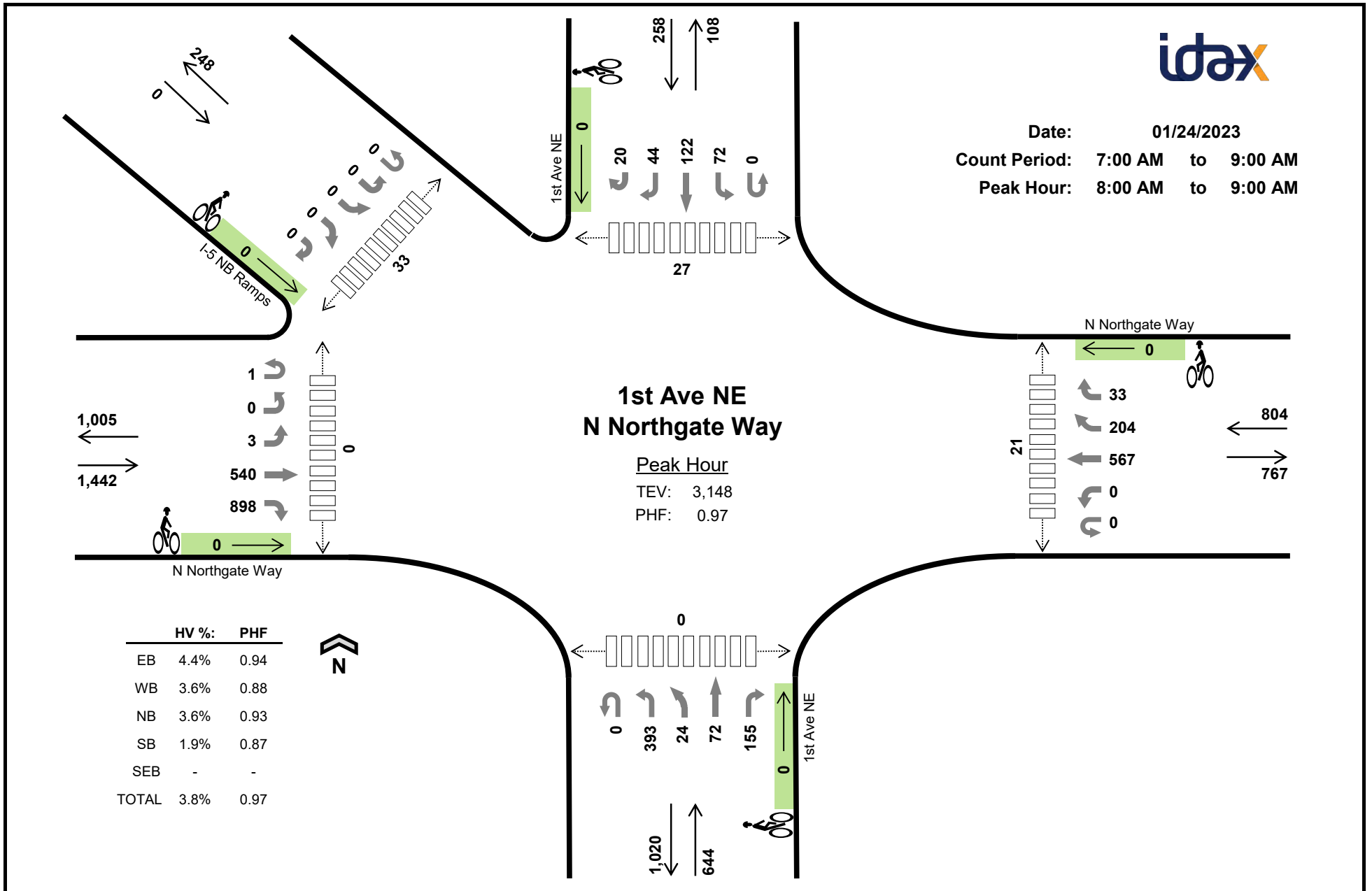
Count Period: 7:00 AM to 9:00 AM

Peak Hour: 8:00 AM to 9:00 AM

1st Ave NE N Northgate Way

Peak Hour
TEV: 3,148
PHF: 0.97

| | HV %: | PHF |
|-------|-------|------|
| EB | 4.4% | 0.94 |
| WB | 3.6% | 0.88 |
| NB | 3.6% | 0.93 |
| SB | 1.9% | 0.87 |
| SEB | - | - |
| TOTAL | 3.8% | 0.97 |



Two-Hour Count Summaries

| Interval Start | N Northgate Way | | | | | N Northgate Way | | | | | 1st Ave NE | | | | | 1st Ave NE | | | | | I-5 NB Ramps | | | | | 15-min Total | Rolling One Hour | |
|----------------|-----------------|----|----|-----|-------|-----------------|----|-------|-----|-----|------------|-----|-----|-----|-----|------------|-----|-----|-----|----|----------------|----|----|----|----|--------------|------------------|----|
| | Eastbound | | | | | Westbound | | | | | Northbound | | | | | Southbound | | | | | Southeastbound | | | | | | | |
| | UT | HL | LT | TH | RT | UT | LT | TH | BR | RT | UT | LT | BL | TH | RT | UT | LT | TH | RT | HR | UT | HL | BL | BR | HR | | | |
| 7:00 AM | 0 | 0 | 0 | 74 | 219 | 0 | 0 | 105 | 36 | 4 | 0 | 48 | 0 | 12 | 28 | 0 | 2 | 25 | 5 | 3 | 0 | 0 | 0 | 0 | 0 | 561 | 0 | |
| 7:15 AM | 0 | 0 | 0 | 87 | 220 | 0 | 0 | 101 | 61 | 7 | 0 | 82 | 5 | 11 | 34 | 0 | 9 | 26 | 9 | 8 | 0 | 0 | 0 | 0 | 0 | 660 | 0 | |
| 7:30 AM | 0 | 0 | 0 | 99 | 269 | 0 | 0 | 114 | 50 | 5 | 0 | 88 | 4 | 19 | 45 | 0 | 10 | 33 | 15 | 19 | 0 | 0 | 0 | 0 | 0 | 770 | 0 | |
| 7:45 AM | 0 | 0 | 0 | 123 | 267 | 0 | 0 | 118 | 43 | 4 | 0 | 103 | 9 | 16 | 41 | 0 | 16 | 40 | 9 | 8 | 0 | 0 | 0 | 0 | 0 | 797 | 2,788 | |
| 8:00 AM | 0 | 0 | 1 | 142 | 240 | 0 | 0 | 115 | 50 | 5 | 0 | 95 | 5 | 14 | 39 | 0 | 19 | 29 | 9 | 7 | 0 | 0 | 0 | 0 | 0 | 770 | 2,997 | |
| 8:15 AM | 0 | 0 | 1 | 129 | 217 | 0 | 0 | 170 | 51 | 8 | 0 | 87 | 6 | 22 | 36 | 0 | 14 | 29 | 9 | 7 | 0 | 0 | 0 | 0 | 0 | 786 | 3,123 | |
| 8:30 AM | 0 | 0 | 1 | 126 | 214 | 0 | 0 | 144 | 51 | 9 | 0 | 103 | 8 | 20 | 43 | 0 | 19 | 28 | 13 | 1 | 0 | 0 | 0 | 0 | 0 | 780 | 3,133 | |
| 8:45 AM | 1 | 0 | 0 | 143 | 227 | 0 | 0 | 138 | 52 | 11 | 0 | 108 | 5 | 16 | 37 | 0 | 20 | 36 | 13 | 5 | 0 | 0 | 0 | 0 | 0 | 812 | 3,148 | |
| Count Total | 1 | 0 | 3 | 923 | 1,873 | 0 | 0 | 1,005 | 394 | 53 | 0 | 714 | 42 | 130 | 303 | 0 | 109 | 246 | 82 | 58 | 0 | 0 | 0 | 0 | 0 | 5,936 | 0 | |
| Peak Hour | All | 1 | 0 | 3 | 540 | 898 | 0 | 0 | 567 | 204 | 33 | 0 | 393 | 24 | 72 | 155 | 0 | 72 | 122 | 44 | 20 | 0 | 0 | 0 | 0 | 0 | 3,148 | 0 |
| | HV | 0 | 0 | 0 | 24 | 39 | 0 | 0 | 21 | 6 | 2 | 0 | 12 | 1 | 1 | 9 | 0 | 1 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 120 | 0 |
| | HV% | 0% | - | 0% | 4% | 4% | - | - | 4% | 3% | 6% | - | 3% | 4% | 1% | 6% | - | 1% | 2% | 2% | 0% | - | - | - | - | - | - | 4% |

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 | SEB | Total | EB | WB | NB | SB | SEB | Total | East | West | North | South | Northwest | Total |
| 7:00 AM | 8 | 6 | 3 | 0 | 0 | 17 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 4 | 0 | 4 | 11 |
| 7:15 AM | 8 | 2 | 7 | 1 | 0 | 18 | 0 | 0 | 1 | 0 | 0 | 1 | 3 | 0 | 4 | 2 | 5 | 14 |
| 7:30 AM | 12 | 8 | 8 | 0 | 0 | 28 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 4 | 1 | 4 | 18 |
| 7:45 AM | 20 | 6 | 7 | 2 | 0 | 35 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 8 | 1 | 7 | 20 |
| 8:00 AM | 20 | 10 | 6 | 1 | 0 | 37 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 5 | 0 | 6 | 16 |
| 8:15 AM | 15 | 5 | 4 | 3 | 0 | 27 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 10 | 0 | 10 | 25 |
| 8:30 AM | 11 | 6 | 8 | 0 | 0 | 25 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 7 | 0 | 9 | 21 |
| 8:45 AM | 17 | 8 | 5 | 1 | 0 | 31 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 5 | 0 | 8 | 19 |
| Count Total | 111 | 51 | 48 | 8 | 0 | 218 | 0 | 0 | 1 | 0 | 0 | 1 | 40 | 0 | 47 | 4 | 53 | 144 |
| Peak Hr | 63 | 29 | 23 | 5 | 0 | 120 | 0 | 0 | 0 | 0 | 0 | 0 | 21 | 0 | 27 | 0 | 33 | 81 |

Two-Hour Count Summaries - Heavy Vehicles

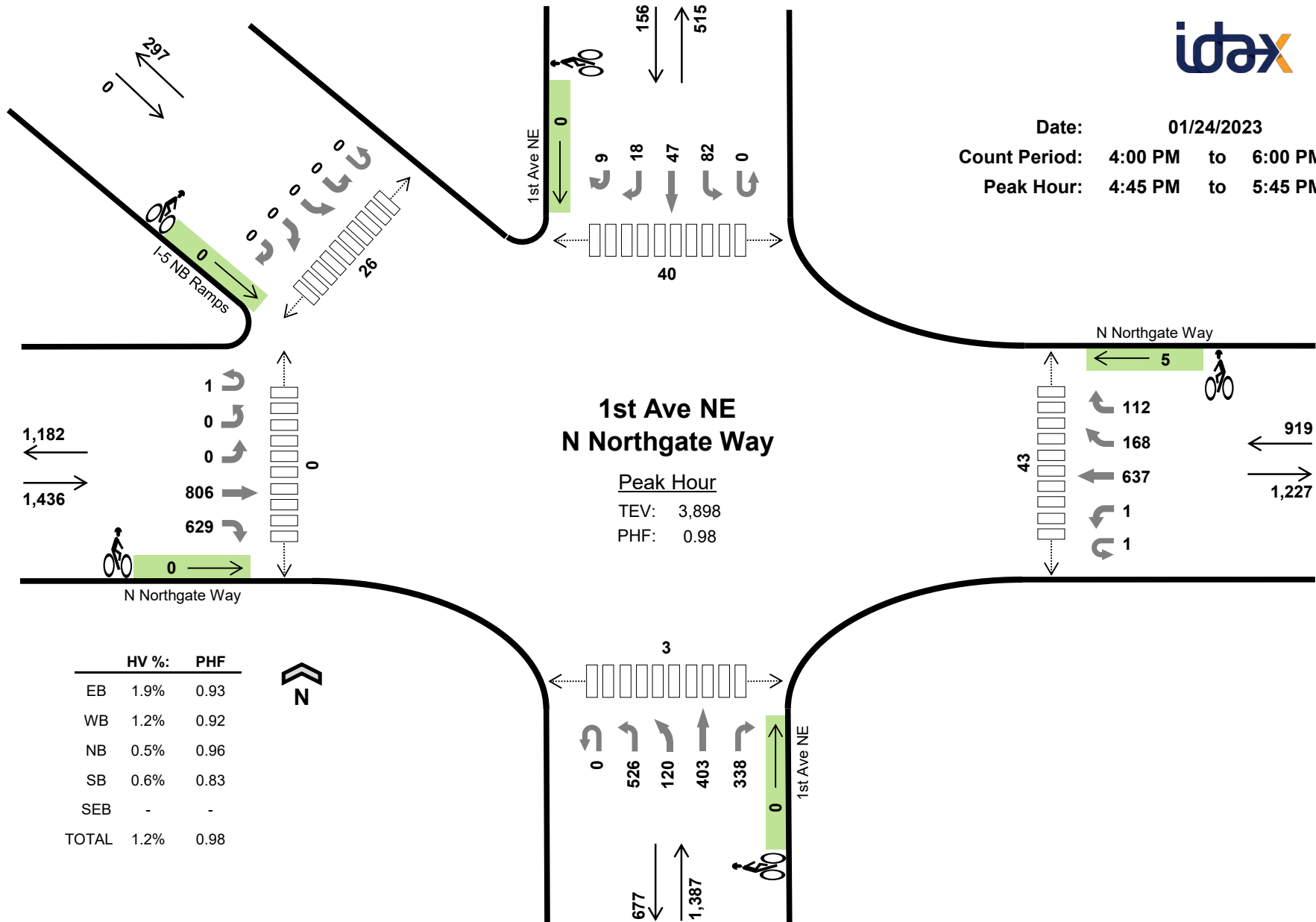
| Interval Start | N Northgate Way Eastbound | | | | | N Northgate Way Westbound | | | | | 1st Ave NE Northbound | | | | | 1st Ave NE Southbound | | | | | n/a Southeastbound | | | | | 15-min Total | Rolling One Hour |
|----------------|------------------------------|----|----|----|----|------------------------------|----|----|----|----|--------------------------|----|----|----|----|--------------------------|----|----|----|----|-----------------------|----|----|----|----|-----------------|------------------------|
| | UT | HL | LT | TH | RT | UT | LT | TH | BR | RT | UT | LT | BL | TH | RT | UT | LT | TH | RT | HR | UT | HL | BL | BR | HR | | |
| 7:00 AM | 0 | 0 | 0 | 2 | 6 | 0 | 0 | 6 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 0 |
| 7:15 AM | 0 | 0 | 0 | 4 | 4 | 0 | 0 | 1 | 1 | 0 | 0 | 4 | 0 | 0 | 3 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 0 |
| 7:30 AM | 0 | 0 | 0 | 3 | 9 | 0 | 0 | 6 | 2 | 0 | 0 | 2 | 0 | 2 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 28 | 0 |
| 7:45 AM | 0 | 0 | 0 | 6 | 14 | 0 | 0 | 5 | 0 | 1 | 0 | 5 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 35 | 98 |
| 8:00 AM | 0 | 0 | 0 | 5 | 15 | 0 | 0 | 8 | 1 | 1 | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 37 | 118 |
| 8:15 AM | 0 | 0 | 0 | 5 | 10 | 0 | 0 | 4 | 1 | 0 | 0 | 3 | 0 | 0 | 1 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 27 | 127 |
| 8:30 AM | 0 | 0 | 0 | 6 | 5 | 0 | 0 | 4 | 2 | 0 | 0 | 4 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | 124 |
| 8:45 AM | 0 | 0 | 0 | 8 | 9 | 0 | 0 | 5 | 2 | 1 | 0 | 2 | 0 | 1 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 31 | 120 |
| Count Total | 0 | 0 | 0 | 39 | 72 | 0 | 0 | 39 | 9 | 3 | 0 | 26 | 1 | 4 | 17 | 0 | 2 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 218 | 0 |
| Peak Hour | 0 | 0 | 0 | 24 | 39 | 0 | 0 | 21 | 6 | 2 | 0 | 12 | 1 | 1 | 9 | 0 | 1 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 120 | 0 |

Two-Hour Count Summaries - Bikes

| Interval Start | N Northgate Way Eastbound | | | | | N Northgate Way Westbound | | | | | 1st Ave NE Northbound | | | | | 1st Ave NE Southbound | | | | | n/a Southeastbound | | | | | 15-min Total | Rolling One Hour |
|----------------|------------------------------|----|----|----|----|------------------------------|----|----|----|----|--------------------------|----|----|----|----|--------------------------|----|----|----|----|-----------------------|----|----|----|----|-----------------|------------------------|
| | UT | HL | LT | TH | RT | UT | LT | TH | BR | RT | UT | LT | BL | TH | RT | UT | LT | TH | RT | HR | UT | HL | BL | BR | HR | | |
| 7:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 8:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 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 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Peak Hour | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |



Date: 01/24/2023
 Count Period: 4:00 PM to 6:00 PM
 Peak Hour: 4:45 PM to 5:45 PM



Two-Hour Count Summaries

| Interval Start | N Northgate Way | | | | | N Northgate Way | | | | | 1st Ave NE | | | | | 1st Ave NE | | | | | I-5 NB Ramps | | | | | 15-min Total | Rolling One Hour | |
|----------------|-----------------|----|----|-------|-------|-----------------|----|-------|-----|-----|------------|-----|-----|-----|-----|------------|-----|----|----|----|----------------|----|----|----|----|--------------|------------------|---|
| | Eastbound | | | | | Westbound | | | | | Northbound | | | | | Southbound | | | | | Southeastbound | | | | | | | |
| | UT | HL | LT | TH | RT | UT | LT | TH | BR | RT | UT | LT | BL | TH | RT | UT | LT | TH | RT | HR | UT | HL | BL | BR | HR | | | |
| 4:00 PM | 0 | 0 | 1 | 220 | 171 | 0 | 0 | 162 | 48 | 29 | 0 | 107 | 28 | 71 | 80 | 0 | 17 | 11 | 13 | 3 | 0 | 0 | 0 | 0 | 0 | 961 | 0 | |
| 4:15 PM | 0 | 0 | 1 | 203 | 178 | 0 | 1 | 188 | 35 | 22 | 0 | 112 | 26 | 68 | 83 | 0 | 30 | 7 | 6 | 4 | 0 | 0 | 0 | 0 | 0 | 964 | 0 | |
| 4:30 PM | 0 | 0 | 1 | 204 | 160 | 0 | 0 | 138 | 34 | 20 | 0 | 101 | 24 | 77 | 92 | 0 | 21 | 11 | 6 | 5 | 0 | 0 | 0 | 0 | 0 | 894 | 0 | |
| 4:45 PM | 0 | 0 | 0 | 222 | 134 | 0 | 1 | 165 | 50 | 35 | 0 | 133 | 28 | 93 | 92 | 0 | 19 | 13 | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 991 | 3,810 | |
| 5:00 PM | 0 | 0 | 0 | 206 | 156 | 0 | 0 | 160 | 36 | 17 | 0 | 119 | 39 | 107 | 98 | 0 | 23 | 12 | 7 | 5 | 0 | 0 | 0 | 0 | 0 | 985 | 3,834 | |
| 5:15 PM | 1 | 0 | 0 | 201 | 183 | 0 | 0 | 152 | 37 | 28 | 0 | 133 | 28 | 92 | 83 | 0 | 23 | 14 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 982 | 3,852 | |
| 5:30 PM | 0 | 0 | 0 | 177 | 156 | 1 | 0 | 160 | 45 | 32 | 0 | 141 | 25 | 111 | 65 | 0 | 17 | 8 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 940 | 3,898 | |
| 5:45 PM | 1 | 0 | 1 | 193 | 149 | 0 | 0 | 137 | 38 | 26 | 0 | 126 | 23 | 87 | 81 | 0 | 6 | 10 | 10 | 1 | 0 | 0 | 0 | 0 | 0 | 889 | 3,796 | |
| Count Total | 2 | 0 | 4 | 1,626 | 1,287 | 1 | 2 | 1,262 | 323 | 209 | 0 | 972 | 221 | 706 | 674 | 0 | 156 | 86 | 53 | 22 | 0 | 0 | 0 | 0 | 0 | 7,606 | 0 | |
| Peak Hour | All | 1 | 0 | 0 | 806 | 629 | 1 | 1 | 637 | 168 | 112 | 0 | 526 | 120 | 403 | 338 | 0 | 82 | 47 | 18 | 9 | 0 | 0 | 0 | 0 | 0 | 3,898 | 0 |
| | HV | 0 | 0 | 0 | 12 | 15 | 0 | 0 | 10 | 1 | 0 | 0 | 4 | 0 | 2 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 46 | 0 |
| | HV% | 0% | - | - | 1% | 2% | 0% | 0% | 2% | 1% | 0% | - | 1% | 0% | 0% | 0% | - | 0% | 0% | 6% | 0% | - | - | - | - | - | 1% | 0 |

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

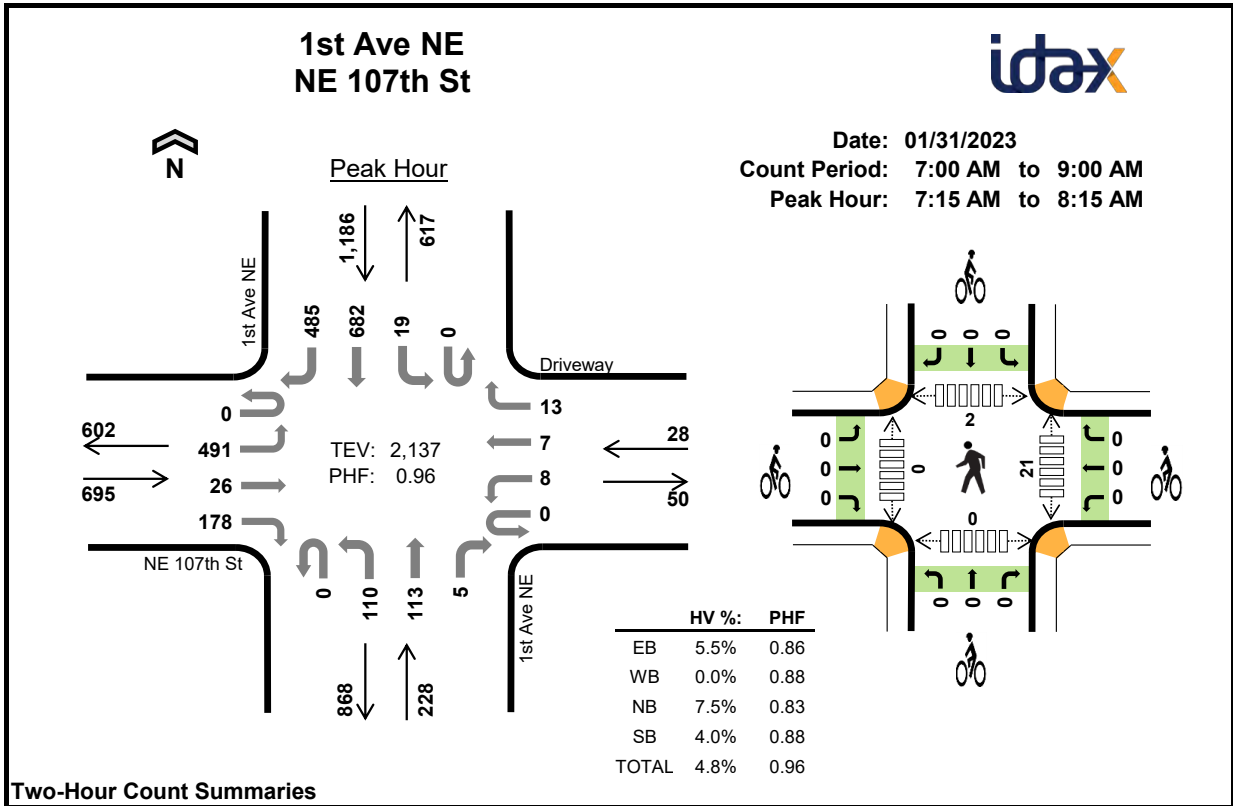
| Interval Start | Heavy Vehicle Totals | | | | | | Bicycles | | | | | | Pedestrians (Crossing Leg) | | | | | |
|----------------|----------------------|----|----|----|-----|-------|----------|----|----|----|-----|-------|----------------------------|------|-------|-------|-----------|-------|
| | EB | WB | NB | SB | SEB | Total | EB | WB | NB | SB | SEB | Total | East | West | North | South | Northwest | Total |
| 4:00 PM | 13 | 3 | 6 | 0 | 0 | 22 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 11 | 1 | 9 | 30 |
| 4:15 PM | 11 | 6 | 4 | 0 | 0 | 21 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 9 | 1 | 9 | 26 |
| 4:30 PM | 14 | 2 | 2 | 0 | 0 | 18 | 1 | 0 | 0 | 0 | 0 | 1 | 12 | 0 | 10 | 1 | 12 | 35 |
| 4:45 PM | 6 | 1 | 4 | 1 | 0 | 12 | 0 | 1 | 0 | 0 | 0 | 1 | 7 | 0 | 12 | 0 | 12 | 31 |
| 5:00 PM | 5 | 4 | 0 | 0 | 0 | 9 | 0 | 2 | 0 | 0 | 0 | 2 | 12 | 0 | 13 | 0 | 3 | 28 |
| 5:15 PM | 7 | 5 | 2 | 0 | 0 | 14 | 0 | 2 | 0 | 0 | 0 | 2 | 11 | 0 | 7 | 2 | 5 | 25 |
| 5:30 PM | 9 | 1 | 1 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 0 | 8 | 1 | 6 | 28 |
| 5:45 PM | 4 | 6 | 3 | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 6 | 0 | 7 | 19 |
| Count Total | 69 | 28 | 22 | 1 | 0 | 120 | 1 | 5 | 0 | 0 | 0 | 6 | 77 | 0 | 76 | 6 | 63 | 222 |
| Peak Hr | 27 | 11 | 7 | 1 | 0 | 46 | 0 | 5 | 0 | 0 | 0 | 5 | 43 | 0 | 40 | 3 | 26 | 112 |

Two-Hour Count Summaries - Heavy Vehicles

| Interval Start | N Northgate Way Eastbound | | | | | N Northgate Way Westbound | | | | | 1st Ave NE Northbound | | | | | 1st Ave NE Southbound | | | | | n/a Southeastbound | | | | | 15-min Total | Rolling One Hour |
|----------------|---------------------------|----|----|----|----|---------------------------|----|----|----|----|-----------------------|----|----|----|----|-----------------------|----|----|----|----|--------------------|----|----|----|-----|--------------|------------------|
| | UT | HL | LT | TH | RT | UT | LT | TH | BR | RT | UT | LT | BL | TH | RT | UT | LT | TH | RT | HR | UT | HL | BL | BR | HR | | |
| 4:00 PM | 0 | 0 | 0 | 3 | 10 | 0 | 0 | 3 | 0 | 0 | 0 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 | 0 |
| 4:15 PM | 0 | 0 | 0 | 3 | 8 | 0 | 0 | 4 | 0 | 2 | 0 | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 | 0 |
| 4:30 PM | 0 | 0 | 0 | 10 | 4 | 0 | 0 | 1 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 0 | |
| 4:45 PM | 0 | 0 | 0 | 3 | 3 | 0 | 0 | 0 | 1 | 0 | 0 | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 12 | 73 | |
| 5:00 PM | 0 | 0 | 0 | 2 | 3 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 60 | |
| 5:15 PM | 0 | 0 | 0 | 2 | 5 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 53 | |
| 5:30 PM | 0 | 0 | 0 | 5 | 4 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 46 | |
| 5:45 PM | 0 | 0 | 0 | 1 | 3 | 0 | 0 | 5 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 47 | |
| Count Total | 0 | 0 | 0 | 29 | 40 | 0 | 0 | 23 | 2 | 3 | 0 | 15 | 1 | 3 | 3 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 120 | 0 | |
| Peak Hour | 0 | 0 | 0 | 12 | 15 | 0 | 0 | 10 | 1 | 0 | 0 | 4 | 0 | 2 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 46 | 0 | |

Two-Hour Count Summaries - Bikes

| Interval Start | N Northgate Way Eastbound | | | | | N Northgate Way Westbound | | | | | 1st Ave NE Northbound | | | | | 1st Ave NE Southbound | | | | | n/a Southeastbound | | | | | 15-min Total | Rolling One Hour |
|----------------|---------------------------|----|----|----|----|---------------------------|----|----|----|----|-----------------------|----|----|----|----|-----------------------|----|----|----|----|--------------------|----|----|----|----|--------------|------------------|
| | UT | HL | LT | TH | RT | UT | LT | TH | BR | RT | UT | LT | BL | TH | RT | UT | LT | TH | RT | HR | UT | HL | BL | BR | HR | | |
| 4:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 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 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4:30 PM | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | |
| 4:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | |
| 5:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 4 | |
| 5:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6 | |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | |
| 5:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | |
| Count Total | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | |
| Peak Hour | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | |



Two-Hour Count Summaries

| Interval Start | NE 107th St | | | | Driveway | | | | 1st Ave NE | | | | 1st Ave NE | | | | 15-min Total | Rolling One Hour | |
|----------------|-------------|-----|-----------|-----|-----------|----|------------|----|------------|-----|------------|-----|------------|----|-------|-----|--------------|------------------|---|
| | Eastbound | | Westbound | | Westbound | | Northbound | | Northbound | | Southbound | | Southbound | | | | | | |
| | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | | | |
| 7:00 AM | 0 | 81 | 6 | 29 | 0 | 1 | 3 | 1 | 0 | 21 | 14 | 0 | 0 | 1 | 169 | 84 | 410 | 0 | |
| 7:15 AM | 0 | 109 | 4 | 48 | 0 | 3 | 1 | 2 | 0 | 30 | 30 | 1 | 0 | 5 | 161 | 105 | 499 | 0 | |
| 7:30 AM | 0 | 109 | 4 | 40 | 0 | 1 | 2 | 5 | 0 | 22 | 21 | 0 | 0 | 6 | 201 | 129 | 540 | 0 | |
| 7:45 AM | 0 | 127 | 8 | 44 | 0 | 2 | 1 | 5 | 0 | 33 | 33 | 3 | 0 | 2 | 178 | 119 | 555 | 2,004 | |
| 8:00 AM | 0 | 146 | 10 | 46 | 0 | 2 | 3 | 1 | 0 | 25 | 29 | 1 | 0 | 6 | 142 | 132 | 543 | 2,137 | |
| 8:15 AM | 0 | 118 | 5 | 31 | 0 | 4 | 2 | 6 | 0 | 32 | 23 | 1 | 0 | 4 | 143 | 112 | 481 | 2,119 | |
| 8:30 AM | 0 | 105 | 3 | 33 | 0 | 2 | 0 | 8 | 0 | 31 | 41 | 1 | 0 | 6 | 133 | 87 | 450 | 2,029 | |
| 8:45 AM | 0 | 130 | 8 | 50 | 0 | 0 | 1 | 7 | 0 | 27 | 39 | 0 | 0 | 9 | 101 | 78 | 450 | 1,924 | |
| Count Total | 0 | 925 | 48 | 321 | 0 | 15 | 13 | 35 | 0 | 221 | 230 | 7 | 0 | 39 | 1,228 | 846 | 3,928 | 0 | |
| Peak Hour | All | 0 | 491 | 26 | 178 | 0 | 8 | 7 | 13 | 0 | 110 | 113 | 5 | 0 | 19 | 682 | 485 | 2,137 | 0 |
| | HV | 0 | 31 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 13 | 4 | 0 | 0 | 0 | 21 | 27 | 103 | 0 |
| | HV% | - | 6% | 0% | 4% | - | 0% | 0% | 0% | - | 12% | 4% | 0% | - | 0% | 3% | 6% | 5% | 0 |

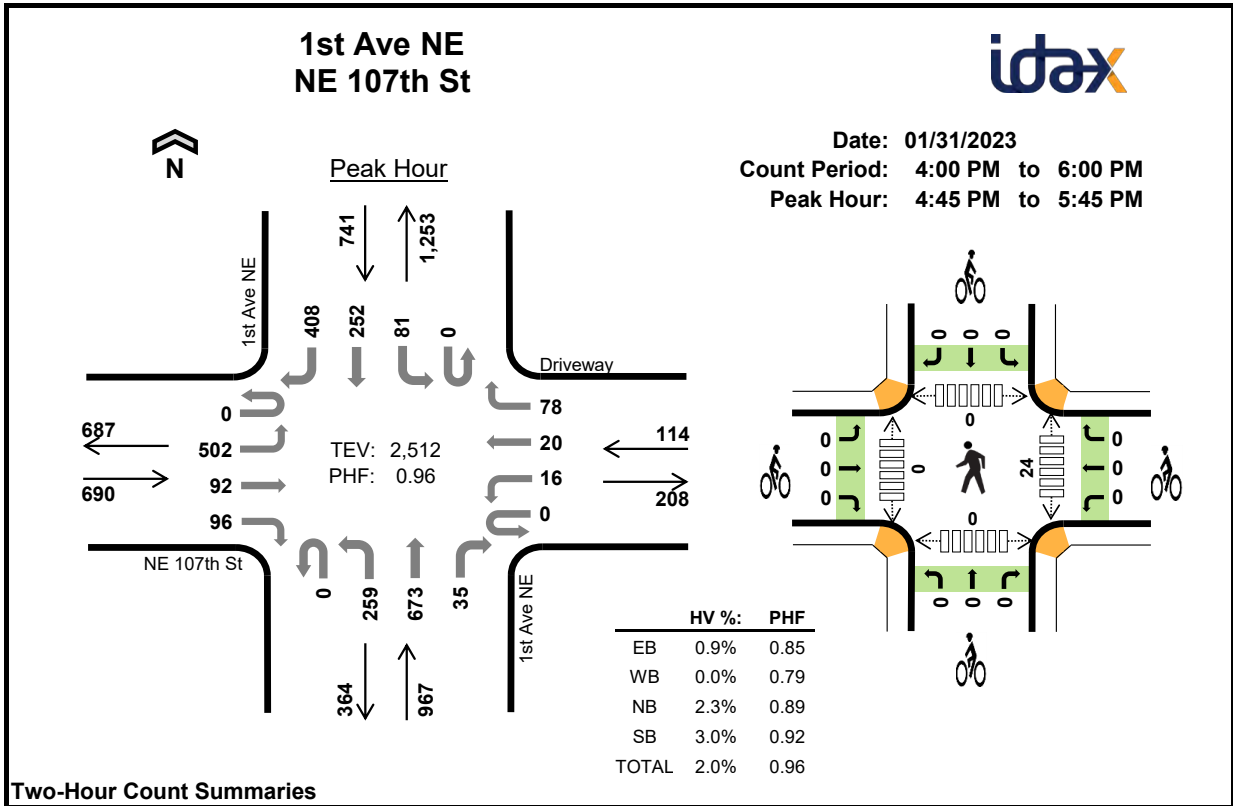
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

| Interval Start | Heavy Vehicle Totals | | | | | Bicycles | | | | | Pedestrians (Crossing Leg) | | | | |
|----------------|----------------------|----|----|----|-------|----------|----|----|----|-------|----------------------------|------|-------|-------|-------|
| | EB | WB | NB | SB | Total | EB | WB | NB | SB | Total | East | West | North | South | Total |
| 7:00 AM | 8 | 0 | 6 | 10 | 24 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 7 |
| 7:15 AM | 10 | 0 | 6 | 18 | 34 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 6 |
| 7:30 AM | 6 | 0 | 3 | 9 | 18 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 7 |
| 7:45 AM | 11 | 0 | 4 | 8 | 23 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 2 | 0 | 8 |
| 8:00 AM | 11 | 0 | 4 | 13 | 28 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 |
| 8:15 AM | 4 | 0 | 7 | 11 | 22 | 0 | 1 | 0 | 0 | 1 | 9 | 0 | 0 | 0 | 9 |
| 8:30 AM | 8 | 0 | 4 | 9 | 21 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| 8:45 AM | 8 | 0 | 3 | 14 | 25 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 |
| Count Total | 66 | 0 | 37 | 92 | 195 | 0 | 1 | 0 | 0 | 1 | 42 | 0 | 2 | 0 | 44 |
| Peak Hour | 38 | 0 | 17 | 48 | 103 | 0 | 0 | 0 | 0 | 0 | 21 | 0 | 2 | 0 | 23 |

| Two-Hour Count Summaries - Heavy Vehicles | | | | | | | | | | | | | | | | | | |
|--|-------------|----|----|----|-----------|----|----|----|------------|----|----|----|------------|----|----|----|--------------|------------------|
| Interval Start | NE 107th St | | | | Driveway | | | | 1st Ave NE | | | | 1st Ave NE | | | | 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 | | |
| 7:00 AM | 0 | 7 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 5 | 1 | 0 | 0 | 0 | 8 | 2 | 24 | 0 |
| 7:15 AM | 0 | 8 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 4 | 2 | 0 | 0 | 0 | 5 | 13 | 34 | 0 |
| 7:30 AM | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 4 | 5 | 18 | 0 |
| 7:45 AM | 0 | 7 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 0 | 0 | 0 | 4 | 4 | 23 | 99 |
| 8:00 AM | 0 | 10 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 8 | 5 | 28 | 103 |
| 8:15 AM | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 1 | 0 | 0 | 0 | 6 | 5 | 22 | 91 |
| 8:30 AM | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 1 | 2 | 6 | 21 | 94 |
| 8:45 AM | 0 | 7 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 4 | 10 | 25 | 96 |
| Count Total | 0 | 57 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 31 | 6 | 0 | 0 | 1 | 41 | 50 | 195 | 0 |
| Peak Hour | 0 | 31 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 13 | 4 | 0 | 0 | 0 | 21 | 27 | 103 | 0 |

| Two-Hour Count Summaries - Bikes | | | | | | | | | | | | | | | | | | |
|---|-------------|----|----|-----------|----|----|------------|----|----|------------|----|----|--------------|------------------|---|---|---|---|
| Interval Start | NE 107th St | | | Driveway | | | 1st Ave NE | | | 1st Ave NE | | | 15-min Total | Rolling One Hour | | | | |
| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | | | | | | |
| | LT | TH | RT | LT | TH | RT | LT | TH | RT | LT | TH | RT | | | | | | |
| 7:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:15 AM | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 |
| 8:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 8:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Count Total | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 |
| Peak Hour | 0 | 0 | 0 | 0 | 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.



Two-Hour Count Summaries

| Interval Start | NE 107th St | | | | Driveway | | | | 1st Ave NE | | | | 1st Ave NE | | | | 15-min Total | Rolling One Hour | |
|----------------|-------------|------------|-----------|-----------|-----------|----------|------------|-----------|------------|-----------|------------|-----------|------------|-----------|-----------|------------|--------------|------------------|---|
| | Eastbound | | Westbound | | Westbound | | Northbound | | Northbound | | Southbound | | Southbound | | | | | | |
| | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | | | |
| 4:00 PM | 0 | 163 | 17 | 24 | 0 | 4 | 5 | 18 | 0 | 63 | 173 | 5 | 0 | 14 | 56 | 99 | 641 | 0 | |
| 4:15 PM | 0 | 156 | 27 | 17 | 0 | 5 | 4 | 17 | 0 | 54 | 146 | 7 | 0 | 13 | 61 | 103 | 610 | 0 | |
| 4:30 PM | 0 | 126 | 20 | 30 | 0 | 2 | 9 | 15 | 0 | 57 | 176 | 9 | 0 | 11 | 45 | 95 | 595 | 0 | |
| 4:45 PM | 0 | 113 | 19 | 21 | 0 | 6 | 4 | 14 | 0 | 59 | 162 | 10 | 0 | 23 | 70 | 108 | 609 | 2,455 | |
| 5:00 PM | 0 | 113 | 18 | 23 | 0 | 4 | 3 | 19 | 0 | 73 | 191 | 9 | 0 | 19 | 49 | 104 | 625 | 2,439 | |
| 5:15 PM | 0 | 125 | 27 | 27 | 0 | 5 | 7 | 16 | 0 | 70 | 162 | 11 | 0 | 20 | 63 | 93 | 626 | 2,455 | |
| 5:30 PM | 0 | 151 | 28 | 25 | 0 | 1 | 6 | 29 | 0 | 57 | 158 | 5 | 0 | 19 | 70 | 103 | 652 | 2,512 | |
| 5:45 PM | 0 | 137 | 22 | 31 | 0 | 10 | 7 | 14 | 0 | 72 | 145 | 9 | 0 | 22 | 59 | 64 | 592 | 2,495 | |
| Count Total | 0 | 1,084 | 178 | 198 | 0 | 37 | 45 | 142 | 0 | 505 | 1,313 | 65 | 0 | 141 | 473 | 769 | 4,950 | 0 | |
| Peak Hour | All | 0 | 502 | 92 | 96 | 0 | 16 | 20 | 78 | 0 | 259 | 673 | 35 | 0 | 81 | 252 | 408 | 2,512 | 0 |
| | HV | 0 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 20 | 2 | 0 | 0 | 0 | 13 | 9 | 50 | 0 |
| | HV% | - | 1% | 0% | 1% | - | 0% | 0% | 0% | - | 8% | 0% | 0% | - | 0% | 5% | 2% | 2% | 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 | 9 | 13 | 24 | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 1 | 0 | 12 |
| 4:15 PM | 1 | 0 | 4 | 8 | 13 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 |
| 4:30 PM | 2 | 0 | 8 | 10 | 20 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 9 |
| 4:45 PM | 2 | 0 | 4 | 5 | 11 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 |
| 5:00 PM | 1 | 0 | 8 | 6 | 15 | 0 | 0 | 0 | 0 | 0 | 13 | 0 | 0 | 0 | 13 |
| 5:15 PM | 3 | 0 | 3 | 6 | 12 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 |
| 5:30 PM | 0 | 0 | 7 | 5 | 12 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 3 |
| 5:45 PM | 5 | 0 | 6 | 9 | 20 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| Count Total | 16 | 0 | 49 | 62 | 127 | 0 | 0 | 0 | 0 | 0 | 47 | 0 | 1 | 0 | 48 |
| Peak Hour | 6 | 0 | 22 | 22 | 50 | 0 | 0 | 0 | 0 | 0 | 24 | 0 | 0 | 0 | 24 |

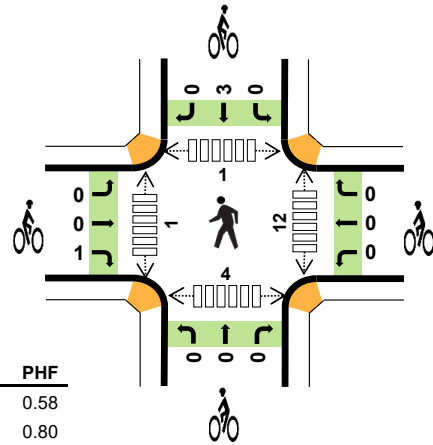
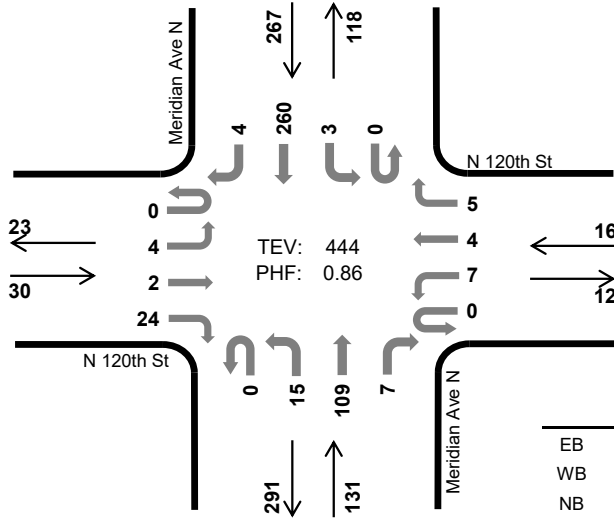
| Two-Hour Count Summaries - Heavy Vehicles | | | | | | | | | | | | | | | | | | | |
|--|-------------|----|----|-----------|-----------|----|------------|----|------------|------------|----|----|--------------|------------------|----|----|--------------|------------------|----|
| Interval Start | NE 107th St | | | | Driveway | | | | 1st Ave NE | | | | 1st Ave NE | | | | 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 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 4 | 0 | 0 | 0 | 7 | 6 | 24 | 0 | |
| 4:15 PM | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 4 | 4 | 13 | 0 | |
| 4:30 PM | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 7 | 1 | 0 | 0 | 0 | 5 | 5 | 20 | 0 | |
| 4:45 PM | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 3 | 2 | 11 | 68 | |
| 5:00 PM | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 2 | 0 | 0 | 0 | 3 | 3 | 15 | 59 | |
| 5:15 PM | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 4 | 2 | 12 | 58 | |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 3 | 2 | 12 | 50 |
| 5:45 PM | 0 | 4 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 4 | 2 | 0 | 0 | 0 | 6 | 3 | 20 | 59 | |
| Count Total | 0 | 13 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 40 | 9 | 0 | 0 | 0 | 35 | 27 | 127 | 0 | |
| Peak Hour | 0 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 20 | 2 | 0 | 0 | 0 | 13 | 9 | 50 | 0 | |
| Two-Hour Count Summaries - Bikes | | | | | | | | | | | | | | | | | | | |
| Interval Start | NE 107th St | | | Driveway | | | 1st Ave NE | | | 1st Ave NE | | | 15-min Total | Rolling One Hour | | | | | |
| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | | | | | | | |
| | 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 | 0 | 0 | 0 | 0 | |
| 4:15 PM | 0 | 0 | 0 | 0 | 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 | 0 | 0 | 0 | 0 | |
| 4:45 PM | 0 | 0 | 0 | 0 | 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 | 0 | 0 | 0 | 0 | |
| 5:15 PM | 0 | 0 | 0 | 0 | 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 | 0 | 0 | 0 | 0 | |
| 5:45 PM | 0 | 0 | 0 | 0 | 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 | 0 | 0 | 0 | 0 | |
| Peak Hour | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| <i>Note: U-Turn volumes for bikes are included in Left-Turn, if any.</i> | | | | | | | | | | | | | | | | | | | |

Meridian Ave N N 120th St



Peak Hour

Date: 01/24/2023
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 8:00 AM to 9:00 AM



| | HV %: | PHF |
|-------|-------|------|
| EB | 13.3% | 0.58 |
| WB | 0.0% | 0.80 |
| NB | 9.9% | 0.91 |
| SB | 4.1% | 0.81 |
| TOTAL | 6.3% | 0.86 |

Two-Hour Count Summaries

| Interval Start | N 120th St Eastbound | | | | N 120th St Westbound | | | | Meridian Ave N Northbound | | | | Meridian Ave N Southbound | | | | 15-min Total | Rolling One Hour | |
|----------------|----------------------|----|----|-----|----------------------|----|----|----|---------------------------|----|-----|-----|---------------------------|----|-----|-----|--------------|------------------|---|
| | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | | | |
| 7:00 AM | 0 | 0 | 1 | 7 | 0 | 2 | 0 | 1 | 0 | 2 | 15 | 2 | 0 | 1 | 38 | 0 | 69 | 0 | |
| 7:15 AM | 0 | 0 | 0 | 4 | 0 | 5 | 0 | 0 | 0 | 0 | 11 | 1 | 0 | 0 | 48 | 2 | 71 | 0 | |
| 7:30 AM | 0 | 0 | 2 | 3 | 0 | 0 | 1 | 0 | 0 | 2 | 23 | 10 | 0 | 0 | 52 | 0 | 93 | 0 | |
| 7:45 AM | 0 | 0 | 0 | 3 | 0 | 1 | 0 | 1 | 0 | 3 | 28 | 11 | 0 | 4 | 65 | 0 | 116 | 349 | |
| 8:00 AM | 0 | 0 | 0 | 6 | 0 | 1 | 1 | 0 | 0 | 4 | 21 | 3 | 0 | 0 | 68 | 1 | 105 | 385 | |
| 8:15 AM | 0 | 1 | 0 | 2 | 0 | 2 | 0 | 3 | 0 | 6 | 25 | 1 | 0 | 0 | 45 | 1 | 86 | 400 | |
| 8:30 AM | 0 | 1 | 2 | 10 | 0 | 3 | 1 | 1 | 0 | 2 | 34 | 0 | 0 | 1 | 69 | 0 | 124 | 431 | |
| 8:45 AM | 0 | 2 | 0 | 6 | 0 | 1 | 2 | 1 | 0 | 3 | 29 | 3 | 0 | 2 | 78 | 2 | 129 | 444 | |
| Count Total | 0 | 4 | 5 | 41 | 0 | 15 | 5 | 7 | 0 | 22 | 186 | 31 | 0 | 8 | 463 | 6 | 793 | 0 | |
| Peak Hour | All | 0 | 4 | 2 | 24 | 0 | 7 | 4 | 5 | 0 | 15 | 109 | 7 | 0 | 3 | 260 | 4 | 444 | 0 |
| | HV | 0 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 3 | 9 | 1 | 0 | 0 | 11 | 0 | 28 | 0 |
| | HV% | - | 0% | 50% | 13% | - | 0% | 0% | 0% | - | 20% | 8% | 14% | - | 0% | 4% | 0% | 6% | 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 |
| 7:00 AM | 2 | 1 | 2 | 3 | 8 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 2 |
| 7:15 AM | 0 | 1 | 1 | 0 | 2 | 0 | 0 | 2 | 1 | 3 | 0 | 0 | 0 | 1 | 1 |
| 7:30 AM | 0 | 0 | 2 | 2 | 4 | 0 | 1 | 0 | 1 | 2 | 1 | 0 | 0 | 1 | 2 |
| 7:45 AM | 1 | 0 | 3 | 2 | 6 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 3 |
| 8:00 AM | 1 | 0 | 3 | 4 | 8 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 3 | 5 |
| 8:15 AM | 0 | 0 | 5 | 1 | 6 | 1 | 0 | 0 | 2 | 3 | 3 | 0 | 0 | 0 | 3 |
| 8:30 AM | 3 | 0 | 0 | 4 | 7 | 0 | 0 | 0 | 1 | 1 | 4 | 0 | 1 | 0 | 5 |
| 8:45 AM | 0 | 0 | 5 | 2 | 7 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 0 | 1 | 5 |
| Count Total | 7 | 2 | 21 | 18 | 48 | 1 | 1 | 2 | 6 | 10 | 15 | 1 | 1 | 9 | 26 |
| Peak Hour | 4 | 0 | 13 | 11 | 28 | 1 | 0 | 0 | 3 | 4 | 12 | 1 | 1 | 4 | 18 |

| Two-Hour Count Summaries - Heavy Vehicles | | | | | | | | | | | | | | | | | | |
|--|------------|----|----|------------|------------|----|----------------|----|----------------|----------------|----|----|----------------|------------------|----|----|--------------|------------------|
| Interval Start | N 120th St | | | | N 120th St | | | | Meridian Ave N | | | | Meridian Ave N | | | | 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 | | |
| 7:00 AM | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 3 | 0 | 8 | 0 |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 2 | 0 | 4 | 0 |
| 7:45 AM | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 1 | 1 | 0 | 6 | 20 |
| 8:00 AM | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 4 | 0 | 8 | 20 |
| 8:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 1 | 0 | 0 | 1 | 0 | 6 | 24 |
| 8:30 AM | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 7 | 27 |
| 8:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 2 | 0 | 7 | 28 |
| Count Total | 0 | 0 | 1 | 6 | 0 | 1 | 0 | 1 | 0 | 5 | 15 | 1 | 0 | 1 | 17 | 0 | 48 | 0 |
| Peak Hour | 0 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 3 | 9 | 1 | 0 | 0 | 11 | 0 | 28 | 0 |
| Two-Hour Count Summaries - Bikes | | | | | | | | | | | | | | | | | | |
| Interval Start | N 120th St | | | N 120th St | | | Meridian Ave N | | | Meridian Ave N | | | 15-min Total | Rolling One Hour | | | | |
| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | | | | | | |
| | LT | TH | RT | LT | TH | RT | LT | TH | RT | LT | TH | RT | | | | | | |
| 7:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 3 | 0 |
| 7:30 AM | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 0 |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 8:15 AM | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 3 | 5 |
| 8:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 4 |
| 8:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| Count Total | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 4 | 2 | 10 | 0 | 0 | 10 | 0 |
| Peak Hour | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 4 | 0 | 0 | 4 | 0 |
| <i>Note: U-Turn volumes for bikes are included in Left-Turn, if any.</i> | | | | | | | | | | | | | | | | | | |

| Two-Hour Count Summaries - Heavy Vehicles | | | | | | | | | | | | | | | | | | |
|--|------------|----|----|----|------------|----|----|----|----------------|----|----|----|----------------|----|----|----|--------------|------------------|
| Interval Start | N 120th St | | | | N 120th St | | | | Meridian Ave N | | | | Meridian Ave N | | | | 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 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 3 | 0 | 5 | 0 |
| 4:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 3 | 0 |
| 4:30 PM | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 1 | 1 | 6 | 0 |
| 4:45 PM | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 4 | 18 |
| 5:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 3 | 16 |
| 5:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 3 | 16 |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 3 | 13 |
| 5:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 4 | 13 |
| Count Total | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 14 | 0 | 0 | 0 | 13 | 1 | 31 | 0 |
| Peak Hour | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 7 | 1 | 18 | 0 |

| Two-Hour Count Summaries - Bikes | | | | | | | | | | | | | | | | | |
|---|------------|----|----|------------|----|----|----------------|----|----|----------------|----|----|--------------|------------------|--|--|--|
| Interval Start | N 120th St | | | N 120th St | | | Meridian Ave N | | | Meridian Ave N | | | 15-min Total | Rolling One Hour | | | |
| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | | | | | |
| | LT | TH | RT | LT | TH | RT | LT | TH | RT | LT | TH | RT | | | | | |
| 4:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 2 | 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 | 1 | 0 | 1 | 3 | | | |
| 5:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | | | |
| 5:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | | | |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | | | |
| 5:45 PM | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | | | |
| Count Total | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 4 | 0 | | | |
| Peak Hour | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 3 | 0 | | | |

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

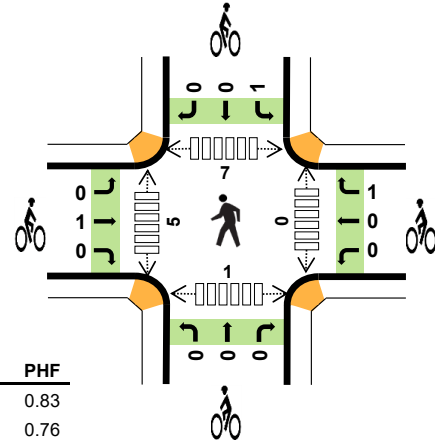
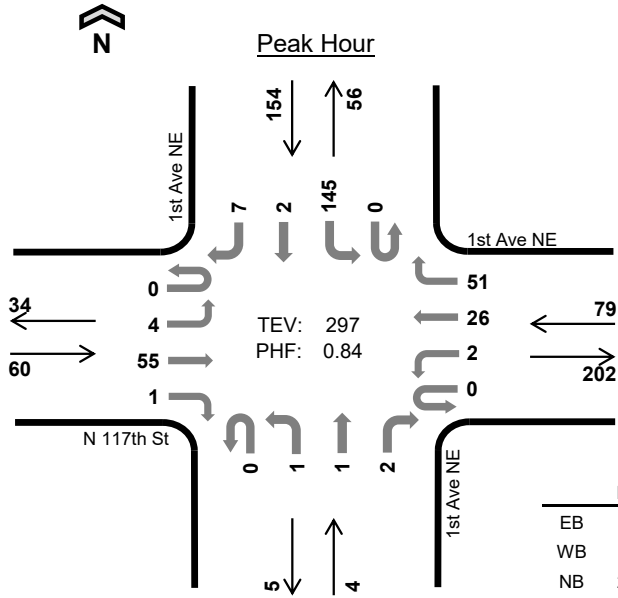


1st Ave NE N 117th St

Date: 07/18/2023

Count Period: 7:00 AM to 9:00 AM

Peak Hour: 7:45 AM to 8:45 AM



| | HV %: | PHF |
|-------|-------|------|
| EB | 8.3% | 0.83 |
| WB | 12.7% | 0.76 |
| NB | 25.0% | 0.50 |
| SB | 2.6% | 0.92 |
| TOTAL | 6.7% | 0.84 |

Two-Hour Count Summaries

| Interval Start | N 117th St | | | | 1st Ave NE | | | | 1st Ave NE | | | | 1st Ave NE | | | | 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 | | | |
| 7:00 AM | 0 | 3 | 8 | 0 | 0 | 0 | 5 | 4 | 0 | 0 | 0 | 0 | 0 | 21 | 0 | 0 | 41 | 0 | |
| 7:15 AM | 0 | 0 | 11 | 0 | 0 | 0 | 3 | 10 | 0 | 0 | 0 | 1 | 0 | 25 | 1 | 1 | 52 | 0 | |
| 7:30 AM | 0 | 0 | 19 | 0 | 0 | 0 | 8 | 3 | 0 | 0 | 1 | 0 | 0 | 27 | 0 | 2 | 60 | 0 | |
| 7:45 AM | 0 | 2 | 15 | 0 | 0 | 0 | 4 | 9 | 0 | 0 | 0 | 0 | 0 | 32 | 0 | 2 | 64 | 217 | |
| 8:00 AM | 0 | 2 | 11 | 0 | 0 | 0 | 1 | 14 | 0 | 0 | 0 | 1 | 0 | 38 | 1 | 3 | 71 | 247 | |
| 8:15 AM | 0 | 0 | 18 | 0 | 0 | 1 | 8 | 17 | 0 | 0 | 1 | 1 | 0 | 41 | 0 | 1 | 88 | 283 | |
| 8:30 AM | 0 | 0 | 11 | 1 | 0 | 1 | 13 | 11 | 0 | 1 | 0 | 0 | 0 | 34 | 1 | 1 | 74 | 297 | |
| 8:45 AM | 0 | 2 | 7 | 0 | 0 | 1 | 4 | 13 | 0 | 0 | 0 | 2 | 0 | 25 | 0 | 1 | 55 | 288 | |
| Count Total | 0 | 9 | 100 | 1 | 0 | 3 | 46 | 81 | 0 | 1 | 2 | 5 | 0 | 243 | 3 | 11 | 505 | 0 | |
| Peak Hour | All | 0 | 4 | 55 | 1 | 0 | 2 | 26 | 51 | 0 | 1 | 1 | 2 | 0 | 145 | 2 | 7 | 297 | 0 |
| | HV | 0 | 1 | 4 | 0 | 0 | 1 | 4 | 5 | 0 | 0 | 1 | 0 | 0 | 3 | 0 | 1 | 20 | 0 |
| | HV% | - | 25% | 7% | 0% | - | 50% | 15% | 10% | - | 0% | 100% | 0% | - | 2% | 0% | 14% | 7% | 0 |

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

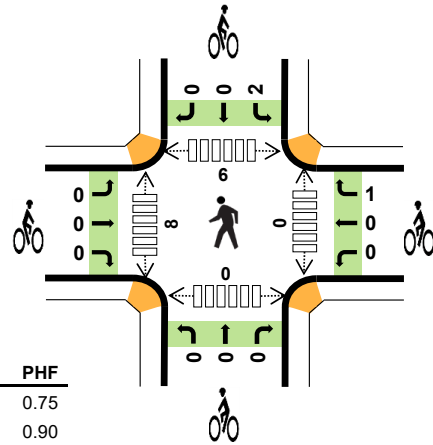
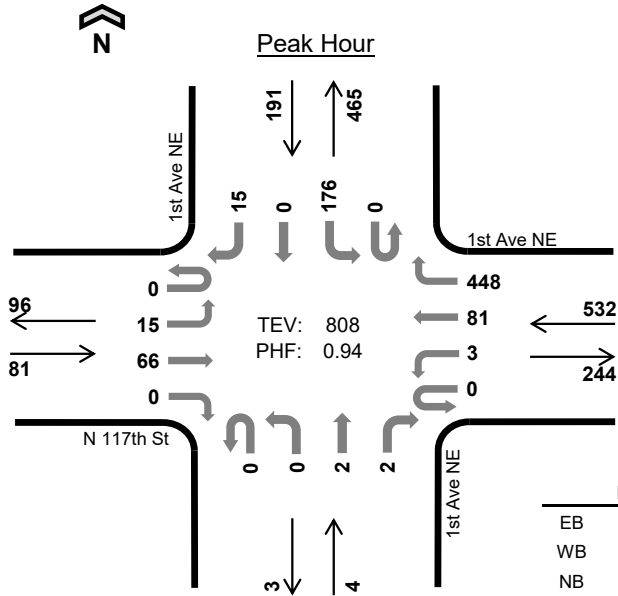
| Interval Start | Heavy Vehicle Totals | | | | | Bicycles | | | | | Pedestrians (Crossing Leg) | | | | | |
|----------------|----------------------|----|----|----|-------|----------|----|----|----|-------|----------------------------|------|-------|-------|-------|---|
| | EB | WB | NB | SB | Total | EB | WB | NB | SB | Total | East | West | North | South | Total | |
| 7:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 5 | 7 |
| 7:15 AM | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 1 | 4 | |
| 7:30 AM | 0 | 1 | 0 | 1 | 2 | 0 | 0 | 0 | 2 | 2 | 0 | 1 | 0 | 0 | 1 | |
| 7:45 AM | 1 | 2 | 0 | 2 | 5 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 2 | 1 | 4 | |
| 8:00 AM | 1 | 0 | 0 | 2 | 3 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | |
| 8:15 AM | 2 | 5 | 1 | 0 | 8 | 0 | 0 | 0 | 1 | 1 | 0 | 2 | 3 | 0 | 5 | |
| 8:30 AM | 1 | 3 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 4 | |
| 8:45 AM | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | |
| Count Total | 5 | 13 | 1 | 6 | 25 | 1 | 1 | 0 | 3 | 5 | 1 | 8 | 11 | 7 | 27 | |
| Peak Hour | 5 | 10 | 1 | 4 | 20 | 1 | 1 | 0 | 1 | 3 | 0 | 5 | 7 | 1 | 13 | |

| Two-Hour Count Summaries - Heavy Vehicles | | | | | | | | | | | | | | | | | | |
|--|------------|----|----|------------|------------|----|------------|----|------------|------------|----|----|--------------|------------------|----|----|--------------|------------------|
| Interval Start | N 117th St | | | | 1st Ave NE | | | | 1st Ave NE | | | | 1st Ave NE | | | | 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 | | |
| 7:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | |
| 7:45 AM | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 5 | 9 | |
| 8:00 AM | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 3 | 12 | |
| 8:15 AM | 0 | 0 | 2 | 0 | 0 | 1 | 2 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 8 | 18 | |
| 8:30 AM | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 20 | |
| 8:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 16 | |
| Count Total | 0 | 1 | 4 | 0 | 0 | 1 | 6 | 6 | 0 | 0 | 1 | 0 | 0 | 3 | 0 | 25 | 0 | |
| Peak Hour | 0 | 1 | 4 | 0 | 0 | 1 | 4 | 5 | 0 | 0 | 1 | 0 | 0 | 3 | 0 | 20 | 0 | |
| Two-Hour Count Summaries - Bikes | | | | | | | | | | | | | | | | | | |
| Interval Start | N 117th St | | | 1st Ave NE | | | 1st Ave NE | | | 1st Ave NE | | | 15-min Total | Rolling One Hour | | | | |
| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | | | | | | |
| | LT | TH | RT | LT | TH | RT | LT | TH | RT | LT | TH | RT | | | | | | |
| 7:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | | |
| 7:45 AM | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | | |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | | |
| 8:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 5 | | |
| 8:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | | |
| 8:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | | |
| Count Total | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 5 | 0 | | |
| Peak Hour | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 3 | 0 | | |
| <i>Note: U-Turn volumes for bikes are included in Left-Turn, if any.</i> | | | | | | | | | | | | | | | | | | |

1st Ave NE N 117th St



Date: 07/18/2023
 Count Period: 4:00 PM to 6:00 PM
 Peak Hour: 4:30 PM to 5:30 PM



| | HV %: | PHF |
|-------|-------|------|
| EB | 1.2% | 0.75 |
| WB | 0.9% | 0.90 |
| NB | 0.0% | 0.50 |
| SB | 0.0% | 0.81 |
| TOTAL | 0.7% | 0.94 |

Two-Hour Count Summaries

| Interval Start | N 117th St | | | | 1st Ave NE | | | | 1st Ave NE | | | | 1st Ave NE | | | | 15-min Total | Rolling One Hour | |
|----------------|------------|----|-----------|----|------------|----|------------|-----|------------|----|------------|----|------------|-----|-----|----|--------------|------------------|---|
| | Eastbound | | Westbound | | Westbound | | Northbound | | Northbound | | Southbound | | Southbound | | | | | | |
| | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | | | |
| 4:00 PM | 0 | 0 | 10 | 1 | 1 | 0 | 11 | 81 | 0 | 0 | 0 | 1 | 0 | 31 | 2 | 2 | 140 | 0 | |
| 4:15 PM | 0 | 3 | 8 | 0 | 0 | 0 | 9 | 118 | 0 | 0 | 0 | 1 | 0 | 28 | 1 | 2 | 170 | 0 | |
| 4:30 PM | 0 | 1 | 16 | 0 | 0 | 0 | 23 | 125 | 0 | 0 | 1 | 0 | 0 | 41 | 0 | 5 | 212 | 0 | |
| 4:45 PM | 0 | 5 | 15 | 0 | 0 | 1 | 26 | 99 | 0 | 0 | 0 | 0 | 0 | 35 | 0 | 5 | 186 | 708 | |
| 5:00 PM | 0 | 2 | 15 | 0 | 0 | 0 | 19 | 117 | 0 | 0 | 1 | 1 | 0 | 57 | 0 | 2 | 214 | 782 | |
| 5:15 PM | 0 | 7 | 20 | 0 | 0 | 2 | 13 | 107 | 0 | 0 | 0 | 1 | 0 | 43 | 0 | 3 | 196 | 808 | |
| 5:30 PM | 0 | 5 | 14 | 0 | 0 | 0 | 13 | 128 | 0 | 0 | 0 | 1 | 0 | 32 | 0 | 4 | 197 | 793 | |
| 5:45 PM | 0 | 3 | 7 | 0 | 0 | 0 | 16 | 127 | 0 | 0 | 0 | 0 | 0 | 40 | 0 | 3 | 196 | 803 | |
| Count Total | 0 | 26 | 105 | 1 | 1 | 3 | 130 | 902 | 0 | 0 | 2 | 5 | 0 | 307 | 3 | 26 | 1,511 | 0 | |
| Peak Hour | All | 0 | 15 | 66 | 0 | 0 | 3 | 81 | 448 | 0 | 0 | 2 | 2 | 0 | 176 | 0 | 15 | 808 | 0 |
| | HV | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 |
| | HV% | - | 0% | 2% | - | - | 0% | 0% | 1% | - | - | 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 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 |
| 4:15 PM | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 2 | 0 | 2 |
| 4:30 PM | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 4 |
| 4:45 PM | 1 | 2 | 0 | 0 | 3 | 0 | 1 | 0 | 2 | 3 | 0 | 4 | 2 | 0 | 6 |
| 5:00 PM | 0 | 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 | 2 | 2 | 0 | 4 |
| 5:30 PM | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 2 | 1 | 5 |
| Count Total | 1 | 6 | 0 | 1 | 8 | 0 | 2 | 1 | 3 | 6 | 1 | 9 | 11 | 1 | 22 |
| Peak Hour | 1 | 5 | 0 | 0 | 6 | 0 | 1 | 0 | 2 | 3 | 0 | 8 | 6 | 0 | 14 |

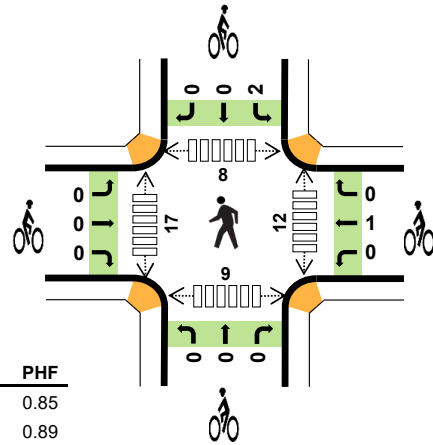
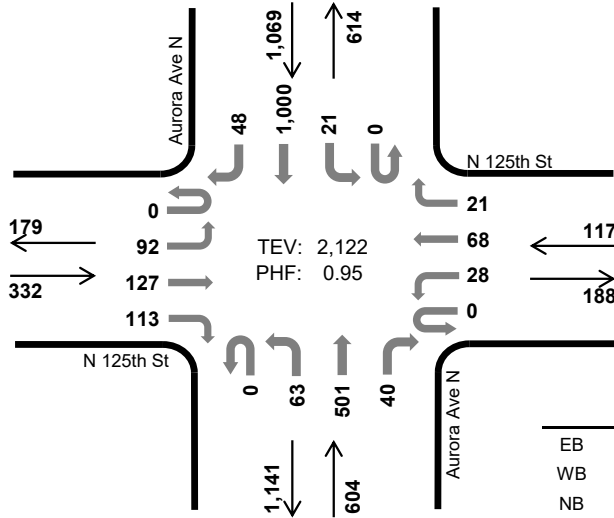
| Two-Hour Count Summaries - Heavy Vehicles | | | | | | | | | | | | | | | | | | |
|--|------------|----|----|------------|------------|----|------------|----|------------|------------|----|----|--------------|------------------|----|----|--------------|------------------|
| Interval Start | N 117th St | | | | 1st Ave NE | | | | 1st Ave NE | | | | 1st Ave NE | | | | 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 | 0 | 0 | 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 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | |
| 4:45 PM | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | |
| 5:00 PM | 0 | 0 | 0 | 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 | 0 | 0 | 0 | |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | |
| 5:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Count Total | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 8 | |
| Peak Hour | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | |
| Two-Hour Count Summaries - Bikes | | | | | | | | | | | | | | | | | | |
| Interval Start | N 117th St | | | 1st Ave NE | | | 1st Ave NE | | | 1st Ave NE | | | 15-min Total | Rolling One Hour | | | | |
| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | | | | | | |
| | LT | TH | RT | LT | TH | RT | LT | TH | RT | LT | TH | RT | | | | | | |
| 4:00 PM | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | | |
| 4:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | | |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 4:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 3 | | |
| 5:00 PM | 0 | 0 | 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 | 0 | 0 | | |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 5:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | | |
| Count Total | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 3 | 0 | 0 | 6 | 0 | | |
| Peak Hour | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 3 | 0 | 0 | | |
| <i>Note: U-Turn volumes for bikes are included in Left-Turn, if any.</i> | | | | | | | | | | | | | | | | | | |

Aurora Ave N N 125th St



Peak Hour

Date: 07/18/2023
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 8:00 AM to 9:00 AM



| | HV %: | PHF |
|-------|-------|------|
| EB | 2.7% | 0.85 |
| WB | 4.3% | 0.89 |
| NB | 10.1% | 0.85 |
| SB | 6.4% | 0.90 |
| TOTAL | 6.7% | 0.95 |

Two-Hour Count Summaries

| Interval Start | N 125th St Eastbound | | | | N 125th St Westbound | | | | Aurora Ave N Northbound | | | | Aurora Ave N Southbound | | | | 15-min Total | Rolling One Hour | |
|----------------|----------------------|-----|-----|-----|----------------------|----|-----|----|-------------------------|-----|-----|-----|-------------------------|----|-------|-------|--------------|------------------|---|
| | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | | | |
| 7:00 AM | 0 | 6 | 20 | 10 | 0 | 7 | 9 | 5 | 2 | 15 | 59 | 4 | 0 | 4 | 183 | 9 | 333 | 0 | |
| 7:15 AM | 0 | 13 | 22 | 14 | 0 | 6 | 6 | 2 | 0 | 8 | 88 | 7 | 0 | 6 | 251 | 13 | 436 | 0 | |
| 7:30 AM | 0 | 12 | 31 | 26 | 0 | 8 | 20 | 3 | 1 | 17 | 108 | 8 | 0 | 5 | 240 | 15 | 494 | 0 | |
| 7:45 AM | 0 | 16 | 22 | 28 | 0 | 9 | 17 | 3 | 0 | 10 | 142 | 5 | 0 | 6 | 237 | 9 | 504 | 1,767 | |
| 8:00 AM | 0 | 22 | 31 | 24 | 0 | 7 | 14 | 9 | 0 | 14 | 107 | 8 | 0 | 1 | 227 | 10 | 474 | 1,908 | |
| 8:15 AM | 0 | 19 | 28 | 33 | 0 | 9 | 23 | 1 | 0 | 11 | 125 | 13 | 0 | 6 | 279 | 11 | 558 | 2,030 | |
| 8:30 AM | 0 | 28 | 36 | 34 | 0 | 3 | 17 | 3 | 0 | 21 | 120 | 7 | 0 | 12 | 241 | 11 | 533 | 2,069 | |
| 8:45 AM | 0 | 23 | 32 | 22 | 0 | 9 | 14 | 8 | 0 | 17 | 149 | 12 | 0 | 2 | 253 | 16 | 557 | 2,122 | |
| Count Total | 0 | 139 | 222 | 191 | 0 | 58 | 120 | 34 | 3 | 113 | 898 | 64 | 0 | 42 | 1,911 | 94 | 3,889 | 0 | |
| Peak Hour | All | 0 | 92 | 127 | 113 | 0 | 28 | 68 | 21 | 0 | 63 | 501 | 40 | 0 | 21 | 1,000 | 48 | 2,122 | 0 |
| | HV | 0 | 3 | 1 | 5 | 0 | 1 | 4 | 0 | 0 | 7 | 48 | 6 | 0 | 0 | 67 | 1 | 143 | 0 |
| | HV% | - | 3% | 1% | 4% | - | 4% | 6% | 0% | - | 11% | 10% | 15% | - | 0% | 7% | 2% | 7% | 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 |
| 7:00 AM | 0 | 1 | 5 | 9 | 15 | 0 | 0 | 0 | 0 | 0 | 6 | 2 | 0 | 2 | 10 |
| 7:15 AM | 2 | 0 | 13 | 24 | 39 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 1 | 5 |
| 7:30 AM | 1 | 6 | 12 | 14 | 33 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 2 | 8 |
| 7:45 AM | 2 | 3 | 10 | 19 | 34 | 0 | 0 | 0 | 0 | 0 | 1 | 7 | 1 | 4 | 13 |
| 8:00 AM | 3 | 0 | 17 | 22 | 42 | 0 | 0 | 0 | 1 | 1 | 4 | 5 | 4 | 3 | 16 |
| 8:15 AM | 3 | 2 | 12 | 20 | 37 | 0 | 1 | 0 | 0 | 1 | 2 | 4 | 2 | 1 | 9 |
| 8:30 AM | 2 | 1 | 17 | 12 | 32 | 0 | 0 | 0 | 0 | 0 | 4 | 2 | 1 | 0 | 7 |
| 8:45 AM | 1 | 2 | 15 | 14 | 32 | 0 | 0 | 0 | 1 | 1 | 2 | 6 | 1 | 5 | 14 |
| Count Total | 14 | 15 | 101 | 134 | 264 | 0 | 1 | 0 | 2 | 3 | 20 | 33 | 11 | 18 | 82 |
| Peak Hour | 9 | 5 | 61 | 68 | 143 | 0 | 1 | 0 | 2 | 3 | 12 | 17 | 8 | 9 | 46 |

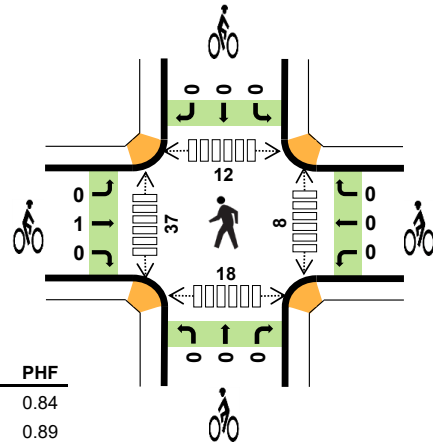
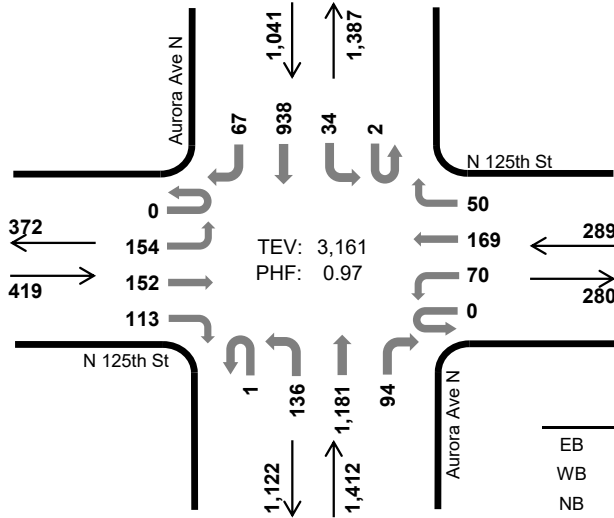
| Two-Hour Count Summaries - Heavy Vehicles | | | | | | | | | | | | | | | | | | |
|--|------------|----------|----------|------------|------------|----------|--------------|----------|--------------|--------------|-----------|----------|--------------|------------------|-----------|----------|--------------|------------------|
| Interval Start | N 125th St | | | | N 125th St | | | | Aurora Ave N | | | | Aurora Ave N | | | | 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 | | |
| 7:00 AM | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 4 | 0 | 0 | 0 | 9 | 0 | 15 | 0 |
| 7:15 AM | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 10 | 2 | 0 | 2 | 22 | 0 | 39 | 0 |
| 7:30 AM | 0 | 0 | 0 | 1 | 0 | 2 | 4 | 0 | 0 | 0 | 9 | 3 | 0 | 0 | 13 | 1 | 33 | 0 |
| 7:45 AM | 0 | 1 | 0 | 1 | 0 | 1 | 2 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 18 | 1 | 34 | 121 |
| 8:00 AM | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 13 | 2 | 0 | 0 | 22 | 0 | 42 | 148 |
| 8:15 AM | 0 | 1 | 1 | 1 | 0 | 0 | 2 | 0 | 0 | 3 | 8 | 1 | 0 | 0 | 19 | 1 | 37 | 146 |
| 8:30 AM | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 2 | 14 | 1 | 0 | 0 | 12 | 0 | 32 | 145 |
| 8:45 AM | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 13 | 2 | 0 | 0 | 14 | 0 | 32 | 143 |
| Count Total | 0 | 4 | 1 | 9 | 0 | 5 | 10 | 0 | 0 | 9 | 81 | 11 | 0 | 2 | 129 | 3 | 264 | 0 |
| Peak Hour | 0 | 3 | 1 | 5 | 0 | 1 | 4 | 0 | 0 | 7 | 48 | 6 | 0 | 0 | 67 | 1 | 143 | 0 |
| Two-Hour Count Summaries - Bikes | | | | | | | | | | | | | | | | | | |
| Interval Start | N 125th St | | | N 125th St | | | Aurora Ave N | | | Aurora Ave N | | | 15-min Total | Rolling One Hour | | | | |
| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | | | | | | |
| | LT | TH | RT | LT | TH | RT | LT | TH | RT | LT | TH | RT | | | | | | |
| 7:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 |
| 8:15 AM | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 |
| 8:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 8:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 3 |
| Count Total | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 3 | 0 | 0 |
| Peak Hour | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 3 | 0 | 0 |
| <i>Note: U-Turn volumes for bikes are included in Left-Turn, if any.</i> | | | | | | | | | | | | | | | | | | |

Aurora Ave N N 125th St



Peak Hour

Date: 07/18/2023
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:00 PM to 5:00 PM



| | HV %: | PHF |
|-------|-------|------|
| EB | 2.1% | 0.84 |
| WB | 2.1% | 0.89 |
| NB | 3.3% | 0.94 |
| SB | 5.0% | 0.94 |
| TOTAL | 3.6% | 0.97 |

Two-Hour Count Summaries

| Interval Start | N 125th St Eastbound | | | | N 125th St Westbound | | | | Aurora Ave N Northbound | | | | Aurora Ave N 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 | 38 | 34 | 31 | 0 | 28 | 39 | 11 | 1 | 32 | 308 | 27 | 0 | 6 | 242 | 18 | 815 | 0 | |
| 4:15 PM | 0 | 36 | 35 | 33 | 0 | 16 | 50 | 15 | 0 | 38 | 270 | 20 | 2 | 13 | 237 | 17 | 782 | 0 | |
| 4:30 PM | 0 | 30 | 34 | 23 | 0 | 16 | 38 | 14 | 0 | 36 | 319 | 21 | 0 | 7 | 254 | 15 | 807 | 0 | |
| 4:45 PM | 0 | 50 | 49 | 26 | 0 | 10 | 42 | 10 | 0 | 30 | 284 | 26 | 0 | 8 | 205 | 17 | 757 | 3,161 | |
| 5:00 PM | 0 | 29 | 26 | 21 | 0 | 12 | 43 | 15 | 1 | 33 | 321 | 30 | 0 | 9 | 237 | 16 | 793 | 3,139 | |
| 5:15 PM | 0 | 34 | 35 | 29 | 0 | 22 | 50 | 16 | 0 | 40 | 281 | 24 | 0 | 15 | 216 | 14 | 776 | 3,133 | |
| 5:30 PM | 0 | 21 | 23 | 21 | 0 | 17 | 41 | 13 | 1 | 28 | 298 | 19 | 0 | 11 | 262 | 18 | 773 | 3,099 | |
| 5:45 PM | 0 | 34 | 36 | 10 | 0 | 25 | 46 | 18 | 0 | 28 | 323 | 14 | 0 | 5 | 251 | 19 | 809 | 3,151 | |
| Count Total | 0 | 272 | 272 | 194 | 0 | 146 | 349 | 112 | 3 | 265 | 2,404 | 181 | 2 | 74 | 1,904 | 134 | 6,312 | 0 | |
| Peak Hour | All | 0 | 154 | 152 | 113 | 0 | 70 | 169 | 50 | 1 | 136 | 1,181 | 94 | 2 | 34 | 938 | 67 | 3,161 | 0 |
| | HV | 0 | 4 | 0 | 5 | 0 | 2 | 1 | 3 | 0 | 7 | 36 | 3 | 0 | 1 | 48 | 3 | 113 | 0 |
| | HV% | - | 3% | 0% | 4% | - | 3% | 1% | 6% | 0% | 5% | 3% | 3% | 0% | 3% | 5% | 4% | 4% | 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 | 2 | 13 | 10 | 29 | 0 | 0 | 0 | 0 | 0 | 3 | 8 | 2 | 4 | 17 |
| 4:15 PM | 0 | 2 | 10 | 24 | 36 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 1 | 4 | 10 |
| 4:30 PM | 4 | 0 | 10 | 9 | 23 | 1 | 0 | 0 | 0 | 1 | 2 | 12 | 2 | 4 | 20 |
| 4:45 PM | 1 | 2 | 13 | 9 | 25 | 0 | 0 | 0 | 0 | 0 | 2 | 13 | 7 | 6 | 28 |
| 5:00 PM | 2 | 0 | 9 | 9 | 20 | 1 | 0 | 0 | 0 | 1 | 4 | 7 | 8 | 2 | 21 |
| 5:15 PM | 3 | 0 | 11 | 4 | 18 | 0 | 0 | 0 | 0 | 0 | 4 | 14 | 2 | 3 | 23 |
| 5:30 PM | 2 | 0 | 9 | 8 | 19 | 1 | 1 | 0 | 0 | 2 | 4 | 17 | 4 | 8 | 33 |
| 5:45 PM | 1 | 1 | 7 | 7 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 2 | 6 | 18 |
| Count Total | 17 | 7 | 82 | 80 | 186 | 3 | 1 | 0 | 0 | 4 | 20 | 85 | 28 | 37 | 170 |
| Peak Hour | 9 | 6 | 46 | 52 | 113 | 1 | 0 | 0 | 0 | 1 | 8 | 37 | 12 | 18 | 75 |

| Two-Hour Count Summaries - Heavy Vehicles | | | | | | | | | | | | | | | | | | |
|--|------------|----|----|----|------------|----|----|----|--------------|----|----|----|--------------|----|----|----|--------------|------------------|
| Interval Start | N 125th St | | | | N 125th St | | | | Aurora Ave N | | | | Aurora Ave N | | | | 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 | 3 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 3 | 9 | 1 | 0 | 0 | 9 | 1 | 29 | 0 |
| 4:15 PM | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 10 | 0 | 0 | 1 | 23 | 0 | 36 | 0 |
| 4:30 PM | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 2 | 7 | 1 | 0 | 0 | 9 | 0 | 23 | 0 |
| 4:45 PM | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 10 | 1 | 0 | 0 | 7 | 2 | 25 | 113 |
| 5:00 PM | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 8 | 1 | 20 | 104 |
| 5:15 PM | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 1 | 0 | 0 | 4 | 0 | 18 | 86 |
| 5:30 PM | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 8 | 0 | 0 | 0 | 7 | 1 | 19 | 82 |
| 5:45 PM | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 7 | 0 | 16 | 73 |
| Count Total | 0 | 9 | 2 | 6 | 0 | 3 | 1 | 3 | 0 | 8 | 70 | 4 | 0 | 1 | 74 | 5 | 186 | 0 |
| Peak Hour | 0 | 4 | 0 | 5 | 0 | 2 | 1 | 3 | 0 | 7 | 36 | 3 | 0 | 1 | 48 | 3 | 113 | 0 |

| Two-Hour Count Summaries - Bikes | | | | | | | | | | | | | | | | | | |
|---|------------|----|----|------------|----|----|--------------|----|----|--------------|----|----|--------------|------------------|---|---|---|---|
| Interval Start | N 125th St | | | N 125th St | | | Aurora Ave N | | | Aurora Ave N | | | 15-min Total | Rolling One Hour | | | | |
| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | | | | | | |
| | 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 | 0 | 0 | 0 | 0 |
| 4:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4:30 PM | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| 4:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 5:00 PM | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 |
| 5:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 5:30 PM | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3 |
| 5:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| Count Total | 0 | 3 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 |
| Peak Hour | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Appendix B Detailed Trip Generation

UW Medical Center - MIMP
Trip Generation Summary

2022 Existing Counts

| Day | AM Peak Hour Vehicle Count | | | PM Peak Hour Vehicle Count | | |
|--|----------------------------|------------|-------------|----------------------------|------------|------------|
| | In | Out | Total | In | Out | Total |
| 10-May | 389 | 189 | 578 | 92 | 354 | 446 |
| 11-May | 365 | 178 | 543 | 74 | 327 | 401 |
| (A) Existing Driveway Trips: | 377 | 184 | 561 | 83 | 341 | 424 |
| Trips on 115th (Calibrated) | 30 | 15 | 45 | 30 | 62 | 92 |
| Total | 407 | 199 | 606 | 113 | 403 | 516 |
| Existing Rate (Trips/1,000 sf): | | | 1.10 | 0.94 | | |
| <i>% In</i> | | | 67% | 22% | | |

Trips assumed off-site

No Action Trip Generation -

| (B) Net New Trips | AM Peak Hour Vehicle Trips | | | PM Peak Hour Vehicle Trips | | |
|-------------------------------------|----------------------------|------------|------------|----------------------------|------------|------------|
| | In | Out | Total | In | Out | Total |
| <i>BHTF</i> 188,846 | 76 | 44 | 120 | -6 | 79 | 73 |
| <i>Hospital</i> 26,000 | 19 | 10 | 29 | 5 | 19 | 24 |
| Baseline Total | 95 | 54 | 149 | -1 | 98 | 97 |
| (C = A + B) No Action Trips: | 502 | 253 | 755 | 112 | 501 | 613 |

All trips added to DW

RIGHT SIZE

| | AM Peak Hour Vehicle Trips | | | PM Peak Hour Vehicle Trips | | |
|--|----------------------------|-----|-------|----------------------------|-----|-------|
| | In | Out | Total | In | Out | Total |
| (A) Existing Trips: | 407 | 199 | 606 | 113 | 403 | 516 |
| CALIBRATED Rate for RIGHT SIZING (trips/1,000 sf): <i>Existing trips/Right sized</i> | 0.79 | | | 0.67 | | |

MIMP

+ 835,457 sf

MIMP TOTAL: 1,600,000

Trip Generation of
MIMP Additional Growth

| (D) MIMP New Trips | AM Peak Hour Vehicle Trips | | | PM Peak Hour Vehicle Trips | | | sf |
|-----------------------|----------------------------|-----|-------|----------------------------|-----|-------|---------|
| | In | Out | Total | In | Out | Total | |
| <i>Interim (2030)</i> | 445 | 217 | 662 | 123 | 440 | 563 | 835,457 |
| | 425 | 208 | 633 | 118 | 421 | 539 | 800,000 |

Estimated per CALIBRATED Rate for RIGHT SIZING (trips/1,000 sf)

Cumulative Total Trip Generation

| | | AM Peak Hour | PM Peak Hour | Size |
|---------------------------|-----------|--------------|--------------|----------------|
| Existing | A | 606 | 516 | 549,697 |
| No Action | C (A + B) | 755 | 613 | 764,543 |
| MIMP | C + D | 1,417 | 1,176 | 1,600,000 |
| MIMP Net New Trips | | 662 | 563 | 835,457 |

Existing CTR Affected Employees 1,000,000
 Rate of CTR Affected Employees per 1,000 SF 2832861.19

Increase in CTR Affected Employees 424929

| Existing TMP Summary (Nov 2019 CTR) | | Future TMP Summary, SOV Shift to Target SOV (65%) | | Future TMP Summary, SOV Shift to Target SOV (50%) | |
|-------------------------------------|-------------|---|-------------|---|-------------|
| CTR Affected Employees | | CTR Affected Employees | | CTR Affected Employees | |
| Employees | 1,000,000 | Employees | 100,000 | Employees | 100,000 |
| <i>Employee Mode Split</i> | | | | | |
| SOV | 74.7% | SOV (Target) | 65.0% | SOV (Sensitivity) | 50.0% |
| Non-SOV | 25.3% | Non-SOV | 35.0% | Non-SOV | 50.0% |
| Carpool | 8.6% | Carpool (Estimated) | 11.9% | Carpool (Estimated) | 17.0% |
| Vanpool | 5.0% | Vanpool (Estimated) | 6.9% | Vanpool (Estimated) | 9.9% |
| Walk | 1.5% | Walk (Estimated) | 2.1% | Walk (Estimated) | 3.0% |
| Bike | 0.8% | Bike (Estimated) | 1.1% | Bike (Estimated) | 1.6% |
| Transit | 7.4% | Transit (Estimated) | 10.2% | Transit (Estimated) | 14.6% |
| Telework | 0.5% | Telework (Estimated) | 0.7% | Telework (Estimated) | 1.0% |
| Other | 1.7% | Other (Estimated) | 2.3% | Other (Estimated) | 3.3% |
| AVO | 1.11 | AVO | 1.17 | AVO | 1.28 |
| SOV | 1 | SOV | 1 | SOV | 1 |
| Carpool | 2.12 | Carpool | 2.12 | Carpool | 2.12 |
| Vanpool | 5.44 | Vanpool | 5.44 | Vanpool | 5.44 |

| | | | |
|-----------|------|------|------|
| Walk/Bike | 2.5% | 3.0% | 4.5% |
| Transit | 7% | 10% | 15% |
| Other | 1.5% | 3.0% | 3.5% |
| Vehicle | 89% | 84% | 77% |
| Total | | | |

UWMC NW - 75% SOV

Person Trips by Mode of Travel

| Trip Generation Summary | Percent By Mode | AM Peak Hour | | | PM Peak Hour | | |
|--|-----------------|--------------|------------|------------|--------------|------------|------------|
| | | In | Out | Total | In | Out | Total |
| <u>Alternative 1 (Subtotal)</u> | | | | | | | |
| MIMP Additional Growth | | | | | | | |
| Walk, Bike, Other Trips | 2.5% | 14 | 7 | 21 | 4 | 14 | 18 |
| Transit Trips | 7% | 39 | 19 | 58 | 11 | 38 | 49 |
| Other | 1.5% | 8 | 4 | 12 | 2 | 8 | 11 |
| Person Trips by Vehicle | 89% | <u>493</u> | <u>240</u> | <u>734</u> | <u>136</u> | <u>488</u> | <u>624</u> |
| Total | 100% | 554 | 270 | 824 | 153 | 548 | 701 |
| <u>No Action (Subtotal)</u> | | | | | | | |
| UWMC | | | | | | | |
| Walk, Bike, Other Trips | 3% | 3 | 2 | 5 | 0 | 3 | 3 |
| Transit Trips | 7% | 8 | 5 | 13 | 0 | 8 | 8 |
| Other | 2% | 2 | 0 | 2 | 0 | 2 | 2 |
| Person Trips by Vehicle | 89% | <u>105</u> | <u>60</u> | <u>165</u> | <u>-1</u> | <u>108</u> | <u>107</u> |
| Total | 100% | 118 | 67 | 185 | -1 | 121 | 120 |
| <u>Existing Use</u> | | | | | | | |
| UWMC | | | | | | | |
| Walk, Bike, Other Trips | 2.5% | 13 | 6 | 19 | 4 | 13 | 16 |
| Transit Trips | 7% | 35 | 17 | 53 | 10 | 35 | 45 |
| Other | 1.5% | 8 | 4 | 11 | 1 | 8 | 10 |
| Person Trips by Vehicle | 89% | <u>451</u> | <u>220</u> | <u>671</u> | <u>125</u> | <u>446</u> | <u>571</u> |
| Total | 100% | 507 | 247 | 754 | 140 | 502 | 642 |
| <u>Alterantive 1 Total Project Person Trips</u> | | | | | | | |
| Walk, Bike, Other Trips | | 30 | 15 | 45 | 8 | 30 | 37 |
| Transit Trips | | 82 | 41 | 124 | 21 | 81 | 102 |
| Other | | 18 | 8 | 25 | 3 | 18 | 23 |
| Person Trips by Vehicle | | 1,049 | 520 | 1,570 | 260 | 1,042 | 1,302 |
| Total | | 1,179 | 584 | 1,763 | 292 | 1,171 | 1,463 |

Vehicle Trip Generation

| Land Use | AVO | AM Peak Hour Vehicle Trips | | | PM Peak Hour Vehicle Trips | | |
|----------------------------|------|----------------------------|------------|--------------|----------------------------|------------|--------------|
| | | In | Out | Total | In | Out | Total |
| Added with MIMP | 1.11 | 445 | 217 | 662 | 123 | 440 | 563 |
| Baseline | 1.11 | 95 | 54 | 149 | -1 | 98 | 97 |
| Existing Use | 1.11 | 407 | 199 | 606 | 113 | 403 | 516 |
| Total Vehicle Trips | | 947 | 470 | 1,417 | 235 | 941 | 1,176 |

UWMC NW - 65% SOV

Person Trips by Mode of Travel

| Trip Generation Summary | Percent By Mode | AM Peak Hour | | | PM Peak Hour | | |
|--|-----------------|--------------|------------|------------|--------------|------------|------------|
| | | In | Out | Total | In | Out | Total |
| <u>Alternative 1 (Subtotal)</u> | | | | | | | |
| MIMP Additional Growth | | | | | | | |
| Walk, Bike, Other Trips | 3.0% | 17 | 8 | 25 | 5 | 16 | 21 |
| Transit Trips | 10% | 55 | 27 | 82 | 15 | 55 | 70 |
| Other | 3.0% | 17 | 8 | 25 | 5 | 16 | 21 |
| Person Trips by Vehicle | 84% | <u>465</u> | <u>226</u> | <u>691</u> | <u>128</u> | <u>462</u> | <u>590</u> |
| Total | 100% | 554 | 270 | 824 | 153 | 548 | 701 |
| <u>No Action (Subtotal)</u> | | | | | | | |
| UWMC | | | | | | | |
| Walk, Bike, Other Trips | 3% | 4 | 2 | 6 | 0 | 4 | 4 |
| Transit Trips | 10% | 12 | 7 | 19 | 0 | 12 | 12 |
| Other | 3% | 4 | 2 | 6 | 0 | 4 | 4 |
| Person Trips by Vehicle | 84% | <u>99</u> | <u>56</u> | <u>155</u> | <u>-1</u> | <u>102</u> | <u>101</u> |
| Total | 100% | 118 | 67 | 185 | -1 | 121 | 120 |
| <u>Existing Use</u> | | | | | | | |
| UWMC | | | | | | | |
| Walk, Bike, Other Trips | 3.0% | 15 | 7 | 23 | 4 | 15 | 19 |
| Transit Trips | 10% | 51 | 25 | 75 | 14 | 50 | 64 |
| Other | 3.0% | 15 | 7 | 23 | 4 | 15 | 19 |
| Person Trips by Vehicle | 84% | <u>426</u> | <u>208</u> | <u>633</u> | <u>118</u> | <u>422</u> | <u>540</u> |
| Total | 100% | 507 | 247 | 754 | 140 | 502 | 642 |
| <u>Alterantive 1 Total Project Person Trips</u> | | | | | | | |
| <i>Walk, Bike, Other Trips</i> | | 36 | 17 | 53 | 9 | 35 | 44 |
| <i>Transit Trips</i> | | 118 | 59 | 176 | 29 | 117 | 146 |
| <i>Other</i> | | 36 | 17 | 53 | 9 | 35 | 44 |
| <i>Person Trips by Vehicle</i> | | 990 | 490 | 1,480 | 245 | 986 | 1,231 |
| <i>Total</i> | | 1,179 | 584 | 1,763 | 292 | 1,171 | 1,463 |

Vehicle Trip Generation

| Land Use | AVO | AM Peak Hour Vehicle Trips | | | PM Peak Hour Vehicle Trips | | |
|----------------------------|------|----------------------------|------------|--------------|----------------------------|------------|--------------|
| | | In | Out | Total | In | Out | Total |
| Added with MIMP | 1.17 | 399 | 194 | 593 | 110 | 396 | 506 |
| Baseline | 1.17 | 93 | 53 | 146 | -1 | 96 | 95 |
| Existing Use | 1.17 | 365 | 178 | 543 | 101 | 362 | 463 |
| Total Vehicle Trips | | 857 | 425 | 1,282 | 210 | 854 | 1,064 |

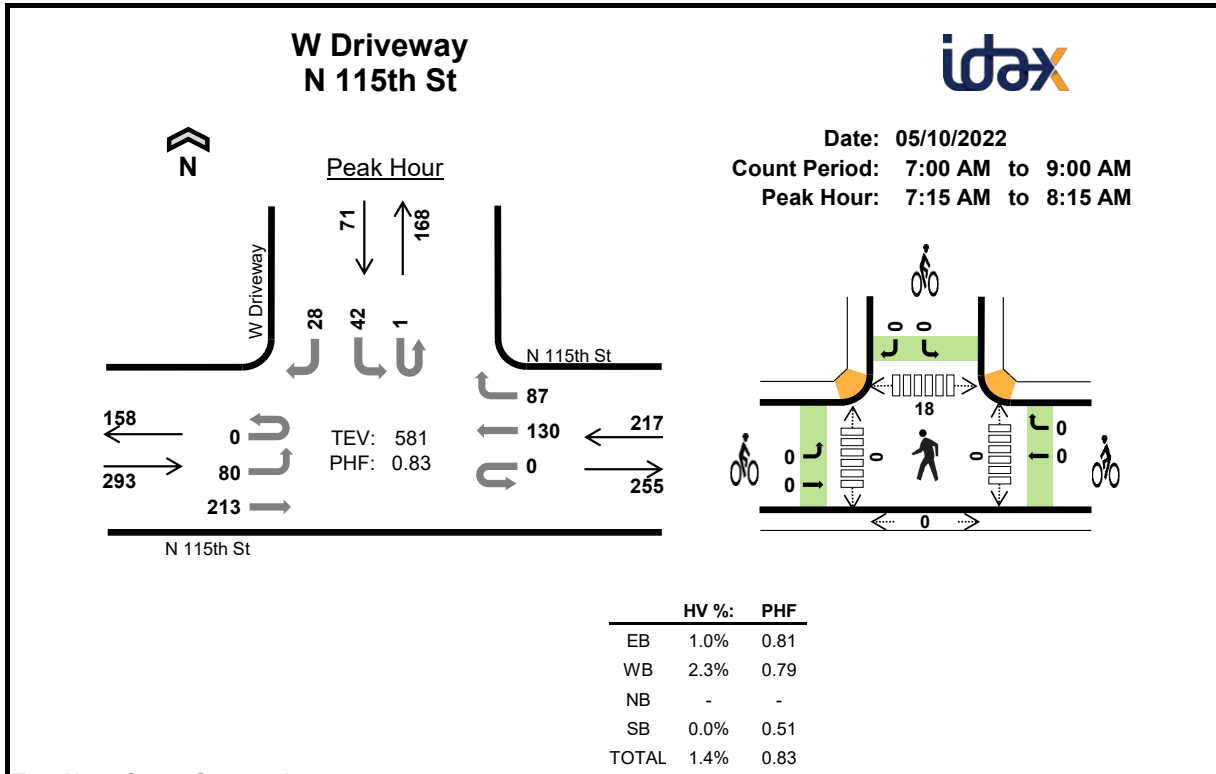
UWMC NW - 50% SOV

Person Trips by Mode of Travel

| Trip Generation Summary | Percent By Mode | AM Peak Hour | | | PM Peak Hour | | |
|--|-----------------|--------------|------------|------------|--------------|------------|------------|
| | | In | Out | Total | In | Out | Total |
| <u>Alternative 1 (Subtotal)</u> | | | | | | | |
| MIMP Additional Growth | | | | | | | |
| Walk, Bike, Other Trips | 4.5% | 25 | 12 | 37 | 7 | 25 | 32 |
| Transit Trips | 15% | 83 | 40 | 124 | 23 | 82 | 105 |
| Other | 3.5% | 20 | 9 | 29 | 5 | 19 | 25 |
| Person Trips by Vehicle | 77% | <u>427</u> | <u>208</u> | <u>635</u> | <u>118</u> | <u>423</u> | <u>541</u> |
| Total | 100% | 555 | 269 | 824 | 154 | 547 | 701 |
| <u>No Action (Subtotal)</u> | | | | | | | |
| UWMC | | | | | | | |
| Walk, Bike, Other Trips | 5% | 5 | 3 | 8 | 0 | 5 | 5 |
| Transit Trips | 15% | 18 | 10 | 28 | 0 | 18 | 18 |
| Other | 3% | 4 | 2 | 6 | 0 | 4 | 4 |
| Person Trips by Vehicle | 77% | <u>91</u> | <u>52</u> | <u>142</u> | <u>-1</u> | <u>93</u> | <u>92</u> |
| Total | 100% | 118 | 67 | 185 | -1 | 121 | 120 |
| <u>Existing Use</u> | | | | | | | |
| UWMC | | | | | | | |
| Walk, Bike, Other Trips | 4.5% | 23 | 11 | 34 | 6 | 23 | 29 |
| Transit Trips | 15% | 76 | 37 | 113 | 21 | 75 | 96 |
| Other | 3.5% | 18 | 8 | 26 | 5 | 17 | 22 |
| Person Trips by Vehicle | 77% | <u>391</u> | <u>190</u> | <u>581</u> | <u>108</u> | <u>387</u> | <u>495</u> |
| Total | 100% | 508 | 246 | 754 | 140 | 502 | 642 |
| <u>Alterantive 1 Total Project Person Trips</u> | | | | | | | |
| Walk, Bike, Other Trips | | 53 | 26 | 79 | 13 | 53 | 66 |
| Transit Trips | | 177 | 87 | 264 | 44 | 175 | 219 |
| Other | | 42 | 20 | 61 | 10 | 40 | 51 |
| Person Trips by Vehicle | | 909 | 450 | 1,358 | 225 | 903 | 1,128 |
| Total | | 1,181 | 582 | 1,763 | 293 | 1,170 | 1,463 |

Vehicle Trip Generation

| Land Use | AVO | AM Peak Hour Vehicle Trips | | | PM Peak Hour Vehicle Trips | | |
|---------------------|------|----------------------------|------------|--------------|----------------------------|------------|------------|
| | | In | Out | Total | In | Out | Total |
| Added with MIMP | 1.28 | 332 | 162 | 494 | 92 | 329 | 421 |
| Baseline | 1.28 | 90 | 51 | 141 | -2 | 93 | 91 |
| Existing Use | 1.28 | 304 | 148 | 452 | 84 | 301 | 385 |
| Total Vehicle Trips | | 726 | 361 | 1,087 | 174 | 723 | 897 |



Two-Hour Count Summaries

| Interval Start | N 115th St Eastbound | | | | N 115th St Westbound | | | | 0 Northbound | | | | W Driveway Southbound | | | | 15-min Total | Rolling One Hour | |
|----------------|----------------------|-----|-----|-----|----------------------|----|-----|-----|--------------|----|----|----|-----------------------|----|----|----|--------------|------------------|---|
| | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | | | |
| | 7:00 AM | 0 | 13 | 29 | 0 | 0 | 0 | 25 | 25 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | | | 0 |
| 7:15 AM | 0 | 18 | 41 | 0 | 0 | 0 | 21 | 30 | 0 | 0 | 0 | 0 | 1 | 10 | 0 | 3 | 124 | 0 | |
| 7:30 AM | 0 | 21 | 56 | 0 | 0 | 0 | 31 | 16 | 0 | 0 | 0 | 0 | 0 | 20 | 0 | 15 | 159 | 0 | |
| 7:45 AM | 0 | 26 | 64 | 0 | 0 | 0 | 42 | 27 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 8 | 176 | 554 | |
| 8:00 AM | 0 | 15 | 52 | 0 | 0 | 0 | 36 | 14 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 2 | 122 | 581 | |
| 8:15 AM | 0 | 17 | 41 | 0 | 0 | 0 | 31 | 22 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 117 | 574 | |
| 8:30 AM | 0 | 11 | 53 | 0 | 1 | 0 | 42 | 10 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 1 | 123 | 538 | |
| 8:45 AM | 0 | 12 | 42 | 0 | 0 | 0 | 42 | 11 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 110 | 472 | |
| Count Total | 0 | 133 | 378 | 0 | 1 | 0 | 270 | 155 | 0 | 0 | 0 | 0 | 1 | 57 | 0 | 31 | 1,026 | 0 | |
| Peak Hour | All | 0 | 80 | 213 | 0 | 0 | 0 | 130 | 87 | 0 | 0 | 0 | 0 | 1 | 42 | 0 | 28 | 581 | 0 |
| | HV | 0 | 1 | 2 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 |
| | HV% | - | 1% | 1% | - | - | - | 4% | 0% | - | - | - | - | 0% | 0% | - | 0% | 1% | 0 |

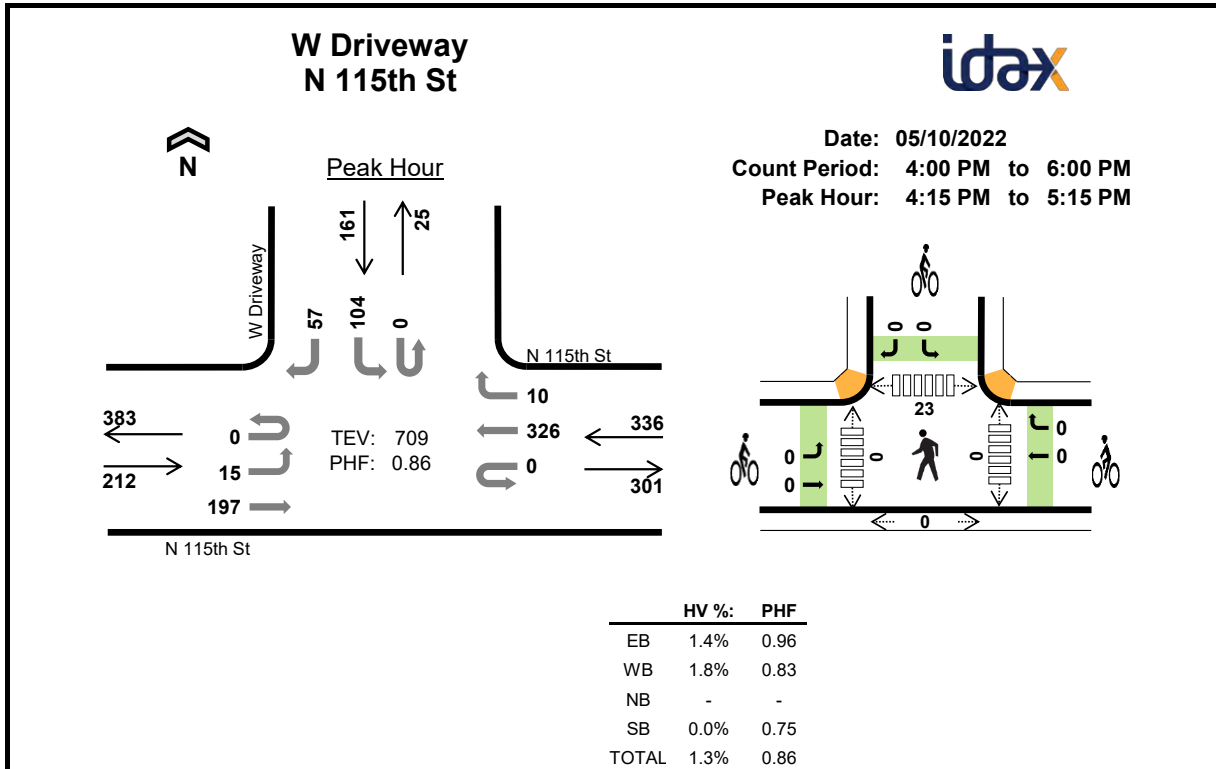
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

| Interval Start | Heavy Vehicle Totals | | | | | Bicycles | | | | | Pedestrians (Crossing Leg) | | | | |
|----------------|----------------------|----|----|----|-------|----------|----|----|----|-------|----------------------------|------|-------|-------|-------|
| | EB | WB | NB | SB | Total | EB | WB | NB | SB | Total | East | West | North | South | Total |
| 7:00 AM | 1 | 2 | 0 | 0 | 3 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 |
| 7:15 AM | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 |
| 7:30 AM | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 3 |
| 7:45 AM | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 4 |
| 8:00 AM | 2 | 3 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 9 |
| 8:15 AM | 3 | 4 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 3 |
| 8:30 AM | 3 | 2 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 |
| 8:45 AM | 1 | 2 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 5 |
| Count Total | 11 | 15 | 0 | 0 | 26 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 29 | 0 | 29 |
| Peak Hr | 3 | 5 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 0 | 18 |

| Two-Hour Count Summaries - Heavy Vehicles | | | | | | | | | | | | | | | | | | |
|--|------------|----|----|----|------------|----|----|----|------------|----|----|----|------------|----|----|----|--------------|------------------|
| Interval Start | N 115th St | | | | N 115th St | | | | 0 | | | | W Driveway | | | | 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 | | |
| 7:00 AM | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| 7:30 AM | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 6 |
| 8:00 AM | 0 | 0 | 2 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 8 |
| 8:15 AM | 0 | 0 | 3 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 14 |
| 8:30 AM | 0 | 0 | 3 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 18 |
| 8:45 AM | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 20 |
| Count Total | 0 | 1 | 10 | 0 | 0 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 26 | 0 |
| Peak Hour | 0 | 1 | 2 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 |

| Two-Hour Count Summaries - Bikes | | | | | | | | | | | | | | | |
|---|------------|----|----|------------|----|----|------------|----|----|------------|----|----|--------------|------------------|---|
| Interval Start | N 115th St | | | N 115th St | | | 0 | | | W Driveway | | | 15-min Total | Rolling One Hour | |
| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | | | |
| | LT | TH | RT | LT | TH | RT | LT | TH | RT | LT | TH | RT | | | |
| 7:00 AM | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Count Total | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Peak Hour | 0 | 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.



Two-Hour Count Summaries

| Interval Start | N 115th St Eastbound | | | | N 115th St Westbound | | | | 0 Northbound | | | | W 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 | 39 | 0 | 1 | 0 | 93 | 1 | 0 | 0 | 0 | 0 | 0 | 20 | 0 | | | 11 |
| 4:15 PM | 0 | 3 | 51 | 0 | 0 | 0 | 84 | 4 | 0 | 0 | 0 | 0 | 0 | 17 | 0 | 9 | 168 | 0 | |
| 4:30 PM | 0 | 0 | 50 | 0 | 0 | 0 | 97 | 4 | 0 | 0 | 0 | 0 | 0 | 35 | 0 | 19 | 205 | 0 | |
| 4:45 PM | 0 | 4 | 51 | 0 | 0 | 0 | 63 | 1 | 0 | 0 | 0 | 0 | 0 | 27 | 0 | 11 | 157 | 695 | |
| 5:00 PM | 0 | 8 | 45 | 0 | 0 | 0 | 82 | 1 | 0 | 0 | 0 | 0 | 0 | 25 | 0 | 18 | 179 | 709 | |
| 5:15 PM | 0 | 1 | 35 | 0 | 0 | 0 | 67 | 2 | 0 | 0 | 0 | 0 | 0 | 20 | 0 | 20 | 145 | 686 | |
| 5:30 PM | 0 | 0 | 50 | 0 | 1 | 0 | 72 | 4 | 0 | 0 | 0 | 0 | 0 | 40 | 0 | 12 | 179 | 660 | |
| 5:45 PM | 0 | 2 | 48 | 0 | 0 | 0 | 66 | 4 | 0 | 0 | 0 | 0 | 0 | 14 | 0 | 16 | 150 | 653 | |
| Count Total | 0 | 18 | 369 | 0 | 2 | 0 | 624 | 21 | 0 | 0 | 0 | 0 | 0 | 198 | 0 | 116 | 1,348 | 0 | |
| Peak Hour | All | 0 | 15 | 197 | 0 | 0 | 0 | 326 | 10 | 0 | 0 | 0 | 0 | 0 | 104 | 0 | 57 | 709 | 0 |
| | HV | 0 | 0 | 3 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 |
| | HV% | - | 0% | 2% | - | - | - | 2% | 0% | - | - | - | - | - | 0% | - | 0% | 1% | 0 |

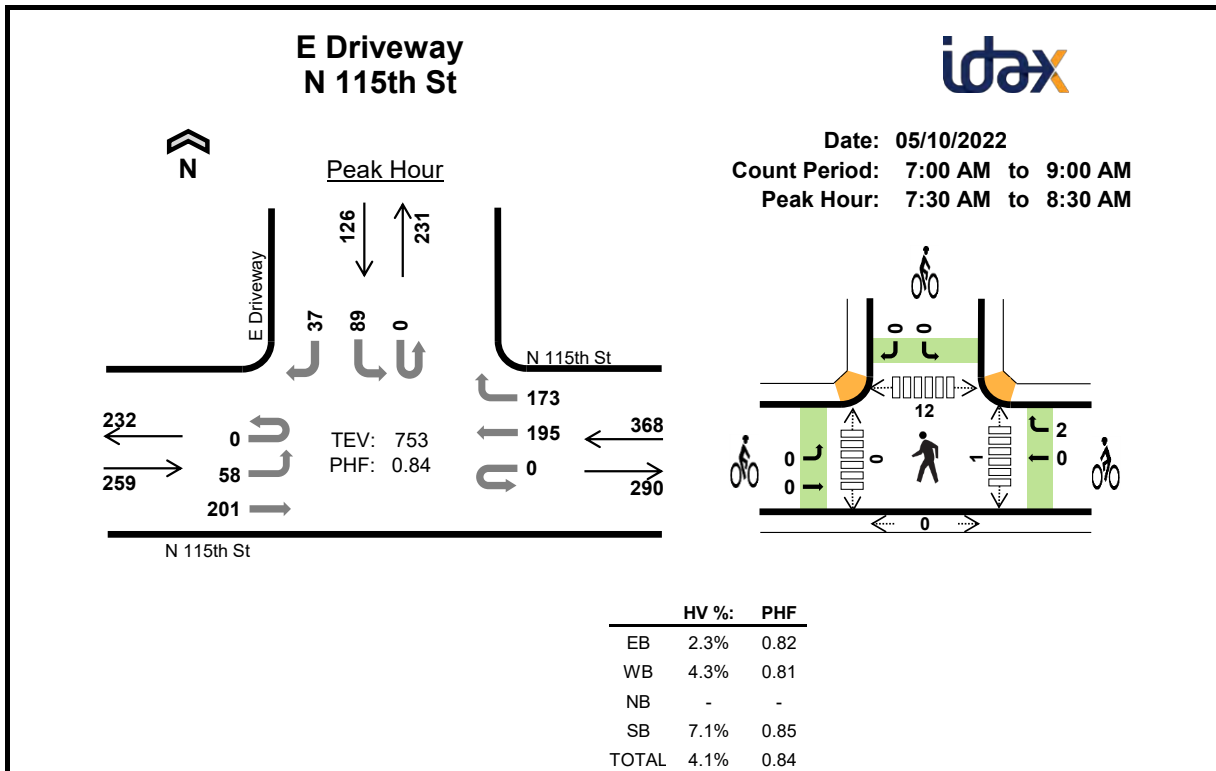
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

| 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 | 1 | 3 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 5 |
| 4:15 PM | 2 | 2 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 4 |
| 4:30 PM | 1 | 2 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 6 |
| 4:45 PM | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 7 |
| 5:00 PM | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 6 |
| 5:15 PM | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 5 |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 11 |
| 5:45 PM | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 5 |
| Count Total | 4 | 13 | 0 | 0 | 17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 49 | 0 | 49 |
| Peak Hr | 3 | 6 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 23 | 0 | 23 |

| Two-Hour Count Summaries - Heavy Vehicles | | | | | | | | | | | | | | 15-min Total | Rolling One Hour | | | |
|---|------------|----|----|----|------------|----|----|----|------------|----|----|----|------------|--------------|------------------|----|----|----|
| Interval Start | N 115th St | | | | N 115th St | | | | 0 | | | | W Driveway | | | | | |
| | Eastbound | | | | Westbound | | | | Northbound | | | | Southbound | | | | | |
| | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | | |
| 4:00 PM | 0 | 0 | 1 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 |
| 4:15 PM | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 |
| 4:30 PM | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 |
| 4:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 12 |
| 5:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 9 |
| 5:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 6 |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 5:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 5 |
| Count Total | 0 | 0 | 4 | 0 | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 0 |
| Peak Hour | 0 | 0 | 3 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 |

| Two-Hour Count Summaries - Bikes | | | | | | | | | | | | | | 15-min Total | Rolling One Hour | | | |
|----------------------------------|------------|----|----|------------|----|----|------------|----|----|------------|----|----|---|--------------|------------------|---|---|---|
| Interval Start | N 115th St | | | N 115th St | | | 0 | | | W Driveway | | | | | | | | |
| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | | | | | | |
| | 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 | 0 | 0 | 0 | 0 |
| 4:15 PM | 0 | 0 | 0 | 0 | 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 | 0 | 0 | 0 | 0 |
| 4:45 PM | 0 | 0 | 0 | 0 | 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 | 0 | 0 | 0 | 0 |
| 5:15 PM | 0 | 0 | 0 | 0 | 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 | 0 | 0 | 0 | 0 |
| 5:45 PM | 0 | 0 | 0 | 0 | 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 | 0 | 0 | 0 | 0 |
| Peak Hour | 0 | 0 | 0 | 0 | 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.



Two-Hour Count Summaries

| Interval Start | N 115th St Eastbound | | | | N 115th St Westbound | | | | 0 Northbound | | | | E Driveway Southbound | | | | 15-min Total | Rolling One Hour | |
|----------------|----------------------|-----|-----|-----|----------------------|----|-----|-----|--------------|----|----|----|-----------------------|-----|----|----|--------------|------------------|---|
| | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | | | |
| | 7:00 AM | 0 | 10 | 23 | 0 | 0 | 0 | 46 | 46 | 0 | 0 | 0 | 0 | 0 | 11 | 0 | | | 8 |
| 7:15 AM | 0 | 15 | 36 | 0 | 0 | 0 | 53 | 37 | 0 | 0 | 0 | 0 | 0 | 17 | 0 | 2 | 160 | 0 | |
| 7:30 AM | 0 | 12 | 61 | 0 | 0 | 0 | 36 | 41 | 0 | 0 | 0 | 0 | 0 | 26 | 0 | 11 | 187 | 0 | |
| 7:45 AM | 0 | 16 | 63 | 0 | 0 | 0 | 61 | 52 | 0 | 0 | 0 | 0 | 0 | 23 | 0 | 10 | 225 | 716 | |
| 8:00 AM | 0 | 14 | 43 | 0 | 0 | 0 | 48 | 49 | 0 | 0 | 0 | 0 | 0 | 16 | 0 | 8 | 178 | 750 | |
| 8:15 AM | 0 | 16 | 34 | 0 | 0 | 0 | 50 | 31 | 0 | 0 | 0 | 0 | 0 | 24 | 0 | 8 | 163 | 753 | |
| 8:30 AM | 0 | 16 | 42 | 0 | 0 | 0 | 46 | 42 | 0 | 0 | 0 | 0 | 0 | 26 | 0 | 10 | 182 | 748 | |
| 8:45 AM | 0 | 9 | 35 | 0 | 0 | 0 | 48 | 37 | 0 | 0 | 0 | 0 | 0 | 21 | 0 | 9 | 159 | 682 | |
| Count Total | 0 | 108 | 337 | 0 | 0 | 0 | 388 | 335 | 0 | 0 | 0 | 0 | 0 | 164 | 0 | 66 | 1,398 | 0 | |
| Peak Hour | All | 0 | 58 | 201 | 0 | 0 | 0 | 195 | 173 | 0 | 0 | 0 | 0 | 0 | 89 | 0 | 37 | 753 | 0 |
| | HV | 0 | 2 | 4 | 0 | 0 | 0 | 6 | 10 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 2 | 31 | 0 |
| | HV% | - | 3% | 2% | - | - | - | 3% | 6% | - | - | - | - | - | 8% | - | 5% | 4% | 0 |

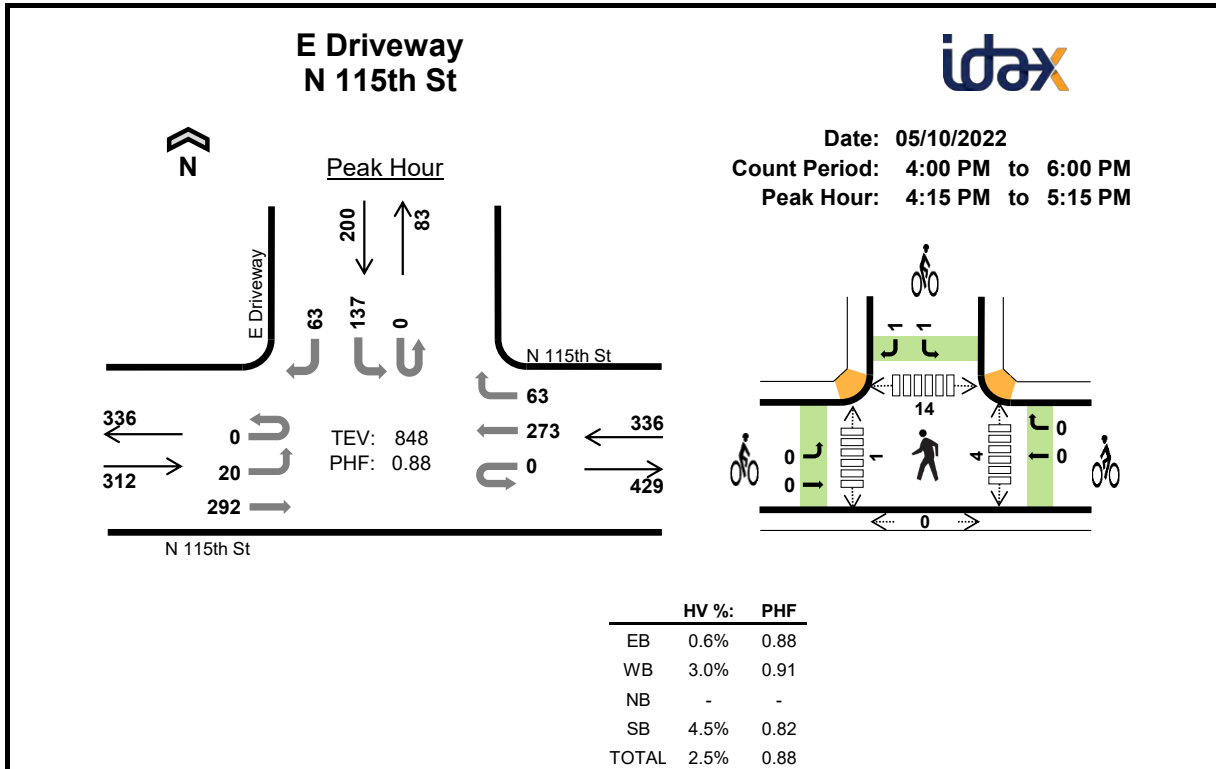
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

| Interval Start | Heavy Vehicle Totals | | | | | Bicycles | | | | | Pedestrians (Crossing Leg) | | | | |
|----------------|----------------------|----|----|----|-------|----------|----|----|----|-------|----------------------------|------|-------|-------|-------|
| | EB | WB | NB | SB | Total | EB | WB | NB | SB | Total | East | West | North | South | Total |
| 7:00 AM | 1 | 2 | 0 | 3 | 6 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 3 |
| 7:15 AM | 0 | 5 | 0 | 2 | 7 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 |
| 7:30 AM | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 7:45 AM | 0 | 3 | 0 | 1 | 4 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 3 | 0 | 4 |
| 8:00 AM | 3 | 6 | 0 | 2 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 5 |
| 8:15 AM | 3 | 4 | 0 | 6 | 13 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 3 | 0 | 3 |
| 8:30 AM | 3 | 3 | 0 | 2 | 8 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 3 |
| 8:45 AM | 1 | 5 | 0 | 1 | 7 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 3 |
| Count Total | 11 | 31 | 0 | 17 | 59 | 1 | 2 | 0 | 0 | 3 | 4 | 0 | 19 | 0 | 23 |
| Peak Hr | 6 | 16 | 0 | 9 | 31 | 0 | 2 | 0 | 0 | 2 | 1 | 0 | 12 | 0 | 13 |

| Two-Hour Count Summaries - Heavy Vehicles | | | | | | | | | | | | | | 15-min Total | Rolling One Hour | | | |
|---|------------|----|----|----|------------|----|----|----|------------|----|----|----|------------|--------------|------------------|----|----|----|
| Interval Start | N 115th St | | | | N 115th St | | | | 0 | | | | E Driveway | | | | | |
| | Eastbound | | | | Westbound | | | | Northbound | | | | Southbound | | | | | |
| | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | | |
| 7:00 AM | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 6 | 0 |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 7 | 0 |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 4 | 20 |
| 8:00 AM | 0 | 1 | 2 | 0 | 0 | 0 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 11 | 25 |
| 8:15 AM | 0 | 1 | 2 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 2 | 13 | 31 |
| 8:30 AM | 0 | 0 | 3 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 8 | 36 |
| 8:45 AM | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 7 | 39 |
| Count Total | 0 | 3 | 8 | 0 | 0 | 0 | 12 | 19 | 0 | 0 | 0 | 0 | 0 | 13 | 0 | 4 | 59 | 0 |
| Peak Hour | 0 | 2 | 4 | 0 | 0 | 0 | 6 | 10 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 2 | 31 | 0 |

| Two-Hour Count Summaries - Bikes | | | | | | | | | | | | | | 15-min Total | Rolling One Hour | | | |
|----------------------------------|------------|----|----|------------|----|----|------------|----|----|------------|----|----|---|--------------|------------------|---|---|---|
| Interval Start | N 115th St | | | N 115th St | | | 0 | | | E Driveway | | | | | | | | |
| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | | | | | | |
| | LT | TH | RT | LT | TH | RT | LT | TH | RT | LT | TH | RT | | | | | | |
| 7:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:15 AM | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 8:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 |
| 8:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 8:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Count Total | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 |
| Peak Hour | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |

Note: U-Turn volumes for bikes are included in Left-Turn, if any.



Two-Hour Count Summaries

| Interval Start | N 115th St Eastbound | | | | N 115th St Westbound | | | | 0 Northbound | | | | E 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 | 5 | 59 | 0 | 0 | 0 | 74 | 11 | 0 | 0 | 0 | 0 | 0 | 37 | 0 | 19 | 205 | 0 | |
| 4:15 PM | 0 | 6 | 60 | 0 | 0 | 0 | 73 | 19 | 0 | 0 | 0 | 0 | 0 | 31 | 0 | 15 | 204 | 0 | |
| 4:30 PM | 0 | 6 | 83 | 0 | 0 | 0 | 77 | 14 | 0 | 0 | 0 | 0 | 0 | 40 | 0 | 21 | 241 | 0 | |
| 4:45 PM | 0 | 5 | 80 | 0 | 0 | 0 | 54 | 9 | 0 | 0 | 0 | 0 | 0 | 27 | 0 | 15 | 190 | 840 | |
| 5:00 PM | 0 | 3 | 69 | 0 | 0 | 0 | 69 | 21 | 0 | 0 | 0 | 0 | 0 | 39 | 0 | 12 | 213 | 848 | |
| 5:15 PM | 0 | 6 | 51 | 0 | 0 | 0 | 56 | 15 | 0 | 0 | 0 | 0 | 0 | 30 | 0 | 9 | 167 | 811 | |
| 5:30 PM | 0 | 3 | 86 | 0 | 0 | 0 | 63 | 10 | 0 | 0 | 0 | 0 | 0 | 18 | 0 | 14 | 194 | 764 | |
| 5:45 PM | 0 | 7 | 57 | 0 | 0 | 0 | 65 | 8 | 0 | 0 | 0 | 0 | 0 | 22 | 0 | 7 | 166 | 740 | |
| Count Total | 0 | 41 | 545 | 0 | 0 | 0 | 531 | 107 | 0 | 0 | 0 | 0 | 0 | 244 | 0 | 112 | 1,580 | 0 | |
| Peak Hour | All | 0 | 20 | 292 | 0 | 0 | 0 | 273 | 63 | 0 | 0 | 0 | 0 | 0 | 137 | 0 | 63 | 848 | 0 |
| | HV | 0 | 0 | 2 | 0 | 0 | 0 | 3 | 7 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 3 | 21 | 0 |
| | HV% | - | 0% | 1% | - | - | - | 1% | 11% | - | - | - | - | - | 4% | - | 5% | 2% | 0 |

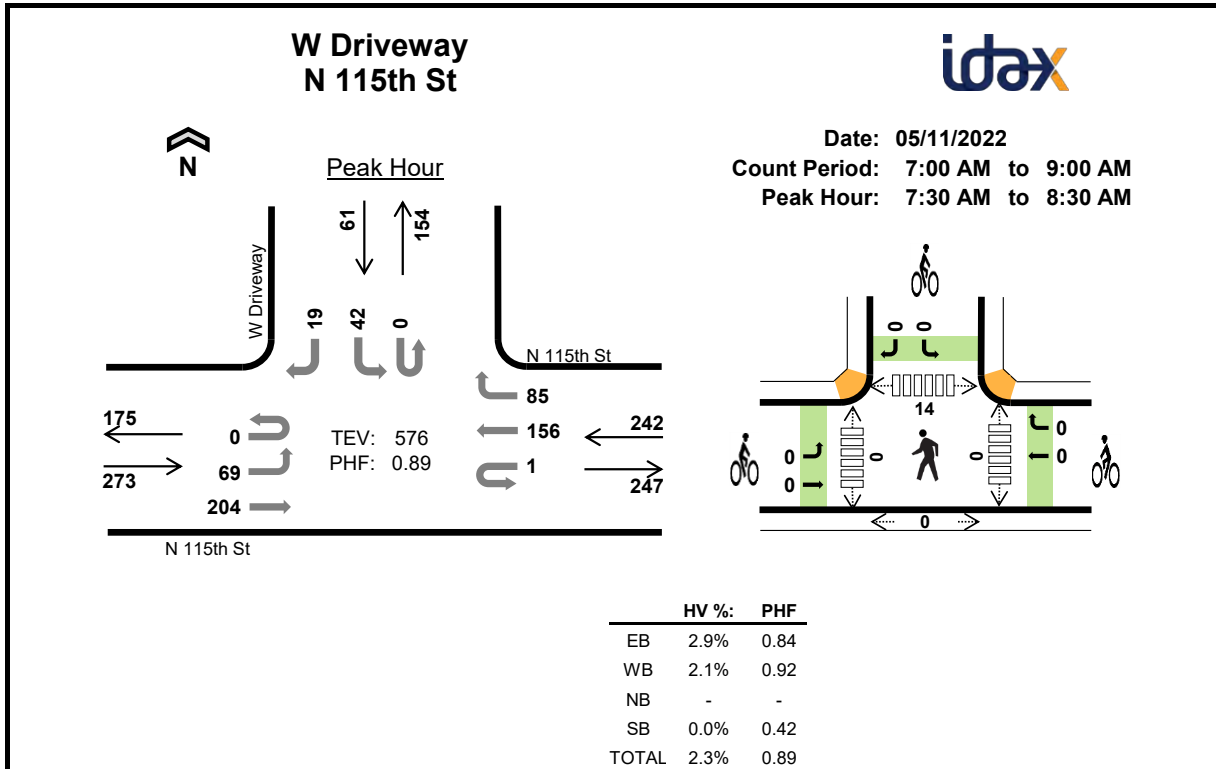
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

| 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 | 4 | 0 | 2 | 7 | 1 | 0 | 0 | 0 | 1 | 2 | 0 | 5 | 0 | 7 |
| 4:15 PM | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 |
| 4:30 PM | 2 | 1 | 0 | 4 | 7 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 3 | 0 | 4 |
| 4:45 PM | 0 | 1 | 0 | 3 | 4 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 5 | 0 | 7 |
| 5:00 PM | 0 | 3 | 0 | 2 | 5 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 5 | 0 | 7 |
| 5:15 PM | 0 | 5 | 0 | 1 | 6 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 5 | 0 | 6 |
| 5:30 PM | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 8 | 0 | 9 |
| 5:45 PM | 0 | 5 | 0 | 2 | 7 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 5 | 0 | 7 |
| Count Total | 3 | 24 | 0 | 15 | 42 | 1 | 0 | 0 | 4 | 5 | 9 | 2 | 37 | 0 | 48 |
| Peak Hr | 2 | 10 | 0 | 9 | 21 | 0 | 0 | 0 | 2 | 2 | 4 | 1 | 14 | 0 | 19 |

| Two-Hour Count Summaries - Heavy Vehicles | | | | | | | | | | | | | | | | | | |
|--|------------|----|----|----|------------|----|----|----|------------|----|----|----|------------|----|----|----|--------------|------------------|
| Interval Start | N 115th St | | | | N 115th St | | | | 0 | | | | E Driveway | | | | 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 | 1 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 7 | 0 |
| 4:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 |
| 4:30 PM | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 7 | 0 |
| 4:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 4 | 23 |
| 5:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 5 | 21 |
| 5:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 6 | 22 |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 16 |
| 5:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 7 | 19 |
| Count Total | 0 | 1 | 2 | 0 | 0 | 0 | 10 | 14 | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 4 | 42 | 0 |
| Peak Hour | 0 | 0 | 2 | 0 | 0 | 0 | 3 | 7 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 3 | 21 | 0 |

| Two-Hour Count Summaries - Bikes | | | | | | | | | | | | | | | | | | |
|---|------------|----|----|----|------------|----|----|----|------------|----|----|----|------------|----|----|----|--------------|------------------|
| Interval Start | N 115th St | | | | N 115th St | | | | 0 | | | | E Driveway | | | | 15-min Total | Rolling One Hour |
| | Eastbound | | | | Westbound | | | | Northbound | | | | Southbound | | | | | |
| | LT | TH | RT | RT | LT | TH | RT | RT | LT | TH | RT | RT | LT | TH | RT | RT | | |
| 4:00 PM | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| 4:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 |
| 4:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 5:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 5:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 2 |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 2 |
| 5:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Count Total | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 5 | 0 |
| Peak Hour | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 2 | 0 |

Note: U-Turn volumes for bikes are included in Left-Turn, if any.



Two-Hour Count Summaries

| Interval Start | N 115th St Eastbound | | | | N 115th St Westbound | | | | 0 Northbound | | | | W Driveway Southbound | | | | 15-min Total | Rolling One Hour | |
|----------------|----------------------|-----|-----|-----|----------------------|----|-----|-----|--------------|----|----|----|-----------------------|----|----|----|--------------|------------------|---|
| | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | | | |
| | 7:00 AM | 0 | 17 | 34 | 0 | 0 | 0 | 20 | 21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | 1 |
| 7:15 AM | 0 | 17 | 40 | 0 | 0 | 0 | 21 | 26 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 4 | 115 | 0 | |
| 7:30 AM | 0 | 16 | 40 | 0 | 0 | 0 | 34 | 24 | 0 | 0 | 0 | 0 | 0 | 26 | 0 | 10 | 150 | 0 | |
| 7:45 AM | 0 | 22 | 59 | 0 | 0 | 0 | 44 | 22 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 4 | 161 | 519 | |
| 8:00 AM | 0 | 17 | 47 | 0 | 0 | 0 | 36 | 18 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 3 | 126 | 552 | |
| 8:15 AM | 0 | 14 | 58 | 0 | 1 | 0 | 42 | 21 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 139 | 576 | |
| 8:30 AM | 0 | 13 | 56 | 0 | 0 | 0 | 39 | 11 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 123 | 549 | |
| 8:45 AM | 0 | 4 | 53 | 0 | 1 | 0 | 47 | 19 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 127 | 515 | |
| Count Total | 0 | 120 | 387 | 0 | 2 | 0 | 283 | 162 | 0 | 0 | 0 | 0 | 0 | 53 | 0 | 27 | 1,034 | 0 | |
| Peak Hour | All | 0 | 69 | 204 | 0 | 1 | 0 | 156 | 85 | 0 | 0 | 0 | 0 | 0 | 42 | 0 | 19 | 576 | 0 |
| | HV | 0 | 0 | 8 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 0 |
| | HV% | - | 0% | 4% | - | 0% | - | 3% | 0% | - | - | - | - | - | 0% | - | 0% | 2% | 0 |

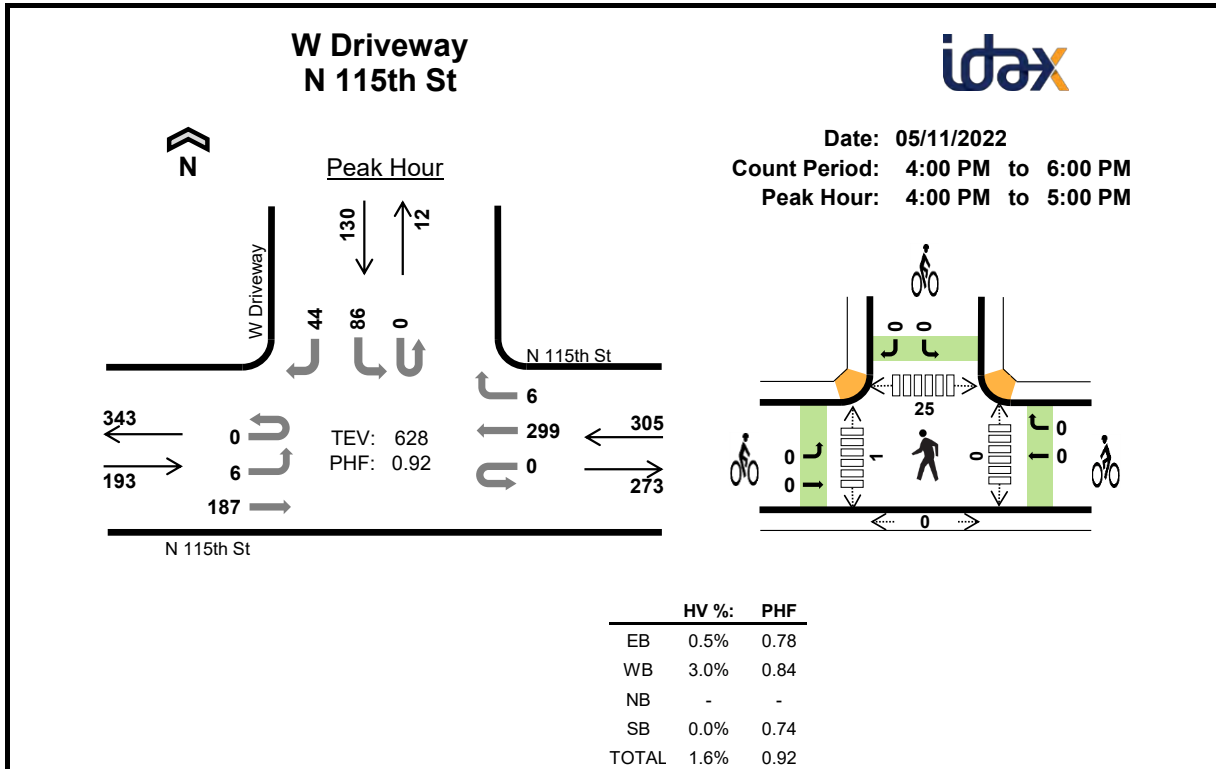
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

| Interval Start | Heavy Vehicle Totals | | | | | Bicycles | | | | | Pedestrians (Crossing Leg) | | | | |
|----------------|----------------------|----|----|----|-------|----------|----|----|----|-------|----------------------------|------|-------|-------|-------|
| | EB | WB | NB | SB | Total | EB | WB | NB | SB | Total | East | West | North | South | Total |
| 7:00 AM | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 7:15 AM | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 3 |
| 7:30 AM | 1 | 2 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 4 |
| 7:45 AM | 2 | 1 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 5 |
| 8:00 AM | 3 | 1 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 |
| 8:15 AM | 2 | 1 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 3 |
| 8:30 AM | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 4 |
| 8:45 AM | 1 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 |
| Count Total | 12 | 7 | 0 | 0 | 19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 | 0 | 24 |
| Peak Hr | 8 | 5 | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 0 | 14 |

| Two-Hour Count Summaries - Heavy Vehicles | | | | | | | | | | | | | | | | | | |
|--|------------|----|----|----|------------|----|----|----|------------|----|----|----|------------|----|----|----|--------------|------------------|
| Interval Start | N 115th St | | | | N 115th St | | | | 0 | | | | W Driveway | | | | 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 | | |
| 7:00 AM | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| 7:15 AM | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| 7:30 AM | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 |
| 7:45 AM | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 9 |
| 8:00 AM | 0 | 0 | 3 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 11 |
| 8:15 AM | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 13 |
| 8:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 11 |
| 8:45 AM | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 10 |
| Count Total | 0 | 1 | 11 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | 0 |
| Peak Hour | 0 | 0 | 8 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 0 |

| Two-Hour Count Summaries - Bikes | | | | | | | | | | | | | | | | | |
|---|------------|----|----|------------|----|----|------------|----|----|------------|----|----|--------------|------------------|---|---|---|
| Interval Start | N 115th St | | | N 115th St | | | 0 | | | W Driveway | | | 15-min Total | Rolling One Hour | | | |
| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | | | | | |
| | LT | TH | RT | LT | TH | RT | LT | TH | RT | LT | TH | RT | | | | | |
| 7:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:45 AM | 0 | 0 | 0 | 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 | 0 | 0 | 0 |
| Peak Hour | 0 | 0 | 0 | 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.



Two-Hour Count Summaries

| Interval Start | N 115th St Eastbound | | | | N 115th St Westbound | | | | 0 Northbound | | | | W 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 | 47 | 0 | 0 | 0 | 86 | 1 | 0 | 0 | 0 | 0 | 0 | 22 | 0 | 13 | 170 | 0 | |
| 4:15 PM | 0 | 1 | 43 | 0 | 0 | 0 | 88 | 3 | 0 | 0 | 0 | 0 | 0 | 12 | 0 | 10 | 157 | 0 | |
| 4:30 PM | 0 | 3 | 36 | 0 | 0 | 0 | 67 | 2 | 0 | 0 | 0 | 0 | 0 | 32 | 0 | 12 | 152 | 0 | |
| 4:45 PM | 0 | 1 | 61 | 0 | 0 | 0 | 58 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 0 | 9 | 149 | 628 | |
| 5:00 PM | 0 | 1 | 42 | 0 | 0 | 0 | 66 | 1 | 0 | 0 | 0 | 0 | 0 | 32 | 0 | 25 | 167 | 625 | |
| 5:15 PM | 0 | 1 | 59 | 0 | 0 | 0 | 48 | 3 | 0 | 0 | 0 | 0 | 0 | 28 | 0 | 15 | 154 | 622 | |
| 5:30 PM | 0 | 0 | 42 | 0 | 0 | 0 | 49 | 3 | 0 | 0 | 0 | 0 | 0 | 35 | 0 | 16 | 145 | 615 | |
| 5:45 PM | 0 | 1 | 40 | 0 | 0 | 0 | 59 | 3 | 0 | 0 | 0 | 0 | 0 | 14 | 0 | 6 | 123 | 589 | |
| Count Total | 0 | 9 | 370 | 0 | 0 | 0 | 521 | 16 | 0 | 0 | 0 | 0 | 0 | 195 | 0 | 106 | 1,217 | 0 | |
| Peak Hour | All | 0 | 6 | 187 | 0 | 0 | 0 | 299 | 6 | 0 | 0 | 0 | 0 | 0 | 86 | 0 | 44 | 628 | 0 |
| | HV | 0 | 0 | 1 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 |
| | HV% | - | 0% | 1% | - | - | - | 3% | 0% | - | - | - | - | - | 0% | - | 0% | 2% | 0 |

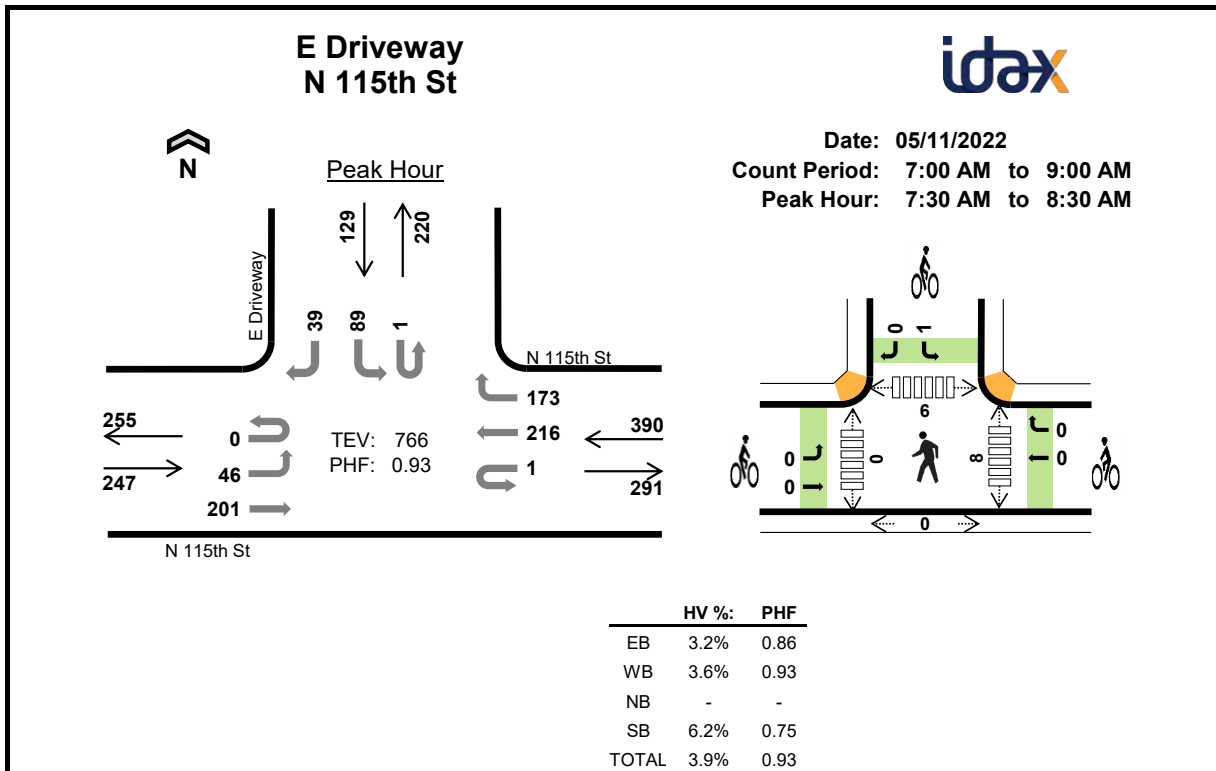
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

| 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 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 6 | 0 | 7 |
| 4:15 PM | 1 | 4 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 9 |
| 4:30 PM | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 3 |
| 4:45 PM | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 7 |
| 5:00 PM | 0 | 2 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 4 | 0 | 4 |
| 5:15 PM | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 3 |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 7 |
| 5:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 4 |
| Count Total | 2 | 11 | 0 | 0 | 13 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 43 | 0 | 44 |
| Peak Hr | 1 | 9 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 25 | 0 | 26 |

| Two-Hour Count Summaries - Heavy Vehicles | | | | | | | | | | | | | | | | | | |
|---|------------|----|----|----|------------|----|----|----|------------|----|----|----|------------|----|----|----|--------------|------------------|
| Interval Start | N 115th St | | | | N 115th St | | | | 0 | | | | W Driveway | | | | 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 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 |
| 4:15 PM | 0 | 0 | 1 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| 4:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 10 |
| 5:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 9 |
| 5:15 PM | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5 |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 5:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| Count Total | 0 | 0 | 2 | 0 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 0 |
| Peak Hour | 0 | 0 | 1 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 |

| Two-Hour Count Summaries - Bikes | | | | | | | | | | | | | | |
|----------------------------------|------------|----|----|------------|----|----|------------|----|----|------------|----|----|--------------|------------------|
| Interval Start | N 115th St | | | N 115th St | | | 0 | | | W Driveway | | | 15-min Total | Rolling One Hour |
| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | | |
| | 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 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 5:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 5:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Count Total | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 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.



Two-Hour Count Summaries

| Interval Start | N 115th St Eastbound | | | | N 115th St Westbound | | | | 0 Northbound | | | | E Driveway Southbound | | | | 15-min Total | Rolling One Hour | |
|----------------|----------------------|----------|-----------|----------|----------------------|----------|-----------|-----------|--------------|----------|----------|----------|-----------------------|-----------|----------|-----------|--------------|------------------|---|
| | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | | | |
| | 7:00 AM | 0 | 9 | 25 | 0 | 0 | 0 | 39 | 30 | 0 | 0 | 0 | 0 | 0 | 11 | 0 | | | 7 |
| 7:15 AM | 0 | 15 | 35 | 0 | 0 | 0 | 52 | 43 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 4 | 158 | 0 | |
| 7:30 AM | 0 | 5 | 60 | 0 | 0 | 0 | 54 | 43 | 0 | 0 | 0 | 0 | 0 | 33 | 0 | 10 | 205 | 0 | |
| 7:45 AM | 0 | 12 | 60 | 0 | 1 | 0 | 59 | 38 | 0 | 0 | 0 | 0 | 0 | 21 | 0 | 7 | 198 | 682 | |
| 8:00 AM | 0 | 10 | 43 | 0 | 0 | 0 | 53 | 37 | 0 | 0 | 0 | 0 | 1 | 18 | 0 | 7 | 169 | 730 | |
| 8:15 AM | 0 | 19 | 38 | 0 | 0 | 0 | 50 | 55 | 0 | 0 | 0 | 0 | 0 | 17 | 0 | 15 | 194 | 766 | |
| 8:30 AM | 0 | 14 | 43 | 0 | 0 | 0 | 45 | 35 | 0 | 0 | 0 | 0 | 0 | 24 | 0 | 8 | 169 | 730 | |
| 8:45 AM | 0 | 14 | 43 | 0 | 0 | 0 | 56 | 50 | 0 | 0 | 0 | 0 | 0 | 24 | 0 | 15 | 202 | 734 | |
| Count Total | 0 | 98 | 347 | 0 | 1 | 0 | 408 | 331 | 0 | 0 | 0 | 0 | 1 | 157 | 0 | 73 | 1,416 | 0 | |
| Peak Hour | All | 0 | 46 | 201 | 0 | 1 | 0 | 216 | 173 | 0 | 0 | 0 | 0 | 1 | 89 | 0 | 39 | 766 | 0 |
| | HV | 0 | 1 | 7 | 0 | 0 | 0 | 5 | 9 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 1 | 30 | 0 |
| | HV% | - | 2% | 3% | - | 0% | - | 2% | 5% | - | - | - | - | 0% | 8% | - | 3% | 4% | 0 |

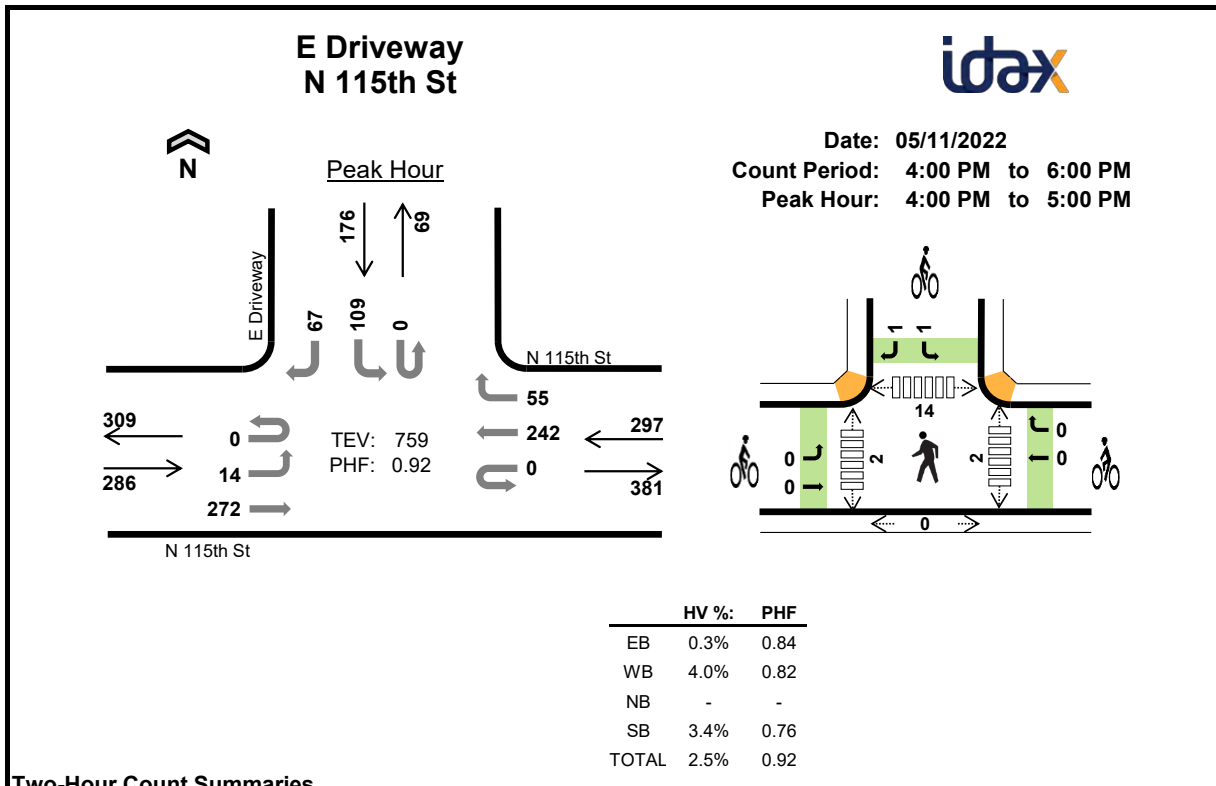
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

| Interval Start | Heavy Vehicle Totals | | | | | Bicycles | | | | | Pedestrians (Crossing Leg) | | | | |
|----------------|----------------------|----------|----------|----------|-----------|----------|----------|----------|----------|----------|----------------------------|----------|----------|----------|----------|
| | EB | WB | NB | SB | Total | EB | WB | NB | SB | Total | East | West | North | South | Total |
| 7:00 AM | 2 | 1 | 0 | 1 | 4 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 2 |
| 7:15 AM | 0 | 7 | 0 | 2 | 9 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 3 |
| 7:30 AM | 1 | 8 | 0 | 1 | 10 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 2 | 0 | 4 |
| 7:45 AM | 2 | 1 | 0 | 4 | 7 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| 8:00 AM | 3 | 3 | 0 | 2 | 8 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 3 |
| 8:15 AM | 2 | 2 | 0 | 1 | 5 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 2 | 0 | 6 |
| 8:30 AM | 0 | 3 | 0 | 2 | 5 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 4 |
| 8:45 AM | 1 | 3 | 0 | 3 | 7 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 4 |
| Count Total | 11 | 28 | 0 | 16 | 55 | 1 | 0 | 0 | 1 | 2 | 13 | 0 | 14 | 0 | 27 |
| Peak Hr | 8 | 14 | 0 | 8 | 30 | 0 | 0 | 0 | 1 | 1 | 8 | 0 | 6 | 0 | 14 |

| Two-Hour Count Summaries - Heavy Vehicles | | | | | | | | | | | | | | 15-min Total | Rolling One Hour | | | |
|---|------------|----------|----------|----------|------------|----------|----------|----------|------------|----------|----------|----------|------------|--------------|------------------|----------|-----------|----------|
| Interval Start | N 115th St | | | | N 115th St | | | | 0 | | | | E Driveway | | | | | |
| | Eastbound | | | | Westbound | | | | Northbound | | | | Southbound | | | | | |
| | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | | |
| 7:00 AM | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 4 | 0 |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 3 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 9 | 0 |
| 7:30 AM | 0 | 1 | 0 | 0 | 0 | 0 | 3 | 5 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 10 | 0 |
| 7:45 AM | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 7 | 30 |
| 8:00 AM | 0 | 0 | 3 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 8 | 34 |
| 8:15 AM | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 5 | 30 |
| 8:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 5 | 25 |
| 8:45 AM | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 7 | 25 |
| Count Total | 0 | 3 | 8 | 0 | 0 | 0 | 11 | 17 | 0 | 0 | 0 | 0 | 0 | 15 | 0 | 1 | 55 | 0 |
| Peak Hour | 0 | 1 | 7 | 0 | 0 | 0 | 5 | 9 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 1 | 30 | 0 |

| Two-Hour Count Summaries - Bikes | | | | | | | | | | | | | | 15-min Total | Rolling One Hour |
|----------------------------------|------------|----------|----------|------------|----------|----------|------------|----------|----------|------------|----------|----------|----------|--------------|------------------|
| Interval Start | N 115th St | | | N 115th St | | | 0 | | | E Driveway | | | | | |
| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | | | |
| | LT | TH | RT | LT | TH | RT | LT | TH | RT | LT | TH | RT | | | |
| 7:00 AM | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | |
| 8:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | |
| 8:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 8:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Count Total | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | |
| Peak Hour | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | |

Note: U-Turn volumes for bikes are included in Left-Turn, if any.



Two-Hour Count Summaries

| Interval Start | N 115th St Eastbound | | | | N 115th St Westbound | | | | 0 Northbound | | | | E 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 | 4 | 68 | 0 | 0 | 0 | 71 | 20 | 0 | 0 | 0 | 0 | 0 | 26 | 0 | 18 | 207 | 0 | |
| 4:15 PM | 0 | 3 | 53 | 0 | 0 | 0 | 71 | 18 | 0 | 0 | 0 | 0 | 0 | 37 | 0 | 21 | 203 | 0 | |
| 4:30 PM | 0 | 4 | 69 | 0 | 0 | 0 | 52 | 2 | 0 | 0 | 0 | 0 | 0 | 28 | 0 | 14 | 169 | 0 | |
| 4:45 PM | 0 | 3 | 82 | 0 | 0 | 0 | 48 | 15 | 0 | 0 | 0 | 0 | 0 | 18 | 0 | 14 | 180 | 759 | |
| 5:00 PM | 0 | 5 | 71 | 0 | 0 | 0 | 55 | 12 | 0 | 0 | 0 | 0 | 0 | 35 | 0 | 8 | 186 | 738 | |
| 5:15 PM | 0 | 12 | 73 | 0 | 0 | 0 | 43 | 11 | 0 | 0 | 0 | 0 | 0 | 18 | 0 | 10 | 167 | 702 | |
| 5:30 PM | 0 | 4 | 80 | 0 | 0 | 0 | 42 | 8 | 0 | 0 | 0 | 0 | 0 | 28 | 0 | 10 | 172 | 705 | |
| 5:45 PM | 0 | 3 | 50 | 0 | 0 | 0 | 55 | 14 | 0 | 0 | 0 | 0 | 0 | 19 | 0 | 9 | 150 | 675 | |
| Count Total | 0 | 38 | 546 | 0 | 0 | 0 | 437 | 100 | 0 | 0 | 0 | 0 | 0 | 209 | 0 | 104 | 1,434 | 0 | |
| Peak Hour | All | 0 | 14 | 272 | 0 | 0 | 0 | 242 | 55 | 0 | 0 | 0 | 0 | 0 | 109 | 0 | 67 | 759 | 0 |
| | HV | 0 | 0 | 1 | 0 | 0 | 0 | 7 | 5 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 2 | 19 | 0 |
| | HV% | - | 0% | 0% | - | - | - | 3% | 9% | - | - | - | - | - | 4% | - | 3% | 3% | 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 | 4 | 0 | 2 | 6 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 3 | 0 | 3 |
| 4:15 PM | 1 | 5 | 0 | 2 | 8 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 5 | 0 | 6 |
| 4:30 PM | 0 | 1 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 3 |
| 4:45 PM | 0 | 2 | 0 | 1 | 3 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 4 | 0 | 6 |
| 5:00 PM | 0 | 3 | 0 | 2 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 3 |
| 5:15 PM | 1 | 1 | 0 | 1 | 3 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 4 | 0 | 4 |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 5 | 0 | 7 |
| 5:45 PM | 0 | 2 | 0 | 2 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| Count Total | 2 | 18 | 0 | 11 | 31 | 0 | 0 | 0 | 3 | 3 | 2 | 5 | 26 | 0 | 33 |
| Peak Hr | 1 | 12 | 0 | 6 | 19 | 0 | 0 | 0 | 2 | 2 | 2 | 2 | 14 | 0 | 18 |

| Two-Hour Count Summaries - Heavy Vehicles | | | | | | | | | | | | | | | | | | |
|---|------------|----|----|----|------------|----|----|----|------------|----|----|----|------------|----|----|----|--------------|------------------|
| Interval Start | N 115th St | | | | N 115th St | | | | 0 | | | | E Driveway | | | | 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 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 6 | 0 |
| 4:15 PM | 0 | 0 | 1 | 0 | 0 | 0 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 8 | 0 |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 0 |
| 4:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 3 | 19 |
| 5:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 5 | 18 |
| 5:15 PM | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 3 | 13 |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| 5:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 4 | 12 |
| Count Total | 0 | 0 | 2 | 0 | 0 | 0 | 8 | 10 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 2 | 31 | 0 |
| Peak Hour | 0 | 0 | 1 | 0 | 0 | 0 | 7 | 5 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 2 | 19 | 0 |

| Two-Hour Count Summaries - Bikes | | | | | | | | | | | | | | |
|----------------------------------|------------|----|----|------------|----|----|------------|----|----|------------|----|----|--------------|------------------|
| Interval Start | N 115th St | | | N 115th St | | | 0 | | | E Driveway | | | 15-min Total | Rolling One Hour |
| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | | |
| | 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 | 1 | 1 | 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 | 1 | 0 | 0 | 1 | 2 |
| 5:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 5:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 5:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Count Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 3 | 0 |
| Peak Hour | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 2 | 0 |

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Appendix C Pipeline Projects

Appendix C - Pipeline Projects

| # | Project Address | Number | Description | Do we have the study? |
|-----|--------------------------------------|-----------------------|--|-----------------------|
| 1. | 1130 N Norhtgate Way | 3030820-LU | 5-story, 69 sleeping rooms, 1 parking space. | Parking only |
| 2. | 12220 Aurora AVE N | 3039892-EG | 6 new mixed-use apartment buildings, 1,400,000 gross area, 2,000 dwelling units, 650 parking | - |
| 3. | 12301 Stone Ave N | 3029876-LU | 19 3-story townhouse buildings (113 Units total) and 3 live-work units. 156 parking | Yes |
| 4. | 12201 Stone Ave N/11762 Aurora AVE N | 3036032-LU/3036031-EG | 24 3-story townhouse buildings and two 5-story apartment buildings. (242 units total) 316 parking. | Yes |
| 5. | 10533 Stone Ave N | 3039300-LU | 4 story residential townhouse structure. (24total) | |
| 6. | 11224 Meridian AVE N | 3032771-LU | 4-story, 57 unit apartment building with 41 parking spaces. | Yes |
| 7. | 2101 N 113th ST | 3039761-LU | 20+ townhouse on vancant portion of Lot. | |
| 8. | 1724 N 107th ST | 3034886-LU | 5 story apartment building with 13 small efficiency dwelling unit, 4 efficiency dwelling units, and 13 apartments (30 units total). No parking | |
| 9. | Northgate Mall MPD. | 3031306-LU | Northgate Mall MPD. Includes all development proposed not completed and operating as of Jan 2023. | Yes |
| 10. | 151 NE 103rd St | 3036540-LU | 7 Story, 232 unit apartment, no parking | Yes |
| 11. | 12800 Aurora Ave N | 3020863-LU | Seattle North Police Precinct. TIA by Heffron. | Yes |
| 12. | 12245 Aurora Ave N | 3039521-EG | 124 apartments, 90 supportive housing units, child care, 45 parking stalls. No TIA. | |
| 13. | 1911 N 120th St | 3039953-LU | 6 townhouses, 1 single-family house, 7 parking stalls. No TIA. | |
| 14. | 11302 Meridian Ave N | 3038025-LU | Fire Station #31. No TIA. | |
| 15. | 1001 N 109th St | 3040343-EG | 90 apartments, 0 stalls. No TIA. | |
| 16. | 10631 8th Ave NE | 3035925-LU | 409 apartments, 256 stalls. TIA by TENW. | Yes |
| 17. | 10712 5th Ave NE | 3030779-LU | 235 apartments, 4,188 sf commercial, 203 stalls. TIA by Gibson. | Yes |
| 18. | 1020 NE Northgate Way | 3039050-LU | 179 apartments, 8,186 sf retail, 88 stalls. No TIA. | |
| 19. | 545 NE 112th Street | 3029327-LU | 82 apartments, 0 stalls. No TIA. | |
| 20. | 11057 8th Ave NE | 3034765-LU | 89 apartments, 8,400 sf child care, 28 stalls. TIA by Heffron. | Yes |
| 21. | 11201 Roosevelt Way NE | 3034991-LU | 291 apartments, 4 live-work units, 3,225 sf commercial, 207 stalls. TIA by TENW. | Yes |

Appendix D LOS Definitions

Highway Capacity Manual 2010/6th Edition

Signalized intersection level of service (LOS) is defined in terms of a weighted average control delay for the entire intersection. Control delay quantifies the increase in travel time that a vehicle experiences due to the traffic signal control as well as provides a surrogate measure for driver discomfort and fuel consumption. Signalized intersection LOS is stated in terms of average control delay per vehicle (in seconds) during a specified time period (e.g., weekday PM peak hour). Control delay is a complex measure based on many variables, including signal phasing and coordination (i.e., progression of movements through the intersection and along the corridor), signal cycle length, and traffic volumes with respect to intersection capacity and resulting queues. Table 1 summarizes the LOS criteria for signalized intersections, as described in the *Highway Capacity Manual 2010* and 6th Edition (Transportation Research Board, 2010 and 2016, respectively).

Table 1. Level of Service Criteria for Signalized Intersections

| Level of Service | Average Control Delay (seconds/vehicle) | General Description |
|------------------|---|---|
| A | ≤10 | Free Flow |
| B | >10 – 20 | Stable Flow (slight delays) |
| C | >20 – 35 | Stable flow (acceptable delays) |
| D | >35 – 55 | Approaching unstable flow (tolerable delay, occasionally wait through more than one signal cycle before proceeding) |
| E | >55 – 80 | Unstable flow (intolerable delay) |
| F ¹ | >80 | Forced flow (congested and queues fail to clear) |

Source: *Highway Capacity Manual 2010 and 6th Edition*, Transportation Research Board, 2010 and 2016, respectively.

1. If the volume-to-capacity (v/c) ratio for a lane group exceeds 1.0 LOS F is assigned to the individual lane group. LOS for overall approach or intersection is determined solely by the control delay.

Unsignalized intersection LOS criteria can be further reduced into two intersection types: all-way stop and two-way stop control. All-way stop control intersection LOS is expressed in terms of the weighted average control delay of the overall intersection or by approach. Two-way stop-controlled intersection LOS is defined in terms of the average control delay for each minor-street movement (or shared movement) as well as major-street left-turns. This approach is because major-street through vehicles are assumed to experience zero delay, a weighted average of all movements results in very low overall average delay, and this calculated low delay could mask deficiencies of minor movements. Table 2 shows LOS criteria for unsignalized intersections.

Table 2. Level of Service Criteria for Unsignalized Intersections

| Level of Service | Average Control Delay (seconds/vehicle) |
|------------------|---|
| A | 0 – 10 |
| B | >10 – 15 |
| C | >15 – 25 |
| D | >25 – 35 |
| E | >35 – 50 |
| F ¹ | >50 |

Source: *Highway Capacity Manual 2010 and 6th Edition*, Transportation Research Board, 2010 and 2016, respectively.

1. If the volume-to-capacity (v/c) ratio exceeds 1.0, LOS F is assigned an individual lane group for all unsignalized intersections, or minor street approach at two-way stop-controlled intersections. Overall intersection LOS is determined solely by control delay.

Appendix E LOS Worksheets

LOS Worksheets are available upon request

Appendix F Transit Analysis

Transit Analysis - 75% SOV

| Net New NA Transit TG | | | | Assume: | Net New MIMP Transit TG | | | |
|-----------------------|----|----|------|---------|-------------------------|----|------|--|
| | AM | PM | | 2023 | AM | PM | | |
| Total | 13 | 8 | 100% | 2040 | 58 | 49 | 100% | |
| | | | | 1% | | | | |

| | | | | Existing | | | | | | | | | | No Action | | | | | | | | | | Action Alternative | | | | |
|----|------------|---------|-------------|---------------------------|--------------------|-------------|----------------------|------|---------------------------|-------------------------------|---|-----------------------------|---|-------------|----------------------|------|---------------------------|---|-------------------------------|--|-------------|-----|--|--------------------|--|--|--|--|
| | Route/Stop | Service | Direction | Onboard Capacity Analysis | | | Total TG (Peak Hour) | Dist | Onboard Capacity Analysis | | | | | | Total TG (Peak Hour) | Dist | Onboard Capacity Analysis | | | | | | | | | | | |
| | | | | Total Capacity | Bus Passenger Load | Utilization | | | Total Capacity | Background Growth (1% annual) | Bus Passenger Load with Background Only | Additional NA (4-hr period) | TOTAL Future No Action Bus Passenger Load | Utilization | | | Total Capacity | TOTAL Future No Action Bus Passenger Load | Additional MIMP (4-hr period) | Total Future Action Bus Passenger Load | Utilization | | | | | | | |
| AM | 345_S_AM | 345 | Shoreline/ | S | 296 | 45 | 15% | 4 | 30% | 296 | 8 | 53 | 16 | 69 | 23% | 17 | 30% | 296 | 69 | 68 | 137 | 46% | | | | | | |
| | 345_N_AM | 345 | Northgate | N | 296 | 54 | 18% | 3 | 30% | 296 | 10 | 63 | 12 | 75 | 25% | 17 | 30% | 296 | 63 | 68 | 131 | 44% | | | | | | |
| | 346_S_AM | 346 | Shoreline/ | S | 370 | 77 | 21% | 1 | 5% | 370 | 14 | 91 | 4 | 95 | 26% | 4 | 5% | 370 | 91 | 16 | 107 | 29% | | | | | | |
| | 346_N_AM | | Northgate | N | 333 | 77 | 23% | 1 | 5% | 333 | 14 | 92 | 4 | 96 | 29% | 4 | 5% | 333 | 92 | 16 | 108 | 32% | | | | | | |
| | 40_S_AM | 40 | Downtown/ | S | 1,520 | 116 | 8% | 1 | 8% | 1,520 | 21 | 137 | 4 | 141 | 9% | 4 | 8% | 1,520 | 137 | 16 | 153 | 10% | | | | | | |
| | 40_N_AM | | Ballard/DT | N | 988 | 126 | 13% | 1 | 8% | 988 | 23 | 149 | 4 | 153 | 16% | 4 | 8% | 988 | 149 | 16 | 165 | 17% | | | | | | |
| | 675_N_AM | 675 | Shoreline/D | N | 1,404 | 355 | 25% | 1 | 8% | 1,404 | 65 | 420 | 4 | 424 | 30% | 4 | 8% | 1,404 | 420 | 16 | 436 | 31% | | | | | | |
| | 675_S_AM | | T | S | 2,496 | 550 | 22% | 1 | 8% | 2,496 | 101 | 652 | 4 | 656 | 26% | 4 | 8% | 2,496 | 652 | 16 | 668 | 27% | | | | | | |
| | | | | | | | 13 | | | | | | | | | | | 58 | | | | | | | | | | |

| | | | | Existing | | | | | | | | | | No Action | | | | | | | | | | Action Alternative | | | | |
|----|------------|---------|-------------|---------------------------|--------------------|-------------|----------------------|------|---------------------------|-------------------------------|---|-----------------------------|---|-------------|----------------------|------|---------------------------|---|-------------------------------|--|-------------|-----|--|--------------------|--|--|--|--|
| | Route/Stop | Service | Direction | Onboard Capacity Analysis | | | Total TG (Peak Hour) | Dist | Onboard Capacity Analysis | | | | | | Total TG (Peak Hour) | Dist | Onboard Capacity Analysis | | | | | | | | | | | |
| | | | | Total Capacity | Bus Passenger Load | Utilization | | | Total Capacity | Background Growth (1% annual) | Bus Passenger Load with Background Only | Additional NA (4-hr period) | TOTAL Future No Action Bus Passenger Load | Utilization | | | Total Capacity | TOTAL Future No Action Bus Passenger Load | Additional MIMP (4-hr period) | Total Future Action Bus Passenger Load | Utilization | | | | | | | |
| PM | 345_S_PM | 345 | Shoreline/ | S | 444 | 84 | 19% | 2 | 30% | 444 | 15 | 99 | 8 | 107 | 24% | 15 | 30% | 444 | 107 | 60 | 167 | 38% | | | | | | |
| | 345_N_PM | 345 | Northgate | N | 407 | 101 | 25% | 2 | 30% | 407 | 19 | 120 | 8 | 128 | 31% | 14 | 30% | 407 | 120 | 56 | 176 | 43% | | | | | | |
| | 346_S_PM | 346 | Shoreline/ | S | 407 | 102 | 25% | 0 | 5% | 407 | 19 | 121 | 0 | 121 | 30% | 2 | 5% | 407 | 121 | 8 | 129 | 32% | | | | | | |
| | 346_N_PM | | Northgate | N | 370 | 114 | 31% | 0 | 5% | 370 | 21 | 135 | 0 | 135 | 36% | 2 | 5% | 370 | 135 | 8 | 143 | 39% | | | | | | |
| | 40_S_PM | 40 | Downtown/ | S | 1,672 | 255 | 15% | 1 | 8% | 1,672 | 47 | 302 | 4 | 306 | 18% | 4 | 8% | 1,672 | 302 | 16 | 318 | 19% | | | | | | |
| | 40_N_PM | | Ballard/DT | N | 1,672 | 202 | 12% | 1 | 8% | 1,672 | 37 | 240 | 4 | 244 | 15% | 4 | 8% | 1,672 | 240 | 16 | 256 | 15% | | | | | | |
| | 675_N_PM | 675 | Shoreline/D | N | 2,808 | 727 | 26% | 1 | 8% | 2,808 | 134 | 861 | 4 | 865 | 31% | 4 | 8% | 2,808 | 861 | 16 | 877 | 31% | | | | | | |
| | 675_S_PM | | T | S | 2,028 | 546 | 27% | 1 | 8% | 2,028 | 101 | 647 | 4 | 651 | 32% | 4 | 8% | 2,028 | 647 | 16 | 663 | 33% | | | | | | |
| | | | | | | | 8 | | | | | | | | | | | 49 | | | | | | | | | | |

Transit Analysis - 65% SOV

| Net New NA Transit TG | | | | Assume: | Net New MIMP Transit TG | | | | |
|-----------------------|--|----|----|---------|-------------------------|-------|----|----|------|
| | | AM | PM | | | | AM | PM | |
| Total | | 19 | 12 | 100% | 2023 | Total | 82 | 70 | 100% |
| | | | | 1% | 2040 | | | | |

| | Existing | | | | No Action | | | | | | | | | | Action Alternative | | | | | | | |
|----|---------------------------|---------|-------------|----------------|----------------------|------|---------------------------|-------------|----------------|-------------------------------|---|-----------------------------|----------------------|------|---|-------------|----------------|---|-------------------------------|--|-------------|-----|
| | Onboard Capacity Analysis | | | | Total TG (Peak Hour) | Dist | Onboard Capacity Analysis | | | | | | Total TG (Peak Hour) | Dist | Onboard Capacity Analysis | | | | | | | |
| | Route/Stop | Service | Direction | Total Capacity | | | Bus Passenger Load | Utilization | Total Capacity | Background Growth (1% annual) | Bus Passenger Load with Background Only | Additional NA (4-hr period) | | | TOTAL Future No Action Bus Passenger Load | Utilization | Total Capacity | TOTAL Future No Action Bus Passenger Load | Additional MIMP (4-hr period) | Total Future Action Bus Passenger Load | Utilization | |
| AM | 345_S_AM | 345 | Shoreline/ | S | 296 | 45 | 15% | 6 | 30% | 296 | 8 | 53 | 24 | 77 | 26% | 25 | 30% | 296 | 77 | 100 | 177 | 60% |
| | 345_N_AM | 345 | Northgate | N | 296 | 54 | 18% | 6 | 30% | 296 | 10 | 63 | 24 | 87 | 30% | 25 | 30% | 296 | 63 | 100 | 163 | 55% |
| | 346_S_AM | 346 | Shoreline/ | S | 370 | 77 | 21% | 2 | 5% | 370 | 14 | 91 | 8 | 99 | 27% | 4 | 5% | 370 | 91 | 16 | 107 | 29% |
| | 346_N_AM | 346 | Northgate | N | 333 | 77 | 23% | 1 | 5% | 333 | 14 | 92 | 4 | 96 | 29% | 4 | 5% | 333 | 92 | 16 | 108 | 32% |
| | 40_S_AM | 40 | Downtown/ | S | 1,520 | 116 | 8% | 1 | 8% | 1,520 | 21 | 137 | 4 | 141 | 9% | 6 | 8% | 1,520 | 137 | 24 | 161 | 11% |
| | 40_N_AM | 40 | Ballard/DT | N | 988 | 126 | 13% | 1 | 8% | 988 | 23 | 149 | 4 | 153 | 16% | 6 | 8% | 988 | 149 | 24 | 173 | 18% |
| | 675_N_AM | 675 | Shoreline/D | N | 1,404 | 355 | 25% | 1 | 8% | 1,404 | 65 | 420 | 4 | 424 | 30% | 6 | 8% | 1,404 | 420 | 24 | 444 | 32% |
| | 675_S_AM | 675 | T | S | 2,496 | 550 | 22% | 1 | 8% | 2,496 | 101 | 652 | 4 | 656 | 26% | 6 | 8% | 2,496 | 652 | 24 | 676 | 27% |
| | | | | | | | | | | 19 | | | | | | | | | | | 82 | |

| | Existing | | | | No Action | | | | | | | | | | Action Alternative | | | | | | | |
|----|---------------------------|---------|-------------|----------------|----------------------|------|---------------------------|-------------|----------------|-------------------------------|---|-----------------------------|----------------------|------|---|-------------|----------------|---|-------------------------------|--|-------------|-----|
| | Onboard Capacity Analysis | | | | Total TG (Peak Hour) | Dist | Onboard Capacity Analysis | | | | | | Total TG (Peak Hour) | Dist | Onboard Capacity Analysis | | | | | | | |
| | Route/Stop | Service | Direction | Total Capacity | | | Bus Passenger Load | Utilization | Total Capacity | Background Growth (1% annual) | Bus Passenger Load with Background Only | Additional NA (4-hr period) | | | TOTAL Future No Action Bus Passenger Load | Utilization | Total Capacity | TOTAL Future No Action Bus Passenger Load | Additional MIMP (4-hr period) | Total Future Action Bus Passenger Load | Utilization | |
| PM | 345_S_PM | 345 | Shoreline/ | S | 444 | 84 | 19% | 3 | 30% | 444 | 15 | 99 | 12 | 111 | 25% | 21 | 30% | 444 | 111 | 84 | 195 | 44% |
| | 345_N_PM | 345 | Northgate | N | 407 | 101 | 25% | 3 | 30% | 407 | 19 | 120 | 12 | 132 | 32% | 21 | 30% | 407 | 120 | 84 | 204 | 50% |
| | 346_S_PM | 346 | Shoreline/ | S | 407 | 102 | 25% | 1 | 5% | 407 | 19 | 121 | 4 | 125 | 31% | 4 | 5% | 407 | 121 | 16 | 137 | 34% |
| | 346_N_PM | 346 | Northgate | N | 370 | 114 | 31% | 1 | 5% | 370 | 21 | 135 | 4 | 139 | 38% | 4 | 5% | 370 | 135 | 16 | 151 | 41% |
| | 40_S_PM | 40 | Downtown/ | S | 1,672 | 255 | 15% | 1 | 8% | 1,672 | 47 | 302 | 4 | 306 | 18% | 5 | 8% | 1,672 | 302 | 20 | 322 | 19% |
| | 40_N_PM | 40 | Ballard/DT | N | 1,672 | 202 | 12% | 1 | 8% | 1,672 | 37 | 240 | 4 | 244 | 15% | 5 | 8% | 1,672 | 240 | 20 | 260 | 16% |
| | 675_N_PM | 675 | Shoreline/D | N | 2,808 | 727 | 26% | 1 | 8% | 2,808 | 134 | 861 | 4 | 865 | 31% | 5 | 8% | 2,808 | 861 | 20 | 881 | 31% |
| | 675_S_PM | 675 | T | S | 2,028 | 546 | 27% | 1 | 8% | 2,028 | 101 | 647 | 4 | 651 | 32% | 5 | 8% | 2,028 | 647 | 20 | 667 | 33% |
| | | | | | | | | | | 12 | | | | | | | | | | | 48 | |
| | | | | | | | | | | | | | | | | | | | | | 70 | |

Transit Analysis - 50% SOV

| | | | | | | | | |
|------------------------------|----|----|------|---------|--------------------------------|-----|-----|------|
| Net New NA Transit TG | | | | Assume: | Net New MIMP Transit TG | | | |
| | AM | PM | | 2023 | AM | PM | | |
| Total | 28 | 18 | 100% | 2040 | Total | 124 | 105 | 100% |
| | | | | 1% | | | | |

| | | | | Existing | | | | | | | | | | No Action | | | | | | | | | | Action Alternative | | | | |
|----|------------|-------------|-----------|---------------------------|--------------------|-------------|----------------------|------|---------------------------|-------------------------------|---|-----------------------------|---|-------------|----------------------|------|---------------------------|---|-------------------------------|--|-------------|--|--|--------------------|--|--|--|--|
| AM | Route/Stop | Service | Direction | Onboard Capacity Analysis | | | Total TG (Peak Hour) | Dist | Onboard Capacity Analysis | | | | | | Total TG (Peak Hour) | Dist | Onboard Capacity Analysis | | | | | | | | | | | |
| | | | | Total Capacity | Bus Passenger Load | Utilization | | | Total Capacity | Background Growth (1% annual) | Bus Passenger Load with Background Only | Additional NA (4-hr period) | TOTAL Future No Action Bus Passenger Load | Utilization | | | Total Capacity | TOTAL Future No Action Bus Passenger Load | Additional MIMP (4-hr period) | Total Future Action Bus Passenger Load | Utilization | | | | | | | |
| | 345 | Shoreline/ | S | 296 | 45 | 15% | 8 | 30% | 296 | 8 | 53 | 32 | 85 | 29% | 38 | 30% | 296 | 85 | 152 | 237 | 80% | | | | | | | |
| | 345 | Northgate | N | 296 | 54 | 18% | 8 | 30% | 296 | 10 | 63 | 32 | 95 | 32% | 38 | 30% | 296 | 63 | 152 | 215 | 73% | | | | | | | |
| | 346 | Shoreline/ | S | 370 | 77 | 21% | 2 | 5% | 370 | 14 | 91 | 8 | 99 | 27% | 6 | 5% | 370 | 91 | 24 | 115 | 31% | | | | | | | |
| | 346 | Northgate | N | 333 | 77 | 23% | 1 | 5% | 333 | 14 | 92 | 4 | 96 | 29% | 6 | 5% | 333 | 92 | 24 | 116 | 35% | | | | | | | |
| | 40 | Downtown/ | S | 1,520 | 116 | 8% | 2 | 8% | 1,520 | 21 | 137 | 8 | 145 | 10% | 9 | 8% | 1,520 | 137 | 36 | 173 | 11% | | | | | | | |
| | 40 | Ballard/DT | N | 988 | 126 | 13% | 2 | 8% | 988 | 23 | 149 | 8 | 157 | 16% | 9 | 8% | 988 | 149 | 36 | 185 | 19% | | | | | | | |
| | 675 | Shoreline/D | N | 1,404 | 355 | 25% | 2 | 8% | 1,404 | 65 | 420 | 8 | 428 | 30% | 9 | 8% | 1,404 | 420 | 36 | 456 | 32% | | | | | | | |
| | 675 | T | S | 2,496 | 550 | 22% | 2 | 8% | 2,496 | 101 | 652 | 8 | 660 | 26% | 9 | 8% | 2,496 | 652 | 36 | 688 | 28% | | | | | | | |
| | | | | | | | 27 | | | | | | | | 124 | | | | | | | | | | | | | |

| | | | | Existing | | | | | | | | | | No Action | | | | | | | | | | Action Alternative | | | | |
|----|------------|-------------|-----------|---------------------------|--------------------|-------------|----------------------|------|---------------------------|-------------------------------|---|-----------------------------|---|-------------|----------------------|------|---------------------------|---|-------------------------------|--|-------------|--|--|--------------------|--|--|--|--|
| PM | Route/Stop | Service | Direction | Onboard Capacity Analysis | | | Total TG (Peak Hour) | Dist | Onboard Capacity Analysis | | | | | | Total TG (Peak Hour) | Dist | Onboard Capacity Analysis | | | | | | | | | | | |
| | | | | Total Capacity | Bus Passenger Load | Utilization | | | Total Capacity | Background Growth (1% annual) | Bus Passenger Load with Background Only | Additional NA (4-hr period) | TOTAL Future No Action Bus Passenger Load | Utilization | | | Total Capacity | TOTAL Future No Action Bus Passenger Load | Additional MIMP (4-hr period) | Total Future Action Bus Passenger Load | Utilization | | | | | | | |
| | 345 | Shoreline/ | S | 444 | 84 | 19% | 4 | 30% | 444 | 15 | 99 | 16 | 115 | 26% | 32 | 30% | 444 | 115 | 128 | 243 | 55% | | | | | | | |
| | 345 | Northgate | N | 407 | 101 | 25% | 4 | 30% | 407 | 19 | 120 | 16 | 136 | 33% | 32 | 30% | 407 | 120 | 128 | 248 | 61% | | | | | | | |
| | 346 | Shoreline/ | S | 407 | 102 | 25% | 1 | 5% | 407 | 19 | 121 | 4 | 125 | 31% | 5 | 5% | 407 | 121 | 20 | 141 | 35% | | | | | | | |
| | 346 | Northgate | N | 370 | 114 | 31% | 1 | 5% | 370 | 21 | 135 | 4 | 139 | 38% | 5 | 5% | 370 | 135 | 20 | 155 | 42% | | | | | | | |
| | 40 | Downtown/ | S | 1,672 | 255 | 15% | 1 | 8% | 1,672 | 47 | 302 | 4 | 306 | 18% | 7 | 8% | 1,672 | 302 | 28 | 330 | 20% | | | | | | | |
| | 40 | Ballard/DT | N | 1,672 | 202 | 12% | 1 | 8% | 1,672 | 37 | 240 | 4 | 244 | 15% | 8 | 8% | 1,672 | 240 | 32 | 272 | 16% | | | | | | | |
| | 675 | Shoreline/D | N | 2,808 | 727 | 26% | 1 | 8% | 2,808 | 134 | 861 | 4 | 865 | 31% | 8 | 8% | 2,808 | 861 | 32 | 893 | 32% | | | | | | | |
| | 675 | T | S | 2,028 | 546 | 27% | 1 | 8% | 2,028 | 101 | 647 | 4 | 651 | 32% | 8 | 8% | 2,028 | 647 | 32 | 679 | 33% | | | | | | | |
| | | | | | | | 14 | | | | | | | | 56 | | | | | | | | | | | | | |

Appendix G Signal Warrants

| Warrants Summary | | | | | | | | | | | | |
|--|---------------|--------------------------|---------------------------------|-----|-------|------------------------|---------------------------|-------|-----|--------------------------|-------|-------------------------------------|
| Information | | | | | | | | | | | | |
| Analyst | Transpo Group | | | | | Intersection | Meridian Ave N/N 115th St | | | | | |
| Agency/Co | | | | | | Jurisdiction | SDOT | | | | | |
| Date Performed | 5/31/2023 | | | | | Units | U.S. Customary | | | | | |
| Project ID | UWMC NW TDR | | | | | Time Period Analyzed | PM Peak Hour | | | | | |
| East/West Street | N 115th St | | | | | North/South Street | Meridian Ave N | | | | | |
| File Name | Warrants1 | | | | | Major Street | North-South | | | | | |
| Project Description <i>UWMC NW TDR</i> | | | | | | | | | | | | |
| General | | | | | | Roadway Network | | | | | | |
| Major Street Speed (mph) | 25 | <input type="checkbox"/> | Population < 10,000 | | | | Two Major Routes | | | <input type="checkbox"/> | | |
| Nearest Signal (ft) | 1330 | <input type="checkbox"/> | Coordinated Signal System | | | | Weekend Count | | | <input type="checkbox"/> | | |
| Crashes (per year) | 1 | <input type="checkbox"/> | Adequate Trials of Alternatives | | | | 5-yr Growth Factor | | | 0 | | |
| Geometry and Traffic | EB | | | WB | | | NB | | | SB | | |
| | LT | TH | RT | LT | TH | RT | LT | TH | RT | LT | TH | RT |
| Number of lanes, N | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 |
| Lane usage | LTR | | | LTR | | | L | TR | LTR | | | |
| Vehicle Volume Averages (vph) | 195 | 14 | 375 | 7 | 3 | 3 | 228 | 225 | 7 | 3 | 107 | 63 |
| Peds (ped/h) / Gaps (gaps/h) | -- | 0 / 0 | -- | -- | 0 / 0 | -- | -- | 0 / 0 | -- | -- | 0 / 0 | -- |
| Delay (s/veh) / (veh-hr) | -- | 0 / 0 | -- | -- | 0 / 0 | -- | -- | 0 / 0 | -- | -- | 0 / 0 | -- |
| Warrant 1: Eight-Hour Vehicular Volume | | | | | | | | | | | | <input type="checkbox"/> |
| 1 A. Minimum Vehicular Volumes (Both major approaches --and-- higher minor approach) --or-- | | | | | | | | | | | | <input type="checkbox"/> |
| 1 B. Interruption of Continuous Traffic (Both major approaches --and-- higher minor approach) --or-- | | | | | | | | | | | | <input type="checkbox"/> |
| 1 (80%) Vehicular --and-- Interruption Volumes (Both major approaches --and-- higher minor approach) | | | | | | | | | | | | <input type="checkbox"/> |
| Warrant 2: Four-Hour Vehicular Volume | | | | | | | | | | | | <input checked="" type="checkbox"/> |
| 2 A. Four-Hour Vehicular Volumes (Both major approaches --and-- higher minor approach) | | | | | | | | | | | | <input checked="" type="checkbox"/> |
| Warrant 3: Peak Hour | | | | | | | | | | | | <input checked="" type="checkbox"/> |
| 3 A. Peak-Hour Conditions (Minor delay --and-- minor volume --and-- total volume) --or-- | | | | | | | | | | | | <input type="checkbox"/> |
| 3 B. Peak- Hour Vehicular Volumes (Both major approaches --and-- higher minor approach) | | | | | | | | | | | | <input checked="" type="checkbox"/> |
| Warrant 4: Pedestrian Volume | | | | | | | | | | | | <input type="checkbox"/> |
| 4 A. Four Hour Volumes --or-- | | | | | | | | | | | | <input type="checkbox"/> |
| 4 B. One-Hour Volumes | | | | | | | | | | | | <input type="checkbox"/> |
| Warrant 5: School Crossing | | | | | | | | | | | | <input type="checkbox"/> |
| 5. Student Volumes --and-- | | | | | | | | | | | | <input type="checkbox"/> |
| 5. Gaps Same Period | | | | | | | | | | | | <input type="checkbox"/> |
| Warrant 6: Coordinated Signal System | | | | | | | | | | | | <input type="checkbox"/> |
| 6. Degree of Platooning (Predominant direction or both directions) | | | | | | | | | | | | <input type="checkbox"/> |
| Warrant 7: Crash Experience | | | | | | | | | | | | <input type="checkbox"/> |
| 7 A. Adequate trials of alternatives, observance and enforcement failed --and-- | | | | | | | | | | | | <input type="checkbox"/> |
| 7 B. Reported crashes susceptible to correction by signal (12-month period) --and-- | | | | | | | | | | | | <input type="checkbox"/> |
| 7 C. (80%) Volumes for Warrants 1A, 1B --or-- 4 are satisfied | | | | | | | | | | | | <input checked="" type="checkbox"/> |

| | |
|---|--------------------------|
| Warrant 8: Roadway Network | <input type="checkbox"/> |
| 8 A. Weekday Volume (Peak hour total --and-- projected warrants 1, 2 or 3) --or-- | <input type="checkbox"/> |
| 8 B. Weekend Volume (Five hours total) | <input type="checkbox"/> |
| Warrant 9: Grade Crossing | <input type="checkbox"/> |
| 9 A. Grade Crossing within 140 ft --and-- | <input type="checkbox"/> |
| 9 B. Peak-Hour Vehicular Volumes | <input type="checkbox"/> |

| Warrants Summary | | | | | | | | | | | | |
|--|-----------------------------------|--------------------------|---------------------------------|----|-------|------------------------|---------------------------|-------|----|--------------------------|-------------------------------------|----|
| Information | | | | | | | | | | | | |
| Analyst | Transpo Group | | | | | Intersection | Central Access/N 115th St | | | | | |
| Agency/Co | | | | | | Jurisdiction | SDOT | | | | | |
| Date Performed | 5/31/2023 | | | | | Units | U.S. Customary | | | | | |
| Project ID | UWMC NW TDR | | | | | Time Period Analyzed | PM Peak Hour | | | | | |
| East/West Street | N 115th Street | | | | | North/South Street | Central Access | | | | | |
| File Name | Central Access_115th Warrants.xhy | | | | | Major Street | East-West | | | | | |
| Project Description <i>UWMC NW TDR</i> | | | | | | | | | | | | |
| General | | | | | | Roadway Network | | | | | | |
| Major Street Speed (mph) | 25 | <input type="checkbox"/> | Population < 10,000 | | | | Two Major Routes | | | <input type="checkbox"/> | | |
| Nearest Signal (ft) | 1900 | <input type="checkbox"/> | Coordinated Signal System | | | | Weekend Count | | | <input type="checkbox"/> | | |
| Crashes (per year) | 2 | <input type="checkbox"/> | Adequate Trials of Alternatives | | | | 5-yr Growth Factor | | | 0 | | |
| Geometry and Traffic | EB | | | WB | | | NB | | | SB | | |
| | LT | TH | RT | LT | TH | RT | LT | TH | RT | LT | TH | RT |
| Number of lanes, N | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane usage | L | T | | | TR | | | | | | LR | |
| Vehicle Volume Averages (vph) | 15 | 263 | 0 | 0 | 300 | 30 | 0 | 0 | 0 | 225 | 0 | 67 |
| Peds (ped/h) / Gaps (gaps/h) | -- | 0 / 0 | -- | -- | 0 / 0 | -- | -- | 0 / 0 | -- | -- | 0 / 0 | -- |
| Delay (s/veh) / (veh-hr) | -- | 0 / 0 | -- | -- | 0 / 0 | -- | -- | 0 / 0 | -- | -- | 0 / 0 | -- |
| Warrant 1: Eight-Hour Vehicular Volume | | | | | | | | | | | <input type="checkbox"/> | |
| 1 A. Minimum Vehicular Volumes (Both major approaches --and-- higher minor approach) --or-- | | | | | | | | | | | <input type="checkbox"/> | |
| 1 B. Interruption of Continuous Traffic (Both major approaches --and-- higher minor approach) --or-- | | | | | | | | | | | <input type="checkbox"/> | |
| 1 (80%) Vehicular --and-- Interruption Volumes (Both major approaches --and-- higher minor approach) | | | | | | | | | | | <input type="checkbox"/> | |
| Warrant 2: Four-Hour Vehicular Volume | | | | | | | | | | | <input checked="" type="checkbox"/> | |
| 2 A. Four-Hour Vehicular Volumes (Both major approaches --and-- higher minor approach) | | | | | | | | | | | <input checked="" type="checkbox"/> | |
| Warrant 3: Peak Hour | | | | | | | | | | | <input checked="" type="checkbox"/> | |
| 3 A. Peak-Hour Conditions (Minor delay --and-- minor volume --and-- total volume) --or-- | | | | | | | | | | | <input type="checkbox"/> | |
| 3 B. Peak- Hour Vehicular Volumes (Both major approaches --and-- higher minor approach) | | | | | | | | | | | <input checked="" type="checkbox"/> | |
| Warrant 4: Pedestrian Volume | | | | | | | | | | | <input type="checkbox"/> | |
| 4 A. Four Hour Volumes --or-- | | | | | | | | | | | <input type="checkbox"/> | |
| 4 B. One-Hour Volumes | | | | | | | | | | | <input type="checkbox"/> | |
| Warrant 5: School Crossing | | | | | | | | | | | <input type="checkbox"/> | |
| 5. Student Volumes --and-- | | | | | | | | | | | <input type="checkbox"/> | |
| 5. Gaps Same Period | | | | | | | | | | | <input type="checkbox"/> | |
| Warrant 6: Coordinated Signal System | | | | | | | | | | | <input type="checkbox"/> | |
| 6. Degree of Platooning (Predominant direction or both directions) | | | | | | | | | | | <input type="checkbox"/> | |
| Warrant 7: Crash Experience | | | | | | | | | | | <input type="checkbox"/> | |
| 7 A. Adequate trials of alternatives, observance and enforcement failed --and-- | | | | | | | | | | | <input type="checkbox"/> | |
| 7 B. Reported crashes susceptible to correction by signal (12-month period) --and-- | | | | | | | | | | | <input type="checkbox"/> | |

| | |
|---|-------------------------------------|
| 7 C. (80%) Volumes for Warrants 1A, 1B --or-- 4 are satisfied | <input checked="" type="checkbox"/> |
| Warrant 8: Roadway Network | <input type="checkbox"/> |
| 8 A. Weekday Volume (Peak hour total --and-- projected warrants 1, 2 or 3) --or-- | <input type="checkbox"/> |
| 8 B. Weekend Volume (Five hours total) | <input type="checkbox"/> |
| Warrant 9: Grade Crossing | <input type="checkbox"/> |
| 9 A. Grade Crossing within 140 ft --and-- | <input type="checkbox"/> |
| 9 B. Peak-Hour Vehicular Volumes | <input type="checkbox"/> |

Appendix H Access Analysis

Alternative 1 2030 Weekday AM Peak Hour Site Access LOS Access Summary

| Intersection | Traffic Control | No Action | | | | Evenly Distributed Parking Scenario | | | | West Concentrated Parking Scenario | | | |
|-------------------------------|-----------------|------------------|--------------------|-----------------|--------------------|-------------------------------------|------------|------------|-----------|------------------------------------|------------|------------|----------|
| | | LOS ¹ | Delay ² | WM ³ | Queue ⁴ | LOS | Delay | WM | Queue | LOS | Delay | WM | Queue |
| Option 1 - N 115th St | | | | | | | | | | | | | |
| 10. Meridian Ave N/N 120th St | TWSC | B | 14 | WB | - | C | 18 | WB | - | C | 18 | WB | - |
| A. West Access/N 115th St | TWSC | C | 20 | SBL | 1 | C | 24 | SBL | 1 | E | 37 | SBL | 4 |
| B. East Access/N 115th St | TWSC | D | 30 | SBL | 2 | F | 76 | SBL | 4 | F | 88 | SBL | 6 |
| C. Central Access/N 115th St | Signal | - | - | - | - | A | 7 | - | - | A | 8 | - | - |
| Option 2 - N 120th St | | | | | | | | | | | | | |
| 10. Meridian Ave N/N 120th St | TWSC | B | 14 | WB | - | C | 20 | WB | - | C | 20 | WB | - |
| A. West Access/N 115th St | TWSC | C | 20 | SBL | 1 | E | 37 | SBL | 3 | F | 76 | SBL | 6 |
| B. East Access/N 115th St | TWSC | D | 30 | SBL | 2 | F | 254 | SBL | 12 | F | 188 | SBL | 8 |
| D. North Access/N 120th St | TWSC | - | - | - | - | A | 9 | NB | <1 | A | 9 | NB | <1 |

Note: TWSC = Two-Way Stop Controlled. **Bold** text indicates operating at LOS E or F if signalized or LOS F for TWSC.

1. Level of Service (A – F) as defined by the *Highway Capacity Manual* (HCM) 6th Edition (TRB, 2016).
2. Average delay per vehicle in seconds
3. Worst movement reported for TWSC intersections. WB = westbound, SBL = southbound left-turn.
4. 95th percentile queue (vehicles) reported for the worst movement at the stop-controlled site access points.

Alternative 1 2030 Weekday PM Peak Hour Site Access LOS Access Summary

| Intersection | Traffic Control | No Action | | | | Evenly Distributed Parking Scenario | | | | West Concentrated Parking Scenario | | | |
|-------------------------------|-----------------|------------------|--------------------|-----------------|--------------------|-------------------------------------|------------|------------|-----------|------------------------------------|------------|------------|-----------|
| | | LOS ¹ | Delay ² | WM ³ | Queue ⁴ | LOS | Delay | WM | Queue | LOS | Delay | WM | Queue |
| Option 1 - N 115th St | | | | | | | | | | | | | |
| 10. Meridian Ave N/N 120th St | TWSC | B | 15 | WB | - | C | 18 | WB | - | C | 18 | WB | - |
| A. West Access/N 115th St | TWSC | C | 21 | SBL | 2 | D | 27 | SBL | 2 | E | 39 | SBL | 4 |
| B. East Access/N 115th St | TWSC | D | 30 | SBL | 4 | F | 94 | SBL | 7 | F | 92 | SBL | 7 |
| C. Central Access/N 115th St | Signal | - | - | - | - | A | 9 | - | - | A | 8 | - | - |
| Option 2 - N 120th St | | | | | | | | | | | | | |
| 10. Meridian Ave N/N 120th St | TWSC | B | 15 | WB | - | C | 18 | WB | - | C | 18 | WB | - |
| A. West Access/N 115th St | TWSC | C | 21 | SBL | 2 | D | 29 | SBL | 3 | F | 122 | SBL | 13 |
| B. East Access/N 115th St | TWSC | D | 30 | SBL | 4 | F | 228 | SBL | 18 | F | 185 | SBL | 14 |
| D. North Access/N 120th St | TWSC | - | - | - | - | A | 9 | NB | <1 | A | 9 | NB | <1 |

Note: TWSC = Two-Way Stop Controlled. **Bold** text indicates operating at LOS E or F if signalized or LOS F for TWSC.

1. Level of Service (A – F) as defined by the *Highway Capacity Manual* (HCM) 6th Edition (TRB, 2016).
2. Average delay per vehicle in seconds
3. Worst movement reported for TWSC intersections. WB = westbound, SBL = southbound left-turn, EB = eastbound.
4. 95th percentile queue reported for the worst movement at the stop-controlled site access points.

Alternative 1 2040 Weekday AM Peak Hour Site Access LOS Access Summary

| Intersection | Traffic Control | No Action | | | | Evenly Distributed Parking Scenario | | | | West Concentrated Parking Scenario | | | |
|-------------------------------|-----------------|------------------|--------------------|-----------------|--------------------|-------------------------------------|------------|------------|-----------|------------------------------------|------------|------------|----------|
| | | LOS ¹ | Delay ² | WM ³ | Queue ⁴ | LOS | Delay | WM | Queue | LOS | Delay | WM | Queue |
| Option 1 - N 115th St | | | | | | | | | | | | | |
| 10. Meridian Ave N/N 120th St | TWSC | B | 13 | WB | - | C | 17 | WB | - | C | 17 | WB | - |
| A. West Access/N 115th St | TWSC | C | 17 | SBL | 1 | C | 22 | SBL | 1 | D | 27 | SBL | 2 |
| B. East Access/N 115th St | TWSC | C | 23 | SBL | 1 | F | 56 | SBL | 3 | F | 54 | SBL | 3 |
| C. Central Access/N 115th St | Signal | - | - | - | - | A | 7 | - | - | A | 9 | - | - |
| Option 2 - N 120th St | | | | | | | | | | | | | |
| 10. Meridian Ave N/N 120th St | TWSC | B | 13 | WB | - | C | 18 | WB | - | C | 18 | WB | - |
| A. West Access/N 115th St | TWSC | C | 17 | SBL | 1 | D | 32 | SBL | 2 | F | 54 | SBL | 5 |
| B. East Access/N 115th St | TWSC | C | 23 | SBL | 1 | F | 170 | SBL | 10 | F | 120 | SBL | 6 |
| D. North Access/N 120th St | TWSC | - | - | - | - | A | 9 | NB | <1 | A | 9 | NB | <1 |

Note: TWSC = Two-Way Stop Controlled. **Bold** text indicates operating at LOS E or F if signalized or LOS F for TWSC.

1. Level of Service (A – F) as defined by the *Highway Capacity Manual* (HCM) 6th Edition (TRB, 2016).
2. Average delay per vehicle in seconds
3. Worst movement reported for TWSC intersections. WB = westbound, SBL = southbound left-turn, EB = eastbound.
4. 95th percentile queue reported for the worst movement at the stop-controlled site access points.

Alternative 1 2040 Weekday PM Peak Hour Site Access LOS Access Summary

| Intersection | Traffic Control | No Action | | | | Evenly Distributed Parking Scenario | | | | West Concentrated Parking Scenario | | | |
|-------------------------------|-----------------|------------------|--------------------|-----------------|--------------------|-------------------------------------|------------|------------|-----------|------------------------------------|------------|------------|-----------|
| | | LOS ¹ | Delay ² | WM ³ | Queue ⁴ | LOS | Delay | WM | Queue | LOS | Delay | WM | Queue |
| Option 1 - N 115th St | | | | | | | | | | | | | |
| 10. Meridian Ave N/N 120th St | TWSC | B | 14 | WB | - | C | 17 | WB | - | C | 17 | WB | - |
| A. West Access/N 115th St | TWSC | C | 19 | SBL | 1 | C | 24 | SBL | 2 | D | 33 | SBL | 3 |
| B. East Access/N 115th St | TWSC | D | 26 | SBL | 3 | F | 70 | SBL | 5 | F | 69 | SBL | 5 |
| C. Central Access/N 115th St | Signal | - | - | - | - | A | 9 | - | - | A | 8 | - | - |
| Option 2 - N 120th St | | | | | | | | | | | | | |
| 10. Meridian Ave N/N 120th St | TWSC | B | 14 | WB | - | C | 17 | EB | - | C | 17 | EB | - |
| A. West Access/N 115th St | TWSC | C | 19 | SBL | 1 | D | 34 | SBL | 4 | F | 88 | SBL | 10 |
| B. East Access/N 115th St | TWSC | D | 26 | SBL | 3 | F | 212 | SBL | 18 | F | 132 | SBL | 11 |
| D. North Access/N 120th St | TWSC | - | - | - | - | A | 9 | NB | <1 | A | 9 | NB | <1 |

Note: TWSC = Two-Way Stop Controlled. **Bold** text indicates operating at LOS E or F if signalized or LOS F for TWSC.

1. Level of Service (A – F) as defined by the *Highway Capacity Manual* (HCM) 6th Edition (TRB, 2016).
2. Average delay per vehicle in seconds
3. Worst movement reported for TWSC intersections. WB = westbound, SBL = southbound left-turn, EB = eastbound.
4. 95th percentile queue reported for the worst movement at the stop-controlled site access points.

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 2.4 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | | ↕ | | | ↕ | |
| Traffic Vol, veh/h | 5 | 5 | 50 | 11 | 5 | 10 | 70 | 406 | 31 | 5 | 152 | 5 |
| Future Vol, veh/h | 5 | 5 | 50 | 11 | 5 | 10 | 70 | 406 | 31 | 5 | 152 | 5 |
| Conflicting Peds, #/hr | 1 | 0 | 4 | 4 | 0 | 1 | 1 | 0 | 12 | 12 | 0 | 1 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 86 | 86 | 86 | 86 | 86 | 86 | 86 | 86 | 86 | 86 | 86 | 86 |
| Heavy Vehicles, % | 13 | 13 | 13 | 0 | 0 | 0 | 10 | 10 | 10 | 4 | 4 | 4 |
| Mvmt Flow | 6 | 6 | 58 | 13 | 6 | 12 | 81 | 472 | 36 | 6 | 177 | 6 |

| Major/Minor | Minor2 | | Minor1 | | Major1 | | | Major2 | | | | |
|----------------------|--------|-------|--------|-----|--------|-----|------|--------|---|-------|---|---|
| Conflicting Flow All | 855 | 875 | 185 | 892 | 860 | 503 | 184 | 0 | 0 | 520 | 0 | 0 |
| Stage 1 | 193 | 193 | - | 664 | 664 | - | - | - | - | - | - | - |
| Stage 2 | 662 | 682 | - | 228 | 196 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.23 | 6.63 | 6.33 | 7.1 | 6.5 | 6.2 | 4.2 | - | - | 4.14 | - | - |
| Critical Hdwy Stg 1 | 6.23 | 5.63 | - | 6.1 | 5.5 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.23 | 5.63 | - | 6.1 | 5.5 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.617 | 4.117 | 3.417 | 3.5 | 4 | 3.3 | 2.29 | - | - | 2.236 | - | - |
| Pot Cap-1 Maneuver | 266 | 276 | 830 | 265 | 296 | 573 | 1344 | - | - | 1036 | - | - |
| Stage 1 | 784 | 721 | - | 453 | 461 | - | - | - | - | - | - | - |
| Stage 2 | 433 | 433 | - | 779 | 742 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | - | - | - |
| Mov Cap-1 Maneuver | 238 | 248 | 826 | 222 | 266 | 566 | 1343 | - | - | 1024 | - | - |
| Mov Cap-2 Maneuver | 238 | 248 | - | 222 | 266 | - | - | - | - | - | - | - |
| Stage 1 | 717 | 715 | - | 410 | 417 | - | - | - | - | - | - | - |
| Stage 2 | 382 | 392 | - | 711 | 736 | - | - | - | - | - | - | - |

| Approach | EB | | WB | | NB | | SB | |
|----------------------|------|--|------|--|-----|--|-----|--|
| HCM Control Delay, s | 11.9 | | 18.2 | | 1.1 | | 0.3 | |
| HCM LOS | B | | C | | | | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1WBLn1 | SBL | SBT | SBR |
|-----------------------|-------|-----|-----|------------|------|-------|-----|
| Capacity (veh/h) | 1343 | - | - | 590 | 302 | 1024 | - |
| HCM Lane V/C Ratio | 0.061 | - | - | 0.118 | 0.1 | 0.006 | - |
| HCM Control Delay (s) | 7.9 | 0 | - | 11.9 | 18.2 | 8.5 | 0 |
| HCM Lane LOS | A | A | - | B | C | A | A |
| HCM 95th %tile Q(veh) | 0.2 | - | - | 0.4 | 0.3 | 0 | - |

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 6.9 | | | | | |
| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations | | ↶ | ↷ | | ↶ | ↷ |
| Traffic Vol, veh/h | 20 | 282 | 482 | 37 | 164 | 75 |
| Future Vol, veh/h | 20 | 282 | 482 | 37 | 164 | 75 |
| Conflicting Peds, #/hr | 18 | 0 | 0 | 18 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | 0 |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 91 | 91 | 91 | 91 | 91 | 91 |
| Heavy Vehicles, % | 5 | 5 | 9 | 9 | 0 | 0 |
| Mvmt Flow | 22 | 310 | 530 | 41 | 180 | 82 |

| Major/Minor | Major1 | Major2 | Minor2 | | |
|----------------------|--------|--------|--------|---|-----|
| Conflicting Flow All | 589 | 0 | - | 0 | 923 |
| Stage 1 | - | - | - | - | 569 |
| Stage 2 | - | - | - | - | 354 |
| Critical Hdwy | 4.15 | - | - | - | 6.4 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.4 |
| Critical Hdwy Stg 2 | - | - | - | - | 5.4 |
| Follow-up Hdwy | 2.245 | - | - | - | 3.5 |
| Pot Cap-1 Maneuver | 972 | - | - | - | 302 |
| Stage 1 | - | - | - | - | 570 |
| Stage 2 | - | - | - | - | 715 |
| Platoon blocked, % | | - | - | - | |
| Mov Cap-1 Maneuver | 955 | - | - | - | 284 |
| Mov Cap-2 Maneuver | - | - | - | - | 284 |
| Stage 1 | - | - | - | - | 544 |
| Stage 2 | - | - | - | - | 703 |

| Approach | EB | WB | SB |
|----------------------|-----|----|------|
| HCM Control Delay, s | 0.6 | 0 | 29.8 |
| HCM LOS | | | D |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 | SBLn2 |
|-----------------------|-------|-----|-----|-----|-------|-------|
| Capacity (veh/h) | 955 | - | - | - | 284 | 516 |
| HCM Lane V/C Ratio | 0.023 | - | - | - | 0.635 | 0.16 |
| HCM Control Delay (s) | 8.9 | 0 | - | - | 37.3 | 13.3 |
| HCM Lane LOS | A | A | - | - | E | B |
| HCM 95th %tile Q(veh) | 0.1 | - | - | - | 4 | 0.6 |

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 10.3 | | | | | |
| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations | | ↶ | ↷ | | ↶ | ↷ |
| Traffic Vol, veh/h | 17 | 682 | 376 | 46 | 144 | 81 |
| Future Vol, veh/h | 17 | 682 | 376 | 46 | 144 | 81 |
| Conflicting Peds, #/hr | 18 | 0 | 0 | 18 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | 0 |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 91 | 91 | 91 | 91 | 91 | 91 |
| Heavy Vehicles, % | 5 | 5 | 9 | 9 | 0 | 0 |
| Mvmt Flow | 19 | 749 | 413 | 51 | 158 | 89 |

| Major/Minor | Major1 | Major2 | Minor2 | | |
|----------------------|--------|--------|--------|---|----------|
| Conflicting Flow All | 482 | 0 | - | 0 | 1244 457 |
| Stage 1 | - | - | - | - | 457 - |
| Stage 2 | - | - | - | - | 787 - |
| Critical Hdwy | 4.15 | - | - | - | 6.4 6.2 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.4 - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.4 - |
| Follow-up Hdwy | 2.245 | - | - | - | 3.5 3.3 |
| Pot Cap-1 Maneuver | 1065 | - | - | - | 194 608 |
| Stage 1 | - | - | - | - | 642 - |
| Stage 2 | - | - | - | - | 452 - |
| Platoon blocked, % | | - | - | - | |
| Mov Cap-1 Maneuver | 1047 | - | - | - | 182 598 |
| Mov Cap-2 Maneuver | - | - | - | - | 182 - |
| Stage 1 | - | - | - | - | 612 - |
| Stage 2 | - | - | - | - | 444 - |

| Approach | EB | WB | SB |
|----------------------|-----|----|------|
| HCM Control Delay, s | 0.2 | 0 | 60.8 |
| HCM LOS | | | F |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 | SBLn2 |
|-----------------------|-------|-----|-----|-----|-------|-------|
| Capacity (veh/h) | 1047 | - | - | - | 182 | 598 |
| HCM Lane V/C Ratio | 0.018 | - | - | - | 0.869 | 0.149 |
| HCM Control Delay (s) | 8.5 | 0 | - | - | 88.2 | 12.1 |
| HCM Lane LOS | A | A | - | - | F | B |
| HCM 95th %tile Q(veh) | 0.1 | - | - | - | 6.4 | 0.5 |

HCM 6th Signalized Intersection Summary

UWMC - NW

15: N 115th St & Central Site Access (Future) Future With-Project (2030) AM Peak Hour_Access Parking (west weighted)



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|--|------|------|------|------|------|------|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 31 | 424 | 398 | 54 | 279 | 120 |
| Future Volume (veh/h) | 31 | 424 | 398 | 54 | 279 | 120 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 0.99 | | | 0.97 | 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 | 1826 | 1826 | 1767 | 1767 | 1900 | 1900 |
| Adj Flow Rate, veh/h | 34 | 466 | 437 | 59 | 307 | 132 |
| Peak Hour Factor | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Percent Heavy Veh, % | 5 | 5 | 9 | 9 | 0 | 0 |
| Cap, veh/h | 431 | 808 | 671 | 91 | 462 | 412 |
| Arrive On Green | 0.44 | 0.44 | 0.44 | 0.44 | 0.26 | 0.26 |
| Sat Flow, veh/h | 876 | 1826 | 1516 | 205 | 1810 | 1610 |
| Grp Volume(v), veh/h | 34 | 466 | 0 | 496 | 307 | 132 |
| Grp Sat Flow(s),veh/h/ln | 876 | 1826 | 0 | 1721 | 1810 | 1610 |
| Q Serve(g_s), s | 0.9 | 5.7 | 0.0 | 6.7 | 4.5 | 2.0 |
| Cycle Q Clear(g_c), s | 7.7 | 5.7 | 0.0 | 6.7 | 4.5 | 2.0 |
| Prop In Lane | 1.00 | | | 0.12 | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 431 | 808 | 0 | 762 | 462 | 412 |
| V/C Ratio(X) | 0.08 | 0.58 | 0.00 | 0.65 | 0.66 | 0.32 |
| Avail Cap(c_a), veh/h | 1116 | 2235 | 0 | 2107 | 1487 | 1323 |
| HCM Platoon Ratio | 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 |
| Uniform Delay (d), s/veh | 9.5 | 6.2 | 0.0 | 6.5 | 9.9 | 9.0 |
| Incr Delay (d2), s/veh | 0.1 | 0.7 | 0.0 | 0.9 | 1.6 | 0.4 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.1 | 1.2 | 0.0 | 1.4 | 1.4 | 0.5 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d),s/veh | 9.6 | 6.9 | 0.0 | 7.5 | 11.6 | 9.4 |
| LnGrp LOS | A | A | A | A | B | A |
| Approach Vol, veh/h | | 500 | 496 | | 439 | |
| Approach Delay, s/veh | | 7.1 | 7.5 | | 10.9 | |
| Approach LOS | | A | A | | B | |
| Timer - Assigned Phs | | | | 4 | 6 | 8 |
| Phs Duration (G+Y+Rc), s | | | | 17.7 | 12.1 | 17.7 |
| Change Period (Y+Rc), s | | | | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | | | | 36.5 | 24.5 | 36.5 |
| Max Q Clear Time (g_c+I1), s | | | | 9.7 | 6.5 | 8.7 |
| Green Ext Time (p_c), s | | | | 3.4 | 1.3 | 3.5 |
| Intersection Summary | | | | | | |
| HCM 6th Ctrl Delay | | | 8.4 | | | |
| HCM 6th LOS | | | A | | | |
| Notes | | | | | | |
| User approved volume balancing among the lanes for turning movement. | | | | | | |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 2.3 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | | ↕ | | | ↕ | |
| Traffic Vol, veh/h | 5 | 5 | 50 | 11 | 5 | 10 | 70 | 406 | 31 | 5 | 152 | 5 |
| Future Vol, veh/h | 5 | 5 | 50 | 11 | 5 | 10 | 70 | 406 | 31 | 5 | 152 | 5 |
| Conflicting Peds, #/hr | 0 | 0 | 7 | 7 | 0 | 0 | 0 | 0 | 8 | 8 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 89 | 89 | 89 | 89 | 89 | 89 | 89 | 89 | 89 | 89 | 89 | 89 |
| Heavy Vehicles, % | 9 | 9 | 9 | 5 | 5 | 5 | 2 | 2 | 2 | 6 | 6 | 6 |
| Mvmt Flow | 6 | 6 | 56 | 12 | 6 | 11 | 79 | 456 | 35 | 6 | 171 | 6 |

| Major/Minor | Minor2 | | Minor1 | | Major1 | | | Major2 | | | | |
|----------------------|--------|-------|--------|-------|--------|-------|-------|--------|---|-------|---|---|
| Conflicting Flow All | 826 | 843 | 181 | 864 | 829 | 482 | 177 | 0 | 0 | 499 | 0 | 0 |
| Stage 1 | 186 | 186 | - | 640 | 640 | - | - | - | - | - | - | - |
| Stage 2 | 640 | 657 | - | 224 | 189 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.19 | 6.59 | 6.29 | 7.15 | 6.55 | 6.25 | 4.12 | - | - | 4.16 | - | - |
| Critical Hdwy Stg 1 | 6.19 | 5.59 | - | 6.15 | 5.55 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.19 | 5.59 | - | 6.15 | 5.55 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.581 | 4.081 | 3.381 | 3.545 | 4.045 | 3.345 | 2.218 | - | - | 2.254 | - | - |
| Pot Cap-1 Maneuver | 283 | 293 | 844 | 271 | 303 | 578 | 1399 | - | - | 1045 | - | - |
| Stage 1 | 800 | 733 | - | 459 | 465 | - | - | - | - | - | - | - |
| Stage 2 | 452 | 451 | - | 772 | 738 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | - | - | - |
| Mov Cap-1 Maneuver | 256 | 266 | 838 | 230 | 275 | 574 | 1399 | - | - | 1037 | - | - |
| Mov Cap-2 Maneuver | 256 | 266 | - | 230 | 275 | - | - | - | - | - | - | - |
| Stage 1 | 738 | 729 | - | 420 | 425 | - | - | - | - | - | - | - |
| Stage 2 | 403 | 413 | - | 706 | 734 | - | - | - | - | - | - | - |

| Approach | EB | | WB | | NB | | | SB | | |
|----------------------|------|--|------|--|-----|--|--|-----|--|--|
| HCM Control Delay, s | 11.6 | | 17.7 | | 1.1 | | | 0.3 | | |
| HCM LOS | B | | C | | | | | | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|-----------------------|-------|-----|-----|-------|-------|-------|-----|-----|
| Capacity (veh/h) | 1399 | - | - | 612 | 312 | 1037 | - | - |
| HCM Lane V/C Ratio | 0.056 | - | - | 0.11 | 0.094 | 0.005 | - | - |
| HCM Control Delay (s) | 7.7 | 0 | - | 11.6 | 17.7 | 8.5 | 0 | - |
| HCM Lane LOS | A | A | - | B | C | A | A | - |
| HCM 95th %tile Q(veh) | 0.2 | - | - | 0.4 | 0.3 | 0 | - | - |

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 7.1 | | | | | |
| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations | | ↔ | ↔ | | ↔ | ↔ |
| Traffic Vol, veh/h | 20 | 282 | 482 | 37 | 164 | 75 |
| Future Vol, veh/h | 20 | 282 | 482 | 37 | 164 | 75 |
| Conflicting Peds, #/hr | 23 | 0 | 0 | 23 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | 0 |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 91 | 91 | 91 | 91 | 91 | 91 |
| Heavy Vehicles, % | 2 | 2 | 6 | 6 | 0 | 0 |
| Mvmt Flow | 22 | 310 | 530 | 41 | 180 | 82 |

| Major/Minor | Major1 | Major2 | Minor2 | | |
|----------------------|--------|--------|--------|---|-----|
| Conflicting Flow All | 594 | 0 | - | 0 | 928 |
| Stage 1 | - | - | - | - | 574 |
| Stage 2 | - | - | - | - | 354 |
| Critical Hdwy | 4.12 | - | - | - | 6.4 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.4 |
| Critical Hdwy Stg 2 | - | - | - | - | 5.4 |
| Follow-up Hdwy | 2.218 | - | - | - | 3.5 |
| Pot Cap-1 Maneuver | 982 | - | - | - | 300 |
| Stage 1 | - | - | - | - | 567 |
| Stage 2 | - | - | - | - | 715 |
| Platoon blocked, % | | - | - | - | |
| Mov Cap-1 Maneuver | 960 | - | - | - | 279 |
| Mov Cap-2 Maneuver | - | - | - | - | 279 |
| Stage 1 | - | - | - | - | 539 |
| Stage 2 | - | - | - | - | 699 |

| Approach | EB | WB | SB |
|----------------------|-----|----|------|
| HCM Control Delay, s | 0.6 | 0 | 30.8 |
| HCM LOS | | | D |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 | SBLn2 |
|-----------------------|-------|-----|-----|-----|-------|-------|
| Capacity (veh/h) | 960 | - | - | - | 279 | 511 |
| HCM Lane V/C Ratio | 0.023 | - | - | - | 0.646 | 0.161 |
| HCM Control Delay (s) | 8.8 | 0 | - | - | 38.7 | 13.4 |
| HCM Lane LOS | A | A | - | - | E | B |
| HCM 95th %tile Q(veh) | 0.1 | - | - | - | 4.1 | 0.6 |

| Intersection | | | | | | |
|--------------------------|--------|--------|--------|------|-------|-------|
| Int Delay, s/veh | 10.7 | | | | | |
| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations | | ↕ | ↕ | | ↕ | ↕ |
| Traffic Vol, veh/h | 17 | 682 | 376 | 46 | 144 | 81 |
| Future Vol, veh/h | 17 | 682 | 376 | 46 | 144 | 81 |
| Conflicting Peds, #/hr | 23 | 0 | 0 | 23 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | 0 |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 91 | 91 | 91 | 91 | 91 | 91 |
| Heavy Vehicles, % | 2 | 2 | 6 | 6 | 0 | 0 |
| Mvmt Flow | 19 | 749 | 413 | 51 | 158 | 89 |
| Major/Minor | Major1 | Major2 | Minor2 | | | |
| Conflicting Flow All | 487 | 0 | - | 0 | 1249 | 462 |
| Stage 1 | - | - | - | - | 462 | - |
| Stage 2 | - | - | - | - | 787 | - |
| Critical Hdwy | 4.12 | - | - | - | 6.4 | 6.2 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.4 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.4 | - |
| Follow-up Hdwy | 2.218 | - | - | - | 3.5 | 3.3 |
| Pot Cap-1 Maneuver | 1076 | - | - | - | 193 | 604 |
| Stage 1 | - | - | - | - | 638 | - |
| Stage 2 | - | - | - | - | 452 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 1052 | - | - | - | 179 | 591 |
| Mov Cap-2 Maneuver | - | - | - | - | 179 | - |
| Stage 1 | - | - | - | - | 605 | - |
| Stage 2 | - | - | - | - | 442 | - |
| Approach | EB | WB | SB | | | |
| HCM Control Delay, s | 0.2 | 0 | 63.4 | | | |
| HCM LOS | | | F | | | |
| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 | SBLn2 |
| Capacity (veh/h) | 1052 | - | - | - | 179 | 591 |
| HCM Lane V/C Ratio | 0.018 | - | - | - | 0.884 | 0.151 |
| HCM Control Delay (s) | 8.5 | 0 | - | - | 92.2 | 12.2 |
| HCM Lane LOS | A | A | - | - | F | B |
| HCM 95th %tile Q(veh) | 0.1 | - | - | - | 6.5 | 0.5 |

HCM 6th Signalized Intersection Summary

UWMC - NW

15: N 115th St & Central Site Access (Future) Future With-Project (2030) PM Peak Hour_Access Parking (west weighted)



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|--|------|------|------|------|------|------|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 31 | 424 | 398 | 54 | 279 | 120 |
| Future Volume (veh/h) | 31 | 424 | 398 | 54 | 279 | 120 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 0.99 | | | 0.98 | 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 | 1870 | 1870 | 1811 | 1811 | 1900 | 1900 |
| Adj Flow Rate, veh/h | 34 | 466 | 437 | 59 | 307 | 132 |
| Peak Hour Factor | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Percent Heavy Veh, % | 2 | 2 | 6 | 6 | 0 | 0 |
| Cap, veh/h | 442 | 825 | 687 | 93 | 463 | 412 |
| Arrive On Green | 0.44 | 0.44 | 0.44 | 0.44 | 0.26 | 0.26 |
| Sat Flow, veh/h | 896 | 1870 | 1559 | 210 | 1810 | 1610 |
| Grp Volume(v), veh/h | 34 | 466 | 0 | 496 | 307 | 132 |
| Grp Sat Flow(s),veh/h/ln | 896 | 1870 | 0 | 1769 | 1810 | 1610 |
| Q Serve(g_s), s | 0.9 | 5.5 | 0.0 | 6.5 | 4.5 | 2.0 |
| Cycle Q Clear(g_c), s | 7.4 | 5.5 | 0.0 | 6.5 | 4.5 | 2.0 |
| Prop In Lane | 1.00 | | | 0.12 | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 442 | 825 | 0 | 780 | 463 | 412 |
| V/C Ratio(X) | 0.08 | 0.57 | 0.00 | 0.64 | 0.66 | 0.32 |
| Avail Cap(c_a), veh/h | 1149 | 2300 | 0 | 2176 | 1494 | 1329 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(l) | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 9.3 | 6.2 | 0.0 | 6.4 | 9.9 | 9.0 |
| Incr Delay (d2), s/veh | 0.1 | 0.6 | 0.0 | 0.9 | 1.6 | 0.4 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.1 | 1.2 | 0.0 | 1.4 | 1.4 | 0.5 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d),s/veh | 9.4 | 6.8 | 0.0 | 7.3 | 11.5 | 9.4 |
| LnGrp LOS | A | A | A | A | B | A |
| Approach Vol, veh/h | | 500 | 496 | | 439 | |
| Approach Delay, s/veh | | 7.0 | 7.3 | | 10.9 | |
| Approach LOS | | A | A | | B | |
| Timer - Assigned Phs | | | | 4 | 6 | 8 |
| Phs Duration (G+Y+Rc), s | | | | 17.6 | 12.1 | 17.6 |
| Change Period (Y+Rc), s | | | | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | | | | 36.5 | 24.5 | 36.5 |
| Max Q Clear Time (g_c+I1), s | | | | 9.4 | 6.5 | 8.5 |
| Green Ext Time (p_c), s | | | | 3.4 | 1.3 | 3.5 |
| Intersection Summary | | | | | | |
| HCM 6th Ctrl Delay | | | 8.3 | | | |
| HCM 6th LOS | | | A | | | |
| Notes | | | | | | |
| User approved volume balancing among the lanes for turning movement. | | | | | | |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 2.8 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | | ↕ | | | ↕ | |
| Traffic Vol, veh/h | 5 | 5 | 75 | 27 | 5 | 5 | 35 | 162 | 16 | 5 | 380 | 5 |
| Future Vol, veh/h | 5 | 5 | 75 | 27 | 5 | 5 | 35 | 162 | 16 | 5 | 380 | 5 |
| Conflicting Peds, #/hr | 1 | 0 | 4 | 4 | 0 | 1 | 1 | 0 | 12 | 12 | 0 | 1 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| Heavy Vehicles, % | 13 | 13 | 13 | 0 | 0 | 0 | 10 | 10 | 10 | 4 | 4 | 4 |
| Mvmt Flow | 5 | 5 | 75 | 27 | 5 | 5 | 35 | 162 | 16 | 5 | 380 | 5 |

| Major/Minor | Minor2 | | Minor1 | | Major1 | | | Major2 | | | | |
|----------------------|--------|-------|--------|-----|--------|-----|------|--------|---|-------|---|---|
| Conflicting Flow All | 640 | 654 | 388 | 689 | 648 | 183 | 386 | 0 | 0 | 190 | 0 | 0 |
| Stage 1 | 394 | 394 | - | 252 | 252 | - | - | - | - | - | - | - |
| Stage 2 | 246 | 260 | - | 437 | 396 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.23 | 6.63 | 6.33 | 7.1 | 6.5 | 6.2 | 4.2 | - | - | 4.14 | - | - |
| Critical Hdwy Stg 1 | 6.23 | 5.63 | - | 6.1 | 5.5 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.23 | 5.63 | - | 6.1 | 5.5 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.617 | 4.117 | 3.417 | 3.5 | 4 | 3.3 | 2.29 | - | - | 2.236 | - | - |
| Pot Cap-1 Maneuver | 373 | 372 | 637 | 363 | 392 | 865 | 1130 | - | - | 1372 | - | - |
| Stage 1 | 609 | 587 | - | 757 | 702 | - | - | - | - | - | - | - |
| Stage 2 | 734 | 673 | - | 602 | 607 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | - | - | - |
| Mov Cap-1 Maneuver | 355 | 353 | 634 | 303 | 372 | 854 | 1129 | - | - | 1356 | - | - |
| Mov Cap-2 Maneuver | 355 | 353 | - | 303 | 372 | - | - | - | - | - | - | - |
| Stage 1 | 588 | 583 | - | 723 | 670 | - | - | - | - | - | - | - |
| Stage 2 | 699 | 643 | - | 522 | 603 | - | - | - | - | - | - | - |

| Approach | EB | | WB | | NB | | SB | |
|----------------------|------|--|------|--|-----|--|-----|--|
| HCM Control Delay, s | 12.3 | | 16.8 | | 1.4 | | 0.1 | |
| HCM LOS | B | | C | | | | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1WBLn1 | SBL | SBT | SBR |
|-----------------------|-------|-----|-----|------------|-------|-------|-----|
| Capacity (veh/h) | 1129 | - | - | 580 | 341 | 1356 | - |
| HCM Lane V/C Ratio | 0.031 | - | - | 0.147 | 0.109 | 0.004 | - |
| HCM Control Delay (s) | 8.3 | 0 | - | 12.3 | 16.8 | 7.7 | 0 |
| HCM Lane LOS | A | A | - | B | C | A | A |
| HCM 95th %tile Q(veh) | 0.1 | - | - | 0.5 | 0.4 | 0 | - |

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 3.3 | | | | | |
| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations | | ↶ | ↷ | | ↶ | ↷ |
| Traffic Vol, veh/h | 83 | 437 | 251 | 161 | 87 | 40 |
| Future Vol, veh/h | 83 | 437 | 251 | 161 | 87 | 40 |
| Conflicting Peds, #/hr | 18 | 0 | 0 | 18 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | 0 |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 100 | 100 | 100 | 100 | 100 | 100 |
| Heavy Vehicles, % | 5 | 5 | 9 | 9 | 0 | 0 |
| Mvmt Flow | 83 | 437 | 251 | 161 | 87 | 40 |

| Major/Minor | Major1 | Major2 | Minor2 | | |
|----------------------|--------|--------|--------|---|-----|
| Conflicting Flow All | 430 | 0 | - | 0 | 953 |
| Stage 1 | - | - | - | - | 350 |
| Stage 2 | - | - | - | - | 603 |
| Critical Hdwy | 4.15 | - | - | - | 6.4 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.4 |
| Critical Hdwy Stg 2 | - | - | - | - | 5.4 |
| Follow-up Hdwy | 2.245 | - | - | - | 3.5 |
| Pot Cap-1 Maneuver | 1114 | - | - | - | 290 |
| Stage 1 | - | - | - | - | 718 |
| Stage 2 | - | - | - | - | 550 |
| Platoon blocked, % | | - | - | - | |
| Mov Cap-1 Maneuver | 1095 | - | - | - | 252 |
| Mov Cap-2 Maneuver | - | - | - | - | 252 |
| Stage 1 | - | - | - | - | 635 |
| Stage 2 | - | - | - | - | 541 |

| Approach | EB | WB | SB |
|----------------------|-----|----|------|
| HCM Control Delay, s | 1.4 | 0 | 21.6 |
| HCM LOS | | | C |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 | SBLn2 |
|-----------------------|-------|-----|-----|-----|-------|-------|
| Capacity (veh/h) | 1095 | - | - | - | 252 | 686 |
| HCM Lane V/C Ratio | 0.076 | - | - | - | 0.345 | 0.058 |
| HCM Control Delay (s) | 8.6 | 0 | - | - | 26.6 | 10.6 |
| HCM Lane LOS | A | A | - | - | D | B |
| HCM 95th %tile Q(veh) | 0.2 | - | - | - | 1.5 | 0.2 |

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 3.8 | | | | | |
| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations | | ↕ | ↕ | | ↕ | ↕ |
| Traffic Vol, veh/h | 77 | 465 | 566 | 221 | 78 | 43 |
| Future Vol, veh/h | 77 | 465 | 566 | 221 | 78 | 43 |
| Conflicting Peds, #/hr | 18 | 0 | 0 | 18 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | 0 |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 100 | 100 | 100 | 100 | 100 | 100 |
| Heavy Vehicles, % | 5 | 5 | 9 | 9 | 0 | 0 |
| Mvmt Flow | 77 | 465 | 566 | 221 | 78 | 43 |

| Major/Minor | Major1 | Major2 | Minor2 | | |
|----------------------|--------|--------|--------|---|----------|
| Conflicting Flow All | 805 | 0 | - | 0 | 1314 695 |
| Stage 1 | - | - | - | - | 695 - |
| Stage 2 | - | - | - | - | 619 - |
| Critical Hdwy | 4.15 | - | - | - | 6.4 6.2 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.4 - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.4 - |
| Follow-up Hdwy | 2.245 | - | - | - | 3.5 3.3 |
| Pot Cap-1 Maneuver | 806 | - | - | - | 176 446 |
| Stage 1 | - | - | - | - | 499 - |
| Stage 2 | - | - | - | - | 541 - |
| Platoon blocked, % | | - | - | - | |
| Mov Cap-1 Maneuver | 792 | - | - | - | 148 438 |
| Mov Cap-2 Maneuver | - | - | - | - | 148 - |
| Stage 1 | - | - | - | - | 426 - |
| Stage 2 | - | - | - | - | 532 - |

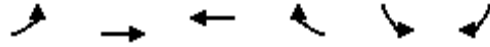
| Approach | EB | WB | SB |
|----------------------|-----|----|------|
| HCM Control Delay, s | 1.4 | 0 | 39.6 |
| HCM LOS | | | E |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 | SBLn2 |
|-----------------------|-------|-----|-----|-----|-------|-------|
| Capacity (veh/h) | 792 | - | - | - | 148 | 438 |
| HCM Lane V/C Ratio | 0.097 | - | - | - | 0.527 | 0.098 |
| HCM Control Delay (s) | 10 | 0 | - | - | 53.6 | 14.1 |
| HCM Lane LOS | B | A | - | - | F | B |
| HCM 95th %tile Q(veh) | 0.3 | - | - | - | 2.6 | 0.3 |

HCM 6th Signalized Intersection Summary

UWMC - NW

15: N 115th St & Central Site Access (Future) Future With-Project (2040) AM Peak Hour_Access Parking (west weighted)



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|------------------------------|------|------|------|------|------|------|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 129 | 406 | 364 | 250 | 148 | 63 |
| Future Volume (veh/h) | 129 | 406 | 364 | 250 | 148 | 63 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | | 0.97 | 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 | 1826 | 1826 | 1767 | 1767 | 1900 | 1900 |
| Adj Flow Rate, veh/h | 129 | 406 | 364 | 250 | 148 | 63 |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Percent Heavy Veh, % | 5 | 5 | 9 | 9 | 0 | 0 |
| Cap, veh/h | 479 | 1046 | 551 | 379 | 245 | 218 |
| Arrive On Green | 0.57 | 0.57 | 0.57 | 0.57 | 0.14 | 0.14 |
| Sat Flow, veh/h | 786 | 1826 | 962 | 661 | 1810 | 1610 |
| Grp Volume(v), veh/h | 129 | 406 | 0 | 614 | 148 | 63 |
| Grp Sat Flow(s),veh/h/ln | 786 | 1826 | 0 | 1622 | 1810 | 1610 |
| Q Serve(g_s), s | 4.2 | 3.8 | 0.0 | 8.0 | 2.4 | 1.1 |
| Cycle Q Clear(g_c), s | 12.2 | 3.8 | 0.0 | 8.0 | 2.4 | 1.1 |
| Prop In Lane | 1.00 | | | 0.41 | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 479 | 1046 | 0 | 930 | 245 | 218 |
| V/C Ratio(X) | 0.27 | 0.39 | 0.00 | 0.66 | 0.60 | 0.29 |
| Avail Cap(c_a), veh/h | 958 | 2159 | 0 | 1918 | 1436 | 1278 |
| HCM Platoon Ratio | 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 |
| Uniform Delay (d), s/veh | 8.7 | 3.6 | 0.0 | 4.5 | 12.6 | 12.0 |
| Incr Delay (d2), s/veh | 0.3 | 0.2 | 0.0 | 0.8 | 2.4 | 0.7 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.5 | 0.5 | 0.0 | 1.0 | 0.9 | 0.3 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d),s/veh | 9.0 | 3.9 | 0.0 | 5.3 | 15.0 | 12.7 |
| LnGrp LOS | A | A | A | A | B | B |
| Approach Vol, veh/h | | 535 | 614 | | 211 | |
| Approach Delay, s/veh | | 5.1 | 5.3 | | 14.3 | |
| Approach LOS | | A | A | | B | |
| Timer - Assigned Phs | | | | 4 | 6 | 8 |
| Phs Duration (G+Y+Rc), s | | | | 22.2 | 8.7 | 22.2 |
| Change Period (Y+Rc), s | | | | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | | | | 36.5 | 24.5 | 36.5 |
| Max Q Clear Time (g_c+I1), s | | | | 14.2 | 4.4 | 10.0 |
| Green Ext Time (p_c), s | | | | 3.5 | 0.6 | 4.9 |
| Intersection Summary | | | | | | |
| HCM 6th Ctrl Delay | | | 6.6 | | | |
| HCM 6th LOS | | | A | | | |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 2.1 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | | ↕ | | | ↕ | |
| Traffic Vol, veh/h | 5 | 5 | 55 | 11 | 5 | 10 | 70 | 444 | 37 | 5 | 167 | 5 |
| Future Vol, veh/h | 5 | 5 | 55 | 11 | 5 | 10 | 70 | 444 | 37 | 5 | 167 | 5 |
| Conflicting Peds, #/hr | 0 | 0 | 7 | 7 | 0 | 0 | 0 | 0 | 8 | 8 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| Heavy Vehicles, % | 9 | 9 | 9 | 5 | 5 | 5 | 2 | 2 | 2 | 6 | 6 | 6 |
| Mvmt Flow | 5 | 5 | 55 | 11 | 5 | 10 | 70 | 444 | 37 | 5 | 167 | 5 |

| Major/Minor | Minor2 | | Minor1 | | Major1 | | | Major2 | | | | |
|----------------------|--------|-------|--------|-------|--------|-------|-------|--------|---|-------|---|---|
| Conflicting Flow All | 790 | 809 | 177 | 828 | 793 | 471 | 172 | 0 | 0 | 489 | 0 | 0 |
| Stage 1 | 180 | 180 | - | 611 | 611 | - | - | - | - | - | - | - |
| Stage 2 | 610 | 629 | - | 217 | 182 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.19 | 6.59 | 6.29 | 7.15 | 6.55 | 6.25 | 4.12 | - | - | 4.16 | - | - |
| Critical Hdwy Stg 1 | 6.19 | 5.59 | - | 6.15 | 5.55 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.19 | 5.59 | - | 6.15 | 5.55 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.581 | 4.081 | 3.381 | 3.545 | 4.045 | 3.345 | 2.218 | - | - | 2.254 | - | - |
| Pot Cap-1 Maneuver | 300 | 306 | 848 | 287 | 318 | 587 | 1405 | - | - | 1054 | - | - |
| Stage 1 | 806 | 737 | - | 476 | 480 | - | - | - | - | - | - | - |
| Stage 2 | 470 | 465 | - | 779 | 743 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | - | - | - |
| Mov Cap-1 Maneuver | 275 | 282 | 842 | 247 | 293 | 583 | 1405 | - | - | 1046 | - | - |
| Mov Cap-2 Maneuver | 275 | 282 | - | 247 | 293 | - | - | - | - | - | - | - |
| Stage 1 | 751 | 733 | - | 440 | 444 | - | - | - | - | - | - | - |
| Stage 2 | 426 | 430 | - | 715 | 739 | - | - | - | - | - | - | - |

| Approach | EB | | WB | | NB | | SB | |
|----------------------|------|--|------|--|----|--|-----|--|
| HCM Control Delay, s | 11.2 | | 16.8 | | 1 | | 0.2 | |
| HCM LOS | B | | C | | | | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1WBLn1 | SBL | SBT | SBR |
|-----------------------|------|-----|-----|------------|-------|-------|-----|
| Capacity (veh/h) | 1405 | - | - | 642 | 330 | 1046 | - |
| HCM Lane V/C Ratio | 0.05 | - | - | 0.101 | 0.079 | 0.005 | - |
| HCM Control Delay (s) | 7.7 | 0 | - | 11.2 | 16.8 | 8.5 | 0 |
| HCM Lane LOS | A | A | - | B | C | A | A |
| HCM 95th %tile Q(veh) | 0.2 | - | - | 0.3 | 0.3 | 0 | - |

| Intersection | | | | | | |
|--------------------------|--------|--------|--------|------|-------|-------|
| Int Delay, s/veh | 6 | | | | | |
| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations | | ↕ | ↕ | | ↕ | ↕ |
| Traffic Vol, veh/h | 20 | 303 | 516 | 39 | 168 | 77 |
| Future Vol, veh/h | 20 | 303 | 516 | 39 | 168 | 77 |
| Conflicting Peds, #/hr | 23 | 0 | 0 | 23 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | 0 |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 100 | 100 | 100 | 100 | 100 | 100 |
| Heavy Vehicles, % | 2 | 2 | 6 | 6 | 0 | 0 |
| Mvmt Flow | 20 | 303 | 516 | 39 | 168 | 77 |
| Major/Minor | Major1 | Major2 | Minor2 | | | |
| Conflicting Flow All | 578 | 0 | - | 0 | 902 | 559 |
| Stage 1 | - | - | - | - | 559 | - |
| Stage 2 | - | - | - | - | 343 | - |
| Critical Hdwy | 4.12 | - | - | - | 6.4 | 6.2 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.4 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.4 | - |
| Follow-up Hdwy | 2.218 | - | - | - | 3.5 | 3.3 |
| Pot Cap-1 Maneuver | 996 | - | - | - | 311 | 532 |
| Stage 1 | - | - | - | - | 576 | - |
| Stage 2 | - | - | - | - | 723 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 974 | - | - | - | 290 | 520 |
| Mov Cap-2 Maneuver | - | - | - | - | 290 | - |
| Stage 1 | - | - | - | - | 550 | - |
| Stage 2 | - | - | - | - | 707 | - |
| Approach | EB | WB | SB | | | |
| HCM Control Delay, s | 0.5 | 0 | 26.9 | | | |
| HCM LOS | D | | | | | |
| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 | SBLn2 |
| Capacity (veh/h) | 974 | - | - | - | 290 | 520 |
| HCM Lane V/C Ratio | 0.021 | - | - | - | 0.579 | 0.148 |
| HCM Control Delay (s) | 8.8 | 0 | - | - | 33.2 | 13.1 |
| HCM Lane LOS | A | A | - | - | D | B |
| HCM 95th %tile Q(veh) | 0.1 | - | - | - | 3.4 | 0.5 |

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 7.8 | | | | | |
| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations | | ↔ | ↔ | | ↔ | ↔ |
| Traffic Vol, veh/h | 17 | 729 | 405 | 46 | 145 | 82 |
| Future Vol, veh/h | 17 | 729 | 405 | 46 | 145 | 82 |
| Conflicting Peds, #/hr | 23 | 0 | 0 | 23 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | 0 |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 100 | 100 | 100 | 100 | 100 | 100 |
| Heavy Vehicles, % | 2 | 2 | 6 | 6 | 0 | 0 |
| Mvmt Flow | 17 | 729 | 405 | 46 | 145 | 82 |

| Major/Minor | Major1 | Major2 | Minor2 | | |
|----------------------|--------|--------|--------|---|----------|
| Conflicting Flow All | 474 | 0 | - | 0 | 1214 451 |
| Stage 1 | - | - | - | - | 451 - |
| Stage 2 | - | - | - | - | 763 - |
| Critical Hdwy | 4.12 | - | - | - | 6.4 6.2 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.4 - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.4 - |
| Follow-up Hdwy | 2.218 | - | - | - | 3.5 3.3 |
| Pot Cap-1 Maneuver | 1088 | - | - | - | 202 613 |
| Stage 1 | - | - | - | - | 646 - |
| Stage 2 | - | - | - | - | 464 - |
| Platoon blocked, % | | - | - | - | |
| Mov Cap-1 Maneuver | 1064 | - | - | - | 188 600 |
| Mov Cap-2 Maneuver | - | - | - | - | 188 - |
| Stage 1 | - | - | - | - | 615 - |
| Stage 2 | - | - | - | - | 454 - |

| Approach | EB | WB | SB |
|----------------------|-----|----|------|
| HCM Control Delay, s | 0.2 | 0 | 48.4 |
| HCM LOS | | | E |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 | SBLn2 |
|-----------------------|-------|-----|-----|-----|-------|-------|
| Capacity (veh/h) | 1064 | - | - | - | 188 | 600 |
| HCM Lane V/C Ratio | 0.016 | - | - | - | 0.771 | 0.137 |
| HCM Control Delay (s) | 8.4 | 0 | - | - | 69.1 | 11.9 |
| HCM Lane LOS | A | A | - | - | F | B |
| HCM 95th %tile Q(veh) | 0 | - | - | - | 5.2 | 0.5 |

HCM 6th Signalized Intersection Summary

UWMC - NW

15: N 115th St & Central Site Access (Future) Future With-Project (2040) PM Peak Hour_Access Parking (west weighted)



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|------------------------------|------|------|------|------|------|------|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 31 | 459 | 435 | 57 | 286 | 124 |
| Future Volume (veh/h) | 31 | 459 | 435 | 57 | 286 | 124 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 0.99 | | | 0.98 | 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 | 1870 | 1870 | 1811 | 1811 | 1900 | 1900 |
| Adj Flow Rate, veh/h | 31 | 459 | 435 | 57 | 286 | 124 |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Percent Heavy Veh, % | 2 | 2 | 6 | 6 | 0 | 0 |
| Cap, veh/h | 456 | 829 | 694 | 91 | 441 | 392 |
| Arrive On Green | 0.44 | 0.44 | 0.44 | 0.44 | 0.24 | 0.24 |
| Sat Flow, veh/h | 899 | 1870 | 1565 | 205 | 1810 | 1610 |
| Grp Volume(v), veh/h | 31 | 459 | 0 | 492 | 286 | 124 |
| Grp Sat Flow(s),veh/h/ln | 899 | 1870 | 0 | 1770 | 1810 | 1610 |
| Q Serve(g_s), s | 0.8 | 5.2 | 0.0 | 6.2 | 4.1 | 1.8 |
| Cycle Q Clear(g_c), s | 7.0 | 5.2 | 0.0 | 6.2 | 4.1 | 1.8 |
| Prop In Lane | 1.00 | | | 0.12 | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 456 | 829 | 0 | 785 | 441 | 392 |
| V/C Ratio(X) | 0.07 | 0.55 | 0.00 | 0.63 | 0.65 | 0.32 |
| Avail Cap(c_a), veh/h | 1199 | 2373 | 0 | 2246 | 1541 | 1371 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(l) | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 8.8 | 5.9 | 0.0 | 6.2 | 9.8 | 8.9 |
| Incr Delay (d2), s/veh | 0.1 | 0.6 | 0.0 | 0.8 | 1.6 | 0.5 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.1 | 1.1 | 0.0 | 1.2 | 1.3 | 0.5 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d),s/veh | 8.9 | 6.5 | 0.0 | 7.0 | 11.4 | 9.4 |
| LnGrp LOS | A | A | A | A | B | A |
| Approach Vol, veh/h | | 490 | 492 | | 410 | |
| Approach Delay, s/veh | | 6.6 | 7.0 | | 10.8 | |
| Approach LOS | | A | A | | B | |
| Timer - Assigned Phs | | | | 4 | 6 | 8 |
| Phs Duration (G+Y+Rc), s | | | | 17.3 | 11.5 | 17.3 |
| Change Period (Y+Rc), s | | | | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | | | | 36.5 | 24.5 | 36.5 |
| Max Q Clear Time (g_c+I1), s | | | | 9.0 | 6.1 | 8.2 |
| Green Ext Time (p_c), s | | | | 3.3 | 1.2 | 3.5 |
| Intersection Summary | | | | | | |
| HCM 6th Ctrl Delay | | | 8.0 | | | |
| HCM 6th LOS | | | A | | | |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 4.1 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | | ↕ | | | ↕ | |
| Traffic Vol, veh/h | 21 | 9 | 81 | 18 | 14 | 5 | 58 | 141 | 11 | 5 | 337 | 37 |
| Future Vol, veh/h | 21 | 9 | 81 | 18 | 14 | 5 | 58 | 141 | 11 | 5 | 337 | 37 |
| Conflicting Peds, #/hr | 1 | 0 | 4 | 4 | 0 | 1 | 1 | 0 | 12 | 12 | 0 | 1 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 86 | 86 | 86 | 86 | 86 | 86 | 86 | 86 | 86 | 86 | 86 | 86 |
| Heavy Vehicles, % | 13 | 13 | 13 | 0 | 0 | 0 | 10 | 10 | 10 | 4 | 4 | 4 |
| Mvmt Flow | 24 | 10 | 94 | 21 | 16 | 6 | 67 | 164 | 13 | 6 | 392 | 43 |

| Major/Minor | Minor2 | | Minor1 | | Major1 | | Major2 | | | | | |
|----------------------|--------|-------|--------|-----|--------|-----|--------|---|---|-------|---|---|
| Conflicting Flow All | 744 | 750 | 419 | 799 | 765 | 184 | 436 | 0 | 0 | 189 | 0 | 0 |
| Stage 1 | 427 | 427 | - | 317 | 317 | - | - | - | - | - | - | - |
| Stage 2 | 317 | 323 | - | 482 | 448 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.23 | 6.63 | 6.33 | 7.1 | 6.5 | 6.2 | 4.2 | - | - | 4.14 | - | - |
| Critical Hdwy Stg 1 | 6.23 | 5.63 | - | 6.1 | 5.5 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.23 | 5.63 | - | 6.1 | 5.5 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.617 | 4.117 | 3.417 | 3.5 | 4 | 3.3 | 2.29 | - | - | 2.236 | - | - |
| Pot Cap-1 Maneuver | 317 | 327 | 611 | 306 | 336 | 864 | 1082 | - | - | 1373 | - | - |
| Stage 1 | 585 | 567 | - | 698 | 658 | - | - | - | - | - | - | - |
| Stage 2 | 671 | 631 | - | 569 | 576 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | - | - | - |
| Mov Cap-1 Maneuver | 284 | 299 | 608 | 234 | 307 | 853 | 1081 | - | - | 1357 | - | - |
| Mov Cap-2 Maneuver | 284 | 299 | - | 234 | 307 | - | - | - | - | - | - | - |
| Stage 1 | 544 | 563 | - | 642 | 606 | - | - | - | - | - | - | - |
| Stage 2 | 603 | 581 | - | 467 | 572 | - | - | - | - | - | - | - |

| Approach | EB | | WB | | NB | | SB | |
|----------------------|------|--|------|--|-----|--|-----|--|
| HCM Control Delay, s | 15.6 | | 19.7 | | 2.4 | | 0.1 | |
| HCM LOS | C | | C | | | | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1WBLn1 | SBL | SBT | SBR |
|-----------------------|-------|-----|-----|------------|-------|-------|-----|
| Capacity (veh/h) | 1081 | - | - | 468 | 288 | 1357 | - |
| HCM Lane V/C Ratio | 0.062 | - | - | 0.276 | 0.149 | 0.004 | - |
| HCM Control Delay (s) | 8.6 | 0 | - | 15.6 | 19.7 | 7.7 | 0 |
| HCM Lane LOS | A | A | - | C | C | A | A |
| HCM 95th %tile Q(veh) | 0.2 | - | - | 1.1 | 0.5 | 0 | - |

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 5.5 | | | | | |
| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations | | ↕ | ↕ | | ↕ | ↕ |
| Traffic Vol, veh/h | 118 | 349 | 196 | 206 | 107 | 66 |
| Future Vol, veh/h | 118 | 349 | 196 | 206 | 107 | 66 |
| Conflicting Peds, #/hr | 18 | 0 | 0 | 18 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | 0 |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 91 | 91 | 91 | 91 | 91 | 91 |
| Heavy Vehicles, % | 5 | 5 | 9 | 9 | 0 | 0 |
| Mvmt Flow | 130 | 384 | 215 | 226 | 118 | 73 |

| Major/Minor | Major1 | Major2 | Minor2 | | |
|----------------------|--------|--------|--------|---|-----|
| Conflicting Flow All | 459 | 0 | - | 0 | 990 |
| Stage 1 | - | - | - | - | 346 |
| Stage 2 | - | - | - | - | 644 |
| Critical Hdwy | 4.15 | - | - | - | 6.4 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.4 |
| Critical Hdwy Stg 2 | - | - | - | - | 5.4 |
| Follow-up Hdwy | 2.245 | - | - | - | 3.5 |
| Pot Cap-1 Maneuver | 1086 | - | - | - | 276 |
| Stage 1 | - | - | - | - | 721 |
| Stage 2 | - | - | - | - | 527 |
| Platoon blocked, % | | - | - | - | |
| Mov Cap-1 Maneuver | 1067 | - | - | - | 225 |
| Mov Cap-2 Maneuver | - | - | - | - | 225 |
| Stage 1 | - | - | - | - | 599 |
| Stage 2 | - | - | - | - | 518 |

| Approach | EB | WB | SB |
|----------------------|-----|----|------|
| HCM Control Delay, s | 2.2 | 0 | 27.2 |
| HCM LOS | | | D |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 | SBLn2 |
|-----------------------|-------|-----|-----|-----|-------|-------|
| Capacity (veh/h) | 1067 | - | - | - | 225 | 690 |
| HCM Lane V/C Ratio | 0.122 | - | - | - | 0.523 | 0.105 |
| HCM Control Delay (s) | 8.8 | 0 | - | - | 37.3 | 10.8 |
| HCM Lane LOS | A | A | - | - | E | B |
| HCM 95th %tile Q(veh) | 0.4 | - | - | - | 2.7 | 0.4 |

Intersection

Int Delay, s/veh 34

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|--------------------------|------|------|------|------|------|------|
| Lane Configurations | | ↕ | ↕ | | ↕ | ↕ |
| Traffic Vol, veh/h | 139 | 312 | 336 | 368 | 178 | 66 |
| Future Vol, veh/h | 139 | 312 | 336 | 368 | 178 | 66 |
| Conflicting Peds, #/hr | 18 | 0 | 0 | 18 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | 0 |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 91 | 91 | 91 | 91 | 91 | 91 |
| Heavy Vehicles, % | 5 | 5 | 9 | 9 | 0 | 0 |
| Mvmt Flow | 153 | 343 | 369 | 404 | 196 | 73 |

| Major/Minor | Major1 | Major2 | Minor2 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 791 | 0 | 0 |
| Stage 1 | - | - | - |
| Stage 2 | - | - | - |
| Critical Hdwy | 4.15 | - | - |
| Critical Hdwy Stg 1 | - | - | - |
| Critical Hdwy Stg 2 | - | - | - |
| Follow-up Hdwy | 2.245 | - | - |
| Pot Cap-1 Maneuver | 816 | - | - |
| Stage 1 | - | - | - |
| Stage 2 | - | - | - |
| Platoon blocked, % | - | - | - |
| Mov Cap-1 Maneuver | 802 | - | - |
| Mov Cap-2 Maneuver | - | - | - |
| Stage 1 | - | - | - |
| Stage 2 | - | - | - |

| Approach | EB | WB | SB |
|----------------------|-----|----|-----|
| HCM Control Delay, s | 3.2 | 0 | 189 |
| HCM LOS | | | F |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 | SBLn2 |
|-----------------------|------|-----|-----|-----|-------|-------|
| Capacity (veh/h) | 802 | - | - | - | 145 | 503 |
| HCM Lane V/C Ratio | 0.19 | - | - | - | 1.349 | 0.144 |
| HCM Control Delay (s) | 10.5 | 0 | - | - | 254.1 | 13.4 |
| HCM Lane LOS | B | A | - | - | F | B |
| HCM 95th %tile Q(veh) | 0.7 | - | - | - | 12.3 | 0.5 |

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection

Int Delay, s/veh 3.5

Movement EBT EBR WBL WBT NBL NBR

| | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 75 | 0 | 64 | 45 | 0 | 31 |
| Future Vol, veh/h | 75 | 0 | 64 | 45 | 0 | 31 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 91 | 91 | 91 | 91 | 91 | 91 |
| Heavy Vehicles, % | 13 | 13 | 0 | 0 | 0 | 0 |
| Mvmt Flow | 82 | 0 | 70 | 49 | 0 | 34 |

Major/Minor Major1 Major2 Minor1

| | | | | | | |
|----------------------|---|---|------|---|-----|-----|
| Conflicting Flow All | 0 | 0 | 82 | 0 | 271 | 82 |
| Stage 1 | - | - | - | - | 82 | - |
| Stage 2 | - | - | - | - | 189 | - |
| Critical Hdwy | - | - | 4.1 | - | 6.4 | 6.2 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.4 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.4 | - |
| Follow-up Hdwy | - | - | 2.2 | - | 3.5 | 3.3 |
| Pot Cap-1 Maneuver | - | - | 1528 | - | 723 | 983 |
| Stage 1 | - | - | - | - | 946 | - |
| Stage 2 | - | - | - | - | 848 | - |
| Platoon blocked, % | - | - | - | - | - | - |
| Mov Cap-1 Maneuver | - | - | 1528 | - | 689 | 983 |
| Mov Cap-2 Maneuver | - | - | - | - | 689 | - |
| Stage 1 | - | - | - | - | 946 | - |
| Stage 2 | - | - | - | - | 808 | - |

Approach EB WB NB

| | | | |
|----------------------|---|-----|-----|
| HCM Control Delay, s | 0 | 4.4 | 8.8 |
| HCM LOS | | | A |

Minor Lane/Major Mvmt NBLn1 EBT EBR WBL WBT

| | | | | | |
|-----------------------|-------|---|---|-------|---|
| Capacity (veh/h) | 983 | - | - | 1528 | - |
| HCM Lane V/C Ratio | 0.035 | - | - | 0.046 | - |
| HCM Control Delay (s) | 8.8 | - | - | 7.5 | 0 |
| HCM Lane LOS | A | - | - | A | A |
| HCM 95th %tile Q(veh) | 0.1 | - | - | 0.1 | - |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 4 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | | ↕ | | | ↕ | |
| Traffic Vol, veh/h | 37 | 14 | 73 | 9 | 7 | 10 | 77 | 397 | 23 | 5 | 149 | 14 |
| Future Vol, veh/h | 37 | 14 | 73 | 9 | 7 | 10 | 77 | 397 | 23 | 5 | 149 | 14 |
| Conflicting Peds, #/hr | 0 | 0 | 7 | 7 | 0 | 0 | 0 | 0 | 8 | 8 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 89 | 89 | 89 | 89 | 89 | 89 | 89 | 89 | 89 | 89 | 89 | 89 |
| Heavy Vehicles, % | 9 | 9 | 9 | 5 | 5 | 5 | 2 | 2 | 2 | 6 | 6 | 6 |
| Mvmt Flow | 42 | 16 | 82 | 10 | 8 | 11 | 87 | 446 | 26 | 6 | 167 | 16 |

| Major/Minor | Minor2 | | Minor1 | | Major1 | | | Major2 | | | | |
|----------------------|--------|-------|--------|-------|--------|-------|-------|--------|---|-------|---|---|
| Conflicting Flow All | 830 | 841 | 182 | 884 | 836 | 467 | 183 | 0 | 0 | 480 | 0 | 0 |
| Stage 1 | 187 | 187 | - | 641 | 641 | - | - | - | - | - | - | - |
| Stage 2 | 643 | 654 | - | 243 | 195 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.19 | 6.59 | 6.29 | 7.15 | 6.55 | 6.25 | 4.12 | - | - | 4.16 | - | - |
| Critical Hdwy Stg 1 | 6.19 | 5.59 | - | 6.15 | 5.55 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.19 | 5.59 | - | 6.15 | 5.55 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.581 | 4.081 | 3.381 | 3.545 | 4.045 | 3.345 | 2.218 | - | - | 2.254 | - | - |
| Pot Cap-1 Maneuver | 281 | 294 | 843 | 263 | 300 | 590 | 1392 | - | - | 1062 | - | - |
| Stage 1 | 799 | 732 | - | 458 | 465 | - | - | - | - | - | - | - |
| Stage 2 | 450 | 452 | - | 754 | 734 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | - | - | - |
| Mov Cap-1 Maneuver | 251 | 265 | 837 | 208 | 271 | 586 | 1392 | - | - | 1054 | - | - |
| Mov Cap-2 Maneuver | 251 | 265 | - | 208 | 271 | - | - | - | - | - | - | - |
| Stage 1 | 731 | 728 | - | 416 | 422 | - | - | - | - | - | - | - |
| Stage 2 | 396 | 410 | - | 657 | 730 | - | - | - | - | - | - | - |

| Approach | EB | | WB | | NB | | SB | |
|----------------------|------|--|------|--|-----|--|-----|--|
| HCM Control Delay, s | 17.3 | | 18.2 | | 1.2 | | 0.3 | |
| HCM LOS | C | | C | | | | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1WBLn1 | SBL | SBT | SBR |
|-----------------------|-------|-----|-----|------------|-------|-------|-----|
| Capacity (veh/h) | 1392 | - | - | 431 | 302 | 1054 | - |
| HCM Lane V/C Ratio | 0.062 | - | - | 0.323 | 0.097 | 0.005 | - |
| HCM Control Delay (s) | 7.8 | 0 | - | 17.3 | 18.2 | 8.4 | 0 |
| HCM Lane LOS | A | A | - | C | C | A | A |
| HCM 95th %tile Q(veh) | 0.2 | - | - | 1.4 | 0.3 | 0 | - |

Intersection

Int Delay, s/veh 5.5

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|--------------------------|------|------|------|------|------|------|
| Lane Configurations | | ↶ | ↷ | | ↶ | ↷ |
| Traffic Vol, veh/h | 20 | 276 | 440 | 38 | 142 | 96 |
| Future Vol, veh/h | 20 | 276 | 440 | 38 | 142 | 96 |
| Conflicting Peds, #/hr | 23 | 0 | 0 | 23 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | 0 |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 91 | 91 | 91 | 91 | 91 | 91 |
| Heavy Vehicles, % | 2 | 2 | 6 | 6 | 0 | 0 |
| Mvmt Flow | 22 | 303 | 484 | 42 | 156 | 105 |

| Major/Minor | Major1 | Major2 | Minor2 | | |
|----------------------|--------|--------|--------|-----|-----|
| Conflicting Flow All | 549 | 0 | 0 | 875 | 528 |
| Stage 1 | - | - | - | 528 | - |
| Stage 2 | - | - | - | 347 | - |
| Critical Hdwy | 4.12 | - | - | 6.4 | 6.2 |
| Critical Hdwy Stg 1 | - | - | - | 5.4 | - |
| Critical Hdwy Stg 2 | - | - | - | 5.4 | - |
| Follow-up Hdwy | 2.218 | - | - | 3.5 | 3.3 |
| Pot Cap-1 Maneuver | 1021 | - | - | 322 | 554 |
| Stage 1 | - | - | - | 596 | - |
| Stage 2 | - | - | - | 720 | - |
| Platoon blocked, % | - | - | - | - | - |
| Mov Cap-1 Maneuver | 999 | - | - | 300 | 542 |
| Mov Cap-2 Maneuver | - | - | - | 300 | - |
| Stage 1 | - | - | - | 568 | - |
| Stage 2 | - | - | - | 704 | - |

| Approach | EB | WB | SB |
|----------------------|-----|----|------|
| HCM Control Delay, s | 0.6 | 0 | 22.8 |
| HCM LOS | | | C |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 | SBLn2 |
|-----------------------|-------|-----|-----|-----|-------|-------|
| Capacity (veh/h) | 999 | - | - | - | 300 | 542 |
| HCM Lane V/C Ratio | 0.022 | - | - | - | 0.52 | 0.195 |
| HCM Control Delay (s) | 8.7 | 0 | - | - | 29.3 | 13.2 |
| HCM Lane LOS | A | A | - | - | D | B |
| HCM 95th %tile Q(veh) | 0.1 | - | - | - | 2.8 | 0.7 |

Intersection

Int Delay, s/veh 51.3

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|--------------------------|------|------|------|------|------|------|
| Lane Configurations | | ↕ | ↕ | | ↕ | ↕ |
| Traffic Vol, veh/h | 29 | 492 | 342 | 69 | 291 | 98 |
| Future Vol, veh/h | 29 | 492 | 342 | 69 | 291 | 98 |
| Conflicting Peds, #/hr | 23 | 0 | 0 | 23 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | 0 |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 91 | 91 | 91 | 91 | 91 | 91 |
| Heavy Vehicles, % | 2 | 2 | 6 | 6 | 0 | 0 |
| Mvmt Flow | 32 | 541 | 376 | 76 | 320 | 108 |

| Major/Minor | Major1 | Major2 | Minor2 |
|----------------------|--------|--------|-------------|
| Conflicting Flow All | 475 | 0 | 0 1042 437 |
| Stage 1 | - | - | - 437 - |
| Stage 2 | - | - | - 605 - |
| Critical Hdwy | 4.12 | - | - 6.4 6.2 |
| Critical Hdwy Stg 1 | - | - | - 5.4 - |
| Critical Hdwy Stg 2 | - | - | - 5.4 - |
| Follow-up Hdwy | 2.218 | - | - 3.5 3.3 |
| Pot Cap-1 Maneuver | 1087 | - | - ~ 257 624 |
| Stage 1 | - | - | - 655 - |
| Stage 2 | - | - | - 549 - |
| Platoon blocked, % | | - | - |
| Mov Cap-1 Maneuver | 1063 | - | - ~ 235 610 |
| Mov Cap-2 Maneuver | - | - | - ~ 235 - |
| Stage 1 | - | - | - 613 - |
| Stage 2 | - | - | - 537 - |

| Approach | EB | WB | SB |
|----------------------|-----|----|-------|
| HCM Control Delay, s | 0.5 | 0 | 173.6 |
| HCM LOS | | | F |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 | SBLn2 |
|-----------------------|------|-----|-----|-----|-------|-------|
| Capacity (veh/h) | 1063 | - | - | - | 235 | 610 |
| HCM Lane V/C Ratio | 0.03 | - | - | - | 1.361 | 0.177 |
| HCM Control Delay (s) | 8.5 | 0 | - | - | 227.9 | 12.2 |
| HCM Lane LOS | A | A | - | - | F | B |
| HCM 95th %tile Q(veh) | 0.1 | - | - | - | 17.5 | 0.6 |

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection

Int Delay, s/veh 3.3

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|--------------------------|------|------|------|------|------|------|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 55 | 0 | 17 | 75 | 0 | 64 |
| Future Vol, veh/h | 55 | 0 | 17 | 75 | 0 | 64 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 91 | 91 | 91 | 91 | 91 | 91 |
| Heavy Vehicles, % | 9 | 9 | 5 | 5 | 0 | 0 |
| Mvmt Flow | 60 | 0 | 19 | 82 | 0 | 70 |

| Major/Minor | Major1 | Major2 | Minor1 | Minor2 |
|----------------------|--------|--------|--------|--------|
| Conflicting Flow All | 0 | 0 | 60 | 180 |
| Stage 1 | - | - | - | 60 |
| Stage 2 | - | - | - | 120 |
| Critical Hdwy | - | - | 4.15 | 6.4 |
| Critical Hdwy Stg 1 | - | - | - | 5.4 |
| Critical Hdwy Stg 2 | - | - | - | 5.4 |
| Follow-up Hdwy | - | - | 2.245 | 3.5 |
| Pot Cap-1 Maneuver | - | - | 1525 | 814 |
| Stage 1 | - | - | - | 968 |
| Stage 2 | - | - | - | 910 |
| Platoon blocked, % | - | - | - | - |
| Mov Cap-1 Maneuver | - | - | 1525 | 803 |
| Mov Cap-2 Maneuver | - | - | - | 803 |
| Stage 1 | - | - | - | 968 |
| Stage 2 | - | - | - | 898 |

| Approach | EB | WB | NB |
|----------------------|----|-----|-----|
| HCM Control Delay, s | 0 | 1.4 | 8.8 |
| HCM LOS | | | A |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT |
|-----------------------|-------|-----|-----|-------|-----|
| Capacity (veh/h) | 1011 | - | - | 1525 | - |
| HCM Lane V/C Ratio | 0.07 | - | - | 0.012 | - |
| HCM Control Delay (s) | 8.8 | - | - | 7.4 | 0 |
| HCM Lane LOS | A | - | - | A | A |
| HCM 95th %tile Q(veh) | 0.2 | - | - | 0 | - |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 3.7 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | | ↕ | | | ↕ | |
| Traffic Vol, veh/h | 21 | 9 | 88 | 18 | 14 | 5 | 65 | 156 | 12 | 5 | 368 | 38 |
| Future Vol, veh/h | 21 | 9 | 88 | 18 | 14 | 5 | 65 | 156 | 12 | 5 | 368 | 38 |
| Conflicting Peds, #/hr | 1 | 0 | 4 | 4 | 0 | 1 | 1 | 0 | 12 | 12 | 0 | 1 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| Heavy Vehicles, % | 13 | 13 | 13 | 0 | 0 | 0 | 10 | 10 | 10 | 4 | 4 | 4 |
| Mvmt Flow | 21 | 9 | 88 | 18 | 14 | 5 | 65 | 156 | 12 | 5 | 368 | 38 |

| Major/Minor | Minor2 | | Minor1 | | Major1 | | | Major2 | | | | |
|----------------------|--------|-------|--------|-----|--------|-----|------|--------|---|-------|---|---|
| Conflicting Flow All | 701 | 708 | 392 | 754 | 721 | 175 | 407 | 0 | 0 | 180 | 0 | 0 |
| Stage 1 | 398 | 398 | - | 304 | 304 | - | - | - | - | - | - | - |
| Stage 2 | 303 | 310 | - | 450 | 417 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.23 | 6.63 | 6.33 | 7.1 | 6.5 | 6.2 | 4.2 | - | - | 4.14 | - | - |
| Critical Hdwy Stg 1 | 6.23 | 5.63 | - | 6.1 | 5.5 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.23 | 5.63 | - | 6.1 | 5.5 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.617 | 4.117 | 3.417 | 3.5 | 4 | 3.3 | 2.29 | - | - | 2.236 | - | - |
| Pot Cap-1 Maneuver | 339 | 346 | 633 | 328 | 356 | 874 | 1110 | - | - | 1384 | - | - |
| Stage 1 | 606 | 584 | - | 710 | 667 | - | - | - | - | - | - | - |
| Stage 2 | 683 | 640 | - | 592 | 595 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | - | - | - |
| Mov Cap-1 Maneuver | 308 | 318 | 630 | 257 | 327 | 863 | 1109 | - | - | 1368 | - | - |
| Mov Cap-2 Maneuver | 308 | 318 | - | 257 | 327 | - | - | - | - | - | - | - |
| Stage 1 | 566 | 580 | - | 656 | 617 | - | - | - | - | - | - | - |
| Stage 2 | 620 | 592 | - | 497 | 591 | - | - | - | - | - | - | - |

| Approach | EB | | WB | | NB | | SB | |
|----------------------|------|--|------|--|-----|--|-----|--|
| HCM Control Delay, s | 14.4 | | 18.1 | | 2.4 | | 0.1 | |
| HCM LOS | B | | C | | | | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1WBLn1 | SBL | SBT | SBR |
|-----------------------|-------|-----|-----|------------|-------|-------|-----|
| Capacity (veh/h) | 1109 | - | - | 500 | 312 | 1368 | - |
| HCM Lane V/C Ratio | 0.059 | - | - | 0.236 | 0.119 | 0.004 | - |
| HCM Control Delay (s) | 8.4 | 0 | - | 14.4 | 18.1 | 7.6 | 0 |
| HCM Lane LOS | A | A | - | B | C | A | A |
| HCM 95th %tile Q(veh) | 0.2 | - | - | 0.9 | 0.4 | 0 | - |

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 4.7 | | | | | |
| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations | | ↶ | ↷ | | ↶ | ↷ |
| Traffic Vol, veh/h | 120 | 377 | 212 | 210 | 108 | 68 |
| Future Vol, veh/h | 120 | 377 | 212 | 210 | 108 | 68 |
| Conflicting Peds, #/hr | 18 | 0 | 0 | 18 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | 0 |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 100 | 100 | 100 | 100 | 100 | 100 |
| Heavy Vehicles, % | 5 | 5 | 9 | 9 | 0 | 0 |
| Mvmt Flow | 120 | 377 | 212 | 210 | 108 | 68 |

| Major/Minor | Major1 | Major2 | Minor2 | | |
|----------------------|--------|--------|--------|---|---------|
| Conflicting Flow All | 440 | 0 | - | 0 | 952 335 |
| Stage 1 | - | - | - | - | 335 - |
| Stage 2 | - | - | - | - | 617 - |
| Critical Hdwy | 4.15 | - | - | - | 6.4 6.2 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.4 - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.4 - |
| Follow-up Hdwy | 2.245 | - | - | - | 3.5 3.3 |
| Pot Cap-1 Maneuver | 1104 | - | - | - | 290 712 |
| Stage 1 | - | - | - | - | 729 - |
| Stage 2 | - | - | - | - | 542 - |
| Platoon blocked, % | | - | - | - | |
| Mov Cap-1 Maneuver | 1085 | - | - | - | 241 700 |
| Mov Cap-2 Maneuver | - | - | - | - | 241 - |
| Stage 1 | - | - | - | - | 616 - |
| Stage 2 | - | - | - | - | 533 - |

| Approach | EB | WB | SB |
|----------------------|-----|----|------|
| HCM Control Delay, s | 2.1 | 0 | 23.5 |
| HCM LOS | | | C |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 | SBLn2 |
|-----------------------|-------|-----|-----|-----|-------|-------|
| Capacity (veh/h) | 1085 | - | - | - | 241 | 700 |
| HCM Lane V/C Ratio | 0.111 | - | - | - | 0.448 | 0.097 |
| HCM Control Delay (s) | 8.7 | 0 | - | - | 31.5 | 10.7 |
| HCM Lane LOS | A | A | - | - | D | B |
| HCM 95th %tile Q(veh) | 0.4 | - | - | - | 2.2 | 0.3 |

Intersection

Int Delay, s/veh 22.7

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|--------------------------|------|------|------|------|------|------|
| Lane Configurations | | ↕ | ↕ | | ↕ | ↕ |
| Traffic Vol, veh/h | 142 | 338 | 361 | 376 | 182 | 66 |
| Future Vol, veh/h | 142 | 338 | 361 | 376 | 182 | 66 |
| Conflicting Peds, #/hr | 18 | 0 | 0 | 18 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | 0 |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 100 | 100 | 100 | 100 | 100 | 100 |
| Heavy Vehicles, % | 5 | 5 | 9 | 9 | 0 | 0 |
| Mvmt Flow | 142 | 338 | 361 | 376 | 182 | 66 |

| Major/Minor | Major1 | Major2 | Minor2 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 755 | 0 | 0 |
| Stage 1 | - | - | - |
| Stage 2 | - | - | - |
| Critical Hdwy | 4.15 | - | - |
| Critical Hdwy Stg 1 | - | - | - |
| Critical Hdwy Stg 2 | - | - | - |
| Follow-up Hdwy | 2.245 | - | - |
| Pot Cap-1 Maneuver | 842 | - | - |
| Stage 1 | - | - | - |
| Stage 2 | - | - | - |
| Platoon blocked, % | - | - | - |
| Mov Cap-1 Maneuver | 828 | - | - |
| Mov Cap-2 Maneuver | - | - | - |
| Stage 1 | - | - | - |
| Stage 2 | - | - | - |

| Approach | EB | WB | SB |
|----------------------|----|----|-------|
| HCM Control Delay, s | 3 | 0 | 128.3 |
| HCM LOS | | | F |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 | SBLn2 |
|-----------------------|-------|-----|-----|-----|-------|-------|
| Capacity (veh/h) | 828 | - | - | - | 160 | 518 |
| HCM Lane V/C Ratio | 0.171 | - | - | - | 1.138 | 0.127 |
| HCM Control Delay (s) | 10.2 | 0 | - | - | 170.1 | 13 |
| HCM Lane LOS | B | A | - | - | F | B |
| HCM 95th %tile Q(veh) | 0.6 | - | - | - | 9.8 | 0.4 |

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

| Intersection | | | | | | |
|--------------------------|--------|--------|--------|-------|------|------|
| Int Delay, s/veh | 3.5 | | | | | |
| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
| Lane Configurations | ↔ | | ↔ | | ↔ | |
| Traffic Vol, veh/h | 80 | 0 | 67 | 50 | 0 | 33 |
| Future Vol, veh/h | 80 | 0 | 67 | 50 | 0 | 33 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 100 | 100 | 100 | 100 | 100 | 100 |
| Heavy Vehicles, % | 13 | 13 | 0 | 0 | 0 | 0 |
| Mvmt Flow | 80 | 0 | 67 | 50 | 0 | 33 |
| Major/Minor | Major1 | Major2 | Minor1 | | | |
| Conflicting Flow All | 0 | 0 | 80 | 0 | 264 | 80 |
| Stage 1 | - | - | - | - | 80 | - |
| Stage 2 | - | - | - | - | 184 | - |
| Critical Hdwy | - | - | 4.1 | - | 6.4 | 6.2 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.4 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.4 | - |
| Follow-up Hdwy | - | - | 2.2 | - | 3.5 | 3.3 |
| Pot Cap-1 Maneuver | - | - | 1531 | - | 729 | 986 |
| Stage 1 | - | - | - | - | 948 | - |
| Stage 2 | - | - | - | - | 852 | - |
| Platoon blocked, % | - | - | - | - | - | - |
| Mov Cap-1 Maneuver | - | - | 1531 | - | 696 | 986 |
| Mov Cap-2 Maneuver | - | - | - | - | 696 | - |
| Stage 1 | - | - | - | - | 948 | - |
| Stage 2 | - | - | - | - | 814 | - |
| Approach | EB | WB | NB | | | |
| HCM Control Delay, s | 0 | 4.3 | 8.8 | | | |
| HCM LOS | | | A | | | |
| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT | |
| Capacity (veh/h) | 986 | - | - | 1531 | - | |
| HCM Lane V/C Ratio | 0.033 | - | - | 0.044 | - | |
| HCM Control Delay (s) | 8.8 | - | - | 7.5 | 0 | |
| HCM Lane LOS | A | - | - | A | A | |
| HCM 95th %tile Q(veh) | 0.1 | - | - | 0.1 | - | |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 3.6 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | | ↕ | | | ↕ | |
| Traffic Vol, veh/h | 38 | 14 | 79 | 9 | 7 | 10 | 78 | 433 | 28 | 5 | 159 | 14 |
| Future Vol, veh/h | 38 | 14 | 79 | 9 | 7 | 10 | 78 | 433 | 28 | 5 | 159 | 14 |
| Conflicting Peds, #/hr | 0 | 0 | 7 | 7 | 0 | 0 | 0 | 0 | 8 | 8 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| Heavy Vehicles, % | 9 | 9 | 9 | 5 | 5 | 5 | 2 | 2 | 2 | 6 | 6 | 6 |
| Mvmt Flow | 38 | 14 | 79 | 9 | 7 | 10 | 78 | 433 | 28 | 5 | 159 | 14 |

| Major/Minor | Minor2 | | Minor1 | | Major1 | | Major2 | | | | | |
|----------------------|--------|-------|--------|-------|--------|-------|--------|---|---|-------|---|---|
| Conflicting Flow All | 788 | 801 | 173 | 841 | 794 | 455 | 173 | 0 | 0 | 469 | 0 | 0 |
| Stage 1 | 176 | 176 | - | 611 | 611 | - | - | - | - | - | - | - |
| Stage 2 | 612 | 625 | - | 230 | 183 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.19 | 6.59 | 6.29 | 7.15 | 6.55 | 6.25 | 4.12 | - | - | 4.16 | - | - |
| Critical Hdwy Stg 1 | 6.19 | 5.59 | - | 6.15 | 5.55 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.19 | 5.59 | - | 6.15 | 5.55 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.581 | 4.081 | 3.381 | 3.545 | 4.045 | 3.345 | 2.218 | - | - | 2.254 | - | - |
| Pot Cap-1 Maneuver | 301 | 310 | 853 | 281 | 317 | 599 | 1404 | - | - | 1072 | - | - |
| Stage 1 | 810 | 740 | - | 476 | 480 | - | - | - | - | - | - | - |
| Stage 2 | 469 | 467 | - | 766 | 743 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | - | - | - |
| Mov Cap-1 Maneuver | 273 | 283 | 847 | 227 | 289 | 594 | 1404 | - | - | 1064 | - | - |
| Mov Cap-2 Maneuver | 273 | 283 | - | 227 | 289 | - | - | - | - | - | - | - |
| Stage 1 | 749 | 736 | - | 437 | 441 | - | - | - | - | - | - | - |
| Stage 2 | 420 | 429 | - | 673 | 739 | - | - | - | - | - | - | - |

| Approach | EB | | WB | | NB | | SB | |
|----------------------|------|--|------|--|-----|--|-----|--|
| HCM Control Delay, s | 15.8 | | 17.2 | | 1.1 | | 0.2 | |
| HCM LOS | C | | C | | | | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1WBLn1 | SBL | SBT | SBR |
|-----------------------|-------|-----|-----|------------|-------|-------|-----|
| Capacity (veh/h) | 1404 | - | - | 465 | 322 | 1064 | - |
| HCM Lane V/C Ratio | 0.056 | - | - | 0.282 | 0.081 | 0.005 | - |
| HCM Control Delay (s) | 7.7 | 0 | - | 15.8 | 17.2 | 8.4 | 0 |
| HCM Lane LOS | A | A | - | C | C | A | A |
| HCM 95th %tile Q(veh) | 0.2 | - | - | 1.1 | 0.3 | 0 | - |

Intersection

Int Delay, s/veh 7.8

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|--------------------------|------|------|------|------|------|------|
| Lane Configurations | | ↕ | ↕ | | ↕ | ↕ |
| Traffic Vol, veh/h | 27 | 288 | 439 | 46 | 203 | 131 |
| Future Vol, veh/h | 27 | 288 | 439 | 46 | 203 | 131 |
| Conflicting Peds, #/hr | 23 | 0 | 0 | 23 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | 0 |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 100 | 100 | 100 | 100 | 100 | 100 |
| Heavy Vehicles, % | 2 | 2 | 6 | 6 | 0 | 0 |
| Mvmt Flow | 27 | 288 | 439 | 46 | 203 | 131 |

| Major/Minor | Major1 | Major2 | Minor2 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 508 | 0 | 0 |
| Stage 1 | - | - | - |
| Stage 2 | - | - | - |
| Critical Hdwy | 4.12 | - | - |
| Critical Hdwy Stg 1 | - | - | - |
| Critical Hdwy Stg 2 | - | - | - |
| Follow-up Hdwy | 2.218 | - | - |
| Pot Cap-1 Maneuver | 1057 | - | - |
| Stage 1 | - | - | - |
| Stage 2 | - | - | - |
| Platoon blocked, % | - | - | - |
| Mov Cap-1 Maneuver | 1034 | - | - |
| Mov Cap-2 Maneuver | - | - | - |
| Stage 1 | - | - | - |
| Stage 2 | - | - | - |

| Approach | EB | WB | SB |
|----------------------|-----|----|------|
| HCM Control Delay, s | 0.7 | 0 | 25.9 |
| HCM LOS | | | D |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 | SBLn2 |
|-----------------------|-------|-----|-----|-----|-------|-------|
| Capacity (veh/h) | 1034 | - | - | - | 319 | 573 |
| HCM Lane V/C Ratio | 0.026 | - | - | - | 0.636 | 0.229 |
| HCM Control Delay (s) | 8.6 | 0 | - | - | 34.1 | 13.1 |
| HCM Lane LOS | A | A | - | - | D | B |
| HCM 95th %tile Q(veh) | 0.1 | - | - | - | 4.1 | 0.9 |

Intersection

Int Delay, s/veh 53.6

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|--------------------------|------|------|------|------|------|------|
| Lane Configurations | | ↕ | ↕ | | ↕ | ↕ |
| Traffic Vol, veh/h | 33 | 473 | 356 | 83 | 351 | 124 |
| Future Vol, veh/h | 33 | 473 | 356 | 83 | 351 | 124 |
| Conflicting Peds, #/hr | 23 | 0 | 0 | 23 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | 0 |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 100 | 100 | 100 | 100 | 100 | 100 |
| Heavy Vehicles, % | 2 | 2 | 6 | 6 | 0 | 0 |
| Mvmt Flow | 33 | 473 | 356 | 83 | 351 | 124 |

| Major/Minor | Major1 | Major2 | Minor2 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 462 | 0 | 0 |
| Stage 1 | - | - | - |
| Stage 2 | - | - | - |
| Critical Hdwy | 4.12 | - | - |
| Critical Hdwy Stg 1 | - | - | - |
| Critical Hdwy Stg 2 | - | - | - |
| Follow-up Hdwy | 2.218 | - | - |
| Pot Cap-1 Maneuver | 1099 | - | - |
| Stage 1 | - | - | - |
| Stage 2 | - | - | - |
| Platoon blocked, % | - | - | - |
| Mov Cap-1 Maneuver | 1075 | - | - |
| Mov Cap-2 Maneuver | - | - | - |
| Stage 1 | - | - | - |
| Stage 2 | - | - | - |

| Approach | EB | WB | SB |
|----------------------|-----|----|-------|
| HCM Control Delay, s | 0.6 | 0 | 159.7 |
| HCM LOS | | | F |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 | SBLn2 |
|-----------------------|-------|-----|-----|-----|-------|-------|
| Capacity (veh/h) | 1075 | - | - | - | 263 | 623 |
| HCM Lane V/C Ratio | 0.031 | - | - | - | 1.335 | 0.199 |
| HCM Control Delay (s) | 8.5 | 0 | - | - | 211.8 | 12.2 |
| HCM Lane LOS | A | A | - | - | F | B |
| HCM 95th %tile Q(veh) | 0.1 | - | - | - | 18.2 | 0.7 |

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 4.1 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | | ↕ | | | ↕ | |
| Traffic Vol, veh/h | 21 | 9 | 81 | 18 | 14 | 5 | 58 | 141 | 11 | 5 | 337 | 37 |
| Future Vol, veh/h | 21 | 9 | 81 | 18 | 14 | 5 | 58 | 141 | 11 | 5 | 337 | 37 |
| Conflicting Peds, #/hr | 1 | 0 | 4 | 4 | 0 | 1 | 1 | 0 | 12 | 12 | 0 | 1 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 86 | 86 | 86 | 86 | 86 | 86 | 86 | 86 | 86 | 86 | 86 | 86 |
| Heavy Vehicles, % | 13 | 13 | 13 | 0 | 0 | 0 | 10 | 10 | 10 | 4 | 4 | 4 |
| Mvmt Flow | 24 | 10 | 94 | 21 | 16 | 6 | 67 | 164 | 13 | 6 | 392 | 43 |

| Major/Minor | Minor2 | | Minor1 | | Major1 | | Major2 | | | | | |
|----------------------|--------|-------|--------|-----|--------|-----|--------|---|---|-------|---|---|
| Conflicting Flow All | 744 | 750 | 419 | 799 | 765 | 184 | 436 | 0 | 0 | 189 | 0 | 0 |
| Stage 1 | 427 | 427 | - | 317 | 317 | - | - | - | - | - | - | - |
| Stage 2 | 317 | 323 | - | 482 | 448 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.23 | 6.63 | 6.33 | 7.1 | 6.5 | 6.2 | 4.2 | - | - | 4.14 | - | - |
| Critical Hdwy Stg 1 | 6.23 | 5.63 | - | 6.1 | 5.5 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.23 | 5.63 | - | 6.1 | 5.5 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.617 | 4.117 | 3.417 | 3.5 | 4 | 3.3 | 2.29 | - | - | 2.236 | - | - |
| Pot Cap-1 Maneuver | 317 | 327 | 611 | 306 | 336 | 864 | 1082 | - | - | 1373 | - | - |
| Stage 1 | 585 | 567 | - | 698 | 658 | - | - | - | - | - | - | - |
| Stage 2 | 671 | 631 | - | 569 | 576 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | - | - | - |
| Mov Cap-1 Maneuver | 284 | 299 | 608 | 234 | 307 | 853 | 1081 | - | - | 1357 | - | - |
| Mov Cap-2 Maneuver | 284 | 299 | - | 234 | 307 | - | - | - | - | - | - | - |
| Stage 1 | 544 | 563 | - | 642 | 606 | - | - | - | - | - | - | - |
| Stage 2 | 603 | 581 | - | 467 | 572 | - | - | - | - | - | - | - |

| Approach | EB | | WB | | NB | | SB | |
|----------------------|------|--|------|--|-----|--|-----|--|
| HCM Control Delay, s | 15.6 | | 19.7 | | 2.4 | | 0.1 | |
| HCM LOS | C | | C | | | | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1WBLn1 | SBL | SBT | SBR |
|-----------------------|-------|-----|-----|------------|-------|-------|-----|
| Capacity (veh/h) | 1081 | - | - | 468 | 288 | 1357 | - |
| HCM Lane V/C Ratio | 0.062 | - | - | 0.276 | 0.149 | 0.004 | - |
| HCM Control Delay (s) | 8.6 | 0 | - | 15.6 | 19.7 | 7.7 | 0 |
| HCM Lane LOS | A | A | - | C | C | A | A |
| HCM 95th %tile Q(veh) | 0.2 | - | - | 1.1 | 0.5 | 0 | - |

Intersection

Int Delay, s/veh 11.8

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|--------------------------|------|------|------|------|------|------|
| Lane Configurations | | ↕ | ↕ | | ↕ | ↕ |
| Traffic Vol, veh/h | 118 | 349 | 196 | 291 | 159 | 66 |
| Future Vol, veh/h | 118 | 349 | 196 | 291 | 159 | 66 |
| Conflicting Peds, #/hr | 18 | 0 | 0 | 18 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | 0 |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 91 | 91 | 91 | 91 | 91 | 91 |
| Heavy Vehicles, % | 5 | 5 | 9 | 9 | 0 | 0 |
| Mvmt Flow | 130 | 384 | 215 | 320 | 175 | 73 |

| Major/Minor | Major1 | Major2 | Minor2 |
|----------------------|--------|--------|------------|
| Conflicting Flow All | 553 | 0 | 0 1037 393 |
| Stage 1 | - | - | - 393 - |
| Stage 2 | - | - | - 644 - |
| Critical Hdwy | 4.15 | - | - 6.4 6.2 |
| Critical Hdwy Stg 1 | - | - | - 5.4 - |
| Critical Hdwy Stg 2 | - | - | - 5.4 - |
| Follow-up Hdwy | 2.245 | - | - 3.5 3.3 |
| Pot Cap-1 Maneuver | 1002 | - | - 258 660 |
| Stage 1 | - | - | - 686 - |
| Stage 2 | - | - | - 527 - |
| Platoon blocked, % | | - | - |
| Mov Cap-1 Maneuver | 985 | - | - 207 649 |
| Mov Cap-2 Maneuver | - | - | - 207 - |
| Stage 1 | - | - | - 561 - |
| Stage 2 | - | - | - 518 - |

| Approach | EB | WB | SB |
|----------------------|-----|----|------|
| HCM Control Delay, s | 2.3 | 0 | 56.9 |
| HCM LOS | | | F |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 | SBLn2 |
|-----------------------|-------|-----|-----|-----|-------|-------|
| Capacity (veh/h) | 985 | - | - | - | 207 | 649 |
| HCM Lane V/C Ratio | 0.132 | - | - | - | 0.844 | 0.112 |
| HCM Control Delay (s) | 9.2 | 0 | - | - | 75.8 | 11.2 |
| HCM Lane LOS | A | A | - | - | F | B |
| HCM 95th %tile Q(veh) | 0.5 | - | - | - | 6.3 | 0.4 |

Intersection

Int Delay, s/veh 18.6

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|--------------------------|------|------|------|------|------|------|
| Lane Configurations | | ↕ | ↕ | | ↕ | ↕ |
| Traffic Vol, veh/h | 139 | 364 | 421 | 283 | 126 | 66 |
| Future Vol, veh/h | 139 | 364 | 421 | 283 | 126 | 66 |
| Conflicting Peds, #/hr | 18 | 0 | 0 | 18 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | 0 |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 91 | 91 | 91 | 91 | 91 | 91 |
| Heavy Vehicles, % | 5 | 5 | 9 | 9 | 0 | 0 |
| Mvmt Flow | 153 | 400 | 463 | 311 | 138 | 73 |

| Major/Minor | Major1 | Major2 | Minor2 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 792 | 0 | 0 |
| Stage 1 | - | - | - |
| Stage 2 | - | - | - |
| Critical Hdwy | 4.15 | - | - |
| Critical Hdwy Stg 1 | - | - | - |
| Critical Hdwy Stg 2 | - | - | - |
| Follow-up Hdwy | 2.245 | - | - |
| Pot Cap-1 Maneuver | 815 | - | - |
| Stage 1 | - | - | - |
| Stage 2 | - | - | - |
| Platoon blocked, % | | - | - |
| Mov Cap-1 Maneuver | 801 | - | - |
| Mov Cap-2 Maneuver | - | - | - |
| Stage 1 | - | - | - |
| Stage 2 | - | - | - |

| Approach | EB | WB | SB |
|----------------------|-----|----|-------|
| HCM Control Delay, s | 2.9 | 0 | 127.9 |
| HCM LOS | | | F |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 | SBLn2 |
|-----------------------|-------|-----|-----|-----|-------|-------|
| Capacity (veh/h) | 801 | - | - | - | 123 | 473 |
| HCM Lane V/C Ratio | 0.191 | - | - | - | 1.126 | 0.153 |
| HCM Control Delay (s) | 10.6 | 0 | - | - | 187.6 | 14 |
| HCM Lane LOS | B | A | - | - | F | B |
| HCM 95th %tile Q(veh) | 0.7 | - | - | - | 8.2 | 0.5 |

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

| Intersection | | | | | | |
|--------------------------|--------|--------|--------|-------|------|------|
| Int Delay, s/veh | 3.5 | | | | | |
| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 75 | 0 | 64 | 45 | 0 | 31 |
| Future Vol, veh/h | 75 | 0 | 64 | 45 | 0 | 31 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 91 | 91 | 91 | 91 | 91 | 91 |
| Heavy Vehicles, % | 13 | 13 | 0 | 0 | 0 | 0 |
| Mvmt Flow | 82 | 0 | 70 | 49 | 0 | 34 |
| Major/Minor | Major1 | Major2 | Minor1 | | | |
| Conflicting Flow All | 0 | 0 | 82 | 0 | 271 | 82 |
| Stage 1 | - | - | - | - | 82 | - |
| Stage 2 | - | - | - | - | 189 | - |
| Critical Hdwy | - | - | 4.1 | - | 6.4 | 6.2 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.4 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.4 | - |
| Follow-up Hdwy | - | - | 2.2 | - | 3.5 | 3.3 |
| Pot Cap-1 Maneuver | - | - | 1528 | - | 723 | 983 |
| Stage 1 | - | - | - | - | 946 | - |
| Stage 2 | - | - | - | - | 848 | - |
| Platoon blocked, % | - | - | - | - | - | - |
| Mov Cap-1 Maneuver | - | - | 1528 | - | 689 | 983 |
| Mov Cap-2 Maneuver | - | - | - | - | 689 | - |
| Stage 1 | - | - | - | - | 946 | - |
| Stage 2 | - | - | - | - | 808 | - |
| Approach | EB | WB | NB | | | |
| HCM Control Delay, s | 0 | 4.4 | 8.8 | | | |
| HCM LOS | | | | A | | |
| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT | |
| Capacity (veh/h) | 983 | - | - | 1528 | - | |
| HCM Lane V/C Ratio | 0.035 | - | - | 0.046 | - | |
| HCM Control Delay (s) | 8.8 | - | - | 7.5 | 0 | |
| HCM Lane LOS | A | - | - | A | A | |
| HCM 95th %tile Q(veh) | 0.1 | - | - | 0.1 | - | |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 4 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | | ↕ | | | ↕ | |
| Traffic Vol, veh/h | 37 | 14 | 73 | 9 | 7 | 10 | 77 | 397 | 23 | 5 | 149 | 14 |
| Future Vol, veh/h | 37 | 14 | 73 | 9 | 7 | 10 | 77 | 397 | 23 | 5 | 149 | 14 |
| Conflicting Peds, #/hr | 0 | 0 | 7 | 7 | 0 | 0 | 0 | 0 | 8 | 8 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 89 | 89 | 89 | 89 | 89 | 89 | 89 | 89 | 89 | 89 | 89 | 89 |
| Heavy Vehicles, % | 9 | 9 | 9 | 5 | 5 | 5 | 2 | 2 | 2 | 6 | 6 | 6 |
| Mvmt Flow | 42 | 16 | 82 | 10 | 8 | 11 | 87 | 446 | 26 | 6 | 167 | 16 |

| Major/Minor | Minor2 | | Minor1 | | Major1 | | | Major2 | | | | |
|----------------------|--------|-------|--------|-------|--------|-------|-------|--------|---|-------|---|---|
| Conflicting Flow All | 830 | 841 | 182 | 884 | 836 | 467 | 183 | 0 | 0 | 480 | 0 | 0 |
| Stage 1 | 187 | 187 | - | 641 | 641 | - | - | - | - | - | - | - |
| Stage 2 | 643 | 654 | - | 243 | 195 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.19 | 6.59 | 6.29 | 7.15 | 6.55 | 6.25 | 4.12 | - | - | 4.16 | - | - |
| Critical Hdwy Stg 1 | 6.19 | 5.59 | - | 6.15 | 5.55 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.19 | 5.59 | - | 6.15 | 5.55 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.581 | 4.081 | 3.381 | 3.545 | 4.045 | 3.345 | 2.218 | - | - | 2.254 | - | - |
| Pot Cap-1 Maneuver | 281 | 294 | 843 | 263 | 300 | 590 | 1392 | - | - | 1062 | - | - |
| Stage 1 | 799 | 732 | - | 458 | 465 | - | - | - | - | - | - | - |
| Stage 2 | 450 | 452 | - | 754 | 734 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | - | - | - |
| Mov Cap-1 Maneuver | 251 | 265 | 837 | 208 | 271 | 586 | 1392 | - | - | 1054 | - | - |
| Mov Cap-2 Maneuver | 251 | 265 | - | 208 | 271 | - | - | - | - | - | - | - |
| Stage 1 | 731 | 728 | - | 416 | 422 | - | - | - | - | - | - | - |
| Stage 2 | 396 | 410 | - | 657 | 730 | - | - | - | - | - | - | - |

| Approach | EB | | WB | | NB | | SB | |
|----------------------|------|--|------|--|-----|--|-----|--|
| HCM Control Delay, s | 17.3 | | 18.2 | | 1.2 | | 0.3 | |
| HCM LOS | C | | C | | | | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1WBLn1 | SBL | SBT | SBR |
|-----------------------|-------|-----|-----|------------|-------|-------|-----|
| Capacity (veh/h) | 1392 | - | - | 431 | 302 | 1054 | - |
| HCM Lane V/C Ratio | 0.062 | - | - | 0.323 | 0.097 | 0.005 | - |
| HCM Control Delay (s) | 7.8 | 0 | - | 17.3 | 18.2 | 8.4 | 0 |
| HCM Lane LOS | A | A | - | C | C | A | A |
| HCM 95th %tile Q(veh) | 0.2 | - | - | 1.4 | 0.3 | 0 | - |

Intersection

Int Delay, s/veh 32.4

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|--------------------------|------|------|------|------|------|------|
| Lane Configurations | | ↕ | ↕ | | ↕ | ↕ |
| Traffic Vol, veh/h | 27 | 268 | 407 | 68 | 304 | 128 |
| Future Vol, veh/h | 27 | 268 | 407 | 68 | 304 | 128 |
| Conflicting Peds, #/hr | 23 | 0 | 0 | 23 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | 0 |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 91 | 91 | 91 | 91 | 91 | 91 |
| Heavy Vehicles, % | 2 | 2 | 6 | 6 | 0 | 0 |
| Mvmt Flow | 30 | 295 | 447 | 75 | 334 | 141 |

| Major/Minor | Major1 | Major2 | Minor2 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 545 | 0 | 0 |
| Stage 1 | - | - | - |
| Stage 2 | - | - | - |
| Critical Hdwy | 4.12 | - | - |
| Critical Hdwy Stg 1 | - | - | - |
| Critical Hdwy Stg 2 | - | - | - |
| Follow-up Hdwy | 2.218 | - | - |
| Pot Cap-1 Maneuver | 1024 | - | - |
| Stage 1 | - | - | - |
| Stage 2 | - | - | - |
| Platoon blocked, % | | - | - |
| Mov Cap-1 Maneuver | 1002 | - | - |
| Mov Cap-2 Maneuver | - | - | - |
| Stage 1 | - | - | - |
| Stage 2 | - | - | - |

| Approach | EB | WB | SB |
|----------------------|-----|----|------|
| HCM Control Delay, s | 0.8 | 0 | 89.5 |
| HCM LOS | | | F |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 | SBLn2 |
|-----------------------|------|-----|-----|-----|-------|-------|
| Capacity (veh/h) | 1002 | - | - | - | 302 | 557 |
| HCM Lane V/C Ratio | 0.03 | - | - | - | 1.106 | 0.253 |
| HCM Control Delay (s) | 8.7 | 0 | - | - | 121.5 | 13.6 |
| HCM Lane LOS | A | A | - | - | F | B |
| HCM 95th %tile Q(veh) | 0.1 | - | - | - | 13.4 | 1 |

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection

Int Delay, s/veh 34

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|--------------------------|------|------|------|------|------|------|
| Lane Configurations | | ↕ | ↕ | | ↕ | ↕ |
| Traffic Vol, veh/h | 33 | 544 | 353 | 58 | 238 | 122 |
| Future Vol, veh/h | 33 | 544 | 353 | 58 | 238 | 122 |
| Conflicting Peds, #/hr | 23 | 0 | 0 | 23 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | 0 |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 91 | 91 | 91 | 91 | 91 | 91 |
| Heavy Vehicles, % | 2 | 2 | 6 | 6 | 0 | 0 |
| Mvmt Flow | 36 | 598 | 388 | 64 | 262 | 134 |

| Major/Minor | Major1 | Major2 | Minor2 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 475 | 0 | 0 |
| Stage 1 | - | - | 443 |
| Stage 2 | - | - | 670 |
| Critical Hdwy | 4.12 | - | 6.4 |
| Critical Hdwy Stg 1 | - | - | 5.4 |
| Critical Hdwy Stg 2 | - | - | 5.4 |
| Follow-up Hdwy | 2.218 | - | 3.5 |
| Pot Cap-1 Maneuver | 1087 | - | ~ 233 |
| Stage 1 | - | - | 651 |
| Stage 2 | - | - | 512 |
| Platoon blocked, % | - | - | - |
| Mov Cap-1 Maneuver | 1063 | - | ~ 212 |
| Mov Cap-2 Maneuver | - | - | ~ 212 |
| Stage 1 | - | - | 604 |
| Stage 2 | - | - | 501 |

| Approach | EB | WB | SB |
|----------------------|-----|----|-------|
| HCM Control Delay, s | 0.5 | 0 | 126.6 |
| HCM LOS | | | F |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 | SBLn2 |
|-----------------------|-------|-----|-----|-----|-------|-------|
| Capacity (veh/h) | 1063 | - | - | - | 212 | 605 |
| HCM Lane V/C Ratio | 0.034 | - | - | - | 1.234 | 0.222 |
| HCM Control Delay (s) | 8.5 | 0 | - | - | 185 | 12.6 |
| HCM Lane LOS | A | A | - | - | F | B |
| HCM 95th %tile Q(veh) | 0.1 | - | - | - | 13.5 | 0.8 |

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

| Intersection | | | | | | |
|--------------------------|--------|--------|--------|-------|------|------|
| Int Delay, s/veh | 3.3 | | | | | |
| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 55 | 0 | 17 | 75 | 0 | 64 |
| Future Vol, veh/h | 55 | 0 | 17 | 75 | 0 | 64 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 91 | 91 | 91 | 91 | 91 | 91 |
| Heavy Vehicles, % | 9 | 9 | 5 | 5 | 0 | 0 |
| Mvmt Flow | 60 | 0 | 19 | 82 | 0 | 70 |
| Major/Minor | Major1 | Major2 | Minor1 | | | |
| Conflicting Flow All | 0 | 0 | 60 | 0 | 180 | 60 |
| Stage 1 | - | - | - | - | 60 | - |
| Stage 2 | - | - | - | - | 120 | - |
| Critical Hdwy | - | - | 4.15 | - | 6.4 | 6.2 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.4 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.4 | - |
| Follow-up Hdwy | - | - | 2.245 | - | 3.5 | 3.3 |
| Pot Cap-1 Maneuver | - | - | 1525 | - | 814 | 1011 |
| Stage 1 | - | - | - | - | 968 | - |
| Stage 2 | - | - | - | - | 910 | - |
| Platoon blocked, % | - | - | - | - | - | - |
| Mov Cap-1 Maneuver | - | - | 1525 | - | 803 | 1011 |
| Mov Cap-2 Maneuver | - | - | - | - | 803 | - |
| Stage 1 | - | - | - | - | 968 | - |
| Stage 2 | - | - | - | - | 898 | - |
| Approach | EB | WB | NB | | | |
| HCM Control Delay, s | 0 | 1.4 | 8.8 | | | |
| HCM LOS | | | A | | | |
| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT | |
| Capacity (veh/h) | 1011 | - | - | 1525 | - | |
| HCM Lane V/C Ratio | 0.07 | - | - | 0.012 | - | |
| HCM Control Delay (s) | 8.8 | - | - | 7.4 | 0 | |
| HCM Lane LOS | A | - | - | A | A | |
| HCM 95th %tile Q(veh) | 0.2 | - | - | 0 | - | |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 3.7 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | | ↕ | | | ↕ | |
| Traffic Vol, veh/h | 21 | 9 | 88 | 18 | 14 | 5 | 65 | 156 | 12 | 5 | 368 | 38 |
| Future Vol, veh/h | 21 | 9 | 88 | 18 | 14 | 5 | 65 | 156 | 12 | 5 | 368 | 38 |
| Conflicting Peds, #/hr | 1 | 0 | 4 | 4 | 0 | 1 | 1 | 0 | 12 | 12 | 0 | 1 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| Heavy Vehicles, % | 13 | 13 | 13 | 0 | 0 | 0 | 10 | 10 | 10 | 4 | 4 | 4 |
| Mvmt Flow | 21 | 9 | 88 | 18 | 14 | 5 | 65 | 156 | 12 | 5 | 368 | 38 |

| Major/Minor | Minor2 | | Minor1 | | Major1 | | | Major2 | | | | |
|----------------------|--------|-------|--------|-----|--------|-----|------|--------|---|-------|---|---|
| Conflicting Flow All | 701 | 708 | 392 | 754 | 721 | 175 | 407 | 0 | 0 | 180 | 0 | 0 |
| Stage 1 | 398 | 398 | - | 304 | 304 | - | - | - | - | - | - | - |
| Stage 2 | 303 | 310 | - | 450 | 417 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.23 | 6.63 | 6.33 | 7.1 | 6.5 | 6.2 | 4.2 | - | - | 4.14 | - | - |
| Critical Hdwy Stg 1 | 6.23 | 5.63 | - | 6.1 | 5.5 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.23 | 5.63 | - | 6.1 | 5.5 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.617 | 4.117 | 3.417 | 3.5 | 4 | 3.3 | 2.29 | - | - | 2.236 | - | - |
| Pot Cap-1 Maneuver | 339 | 346 | 633 | 328 | 356 | 874 | 1110 | - | - | 1384 | - | - |
| Stage 1 | 606 | 584 | - | 710 | 667 | - | - | - | - | - | - | - |
| Stage 2 | 683 | 640 | - | 592 | 595 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | - | - | - |
| Mov Cap-1 Maneuver | 308 | 318 | 630 | 257 | 327 | 863 | 1109 | - | - | 1368 | - | - |
| Mov Cap-2 Maneuver | 308 | 318 | - | 257 | 327 | - | - | - | - | - | - | - |
| Stage 1 | 566 | 580 | - | 656 | 617 | - | - | - | - | - | - | - |
| Stage 2 | 620 | 592 | - | 497 | 591 | - | - | - | - | - | - | - |

| Approach | EB | | WB | | NB | | SB | |
|----------------------|------|--|------|--|-----|--|-----|--|
| HCM Control Delay, s | 14.4 | | 18.1 | | 2.4 | | 0.1 | |
| HCM LOS | B | | C | | | | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1WBLn1 | SBL | SBT | SBR |
|-----------------------|-------|-----|-----|------------|-------|-------|-----|
| Capacity (veh/h) | 1109 | - | - | 500 | 312 | 1368 | - |
| HCM Lane V/C Ratio | 0.059 | - | - | 0.236 | 0.119 | 0.004 | - |
| HCM Control Delay (s) | 8.4 | 0 | - | 14.4 | 18.1 | 7.6 | 0 |
| HCM Lane LOS | A | A | - | B | C | A | A |
| HCM 95th %tile Q(veh) | 0.2 | - | - | 0.9 | 0.4 | 0 | - |

Intersection

Int Delay, s/veh 8.6

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|--------------------------|------|------|------|------|------|------|
| Lane Configurations | | ↔ | ↔ | | ↔ | ↔ |
| Traffic Vol, veh/h | 120 | 377 | 212 | 300 | 162 | 67 |
| Future Vol, veh/h | 120 | 377 | 212 | 300 | 162 | 67 |
| Conflicting Peds, #/hr | 18 | 0 | 0 | 18 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | 0 |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 100 | 100 | 100 | 100 | 100 | 100 |
| Heavy Vehicles, % | 5 | 5 | 9 | 9 | 0 | 0 |
| Mvmt Flow | 120 | 377 | 212 | 300 | 162 | 67 |

| Major/Minor | Major1 | Major2 | Minor2 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 530 | 0 | 997 |
| Stage 1 | - | - | 380 |
| Stage 2 | - | - | 617 |
| Critical Hdwy | 4.15 | - | 6.4 |
| Critical Hdwy Stg 1 | - | - | 5.4 |
| Critical Hdwy Stg 2 | - | - | 5.4 |
| Follow-up Hdwy | 2.245 | - | 3.5 |
| Pot Cap-1 Maneuver | 1022 | - | 273 |
| Stage 1 | - | - | 696 |
| Stage 2 | - | - | 542 |
| Platoon blocked, % | - | - | - |
| Mov Cap-1 Maneuver | 1004 | - | 224 |
| Mov Cap-2 Maneuver | - | - | 224 |
| Stage 1 | - | - | 581 |
| Stage 2 | - | - | 533 |

| Approach | EB | WB | SB |
|----------------------|-----|----|------|
| HCM Control Delay, s | 2.2 | 0 | 41.6 |
| HCM LOS | | | E |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 | SBLn2 |
|-----------------------|------|-----|-----|-----|-------|-------|
| Capacity (veh/h) | 1004 | - | - | - | 224 | 659 |
| HCM Lane V/C Ratio | 0.12 | - | - | - | 0.723 | 0.102 |
| HCM Control Delay (s) | 9.1 | 0 | - | - | 54.2 | 11.1 |
| HCM Lane LOS | A | A | - | - | F | B |
| HCM 95th %tile Q(veh) | 0.4 | - | - | - | 4.8 | 0.3 |

Intersection

Int Delay, s/veh 12.1

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|--------------------------|------|------|------|------|------|------|
| Lane Configurations | | ↕ | ↕ | | ↕ | ↕ |
| Traffic Vol, veh/h | 141 | 393 | 450 | 287 | 128 | 67 |
| Future Vol, veh/h | 141 | 393 | 450 | 287 | 128 | 67 |
| Conflicting Peds, #/hr | 18 | 0 | 0 | 18 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | 0 |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 100 | 100 | 100 | 100 | 100 | 100 |
| Heavy Vehicles, % | 5 | 5 | 9 | 9 | 0 | 0 |
| Mvmt Flow | 141 | 393 | 450 | 287 | 128 | 67 |

| Major/Minor | Major1 | Major2 | Minor2 |
|----------------------|--------|--------|------------|
| Conflicting Flow All | 755 | 0 | 0 1287 612 |
| Stage 1 | - | - | - 612 - |
| Stage 2 | - | - | - 675 - |
| Critical Hdwy | 4.15 | - | - 6.4 6.2 |
| Critical Hdwy Stg 1 | - | - | - 5.4 - |
| Critical Hdwy Stg 2 | - | - | - 5.4 - |
| Follow-up Hdwy | 2.245 | - | - 3.5 3.3 |
| Pot Cap-1 Maneuver | 842 | - | - 183 497 |
| Stage 1 | - | - | - 545 - |
| Stage 2 | - | - | - 510 - |
| Platoon blocked, % | - | - | - |
| Mov Cap-1 Maneuver | 828 | - | - 138 488 |
| Mov Cap-2 Maneuver | - | - | - 138 - |
| Stage 1 | - | - | - 419 - |
| Stage 2 | - | - | - 501 - |

| Approach | EB | WB | SB |
|----------------------|-----|----|------|
| HCM Control Delay, s | 2.7 | 0 | 83.7 |
| HCM LOS | | | F |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 | SBLn2 |
|-----------------------|------|-----|-----|-----|-------|-------|
| Capacity (veh/h) | 828 | - | - | - | 138 | 488 |
| HCM Lane V/C Ratio | 0.17 | - | - | - | 0.928 | 0.137 |
| HCM Control Delay (s) | 10.2 | 0 | - | - | 120.4 | 13.5 |
| HCM Lane LOS | B | A | - | - | F | B |
| HCM 95th %tile Q(veh) | 0.6 | - | - | - | 6.3 | 0.5 |

| Intersection | | | | | | |
|--------------------------|--------|--------|--------|-------|------|------|
| Int Delay, s/veh | 3.5 | | | | | |
| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 80 | 0 | 67 | 50 | 0 | 33 |
| Future Vol, veh/h | 80 | 0 | 67 | 50 | 0 | 33 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 100 | 100 | 100 | 100 | 100 | 100 |
| Heavy Vehicles, % | 13 | 13 | 0 | 0 | 0 | 0 |
| Mvmt Flow | 80 | 0 | 67 | 50 | 0 | 33 |
| Major/Minor | Major1 | Major2 | Minor1 | | | |
| Conflicting Flow All | 0 | 0 | 80 | 0 | 264 | 80 |
| Stage 1 | - | - | - | - | 80 | - |
| Stage 2 | - | - | - | - | 184 | - |
| Critical Hdwy | - | - | 4.1 | - | 6.4 | 6.2 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.4 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.4 | - |
| Follow-up Hdwy | - | - | 2.2 | - | 3.5 | 3.3 |
| Pot Cap-1 Maneuver | - | - | 1531 | - | 729 | 986 |
| Stage 1 | - | - | - | - | 948 | - |
| Stage 2 | - | - | - | - | 852 | - |
| Platoon blocked, % | - | - | - | - | - | - |
| Mov Cap-1 Maneuver | - | - | 1531 | - | 696 | 986 |
| Mov Cap-2 Maneuver | - | - | - | - | 696 | - |
| Stage 1 | - | - | - | - | 948 | - |
| Stage 2 | - | - | - | - | 814 | - |
| Approach | EB | WB | NB | | | |
| HCM Control Delay, s | 0 | 4.3 | 8.8 | | | |
| HCM LOS | | | | A | | |
| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT | |
| Capacity (veh/h) | 986 | - | - | 1531 | - | |
| HCM Lane V/C Ratio | 0.033 | - | - | 0.044 | - | |
| HCM Control Delay (s) | 8.8 | - | - | 7.5 | 0 | |
| HCM Lane LOS | A | - | - | A | A | |
| HCM 95th %tile Q(veh) | 0.1 | - | - | 0.1 | - | |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 3.6 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | | ↕ | | | ↕ | |
| Traffic Vol, veh/h | 38 | 14 | 79 | 9 | 7 | 10 | 78 | 433 | 28 | 5 | 159 | 14 |
| Future Vol, veh/h | 38 | 14 | 79 | 9 | 7 | 10 | 78 | 433 | 28 | 5 | 159 | 14 |
| Conflicting Peds, #/hr | 0 | 0 | 7 | 7 | 0 | 0 | 0 | 0 | 8 | 8 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| Heavy Vehicles, % | 9 | 9 | 9 | 5 | 5 | 5 | 2 | 2 | 2 | 6 | 6 | 6 |
| Mvmt Flow | 38 | 14 | 79 | 9 | 7 | 10 | 78 | 433 | 28 | 5 | 159 | 14 |

| Major/Minor | Minor2 | | Minor1 | | Major1 | | Major2 | | | | | |
|----------------------|--------|-------|--------|-------|--------|-------|--------|---|---|-------|---|---|
| Conflicting Flow All | 788 | 801 | 173 | 841 | 794 | 455 | 173 | 0 | 0 | 469 | 0 | 0 |
| Stage 1 | 176 | 176 | - | 611 | 611 | - | - | - | - | - | - | - |
| Stage 2 | 612 | 625 | - | 230 | 183 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.19 | 6.59 | 6.29 | 7.15 | 6.55 | 6.25 | 4.12 | - | - | 4.16 | - | - |
| Critical Hdwy Stg 1 | 6.19 | 5.59 | - | 6.15 | 5.55 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.19 | 5.59 | - | 6.15 | 5.55 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.581 | 4.081 | 3.381 | 3.545 | 4.045 | 3.345 | 2.218 | - | - | 2.254 | - | - |
| Pot Cap-1 Maneuver | 301 | 310 | 853 | 281 | 317 | 599 | 1404 | - | - | 1072 | - | - |
| Stage 1 | 810 | 740 | - | 476 | 480 | - | - | - | - | - | - | - |
| Stage 2 | 469 | 467 | - | 766 | 743 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | - | - | - |
| Mov Cap-1 Maneuver | 273 | 283 | 847 | 227 | 289 | 594 | 1404 | - | - | 1064 | - | - |
| Mov Cap-2 Maneuver | 273 | 283 | - | 227 | 289 | - | - | - | - | - | - | - |
| Stage 1 | 749 | 736 | - | 437 | 441 | - | - | - | - | - | - | - |
| Stage 2 | 420 | 429 | - | 673 | 739 | - | - | - | - | - | - | - |

| Approach | EB | | WB | | NB | | SB | |
|----------------------|------|--|------|--|-----|--|-----|--|
| HCM Control Delay, s | 15.8 | | 17.2 | | 1.1 | | 0.2 | |
| HCM LOS | C | | C | | | | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1WBLn1 | SBL | SBT | SBR |
|-----------------------|-------|-----|-----|------------|-------|-------|-----|
| Capacity (veh/h) | 1404 | - | - | 465 | 322 | 1064 | - |
| HCM Lane V/C Ratio | 0.056 | - | - | 0.282 | 0.081 | 0.005 | - |
| HCM Control Delay (s) | 7.7 | 0 | - | 15.8 | 17.2 | 8.4 | 0 |
| HCM Lane LOS | A | A | - | C | C | A | A |
| HCM 95th %tile Q(veh) | 0.2 | - | - | 1.1 | 0.3 | 0 | - |

Intersection

Int Delay, s/veh 23.4

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|--------------------------|------|------|------|------|------|------|
| Lane Configurations | | ↕ | ↕ | | ↕ | ↕ |
| Traffic Vol, veh/h | 28 | 288 | 439 | 70 | 313 | 131 |
| Future Vol, veh/h | 28 | 288 | 439 | 70 | 313 | 131 |
| Conflicting Peds, #/hr | 23 | 0 | 0 | 23 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | 0 |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 100 | 100 | 100 | 100 | 100 | 100 |
| Heavy Vehicles, % | 2 | 2 | 6 | 6 | 0 | 0 |
| Mvmt Flow | 28 | 288 | 439 | 70 | 313 | 131 |

| Major/Minor | Major1 | Major2 | Minor2 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 532 | 0 | 841 |
| Stage 1 | - | - | 497 |
| Stage 2 | - | - | 344 |
| Critical Hdwy | 4.12 | - | 6.4 |
| Critical Hdwy Stg 1 | - | - | 5.4 |
| Critical Hdwy Stg 2 | - | - | 5.4 |
| Follow-up Hdwy | 2.218 | - | 3.5 |
| Pot Cap-1 Maneuver | 1036 | - | 338 |
| Stage 1 | - | - | 615 |
| Stage 2 | - | - | 722 |
| Platoon blocked, % | - | - | - |
| Mov Cap-1 Maneuver | 1013 | - | 313 |
| Mov Cap-2 Maneuver | - | - | 313 |
| Stage 1 | - | - | 582 |
| Stage 2 | - | - | 706 |

| Approach | EB | WB | SB |
|----------------------|-----|----|------|
| HCM Control Delay, s | 0.8 | 0 | 66.2 |
| HCM LOS | | | F |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 | SBLn2 |
|-----------------------|-------|-----|-----|-----|-------|-------|
| Capacity (veh/h) | 1013 | - | - | - | 313 | 564 |
| HCM Lane V/C Ratio | 0.028 | - | - | - | 1 | 0.232 |
| HCM Control Delay (s) | 8.7 | 0 | - | - | 88.4 | 13.3 |
| HCM Lane LOS | A | A | - | - | F | B |
| HCM 95th %tile Q(veh) | 0.1 | - | - | - | 10.8 | 0.9 |

Intersection

Int Delay, s/veh 23.6

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|--------------------------|------|------|------|------|------|------|
| Lane Configurations | | ↕ | ↕ | | ↕ | ↕ |
| Traffic Vol, veh/h | 33 | 583 | 380 | 58 | 241 | 124 |
| Future Vol, veh/h | 33 | 583 | 380 | 58 | 241 | 124 |
| Conflicting Peds, #/hr | 23 | 0 | 0 | 23 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | 0 |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 100 | 100 | 100 | 100 | 100 | 100 |
| Heavy Vehicles, % | 2 | 2 | 6 | 6 | 0 | 0 |
| Mvmt Flow | 33 | 583 | 380 | 58 | 241 | 124 |

| Major/Minor | Major1 | Major2 | Minor2 |
|----------------------|--------|--------|-------------|
| Conflicting Flow All | 461 | 0 | 0 1081 432 |
| Stage 1 | - | - | - 432 - |
| Stage 2 | - | - | - 649 - |
| Critical Hdwy | 4.12 | - | - 6.4 6.2 |
| Critical Hdwy Stg 1 | - | - | - 5.4 - |
| Critical Hdwy Stg 2 | - | - | - 5.4 - |
| Follow-up Hdwy | 2.218 | - | - 3.5 3.3 |
| Pot Cap-1 Maneuver | 1100 | - | - 243 628 |
| Stage 1 | - | - | - 659 - |
| Stage 2 | - | - | - 524 - |
| Platoon blocked, % | | - | - |
| Mov Cap-1 Maneuver | 1076 | - | - ~ 222 614 |
| Mov Cap-2 Maneuver | - | - | - ~ 222 - |
| Stage 1 | - | - | - 616 - |
| Stage 2 | - | - | - 512 - |

| Approach | EB | WB | SB |
|----------------------|-----|----|----|
| HCM Control Delay, s | 0.5 | 0 | 91 |
| HCM LOS | | | F |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 | SBLn2 |
|-----------------------|-------|-----|-----|-----|-------|-------|
| Capacity (veh/h) | 1076 | - | - | - | 222 | 614 |
| HCM Lane V/C Ratio | 0.031 | - | - | - | 1.086 | 0.202 |
| HCM Control Delay (s) | 8.5 | 0 | - | - | 131.5 | 12.3 |
| HCM Lane LOS | A | A | - | - | F | B |
| HCM 95th %tile Q(veh) | 0.1 | - | - | - | 10.8 | 0.8 |

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

| Intersection | | | | | | |
|--------------------------|--------|--------|--------|-------|------|------|
| Int Delay, s/veh | 3.3 | | | | | |
| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 60 | 0 | 19 | 75 | 0 | 66 |
| Future Vol, veh/h | 60 | 0 | 19 | 75 | 0 | 66 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 100 | 100 | 100 | 100 | 100 | 100 |
| Heavy Vehicles, % | 9 | 9 | 5 | 5 | 0 | 0 |
| Mvmt Flow | 60 | 0 | 19 | 75 | 0 | 66 |
| Major/Minor | Major1 | Major2 | Minor1 | | | |
| Conflicting Flow All | 0 | 0 | 60 | 0 | 173 | 60 |
| Stage 1 | - | - | - | - | 60 | - |
| Stage 2 | - | - | - | - | 113 | - |
| Critical Hdwy | - | - | 4.15 | - | 6.4 | 6.2 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.4 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.4 | - |
| Follow-up Hdwy | - | - | 2.245 | - | 3.5 | 3.3 |
| Pot Cap-1 Maneuver | - | - | 1525 | - | 822 | 1011 |
| Stage 1 | - | - | - | - | 968 | - |
| Stage 2 | - | - | - | - | 917 | - |
| Platoon blocked, % | - | - | - | - | - | - |
| Mov Cap-1 Maneuver | - | - | 1525 | - | 811 | 1011 |
| Mov Cap-2 Maneuver | - | - | - | - | 811 | - |
| Stage 1 | - | - | - | - | 968 | - |
| Stage 2 | - | - | - | - | 905 | - |
| Approach | EB | WB | NB | | | |
| HCM Control Delay, s | 0 | 1.5 | 8.8 | | | |
| HCM LOS | | | A | | | |
| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT | |
| Capacity (veh/h) | 1011 | - | - | 1525 | - | |
| HCM Lane V/C Ratio | 0.065 | - | - | 0.012 | - | |
| HCM Control Delay (s) | 8.8 | - | - | 7.4 | 0 | |
| HCM Lane LOS | A | - | - | A | A | |
| HCM 95th %tile Q(veh) | 0.2 | - | - | 0 | - | |