John Marshall School – Interim Site Modernization and Addition Project

Final State Environmental Policy Act Checklist

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For questions and more information about this document, please contact the following:

Paul Wight
Project Manager
pdwight@seattleschools.org

While the John Marshall School – Interim Site Modernization and Addition Project Final State Environmental Policy Act (SEPA) Checklist is accessible and compliant with the Americans with Disabilities Act, the attached figures and appendices that support the checklist contain complex material that are not accessible. The following is a description of what is contained in the figures and appendices:

- **Figure 1, John Marshall School Site Vicinity Map, Seattle, Washington**
  Figure 1 is a vicinity map of the John Marshall School site and the surrounding neighborhood. The project site is outlined in red.

- **Figure 2, John Marshall School Site Aerial Map, Seattle, Washington**
  Figure 2 is an aerial map of the John Marshall School site and the surrounding neighborhood. The project area is outlined in red.

- **Figure 3, John Marshall School Project Site Plan, Seattle, Washington**
  Figure 3 consists of the site plan for the John Marshall School Project. The plan shows the existing building, proposed building addition, proposed recreation areas, proposed parking and other associated site elements that would be provided with the project.

- **Figure 4, John Marshall School Project Demolition and Building Addition/Modernization Plan, Seattle, Washington**
  Figure 4 consists of the proposed demolition and building addition/modernization plan for the John Marshall School Project. The plan shows the existing building with proposed areas for demolition and modernization; the area of the proposed building addition is also indicated.

- **Appendix A: Construction Best Management Practices**
  Appendix A consists of construction best management practices that could be implemented during the construction of the proposed project.

- **Appendix B: Geotechnical Engineering Study**
  Appendix B is a Geotechnical Engineering Study prepared by GeoEngineers, dated March 16, 2026. The study documents existing geotechnical conditions on the site including a review of existing information, a description of onsite exploration methodology, and summary of onsite exploration results (soil conditions and groundwater conditions). The report provides geotechnical recommendations for the proposed project and includes figures and tables within the report to support the analysis and recommendations. Site exploration boring logs and testing results are also included as an appendix to the report.

- **Appendix C: Greenhouse Gas Emissions Worksheet**
  Appendix C is the Greenhouse Gas Emissions Worksheet prepared by EA Engineering, dated February 2026. The Greenhouse Gas Emissions Worksheet includes tables that estimate the potential greenhouse gas emissions associated with the proposed project.

- **Appendix D: Arborist Report**
  Appendix D is the Arborist Report prepared by Tree Solutions, dated September 15, 2025. The report describes existing trees on and adjacent to the site. The report includes site observations, a discussion of existing conditions and regulations, and recommendations. Appendices are provided in the report including a glossary, references, photographs and tables. Photographs are included to illustrate and support discussions in the text portion of the report. Tables are utilized to provide details on specific trees within the site area.

- **Appendix E: Cultural Resources Report**
  Appendix E consists of the Cultural Resources Report for the project that was prepared by Psomas, dated April 30, 2026. The report provides a description of existing natural and cultural background setting, a summary of archaeological research review for the project area, a description of field investigation methodology and results, and discussion on conclusions and recommendations. There are figures and tables throughout the document to support the analysis in the report. Appendices are provided at the end of the report, including Appendix A, “Inadvertent Discovery Plan,” and Appendix B, “Shovel Probe Summary.” Due to the confidential nature of archaeological materials, a copy of this report is not included in this electronic version.

- **Appendix F: Transportation Technical Report**
  Appendix F consists of the Transportation Technical Report for the project that was prepared by Heffron Transportation, Inc., dated May 22, 2026. The report provides a description and analysis of background conditions in the project area, including traffic volumes, traffic operation (level of service), parking, traffic safety, transit facilities, and non-motorized facilities. It evaluates potential impacts of the proposed project and concludes with a summary and recommendations. There are figures and tables through the document to support the analysis in the report. Appendices are provided at the end of the report, including Appendix A, "Level of Service Definitions," and Appendix B, "Parking Utilization Study Data."

- **Appendix G: SEPA Public Comment Summary and Responses**
  Appendix G consists of a summary of public comments that were received on the Draft SEPA Checklist and provides responses to those comments.

This concludes the Final SEPA Checklist.

DATE: August 31, 2026

TO: Recipients of the State Environmental Policy Act Determination of Nonsignificance (SEPA DNS) for John Marshall School: Interim Site Modernization and Addition Project

FROM: Dr. Marni Asplund-Campbell, SEPA Official

Seattle Public Schools (SPS) has determined that the final SEPA checklist dated August 2026, meets our environmental review needs for the John Marshall School: Interim Site Modernization and Addition Project. SPS plans to begin construction in summer 2027 with occupancy in summer 2029.

After conducting an independent review, SPS has determined that the project will not have significant adverse impacts on the environment, as documented in the checklist and the enclosed DNS.

The final SEPA checklist discusses the potential environmental impacts that could result from construction of the project. A draft of the checklist was released for public comment from June 15, 2026, through July 15, 2026. Comments received helped inform revisions to the final SEPA checklist, on which the DNS is based. The responses to written comments received are summarized in the SEPA Public Comments and Seattle Public Schools Responses, which are included with the SEPA checklist.

Thank you for your participation in the SPS SEPA process. Your involvement has helped to make the John Marshall School: Interim Site Modernization and Addition proposal a much better project.

Dr. Marni Asplund-Campbell, Assistant Superintendent of School Operations
P.O. Box 34165, MS 22-183, Seattle WA 98124 * 206-252-0636

WAC 197-11-970 Determination of Nonsignificance (DNS)

STATE ENVIRONMENTAL POLICY ACT
DETERMINATION OF NONSIGNIFICANCE (DNS)
JOHN MARSHALL SCHOOL – INTERIM SITE MODERNIZATION AND ADDITION PROJECT

Date of issuance: Sept. 7, 2026
Lead agency: Seattle School District No. 1 (Seattle Public Schools)
Location of proposal: John Marshall School, 520 NE Ravenna Boulevard, Seattle, WA 98115
(NE Quarter of Section 5, Township 25 North, Range 4 East)

Description of proposal: Seattle Public Schools (SPS) is proposing to expand the capacity of John Marshall School to serve as an interim site for elementary and middle schools in the district. The proposed project would include a complete interior renovation and re-roofing of the existing building, as well as partial demolition and development of a new building addition. Approximately 27,847 square feet of new addition and 85,207 square feet of modernization are planned, resulting in a total building space of approximately 113,054 square feet. The facility would have the capacity to serve up to 650 elementary students or 1,000 middle school students.

The new addition would include general classrooms, science labs, a new commons area, choir classroom, a gymnasium, administrative offices, and support space, such as utility rooms, corridors, restrooms, and storage spaces. New geothermal wells also would be installed on site as part of the project. The proposed renovations to the 1926 building would include upgrades to general classroom, special education spaces, learning commons, the library, band facilities, structural systems, mechanical and electrical systems, fire alarm and sprinklers, seismic improvements, and food service facilities. Once operational, SPS elementary and middle would use the site on an interim basis while their permanent facilities undergo construction or renovation. The project would be funded by the Building Excellence (BEX) VI Capital Levy.

The proposed project would modernize the school facility to meet SPS's contemporary educational needs while retaining and preserving the character-defining features. New construction is confined to portions of the building that do not contribute to its historic character and would be designed to be visually subordinate to the historic character elements of the structure.

Most on-site parking would be relocated to the south side of the site and reconfigured to provide 16 parking spaces. The existing parking lot to the northeast would be restriped to accommodate two ADA-accessible stalls. The parking area east of the building, which lies partially within the project boundaries, would be removed and redeveloped as outdoor play areas with new landscaping. In total, the site would provide 18 on-site parking spaces, including two ADA-accessible stalls. The existing bus loading and unloading area along Northeast Ravenna Boulevard would be retained. Pick-up and drop-off activities would occur along the curb within the existing right-of-way on Northeast 68th Street. Frontage improvements, including curb and ramp replacements and sidewalk repairs along Northeast Ravenna Boulevard, Northeast 68th Street, and Oswego Place Northeast, would also be completed as part of the project.

Existing recreational areas would be removed and replaced as a part of the proposed project. Hardscape playground areas surrounding the building, including the playground with play structures and basketball courts, would be removed.

The 31,300 square-foot outdoor play areas, including play structures and hardscape basketball and recreational areas, would be redeveloped to include approximately 4,400 square-foot soft-surface play area with play structure, a 9,500 square-foot synthetic turf playfield, and 20,000 square feet of additional hardscape recreational space. In total, recreation space on the site would slightly increase from approximately 31,300 square feet to 33,900 square feet.

As part of these onsite redevelopments, approximately 18 trees will be removed, including 16 on-site trees and two street trees in the public right-of-way. These trees would be replaced with 46 new trees, along with additional landscaping improvements throughout the site. Of the trees proposed for removal, only one is a Tier 2 tree (a Lawson Cypress); no Tier 1 trees are located on site.

Site preparation and construction could begin in summer 2027, with operation in summer 2029.

The lead agency for this proposal has determined that this project will not have a probable significant adverse impact on the environment. An environmental impact statement (EIS) is not required under RCW 43.21C.030(2)(c). This decision was made after review of a completed environmental checklist and other information on file with the lead agency. This information is available to the public on request at the following location: Seattle Public Schools, John Stanford Center for Educational Excellence, 2445 3rd Ave. S, Seattle, WA 98124-1165 (Attn: Paul Wight, Phone: 206-252-0648) and online at:
https://www.seattleschools.org/departments/sepa/

This DNS is issued under WAC 197-11-340(2); the lead agency will not act on this proposal prior to Sept. 22, 2026 (at least 15 days from the issuance date listed above) following a concurrent comment and appeal period. Comments and appeals (appealed by written notice setting forth specific factual objections) are to be received no later than Sept. 22, 2026, sent to:

Superintendent
Seattle School District No. 1
P.O. Box 34165, MS 32-151
Seattle, WA 98124-1165

Name of agency making threshold determination: Seattle Public Schools
Responsible Official: Dr. Marni Asplund-Campbell, Assistant Superintendent School Operations, Seattle Public Schools
Phone: 206-252-0636
Address: MS 22-183, P.O. Box 34165, Seattle, WA 98124-1165

Date: Aug. 31, 2026 **Signature:** 

FINAL ENVIRONMENTAL CHECKLIST

for the proposed

John Marshall School – Interim Site Modernization and Addition Project

prepared by

SEATTLE PUBLIC SCHOOLS

August 2026

EA Engineering, Science, and Technology, Inc., PBC
Bassetti Architects
GeoEngineers
Psomas
Heffron Transportation, Inc.

PREFACE

The purpose of this Environmental Checklist is to identify and evaluate probable environmental impacts that could result from the ***John Marshall School – Interim Site Modernization and Addition (John Marshall School) Project*** and to identify measures to mitigate those impacts. The ***John Marshall School Project*** is intended to expand the capacity of the school to allow the school to serve as an interim site for middle schools and elementary schools in the school district. The proposed project would include a complete interior renovation and re-roofing of the existing building, as well as partial demolition and development of a new building addition. Approximately 27,847 sq. ft. of new addition and 85,207 sq. ft. of modernization are anticipated for the building. In total, the building would contain approximately 113,054 sq. ft. of building space with capacity to serve up to 650 elementary students or 1,000 middle school students.

The State Environmental Policy Act (SEPA) requires that all governmental agencies consider the environmental impacts of a proposal before the proposal is decided upon. This Environmental Checklist has been prepared in compliance with the State Environmental Policy Act; the SEPA Rules, effective April 4, 1984, as amended in Chapter 197-11, Washington Administrative Code (WAC), and the City of Seattle Code 25.05, which implements SEPA.

This document is intended to serve as SEPA review for site preparation work, associated construction, and operation of the proposed development comprising the ***John Marshall School Project.*** Analysis associated with the proposed project contained in this Environmental Checklist is based on plans for the project, which are on file with Seattle Public Schools. While not construction-level detail, the plans accurately represent the eventual size, location, and configuration of the proposed project and are considered adequate for analysis and disclosure of environmental impacts.

This Environmental Checklist is organized into three major sections. *Section A* of the Checklist (starting on page 1) provides background information concerning the *Proposed Action* (e.g., purpose, proponent/contact person, project description, project location, etc.). *Section B* (beginning on page 6) contains the analysis of environmental impacts that could result from implementation of the proposed project, based on review of major environmental parameters. This section also identifies possible mitigation measures. *Section C* (page 38) contains the signature of the proponent, confirming the completeness of this Environmental Checklist.

Technical reports included as appendices to this Environmental Checklist are: *Geotechnical Engineering Report (GeoEngineers, 2026), Greenhouse Gas Emissions Worksheet (EA Engineering, 2026), Arborist Report (Tree Solutions, 2025), Cultural Resources Assessment (Psomas, 2026),* and the *Transportation Technical Report (Heffron Transportation, Inc., 2026).*

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SEPA ENVIRONMENTAL CHECKLIST

Purpose of checklist
Governmental agencies use this checklist to help determine whether the environmental impacts of your proposal are significant. This information is also helpful to determine if available avoidance, minimization, or compensatory mitigation measures will address the probable significant impacts or if an environmental impact statement will be prepared to further analyze the proposal.

Instructions for applicants
This environmental checklist asks you to describe some basic information about your proposal. Please answer each question accurately and carefully, to the best of your knowledge. You may need to consult with an agency specialist or private consultant for some questions. **You may use "not applicable" or "does not apply" only when you can explain why it does not apply and not when the answer is unknown.** You may also attach or incorporate by reference additional studies reports. Complete and accurate answers to these questions often avoid delays with the SEPA process as well as later in the decision-making process.

The checklist questions apply to **all parts of your proposal,** even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. The agency to which you submit this checklist may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

Instructions for lead agencies
Please adjust the format of this template as needed. Additional information may be necessary to evaluate the existing environment, all interrelated aspects of the proposal and an analysis of adverse impacts. The checklist is considered the first but not necessarily the only source of information needed to make an adequate threshold determination. Once a threshold determination is made, the lead agency is responsible for the completeness and accuracy of the checklist and other supporting documents.

Use of checklist for nonproject proposals
For nonproject proposals (such as ordinances, regulations, plans and programs), complete the applicable parts of sections A and B, plus the Supplemental Sheet for Nonproject Actions (Part D). Please completely answer all questions that apply and note that the words "project," "applicant," and "property or site" should be read as "proposal," "proponent," and "affected geographic area," respectively. The lead agency may exclude (for non-projects) questions in "Part B: Environmental Elements" that do not contribute meaningfully to the analysis of the proposal.

A. Background

1. Name of proposed project, if applicable:

John Marshall School – Interim Site Modernization and Addition (John Marshall School) Project

2. Name of applicant:

Seattle School District No. 1 (Seattle Public Schools)

3. Address and phone number of applicant and contact person:

Paul Wight
Project Manager
Seattle Public Schools
2445 3rd Avenue South
Seattle, WA 98134
206-252-0648

4. Date checklist prepared:

August 17, 2026

5. Agency requesting checklist:

Seattle School District No. 1
2445 3rd Avenue South
MS 22-332, P.O. Box 34165
Seattle, WA 98124-1165

6. Proposed timing or schedule (including phasing, if applicable):

The ***John Marshall School Project*** analyzed in this Environmental Checklist involves site preparation work, construction, and operation of the project. Site preparation and construction could begin in summer 2027 with operation in summer 2029.

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.

No future plans for further development of the project site are proposed at this time.

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.

The following environmental information has been prepared for the project and is included as appendices to this Checklist:

- *Geotechnical Report (GeoEngineers, March 16, 2026)*
- *Greenhouse Gas Emissions Worksheet (EA Engineering, February 2026)*

- *Arborist Report (Tree Solutions, September 15, 2025)*
- *Cultural Resources Assessment (Psomas, April 30, 2026)*
- *Transportation Technical Report (Heffron Transportation, Inc., May 22, 2026)*

9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.

There are no known other applications or proposals that are pending approval for the ***John Marshall School Project*** site.

10. List any government approvals or permits that will be needed for your proposal, if known.

The following permits/approvals will be needed for the proposed project, including:

City of Seattle

Department of Construction and Inspections

- Master Use Permit
- Land Use Code Departure Approval
- Building Permit
- Demolition Permit
- Mechanical Permits
- Electrical and Fire Alarm Permits
- Drainage and Side Sewer Permit
- Comprehensive Drainage Control Plan Approvals (includes Construction Best Management Practices, Erosion and Sediment Control requirements)
- Stormwater Permit

Department of Transportation

- Street Use and Construction Use Permit (temporary – construction related)
- Street Use and Utility Permit
- Street Improvement Permit
- Urban Forestry Construction Permit

King County

- Plumbing Permit
- Sewer Treatment Capacity Charge Approval
- Health Department Approval

Puget Sound Clean Air Agency

- Air Quality Permit - Demolition

Washington Department of Ecology

- Construction General NPDES Permit

11. Give a brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page.

The proposed ***John Marshall School Project*** is located at 520 NE Ravenna Boulevard, in the Green Lake neighborhood of Seattle (see **Figure 1** and **2**). The school campus is generally bounded by NE 68th Street to the north, Weedin Place NE, a parking lot, and Interstate-5 to the east, existing residences, parking, and the northern terminus of Oswego Place NE to the south, and NE Ravenna Boulevard to the west.

Existing Site

The existing John Marshall School site currently serves as an interim site for Seattle Public Schools (SPS). The John Marshall School site is comprised of one main building that covers a large portion of the site. The existing building on the site was constructed in 1926 and opened in 1927. The school contains approximately 95,540 square feet of building space. Historically, the existing building was designed to accommodate approximately 900 students, with a peak enrollment of approximately 1,450 students between 1955 and 1957 (Cipalla, et. al., 2024).

The existing building is not currently utilized for a specific school use at this time but a portion is occupied by Seattle Public Schools Department of Technology staff. The most recent school use of the building was by Montlake Elementary and John Rogers Elementary during the 2024-2025 school year. Enrollment during that school year was approximately 171 students for Montlake Elementary and 248 students for John Rogers Elementary (SPS, 2025). The school also temporarily housed Jane Addams (now Hazel Wolf) K-8 from 2014 to 2016 with enrollment up to 756 students.

Two soft-surface recreational areas with play structures are located to the northwest and southeast sides of the building. Paved basketball courts and additional hardscape recreational areas are located to the east and southeast of the existing school building. Total recreational areas at the project site cover approximately 31,300 square feet. There are existing grass areas located along the west side of the 1926 building along NE Ravenna Boulevard. Approximately 24 regulated trees (six inches in diameter at standard height) are located within the project boundaries and 29 trees are located adjacent to the site.

Currently, three areas of the site have striped parking – located on the north, northeast, and southeast; however, only two of those areas (north and northeast) are within the fenced portion of the site. The southeast parking area (with 21 stalls) is within the fenced area of the adjacent King County Metro Park-and-Ride lot. The north lot (with 44 stalls) and northeast lot are accessed from two driveways on NE 68th Street. The school-site property boundary aligns diagonally through the northeast lot with part of it on Seattle Public School's property and part within WSDOT right-of-way. Approximately 10 stalls are located on Seattle Public School's property. There is also a gated and locked access at the north end of Oswego Place NE, which dead ends at the site on the south. The parking at the southeast portion of the site (not within the fenced area of the school site) is accessed from driveways serving the park-and-ride lot. Existing bus and parent load/unload areas are available along NE Ravenna

Boulevard and NE 68th Street curb-side within the existing rights-of-ways adjacent to the school.

Proposed Project

The proposed ***John Marshall School Project*** is intended to expand the capacity of the school and upgrade the quality of the student learning environment. The proposed modernization and addition would allow the school to serve as an interim site for up to 650 elementary or 1,000 middle school students.

The project proposes a complete interior school remodel and re-roofing, as well as a partial demolition and replacement with a new building addition. Limited portions of the existing 95,540 square-foot building would be demolished and approximately 27,847 square feet of new addition and 85,207 square feet of modernization are anticipated for the building. The proposed building addition would be located along the eastern portion of the existing 1926 building (behind the primary western façade of the existing building). See **Figure 3** for the proposed site plan and **Figure 4** for an illustration of proposed limited building demolition and proposed building addition/modernization.

The new addition would include general classrooms, science labs, a new commons area, choir classroom, a gymnasium, administrative offices, and support space (utility rooms, corridors, restrooms, storage spaces, etc.); as part of the development new geothermal wells would also be installed on-site. The proposed renovations to the 1926 building would include general classroom, special education spaces, learning commons, library, band, structural, mechanical, electrical, fire alarm and sprinklers, seismic, and food service upgrades.

With completion of the project, the school would contain approximately 113,054 square feet of permanent building space. With the proposed project, the building could accommodate either a 650-student elementary school or a 1,000-student middle school on an interim basis. Once operational, future SPS elementary and middle schools north of the ship canal would be intended to use the proposed site on an interim basis during construction periods of their current facilities. The project would be funded by The Building Excellence (BEX) VI Capital Levy.

Most on-site parking would be relocated to the south side of the site and reconfigured with 16 parking spaces. The existing parking lot to the northeast would be restriped and would provide two ADA stalls. The parking lot to the east partially included within the site boundaries would be removed and redeveloped with outdoor play areas and new landscaping. The new total parking provided at the site would be 18 on-site stalls including two ADA spaces. The existing bus load/unload area along NE Ravenna Boulevard would be retained as part of the project. On-street parent vehicle load/unload would be provided curb-side within the existing right-of-way area of NE 68th Street. As a part of the proposed project, frontage improvements including curb and ramp replacement and sidewalk repairs along NE Ravenna Boulevard, NE 68th Street, and Oswego Place NE would be completed.

On-site recreational areas would be removed and replaced as a part of the proposed project. Surrounding hardscape playground areas surrounding the building, including the playground with play structures and basketball courts, would be removed.

The 31,300 square-foot outdoor play areas, associated play structures, and hardscape basketball and recreational areas would be redeveloped with a new approximately 4,400 square-foot soft-surface play area with play structure, 9,500 square-foot synthetic turf playfield, and 20,000 square feet of additional hardscape recreational areas. In total, recreation space on the site would slightly increase from approximately 31,300 square feet to 33,900 square feet. As part of these onsite redevelopments, approximately 18 trees will be removed (16 onsite trees and 2 street trees in the public right-of-way) and replaced with 46 new trees and new landscaping designs implemented throughout the site. Of the trees proposed for removal, only one Tier 2 tree (a Chamaecyparis lawsoniana/ Lawson Cypress) would be removed; no Tier 1 trees are located on site.

12. Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist.

The John Marshall School is located at 520 NE Ravenna Boulevard within the Green Lake neighborhood of Seattle (a portion of the NE Quarter of Section 5, Township 25, and Range 4). The school is generally bounded by NE 68th Street to the north, Weedin Place NE, a parking lot, and Interstate-5 to the east, existing residences, parking, and the northern terminus of Oswego Place NE to the south, and NE Ravenna Boulevard to the west. The existing school building is positioned along the west side of the site with the primary façade facing NE Ravenna Boulevard (see **Figures 1** and **2**).

B. Environmental Elements

1. Earth

a. General description of the site:
Circle or highlight one: flat, rolling, hilly, steep slopes, mountainous, other:

The topography of the ***John Marshall School Project*** site is generally flat with gradual grade changes ranging between 177 feet to 182 feet. The project site is mostly rectangular in shape with a small triangular shaped portion on the south side and generally measures 400 feet in the north-south direction and 470 feet in the east-west direction. Adjacent properties are also generally level with minimal topographic and grade change (*GeoEngineers, 2026*).

b. What is the steepest slope on the site (approximate percent slope)?

The steepest slope on the ***John Marshall School Project*** site is recorded at approximately 3%. A slope of approximately 1% to 3%, a change of approximately five feet of elevation, is noted throughout the site. According to the City of Seattle's Environmentally Critical Area (ECA) Maps, there is no Steep Slope ECA located within the project site (*City of Seattle, 2026).* However, there is a Steep Slope ECA located beyond Weedin Place NE approximately 60 feet east of the project site boundary (*City of Seattle, 2026).*

In accordance with Seattle Municipal Code (SMC) 25.09.090, a Steep Slope ECA buffer of 15 feet is required from proposed developments.[1] However, the buffer area extending from the offsite Steep Slope ECA would not extend onto the ***John Marshall School Project*** site and therefore, no impact to the Steep Slope ECA buffer is anticipated. Additionally, to further confirm no adverse impacts to stability or erosion, the *Geotechnical Report* did not identify any landslide or steep slope concerns.

c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them, and note any agricultural land of long-term commercial significance and whether the proposal results in removing any of these soils.

A *Geotechnical Report* was completed for the school campus by *GeoEngineers* and is available in **Appendix B**. The report included six site exploration borings (GEI-1 through GEI-6) as part of on-site investigations. Borings were completed to a depth of 20.5 to 51 feet deep with GEI-1 through GEI-5 advanced around the building perimeter and GEI-6 drilled in the northeast parking area. The soils encountered on the site generally consisted of fill, recent deposits, and glacially consolidated soils *(GeoEngineers, 2026*).

Fill generally consisted of medium dense silty sand with gravel and ranged from three to seven feet below ground surface (bgs). Below the fill, recent deposit soils were encountered between approximately eight to 36 feet bgs and typically consisted of variable and interbedded layers of very soft to medium stiff clay and very loose to

[1] SMC 25.09.090

medium dense sand. Glacially consolidated soils were recorded beyond the fill and recent deposits between approximately 12 to 37 feet bgs and consisted of very dense sands with variable silt and gravel content *(GeoEngineers, 2026*).

The project site does not contain any agricultural land areas of commercial significance.

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.

In general, the Puget Sound region is a seismically active region; thus the project site could experience seismic activity, which may cause surface rupture, liquefaction and subsidence, and landslides. According to the City of Seattle ECA Maps, the project site is located within a Liquefaction Prone ECA (*City of Seattle, 2026).* The *Geotechnical Report,* prepared by *GeoEngineers,* includes a review of geologic hazards, including landslide, seismic and liquefaction, and erosion hazards and is available in **Appendix B**.

Soil explorations completed at the project site indicate the mapped liquefaction hazard at the site is associated with isolated loose sand layers within the recent deposits below the groundwater table. Liquefiable layers occur sporadically across the site, indicating they are discontinuous and localized. Based on these conditions, the potential for widespread liquefaction at the site is considered low. The implementation of deep foundations to support the existing building retrofit and expansion will effectively mitigate potential liquefaction-related hazards (see **Appendix B** for further details). Additionally, seismic upgrades to the existing school will be completed as part of the project in accordance with the City of Seattle Existing Building Code.

Considering the overall low slope throughout the site and the implementation of the above-described mitigation measures, potential risk of landslides or liquefaction is anticipated to be low. There is no history of unstable soils on the site or in the immediate vicinity, and no evidence of unstable soils has been observed.

e. Describe the purpose, type, total area, and approximate quantities and total affected area of any filling, excavation, and grading proposed. Indicate source of fill.

While the majority of the existing building will remain, removal of all paving and most utilities at the site will be required. In order to satisfy the stormwater requirements associated with the building renovations and redevelopments, it is estimated that approximately 30,000 cubic feet of excavation and 10,000 cubic feet of fill are required for the proposed 20,000 cubic feet detention and chamber systems. However, if additional detention is required with the new Stormwater Code update, an additional 6,000 cubic feet of excavation and 2,000 cubic feet of fill could occur. The source of the fill will be identified during the permitting process and will satisfy all needed requirements for approval.

f. Could erosion occur because of clearing, construction, or use? If so, generally describe.

Erosion is possible in conjunction with any construction activity. Site work would expose soils on the site, but the implementation of best management practices (BMPs) and a

Temporary Erosion Sedimentation Control (TESC) plan during construction would mitigate any potential impacts. Additionally, the *Geotechnical Report* identified measures to minimize potential erosion. Those measures are summarized in Section B.1.h. See **Appendix B** for complete details.

Once the project is operational, no erosion is anticipated.

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?

The project site currently contains the existing building, parking, outdoor play areas, and landscaping. The existing percentage of impervious surface is approximately 84%. With the completion of the proposed ***John Marshall School Project***, approximately 81% of the site would be covered with impervious surfaces. Impervious surfaces with the project would primarily consist of the existing building and proposed building addition, hardscape recreational areas, and paved parking.

h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any.

No significant erosion is anticipated with the construction of the proposed project. The proposed project would comply with City of Seattle regulations, such as implementing a TESC plan and utilizing construction BMPs. See **Appendix A** for a list of typical construction BMPs for SPS projects.

The *Geotechnical Report* (*GeoEngineers, 2026*) for the project identified the following measures to minimize potential erosion:

- Incorporate erosion control measures into the project design and construction planning.
- Minimize ground disturbance, site grading and drainage, and vegetation removal to the greatest extent possible.
- Implement standard erosion control practices such as a TESC plan and construction BMPs.

2. Air

a. What types of emissions to the air would result from the proposal during construction, operation, and maintenance when the project is completed? If any, generally describe and give approximate quantities if known.

During construction, the ***John Marshall School Project*** could result in temporary and relatively small increases in localized air emissions, carbon monoxide, and hydrocarbons associated with particulates and diesel and gasoline-powered construction equipment and vehicles. The primary source would likely arise from particulates due to on-site excavation and site preparation at the project outset. However, considering construction activities would be temporary and the implementation of BMPs, air quality emission impacts are not anticipated to be significant.

Upon completion of the project, the primary source of emissions would be from staff, student, and parent vehicles traveling to and from the site. The increase in vehicles traveling to the site is expected to be minimal and would not be anticipated to result in a significant adverse air quality impact.

Another consideration with regard to air quality and climate relates to Greenhouse Gas Emissions (GHG). In order to evaluate climate change impacts of the proposed project, a *Greenhouse Gas Emissions Worksheet* has been prepared (see **Appendix C** of this Environmental Checklist). This *GHG Worksheet* estimates the emissions from the following sources: embodied, energy-related, and transportation-related emissions.

Since the implementation of the proposed project would result in an increase of approximately 27,847 square feet of new educational building space, the total estimated lifespan emissions for the project is anticipated to be approximately 29,113 MTCO2e. MTCO2e is defined as Metric Ton Carbon Dioxide Equivalent and is a standard measure of amount of Carbon Dioxide (CO2) emissions reduced or sequestered. Based on assumed building life of 62.5 years (62.5 years is the presumed lifespan for educational facilities), the proposed project would be estimated to generate approximately 466 MTCO2e annually. For reference, the Washington State Department of Ecology threshold for potential significant GHG emissions is 25,000 MTCO2e annually. Therefore, the proposed project would not be anticipated to generate a significant amount of GHG emissions.

b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.

The primary off-site source of emissions in the site vicinity is vehicle traffic on surrounding roadways, including NE 68th Street to the north, Weedin Place NE, Interstate-5, Oswego Place NE, and NE Ravenna Boulevard. However, these emissions are expected to be minimal and therefore would have no impact on the proposed project. There are no other known off-site sources of air emissions or odors that may affect the proposed project.

c. Proposed measures to reduce or control emissions or other impacts to air, if any.

Construction activities would be required to comply with Puget Sound Clean Air Agency (PSCAA) regulations, including Regulation I, Section 9.11 (prohibiting the emission of air contaminants that would be injurious to human health) and Regulation I, Section 9.15 (prohibiting the emission of fugitive dust, unless reasonable precautions are employed). No significant air quality impacts are anticipated with the construction of the proposed project.

3. Water

a. Surface Water:

1. **Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into.**

   There is no surface water body on or in the immediate vicinity of the ***John Marshall School Project*** site. The nearest surface water body is Green Lake located approximately 0.2 miles northwest (see **Figure 1**).

2. **Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans.**

   The proposed project would not require any work over, in, or adjacent (within 200 feet) to any water body.

3. **Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.**

   No fill or dredge material would be placed in or removed from any surface water body as a result of the proposed project.

4. **Will the proposal require surface water withdrawals or diversions? Give a general description, purpose, and approximate quantities if known.**

   The proposed project would not require any surface water withdrawals or diversions.

5. **Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.**

   The proposed project site does not lie within a 100-year floodplain and is not identified within a flood prone area on the City of Seattle ECA Mapper (*City of Seattle, 2026)*.

6. **Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.**

   There would be no discharge of waste materials to surface waters as a result of the proposed project. Any waste materials generated during construction (i.e., grading spoils and demolition debris) would be transported off-site to an appropriate disposal facility.

b. Ground Water:

1. **Will groundwater be withdrawn from a well for drinking water or other purposes? If so, give a general description of the well, proposed uses and approximate quantities withdrawn from the well. Will water be discharged to groundwater? Give a general description, purpose, and approximate quantities if known.**

   No groundwater would be withdrawn from a well and no water would be discharged to groundwater as part of the proposed project. Geotechnical investigations completed between January 14 to March 5, 2026, encountered groundwater between 11.4 to 13.6 feet bgs within the excavation boring locations on the site (*GeoEngineers, 2026*). Due to these recorded depths, shallow groundwater seepage may enter excavations depending on the time of year construction takes place, especially in the winter months. If perched or seepage groundwater is encountered during construction, it should be properly drained from the project site. Dewatering techniques can likely be handled by digging interceptor trenches in the excavations and pumping from sumps (see **Appendix B** for further details).

2. **Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (domestic sewage; industrial, containing the following chemicals…; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.**

   Waste material would not be discharged into the ground from septic tanks or other sources as a result of the proposed project.

c. Water Runoff (including stormwater):

1. **Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.**

   The existing ***John Marshall School Project*** site is primarily covered by impervious surfaces (such as the existing school building and hard surface areas). With the completion of the project, approximately 81% of the site will be developed with impervious surfaces. Water runoff is anticipated to generally travel north to south through the project site. Two new storm drains will be established along NE 68th Street and new combined sewer and storm mains will be installed throughout the site. Since the stormwater flow will be connected to combined sewer and storm mains, water quality treatment is not required.

   The proposed new and replaced impervious surfaces at the site will require on-site stormwater management. To satisfy these requirements, new 14,000 cubic feet, 4,000 cubic feet, and 6,000 cubic feet detention chamber systems, as well as several bioretention planters covering approximately 1,000 square feet would be installed. The proposed bioretention planters would treat the new roof areas of the building and

portions of the new or existing paved surfaces.

Stormwater conveyance will flow from storm drains on NE 68th Street and through natural gravity routes throughout the site into the new bioretention planters and detention vaults before traveling through the combined sewer and storm mains. Stormwater will then flow into Ravenna Creek before ultimately draining into Lake Washington to the southeast.

Based on the soil composition and topography described in the *Geotechnical Report*, there is limited infiltration capacity at the site due to groundwater levels and soil composition. If stormwater infiltration facilities are included in the final project design, in-situ infiltration testing will be required (*GeoEngineers, 2026*).

The proposed project must implement a construction stormwater control plan, as well as follow stormwater BMPs during all phases of construction. All stormwater controls, imported fill, and bioretention planter vegetation will comply with the current Seattle Stormwater Manual applicable requirements at the time of permitting.

2. Could waste materials enter ground or surface waters? If so, generally describe.

The existing and proposed stormwater management systems for the ***John Marshall School Project*** would inhibit waste materials from entering ground or surface waters as a result of the proposed project. Additionally, erosion and sedimentation control measures would be implemented to prevent waste materials entering ground or surface waters per City of Seattle requirements.

3. Does the proposal alter or otherwise affect drainage patterns in the vicinity of the site? If so, describe.

The proposed project would not alter or otherwise affect drainage patterns in the site vicinity.

4. Proposed measures to reduce or control surface, ground and runoff water, and drainage pattern impacts, if any.

No impacts to surface, groundwater and runoff water, and drainage patterns are anticipated. Although a decrease of impervious surfaces would occur with the implementation of the project, proposed management systems and mitigation would also ensure no significant impacts to stormwater and drainage patterns. The following measures would be implemented to control surface, groundwater, and runoff impacts to reduce the risk of materials entering the stormwater systems:

- Installation of two new storm drains along NE 68th Street and new combined sewer and storm mains throughout the site.
- Three new 14,000 cubic feet, 4,000 cubic feet, and 6,000 cubic feet detention chamber systems.
- New bioretention planters covering approximately 1,000 square feet.

- A TESC Plan and construction BMPs would be approved and implemented during construction to reduce erosion and minimize impacts to water resources.
- A Construction Stormwater Pollution Prevention Plan (SWPPP) would be prepared and approved for the proposed project.
- Stormwater management for the proposed project would comply with applicable City requirements, including the current City of Seattle Stormwater Manual at the time of permitting.

4. Plants

a. Check the types of vegetation found on the site:

☒ **deciduous tree: alder, maple, aspen, other**
☒ **evergreen tree: fir, cedar, pine, other**
☒ **shrubs**
☒ **grass**
☐ **pasture**
☐ **crop or grain**
☐ **orchards, vineyards, or other permanent crops.**
☐ **wet soil plants: cattail, buttercup, bullrush, skunk cabbage, other**
☐ **water plants: water lily, eelgrass, milfoil, other**
☐ **other types of vegetation**

b. What kind and amount of vegetation will be removed or altered?

Existing grass areas are located in front of the John Marshall School along the NE Ravenna Boulevard right-of-way and portions of these areas would be disturbed to accommodate the proposed project. To the extent feasible, these grass areas will be returned to their original conditions upon the completion of the proposed project.

An Arborist Report was completed for the ***John Marshall School Project***, which identified a total of 24 trees with a diameter at standard height (DSH) of at least 6 inches, as well as 29 adjacent trees with canopy or root zones extending over the property line. Of the 24 trees recorded on-site, three were classified as Tier 2 trees (DSH equal to or greater than 24 inches but do not qualify as a heritage tree); no Tier 1 trees were located on site. See **Appendix D** for the complete Arborist Report.

Trees located on-site include decorative landscape species such as Norway maple, red maple, and deodar cedar. Adjacent trees within the right-of-way were mainly comprised of Callery pear and hedge maple. Additional vegetation includes landscaped shrubs and grass-covered areas along NE Ravenna Boulevard.

Development of the proposed site would require the removal of existing vegetation and 18 existing trees, including 16 trees within the project site and two (2) street trees within the adjacent rights-of-ways. Of the trees proposed for removal on site, one Tier 2 tree (a Chamaecyparis lawsoniana/ Lawson Cypress) is identified for removal. A total of 46 new trees would also be planted on the site, including 18 large-canopy deciduous

trees, 19 evergreen trees, and nine (9) small-medium canopy accent trees, resulting in a net increase of 28 trees within the project area. Tree protection measures would be implemented during construction for retained trees. All tree work will meet or exceed the City's applicable tree preservation and replacement requirements.

c. List threatened and endangered species known to be on or near the site.

No known threatened or endangered species are located on or proximate to the project site.

d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any.

New landscaping would be installed as part of the project and would be consistent with City of Seattle requirements at the time of permitting.

New landscaping will be installed along the entire perimeter of and throughout the project site. Areas surrounding the proposed building addition will be planted with native, drought resistant, or Pacific Northwest climate adapted shrubs and ground cover. Additional landscaping areas will include bioretention planters located throughout the site. The tree replacement plan includes the planting of 46 new trees to offset the removal of 18 trees within the project site and adjacent rights-of-ways for a net increase of 28 trees. All tree work will meet or exceed City of Seattle tree preservation and replacement requirements.

e. List all noxious weeds and invasive species known to be on or near the site.

Noxious weeds or invasive species that could be present in the vicinity of the site include giant hogweed, English Ivy, and Himalayan blackberry.

5. Animals

a. List any birds and other animals that have been observed on or near the site or are known to be on or near the site.
Examples include:

- **Birds: hawk, heron, eagle, songbirds, other: crows, pigeons, seagulls**
- **Mammals: deer, bear, elk, beaver, other: squirrels, raccoons, rats, opossums**
- **Fish: bass, salmon, trout, herring, shellfish, other:**

Urban wildlife is known to be on and in the vicinity of the ***John Marshall School Project*** site including, crows, pigeons, squirrels, raccoons, rats, and opossums. Data obtained from the U.S. Fish and Wildlife Service (USFWS) indicates Bald and Golden Eagles are known to exist within the project area (*USFWS, 2025*); however, based on the highly developed nature of the project site and proximity to Interstate-5, no eagles are anticipated to be on or within the immediate vicinity of the project site.

b. List any threatened and endangered species known to be on or near the site.

The following are listed or proposed threatened, endangered, or candidate species that could be affected by development on the site or surrounding vicinity based on data from the USFWS: Marbled Murrelet, Yellow-billed Cuckoo, Northwestern Pond Turtle, Bull Trout, Monarch Butterfly, and Suckley's Cuckoo Bumble Bee (*USFWS, 2025*). However, it should be noted due to the urban and developed nature of the site and surrounding area, none of the respective species have been observed and it is unlikely that these animals are present on or near the ***John Marshall School Project*** site.

c. Is the site part of a migration route? If so, explain.

The proposed project site is not located within a specific migration route. However, in general, the entire Puget Sound area is within the Pacific Flyway, which is a major north-south flyway for migratory birds in America that extends from Alaska to Patagonia. Every year, migratory birds travel some or all of this distance both in spring and in fall, following food sources, heading to breeding grounds, or travelling to overwintering sites.

d. Proposed measures to preserve or enhance wildlife, if any.

No specific measures are proposed to enhance wildlife and/or habitat.

e. List any invasive animal species known to be on or near the site.

There are no known invasive animal species on or adjacent to the project site. However, invasive species known to be located in King County include European starling, house sparrow, and eastern gray squirrel.

6. Energy and Natural Resources

a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.

Electricity is the primary source of energy that would serve the proposed ***John Marshall School Project***. Electricity currently serves the existing John Marshall School building on the subject parcel. The project developments would tie into electricity via new and existing utility connections. The electricity would be utilized to operate the building, including lighting, heating, and electronics at the property.

b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.

The proposed project would not affect the potential use of solar energy by adjacent properties.

c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any.

No significant energy impacts are anticipated with the proposed project. However, the proposed project would be required to meet or exceed the requirements of the City of Seattle Energy Code, as well as comply with the Washington Sustainable Schools Protocol (WSSP), Seattle Public School Board Clean Energy Resolution 2020/21-8, and Seattle Public School Board Green Resolution 2012/13-12. The WSSP is a design process that helps school districts plan and implement established sustainability requirements for energy and water efficiency through site planning, materials, and indoor environmental quality.

The proposed design for the building and site improvements has been developed to minimize energy use and operate as efficiently as possible. The proposed lighting would be consistent with the City of Seattle light and glare standards (SMC 23.45.534) and SPS design requirements. The project includes the following measures that would be utilized to conserve energy and minimize energy impacts:

- Photovoltaic panels included in the proposed building design.
- Reuse existing building materials and frame to the greatest extent possible and reduce the amount of concrete required.
- Address air leakages at all portions of the project to increase mechanical use system efficiency, including the replacement of single pane windows with new insulated gas windows.
- An energy-efficient mechanical system, including heat pumps and heat recovery systems. Geothermal wells would also be utilized to support the high efficiency heat pumps.
- LED lighting and advanced lighting system controls.
- New dual EV charging stations within the south parking lot.

7. Environmental Health

a. Environmental Health Hazards:

1. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur because of this proposal? If so, describe.

Accidental spills of hazardous materials from equipment or vehicles could occur in conjunction with any construction activity. However, the construction contractor would develop a spill prevention/control plan to prevent the accidental release of hazardous materials to the environment.

2. **Describe any known or possible contamination at the site from present or past uses.**

   The Washington State Department of Ecology (WA Ecology) website was reviewed to identify any potential contaminated soils on or in the vicinity of the site, as well as potential issues related to the former Tacoma Asarco Smelter Plume. There are no records of any contaminated soils on or adjacent to the project site, and the site is located in an area where levels of arsenic and lead associated with the former smelter plume are anticipated to be below state cleanup levels (*WA Ecology, 2026*).

3. **Describe existing hazardous chemicals/conditions that might affect project development and design. This includes underground hazardous liquid and gas transmission pipelines located within the project area and in the vicinity.**

   No existing hazardous chemicals/conditions are located within the project area that would affect the proposed project.

4. **Describe any toxic or hazardous chemicals that might be stored, used, or produced during the project's development or construction, or at any time during the operating life of the project.**

   Chemicals stored and used during construction would be limited to gasoline and other petroleum products that are utilized by construction equipment and vehicles. Once the proposed project is operational, the potential chemicals that would be used on the site would generally be limited to standard household cleaning supplies and would be stored in an appropriate and safe location.

5. **Describe special emergency services that might be required.**

   No special emergency services are expected to be required as a result of the project. As is typical of urban development, it is possible that normal fire, medical, and other emergency services may, on occasion, be needed from the City of Seattle for school operations.

6. **Proposed measures to reduce or control environmental health hazards, if any.**

   No significant environmental health hazards are anticipated as part of the project and no mitigation measures would be required. A spill prevention plan would be developed and implemented during construction to minimize the potential for an accidental release of hazardous materials into the environment.

b. Noise:

1. **What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?**

   As with any urban or developed environment, standard noise will persist pertaining to traffic, resident, recreational, and neighborhood activities, etc. However, these noises are not expected to affect the proposed ***John Marshall School Project***. The primary source of noise will be from vehicular traffic associated with adjacent roadways (NE 68th Street to the north, Weedin Place NE, Interstate-5, Oswego Place NE, and NE Ravenna Boulevard) in the vicinity of the project site.

2. **What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site)?**

   Short-Term Noise

   Temporary construction-related noise would occur as a result of the development of the proposed ***John Marshall School Project***. Construction activities including excavation, grading, building modifications, and geothermal well drilling, would be the primary sources of noise during the development process, as well as noise from vehicles and equipment. Geothermal wells would be generally located in the north and west portions of the site. The geothermal wells would be constructed by utilizing vertical bores with rotary drill rigs and the primary source of noise associated with this portion of construction would be from the operation of the diesel engine. Similar to other construction activities, noise from the construction of geothermal wells would be temporary during a portion of the overall construction process. Existing residential land uses surrounding the property would be the most sensitive noise receptors and could experience occasional noise-related impacts during construction activities.

   Pursuant to Seattle's Noise Control Code, SMC 25.08, maximum sound levels in residential communities shall not exceed 55 dB(A) during the daytime and 45 dB(A) during the nighttime. Per SMC 25.08 and the Low-rise Multi-Family Residential 3 zoning at the site, construction activities are allowed to exceed the maximum noise levels between 7:00 AM and 10:00 PM on weekdays and 9:00 AM to 10:00 PM on weekends and holidays. Construction equipment may exceed the sound level limits during construction periods by 25 dB(A) and portable powered equipment may exceed the limits by 20 dB(A). The proposed project would comply with provisions of Seattle's Noise Code as it relates to construction-related noise to reduce noise impacts during construction. Contractors are aware of the City of Seattle Noise Ordinance requirements and are contractually required by SPS to abide by them and therefore any short-term construction noise impacts are not expected to result in a significant impact.

   Long-Term Noise

   The proposed project would potentially result in a minor increase in noise from human voices and vehicles traveling to and from the site, particularly during the school day and

during student drop-off and pickup. The potential increase in noise is anticipated to be minor and indistinguishable from existing noise levels. As a result, no significant noise impacts would be anticipated.

3. Proposed measures to reduce or control noise impacts, if any.

No significant noise impacts are anticipated with the proposed project. However, the project includes the following measures would be provided to minimize noise from construction and operation:

- Construction of the project would comply with provisions of the City's Noise Code SMC 25.08; specifically: construction hours would be limited to standard construction hours (non-holiday) from 7:00 AM to 10:00 PM and Saturdays and Sundays (including holidays) from 9:00 AM to 10:00 PM. However, similar to other SPS projects, construction would generally occur between 7:00 AM and 5:00 PM on weekdays.

- To reduce noise during construction, contractors could also implement the following measures:
  - Minimize idling time of equipment and vehicle operation.
  - Use well-maintained and properly functioning equipment and vehicles.
  - Locate stationary equipment away from receiving properties.

The project will also include the installation of geothermal wells within the north and west portions of the site. The noise associated with the drilling of the wells would be within local and state regulations. The contractor would provide updates to nearby residents on the progress and duration of activities during the construction of the project. After construction, the site would continue to serve as a school and no significant changes in noise levels are anticipated over existing conditions. No additional mitigation would be required.

8. Land and Shoreline Use

a. What is the current use of the site and adjacent properties? Will the proposal affect current land uses on nearby or adjacent properties? If so, describe.

The proposed ***John Marshall School Project*** site is currently developed with a three-story building, parking areas, outdoor play and recreational areas, and intermittent landscaping with trees and vegetation. See **Figure 2** for an aerial map of the existing site and **Figure 3** for the proposed site plan for the project.

Existing land uses adjacent to the project site include single and multi-family residential properties to the north, south, and west, as well as Interstate-5 located to the east. The primary land use in the project site vicinity is residential with pockets of commercial and retail buildings. Considering the proposed project would continue to operate as an educational facility, no impacts or changes to land use at or surrounding the site are

anticipated.

b. Has the project site been used as working farmlands or working forest lands? If so, describe. How much agricultural or forest land of long-term commercial significance will be converted to other uses because of the proposal, if any? If resource lands have not been designated, how many acres in farmland or forest land tax status will be converted to nonfarm or non-forest use?

The project site has no recent history of use as a working farmland or forest land.

1. Will the proposal affect or be affected by surrounding working farm or forest land normal business operations, such as oversize equipment access, the application of pesticides, tilling, and harvesting? If so, how?

The project site is located in an urban area and would not affect or be affected by working farm or forest land as no working farm or forest land is located in the vicinity of this urban site.

c. Describe any structures on the site.

Existing structures on the project site include the three-story, approximately 95,540 square-foot John Marshall School building (constructed in 1926).

d. Will any structures be demolished? If so, what?

A limited portion of the existing John Marshall School building will be demolished as part of the proposed project and the existing roof will be removed and replaced. The areas to be demolished are located within the center-east portions of the building (behind the primary, west-facing façade of the existing building). The east-most single-story portion of the existing John Marshall School Building contains resource classroom spaces which will be demolished in their entirety. The center portion of the existing building containing kitchen, lunchrooms, a classroom, locker rooms, & corridors will be removed down to the first-floor slab and existing roof will be removed and replaced. In total, approximately 10,300 square feet of the existing 95,540 square-foot building would be demolished and approximately 85,210 square feet would be retained with the project.

e. What is the current zoning classification of the site?

The current zoning classification for the site is Low-Rise Multi-Family 3 (LR3) and LR3 RC (*City of Seattle, 2026*).

f. What is the current comprehensive plan designation of the site?

The comprehensive plan future land use designation for the site is Residential Urban Village (*City of Seattle, 2026*).

g. If applicable, what is the current shoreline master program designation of the site?

The project site is not located within the City of Seattle designated shoreline boundary (*City of Seattle, 2026).*

h. Has any part of the site been classified as a critical area by the city or county? If so, specify.

As previously discussed in **Section B.1.d**, the project site is located within a Liquefaction Prone ECA. Potential mitigation measures are noted in **Section B.1.d** and no significant impacts would be anticipated. No other ECAs are located on the project site.

i. Approximately how many people would reside or work in the completed project?

The proposed project would not provide any residential opportunities. Operation of the ***John Marshall School Project*** would be anticipated to provide space between approximately 69 to 108 employees depending on the interim school use. However, it should be noted that some of these employees would only be on site on a limited basis. The school would provide a maximum capacity of approximately 650 elementary or 1,000 middle school students on an interim basis.

Historically, the existing building was designed to accommodate approximately 900 students, with a peak enrollment of approximately 1,450 students between 1955 and 1957 (Cipalla, et. al., 2024). More recently, over the past 10 years the building has served as an interim school with enrollments up to 750 students, as well as associated employees, on an interim basis.

j. Approximately how many people would the completed project displace?

The proposed project would not displace any people.

k. Proposed measures to avoid or reduce displacement impacts, if any.

No displacement would occur and therefore no mitigation measures are necessary.

l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any.

The proposed project would be compatible with existing land uses and plans.

The project site is designated on the City of Seattle Comprehensive Plan Future Land Use Map as Residential Urban Village. Residential Urban Villages aim to provide general services, convenient pedestrian and transit opportunities, and meet housing goals. The proposed ***John Marshall School Project*** would be consistent with the future land use

designation by providing community resources, such as job opportunities and educational facilities within a residentially focused area.

The Seattle Municipal Code includes development standards for public schools in residential zones (SMC 23.51B.002) and includes procedures for departures from the required development standards for public school structures (SMC 23.79). Due to the size of the site, the existing building, and the configuration of the site, the project is requesting departures for the following:

- Maximum Building Height – to allow for a rooftop mechanical penthouse to replace the existing 100-year-old mechanical system.
- Setbacks – to accommodate long-term bicycle parking on the site.
- Bicycle Parking – to reduce the number of bicycle stalls due to the interim school nature of the use and fewer students who are likely to travel to the site by bicycle.
- Signs in Multifamily Zones – to provide one double-sided, illuminated reader board with changing images to allow for wayfinding for the interim school communities and support multiple languages for the different communities served by the school.
- Fences within Setbacks – to provide new fencing along the property line to match the existing eight-foot tall fencing and establish clear boundaries between the site and adjacent Metro Park and Ride.

The City of Seattle's departures process is separate from SEPA review. SPS is continuing to coordinate with the City regarding departures for the proposed project and would comply with the requirements of the City's departures process.

m. Proposed measures to reduce or control impacts to agricultural and forest lands of long-term commercial significance, if any.

The project site is not located near agricultural or forest lands and therefore no mitigation measures are necessary.

9. Housing

a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.

No housing units would be provided as part of the project.

b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.

No housing presently exists on the project site and none would be eliminated.

c. Proposed measures to reduce or control housing impacts, if any.

No housing impacts would occur and therefore no mitigation would be necessary.

10. Aesthetics

a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?

The proposed ***John Marshall School Project*** building at the highest point of the rooftop would be approximately 60 feet to the top of the mechanical penthouse, an increase of approximately nine feet from the existing building. Principal exterior building materials would include brick veneer, glass windows, and metal panels.

b. What views in the immediate vicinity would be altered or obstructed?

Existing views of the site are generally limited to one to three blocks in all directions due to existing one-story to four-story residential buildings, trees, utilities, roadways, and other vegetation obstructing the viewshed. Views of the ***John Marshall School Project*** site would change with the project from the existing 95,540 square-foot, three-story building to a larger three-story school facility with approximately 113,054 square feet and new trees, outdoor play areas, and landscaping on the site. The proposed building addition would be located on the east side of the existing building and away from the primary public façade which is located to the west along Ravenna Boulevard. With this location and the proposed design, while the new addition would be slightly taller than the existing building it would appear to be visually subordinate to the existing building from the view of the primary façade (western façade) due to the addition being setback further to the east behind the primary façade. As such, views of the primary façade of the existing building from the west would remain generally similar to existing conditions. The new landscaping would also be provided to enhance the aesthetic character of the site. Therefore, existing background views (i.e., views of buildings beyond the site) from nearby locations are not anticipated to be significantly obstructed or altered by the proposed ***John Marshall School Project*** and no significant aesthetic impact is anticipated.

The City of Seattle maintains public view protection policies which are 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 Puget Sound, 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[2]. However, there are no SEPA protected view sites on or in the vicinity of the ***John Marshall School Project*** site. The closest designated protected viewpoint is Rainbow Point which is located approximately 0.35 miles north of the project site (*City of Seattle, 2026).* The John Marshall School is not visible from this

[2] SMC 25.05.675 P.2.a and the accompanying list of protected views in *Attachment 1*

viewpoint and therefore no impacts are anticipated.

View protection from City-designated Scenic Routes is encouraged[3]. According to documentation from the City of Seattle, the closest designated scenic route to the project site is Interstate-5 located immediately east of the project site[4]. Although the ***John Marshall School Project*** will be visible from Interstate-5, the proposed building modifications would not significantly alter the existing viewshed of the site from Interstate-5 and no impacts to scenic routes are anticipated.

Views of designated historic landmarks are also a consideration[5]. The closest City of Seattle designated landmark is Fire Station #16 located approximately 0.1 miles north of the project site (*City of Seattle, 2026)*. The proposed ***John Marshall School Project*** would not be visible from Fire Station #16 and would therefore have no impact on the view of landmark structures. There are no designated views of the Space Needle on or adjacent to the project site[6].

c. Proposed measures to reduce or control aesthetic impacts, if any.

No significant impacts are anticipated with regard to aesthetic impacts. The proposed building addition and site improvements would be designed to complement the existing building and intended to be visually subordinate to the existing building.

11. Light and Glare

a. What type of light or glare will the proposal produce? What time of day would it mainly occur?

Short-Term Light and Glare

At times during the construction process, area lighting of the job site (to meet safety requirements) may be necessary, which has the potential to be noticeable proximate to the project site. However, such lighting would be temporary and would not occur on a regular basis during construction. In general, light and glare from construction of the proposed project is not anticipated to adversely affect adjacent land uses considering it is relatively minor and temporary.

Long-Term Light and Glare

With the proposed ***John Marshall School Project***, there would be a slight increase in light and glare with the proposed building. Light sources would primarily consist of interior and

[3] Ordinance #97025, Ordinance #114057, and Seattle DCLU, 2001

[4] Scenic routes provided by Seattle Transportation, Traffic Division Map within SMC 25.05.675

[5] SMC 25.05.675 P.2.c

[6] SMC 25.05.675 P.2.d

exterior building lighting, as well as lights from additional vehicles traveling to and from the site. Exterior building and outdoor lighting would be designed in accordance with applicable provisions of SMC 23.46.020 and would be intended to focus light on the site through angle and shielding techniques to minimize impacts on adjacent properties. Glare from building materials (e.g., window glazing or other building materials) could also occur during certain times of day. The presence of new trees and landscaping would provide a buffer between the school building and existing off-site uses to reduce light and glare toward adjacent properties. Overall, the resulting light and glare should not increase greatly from existing conditions. Based on the relatively small scale of the project, as well as implemented design and regulatory measures, no significant light or glare impacts are anticipated.

b. Could light or glare from the finished project be a safety hazard or interfere with views?

Light and glare associated with the proposed project would not be expected to cause a safety hazard or interfere with views.

c. What existing off-site sources of light or glare may affect your proposal?

No off-site sources of light or glare are anticipated to affect the proposed project.

d. Proposed measures to reduce or control light and glare impacts, if any.

All implemented light and glare designs will follow applicable City of Seattle and SPS requirements. No adverse impacts from light and glare are anticipated and therefore no additional mitigation measures are proposed.

12. Recreation

a. What designated and informal recreational opportunities are in the immediate vicinity?

Current recreational areas at the project site include two outdoor areas with play structures located at the northern and southern sides of the building, as well as basketball courts to the east and hardscape play areas to the south of the building. The northern play area, southern play area, basketball courts, and hardscape play areas contain approximately 31,300 square feet of recreational space.

There are also several parks and recreation areas in the vicinity of the project site (approximately one-half mile), including:

- Ravenna Boulevard Park is located approximately 40 feet west of the site in the median of NE Ravenna Boulevard at its closest point.
- Green Lake Park is located approximately 0.1 miles northwest of the site.
- Rainbow Point Park is located approximately 0.35 miles north of the site.
- NE 60th Street Park is located approximately 0.35 miles south of the site.
- Froula Playground is located approximately 0.4 miles northeast of the site.

- Roosevelt Land-Bank Site Park is located approximately 0.4 miles east of the site.
- Banner Way Triangles Park is located approximately 0.5 miles north of the site.
- Ravenna Park is located approximately 0.5 miles southeast of the site.
- Cowen Park is located approximately 0.5 miles southeast of the site.

b. Would the proposed project displace any existing recreational uses? If so, describe.

The ***John Marshall School Project*** would require the removal of the existing 31,300 square-foot outdoor play areas, associated play structures, and hardscape basketball and recreational areas. As part of development, a new approximately 4,400 square-foot synthetic soft surface play area with play structure, 9,500 square-foot synthetic turf playfield, and 20,000 square feet of additional hardscape recreational areas. The resulting total recreational area at the project site would be approximately 33,900 square feet, a net increase of 2,600 square feet from existing conditions. Some existing trees and vegetation on the property would also be removed and replaced as previously described under **Sections B.4.b** and **B.4.d**.

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any.

As noted above, the proposed ***John Marshall School Project*** would provide new and enhanced recreation space for the site. Therefore, no additional mitigation measures would be necessary.

13. Historic and Cultural Preservation

a. Are there any buildings, structures, or sites, located on or near the site that are over 45 years old listed in or eligible for listing in national, state, or local preservation registers? If so, specifically describe.

The John Marshall School building is a three-story structure that was constructed in 1926 and is located in the western side of the parcel. Based on information of the City of Seattle Landmarks Map, Washington Department of Archaeology and Historic Preservation's (DAHP) Washington Information System for Architectural and Archaeological Records Data (WISAARD), and National Register of Historic Places (NRHP), the existing John Marshall School building is recorded as eligible for listing within the NRHP.

According to the City of Seattle Landmarks Map (*City of Seattle, 2026*), the following listed City of Seattle Landmarks are located in the site vicinity (approximately one-half mile):

- Fire Station #16 located approximately 535 feet north of the site.
- Evans Pool located approximately 0.35 miles northwest of the site.
- Roosevelt High School located approximately 0.4 miles east of the site.
- Green Lake Library located approximately 0.4 miles northwest of the site.

- Dr Annie Russell House located approximately 0.4 miles south of the site.

Although there are several buildings that meet the age threshold for registration in the project site vicinity, according to DAHP WISAARD, the following listings were noted within a one-half mile radius of the site (*City of Seattle, 2026*):

- John Marshall Junior High School, the subject building, is eligible for listing.
- Seattle Freeway Prototype Community Fallout Shelter, located approximately 180 feet north of the site, is eligible for listing.
- Evans Swimming Pool - Green Lake Park, located approximately 0.4 miles northwest of the site, is eligible for listing.
- Change House, located approximately 0.3 miles northeast of the site, is eligible for listing.
- Steiner House, located approximately 0.3 miles northeast of the site, is eligible for listing.
- Bakketun Residence, located approximately 0.3 miles east of the site, is eligible for listing.
- Culpepper House, located approximately 0.35 miles northeast of the site, is eligible for listing.
- Pacific Telephone and Telegraph Company, located approximately 0.35 miles southeast of the site, is eligible for listing.
- Pearl Market, located approximately 0.35 miles southeast of the site, is eligible for listing.
- Seattle Public Library - Green Lake Branch, located approximately 0.35 miles northwest of the site, is recorded as listed on the NRHP.
- Residence at 1021 NE 73rd Street, located approximately 0.4 miles northeast of the site, is eligible for listing.
- Roosevelt High School, located approximately 0.4 miles east of the site, is eligible for listing.
- Ravenna-Cowen North Historic District, located at its closest point approximately 0.4 miles southeast from the site, is a historic district listed within the NRHP that includes several NRHP listed or eligible buildings.
- M. A. Barton House, located approximately 0.4 miles east-southeast of the site, is eligible for listing.
- Ferne Funk House, located approximately 0.4 miles east-southeast of the site, is eligible for listing.
- P. G. Zwilgmeyer House, located approximately 0.4 miles east-southeast of the site, is eligible for listing.
- Cecil Bullock House, located approximately 0.4 miles east-southeast of the site, is eligible for listing.
- Henry Gustafson House, located approximately 0.4 miles east-southeast of the site, is eligible for listing.
- Eckert House, located approximately 0.4 miles southeast of the site, is eligible for listing.
- Residence at 6117 12th Avenue NE, located approximately 0.4 miles southeast of

the site, is eligible for listing.

- McNamee-Gorner House, located approximately 0.4 miles southeast of the site, is eligible for listing.
- Green Lake Park Field House, located approximately 0.4 miles northwest of the site, is eligible for listing.
- Green Lake Reservoir, located approximately 0.45 miles northeast of the site, is eligible for listing.
- Green Lake Pump Station, located approximately 0.45 miles northeast of the site, is eligible for listing.
- House 23, located approximately 0.45 miles east-southeast of the site, is eligible for listing.
- Residence at 6101 12th Avenue NE, located approximately 0.45 miles southeast of the site, is eligible for listing.
- Russell, Dr. Annie, House, located approximately 0.45 miles south of the site, is eligible for listing.
- House at 135 NE 59th Street, located approximately 0.45 miles southwest of the site, is eligible for listing.

As noted above, the John Marshall School building has been determined eligible for listing in the NRHP and appears to meet the criteria for Seattle Landmark designation except that SPS, as the property owner, has not consented to a formal Landmark designation and the building cannot accordingly be designated as a Seattle Landmark. Nevertheless, the building renovation has been designed with the commitment to retain the majority of the building and preserve historic and character-defining features as part of this project.

The building is a highly intact three-story Georgian Revival-style school constructed in 1926 and designed by Floyd A. Naramore, then Supervising Architect for SPS. The character-defining elements of the resource are:

- The three-story classroom bars exterior façades facing NE Ravenna Boulevard and NE 68th Street feature symmetrical Georgian Revival composition with red brick cladding, cast stone ornament, and original window patterns.
- The unreinforced masonry (URM) gymnasium structures are notable for their distinctive arched windows.
- The front lawn and setback along NE Ravenna Boulevard form part of the historic Olmsted-designed boulevard system.

The proposed project would modernize the school facility to meet the contemporary educational needs of SPS while retaining and preserving all the above character-defining features. New construction is confined to less significant portions of the building and is designed to be visually subordinate to the historic structure.

The ***John Marshall School Project*** proposes a full interior modernization of the classroom wing of the building. The work would include a seismic upgrade, new mechanical, plumbing, and electrical systems, and a reconfiguration of spaces to meet modern

educational needs. The envelope would also be modernized, the exterior walls and roof would be insulated to meet the current energy code, and the deteriorating wood windows would be replaced with new aluminum clad wood windows with profiles to match the originals. Most of the original cast stone sills would be replaced in kind and the brick would be repointed. The locker room structures located between the historic classroom wing would be removed and replaced with a new three-story classroom addition approximately within the existing footprint. The massing of the addition sits slightly below the height of the existing classroom wing, preserving the visual prominence of the original building from NE Ravenna Boulevard and NE 68th Street.

The historic URM gymnasium, among the building's most architecturally significant elements, will be preserved and adaptively reused as a library and band room. The project retains the interior volumes and the distinctive arched windows, ensuring continued visibility and appreciation of these spaces.

The former shop wing at the rear (east) portion of the building would be removed in order to make space for the addition of new gym that is sized to meet modern needs (see **Figure 4** for details). The former shop wing is a single-story utilitarian portion that is original to the 1926 construction. However, the shop wing is not visible from NE Ravenna Boulevard and has historically portrayed as a secondary service element rather than a principal façade. It features simplified fenestration, minimal architectural detailing, and less robust construction materials than the primary portions of the building. Therefore, removal of the east shop wing is not expected to adversely affect the historic identity or landmark-eligible character of the resource.

Renovations and improvements on the building, the front lawn, setback, and right-of-way along NE Ravenna Boulevard will undergo minor modifications and improvements and are designed to retain the most prominent historic features pertaining to the building. Building improvements along the primary façade will include renovations, such as replacement of windows, that will retain the overall visual character and will not remove any defining features. Proposed improvements in the front lawn and setback area along NE Ravenna Boulevard will include some grading and construction for a new entry plaza; however, the remaining lawn and setback area will remain entirely intact with no grading, construction or alterations.

The proposed work on the building, front lawn, and right-of-way along NE Ravenna Boulevard is relatively minor and the overall viewshed and historic character defining features of the site would remain entirely intact. This preserves the building's historic relationship to the Olmsted-designed boulevard and maintains the site's contribution to the resource's significance. Elsewhere on the site, surface parking areas that lack historic significance will be replaced with a combination of hardscape and soft landscape areas designed to support student outdoor activities.

Additionally, SPS is in the process of consultation and review with DAHP as part of the process for Governor’s Executive Order 21-02, which also includes coordination with local Tribes. As part of the consultation process, DAHP concluded that the project as proposed

will have no adverse impact on historic resources that are listed in, or determined eligible for listing in the NRHP (*Washington Department of Archaeology and Historic Preservation, 2026*). SPS will continue to coordinate with DAHP to complete the 21-02 process.

b. Are there any landmarks, features, or other evidence of Indian or historic use or occupation? This may include human burials or old cemeteries. Are there any material evidence, artifacts, or areas of cultural importance on or near the site? Please list any professional studies conducted at the site to identify such resources.

The DAHP WISAARD predictive model indicates that the project site is comprised of area that could be considered low to moderate risk for archaeological resources and recommends that a Cultural Resources Assessment be conducted.

A Cultural Resources Assessment was completed for the project site (*Psomas, 2026*) that included a review of records on file with DAHP, historic map and archival research, review of geotechnical investigations for the project, and onsite investigations. Prior to conducting onsite investigations, emails were sent to local Tribes (including the Muckleshoot Tribe, Suquamish Tribe, Snoqualmie Tribe, Stillaguamish Tribe, Squaxin Tribe, Tulalip Tribe, and Duwamish Tribal Organization) to solicit information and invite representatives to participate in archaeological fieldwork. A representative from the Duwamish Tribal Organization was on hand during fieldwork for the Cultural Resources Assessment. Fieldwork included a pedestrian survey of the site area and four shovel probe subsurface excavations that were completed within the lawn area to the west of the existing building.

Subsurface explorations encountered fill sediments within all shovel probe locations on the site. No potentially significant cultural resource materials were observed during subsurface explorations. Similarly, no buried soils indicative of stable subaerially-exposed surfaces suitable for human use were encountered, which would indicate that former ground surfaces with the potential for cultural resource materials would be unlikely within the upper extent (approximately 4.7 feet below the ground surface) of the project area.

Based on the review of records, archival research, and onsite investigations for the project, the project area would be considered to have a moderate potential for buried precontact cultural resource materials. While no cultural resource materials were observed from background research or onsite investigations, deeply buried deposits have the potential to contain intact cultural resource materials. While most proposed project activities associated with the ***John Marshall School Project*** are unlikely to encounter cultural resource materials, ground disturbance within the proposed building addition area has an elevated potential to encounter as-yet unidentified cultural resource materials. Therefore, measures have been identified below in Section B.13.d to minimize potential impacts to cultural resources, including the development of an Inadvertent Discovery Plan, and no significant impacts to cultural resources would be anticipated with the implementation of these measures. See **Appendix E**[7] for further details.

[7] The Cultural Resources Assessment is on file with SPS.

c. Describe the methods used to assess the potential impacts to cultural and historic resources on or near the project site. Examples include consultation with tribes and the department of archeology and historic preservation, archaeological surveys, historic maps, GIS data, etc.

The DAHP WISAARD, City of Seattle Landmarks database, City of Seattle Archaeological Buffer online mapper, and the Cultural Resources Assessment completed by Psomas (see **Appendix E**) were consulted to identify any potential historic or cultural sites in the surrounding area, as well as the potential for encountering archaeological resources in the area.

The Cultural Resources Assessment completed for the site (*Psomas, 2026*) included a review of records on file with DAHP, historic map and archival research, review of geotechnical investigations for the project, and onsite surface and subsurface investigations.

d. Proposed measures to avoid, minimize, or compensate for loss, changes to, and disturbance to resources. Please include plans for the above and any permits that may be required.

The proposed project has been specifically designed to avoid significant adverse impacts to the John Marshall School historic resource and surrounding Olmsted-designed boulevard. The following measures are identified to minimize potential impacts to historic resources.

- All major character-defining elements, particularly the primary façades and building form along NE Ravenna Boulevard, the gymnasium structures, and front lawn would be retained and preserved in place.
- New building construction would be located away from the primary public façade and be intended to appear visually subordinate to the existing building. With the proposed design and location, the new addition would be slightly taller than the existing building but it would appear to be visually subordinate to the existing building from the view of the primary façade (western façade) due to the addition being setback further to the east behind the primary façade. As such, views of the primary façade of the existing building from the west would remain generally similar to existing conditions. In addition, the proposed new plaza area would also be designed to be visually subordinate to the main public façade and not affect views of the building.
- While some historic material will be removed as part of the project, these removals are limited to areas that are not central to the building's historic significance. To further mitigate this impact, the portions of the building proposed for demolition would be thoroughly documented through measured drawings and

high-resolution photography to ensure a permanent record of the original conditions is retained.

- SPS is in the process of consultation and review with DAHP as part of the process for Governor's Executive Order 21-02, which also includes coordination with local Tribes. SPS will continue to work with and coordinate with DAHP to complete the 21-02 process.

The following measures are identified to minimize potential impacts to cultural resources (see **Appendix E** for further details).

- Project-related ground disturbance not exceeding 4.5 feet below the prevailing grade would proceed under the Inadvertent Discovery Plan for the project (see **Appendix E**). The Inadvertent Discovery Plan should be kept onsite during project construction.
- Archaeological monitoring is recommended for excavation activities within the proposed building addition area if open excavations will expose native soil deposits.

14. Transportation

A *Transportation Technical Report* (Heffron Transportation, Inc., 2026) has been prepared for the proposed project, and the results of the report are summarized in this section. For further details on the *Transportation Technical Report*, please refer to **Appendix F** of this Checklist.

It should be noted that while the transportation report provides an analysis of parking with the project because it is necessary to support the proposed Development Standard Departures with the City of Seattle, the State of Washington adopted SEPA-related amendments on January 20, 2023, which removed parking as an element of the environment in WAC 197-11-444(2)(c)(iv). The amendment also removed the parking-related question from the environmental checklist in WAC 197-11-960(B)(14)(c). Pursuant to these updates, SPS and the City of Seattle will no longer identify and analyze parking impacts in its SEPA analysis.

a. Identify public streets and highways serving the site or affected geographic area and describe proposed access to the existing street system. Show on site plans, if any.

The John Marshall School site is bounded on the west by NE Ravenna Boulevard, on the north by NE 68th Street, and at the northeast corner by Weedin Place NE. To the east, it is bounded by Washington State Department of Transportation (WSDOT) right-of-way that is below Interstate 5 and adjacent to the King County Metro I-5/NE 65th Street/Green Lake Park-and-Ride Lot. On the south, there are private multi-family residential properties and a portion of the referenced park-and-ride lot.

Currently, three areas of the site have striped parking – located on the north, northeast, and southeast; however, only two of those areas (north and northeast) are within the

fenced portion of the site. The southeast parking area (with 21 stalls) is within the fenced area of the adjacent King County Metro Park-and-Ride lot. The north lot (with 44 stalls) and northeast lot are accessed from two driveways on NE 68th Street. The school-site property boundary aligns diagonally through the northeast lot with part of it on Seattle Public School's property and part within WSDOT right-of-way. Approximately 10 stalls are located on Seattle Public School's property. There is also a gated and locked access at the north end of Oswego Place NE, which dead ends at the site on the south. The parking at the southeast portion of the site (not within the fenced area of the school site) is accessed from driveways serving the park-and-ride lot. The western site frontage (east side of NE Ravenna Boulevard) is signed 'School Bus Only' from 7:00 to 9:00 A.M. to 1:00 to 4:00 P.M.

The site's frontage along NE Ravenna Boulevard would remain a 'School Bus Only' zone and the NE 68th Street frontage would be signed 'School Load Only' for family-vehicle load/unload.

The site would be reconfigured to incorporate Seattle Public School's property that is now used as parking for the adjacent park-and-ride lot. The site would have 18 parking stalls in two lots including 16 stalls in a new lot south of the building and two ADA stalls in the northeast lot. The adjacent WSDOT right-of-way is not proposed to be changed. The northeast lot would be accessed from the existing eastern driveway on NE 68th Street and the west driveway on NE 68th Street would be removed. The new south lot would be accessed from the existing driveway at the north end of Oswego Place NE.

The site plan and access configuration was developed in coordination with the Seattle Department of Transportation (SDOT) through the Street Improvement Permit (SIP) process. Frontage improvements, including curb and ramp replacement, landscaping, street trees, and sidewalk repairs along NE Ravenna Boulevard, NE 68th Street, and Oswego Place NE would be completed as required.

b. Is the site or affected geographic area currently served by public transit? If so, generally describe. If not, what is the approximate distance to the nearest transit stop?

King County Metro Transit (Metro) provides bus service along NE Ravenna Boulevard within 200 feet of the John Marshall School site. The northbound stop is located just north of NE 68th Street and the southbound stop is located south of NE 68th Street. These stops are served by Routes 45 and 62. The Green Lake Park-and-Ride is located adjacent to the site just to the south and is served by Routes 45, 62, and 79. Sound Transit's Roosevelt Station is located approximately 0.4 miles east of the site at the NE 65th Street and 12th Avenue NE intersection. It is served by Sound Transit's Link 1 Line and Link 2 Line light rail service with connections north to Lynnwood, south to Federal Way, and east to Bellevue and Redmond. The Roosevelt Station is also served by Metro Routes 45, 62, and 79 operating along NE 65th Street. Refer to the *Transportation Technical Report* in **Appendix F** for more information about public transit serving the site and surrounding vicinity.

In most cases, the John Marshall School site would be outside of the walk boundary for interim schools that would occupy the building. Therefore, all students are likely eligible for school-bus transportation while their school occupies the site. In addition, all students aged 18 and younger in King County are eligible for fare-free transit.

c. Will the proposal require any new or improvements to existing roads, streets, pedestrian, bicycle, or state transportation facilities, not including driveways? If so, generally describe (indicate whether public or private).

SPS would request that the frontage on the south side of NE 68th Street be designated for 'School Load Only' for family automobile load and unload. Based on load zones at other SPS schools, the restrictions are likely to be in effect from 7:00 to 9:00 A.M. and from 2:00 to 4:00 P.M. The frontage could be used for general parking at other times. School buses would continue to use the load zone on the east (northbound) side of NE Ravenna Boulevard.

Frontage improvements including curb and ramp replacement and sidewalk repairs along NE Ravenna Boulevard, NE 68th Street, and Oswego Place NE would be completed as required by SDOT through the SIP process. Additionally, SPS would request a departure for bicycle parking requirements to reduce the number of bicycle parking spaces on the site due to lack of use. No other physical changes to the surrounding transportation network are proposed or required as part of the project.

d. Will the project or proposal use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.

The ***John Marshall School Project*** would not use or occur in the immediate vicinity of water or air transportation. However, the school is located within one-half mile of Sound Transit's Roosevelt Station, which is served by Sound Transit's Link 1 Line and Link 2 Line light rail service with connections north to Lynnwood, south to Federal Way, and east to Bellevue and Redmond. Some school employees, visitors, and students are likely to use light rail to access the site.

e. How many vehicular trips per day would be generated by the completed project or proposal? If known, indicate when peak volumes would occur and what percentage of the volume would be trucks (such as commercial and non-passenger vehicles). What data or transportation models were used to make these estimates?

The traffic analysis conducted for this SEPA Checklist was prepared to evaluate the John Marshall School to continue to temporarily house an elementary school (with up to 650 students) or a middle school (with up to 1,000 students) while their respective buildings are renovated or replaced. Based on review of the range of potential interim use scenarios, it was determined that a middle school operating at the planned enrollment capacity of up to 1,000 students would result in the highest estimated peak hour trip generation and largest change from its highest prior use over the previous 10 years. Without the project, the building could be occupied by a 756-student middle school, based on the size of a K-8 that has already been accommodated on the site in the past

ten years.

The ***John Marshall School Project*** would increase enrollment capacity up to 1,000 students (a net increase of 240 students) compared to the school's recent prior use. Based on daily trip generation rates published for middle schools by the Institute of Transportation Engineers, the added capacity is expected to generate a net increase of about 510 trips per day (255 in, 255 out). The peak traffic volumes would occur in the morning just before classes begin (8:00 to 9:00 A.M.) and in the afternoon around dismissal (3:15 to 4:15 P.M.).

The number of school buses would vary depending on the school occupying the building. School buses are expected to range from 4 to 12 full-size buses plus 3 to 8 shorter Special Education (SPED) buses. Other truck trips expected to continue serving the site include deliveries of food and supplies, trash and recycling pick-up, and occasional maintenance.

Overall, school buses and small trucks would likely continue to represent about 2% to 4% of the total daily traffic. For more information about the anticipated school traffic generation, refer to **Appendix F** for the *Transportation Technical Report* (Heffron Transportation, Inc., 2026).

f. Will the proposal interfere with, affect, or be affected by the movement of agricultural and forest products on roads or streets in the area? If so, generally describe.

The proposal would not interfere with the movement of agricultural or forest products on streets in the area because no agricultural or working forest lands are located within the vicinity of the project site.

g. Proposed measures to reduce or control transportation impacts, if any.

The following measures are identified to reduce adverse impacts during short-term construction and long-term operations of the ***John Marshall School Project*** with the proposed addition and planned interim student use. With these measures the project would not result in significant adverse transportation impacts.

- Construction Transportation Management Plan (CTMP): SPS will require the selected contractor to develop a CTMP that addresses traffic and pedestrian control during construction of the new facility. It would define truck routes, lane closures, walkway closures, and parking or load/unload area disruptions, as necessary. To the extent possible, the CTMP would direct trucks along the shortest route to arterials and away from residential streets to avoid unnecessary conflicts with resident and pedestrian activity. The CTMP may also include measures to keep adjacent streets clean on a daily basis at the truck exit points (such as street sweeping or on-site truck wheel cleaning) to reduce tracking dirt offsite.
- Initial School Transportation Management Plan (TMP): Prior to opening the expanded school for interim use by a middle or elementary school, SPS will

establish a TMP designed to minimize automobile trips to and from the site and to educate parents and students about the preferred access and circulation patterns for the interim school. The TMP will include the following key components:

- Bus transportation options for students
- Other transportation options to families
- Ride-sharing opportunities
- Directions for load/unload and parking procedures
- School bus staging and load/unload procedures

Consistent staff monitoring of the load/unload area and related queuing conditions will occur at the beginning of each school year followed by regular monitoring as needed to address queuing concerns.

- Subsequent School TMPs: Prior to occupancy for interim use by other schools, SPS will update the TMP to reflect any needed modifications. School bus staging adjustments may be needed if most or all students qualify based on distance from the site.
- Event Management Plan: Prior to each school year, SPS will work with the school principal to develop an Event Management Plan to reduce parking impacts during large evening events (those expected to have 500 or more attendees). Measures could include: 1) separating large events by grade to reduce overall attendance on any given evening; 2) holding large events at an off-site location; and/or 3) securing agreements for off-site/off-street parking such as at the adjacent Green Lake Park-and-Ride lot or nearby church parking lots.
- Develop Neighborhood Communication Plan for School Events: SPS and school administration would develop a neighborhood communication plan to inform nearby neighbors of events each year. The plan will be updated annually (or as events are scheduled) and would provide information about the dates, times, and rough magnitude of attendance. The communication would be intended to allow neighbors to plan for the occasional increase in on-street parking demand that would occur with large events. SPS will coordinate the Neighborhood Communication Plan with each principal prior to occupation by their school.
- Update right-of-way and curb-side signage: SPS will work with SDOT to confirm the locations, extent, and signage (such as times of restrictions) of the school-bus load zone on NE Ravenna Boulevard and the passenger-vehicle load/unload zone on NE 68th Street.

15. Public Services

a. Would the project result in an increased need for public services (for example: fire protection, police protection, public transit, health care, schools, other)? If so, generally describe.

While the ***John Marshall School Project*** would increase student and staff capacity at the site, it is not anticipated to generate a significant increase in the overall need for public

services in the area since these students and staff would be temporarily relocated to the site from other schools within the north portion of the school district. To the extent that emergency service providers have planned for gradual increases in service demands, no significant impacts are anticipated.

b. Proposed measures to reduce or control direct impacts on public services, if any.

The increase in capacity of the school and number of students and staff on the site may result in incrementally greater demand for emergency services; however, it is anticipated that adequate service capacity is available within the Green Lake neighborhood area to negate the need for additional public facilities/services.

16. Utilities

a. Circle utilities currently available at the site: <u>electricity</u>, <u>natural gas</u>, <u>water</u>, <u>refuse service</u>, <u>telephone</u>, <u>sanitary sewer</u>, septic system, other:

All underlined utilities are currently available at the site.

b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.

The proposed ***John Marshall School Project*** would require additional electricity, water, sewer, and refuse services for operation. Utilities and providers (in parentheses) proposed for the project would include the following:

- Electrical (Seattle City Light) – the existing and proposed modification/addition would be required to connect to existing electrical providers to power the proposed project. New electrical utility lines and transformers would be installed as part of the project to provide electricity service for the site.
- Water (Seattle Public Utilities) – new water service lines would be constructed to connect existing and proposed improvements on the project site.
- Sewer (Seattle Public Utilities) – new combined sewer and stormwater service lines would be installed to connect to the existing sanitary sewer system that discharges along NE 68th Street to the north of the existing building.
- Refuse Service (Seattle Public Utilities/Waste Management Northwest) – Seattle Public Utilities, through a contract with Waste Management Northwest, provides refuse service for the City of Seattle area, including the project site, and would continue to provide service with the implementation of the proposed project.
- Natural Gas (Puget Sound Energy) – access to natural gas would be removed from the project site. Natural gas lines would be capped at the connections in the right-of-way and gas valves would be removed.

C. Signature

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Paul Wight

Type name of signee: Paul Wight

Position and agency/organization: Project Manager, Seattle Public Schools

Date submitted: 8/17/2026

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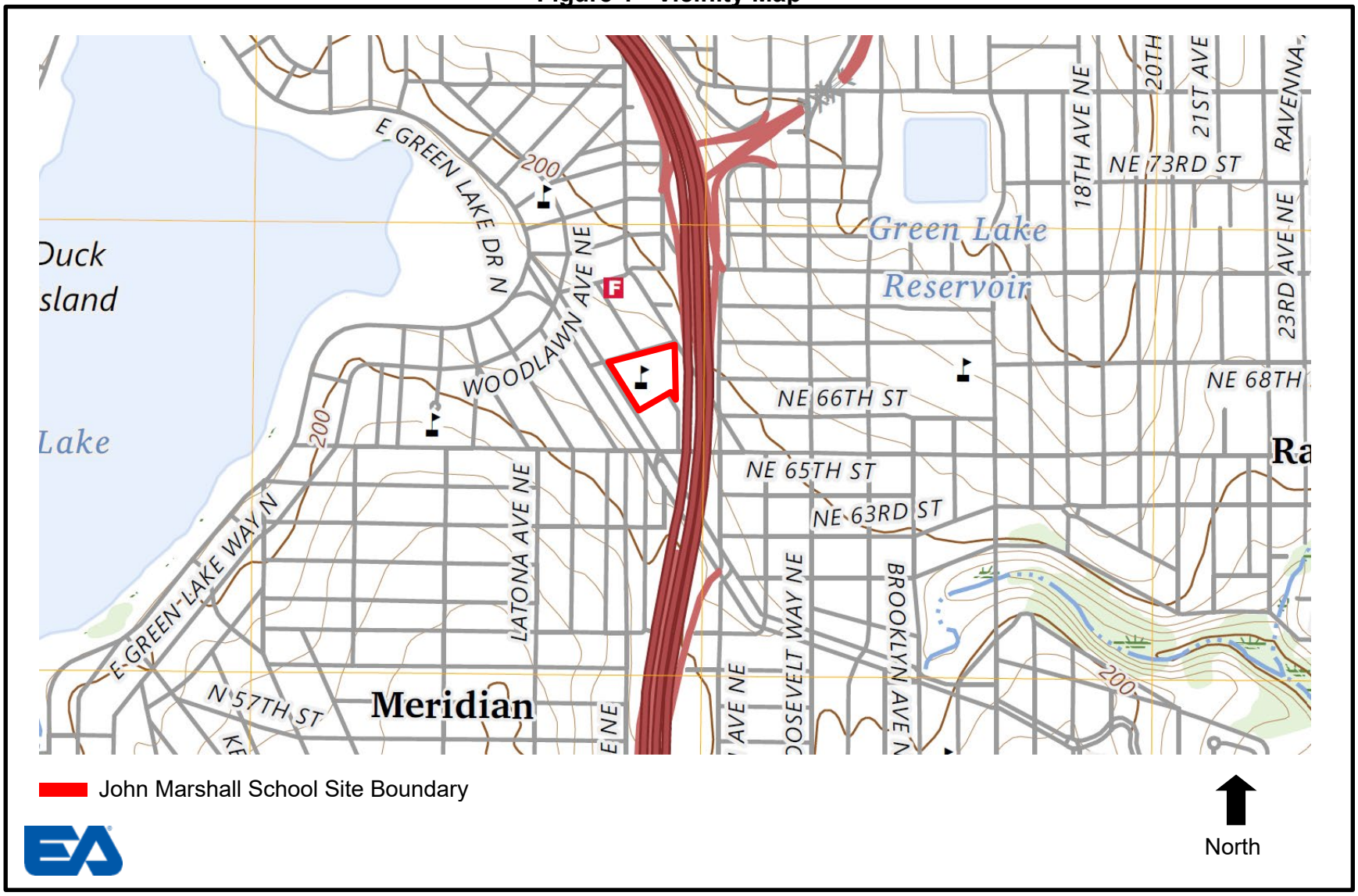
FIGURES

John Marshall School Project - Environmental Checklist
Figure 1 - Vicinity Map

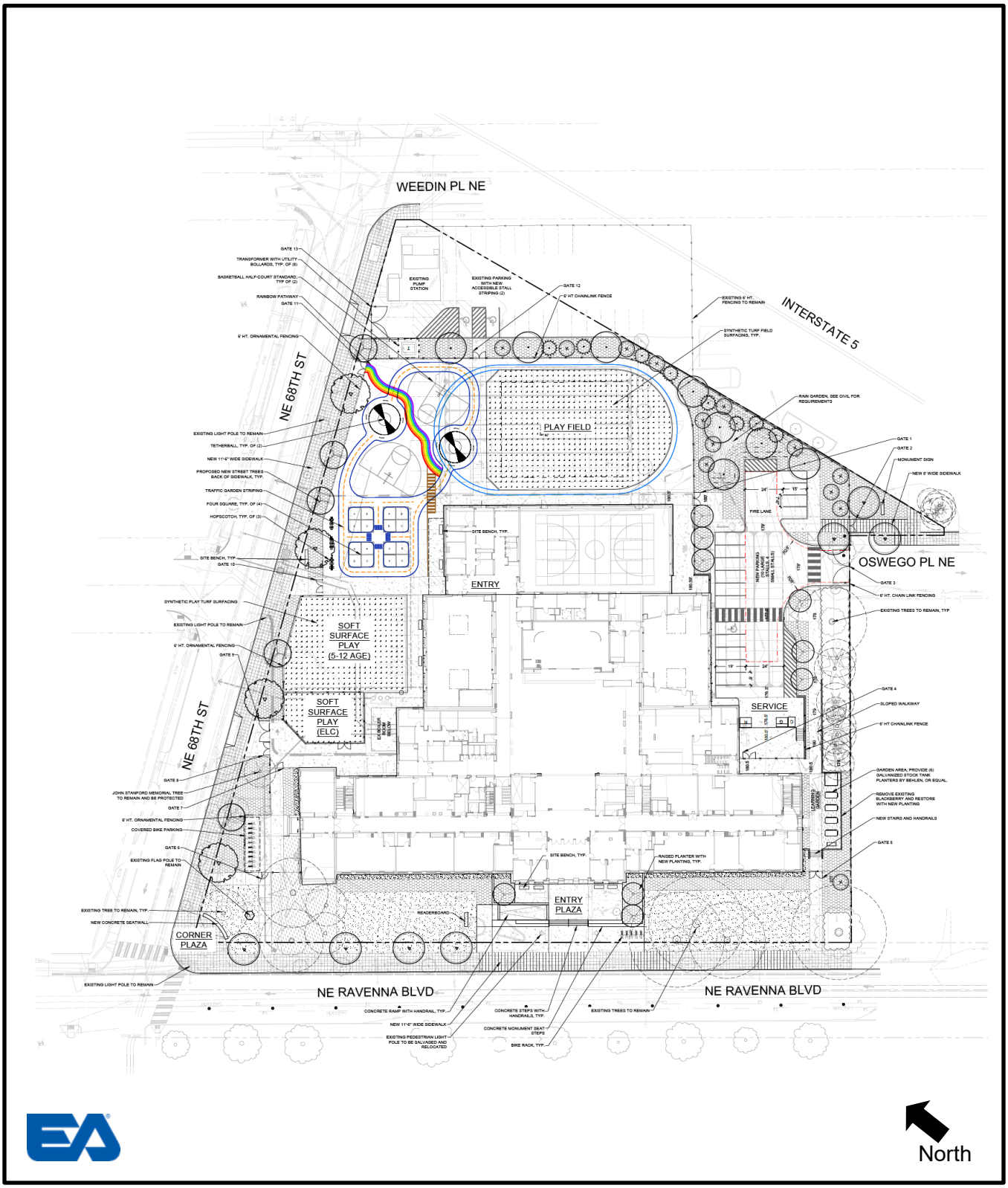


Source: USGS Topographic Map and EA Engineering, 2025.

John Marshall School Project - Environmental Checklist
Figure 2 – Aerial Map

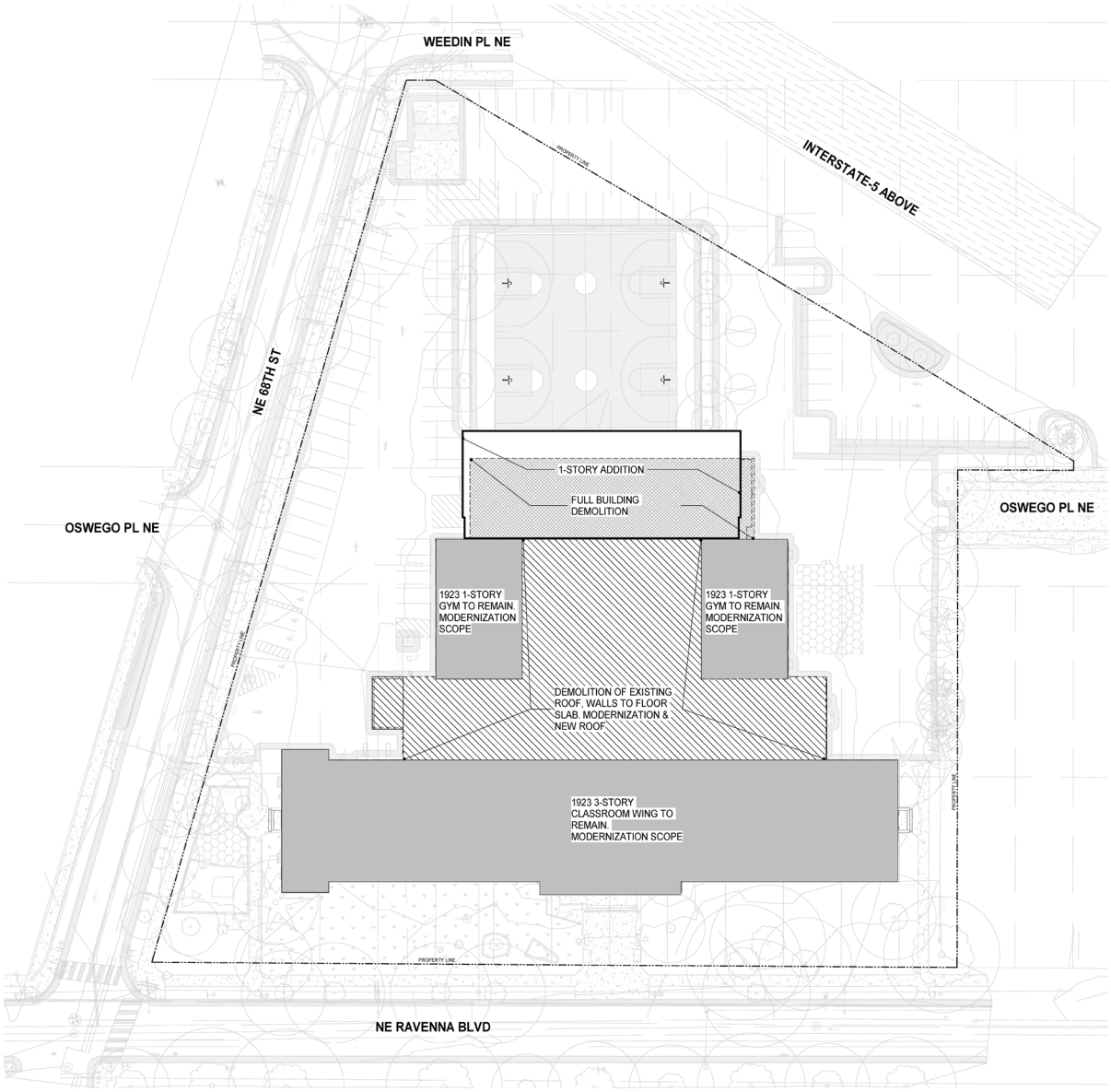
Source: Google Earth and EA Engineering, 2026.

John Marshall School Project - Environmental Checklist
Figure 3 – Site Plan



Source: Bassetti Architects, 2026.

Figure 4 – Proposed Demolition and Building Addition/Modernization Plan



Source: Bassetti Architects, 2026.

APPENDIX A

Construction Best Management Practices

APPENDIX A

CONSTRUCTION BEST MANAGEMENT PRACTICES

The contractor will be required to implement measures to ensure the minimal environmental impacts throughout the construction process, which could include the following:

- The contractor will submit a written earthwork plan to the Project Engineer for approval prior to the commencing with any mass excavation or filling. The earthwork plan will also include:
  - Sequencing of the earthwork and grading activities;
  - Proposed equipment to be utilized;
  - Surface water diversion and control (description of how existing catch basins at the project site would remain intact and measures used to protect them from sediment during construction);
  - Proposed protection methods for excavated stockpiled fill materials and trenches;
  - Soil drying procedures; and,
  - Any other information pertinent to the manner in which the earthwork and grading will be performed.

- The contractor will obtain the City of Seattle's Department of Construction and Inspection approval that erosion control measures are in place and functioning, and will maintain erosion control measures as earthwork and utility construction commences in accordance with City of Seattle Standards.

- Surface water controls (i.e., temporary interceptor swales, check dams, silt fences, etc.) will be constructed simultaneously with clearing and grading for project development.

- Surface water and erosion control measures will be relocated or new measures will be installed so as site conditions change, erosion control measures remain in accordance with City of Seattle Best Management Practice (BMP) requirements during the construction period.

- All construction areas inactive for more than seven days during the dry season (April 1st to October 31st) or two days during the wet season (November 1st to March 31st) will be covered.

- Mitigation measures to reduce and/or control impacts to air will include:
  - Watering surfaces to control dust, the use of temporary ground covers, sprinkling the project site with approved dust palliatives, or use of temporary stabilizations practices upon the completion of grading.
  - Wheel-cleaning stations will be provided to ensure construction vehicle wheels and undercarriages do not carry excess dirt from the site onto adjacent roadways.

  - Streets will be regularly cleaned to ensure excess dust and debris is not transported from the construction site onto adjacent roads.
  - Construction activities will be planned to minimize exposing areas of earth for extended periods.
  - The contractor will be required to comply with the Puget Sound Clean Air Agency's (PSCAA) Regulation I, Section 9.15, requiring reasonable precautions to avoid dust emissions and Regulation I, Section 9.11, requiring the best available measures to control emissions of odor-bearing contaminants. The contractor will be required to comply with recommendations in the Washington Associated General Contractor brochure "Guide to Handling Fugitive Dust from Construction Projects."

- During construction, BMPs would be implemented to ensure that sediment originating from disturbed soils would be retained within the limits of disturbance. BMP measures may include installation of filter fabric between grate and rings of all catch basin inlets, fabric fencing, barriers, check dams, etc.

- Construction activities will be restricted to hours designated by the City of Seattle Noise Control Ordinance (SMC 25.08.425). If construction activities exceed permitted noise levels, the District would instruct the contractor to implement measures to reduce noise impacts to comply with the Noise Ordinance, which may include additional muffling of equipment.

- Construction vehicle traffic to and from the site will be minimized during peak traffic hours.

- Construction vehicles will not be parked in traffic lanes.

- Flaggers will be provided as required.

- Barriers, flashing lights, walkways, guardrails, and night lighting will be provided as required for safety and control.

- Fire lanes and roadways to existing buildings will be retained, as required by the fire department.

- Walkways leading past the site will remain clear of construction vehicles and debris and will remain safe at all times.

APPENDIX B

Geotechnical Report

Geotechnical Engineering Services

John Marshall Site Modernization
520 NE Ravenna Boulevard
Seattle, Washington

for
Seattle Public Schools

March 16, 2026

2101 4th Avenue, Suite 950
Seattle, Washington 98121
206.728.2674

GeoEngineers

Geotechnical Engineering Services

John Marshall Site Modernization
520 NE Ravenna Boulevard
Seattle, Washington

File No. 2820-005-02
March 16, 2026

Prepared for:

Seattle Public Schools
Department of Capital and Planning
2445 3rd Avenue South
Seattle, Washington 98124

Attention: Paul Wight, Capital Project Manager

Prepared by:

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Associate Geotechnical Engineer

SST:JSP:JC:HP:mce

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Appendices (continued)

1.0 Project Understanding

GeoEngineers, Inc. (GeoEngineers) is pleased to present this report summarizing the results of our geotechnical engineering services for the proposed John Marshall Site Modernization project located at 520 NE Ravenna Boulevard in Seattle, Washington. The school was originally constructed in 1927 and has recently served as an interim site for schools under construction. Seattle Public Schools has identified improvements to modernize the existing building and bring it into compliance with current building codes.

Our understanding of the project is based on our review of provided documents and discussions with other project team members, including Coughlin Porter Lundeen (CPL), structural engineer; Bassetti Architects, architect; and Metrix Engineers, mechanical engineer. The project will include seismic and structural upgrades to the existing building; a portion of the northeast building will be demolished and replaced with a new gym facility. Other proposed geotechnical related site improvements include new portable classroom structures, geothermal ground source heat pump system, stormwater improvements, hard surface playgrounds and a synthetic turf playfield.

The structural design will be completed in accordance with the 2021 Seattle Building Code (SBC), 2021 Seattle Existing Building Code (SEBC) and American Society of Civil Engineers (ASCE) 41-17 *Seismic Evaluation and Retrofit of Existing Buildings* for compliance with the Seattle Department of Construction and Inspections (SDCI) Substantial Alteration code requirements.

2.0 Purpose and Scope of Services

The purpose of our services is to assess subsurface conditions at the site to support the design and construction of the proposed site improvements. This includes completing project specific subsurface explorations, laboratory testing, engineering analyses and geotechnical recommendations. Our services have been provided in accordance with our agreement with Seattle Public Schools (Contract No. K1432, authorized October 31, 2025). Details regarding our specific scope of services for the project can be reviewed in our agreements or provided upon request.

3.0 Site Description

3.1 VICINITY AND SITE LIMITS

John Marshall Alternative High School is located on an approximate 3.2-acre parcel in the Green Lake neighborhood of Seattle, Washington. The site is generally bounded by NE Ravenna Boulevard (southwest), NE 68th Street (northwest), Weedin Place NE (northeast) and residential apartments (southeast). An overview of the project site and surrounding area is shown in the Vicinity Map, Figure 1. A general overview of the site, existing conditions and immediate surroundings is shown in the Site Plan, Figure 2.

3.2 SURFACE CONDITIONS

The existing building includes a three-story concrete-framed classroom bar along the southwest adjacent to Ravenna Boulevard. The building front along Ravenna Boulevard is lined with landscaped grass areas, shrubs and trees. The northeast portion of the building consists of a single-story unreinforced masonry volume, generally surrounded by asphalt pavements for playground areas or vehicular parking. The first

floor of the building is raised approximately 0.5 to 2 feet above surrounding grade. The building includes a below-grade level extending approximately 10 to 20 feet below the first floor and includes finished basement areas for a fan room, boiler room and other mechanical areas in the northern building footprint.

Areas north and east of the school building consist of asphalt pavements for athletic court areas and vehicle parking and driveways. Asphalt surfaced basketball courts are immediately east-north-east of the building. A City of Seattle underground pump station is located in the northeast portion of the site (near the intersection of NE 68th Street and Weedin Place NE) and accessed via manhole covers in the parking lot.

We were provided topographic survey mapping of the site prepared by Bush, Roed & Hitchings, Inc. dated April 23, 2025. Elevations referenced within this report are based on the mapping provided, referenced to the National American Vertical Datum of 1988 (NAVD88) and should be considered approximate. The site is relatively level with gradual grade changes ranging between about Elevation 177 and 182 feet. Adjacent properties are also generally level, with minimal topographic and grade change.

4.0 Exploration Program

Our exploration program for this study included six drilled borings (GEI-1 through GEI-6) to depths ranging between approximately 20½ and 51 feet below ground surface (bgs). GEI-1 through GEI-5 were advanced around the building perimeter. GEI-6 was advanced in the northeast parking area. Groundwater monitoring wells were installed in GEI-2, GEI-5 and GEI-6 to monitor long-term levels across the site. Details of the borings, including summary logs and laboratory testing results, are provided in Appendix A.

We also completed a non-invasive geophysical survey to measure the shear wave velocity (Vs) at the site and its vicinity for depths up to 1,000 feet. The geophysical survey report is included in Appendix B.

One ground source heat pump test well (GSHP-1) was installed in the northeast parking lot to evaluate geothermal properties. The well was advanced to a nominal depth of approximately 350 feet bgs, followed by the installation of polyvinyl chloride (PVC) u-bend loop piping. Conductivity testing was completed after well installation. Details regarding the well installation and testing results are provided in Appendix C.

Approximate locations of the completed explorations are shown in Figure 2. For reference, this figure also includes previous borings conducted at the site, which we reviewed as part of this study.

5.0 Existing Information Review

5.1 GEOLOGIC SETTING

Puget Sound was historically covered by thick glacial ice, affecting soil deposition and soil properties relevant to engineering design. Glacially consolidated have been glacially overridden and are typically dense to very dense. Examples of glacially consolidated soils include glacial till and advance glacial outwash. Soils deposited after glacial recession are not glacially overridden and are generally less dense. Examples of post-glacial soils include alluvium (river and stream deposits).

We reviewed published geologic mapping of the area, including maps by Booth et al. (2009) and Troost et al. (2005). Surface geologic units mapped at the site include alluvium and peat deposits, which extend northwest to the Green Lake shoreline. Alluvium generally consists of variable loose to occasionally dense mixtures of sand, silt, gravel, and/or cobbles deposited by streams and running water. Peat deposits consist of accumulations of wood, plant debris and other organic-rich soils. Engineering characteristics of these soil types can vary, depending on actual soils present; associated hazards include relatively low allowable bearing pressures, settlement under new fill or building loads, and liquefaction due to seismic shaking.

Elevated areas in the vicinity of the site are mapped as glacial till and advance glacial outwash (glacially consolidated soil types). Based on results of our subsurface exploration program, these soils are present at the project site underlying the alluvium. Till and advance outwash soils typically range between dense to very dense and are generally characterized by relatively high-strength, high allowable bearing pressures, low compressibility and low liquefaction risk.

5.2 HISTORICAL SITE DEVELOPMENT

We understand the site was purchased circa 1925 by the Seattle School District, and the existing school building was opened in 1927. We reviewed the provided as-built drawings dated May 24, 1926 and note the following historical site developments:

- 1925 survey indicates site grades were generally about 4 to 5 feet below the surrounding sidewalk and roadway level. Portions of the site included vacated buildings and concrete basements. It is not reported whether foundation and basement elements were removed during initial site development and construction.
- Five “test holes” were reported to have been conducted to depths ranging from up to 9 to 15 feet below historic grade. Recorded soil logs describe soils consisting of variable and interbedded layers of loam, clay, and sand. Some near surface layers are reported as black, which could indicate organics.
- 1926 survey indicates the site perimeter was raised approximately 4 to 7 feet. It appears that fill was not placed in the central portion of the site where the school building is located. Descriptions of fill soil types and/or compaction methods used are not reported.
- The school building is supported by a system of beams, girders, posts and columns founded on a concrete pile deep foundation system. The top of piles is located at the below-grade level, approximately 10 to 20 feet below the first floor level. Structural details in the drawings are provided for pile lengths ranging from approximately 15 to 30 feet.

5.3 PREVIOUS GEOTECHNICAL SITE WORK AND EXPLORATIONS

We reviewed previous geotechnical studies completed at the site and published boring and well logs in the vicinity. Historic explorations completed at the site and immediate surroundings are shown in Figure 2. Exploration logs and laboratory testing results are presented in Appendix D.

5.3.1 Shannon & Wilson (1991)

We reviewed boring logs and laboratory testing results related to a combined sewer overflow project in the area. These include two borings advanced in the eastern portion of the site (current parking lot), two borings generally north along NE 68th Street, and two borings west along the southbound lane of Ravenna

Boulevard. Soil types in the logs include loose sand (fill) ranging between about 0 to 7 feet thick, overlying variable layers of very soft to medium stiff clay and very loose to medium sand. Occasional layers of peat and organic silt are also reported. Very dense sands were encountered in all borings. The top of dense soils ranged between about 12 to 45 feet bgs and extended to the depths explored (up to 68 feet bgs).

5.3.2 GeoEngineers (2012)

GeoEngineers' experience at the site includes advancing one boring in support of developing geotechnical design recommendations for an elevator addition in the southwest portion of the existing building. Soil types encountered in the boring consist of approximately 8 feet of very loose to medium dense silty sand and gravel (fill), approximately 23 feet of soft to stiff silt and clay (alluvium), and very dense sands (advance outwash) extending below 37 feet and to the bottom of the boring at 45 feet. Based on the presence of settlement sensitive silts and clays, it was recommended the proposed elevator addition be supported on deep foundations embedded in the underlying dense sand deposits.

5.3.3 AESI (2023)

We reviewed the Associated Earth Sciences Inc. "Limited Geotechnical Engineering Feasibility Analysis" report, dated October 12, 2023. The report included a site reconnaissance and building assessment; no new explorations were conducted. The report notes no visual indications of settlement (e.g., cracking of walls at structural openings or at the junctions of walls and floors) for the three-story portion of the school building. Observations of differential settlement are reported between the pile supported building and adjacent site improvements that are not pile-supported. Indications of possible differential settlement are also reported between the one- and three-story portions of the building.

6.0 Subsurface Conditions

Our understanding of subsurface conditions at the site is based on our borings completed as part of this study, as well as a review of the previous site explorations. In general, the conditions encountered in our borings completed are consistent with those described in the previous borings.

6.1 SOIL CONDITIONS

We interpret three general soil units at the site: fill, recent deposits and glacially consolidated soils.

- **Fill** soils were encountered in four borings (GEI-6, B-1-2012, B-1-1991 and B-3-1991), generally consisting of medium dense silty sand with gravel. Fill thicknesses ranged from approximately 3 to 7 feet, where encountered. Fill does not appear to be present throughout the site and was not observed in five of the borings. We anticipate fill soils are more likely to be encountered near areas associated with historic backfill of below-grade elements such as the building basement walls and/or for underground utilities and vaults.
- **Recent deposits** were generally encountered below the fill and typically consisted of variable and interbedded layers of very soft to medium stiff clay and very loose to medium dense sand. Occasional layers of organic-rich soils are also present. Thicknesses ranged between approximately 8 to 36 feet and are generally thickest toward the southwest (Ravenna Boulevard) and thinner toward the northeast. Recent deposits were encountered in all borings except for GEI-6 in the northeast parking lot. We interpret these soils to be associated with alluvium deposits and historical site grading activities.

- **Glacially consolidated soils** were encountered below the fill and recent deposits and consisted of very dense sands with variable silt and gravel content. These soils were encountered in all borings completed at the site. The top of these dense deposits ranged from approximately 12 (northeastern area of the site) to 37 feet (southwestern area of the site) below existing ground surface.

Generalized engineering soil units (ESUs) developed for use in our geotechnical analyses are summarized in Table 1 below. Cross Section A-A', Figure 3, shows a representative cross-section with simplified boring logs and inferred soil contacts between ESUs. Conditions shown in the figure are based on interpolation between widely spaced explorations and should be considered approximate; actual conditions may vary from those shown.

TABLE 1. ENGINEERING SOIL UNITS

ENGINEERING SOIL UNIT	SOIL TYPE	GENERALIZED DESCRIPTION
ESU-1	Fill	Medium dense silty sands with gravel
ESU-2	Recent Deposits	Soft clays and loose sands
ESU-3	Glacially Consolidated	Very dense sands

6.2 GROUNDWATER CONDITIONS

Wet soils and groundwater were encountered in each of the completed the borings at the time of drilling. These observations represent short-term conditions and may not accurately represent long-term conditions; therefore, they should be considered approximate.

Borings GEI-2, GEI-5 and GEI-6 were completed as monitoring wells to measure long-term groundwater conditions. Each well was equipped with an electronic data logger to record water levels at regular intervals over time. Transducer readings in this report were recorded between January 14 and March 5, 2026. During this period, groundwater levels fluctuated by up to approximately 1 foot within the individual wells and varied by approximately 3 feet across the site. Based on these observations, we consider the measured levels to be generally representative of static groundwater conditions at the site.

Water levels recorded in the wells and local precipitation data (from a station approximately 3 miles east-northeast of the site), are presented in the Groundwater Hydrographs (Figure 4) and summarized in the table below. Groundwater levels appear to be somewhat influenced by precipitation. We will continue to record groundwater levels and will update our estimates of groundwater elevations as the project advances.

TABLE 2. GROUNDWATER MONITORING WELL SUMMARY

MONITORING WELL	APPROXIMATE GROUND SURFACE ELEVATION (FT)	GROUNDWATER DEPTH BGS (FT)		APPROXIMATE GROUNDWATER ELEVATION (FT)	
		MIN	MAX	MIN	MAX
GEI-2	179	12.5	13.5	165.5	166.5
GEI-5	180	11.4	12.3	167.7	168.6
GEI-6	180	13.0	13.6	166.4	167.0

Notes:
Groundwater depths recorded between January 14 and March 5, 2026.

7.0 Conclusions and Recommendations

7.1 SUMMARY

A summary of primary geotechnical considerations is provided below. This summary is intended for introductory purposes only and should be read in conjunction with the complete recommendations presented in this report.

- **Soil Conditions**: The existing school building and much of the site are underlain by recent deposits that are compressible and may settle under new loads. Competent glacially consolidated soils are present at depth across the site.
- **Groundwater Conditions**: Static groundwater elevations must be considered for design and construction, as groundwater may affect below-grade structures, stormwater facilities, underground utilities and other excavations.
- **Critical Areas**: Overall geologic hazards (e.g., landslide, erosion and liquefaction) at the site are low and not expected to significantly limit the planned site development.
- **Seismic Design**: Seismic design criteria and recommended ASCE 41-17 response spectra and spectral response acceleration parameters are provided.
- **Foundation Support**: Foundation recommendations vary across the site, depending on structure type, expected loads and performance requirements.
  - **Deep Foundations**: We anticipate new building structures will be supported on drilled deep foundation elements (e.g., micropiles or augercast piles) extending to the underlying dense glacially consolidated soils. These deep foundations are intended to provide increased bearing capacity, limit settlement of new structures, and reduce impacts to the adjacent existing building.
  - **Shallow Foundations**: Shallow foundations founded at or near existing site grades within the recent deposits can be considered for lightly loaded ancillary structures that do not support the main building. Depending on final layout and elevation, low allowable bearing capacities and increased settlement, tolerance may be necessary.
- **Stormwater Infiltration**: We anticipate limited infiltration capacity at the site due to groundwater levels and the presence of fine-grained (silt- and clay-size) soils. In-situ infiltration testing will be required if stormwater infiltration facilities are included in the final project design.
- **Earthwork**: Excavations at the site may encounter groundwater. Recorded groundwater levels are provided in this report and should be reviewed when planning earthwork activities.
- **Soil Reuse**: Existing site soils generally contain a significant quantity of fine-grained (silt- and clay-size) particles and will be difficult or impossible to place and compact when wet. For planning purposes, we recommended existing site soil not be relied upon for re-use as structural fill and that imported structural fill materials be specified.

7.2 DESIGN GROUNDWATER LEVEL

We recommend that a design groundwater elevation of about 170 feet be considered for design and construction. We anticipate static groundwater could affect below-grade structures, such as basement walls, stormwater vaults and underground utilities. Design should include potential affects, including buoyancy, drainage requirements and hydrostatic pressures.

This recommended groundwater level is based on monitoring data collected to date and includes an allowance for some seasonal and annual variability. Areas of shallower perched groundwater could be present due to infiltration of surface water during rain events; however, these conditions are expected to be discontinuous and intermittent.

7.3 CRITICAL AREAS REVIEW

Geologically related critical areas defined by Seattle Municipal Code Chapter 25.09 consist of erosion, landslide (steep slope) and seismic hazard areas. We reviewed Chapter 25.09 and the critical areas mapping available online from the SDCI website. Overall, we anticipate that geologic hazards can be mitigated through engineering controls (e.g., site layout, grading, horizontal offsets, structural elements) and are not expected to limit the planned site development.

7.3.1 Erosion Hazard

Erosion is the process of particle migration, displacement and removal of surface soils, typically through wind, rain, stream or wave action. These are natural processes that affect steeper slope areas and are typically a result of saturation, freeze-thaw action, animal burrowing, weathering and general weakness of near surface soils. Concentrated stormwater runoff is a major cause of erosion and soil loss.

In our opinion, site soils will be susceptible to erosion if exposed during or after construction. Erosion control measures should therefore be incorporated into the project design and construction planning. We anticipate erosion hazards can be effectively mitigated through measures such as minimizing ground disturbance, site grading and drainage, vegetation and other standard erosion control practices.

7.3.2 Landslide (Steep Slope) Hazard

Landslide-prone areas defined by SDCI include slopes with an incline of 40 percent or greater with vertical elevation change of at least 10 feet and/or areas with indications of historic landslide activity. Based on our review of SDCI mapping, the site is not located within a mapped landslide slide area, and no known landslides are identified at the site. Ground surface elevations across the site are relatively level, with an overall grade change of approximately 5 feet. Based on these conditions, the site does not meet the criteria for steep slopes, and the potential for landsliding is low.

7.3.3 Seismic and Liquefaction Hazards

The site is located within western Washington, a region of relatively high seismic hazard with the potential for strong ground shaking. Seismic shaking can induce liquefaction, which may result in a loss of soil strength and settlement of structures. A detailed discussion of seismic hazards, including liquefaction and surface rupture potential, along with recommended design parameters, is provided in Section 7.4 below.

The site is mapped by SDCI as being within a liquefaction prone area. Our evaluation indicates the mapped liquefaction hazard at the site is associated with isolated loose sand layers within the recent deposits below the groundwater table. Liquefiable layers occur sporadically across the site, appearing in some borings but not others and at varying depths, indicating they are discontinuous and localized. Based on these conditions, the potential for widespread liquefaction at the site is considered low.

In our opinion, the planned use of deep foundations to support the existing building retrofit and building expansion will effectively mitigate potential liquefaction-related hazards.

7.4 SEISMIC DESIGN

We evaluated the site for seismic hazards and design parameters in accordance with ASCE 41-17 and SDCI Substantial Alteration code requirements. ASCE 41-17 provides performance objectives and Basic Safety Earthquake (BSE) levels for seismic evaluation and retrofit of existing buildings, as summarized below.

7.4.1 Seismic Design Parameters

A site-specific ground response analysis (GRA) was completed in accordance with ASCE 41-17 and ASCE 7-16. Site-specific procedures are required because the site is Site Class F due to potentially liquefiable soils and because the estimated fundamental period of the building is greater than 0.5 seconds. Details and results of the site-specific analysis, including recommended site-specific response spectra, are presented in Appendix E. Corresponding site-specific spectral response acceleration parameters are shown below.

TABLE 3. RECOMMENDED SITE-SPECIFIC SPECTRAL RESPONSE ACCELERATION PARAMETERS

ASCE 41 17 DESIGN PARAMETER	RECOMMENDED VALUE			
	BSE 2N	BSE 1N	BSE 2E	BSE 1E
Site Class	F	F	F	F
Spectral Response Acceleration at Short Period, Adjusted for Site Class, S_{XS} (g)	1.812	1.208	1.812	1.208
Spectral Response Acceleration at 1 second Period, Adjusted for Site Class, S_{X1} (g)	0.904	0.603	0.677	0.300
Site Modified Peak Ground Acceleration, PGA_M (g)	0.485	0.323	0.437	0.303

7.4.2 Liquefaction

Liquefaction refers to the condition by which vibration or shaking of the ground, usually from earthquake forces, results in the development of excess pore pressures in saturated soils with subsequent loss of strength. In general, soils that are susceptible to liquefaction include very loose to medium dense, clean to silty sands, and some silts, which are below the groundwater table.

Recent deposits below the groundwater table predominantly consist of lean clays with plasticity index (PI) values between 11 and 18 based on laboratory testing. We evaluated liquefaction susceptibility of these fine-grained soils using the screening criteria by Stuedlein et al. (2022). Based on these criteria, the fine-grained deposits are generally considered non-liquefiable.

Occasional layers of silty to clayey sands are present within the recent deposits and below groundwater. We evaluated these coarse-grained soils using semi-empirical standard penetration test (SPT)-based liquefaction correlations (Youd et al. 2001; Idriss and Boulanger 2014). Liquefaction-induced settlement was estimated using the methods by Tokimatsu and Seed (1987), Ishihara and Yoshimine (1992), and Idriss and Boulanger (2014). Analysis results indicate that these isolated pockets of coarse-grained recent deposits are potentially liquefiable.

Dense glacially consolidated soils underlying the site are not susceptible to liquefaction.

We estimate liquefaction-induced settlements up to approximately 1 to 2 inches could occur in areas of the site for the BSE-2N hazard level, which represents the highest ground shaking intensity among the ASCE 41-17 hazard levels. The liquefaction susceptibility and associated settlements for the lower hazard levels are anticipated to be less than or equal to the estimates for the BSE-2N hazard level. Potential for liquefaction-induced settlements appears to be greatest in the eastern portion of the site.

7.4.3 Lateral Spreading

Lateral spreading is associated with liquefaction and involves lateral displacements of large surficial blocks of soil as the underlying soil layer liquefies. Lateral spreading can occur on near-level ground as blocks of surface soils displace relative to adjacent blocks. It also occurs as blocks of surface soils are displaced toward a nearby slope or free-face by movement of the underlying liquefied soils.

Potential for lateral spreading at the site is considered low due to the relatively flat topography and the isolated and discontinuous nature of the potentially liquefiable soils.

7.4.4 Surface Fault Rupture

We reviewed geologic seismic feature maps of the project vicinity, including the "Faults and Earthquakes in Washington State" (Czajkowski and Bowman 2014). The nearest mapped fault is the Seattle fault zone, approximately 7-miles to the south. Locations of this fault zone has been inferred from geophysical studies and there are no known surface expressions of the fault. Based on our review and understanding of local geology, it is our opinion the risk for seismic surface rupture at the site is low.

7.5 EXISTING PILE FOUNDATIONS

Reviewed as-built drawings indicate the existing building is supported on driven precast tapered reinforced concrete piles. The drawings depict square piles tapering from approximately 12 inches in size at the top and pile lengths range from approximately 15 to 30 feet.

ASCE 41-17 Sections 8.4.3.2 and 8.4.1.1 require prescriptive expected capacities to be used where construction documents for the existing building are available and provide information on foundation soil design parameters. The 1926 drawings indicate a "Safe Load" of 60,000 pounds per pile, which we interpret to represent the allowable axial compressive capacity of the piles.

The drawings do not indicate uplift or lateral capacities. Per ASCE 41-17 Section 8.4.3.2, the expected axial capacity in tension should not exceed the lower-bound structural capacity of the pile elements. The lateral capacity of the piles can be evaluated using lateral pile analysis with the LPILE parameters provided in Section 7.7.3.2 below. The lateral capacity contribution of the pile caps can be evaluated using the passive pressure mobilization curve provided in ASCE 41-17 Figure 8-6 and an expected (i.e., unfactored) passive pressure equivalent fluid density of 200 pounds per cubic foot (pcf).

7.6 COMPRESSIBLE SOILS

Very soft to medium stiff clays, along with occasional organics layers, are present at the site within the recent deposits. These soils are compressible and are expected to undergo long-term consolidation settlement under new loads, which may occur over weeks or months after the new loads are applied. Compressible soils were encountered near the ground surface and extended up to approximately 36 feet bgs. If the new footing loads for the building are supported on conventional shallow foundations, we

estimate that consolidation settlement from static loading could be up to about 6 inches. This settlement would likely occur gradually over several weeks or months. Settlement is expected to vary across the building footprint due to local differences in soil type, stratigraphy and thickness of compressible layers.

7.7 BUILDING SUPPORT – NEW DEEP FOUNDATIONS

Given the presence of soft and compressible recent deposits, deep foundations are considered appropriate for providing foundation support for the school building and proposed building addition(s). In our opinion, preloading or surcharging is not recommended, as these approaches could induce settlement of the existing building. Similarly, driven piles, stone columns, rammed aggregate piers and other vibration-intensive ground improvement methods are not recommended due to the potential for installation vibrations to affect the existing structure.

Based on the subsurface conditions and project constraints, we anticipate drilled deep foundation elements are best suited to support new building footings. General recommendations for micropiles and augercast piles are provided in the following sections. We can provide refined recommendations once an approach has been selected and foundation layout and elevations have been determined.

7.7.1 Estimated Bearing Elevation

Deep foundations should extend through the recent deposits and be embedded in underlying dense glacially consolidated soils. We recommend that deep foundations be embedded a minimum of 10 feet into dense glacially consolidated soils to provide uniform support and to account for potential weathering in the upper portion of these soils.

The elevation of the glacially consolidated soils varies across the site, generally increasing from the northeast to southwest. Figure 5 presents the estimated bearing layer elevation contour map. Conditions shown in the figure are based on interpolation between widely spaced explorations and should be considered approximate; actual conditions may vary from those shown.

7.7.2 Micropiles

Micropiles are small-diameter (typically 6- to 12-inch) drilled piles, often installed using limited access equipment to improve existing shallow foundations as part of seismic retrofit projects or beneath new pile caps. Micropiles are generally cost-effective where high-load capacities are required in limited access areas. Typical installation is completed by drilling a hole using rotary methods and steel casing, placing center reinforcement to the bottom of the hole, and grouting the hole. The casing may extend to full depth or end above the bond zone and/or an uplift anchor (as needed). Structural detailing at the tops of the piles is made to connect to the shallow foundation or pile cap. If the pile is designed with permanent steel casing in the upper portion of pile above the bond zone, it is common to leave sections of steel drill casing in place after withdrawal and grouting of the hole.

The construction methodology, grouting method, and equipment have a significant influence on micropile capacity. There are five classifications of micropiles as defined by American Association of State Highway and Transportation Officials (AASHTO), Types A through E, based on their method of installation as outlined below:

- Type A micropiles are installed under gravity grout head only;

- Type B micropiles are grouted under pressure while temporary casing or auger is withdrawn;
- Type C micropiles are grouted like Type A followed by injection of additional grout under pressure through a sleeved grout pipe;
- Type D micropiles are like Type C, but the primary grout is allowed to harden before injecting secondary grout; and
- Type E micropiles are constructed by drilling with grout injection through a continuous-thread hollow-core steel bar.

Micropiles installed by gravity grouting have lower capacities and micropiles installed by pressure grouting or post-grouting (two-stage grouting process) can achieve much higher capacities. As a result, micropiles are typically design-build foundation elements. The micropile contractor can modify its equipment and grouting techniques to achieve the required pile capacity.

Because of the wide range of equipment capabilities and grouting/construction techniques, final design of micropiles is typically confirmed when the specialty contractor is selected and capacities are confirmed by load tests.

7.7.2.1 PRELIMINARY DESIGN PARAMETERS

For preliminary design and cost estimating, we recommend the following:

- Minimum 6-inch-diameter micropile.
- In addition to required depths for axial and lateral resistance as discussed below, we recommend a minimum 10-foot embedment into dense glacially consolidated soils.
- Ultimate bond stress (i.e., load transfer for side resistance) equal to 30 pounds per square inch (psi) for compressive and uplift capacity within dense glacially consolidated soils. Allowable load transfer values should incorporate a minimum factor of safety (FS) equal to 2.0 for downward axial and 2.5 for uplift.
- Load transfer in the fill and recent deposit soil layers should be neglected. The design load transfer (side resistance) should start at the contact with the competent glacially consolidated soils.
- Tip resistance is typically ignored in micropile design due to the relatively small diameter and high grout-to-ground bond resistance.
- In our opinion, based on the subsurface conditions and the results of our liquefaction analyses, no downdrag loads need to be considered within the existing building footprint.

Capacities derived from these parameters apply to single piles. We recommend a minimum pile spacing of 3 feet. In our opinion, if piles are spaced at least 3 feet on-center, no reduction of axial capacity for group action is needed.

Micropiles have relatively small cross-sectional areas and therefore have limited resistance to lateral loading and bending moments. When used for lateral support, micropiles may be battered to increase the resistance to lateral demands. Typical batter angles range from 5 to 30 degrees from vertical. Special attention should be given to the pile connection detail to create a fixed or free headed condition consistent with the design engineer's assumptions.

7.7.2.2 SETTLEMENT

We estimate post-construction settlement of micropiles designed and installed as recommended will be on the order of ½-inch or less. Maximum differential settlement should be less than about one-half the post-construction settlement. Most of this settlement will occur rapidly as loads are applied.

7.7.2.3 TEST PILE PROGRAM

No direct information regarding capacity (e.g., driving resistance data) of the micropile is obtained during installation. Therefore, installation and testing should be monitored by a qualified individual working under the direct supervision of the geotechnical engineer. Observation and consultation during construction should include verifying soil conditions, installation depths, volume of grout placed, stress testing, and providing recommendations for changes in length based on the encountered conditions and test results.

We recommend establishing a testing program to confirm that the required capacities and performance of micropile foundations have been achieved. The load tests should be completed in general accordance with ASTM International (ASTM) D3689, "Procedure for Standard Test Methods for Deep Foundations Under Static Axial Tensile Load." The structural engineer may require alternative testing requirements. We are available to assist with testing and frequency, as needed.

We recommend a minimum of one verification load test be performed on a sacrificial pile to confirm the expected soil-grout bond strength for a specific set of means and methods. Verification tests shall be taken to 200 percent of the allowable design load of the pile, with the maximum load maintained and displacements measured for a minimum of 1 hour. The sacrificial micropile should be located in the same general location as production micropiles and installed using the same means and methods as the production piles.

Proof tests should also be performed on a minimum of 5 percent of total production piles, or no less than two piles, whichever is greater. Proof tests shall be taken to 130 percent of the allowable design load with the maximum load maintained and displacements measured for a minimum of 15 minutes.

Pile load testing should be completed using a load frame capable of distributing large test loads into the near-surface soils without damaging existing improvements and maintaining the minimum offsets from the test pile specified in ASTM D3689. Large test loads frequently cause damage to slabs-on-grade and other nearby improvements and the location of pile load tests should be reviewed during the design phase to minimize impacts to existing improvements.

GeoEngineers should be on site to observe drilling and installation of the piles, confirm similar installation techniques are utilized at all piles, record and evaluate testing, and provide modifications to pile installation, as necessary.

7.7.2.4 INSTALLATION CONSIDERATIONS

We recommend that all micropiles be installed by a competent foundation contractor experienced with this type of construction. We anticipate that conventional micropile drilling methods can be used to advance into soil types encountered at the site. Slower drilling advancement should be expected within underlying dense to very dense glacial deposits, which in our experience can be cemented. Drilling for micropiles will generate spoils during construction. Additional testing could be required for proper site safety, material handling and/or disposal.

Although not encountered in the borings, we anticipate obstructions such as cobbles, boulders, logs or debris are occasionally present within alluvial and glacial deposits in the area and could be encountered during installation The diameter of the obstructions could be larger than the diameter of the proposed micropiles. The contractor should be prepared to deal with these conditions, which could require drilling through obstacles or relocating planned piles.

The contractor should be prepared to install the micropiles below the groundwater table and collect groundwater, as necessary. Drilling mud should not be used unless approved by GeoEngineers before the start of construction. After the hole is drilled to the planned depth, all cuttings must be removed from the hole, either mechanically or by using pressurized air. Water should not be used to remove cuttings from the hole.

We anticipate caving could occur if relatively loose and/or "clean" granular soil layers are encountered during drilling, most likely to occur within the recent deposits. Maintaining drill hole stability in these soils could be difficult; therefore, the contractor should be prepared to use casing (permanent or temporary) or other methods if necessary to achieve the design pile length.

7.7.3 Augercast Piles

Augercast piles may also be used for foundation support if site constraints allow for their use. Augercast piles are constructed using a continuous-flight, hollow-stem auger to drill to the specified pile tip elevation. Grout is then pumped through the hollow auger stem during steady withdrawal of the auger, replacing the drilled soils. A steel reinforcing cage and/or center bar are then installed into the column of fresh grout. One benefit of using augercast piles is that the auger provides support for the soils during the pile installation process, thus eliminating the need for temporary casing or drilling fluid.

We developed geotechnical design recommendations for 12- and 18-inch-diameter augercast piles. We anticipate axial and lateral pile capacity will be primarily developed within the glacially consolidated soils at depth. In addition to required depths for axial and lateral resistance as discussed below, we recommend augercast piles extend a minimum of 10 feet into dense glacially consolidated soils.

7.7.3.1 AXIAL CAPACITY

Estimated axial pile capacities are presented in Table 4. In our opinion, based on the subsurface conditions and the results of our liquefaction analyses, no downdrag loads need to be considered for augercast piles installed within the existing building footprint. If deep foundations are planned outside the existing building footprint, we should be contacted to confirm or update the recommendations provided, as appropriate.

TABLE 4. ESTIMATED AUGERCAST PILE AXIAL CAPACITIES

PILE DIAMETER	EMBEDMENT DEPTH WITHIN BEARING LAYER (FEET)	ULTIMATE DOWNWARD AXIAL RESISTANCE (KIPS)	ALLOWABLE AXIAL CAPACITY (KIPS)	
			DOWNWARD	UPLIFT
12-inch	10	110	40	13
	20	200	80	30
	30	305	125	55
18-inch	10	250	90	28
	20	460	180	70
	30	715	290	130

Allowable axial pile capacities were evaluated based on Allowable Stress Design (ASD) and are for combined dead plus long-term live loads and may be increased by one-third when considering design loads of short duration such as seismic forces. The allowable capacities are based on the strength of the supporting soils and include a FS of 3 for end bearing, 2 for downward skin friction and 2.5 for uplift.

The capacities apply to single piles. In our opinion, no reduction of axial resistance is needed if center-to-center pile spacing is at least 3 pile diameters of greater. The structural characteristics of pile materials and structural connections may impose limitations on pile capacities and should be evaluated by the project's structural engineer.

7.7.3.2 LATERAL CAPACITY

Lateral loads can be resisted by passive soil pressure on the vertical piles and by the passive soil pressures on the pile cap. Because of the potential separation between the pile-supported foundation components and the underlying soil from settlement, base friction along the bottom of the pile cap should not be included in calculations for lateral capacity.

Lateral pile resistances can be evaluated using LPILE or other similar computer software programs. Recommended LPILE soil parameters are provided in the table below. Soil layer depths and thicknesses will vary across the site and can be estimated using Figures 3 and 5.

TABLE 5. RECOMMENDED LPILE SOIL PARAMETERS

SOIL UNIT	LPILE SOIL MODEL	EFFECTIVE UNIT WEIGHT (PCF)	FRICTION ANGLE (DEGREES)	SOIL MODULUS, K (PCI)	UNDRAINED COHESION (PSF)	E_{50}
Recent Deposits (above groundwater)	Soft Clay (Matlock)	100	-	-	100	0.02
Recent Deposits (below groundwater)	Soft Clay (Matlock)	37.6	-	-	200	0.02
Glacially Consolidated	Sand (Reese)	72.6	38	125	-	-

Notes:
pci = pounds per cubic inch, psf = pounds per square foot

Piles spaced closer than 5 pile diameters apart will experience group effects that will result in a lower lateral load capacity for trailing rows of piles with respect to leading rows of piles for an equivalent deflection. We recommend that the lateral load capacity for piles in a pile group spaced less than 5 pile diameters apart be reduced in accordance with the factors in Table 6.

TABLE 6. RECOMMENDED PILE P-MULTIPLIERS (P_M) FOR MULTIPLE PILE ROWS

SHAFT SPACING (IN TERMS OF SHAFT DIAMETER)[1]	P-MULTIPLIER, P_M[2,3]		
	ROW 1 (LEADING ROW)	ROW 2 (1ST TRAILING ROW)	ROW 3 AND HIGHER (2ND TRAILING ROW)
3D	0.8	0.4	0.3
5D	1.0	0.85	0.7

Notes:

1. The P-multipliers in the table above are a function of the center-to-center spacing of shafts in the group in the direction of loading expressed in multiples of the shaft diameter, D.
2. The values of P_m were developed for vertical shafts only per 2017 AASHTO Load Resistance Factor Design (LRFD) Table 10.7.4-1.
3. The P-multipliers are dependent on the shaft spacing and the row number in the direction of the loading to establish values of P_m for other shaft spacing values, interpolation between values should be conducted.

We recommend that the passive soil pressure acting on the pile cap be estimated using an equivalent fluid density of 200 pcf where the soil adjacent to the foundation consists of adequately compacted structural fill.

This passive resistance value includes a factor of safety of 1.5 and assumes a minimum lateral deflection of 1 inch to fully develop the passive resistance. Deflections that are less than 1 inch will not fully mobilize the passive resistance in the soil.

7.7.3.3 PILE SETTLEMENT

We estimate post-construction settlement of augercast piles designed and installed as recommended will be on the order of ½-inch or less. Maximum differential settlement should be less than about one-half the post-construction settlement. Most of this settlement will occur rapidly as loads are applied.

7.7.3.4 CONSTRUCTION CONSIDERATIONS

We recommend that all augercast piles be installed by a competent foundation contractor experienced with this type of construction. We anticipate conventional augercast drilling methods can be used to advance into soil types encountered at the site. Slower drilling advancement should be expected within underlying dense glacial deposits, which in our experience can be cemented. Drilling for augercast piles will generate spoils during construction. Additional testing could be required for proper site safety, material handling and/or disposal.

We recommend the contractor use drilling equipment instrumented to measure and display crowd speed, crowd force and/or drill pressure during augercast pile installation. These measurements can be used as an indication of the transition from softer recent deposits to the glacially consolidated soils, which can be used to estimate pile embedment in the glacial soils.

Production piles located in close proximity to one of the geotechnical borings completed for this project should be installed at the beginning of pile construction to calibrate the typical resistance measured within

soil layers at the site. This process will provide the required information to determine whether the piles have been installed to an appropriate length and may eliminate the need for static pile load testing. This approach has been used successfully on previous projects in Seattle that GeoEngineers provided construction observation for.

Although not encountered in the borings, we anticipate obstructions such as cobbles, boulders, logs or debris are occasionally present within alluvial and glacial deposits in the area and could be encountered during installation. The contractor should be prepared to deal with these conditions, which could require drilling through obstacles or relocating planned piles.

The augercast piles should be installed using a continuous-flight, hollow-stem auger. As is standard practice, the pile grout must be pumped under pressure through the hollow stem as the auger is withdrawn. Maintenance of adequate grout pressure at the auger tip is critical to reduce the potential for encroachment of adjacent native soils into the grout column. The rate of withdrawal of the auger must remain constant throughout the installation of the piles in order to reduce the potential for necking of the piles. Failure to maintain a constant rate of withdrawal of the auger should result in immediate rejection of that pile. Reinforcing steel for bending and uplift should be placed in the fresh grout column as soon as possible after withdrawal of the auger. Centering devices should be used to provide concrete cover around the reinforcing steel.

The contractor should adhere to a waiting period of at least 12 hours between the installation of piles spaced closer than 8 feet, center-to-center. This waiting period is necessary to avoid disturbing the curing concrete in previously cast piles.

Grout pumps must be fitted with a volume-measuring device and pressure gauge so that the volume of grout placed in each pile and the pressure head maintained during pumping can be observed. A minimum grout line pressure of 100 psi should be maintained. The rate of auger withdrawal should be controlled during grouting such that the volume of grout pumped is equal to at least 115 percent of the theoretical pile volume. A minimum head of 10 feet of grout should be maintained above the auger tip during withdrawal of the auger to maintain a full column of grout and to prevent hole collapse.

GeoEngineers should be on site to observe drilling and installation of the piles, monitor grout injection procedures and grout volumes, confirm similar installation techniques are utilized at all piles, record and evaluate testing, and provide modifications to pile installation, as necessary.

7.8 ANCILLARY STRUCTURE SUPPORT – NEW SHALLOW FOUNDATIONS

In our opinion, shallow foundation support can be considered where reduced foundation performance, higher tolerable settlement and lower bearing capacity is acceptable.

In our opinion, shallow foundations are appropriate for lightly loaded ancillary structures that do not support the main building (e.g., utility vaults, landscaping walls, etc.). We anticipate these ancillary structures will be generally northeast of the existing school building, within the existing basketball court and/or parking lot areas. Shallow foundations are not recommended to support new building addition(s) or other heavily loaded or settlement-sensitive structures.

7.8.1 Preliminary Design Parameters

Potentially soft/loose and compressible recent deposits (ESU-2) are present across the site and generally decrease in thickness toward the northeast. Depending on final foundation layout and elevations, we anticipate footings will be supported on one of two typical soil profiles:

- Soft/loose recent deposits, which are potentially settlement sensitive, or
- Medium dense or better existing fill overlying dense glacially consolidated soils.

We recommend foundations not bear directly on loose, soft and/or organic-rich soils due to the potential for excessive settlement. Overexcavation and replacement with imported structural fill may be required where these soils are encountered.

7.8.1.1 ALLOWABLE SOIL BEARING PRESSURE AND SETTLEMENT ESTIMATES

The recommendations provided below are intended to support site layout and preliminary design. We should be contacted once footing layouts, elevations, loading criteria and performance requirements have been established to provide updated recommendations for the final design.

- **For footings supported on recent deposits:**

  We recommend surfaces be overexcavated by 2 feet and replaced with 2 feet of properly compacted structural fill. For this condition, we recommend an allowable soil bearing pressure of 1,500 psf. This reduced pressure accounts for potential soft, loose and/or organic soils below the depth of footing excavation and is intended to limit long-term static settlements to approximately 1 to 2 inches. Additional seismic settlements may also need to be considered depending on the final foundation layout. Based on site explorations (e.g., GEI-4, GEI-5 and B-1-1991), this condition is expected to apply in areas east of the building near the existing basketball court.

- **For footings bearing on medium dense or better existing fill overlying glacially consolidated soils:**

  For this condition, we recommend an allowable soil bearing pressure of 3,000 psf. We estimate that long-term settlements will be on the order of 1 inch or less. We anticipate this condition is likely appropriate for the northeastern extent of the site based on site explorations (GEI-6 and B-3-1991).

- Soil layer thicknesses and elevations across the site can be estimated using Figures 3 and 5.

The recommended bearing pressures apply to combined dead and long-term live loads and may be increased by one-third when considering total loads, including earthquake or wind loads. These are net bearing pressures; the weight of the footing and overlying backfill can be ignored.

7.8.1.2 LATERAL RESISTANCE

Lateral foundation loads may be resisted by passive resistance on the sides of shallow foundations and by friction on the base of the shallow foundations.

For cast-in-place footings prepared in accordance with the recommendations presented above, the allowable frictional resistance on the base of the footing may be computed using a coefficient of friction of 0.35 applied to the vertical dead-load forces. The allowable passive resistance on the face of the footing or other embedded foundation elements may be computed using an equivalent fluid density of 250 pcf for

structural fill extending out from the face of the foundation element a horizontal distance at least equal to 2.5 times the depth of the element.

The above values include a FS of about 1.5. The passive earth pressure and friction components may be combined, provided the passive earth pressure component does not exceed two-thirds of the total. The passive earth pressure value is based on the assumptions that the adjacent grade is level and groundwater levels remain below the base of the footing throughout the year. The top foot of soil should be neglected when calculating passive lateral earth pressure unless the area adjacent to the foundation is covered with pavement or slab-on-grade.

7.9 FOOTING AND BUILDING DRAINAGE

Perimeter footing drains are recommended due to the presence of groundwater. These drains will help maintain long-term bearing conditions, keep the area around the structure relatively dry, and intercept water that could accumulate beneath slabs and other interior spaces. Perimeter drains may also reduce the risk of groundwater affecting moisture-sensitive flooring or other floor finishes.

We expect typical civil design details for foundation drains, such as perforated pipe surrounded by clean gravel wrapped in a geotextile fabric, installed at base of footing, will generally be adequate for these purposes. Some flexibility in this design may be required to accommodate stepped foundations and potential difficulties designing a gravity outlet. We recommend the ground surface be sloped away from structures. Downspouts should be tightlined away from the building foundation areas, not be connected to footing drains, and should also be discharged to appropriate discharge locations or stormwater management systems.

GeoEngineers should be contacted to provide specific recommendations for the design of foundation drains once final structure locations and elevations have been determined.

Deeper structures (such as utility vaults) may extend below static groundwater levels. Where structures are installed below groundwater, foundation drains should be provided, where practical, to help limit water intrusion. Structures located below the water level should be design for long-term submerged conditions, including full appropriate waterproofing and consideration of hydrostatic lateral and uplift pressures.

7.10 SLAB-ON-GRADE FLOORS

Slabs-on-grade are anticipated for the project in areas where the existing slab-on-grade will be removed. The following sections provide design recommendations for subgrade preparation, slab-on-grade design parameters and below-slab drainage.

7.10.1 Subgrade Preparation

Based on initial discussions with CPL we understand floor slabs will be supported on grade beams to transfer loads to deep foundation elements. For preliminary planning purposes we do not anticipate overexcavation and replacement below floor slabs will be required over the entire building footprint(s).

The exposed subgrade should be evaluated after site grading is complete via probing or similar methods. The exposed soil should be firm and without significant water. Disturbed areas should be recompacted if possible or removed and replaced with compacted structural fill.

7.10.2 Wet Weather Considerations

Slab subgrade surfaces must not be exposed to standing water, as wet surfaces can become easily disturbed. If water pools on top of prepared surfaces, it should be removed before placing structural fill and/or capillary break. Structural fill and concrete should be placed as soon as practical.

7.10.3 Design Parameters

For slabs designed as a beam on an elastic foundation, a modulus of subgrade reaction of 100 pci may be used for subgrade soils prepared as recommended.

We recommend that the slab-on-grade floors be underlain by a capillary break layer consisting of material meeting the requirements of Mineral Aggregate Type 22 (¾-inch crushed gravel), City of Seattle Standard Specification 9-03.14. Provided the performance of the existing building has been acceptable, we recommend matching the thickness of capillary break below the existing slab-on-grade.

Provided that loose soil is removed and the subgrade is prepared as recommended, we estimate that slabs-on-grade will not settle appreciably under static loading.

7.10.4 Below Slab Drainage

Provided that the performance of the existing building has been acceptable, we recommend matching below slab drainage for the existing building. Therefore, if below slab drainage is currently constructed below the slab-on-grade we recommend matching, or repairing the existing system when construction is complete. This includes placement of capillary break below the slab-on-grade of minimum thickness as that currently there, as well as repairing or replacing any foundation drainage encountered during the improvements. If no below slab drainage is currently included in the building, then we take no exception to its exclusion from the planned improvements.

GeoEngineers should be consulted if additional foundation drainage recommendations are necessary.

7.11 BELOW-GRADE WALLS AND STRUCTURES

7.11.1 Existing Walls

Recommended lateral earth pressures for the evaluation of existing below-grade walls are provided in Figure 6 for static conditions and Figure 7 for seismic conditions. These pressures assume the retained soils are consistent with those encountered in our explorations. The seismic lateral earth pressures are provided in accordance with ASCE 41-17 Section 8.6, which requires that "*the seismic earth pressure shall be added to the unfactored static active earth pressure to obtain the total earth pressure on the wall.*"

Submerged conditions should be considered for below-grade walls below the static groundwater level. Surcharge loading (including adjacent building foundations, and vehicular traffic) will need to be included in design and may require additional reinforcement elements, larger sizes, increased depth/length, and/or reduced spacing. Surcharge pressures can be estimated following the distributions shown in Figure 8. We can provide additional recommendations for specific surcharge loading conditions upon request.

7.11.2 New Below-grade Structures

Based on the relatively level topography across the site, we do not anticipate the need for new retaining walls. We assume that precast vaults and structures will be included in underground utility improvements. The lateral soil pressures acting on new below-grade structures will vary across the site and based on backfill conditions. GeoEngineers should be contacted to provide design recommendations once the types and locations of new below-grade structures have been established.

7.12 INFILTRATION CONSIDERATIONS

For general planning purposes, we considered stormwater infiltration in accordance with the 2021 City of Seattle Stormwater Manual (SMS). Overall, we anticipate limited infiltration potential at the site due to the presence of fine-grained silt and clay soil layers, observed groundwater levels, and underlying dense glacially consolidated soils. We expect required vertical and horizontal separations (e.g., depth to groundwater) will likely control infiltration design. For reference, the SMS generally requires a minimum vertical separation of 5 feet from the base of infiltration basins/trenches to the top of seasonal high groundwater or other hydraulically restrictive layer. Groundwater mounding analysis could be required depending on the depth and size of proposed facility.

Some infiltration will occur within coarse-grained sand layers encountered in the borings at the site, however, soil layering (i.e., fine-grained silts and clays) and groundwater will reduce the overall infiltration rates and/or options.

If infiltration is included in project design, field testing such as Pilot Infiltration Tests (PITs), will be required in accordance with the SMS to determine design infiltration rates. PITs should be conducted during the wet season (November to March) to provide an accurate measure of groundwater effects. PITs should be completed within the footprint of proposed infiltration facilities and at the proposed infiltration depths. Therefore, PITs are best completed once preliminary site planning and layout has occurred. Ultimately, we recommend we review initial planning ideas if infiltration is decided to be considered for stormwater management.

7.13 EARTHWORK

Based on the subsurface soil conditions encountered in the borings, we expect that the soils at the site may be excavated using conventional heavy-duty construction equipment. Cobbles and debris were not observed in the fill material during our borings; however, fill can contain cobbles and debris. Accordingly, the contractor should be prepared to deal with cobbles and debris, if encountered.

The fill contains sufficient fines (material passing the U.S. standard No. 200 sieve) to be highly moisture-sensitive and susceptible to disturbance, especially when wet. Ideally, earthwork should be undertaken during extended periods of dry weather when the surficial soils will be less susceptible to disturbance and provide better support for construction equipment. Dry weather construction will help reduce earthwork costs and increase the potential for using the drier native soils as structural fill.

Trafficability on the site is not expected to be difficult during dry weather conditions. However, the native soils will be susceptible to disturbance from construction equipment during wet weather conditions and pumping and rutting of the exposed soils under equipment loads may occur.

7.13.1 Clearing and Site Preparation

All existing utilities should be removed from the building expansion footprint and rerouted if needed.

Areas to be developed or graded should be cleared of surface and subsurface deleterious matter including any debris, shrubs, trees and associated stumps and roots. Graded areas should be stripped of organic soils.

The organic soils can be stockpiled and used later for landscaping purposes or may be spread over disturbed areas following completion of grading. If spread out, the organic strippings should be in a layer less than 1-foot-thick, should not be placed on slopes greater than 3H:1V and should be track-rolled to a uniformly compacted condition. Materials that cannot be used for landscaping or protection of disturbed areas should be removed from the project site.

7.13.2 Subgrade Preparation

Prior to placing new fills, pavement base course materials or gravel below on-grade floor slabs, subgrade areas should be probed to locate any soft or pumping soils. If soft or pumping soils are observed, they should be removed and replaced with structural fill.

If deep pockets of soft or pumping soils are encountered outside the building area, it may be possible to limit the depth of overexcavation by placing a non-woven geotextile fabric such as TenCate Mirafi 500X (or equivalent) on the overexcavated subgrade prior to placing structural fill. The geotextile will provide additional support by bridging over the soft material and will help reduce fines contamination into the structural fill.

After completing the probing, the subgrade areas should be recompacted to a firm condition, if possible. The degree of compaction that can be achieved will depend on when the construction is performed. If the work is performed during dry weather conditions, we recommend that all subgrade areas be recompacted to at least 95 percent of the maximum dry density (MDD) in accordance with the ASTM D 1557 test procedure (modified Proctor). If the work is performed during wet weather conditions, it may not be possible to recompact the subgrade to 95 percent of the MDD. In this case, we recommend that the subgrade be compacted to the extent possible without causing undue heaving or pumping of the subgrade soils.

Subgrade disturbance or deterioration could occur if the subgrade is wet and cannot be dried. If the subgrade deteriorates during compaction, it may become necessary to modify the compaction criteria or methods.

7.13.3 Structural Fill

All fill, whether existing on-site fill soil or imported soil, which will support slabs, pavement areas or foundations, or be placed against retaining walls or in utility trenches should generally meet the criteria for structural fill presented below. The suitability of soil for use as structural fill depends on its gradation and moisture content.

7.13.3.1 Materials

Materials used as backfill for foundations, slabs, structures, below-grade walls, drainage layers, utility trenches and paved areas are classified as structural fill for the purpose of this report. We recommend specifying materials using the City of Seattle Standard Specifications (Seattle Mineral Aggregate) or the

Washington State Department of Transportation (WSDOT) Standard Specifications. Structural fill material quality varies depending upon its use as described below:

1. Structural fill placed below all structures and during wet weather conditions should consist of imported gravel borrow, as described in Section 9-03.14(1) of the WSDOT Standard Specifications or City of Seattle Mineral Aggregate Type 17, with the additional restriction that the fines content be limited to no more than 5 percent.
2. Structural fill placed to backfill utility trenches may consist of on-site suitable fill soils provided that the soils are conditioned for the required compaction. On-site fill soils may be suitable for use as structural fill during dry weather conditions in areas needing 90 percent compaction. The existing soil will require moisture conditioning prior to use as structural fill. If structural fill is placed during wet weather, the structural fill should consist of imported gravel borrow, as described above. On-site recent deposits should not be planned for reuse as structural fill.
3. Structural fill placed immediately outside below-grade walls (drainage zone) should consist of washed gravel, such as Seattle Mineral Aggregate Type 5 or conform to Section 9-03.12(4) of the WSDOT Standard Specifications, surrounded by a nonwoven geotextile separator. Alternatively, Seattle Mineral Aggregate Type 26 may be used without a geotextile fabric in conjunction with a geocomposite wall drainage board.
4. Structural fill placed as crushed surfacing base course (CSBC) below pavements should conform to Section 9-03.9(3) of the WSDOT Standard Specifications or Seattle Mineral Aggregate Type 2.
5. Structural fill placed as capillary break below slabs should consist of 1-inch-minus clean crushed rock with negligible sand or silt in conformance with Section 9-03.1(4)C, grading No. 67 of the WSDOT Standard Specifications or Seattle Mineral Aggregate Type 22 with negligible fines or sand content.

7.13.3.2 Reuse of On-site Soils

Existing site soils include fine-grained silts and clays, organic-rich soils and silty sands. Summary logs, soil descriptions and results of laboratory testing from previous site explorations are included in Appendix A. We envision that some of the materials could be generated above optimum moisture content and require drying to obtain proper compaction, especially if material is generated during wet weather or near/below groundwater levels.

In general, we do not recommend on-site materials be considered for use as structural fill. On-site materials will essentially be rendered useless as a structural fill if they become wet. Organics, debris and other unsuitable materials could also be present which would need to be sorted and removed before re-use.

7.13.3.3 Fill Placement and Compaction Criteria

Structural fill should be mechanically compacted to a firm condition. Structural fill should be placed in loose lifts not exceeding 12 inches in thickness when using heavy compaction equipment and not more than 6 inches when using hand operated compaction equipment. The actual thickness will be dependent on the structural fill material used and the type and size of compaction equipment. Each lift should be moisture-conditioned to within about 2 percent of the optimum moisture content to achieve proper compaction to the specified density before placing subsequent lifts. Compaction of all structural fill at the site should be in accordance with the ASTM D 1557 (modified proctor) test method. Structural fill should be compacted to the following criteria:

1. Structural fill placed below floor slabs and foundations should be compacted to 95 percent of the MDD.
2. Structural fill placed behind below-grade walls should be compacted to between 90 to 92 percent of the MDD estimated in accordance with ASTM D 1557. Care should be taken when compacting fill near the face of below-grade walls to avoid overcompaction and hence, overstressing the walls. Hand operated compactors should be used within 5 feet behind the wall. The upper 2 feet of fill below floor slab subgrade should also be compacted to at least 95 percent of the MDD. The contractor should keep all heavy construction equipment away from the top of retaining walls a distance equal to half the height of the wall, or at least 5 feet, whichever is greater.
3. Structural fill in new pavement and hardscape areas, including utility trench backfill, should be compacted to at least 90 percent of the MDD, except that the upper 2 feet of fill below final subgrade should be compacted to at least 95 percent of the MDD, as shown in Figure 9.
4. Non-structural fill, such as fill placed in landscape areas, should be compacted to at least 90 percent of the MDD.

7.13.3.4 Weather Considerations

Disturbance of near surface soils should be expected if earthwork is completed during periods of wet weather. During dry weather, the soils will: (1) be less susceptible to disturbance; (2) provide better support for construction equipment; and (3) be more likely to meet the required compaction criteria.

The wet weather season generally begins in October and continues through May in Western Washington; however, periods of wet weather may occur during any month of the year. For earthwork activities during wet weather, we recommend that the following steps be taken:

- Ground surface in and around the work area should be sloped so that surface water is directed away from the work area. The ground surface should be graded so that areas of ponded water do not develop. Measures should be taken by the contractor to prevent surface water from collecting in excavations and trenches. Measures should be implemented to remove surface water from the work area.
- Earthwork activities should not take place during periods of moderate to heavy precipitation.
- Slopes with exposed soils should be covered with plastic sheeting.
- The contractor should take necessary measures to prevent on-site soils and soils to be used as fill from becoming wet or unstable. These measures may include the use of plastic sheeting, sumps with pumps and grading. The site soils should not be left uncompacted and exposed to moisture. Sealing the surficial soils by rolling with a smooth-drum roller prior to periods of precipitation will help reduce the extent that these soils become wet or unstable.
- The contractor should cover all soil stockpiles that will be used as structural fill with plastic sheeting.
- Construction traffic should be restricted to specific areas of the site, preferably areas that are surfaced with the existing asphalt or working pad materials not susceptible to wet weather disturbance.
- Construction activities should be scheduled so that the length of time that soils are left exposed to moisture is reduced to the extent practical.

Routing of equipment on the fill subgrade soils during the wet weather months will be difficult and the subgrade will likely become highly disturbed and rutted. In addition, a significant amount of mud can be produced by routing equipment directly on the existing fill soils in wet weather. Therefore, to protect the

subgrade soils and to provide an adequate wet weather working surface for the contractor's equipment and labor, we recommend that the contractor protect exposed subgrade soils with crushed rock.

7.13.4 Temporary Slopes

Temporary slopes may be used where excavations extend greater than 2 to 4 feet below site grades. We recommend that temporary slopes be inclined at 1.5H:1V (horizontal to vertical). Flatter slopes may be necessary if seepage is present on the face of the cut slopes or if localized sloughing occurs. For open cuts at the site, we recommend that:

- No traffic, construction equipment, stockpiles or building supplies be allowed at the top of the cut slopes within a distance of at least 5 feet from the top of the cut;
- The general condition of the slopes be observed periodically by the geotechnical engineer to confirm adequate stability.

Because the contractor has control of the construction operations, the contractor should be made responsible for the stability of cut slopes, as well as the safety of the excavations. Shoring and temporary slopes must conform to applicable local, state and federal safety regulations.

7.13.5 Permanent Cut and Fill Slopes

Permanent cut and fill slopes are not anticipated at this time. Where required, GeoEngineers should be contacted to provide recommendations.

7.13.6 Utility Trenches

Trench excavation, pipe bedding and trench backfilling should be completed using the general procedures required by the City of Seattle or specified by the project civil engineer. The fill soils encountered at the site are generally of low corrosivity based on our experience in the Puget Sound area; however, the recent deposits have a moderate to high potential for corrosion.

Utility trench backfill should consist of structural fill and should be placed in loose lifts not exceeding 12 inches in thickness when using heavy compaction equipment and not more than 6 inches when using hand operated compaction equipment such that adequate compaction can be achieved throughout the lift. Each lift must be compacted prior to placing the subsequent lift. Prior to compaction, the backfill should be moisture-conditioned to within 2 percent of the optimum moisture content, if necessary. The backfill should be compacted in accordance with the criteria discussed above. Figure 9 illustrates recommended trench compact trench compaction criteria under pavement and non-structural areas.

7.13.7 Sedimentation and Erosion Control

In our opinion, the erosion potential of the on-site soils is low to moderate. Construction activities including stripping and grading will expose soils to the erosional effects of wind and water. The amount and potential impacts of erosion are partly related to the time of year that construction actually occurs. Wet weather construction will increase the amount and extent of erosion and potential sedimentation.

Erosion and sedimentation control measures may be implemented by using a combination of interceptor swales, straw bale barriers, silt fences and straw mulch for temporary erosion protection of exposed soils. All disturbed areas should be finish graded and seeded as soon as practicable to reduce the risk of erosion.

Erosion and sedimentation control measures should be installed and maintained in accordance with the requirements of the City of Seattle.

7.13.8 Surface Water Drainage Considerations

All paved and landscaped areas should be graded so that surface drainage is directed away from the new and existing buildings to appropriate catch basins.

Water collected in roof downspout lines must not be routed to the footing drain lines. Collected downspout water should be routed to appropriate discharge points in separate pipe systems.

7.13.9 Temporary Dewatering Considerations

We anticipate shallow groundwater seepage may enter excavations depending on the time of year construction takes place, especially in the winter months. However, we expect that this seepage water can be handled by digging interceptor trenches in the excavations and pumping from sumps. The seepage water if not intercepted and removed from the excavations will make it difficult to place and compact structural fill and may destabilize cut slopes.

For planning purposes, we anticipate that temporary dewatering for the deeper portion of the pool excavation may encounter groundwater flow rates up to about 10 gallons per minute (gpm) during construction.

GeoEngineers should be contacted to provide additional recommendations if excavations are planned below the design groundwater elevation.

8.0 Recommended Additional Geotechnical Services

We anticipate additional geotechnical design and review will be required for final project design to ensure that the recommendations provided in this report have been incorporated. Depending on factors such as the final layout, building/foundation elevations, structural loads and performance requirements, it may be necessary to update and revise the design recommendations provided in this report. We envision additional geotechnical services could include:

- Coordination with the structural engineer to incorporate recommendations provided in this report.
- Complete additional analyses (e.g., alternative pile types/sizes) for value engineering.
- Review final foundation design to confirm adequate axial and lateral resistance.
- Review geotechnical related portions of project plans and specifications.
- Review of submittals and product types and/or methods of foundation construction, earthwork, and other site development activities.

9.0 Limitations

We have prepared this report for the exclusive use of Seattle Public Schools and their authorized agents and/or regulatory agencies for the proposed John Marshall Site Modernization project in Seattle, Washington. This report is not intended for use by others, and the information contained herein is not applicable to other sites. Parks Tacoma may distribute copies of this report to authorized agents and/or regulatory agencies as may be required for the project. No other party may rely on the product of our services unless we agree in advance and in writing to such reliance.

Within the limitations of scope, schedule and budget, our services have been executed in accordance with generally accepted practices for geotechnical engineering in this area at the time this report was prepared. The conclusions, recommendations and opinions presented in this report are based on our professional knowledge, judgment and experience. No warranty, express or implied, applies to the services or this report.

Please refer to Appendix F titled "Report Limitations and Guidelines for Use" for additional information pertaining to the use of this report.

10.0 References

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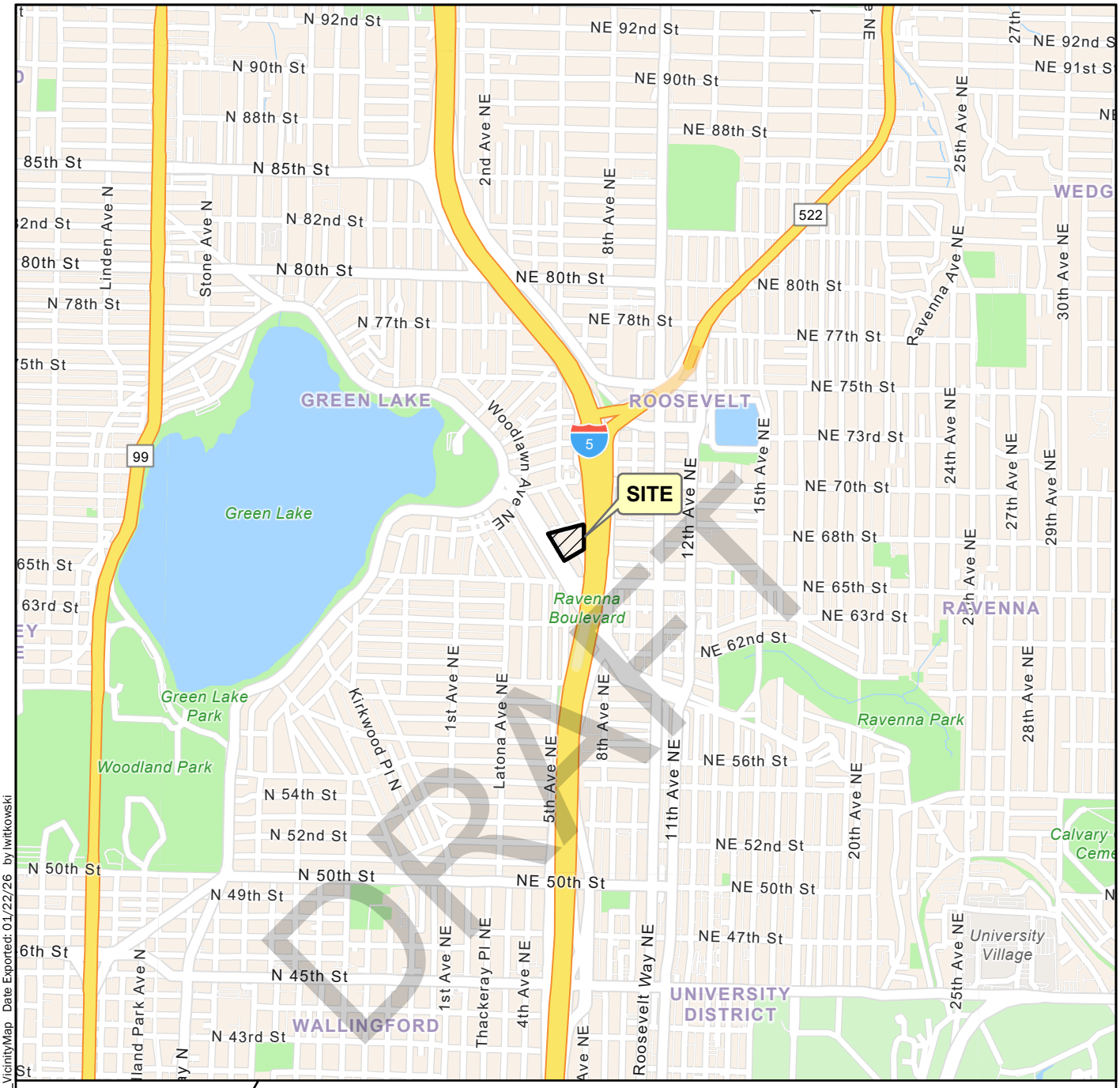
Figures



N

0 2,000

Feet

Source(s):
- ESRI

Coordinate System: NAD 1983 2011 StatePlane Washington North FIPS 4601 Ft US

Vicinity Map

John Marshall Site Modernization
Seattle, Washington

GeoEngineers

Figure 1

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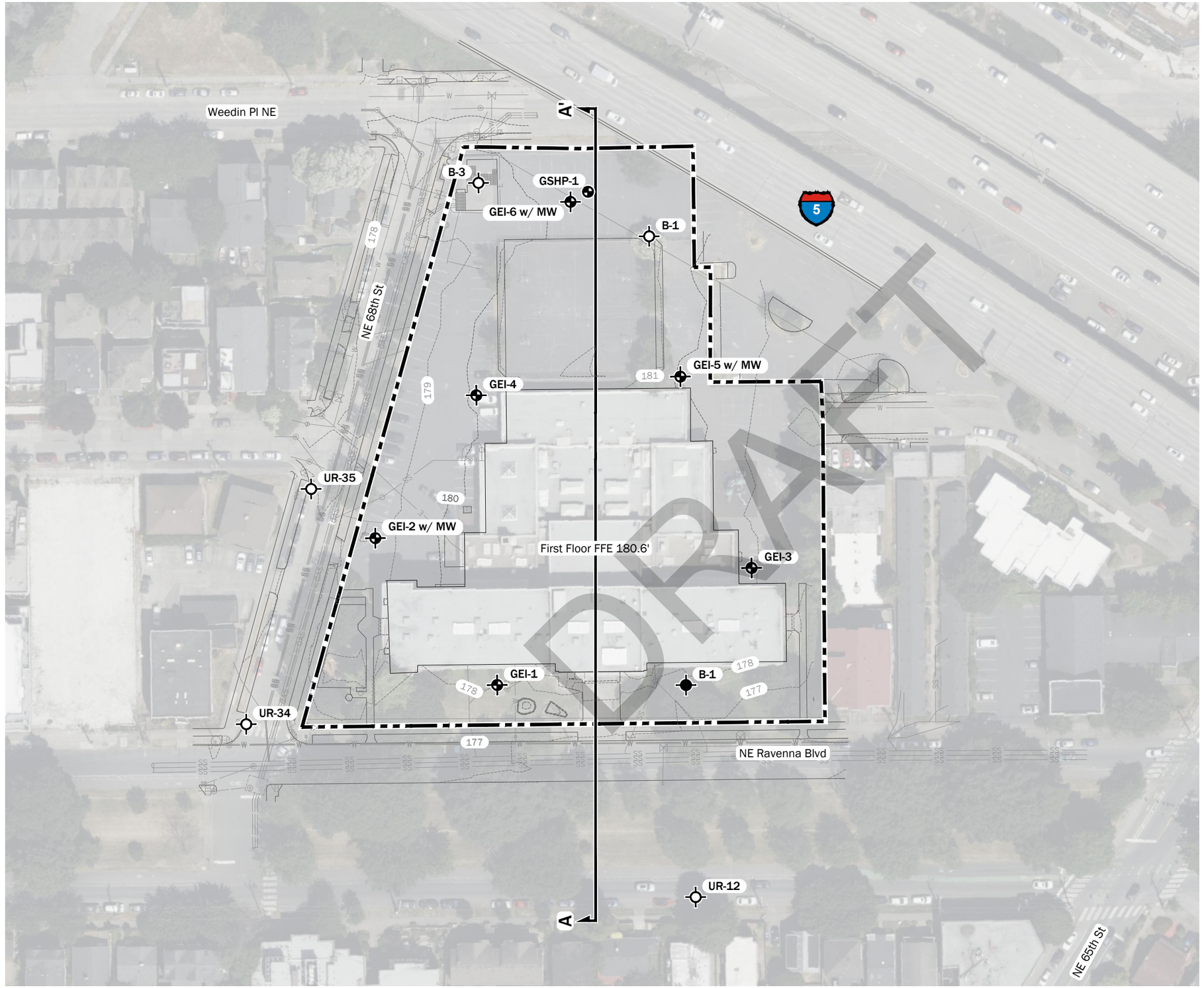

GSHP-1
GEO-1
B-1
B-1
A

Sources:
- Aerial from Microsoft Bing
- Survey from Bush, Roed & Hitchings, Inc., dated 04/23/2025

Coordinate System: Washington State Plane, North Zone, NAD83, US Foot

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John Marshall Site Modernization

GeoEngineers

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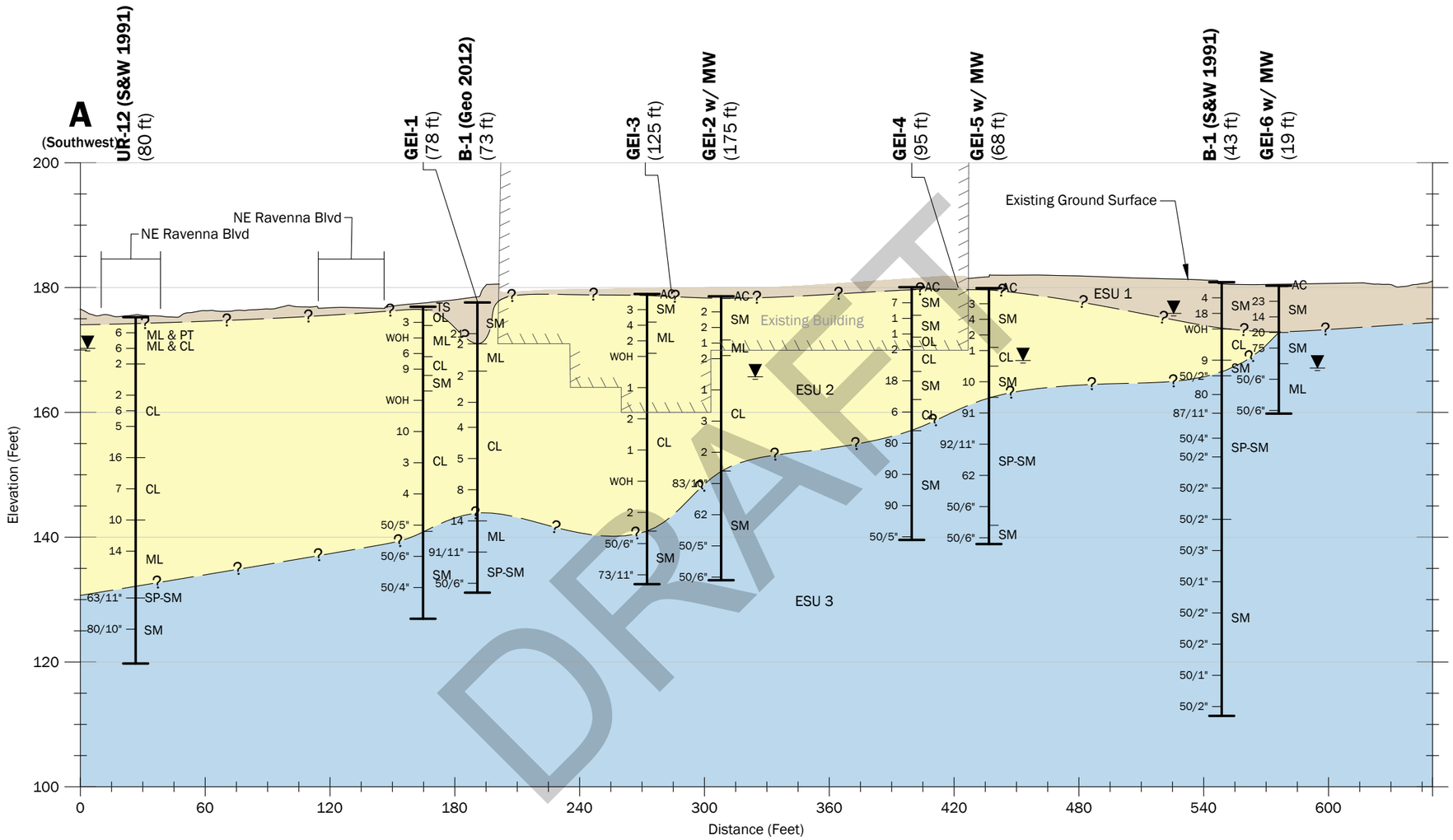
A
(Southwest)



Note:

1. The subsurface conditions shown are based on interpolation between widely spaced explorations and should be considered approximate; actual subsurface conditions may vary from those shown.
2. See report for long-term groundwater readings from monitoring wells.

Datum: NAVD88

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Legend

Boring ID (Offset)

Boring

Inferred Soil Contact

SM — Soil Classification

Groundwater Measured in Piezometer

20 — SPT Blow Count

- ESU 1 (Fill)
- ESU 2 (Recent Deposits)
- ESU 3 (Glacially Consolidated Soils)

0 60 Horizontal Feet

0 20 Vertical Feet

Vertical Exaggeration = 3X

John Marshall Site Modernization

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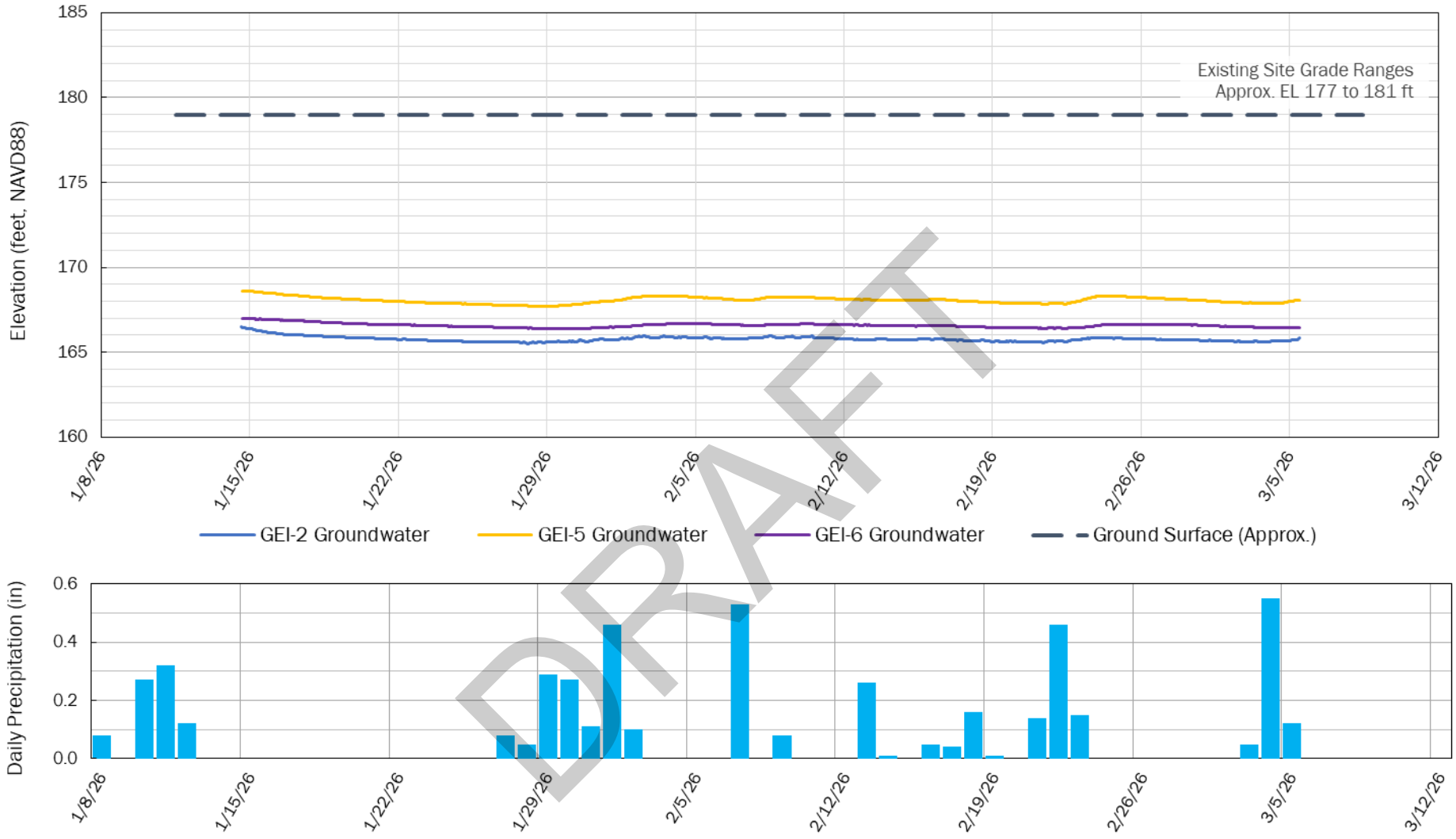

Note(s):

1. Elevations based on provided site survey data, reference NAVD88, and should be considered approximate.
2. Precipitation data obtained from NOAA Seattle Sand Point weather station, approximately 3 miles east-northeast of project site.

Groundwater Hydrographs

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Seattle, Washington

GeoEngineers

Figure 4

140

Sources:

- Aerial from Microsoft Bing
- Survey from Bush, Roed & Hitchings, Inc., dated 04/23/2025

Coordinate System: Washington State Plane, North Zone, NAD83, US Foot

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Estimated Bearing Layer Elevation Contour Map

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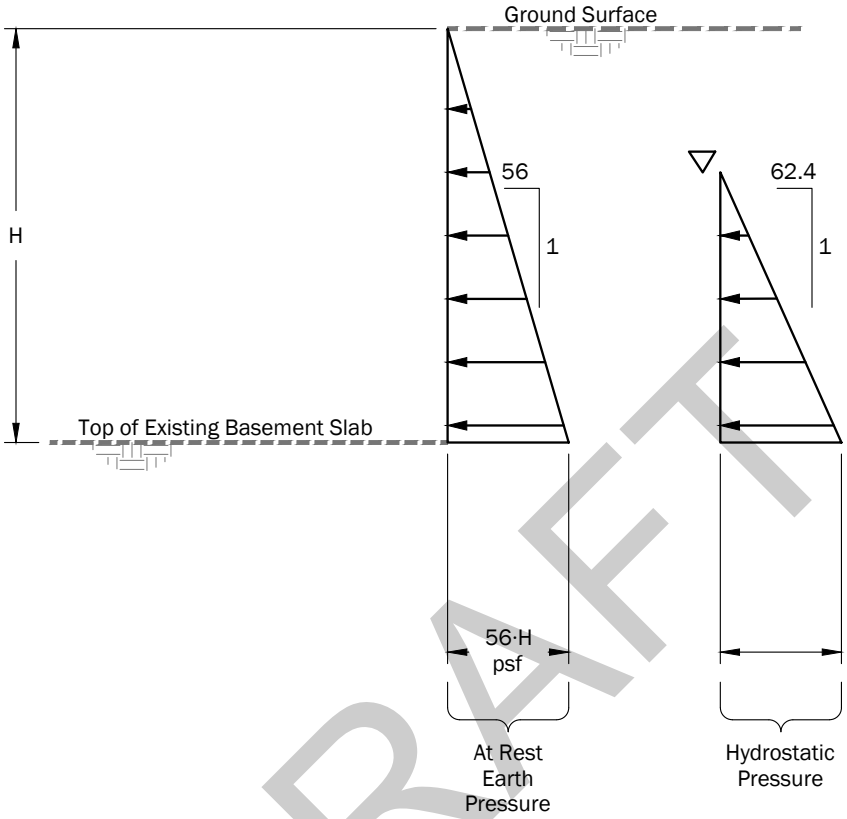


Legend

H = Height of Excavation, Feet

▽ Design Groundwater Elevation for Passive Resistance Design

Not To Scale

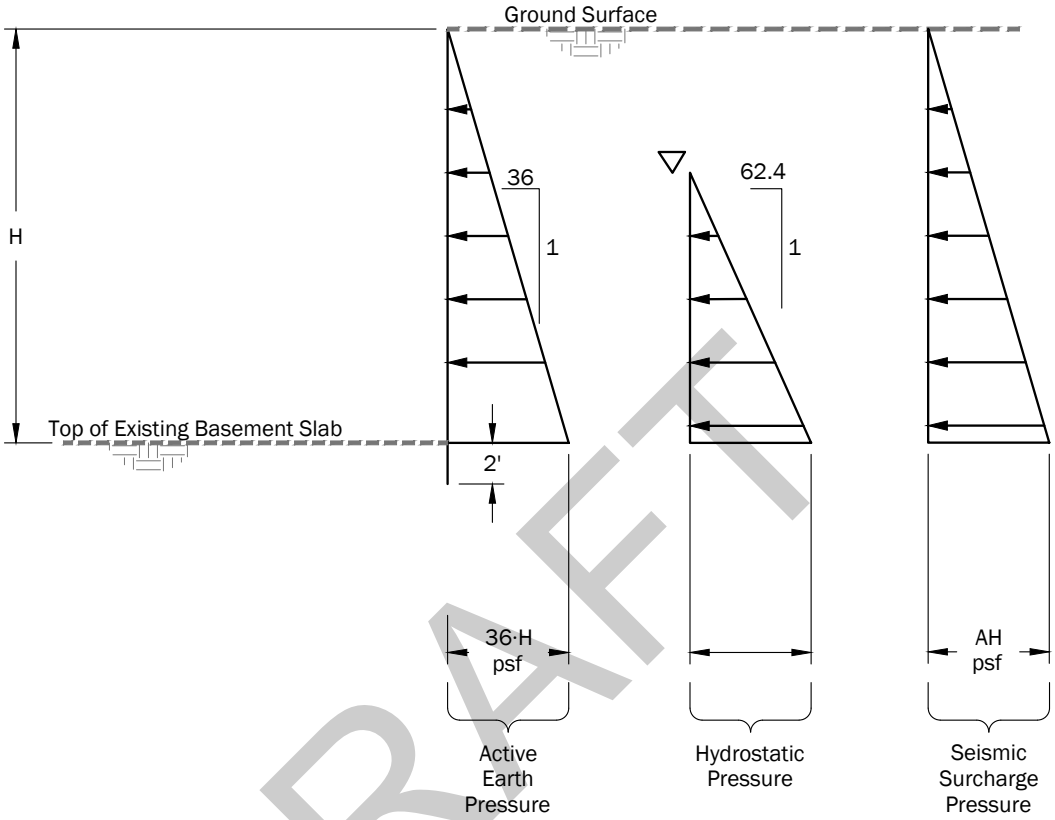
Static Earth Pressure Diagram
Permanent Basement Wall

John Marshall Site Modernization
Seattle, Washington

GeoEngineers

Figure 6

Notes:
1. Additional surcharge loads shall be included in accordance with recommendations provided in the report text.
2. Earth pressures provided do not include a factor of safety.
3. These earth pressures should be considered preliminary and must be reevaluated during final design based on the actual layout and configuration of below grade walls.



Earth Pressure Factor for Seismic Surcharge	
Seismic Hazard Level	Earth Pressure Factor A
BSE-2N	26
BSE-1N	15
BSE-2E	23
BSE-1E	14

Legend

H = Height of Excavation, Feet

▽ Design Groundwater Elevation for Passive Resistance Design

Notes:

1. Additional surcharge loads shall be included in accordance with recommendations provided in the report text.
2. Earth pressures provided do not include a factor of safety.
3. These earth pressures should be considered preliminary and must be reevaluated during final design based on the actual layout and configuration of below grade walls.

Not To Scale

Seismic Earth Pressure Diagram
Permanent Basement Wall

John Marshall Site Modernization
Seattle, Washington

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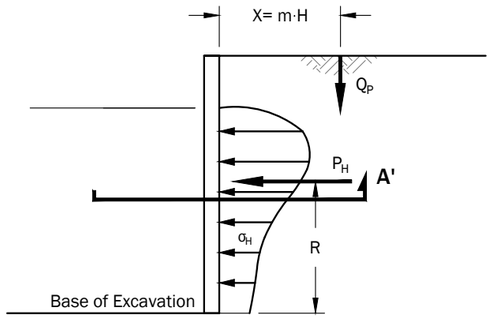
Figure 7

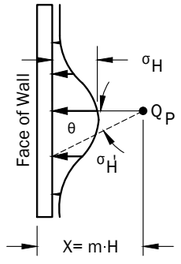
Lateral Earth Pressure from Point Load, Q_P (Spread Footing)



m > 0.4

$$\sigma_H = \frac{1.77 Q_P m^2 n^2}{H^2 (m^2+n^2)^3}$$

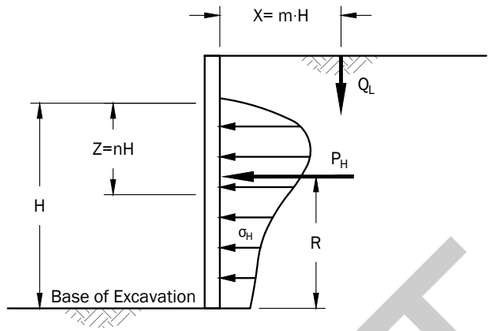
$$\sigma'_H = \sigma \cos^2(1.1\theta)$$



Section A-A'

Pressures from Point Load Q_P

Lateral Earth Pressure from Line Load, Q_L (Continuous Wall Footing)



For m ≤ 0.4

$$\sigma_H = \frac{0.2n \cdot Q_L}{H(0.16+n^2)^2}$$

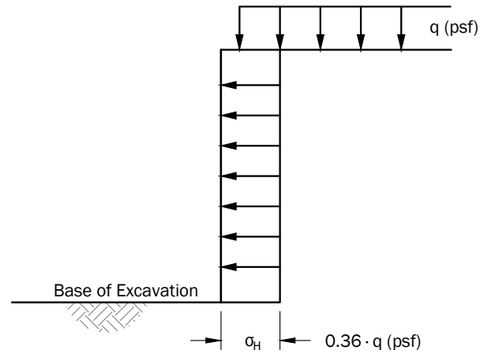
For m > 0.4

$$\sigma_H = \frac{1.28 m^2 n Q_L}{H(m^2+n^2)^2}$$

$$\text{Resultant } P_H = \frac{0.64 Q_L}{(m^2+1)}$$

m	R
0.40	0.61H
0.45	0.58H
0.50	0.56H
0.55	0.54H
0.60	0.52H
0.65	0.50H
0.70	0.49H

Uniform Surcharges, q (Floor Loads, Large Foundation Elements or Traffic Loads)



σ_H = Lateral Surcharge Pressure from Uniform Surcharge

Procedures for estimating surcharge pressures shown above are based on Unified Facilities Criteria UFC-3-220-20, Foundations and Earth Structures (DM 7.2), 16 January 2025. See report text for where surcharge pressures are appropriate.

Definitions:

- Q_P = Point load in pounds
- Q_L = Line load in pounds/foot
- H = Excavation height below footing, feet
- σ_H = Lateral earth pressure from surcharge, psf
- q = Surcharge pressure in psf
- θ = Radians
- σ'_H = Distribution of σ_H in plan view
- P_H = Resultant lateral force acting on wall, pounds
- R = Distance from base of excavation to resultant lateral force, feet
- X = Resultant lateral force acting on wall, pounds
- Z = Depth of σ_H to be evaluated below the bottom of Q_P or Q_L
- m = Ratio of X to H
- n = Ratio of Z to H

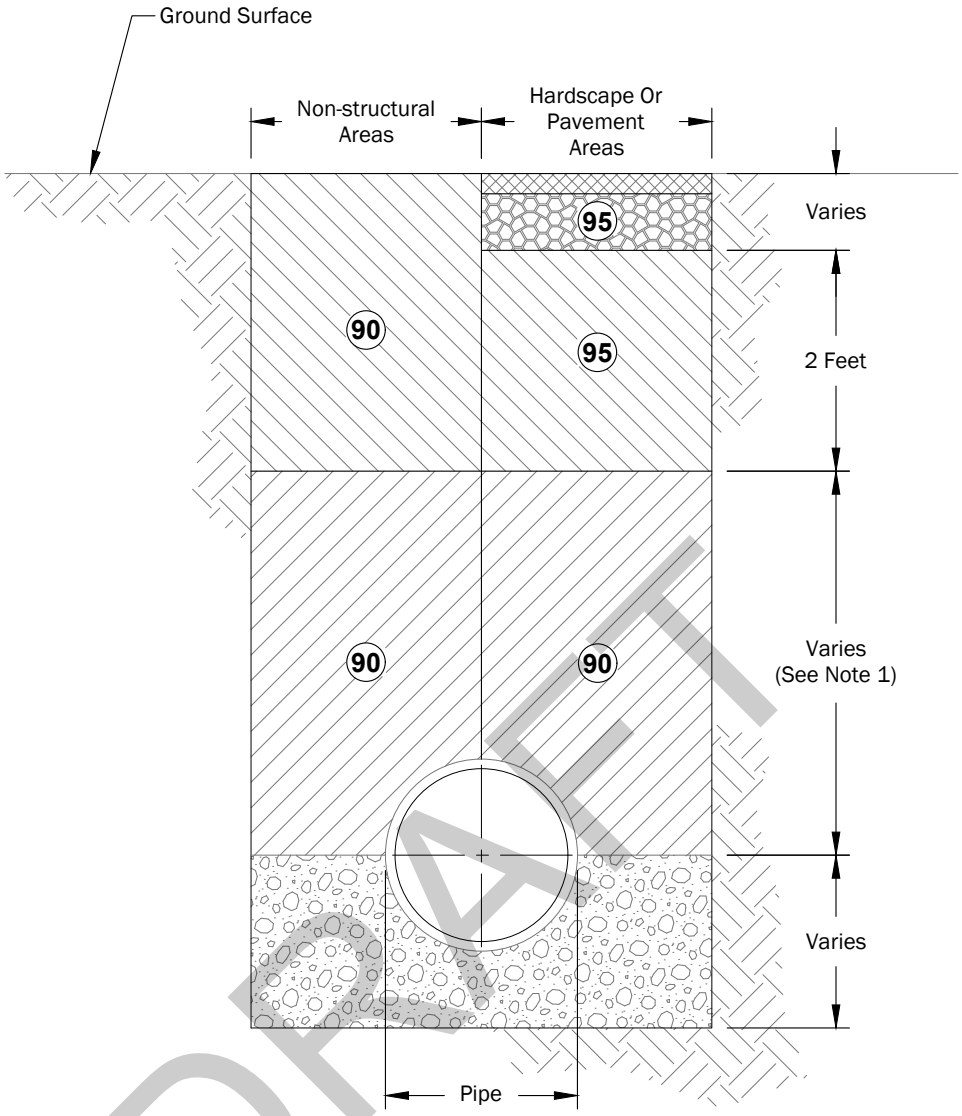
Not To Scale

Recommended Surcharge Pressure

John Marshall Site Modernization
Seattle, Washington

GeoEngineers

Figure 8



Not To Scale

Legend

95 — Recommended Compaction as a Percentage of Maximum Dry Density, by Test Method ASTM D1557 (Modified Proctor)

Concrete or Asphalt Pavement

Base Course

Trench Backfill

Pipe Bedding

Notes:

1. All backfill under building areas should be compacted to at least 95 percent per ASTM D1557.

Site Plan

John Marshall Site Modernization
Seattle, Washington

GeoEngineers

Figure 9

Appendices

APPENDIX C

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 on 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.

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 (MTCO2e) Embodied	Energy	Transportation	Lifespan Emissions (MTCO2e)
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		**27.8**	39	646	361	**29113**
Food Sales		0.0	39	1,541	282	**0**
Food Service		0.0	39	1,994	561	**0**
Health Care Inpatient		0.0	39	1,938	582	**0**
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: **29113**

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/cbecs/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		
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	Total Embodied Emissions (MTCO2e)	Total Embodied Emissions (MTCO2e/ thousand sq feet)
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

Pavement Emissions Factors
MTCO2e/thousand square feet of asphalt
or concrete pavement

50 (see below)

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

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

Treloar, 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 lief 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/cbecs/cbecs2003/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 lief 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

APPENDIX D

Arborist Report

Tree Solutions Inc
Consulting Arborists

Project No. TS - 9795

Arborist Report
Existing Conditions

To:	Seattle Public Schools c/o Paul Wight
Site:	John Marshall School 520 NE Ravenna Blvd, Seattle, WA 98115
Re:	Tree Inventory and Assessment
Date:	September 15, 2025
Project Arborists:	Holly Iosso, Registered Consulting Arborist #567 ISA Certified Arborist PN-6298A ISA Qualified Tree Risk Assessor
	Lindsay Osborn ISA Certified Arborist PN-10281A
Attached:	Table of Trees Tree Site Map

Summary

We inventoried, tagged and assessed 24 trees[1] within the project boundaries. We also assessed 29 trees adjacent to the site[2].

There were no tree groves[3] on-site. Trees 12 inches or greater comprising a tree grove are regulated as tier 2 trees.

Of the trees on-site, three met the criteria of tier 2. This includes both trees in tree groves as well as trees large enough to qualify per the definition in Seattle Director's Rule 07-2024.

We have not reviewed development plans for tree retention feasibility or removals.

If development occurs, all tier 1, 2, and 3 trees, both on and off-site will require tree protection measures.

[1] Trees with diameter at standard height (DSH) ≥6"
[2] Trees with DSH ≥6" with canopies or root zones extending over the property line
[3] Tree grove is eight or more trees each with a DSH of ≥12 inches with continuously overlapping canopies (SMC 25.11.130), excluding certain species and trees growing entirely in "the public place", also known as the right-of-way.

Assignment and Scope of Work

This report documents the visit by Holly Iosso and Lindsay Osborn of Tree Solutions Inc. on August 27, 2025 to the above referenced site. We were asked to complete a tree inventory and assessment by Paul Wight, Capitol Project Manager for Seattle Public Schools, in preparation for project planning.

Trees on neighboring properties were documented if they appeared to be greater than 6-inches DSH and their canopies or root zones extended over the property line. All trees on adjacent properties were estimated from the subject site or public property such as the adjacent right-of-way (ROW). Alphabetical tree identifiers are used for trees off-site.

Observations

Site

The 138,521 square foot site fronts NE Ravenna Blvd in the Greenlake neighborhood of Seattle. A three story school building, playground equipment, sport courts, and a parking lot currently exist on-site.

According to the Seattle Department of Construction and Inspections GIS map the entire site is in a liquefaction-prone environmentally critical area (ECA).

Trees

The trees on-site included decorative landscape species such as Norway maple (*Acer platanoides*), red maple, (*Acer rubrum*), and deodar cedar (*Cedrus deodara*).

The trees in the ROW were mainly comprised of Callery pear (*Pyrus calleryana*) and hedge maple (*Aer campestre*).

The Tree Site Map is attached, which includes GIS locations of each tree on a base map with aerial imagery. We have also attached a Tree Table that has detailed information about each tree.

Municipal Regulations

Tree Removal

Private Property Trees (SDCI)

Seattle Municipal Code classifies privately-owned trees under a four-tiered system, which are regulated by Seattle Department of Construction and Inspections (SDCI) based on size and species. This includes trees located in parks and managed by public entities. It does not include trees managed by Seattle Department of Transportation (SDOT).

Table 1. Tree Classifications (SMC 25.11.050)

Tree category	Definitions	During development – Related to SDCI permit	Not part of a SDCI permit application
Tier 1	Includes • heritage trees	May not be removed unless deemed hazardous or in need of emergency action*.	May not be removed unless deemed hazardous or in need of emergency action*.
Tier 2	Includes • trees ≥ 24 in DSH • trees in groves • trees < 24" for tree species listed in Director's Rule 07-2024	May be approved for removal as part of overall development permit.	May not be removed unless deemed hazardous or in need of emergency action.
Tier 3	Includes • all other trees ≥ 12" DSH not considered Tier 2 trees	May be approved for removal as part of the overall development permit.	May not be removed unless deemed hazardous or in need of emergency action.
Tier 4	Includes • all other trees > 6" DSH	May be approved for removal as part of the overall development permit.	May not be removed unless deemed hazardous or in need of emergency action.

*Documentation is required for all hazardous and emergency removals.

A basic tree protection area (BTPA) for trees regulated by SDCI is calculated using a radius that is equal to one foot for every inch DSH of a tree (SMC 25.11.060). The BTPA is used to determine if a tier 2 tree is allowed to be removed based on the conditions in SMC 25.11.070.

Trees in the ROW

All trees in the ROW (also referred to as public trees) are under the jurisdiction of SDOT Urban Forestry. An SDOT Urban Forestry tree removal permit is required to remove trees in the ROW.

Tree Protection

Private Property Trees (SDCI)

A tree protection area (TPA) is required for all tier 1, 2, and 3 trees that are proposed for retention. This is a protection zone surrounding a tree where excavation, access, and material storage cannot occur (SMC 25.11.030). Tree protection areas are also required for trees (tier 1, 2, 3) growing adjacent to the project with canopies and/or roots extending into the project area. TPAs are determined using a multiplier of trunk diameter based on the International Society of Arboriculture's Best Management Practices Managing Trees During Site Development and Construction Third Edition.

BTPAs and TPAs are listed in the attached table of trees.

Tree protection measures (see Appendix F) should be implemented during construction and are intended to help maintain soil integrity (reduce soil compaction), limit root loss, protect overhead canopy, and maintain tree health. These measures can include (but are not limited to) mulching, temporary irrigation, soil protection, construction monitoring by the project arborist, and tree protection fencing. The location of tree protection fencing should be along the edges of the TPA. Once in place, the fence should not be moved unless the project arborist is present.

Trees in the ROW
A basic tree protection area (BTPA) is required for trees in the right-of-way per Standard Plan 133 (City of Seattle, 2023). This area is calculated using a radius that is equal to one foot for every inch DSH of a tree. While this is listed as Zone B: Critical Root Zone on Plan 133, this report will refer to it as the Basic Tree Protection Area. No disturbance can occur within this area, unless approved by SDOT Urban Forestry. If approved, encroachment is restricted to 30 percent of this area.

A modified tree protection area (TPA) (referred to as Zone A: Interior Critical Root Zone on Standard Plan 133) is half of radius of the BTPA but not closer than 8 feet to a tree[4]. No disturbance is allowed within this area without SDOT site visit, approved TVSPP, and tunnelling may be required for utility installation.

Discussion – Construction Impacts

Proposed Plans
This report is preliminary as we have not reviewed design or construction plans for this site.

Recommendations

Planning Phase
- Provide Tree Solutions Inc with a full plan set (including demolition, grading, excavation, civil, and landscape) so we can assess tree retention feasibility.
- Follow all requirements outlined in SMC 25.11.060[5] for site planning.
- Include tree IDs, TPAs, and an 'X' over tree removals on Tree Protection Plan, TESC or TVSPP.
- Add tree protection specifications to all permitting drawings and construction plans.
- Add callouts / notes to plan set that specify monitoring by project arborist within the TPA of retained trees.

Construction Phase
- Have the project arborist present at pre-construction meeting on site to discuss tree protection.
- Maintain fencing and signage at edge of tree protection area for the duration of the project.
- Mulch trees BEFORE construction.
- Irrigate trees DURING and AFTER construction.
- Hire a Registered SDCI Tree Service Provider to perform all pruning, which should follow the methods outlined in ANSI A300 standards.[6]

[4] Per SDOT Urban Forestry
[5] Seattle Municipal Code 25.11.060. Requirements for Trees when Development is Proposed
[6] Accredited Standards Committee A300 (ASC 300). ANSI A300 (Part 1) Tree, Shrub, and Other Woody Plant Management – Standard Practices (Pruning). Londonderry: Tree Care Industry Association, 2017.

- Hire a Registered SDOT Tree Service Provider to perform all pruning on SDOT trees.

Post-Construction

- Plant tree replacements if needed.
- Maintain and water replacement trees for a minimum of five years. Replace failed plantings.
- Maintain photographic documentation of planting for the duration of the five-year period and be prepared to submit to SDCI upon request.

Respectfully submitted,

Holly Iosso,
Consulting Arborist

Appendix A **Glossary**

ANSI A300: Standards for Tree Care. American National Standards Institute (ANSI).

Diameter at Standard height (DSH): diameter of the tree trunk measured 54 inches (4.5 feet) above grade. (SMC 25.11.130)

Dripline: an area encircling the base of a tree, the minimum extent of which is delineated by a vertical line extending from the outer limit of a tree's branch tips down to the ground. The dripline may be irregular in shape to reflect the variation in branch outer limits. (SMC 25.11.130)

Interior Critical Root Zone (ICRZ): inner critical root zone radius equals ½ of the dripline radius no work may occur within a SDOT street tree's inner critical root zone without specific authorization from SDOT Urban Forestry. If more than 30 percent of the dripline area is impacted by construction activities, a site review by SDOT Urban Forestry is required. All areas to be impacted by construction activities must be shown on the plan and reviewed prior to construction. (Standard Plan 133)

ISA: International Society of Arboriculture

Regulated Tree: A tree required by municipal code to be identified in an arborist report (SMC 25.11.130).

Tier 1 tree: A heritage tree. A heritage tree is a tree or group of trees as defined in Title 15 (SMC 25.11.130)

Tier 2 tree: Any tree that is 24 inches in diameter at standard height or greater, tree groves, each tree comprising a tree grove, and specific tree species below 24 inches in diameter at standard height as provided by Director's Rule 7-2024 "Designation of Tier 2 Trees". (SMC 25.11.130)

Tier 3 tree: Any tree that is 12 inches in diameter at standard height or greater but less than 24 inches in diameter at standard height and is not defined as a Tier 1 or Tier 2 tree. (SMC 25.11.130)

Tier 4 tree: Any tree that is 6 inches or greater in diameter at standard height but less than 12 inches in diameter at standard height and is not defined as a Tier 1 or Tier 2 tree. (SMC 25.11.130)

Tree Protection Area (TPA): the area surrounding a tree defined by a specified distance, in which excavation and other construction-related activities must be avoided unless approved by the (SDCI) Director. The TPA is variable depending on species, age and health of the tree, soil conditions, and proposed construction. (SMC 25.11.130)

Tree Protection Area, Basic (BTPA): the area surrounding a tree defined by a specified distance, in which excavation and other construction-related activities must be avoided unless approved by the (SDCI) Director. This area is delineated using a radius that is equal to one foot for every inch DSH of the tree. (SMC 25.11.130)

Tree Service Provider: means any person or entity engaged in commercial tree work. (SMC 25.11.130)

Visual Tree Assessment (VTA): method of evaluating structural defects and stability in trees by noting the pattern of growth. (Mattheck 1994)

Appendix B **References**

Accredited Standards Committee A300 (ASC 300). *ANSI A300 (Part 1) Tree, Shrub, and Other Woody Plant Management – Standard Practices (Pruning)*. Londonderry: Tree Care Industry Association, 2017.

Council of Tree and Landscape Appraisers, *Guide for Plant Appraisal, 10th Edition, Second Printing*. Atlanta, GA: The International Society of Arboriculture (ISA), 2019.

Harrell, B. *Executive Order 2023-03: One Seattle Tree Plan: Growing and Fostering an Equitable tree Canopy on Public Land*. City of Seattle, 2023.

Matheny, N., E. Smiley, R. Gilpin, R. Hauer. *Best Management Practices – Managing Trees During Site Development and Construction, Third Edition*. International Society of Arboriculture (ISA), 2023.

Mattheck, Claus and Helge Breloer, *The Body Language of Trees.: A Handbook for Failure Analysis*. London: HMSO, 1994.

Seattle Municipal Code 25.11.050. General Provisions for Regulated Tree Categories

Seattle Municipal Code 25.11.060. Requirements for Trees When Development is Proposed

Seattle Municipal Code 25.11.070. Tree Protection on Sites Undergoing Development in Neighborhood Residential, Low-rise, Midrise, and Seattle Mixed Zones

Seattle Municipal Code 25.11.080. Tree Protection on sites in Major Institution Overlay Districts

Seattle Municipal Code 25.11.090. Tree Replacement, Maintenance, and Site Restoration

Seattle Municipal Code 25.11.100 Tree Service Provider Registration

Seattle Department of Transportation. “Street Tree Manual”. City of Seattle, 2014.

Standard Plans for Municipal Construction. Plan sheets 132a, 132b, 133. City of Seattle, 2023.

Standard Specifications for Roads, Bridges, and Municipal Construction. Section 8-01.3(2)B. City of Seattle, 2023.

Torgelson, N. “*Director’s Rule 7-2024 - Designation of Tier-2 Trees*”. Seattle, WA, 2024.

Appendix C **Photographs**

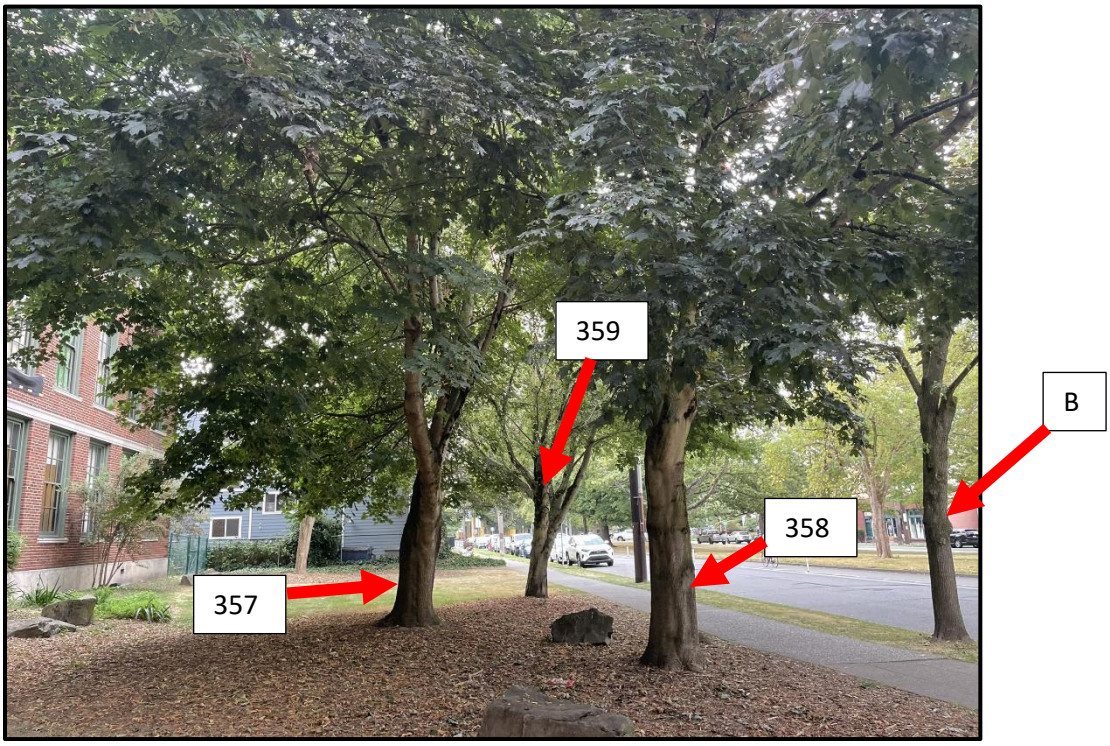


Photo 1. Looking southeast at trees 357, 358, 359, and ROW tree B showing typical conditions for trees growing along NE Ravenna Blvd.

Photo 2. Looking north at trees 365, 364, and 363 showing typical conditions for trees growing around the sport court. Limited rooting area and surface roots present.

Photo 3. Looking up at tree 350. If the building needs masonry repairs, clearance pruning may be needed.

Appendix D **Assumptions & Limiting Conditions**

1 Consultant assumes that the site and its use do not violate, and is in compliance with, all applicable codes, ordinances, statutes or regulations.

2 The consultant may provide a report or recommendation based on published municipal regulations. The consultant assumes that the municipal regulations published on the date of the report are current municipal regulations and assumes no obligation related to unpublished city regulation information.

3 Any report by the consultant and any values expressed therein represent the opinion of the consultant, and the consultant's fee is in no way contingent upon the reporting of a specific value, a stipulated result, the occurrence of a subsequent event, or upon any finding to be reported.

4 All photographs included in this report were taken by Tree Solutions, Inc. during the documented site visit, unless otherwise noted. Sketches, drawings and photographs (included in, and attached to, this report) are intended as visual aids and are not necessarily to scale. They should not be construed as engineering drawings, architectural reports or surveys. The reproduction of any information generated by architects, engineers or other consultants and any sketches, drawings or photographs is for the express purpose of coordination and ease of reference only. Inclusion of such information on any drawings or other documents does not constitute a representation by the consultant as to the sufficiency or accuracy of the information.

5 Unless otherwise agreed, (1) information contained in any report by consultant covers only the items examined and reflects the condition of those items at the time of inspection; and (2) the inspection is limited to visual examination of accessible items without dissection, excavation, probing, climbing, or coring.

6 These findings are based on the observations and opinions of the authoring arborist, and do not provide guarantees regarding the future performance, health, vigor, structural stability or safety of the plants described and assessed.

7 Measurements are subject to typical margins of error, considering the oval or asymmetrical cross-section of most trunks and canopies.

8 Tree Solutions did not review any reports or perform any tests related to the soil located on the subject property unless outlined in the scope of services. Tree Solutions staff are not and do not claim to be soils experts. An independent inventory and evaluation of the site's soil should be obtained by a qualified professional if an additional understanding of the site's characteristics is needed to make an informed decision.

9 Our assessments are made in conformity with acceptable evaluation/diagnostic reporting techniques and procedures, as recommended by the International Society of Arboriculture.

Appendix E **Methods**

Measuring

Tree diameter at standard height (DSH) is measured at 54 inches (4.5 feet) above grade. If a tree had multiple stems, each stem was measured individually, and a single stem equivalent was calculated as the root of the sum of each diameter squared (example with 3 stems: DSH = square root [$(stem)^2 + (stem)^2 + (stem)^2$]. A multi-stem tree is regulated based on this single-stem equivalent diameter value. Because this value is calculated in the office following field work, some trees in our data set may have diameters smaller than 6 inches. These trees are included in the tree table for informational purposes only and not factored into tree totals discussed in this report.

Tagging

Each tree was tagged with a circular aluminum tag at eye level. Each tree was assigned a numerical identifier on our map and in our tree table, corresponding to this tree tag. Alphabetical identifiers were used for trees off-site, and trees in the right of way.

We cross-referenced the City of Seattle GIS Tree Database for ID numbers of trees growing in the ROW. Trees growing along NE Ravenna Blvd did not have associated identification numbers in this database. Trees growing along NE 68th St did, but the tree species and size did not align with our inventory. Therefore we did not include these IDs in our tree inventory.

Evaluating

Tree health and structure was assessed utilizing visual tree assessment (VTA) methods. The basis behind VTA is the identification of symptoms, which the tree produces in reaction to a weak spot or area of mechanical stress. A tree reacts to mechanical and physiological stresses by growing more vigorously to re-enforce weak areas, while depriving less stressed parts. An understanding of the uniform stress allows the arborist to make informed judgments about the condition of a tree.

Rating

Tree health ratings take into consideration crown indicators such as foliar density, size, color, stem and shoot extensions. Tree structure ratings take into consideration form, as well as structural defects (including past damage and decay). Tree Solutions has adapted our ratings based on the Purdue University Extension formula values for health condition (*Purdue University Extension bulletin FNR-473-W - Tree Appraisal*). These values are a general representation used to assist arborists in assigning ratings.

Health

Excellent - Perfect specimen with excellent form and vigor, well-balanced crown. Normal to exceeding shoot length on new growth. Leaf size and color normal. Trunk is sound and solid. Root zone undisturbed. No apparent pest problems. Long safe useful life expectancy for the species.

Good - Imperfect canopy density in few parts of the tree, up to 10% of the canopy. Normal to less than ¾ typical growth rate of shoots and minor deficiency in typical leaf development. Few pest issues or damage, and if they exist they are controllable or tree is reacting appropriately. Normal branch and stem development with healthy growth. Safe useful life expectancy typical for the species.

Fair - Crown decline and dieback up to 30% of the canopy. Leaf color is somewhat chlorotic/necrotic with smaller leaves and “off” coloration. Shoot extensions indicate some stunting and stressed growing conditions. Stress cone crop clearly visible. Obvious signs of pest

problems contributing to lesser condition, control might be possible. Some decay areas found in main stem and branches. Below average safe useful life expectancy

Poor - Lacking full crown, more than 50% decline and dieback, especially affecting larger branches. Stunting of shoots is obvious with little evidence of growth on smaller stems. Leaf size and color reveals overall stress in the plant. Insect or disease infestation may be severe and uncontrollable. Extensive decay or hollows in branches and trunk. Short safe useful life expectancy.

Structure

Excellent - Root plate undisturbed and clear of any obstructions. Trunk flare has normal development. No visible trunk defects or cavities. Branch spacing/structure and attachments are free of any defects.

Good - Root plate appears normal, with only minor damage. Possible signs of root dysfunction around trunk flare. Minor trunk defects from previous injury, with good closure and less than 25% of bark section missing. Good branch habit; minor dieback with some signs of previous pruning. Codominant stem formation may be present, requiring minor corrections.

Fair - Root plate reveals previous damage or disturbance. Dysfunctional roots may be visible around the main stem. Evidence of trunk damage or cavities, with decay or defects present and less than 30% of bark sections missing on trunk. Co-dominant stems are present. Branching habit and attachments indicate poor pruning or damage, which requires moderate corrections.

Poor - Root plate disturbance and defects indicate major damage, with girdling roots around the trunk flare. Trunk reveals more than 50% of bark section missing. Branch structure has poor attachments, with several structurally important branches dead or broken. Canopy reveals signs of damage or previous topping or lion-tailing, with major corrective action required.

Appendix F **Tree Protection Specifications**

The following is a list of protection measures which should be employed before, during, and after construction to ensure the long-term viability of retained trees. This specification can be copied onto the site plan or into contract documents.

1. **Project Arborist:** The project arborists shall at minimum have an International Society of Arboriculture (ISA) Certification and ISA Tree Risk Assessment Qualification.
2. **Tree Protection Area (TPA):** TPA is the area surrounding a tree defined by a specified distance, in which excavation and other construction-related activities must be avoided unless approved by the Director (SMC 25.11.130).
3. **Tree Protection Fencing:** Tree protection fencing shall consist of 6-foot-tall chain-link fencing installed at the edge of the TPA as approved by the project arborist and City of Seattle. Fence posts shall be driven into the ground or bolted to existing hardscape surfaces at 8-foot maximum intervals. Fencing must be installed prior to demolition or ground disturbance and be kept in place for the duration of construction.
    a. Where trees are being retained as a group the fencing shall encompass the entire area including all landscape beds or lawn areas associated with the group.
    b. Per arborist approval, TPA fencing may be placed at the edge of existing hardscape within the TPA to allow for staging and traffic.
    c. Where work is planned within the TPA, install fencing at edge of TPA and move to limits of disturbance at the time that the work within the TPA is planned to occur. This ensures that work within the TPA is completed to specification.
    d. Where trees are protected at the edge of the project boundary, construction limits fencing shall be incorporated as the boundary of tree protection fencing.
4. **Access Beyond Tree Protection Fencing:** The project manager or project arborist shall be present when tree protection areas are accessed.
5. **Tree Protection Signage:** Tree protection signage shall be affixed to fencing every 20 feet. Signage shall be fluorescent, at least 2’ x 2’ in size. Signage must include all information in the PDF located here: http://www.seattle.gov/Documents/Departments/SDCI/Codes/TreeProtectionAreaSign.pdf in addition to the contact information for the project manager and instructions for gaining access to the area.
6. **Filter / Silt Fencing:** Filter / silt fencing within or at the edge of the TPA of retained trees shall be installed in a manner that does not sever roots. Install so that filter / silt fencing sits on the ground and is weighed in place by sandbags or gravel. Do not trench to insert filter / silt fencing into the ground.
7. **Monitoring:** The project arborist shall monitor all ground disturbance at the edge of or within the TPA.
8. **Soil Protection:** Retain existing paved surfaces within or at the edge of the TPA for as long as possible. No parking, foot traffic, materials storage, or dumping (including excavated soils) are allowed within the TPA. Heavy machinery shall remain outside of the TPA. Access to the tree protection area will be granted under the supervision of the project arborist. If the project arborist allows, heavy machinery can enter the area if soil is protected from the load. Acceptable methods of soil protection include placing 3/4-inch plywood over 6 inches of wood chip mulch, or use of AlturnaMats® (or equivalent product approved by the project arborist). Compaction of soils within the TPA must not occur.
9. **Soil Remediation:** Soil compacted within the TPA of retained trees shall be remediated using pneumatic air excavation according to a specification produced by the project arborist.

10. **Canopy Protection**: Where fencing is installed at the limits of disturbance within the TPA, canopy management (pruning or tying back) shall be conducted to ensure that vehicular traffic does not damage canopy parts. Exhaust from machinery shall be located 5 feet outside the dripline of retained trees. No exhaust shall come in contact with foliage for prolonged periods of time.
11. **Duff/Mulch:** Apply 6 inches of arborist wood chip mulch or hog fuel over bare soil within the TPA to prevent compaction and evaporation. TPA shall be free of invasive weeds to facilitate mulch application. Keep mulch 1 foot away from the base of trees and 6 inches from retained understory vegetation. Retain and protect as much of the existing duff and understory vegetation as possible.
12. **Excavation:** Excavation done within the TPA shall use alternative methods such as pneumatic air excavation or hand digging. If heavy machinery is used, use flat front buckets with the project arborist spotting for roots. When roots are encountered, stop excavation and cleanly sever roots. The project arborist shall monitor all excavation done within the TPA.
13. **Fill:** No fill is to be placed within the TPA of retained trees without the approval of the project arborist.
14. **Root Pruning:** Limit root pruning to the extent possible. All roots shall be pruned with a sharp saw making clean cuts. Do not fracture or break roots with excavation equipment.
15. **Root Moisture:** Root cuts and exposed roots shall be immediately covered with soil, mulch, or clear polyethylene sheeting and kept moist. Water to maintain moist condition until the area is back filled. Do not allow exposed roots to dry out before replacing permanent back fill.
16. **Hardscape Removal:** Retain hardscape surfaces for as long as practical. Remove hardscape in a manner that does not require machinery to traverse newly exposed soil within the TPA. Where equipment must traverse the newly exposed soil, apply soil protection as described in section 8. Replace fencing at edge of TPA if soil exposed by hardscape removal will remain for any period of time.
17. **Tree Removal:** All trees to be removed that are located within the TPA of retained trees shall not be ripped, pulled, or pushed over. The tree should be cut to the base and the stump either left in place or ground out. A flat front bucket can also be used to sever roots around all sides of the stump, or the roots can be exposed using hydro or air excavation and then cut before removing the stump.
18. **Irrigation:** Retained trees with soil disturbance within the TPA will require supplemental water from June through September. Acceptable methods of irrigation include drip, sprinkler, or watering truck. Trees shall be watered three times per month during this time.
19. **Pruning:** Pruning required for construction and safety clearance shall be done with a pruning specification provided by the project arborist in accordance with American National Standards Institute ANSI-A300 2017 Standard Practices for Pruning. Pruning shall be conducted or monitored by an arborist with an ISA Certification.
20. **Plan Updates:** All plan updates or field modifications that result in impacts within the TPA or change the retained status of trees shall be reviewed by the senior project manager and project arborist prior to conducting the work.
21. **Materials:** Contractor shall have the following materials on-site and available for use during work in the TPA:
    - **Sharp and clean bypass hand pruners**
    - **Sharp and clean bypass loppers**
    - **Sharp hand-held root saw**
    - **Reciprocating saw with new blades**
    - **Shovels**
    - **Trowels**
    - **Clear polyethylene sheeting**
    - **Burlap**
    - **Water**

Tree Solutions Inc
Consulting Arborists

Table of Trees
Seattle Public Schools
John Marshall School

Arborist: HI/LO
Date of Inventory: 08/27/2025
Table Prepared: 09/10/2025

DSH (Diameter at Standard Height) is measured 4.5 feet above grade, or as specified in the Guide for Plant Appraisal, 10th Edition , published by the Council of Tree and Landscape Appraisers.
Multi-stem measurements are listed under DSH Multistem. The value listed under the DSH column for these trees is a single stem equivalent, calculated as the square root of the sum of the DSH for each individual stem squared.
Tier is based on SMC 25.11 and Director's Rule 7-2024.
Basic Tree Protection Area is an area with a radius calculated as 12 times DSH.
Tree Protection Area is calculated as 10 times DSH or greater depending on tree species, health, and age.
Letters are used to identify trees on neighboring properties with overhanging canopies.
Average dripline is measured from the center of the tree to the outermost extent of the canopy.

Tree ID	Scientific Name	Common Name	DSH (inches)	DSH Multistem	Health Condition	Structural Condition	Dripline Radius (feet)	Jurisdiction (SDOT/SDCI)	Tier 2 Threshold (inches)	Tier Level	Basic Tree Protection Area (feet)	Tree Protection Area (feet)	Notes
346	*Callitropsis nootkatensis*	Alaska yellow cedar	10.1	9.5, 3.5	Good	Good	13	SDCI	24	4	10	8	
347	*Acer platanoides*	Norway maple	10.0		Good	Good	22	SDCI	24	4	10	8	Codominant at 15 feet with good union.
348	*Ulmus glabra*	Scots elm	18.4	10.3, 15.2	Good	Good	17	SDCI	24	3	18	15	Surface roots present 13 feet to south.
349	*Acer platanoides*	Norway maple	10.6	6.6, 8.3	Good	Good	23	SDCI	24	4	11	9	
350	*Cedrus deodara*	Deodar cedar	34.2		Good	Good	32	SDCI	24	2	34	29	If exterior masonry work is required may need clearance pruning.
351	*Acer platanoides*	Norway maple	14.5		Good	Good	17	SDCI	24	3	15	12	Purple leaf variety.
352	*Acer platanoides*	Norway maple	26.6		Good	Good	31	SDCI	24	2	27	22	Pruned for overhead wire clearance. Measured at narrowest point below union. Girdling roots on northeast and east side.
353	*Acer platanoides*	Norway maple	22.0		Good	Good	28	SDCI	24	3	22	18	Surface roots present.
354	*Malus sp*	Crabapple	9.2		Good	Good	15	SDCI	12	4	9	8	
355	*Acer palmatum*	Japanese maple	7.6	4.1, 3.9, 5	Good	Good	16	SDCI	12	4	8	6	If exterior masonry work is required may need clearance pruning.
356	*Prunus domestica*	Plum	9.5	5.4, 5.3, 5.7	Good	Good	17	SDCI	24	4	9	8	
357	*Acer platanoides*	Norway maple	20.0		Good	Good	31	SDCI	24	3	20	17	Pruned for utility clearance. Purple leaf variety.

Tree Solutions Inc
Consulting Arborists

Table of Trees
Seattle Public Schools
John Marshall School

Arborist: HI/LO
Date of Inventory: 08/27/2025
Table Prepared: 09/10/2025

Tree ID	Scientific Name	Common Name	DSH (inches)	DSH Multistem	Health Condition	Structural Condition	Dripline Radius (feet)	Jurisdiction (SDOT/SDCI)	Tier 2 Threshold (inches)	Tier Level	Basic Tree Protection Area (feet)	Tree Protection Area (feet)	Notes
358	*Acer platanoides*	Norway maple	22.8		Good	Good	25	SDCI	24	3	23	19	
359	*Acer rubrum*	Red maple	17.2		Fair	Fair	28	SDCI	24	3	17	14	Canopy sparse on southeast side.
360	*Acer saccharum*	Sugar maple	19.5		Good	Good	31	SDCI	24	3	20	16	If exterior masonry work is required may need clearance pruning.
361	*Acer rubrum*	Red maple	10.6		Fair	Good	16	SDCI	24	4	11	9	Measured at narrowest point below union.
362	*Acer rubrum*	Red maple	15.6		Poor	Fair	16	SDCI	24	3	16	13	Tree is in decline.
363	*Catalpa bignonioides*	Southern catalpa	12.0		Fair	Fair	19	SDCI	24	3	12	10	Wound on east side of trunk with good reaction wood. Base of trunk is growing over curb.
364	*Acer rubrum*	Red maple	10.9		Fair	Fair	12	SDCI	24	4	11	9	Surface roots present.
365	*Acer rubrum*	Red maple	8.6		Good	Fair	13	SDCI	24	4	9	7	
366	*Acer rubrum*	Red maple	13.0		Good	Good	17	SDCI	24	3	13	11	Many surface roots present.
367	*Acer rubrum*	Red maple	16.5		Fair	Good	27	SDCI	24	3	17	14	Asphalt uplift. If exterior masonry work is required may need clearance pruning. Measured at narrowest point below union. Sparse canopy at top.
368	*Acer pseudoplatanus*	Sycamore maple	18.1	11.3, 14.2	Good	Good	24	SDCI	24	3	18	15	Some branches growing through fence.
369	*Chamaecyparis lawsoniana*	Lawson cypress	29.0		Good	Good	19	SDCI	24	2	29	24	Base of trunk is approximately 12 to 18 inch from building. Canopy of tree is approximately 2 feet from building.

Table of Trees
Seattle Public Schools
John Marshall School

Arborist: HI/LO
Date of Inventory: 08/27/2025
Table Prepared: 09/10/2025

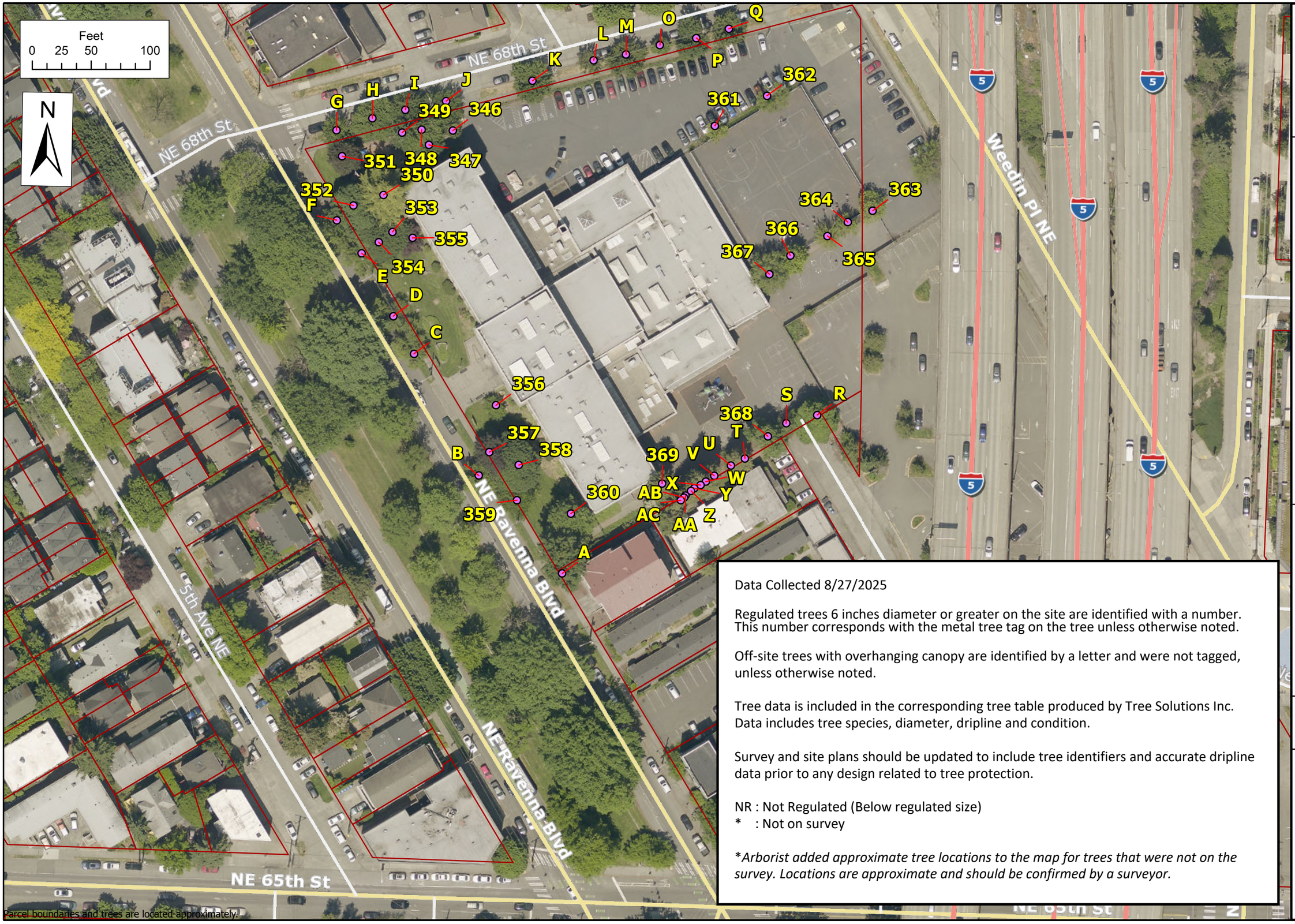
Tree ID	Scientific Name	Common Name	DSH (inches)	DSH Multistem	Health Condition	Structural Condition	Dripline Radius (feet)	Jurisdiction (SDOT/SDCI)	Tier 2 Threshold (inches)	Tier Level	Basic Tree Protection Area (feet)	Tree Protection Area (feet)	Notes
A	*Acer pseudoplatanus*	Sycamore maple	39.5		Good	Good	39	SDCI	24	2	40	33	Ivy to 12 feet, cabling present at 20ft. Has been clearance pruned for utility wires.
AA	*Chamaecyparis lawsoniana*	Lawson cypress	13.0		Good	Good	8	SDCI	24	3	13	11	
AB	*Chamaecyparis lawsoniana*	Lawson cypress	16.0		Good	Good	9	SDCI	24	3	16	13	
AC	*Chamaecyparis lawsoniana*	Lawson cypress	14.0		Good	Good	11	SDCI	24	3	14	12	
B	*Pyrus calleryana*	Callery pear	13.0		Fair	Fair	13	SDOT	-	-	13	-	Dripline asymmetrical to southwest over street (18 feet). Has been pruned for utility wires.
C	*Pyrus calleryana*	Callery pear	13.0		Fair	Fair	13	SDOT	-	-	13	-	Dripline asymmetrical to southwest over street (16 feet). Has been pruned for utility wires.
D	*Pyrus calleryana*	Callery pear	12.0		Fair	Fair	13	SDOT	-	-	12	-	Dripline asymmetrical to southwest over street (18 feet). Has been pruned for utility wires.
E	*Pyrus calleryana*	Callery pear	13.5		Fair	Fair	17	SDOT	-	-	14	-	Dripline asymmetrical to southwest over street (26 feet). Has been pruned for utility wires.
F	*Pyrus calleryana*	Callery pear	11.5		Fair	Fair	12	SDOT	-	-	12	-	Dripline asymmetrical to southwest over street (16 feet). Has been pruned for utility wires.
G	*Acer campestre*	Hedge maple	10.2		Good	Good	14	SDOT	-	n/a street tree	10	-	Hedge maples G-Q have all been pruned for utility wire clearance and vehicle clearance.
H	*Acer campestre*	Hedge maple	18.0		Good	Good	23	SDOT	-	n/a street tree	18	-	Many surface roots present.

Tree Solutions Inc
Consulting Arborists

Table of Trees
Seattle Public Schools
John Marshall School

Arborist: HI/LO
Date of Inventory: 08/27/2025
Table Prepared: 09/10/2025

Tree ID	Scientific Name	Common Name	DSH (inches)	DSH Multistem	Health Condition	Structural Condition	Dripline Radius (feet)	Jurisdiction (SDOT/SDCI)	Tier 2 Threshold (inches)	Tier Level	Basic Tree Protection Area (feet)	Tree Protection Area (feet)	Notes
I	*Acer campestre*	Hedge maple	12.8		Good	Fair	18	SDOT	-	n/a street tree	13	-	
J	*Acer campestre*	Hedge maple	14.2		Good	Fair	16	SDOT	-	n/a street tree	14	-	Area of decay on south side of trunk with good reaction wood.
K	*Acer campestre*	Hedge maple	17.0		Good	Good	21	SDOT	-	n/a street tree	17	-	
L	*Acer campestre*	Hedge maple	9.2		Fair	Good	10	SDOT	-	n/a street tree	9	-	Smaller leaves show signs of stress.
M	*Acer campestre*	Hedge maple	12.5		Good	Good	19	SDOT	-	n/a street tree	13	-	
O	*Acer campestre*	Hedge maple	6.8		Good	Good	9	SDOT	-	n/a street tree	7	-	
P	*Acer campestre*	Hedge maple	15.0		Good	Good	20	SDOT	-	n/a street tree	15	-	
Q	*Acer campestre*	Hedge maple	15.2		Good	Good	16	SDOT	-	n/a street tree	15	-	
R	*Acer pseudoplatanus*	Sycamore maple	25.5	19.6, 16.3	Good	Good	19	SDOT	-	n/a street tree	25	-	
S	*Betula papyrifera*	Paper birch	9.0		Good	Good	18	SDOT	-	n/a street tree	9	-	
T	*Chamaecyparis lawsoniana*	Lawson cypress	14.0		Good	Good	7	SDCI	24	3	14	12	Crown asymmetrical to west.
U	*Chamaecyparis lawsoniana*	Lawson cypress	18.0		Good	Good	13	SDCI	24	3	18	15	
V	*Chamaecyparis lawsoniana*	Lawson cypress	12.0		Good	Good	9	SDCI	24	3	12	10	
W	*Chamaecyparis lawsoniana*	Lawson cypress	14.0		Good	Good	10	SDCI	24	3	14	12	
X	*Chamaecyparis lawsoniana*	Lawson cypress	22.0		Good	Good	11	SDCI	24	3	22	18	
Y	*Chamaecyparis lawsoniana*	Lawson cypress	16.0		Good	Good	9	SDCI	24	3	16	13	Trunk is growing into top of fence.
Z	*Chamaecyparis lawsoniana*	Lawson cypress	14.0		Good	Good	7	SDCI	24	3	14	12	



Parcel boundaries and trees are located approximately.

Data Collected 8/27/2025

Regulated trees 6 inches diameter or greater on the site are identified with a number. This number corresponds with the metal tree tag on the tree unless otherwise noted.

Off-site trees with overhanging canopy are identified by a letter and were not tagged, unless otherwise noted.

Tree data is included in the corresponding tree table produced by Tree Solutions Inc. Data includes tree species, diameter, dripline and condition.

Survey and site plans should be updated to include tree identifiers and accurate dripline data prior to any design related to tree protection.

NR : Not Regulated (Below regulated size)
* : Not on survey

**Arborist added approximate tree locations to the map for trees that were not on the survey. Locations are approximate and should be confirmed by a surveyor.*

Tree Solutions Inc
Consulting Arborists
2940 Westlake Ave N #200
Seattle, WA 98109
206-528-4670

John Marshall School
520 NE Ravenna Blvd,
Seattle, WA 98115
Parcel: 9528103775

Legend

- Assessed Trees
- King County Parcels

Tree Site Map

Date: August 27, 2025

Arborist:
Holly Iosso, RCA #567
ISA PN-6298A
ISA TRAQ

APPENDIX E

Cultural Resources Assessment

(On-File with Seattle Public Schools)

APPENDIX F

Transportation Technical Report

TRANSPORTATION TECHNICAL REPORT

for the

John Marshall School Interim Site Modernization and Addition Project

PREPARED FOR:

Seattle Public Schools

PREPARED BY:

heffron transportation inc
6544 NE 61st Street, Seattle, WA 98115
ph: (206) 523-3939 ◆ www.hefftrans.com

May 22, 2026

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1. INTRODUCTION

This report presents the transportation impact analyses for the Seattle Public Schools' (SPS) proposed modernization and addition to the John Marshall School, which is located at 520 NE Ravenna Boulevard in Seattle's Green Lake neighborhood. The scope of analysis and approach were based on extensive past experience performing transportation impact analyses for projects throughout the City of Seattle, including numerous analyses prepared for SPS projects. This report documents the existing conditions in the site vicinity, presents estimates of project-related traffic, and evaluates the anticipated impacts to the surrounding transportation system including transit, parking, safety, and non-motorized facilities. These analyses were prepared to support the SEPA Checklist and land use code departures anticipated to be requested for this project.

1.1. Project Description

The John Marshall School site is bounded on the west by NE Ravenna Boulevard, on the north by NE 68th Street, and at the northeast corner by Weedin Place NE. To the east, it is bounded by Washington State Department of Transportation (WSDOT) right-of-way that is below Interstate 5 (I-5) and adjacent to King County Metro's I-5/NE 65th Street/Green Lake Park-and-Ride Lot. On the south, there are private multi-family residential properties and a portion of the referenced park-and-ride lot. SPS is proposing to modernize and construct an addition on the east side of the existing John Marshall School building. The following sections describe the existing site and the proposed project.

1.1.1. Existing Site

The existing school building was constructed in 1926 and opened in 1927. It contains about 95,540 gross square feet (sf)[1] and is located on the western portion of the site. Paved asphalt parking is located on the north and east sides of the site; hard-surface play areas are located to the east and south of the building. Three areas of the site have striped parking—on the north, northeast, and southeast; however, only two of those areas (north and northeast) are within the fenced portion of the site. The southeast parking area (with 21 stalls) is within the fenced area of the adjacent King County Metro Park-and-Ride lot. The north lot (with 44 stalls) and the northeast lot are accessed from two driveways on NE 68th Street. The school-site property boundary aligns diagonally through the northeast lot with part of it on District property and part within WSDOT right-of-way. It has been re-striped several times over the past years and used as both parking and a hard-surface play space. At the time of this analysis, the combined areas had 21 stalls; however, when fully striped as parking, there were 28 stalls. About 10 stalls are on District property. There is also an access, which is gated and locked at the north end of Oswego Place NE, which dead-ends at the site on the south. The parking at the southeast portion of the site is accessed from driveways serving the park-and-ride lot. The western site frontage (east side of NE Ravenna Boulevard) is signed 'School Bus Only' from 7:00 to 9:00 A.M. to 1:00 to 4:00 P.M.

According to information published in *Building for Learning, Seattle Public Schools Histories, 1862-2000*,[2] the original intermediate school was designed to accommodate 900 students and was named after John Marshall, a former Chief Justice of the U.S. Supreme Court. The school's enrollment peaked at about 1,450 students between 1955 and 1957; however, I-5 was constructed in the early 1960s through part of the school site and divided its attendance area. This resulted in enrollment decline and the junior high school was closed in 1971. The building was used as an annex for Roosevelt High School accommodating 500 to 700 9th-grade students from 1971 to 1975 and accommodated several alternative and non-traditional high school programs between 1979 and 2007. After being leased to outside

1 Existing total building area from Bassetti Architects, March 30, 2026.
2 Rita E. Cipalla, Ryan Anthony Donaldson, Tom G. Heuser, Meaghan Khalo, Melinda Lamantia, Casey McNerthney, and Nick Rousso; *Building for Learning, Seattle Public Schools Histories, 1862-2022;* 2024.

organizations from 2008 to 2013, it was renovated to serve as an interim site for other schools while they underwent remodel or replacement projects. From 2014 to 2025, the John Marshall School housed one K-8 school and seven elementary schools[3] on an interim basis, usually for two years and from 2023 to 2025 with two elementary schools (Montlake and John Rogers) in the building at the same time.

The existing building is currently occupied by a portion of SPS Department of Technology staff, but has no school-specific use. Over the past 10 years, the building housed schools with enrollments up to about 750 students on an interim basis.

1.1.2. Proposed Site Changes

The proposed project is intended to expand the capacity of the school and upgrade the quality of the student learning environment. It would involve a complete interior building remodel and re-roofing, as well as a partial demolition and replacement with a new building addition. Limited portions of the existing 1926 building would be demolished and about 85,200 sf of the building would be modernized. An addition with about 27,850 sf would be constructed along the eastern (back) of the existing 1926 building. The new addition would include science labs, general classrooms, a new commons, choir classroom, a gymnasium, administrative offices, and support space (utility rooms, corridors, restrooms, storage spaces, etc.). The proposed renovations to the 1926 building would include improved general classrooms and special education spaces, learning commons, library, band, structural, mechanical, electrical, fire alarm, fire sprinkler and food service upgrades. At completion, the school would contain approximately 113,050 sf of permanent building space.

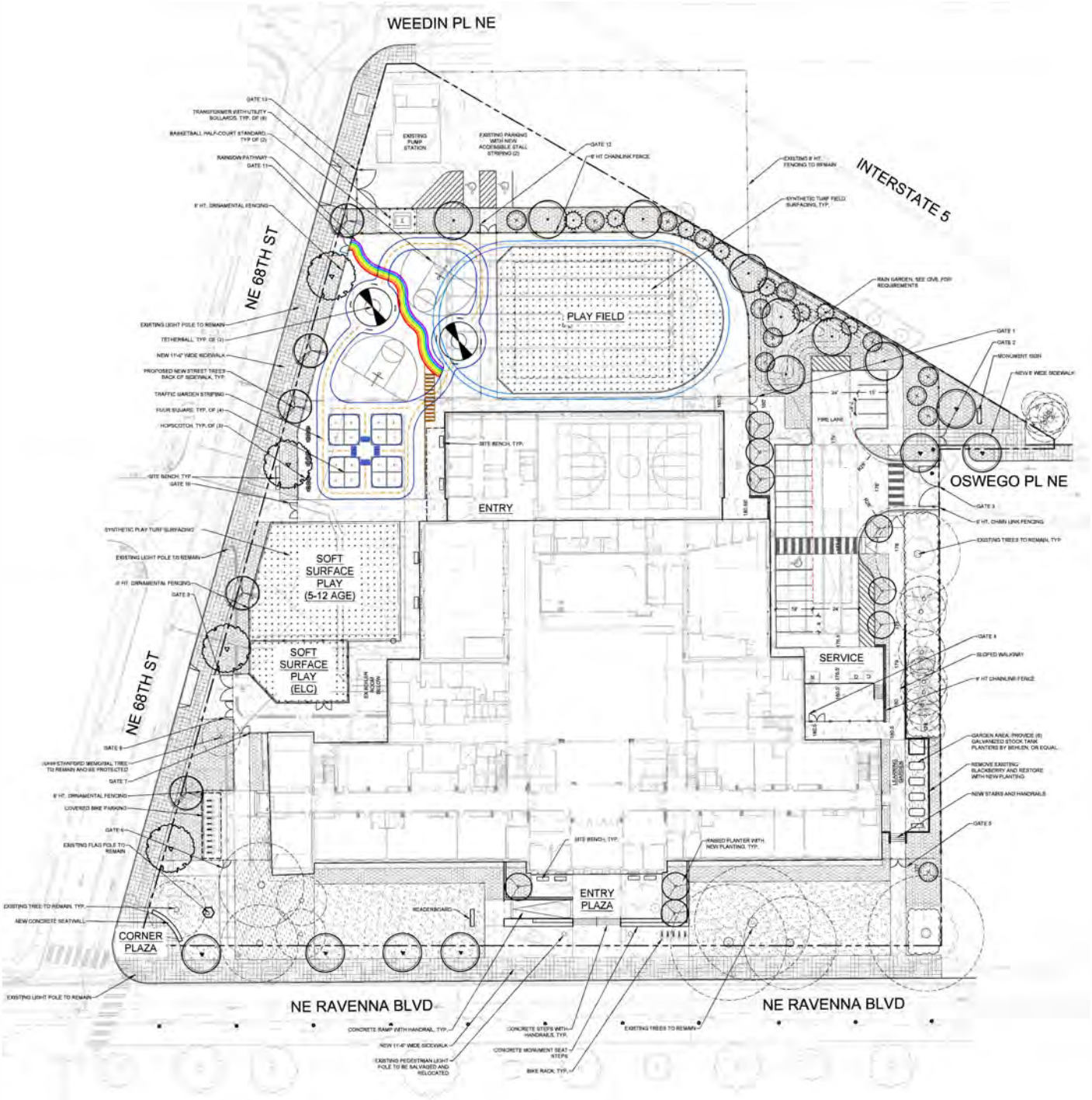
The modifications would be made to accommodate either a 1,000-student middle school or a 650-student elementary school on an interim basis. When complete, John Marshall School is planned as an interim site to temporarily house schools while their respective buildings are renovated.

The site's frontage along NE Ravenna Boulevard would remain a 'School Bus Only' zone; the NE 68th Street frontage would be signed 'School Load Only' for family-vehicle load/unload. The site would have 18 parking stalls in two lots—16 stalls in a new lot on the south side of the building and 2 ADA stalls in the northeast lot. The adjacent WSDOT right-of-way is not proposed to be changed. The northeast lot would be accessed from the existing eastern driveway on NE 68th Street; the west driveway on NE 68th Street would be removed. The new south lot would be accessed from the existing driveway at the north end of Oswego Place NE. Figure 1 shows the site plan with the location of the proposed addition, parking areas, and access locations.

The site plan and access configuration was developed in coordination with the Seattle Department of Transportation (SDOT) through the Street Improvement Permit (SIP) process. Frontage improvements, including curb and ramp replacement, landscaping, street trees, and sidewalk repairs along NE Ravenna Boulevard, NE 68th Street, and Oswego Place NE would be completed as required. SPS would coordinate with SDOT to establish the school load zone on the south side of NE 68th Street. That area is expected to be signed for school load/unload only during morning arrival and afternoon dismissal periods; it would be available for general parking during the other times of day.

Construction is planned to begin in summer 2027 and be complete for occupancy by fall 2029. The first interim school occupancy could be as early as fall 2029. Future analyses (without and with the project) presented in this report reflect year 2029 conditions.

[3] 2014-16 – Hazel Wolf K-8 (previously known as Jane Addams K-8); 2016-18 – Loyal Heights; 2018-19 – Queen Anne; 2019-20 – Daniel Bagley; 2020-21 – West Woodland; 2021-23 – Viewlands; 2023-25 – Montlake; 2023-25 – John Rogers.



Source: Bassetti Architects, May 20, 2026

JOHN MARSHALL SCHOOL
INTERIM SITE MODERNIZATION
AND ADDITION PROJECT

Figure 1
Site Plan

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2. BACKGROUND CONDITIONS

This section presents the existing and forecast future conditions without the proposed project. The impacts of the proposed project were evaluated against these base conditions. Although the John Marshall School building is not currently occupied (it most recently housed two elementary schools simultaneously from 2023 to 2025), it could accommodate a middle school, K-8, or elementary school at the same enrollment levels as it has in the recent past 10 years. For example, it temporarily housed Jane Addams (now Hazel Wolf) K-8 from 2014 to 2016 with enrollment up to 756 students. It housed Loyal Heights Elementary from 2016 to 2018 with enrollment of 411 students, and the combined enrollments of Montlake and John Rogers Elementary schools at 419 students during the 2024-2025 school year.

With the proposed project, the largest increase in enrollment capacity would be to accommodate a 1,000-student middle school (244 more students than the K-8 school it accommodated in the past 10 years). Analysis presented later in this report (See Section 3.2) shows that potential future interim use by a 650-student elementary school would have reduced impacts compared to a middle school. Therefore, the 2029-without-project condition reflects use of the building by a 756-student middle school, based on the size of a K-8 that has already been accommodated on the site; the 2029-with-project condition (see Section 3) reflects occupancy of the building by a 1,000-student middle school.

The following sections describe the existing roadway network, traffic volumes, traffic operations (in terms of levels of service), traffic safety, transit facilities, non-motorized facilities, and parking.

2.1. Study Area

Figure 2 shows the project site location and vicinity. The following eight off-site intersections, plus site access driveways, were selected for study based on the size of the proposed project, historic traffic counts, and travel routes expected to be used by family drivers, buses, and staff to access and egress the site area.

- NE 65th Street / NE Ravenna Blvd (northbound)
- NE 65th Street / NE Ravenna Blvd (southbound)
- NE 68th Street / NE Ravenna Blvd (northbound)
- NE 68th St / NE Ravenna Blvd (northbound)
- NE 68th St / Oswego Place NE
- NE 68th St / Weedin Place NE
- NE 65th St / 8th Avenue NE
- NE 65th St / Oswego Place NE

NE Ravenna Boulevard has a median separating northbound and southbound directions, and its signalized intersections with NE 65th Street were evaluated as separate, but coordinated, intersections. The intersections at NE 68th Street are stop-sign controlled and also evaluated separately.

JOHN MARSHALL SCHOOL
INTERIM SITE MODERNIZATION
AND ADDITION PROJECT

Figure 2
Site Location and Vicinity

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2.2. Transportation Network

2.2.1. Existing Network

The surrounding area consists of multi-family and single-family residences as well as commercial and institutional (church) uses. Key roadways that serve the site are described below. Roadway classifications are based on the City's Street Classification Map.[4] Speed limits are 25 miles per hour (mph) on arterials (unless otherwise marked) and 20 mph on local access streets.

NE Ravenna Boulevard is a two-lane arterial that provides two-way access between Green Lake Way N to the northwest of the school site and Ravenna Avenue NE at Ravenna Park southeast of the school site. Adjacent to the John Marshall School site, the roadway is designated as a Minor Arterial; it becomes a Principal Arterial between NE 65th Street and 8th Avenue NE.[5] Northwest of NE 65th Street, Ravenna Boulevard has one lane in each direction, curbs, gutters, sidewalk, and bike lanes in both directions, as well as on-street parallel parking to the right of the travel lanes on both sides. The travel ways are separated by a tree-lined and landscaped median that is about 65-feet wide. Its intersection with NE 65th Street is signalized; its intersections with NE Green Lake Way, Woodlawn Avenue NE, and 8th Avenue NE are all-way-stop controlled. There are marked crosswalks at the signalized and all-way-stop controlled intersections. There is also a marked and signed school crossing at NE 68th Street (south leg).

NE 68th Street is an east-west local access roadway on the north side of the school site that provides access between NE Ravenna Boulevard and Weedin Place NE. Adjacent to the site, there are curbs, gutters, sidewalks, and parallel on-street parking on both sides. Its approaches to NE Ravenna Boulevard and Weedin Place NE are stop-sign controlled; its intersection with Oswego Place NE is uncontrolled. There is a marked crosswalk at NE Ravenna Boulevard crossing the east leg of NE 68th Street. It is noted that the street width is relatively narrow (about 32-feet). Therefore, when vehicles are parallel parking on both sides of the street, the travel way may only accommodate one direction of travel at a time. The curb-space along the school frontage was previously signed 'School Bus Only 7 A.M. to 4 P.M.,' but after September 2025, signs were removed and the curb space is currently unrestricted.

Weedin Place NE is a two-lane Minor Arterial that provides a northwest-southeast connection under I-5 between 8th Avenue NE and 70th Streets. Near the site, there are curbs, gutters, and sidewalks on both sides of the street. Parallel on-street parking occurs on both sides. There is a marked and signed crosswalk at NE 70th Street crossing the south leg of Weedin Place NE.

NE 65th Street is a Minor Arterial that provides two-way access between Sand Point Way NE to the east and E Green Lake Way N to the west (the segment between the northbound and southbound directions of NE Ravenna Boulevard is designated as a Principal Arterial). The roadway has curbs, gutters, concrete sidewalks, and bicycle lanes on both sides. In the site vicinity, signals control the NE 65th Street intersections at NE Ravenna Boulevard and 8th Avenue NE. The unsignalized approaches of other roadways that intersect NE 65th Street are controlled by stop signs.

8th Avenue NE is a Minor Arterial between NE 65th Street and NE 70th Street, and a Principal Arterial from NE 65th Street to NE Ravenna Boulevard. Within the site vicinity (near NE Ravenna Boulevard), it has one travel lane in each direction with parking allowed on the east side only (northbound travel direction). Curbs and gutters are provided along both sides of the roadway. South of NE 66th Street, it has sidewalks on both sides; north of NE 66th Street it has vegetation on the west and paved sidewalks along the east side.

4 Seattle Department of Transportation (SDOT), Interactive Street Classification Maps, accessed March 2026.
5 Source: City of Seattle, Arterial Classification Map (2003).

Oswego Place NE is a non-arterial Local Access street. Near the school site there are two segments—one to the south that extends from the school site to NE 65th Street and one to the north that extends from NE 68th Street to NE 70th Street. Both segments have curbs, gutters, and sidewalks on both sides (except for the southern 160 feet on the east side of south segment). Its approach with NE 65th Street is stop-sign controlled; its intersections with NE 68th and NE 70th Streets are uncontrolled.

2.2.2. Planned Improvements

The proposed project is scheduled to be complete and could be occupied by 2029. In 2024, the City adopted the *Seattle Transportation Plan (STP)*,[6] which outlines the City's 20-year vision plan. The STP replaces the City's earlier individual modal plans (including walking/rolling, biking, transit, and freight). The following describes the STP plan elements and other long-range planning documents reviewed to determine if there are any transportation improvements planned for the study area that could affect roadways and intersections near the John Marshall School site.

City of Seattle's Adopted 2026-2031 Capital Improvement Program (CIP)[7] – No specific improvements to the transportation network were identified for roadways or intersections in the site vicinity within the adopted CIP document.

STP – 3-Year Implementation Outlook – The 3-year outlook indicates that the City is upgrading existing protected bike lanes by replacing flexible plastic posts with sturdier materials like concrete and hardened barriers. The upgrades planned include bike lanes along Ravenna Boulevard.

STP – Pedestrian Element – The *STP* identifies several missing sidewalks, deficient sidewalks, and intersections lacking enhanced crossings in the near-site study area as part of the Priority Investment Network, which ranks potential projects in priority from Tier 1 to Tier 5. Specifically, NE Ravenna Boulevard is listed as having a Tier 2 missing sidewalk; however, it has sidewalks on both sides near the John Marshall School site.

STP – Bicycle and E-Mobility Element[8] – The *STP* identifies locations that are in the City's proposed Bike+ network which consists of bikeways suitable for people of all ages and abilities, including protected bike lanes, Neighborhood Greenways, Healthy Streets, and bike lanes where vehicle speeds and volumes are sufficiently low. It identifies a proposed Bike+ Arterial upgrade for NE 65th Street west of NE Ravenna Boulevard.

STP – Transit Element – The STP indicates that large scale projects that will or could be managed by SDOT. It notes that NE 65th Street is identified as a Tier 2: High Priority Bus Corridor that "*Merits corridor-level investment programming, significant transit priority need*." However, it does not identify any specific improvements for the corridor.

2024 Seattle Transportation Levy[9] – This levy, approved by voters in November 2024, is an eight-year $1.55 billion levy to maintain and modernize the City's transportation infrastructure. The levy would contribute funds to safety education programs at public schools and build new sidewalks or sidewalk alternatives within 1-mile walksheds of K-12 schools. One project identified is along NE Ravenna Boulevard between 12th Avenue NE and Brooklyn Avenue NE. However, none are listed within the project study area.

6 Adopted April 23, 2024.
7 City of Seattle, online access January 2026.
8 SDOT. May 2024.
9 Seattle Department of Transportation, *2024 Seattle Transportation Levy,* August 2024.

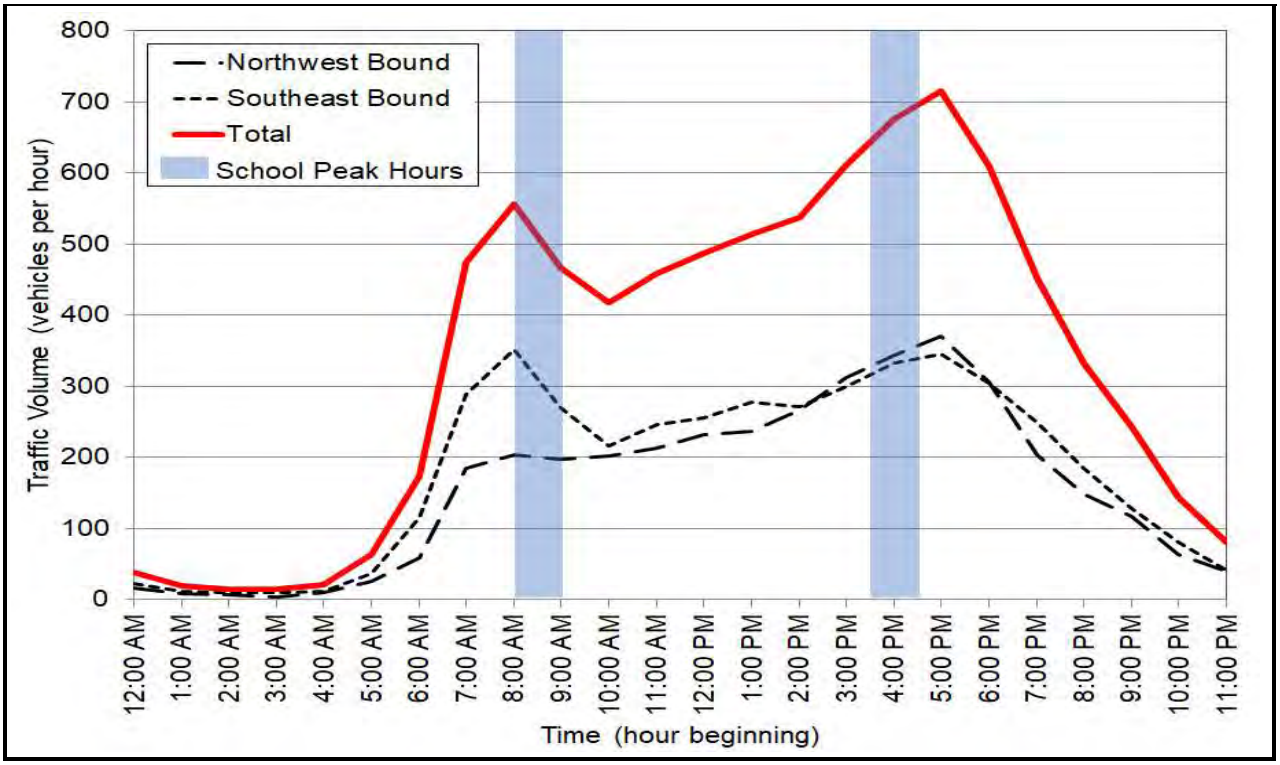
Based on review of the above documents, although some projects are planned in the area non-motorized, and safety improvements, no specific funded projects were identified that would affect the roadway network or intersection capacity within the study area by 2029; therefore, the future conditions analysis assumes that roadway and intersection geometry for study-area intersections would remain unchanged.

2.3. Traffic Volumes

2.3.1. Existing Traffic Volumes

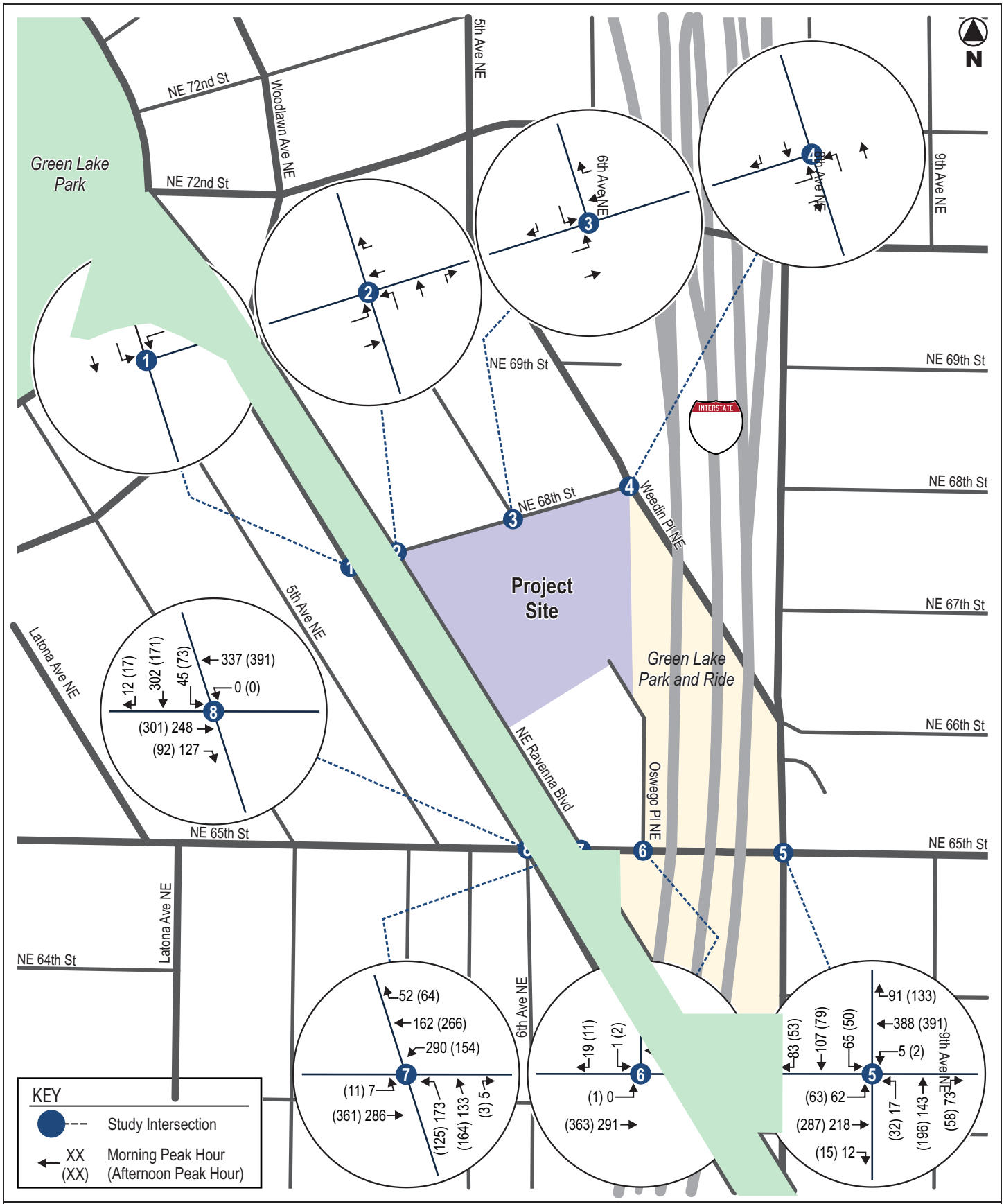
Figure 3 shows the average hourly volumes on NE Ravenna Boulevard in 2025. The traffic patterns are typical of most arterials in the City with the highest volume during the PM peak hours (4:00 to 6:00 P.M.) and smaller peaks in the morning peak hours (7:00 to 9:00 A.M.). The directional flows are also typical, with southwest bound traffic (toward I-5 ramps) higher the morning and northwest bound traffic (away from I-5) higher in the afternoon.

Figure 3. Traffic Volumes on NE Ravenna Boulevard between NE 65th and NE 68th Streets



Source: Idax Data Solutions, March 25-31, 2025, reflects average of Tue., Mar. 25, Thu., Mar. 27, and Mon., Mar. 31, 2025.

At the time of this analysis, the school day at almost all Seattle middle schools (except Denny) started at 8:55 A.M. and ended at 3:45 P.M. with early release at 2:30 P.M. on Wednesdays. To capture the existing traffic conditions around the John Marshall School site during the times of typical middle school arrival and dismissal peak periods, traffic counts were performed from 7:30 to 9:30 A.M. and from 2:30 to 4:30 P.M. on Thursday, March 12, 2026 at the eight study-area intersections. Counts at and around other Seattle middle schools have indicated that the morning and afternoon peak hours for school traffic typically occur from 8:00 to 9:00 A.M. and from 3:30 to 4:30 P.M., respectively. Figure 4 shows the existing (2026) traffic volumes for those times (morning and afternoon peak hours).



JOHN MARSHALL SCHOOL
INTERIM SITE MODERNIZATION
AND ADDITION PROJECT

Figure 4
Existing (2026) Traffic Volumes
Morning and Afternoon Peak Hours

heffron transportation inc

It is noted that when counts performed for this analysis were performed (March 2026), WSDOT's Revive Interstate 5 (I-5) construction work was underway. This major construction project reduced the capacity on I-5 over the Ship Canal Bridge, which may have affected traffic patterns at key I-5 access ramps, such as those on NE Ravenna Boulevard. A historical count for the NE 65th Street / NE Ravenna Boulevard intersections from 2019 was compared to the new March 2026 count. It shows that the total entering traffic at the intersection were nearly the same. Therefore, even if fewer vehicles accessed the ramps, it did not substantially reduce traffic volumes through the intersection.

2.3.2. Forecast Without-Project Traffic Volumes

The modernized and expanded school is planned to be complete and could be occupied by fall 2029. Without-project traffic forecasts for 2029 conditions were developed after review of historical traffic count data and development permit activity in the study area.

The Seattle Department of Construction and Inspections (SDCI's) Property and Building Activity permit map was reviewed to identify future development projects in the area that could generate traffic at study-area intersections by 2029. Based on that review, three projects were identified for possible inclusion. The three projects listed in Table 1 each had traffic studies prepared with estimates of morning and PM peak hour traffic. As shown, two are expected to generate small numbers of peak hour trips (10 or fewer) and one is expected to result in fewer trips than the site's prior use. Other smaller development projects in the vicinity are expected to have negligible impacts to traffic and parking within the study area during the identified peak hours. Based on this review no specific pipeline traffic was included in the forecasts.

Table 1. Pipeline Development Projects Included in Traffic Forecasts

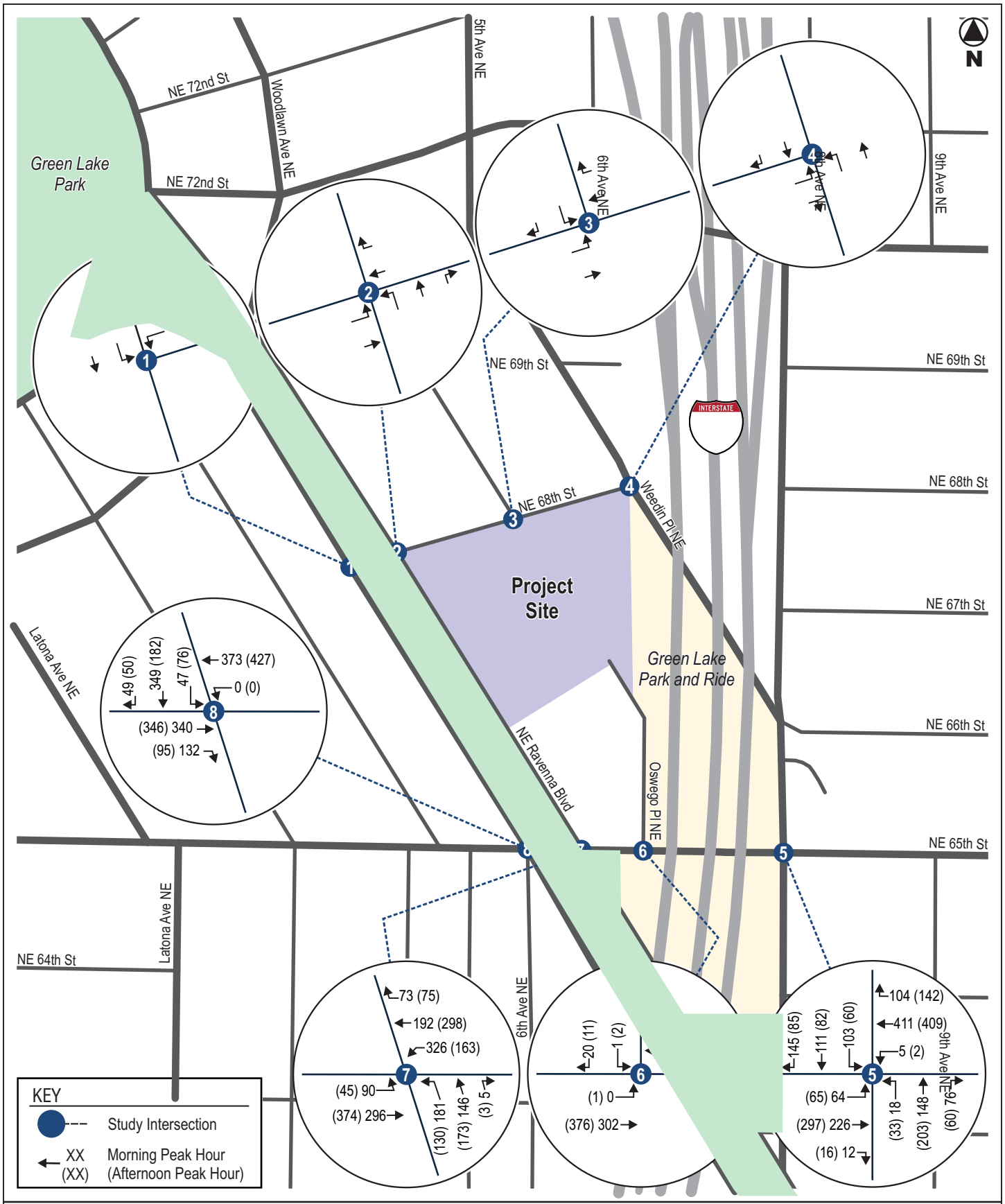
Permit #	Project Address	Program	Pipeline Net Trip Estimates			Sources
			Morning	Afternoon	PM	
3017924-LU	831 NE 66th St	36 apartment units, retail, no pkg (remove existing duplex)	7	8	10	William Popp Associates [1] Heffron Transp.[2]
3027716-LU	6501 Roosevelt Way NE	20 apartment units with 850-sf retail, no parking (remove 2 existing apartment units and 1,242-sf retail)	3	5	6	Transpo Group [3] Heffron Transp.[2]
3029903-LU	444 NE Ravenna Blvd	109 apartment units with 1,500-sf retail, 36 pkg stalls (remove existing 43 ksf office)	-30	-19	-21	TENW [4] Heffron Transp.[2]

Source: SDCI Property and Building Activity portal, March 2026.

1. *Program and AM and PM peak trip estimates from William Popp Associates, Traffic and Parking Demand Study 831 NE 66th St (36 Apartments), June 16, 2017.*
2. *Published materials did not provide trip estimates for the school's afternoon peak hours; estimated by Heffron Transportation, Inc. based on available program data and time of day trip generation date from ITE's Trip Generation Manual.*
3. *Program and AM and PM peak trip estimates from Transpo Group, 6501 Roosevelt Way NE Correction Responses, Aug. 5, 2019.*
4. *Transportation Engineering Northwest (TENW), Trip Generation Memo – 444 Ravenna (DCI Project No. 3029903) May 15, 2019.*

Review of historical count data from 2019 to 2025 indicated divergent patterns by location and among the various time periods, with traffic having declined in the morning peak hours and increased by 0.8% to 1.2% per year in the PM peak hours. To account for recent and ongoing development throughout Seattle and within the site vicinity, a 1.2% annual growth rate was applied to the 2026 peak hour volumes to estimate 2029-without-project volumes at the study area intersections. This rate is higher than most applied for traffic analyses of other developments in the larger Seattle area and may result in conservatively-high (worst-case) estimates of future traffic volumes.

The without-project traffic volumes were also adjusted to reflect that the John Marshall School could be reoccupied as an interim school at any time without the project. Based on its most intense prior interim use (as home to Jane Addams K-8, now Hazel Wolf K-8), it was assumed to be occupied by a middle school with enrollment of 756 students. Trip generation estimates and assignments for the without-project use of the school were developed using the same rates and patterns presented later for with-project conditions in Section 3.2.1. Figure 5 shows the resulting forecast 2029-without-project morning and afternoon hour traffic volumes.



JOHN MARSHALL SCHOOL
INTERIM SITE MODERNIZATION AND ADDITION PROJECT

Figure 5
Forecast-2029-Without-Project Traffic Volumes
Morning and Afternoon Peak Hours

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2.4. Traffic Operations

Level of service (LOS) is a qualitative measure used to characterize traffic operating conditions. Six letter designations, "A" through "F," are used to define level of service. LOS A is the best and represents good traffic operations with little or no delay to motorists. LOS F is the worst and indicates poor traffic operations with long delays. The City of Seattle does not have adopted intersection level of service standards; however, project-related intersection delay that causes a signalized intersection to operate at LOS E or F, or increases delay at a signalized intersection that is projected to operate at LOS E or F without the project, may be considered a significant adverse impact, if increases are greater than 5 seconds. The City may tolerate LOS E or F conditions for automobiles at signalized intersections where physical constraints limit opportunities for widening or where it has established priority for other modes such as transit, pedestrian, or bicycle movements. The City may also tolerate delays in the LOS E or F range at unsignalized intersections where changes such as conversion to all-way-stop-control or signalization are not applicable or desirable.

Levels of service for the study area intersections were determined based on methodologies established in the *Highway Capacity Manual (HCM), 7th Edition*[10] using the *Synchro 12* analysis software. Appendix A summarizes level of service thresholds and definitions for signalized and unsignalized intersections. The modeling assumptions for existing conditions, including signal timing and phase splits for the signalized intersections were provided by SDOT.[11] Table 2 summarizes existing and forecast 2029-without-project levels of service at the study-area intersections for morning and afternoon peak hours.

As shown, the three signalized intersections currently operate at LOS C or better during both peak hours. The unsignalized intersections operate at LOS A overall (with all movements at LOS B or better) during both periods. Assumed traffic increases, including traffic generated by John Marshall School with a 756-student middle school, are projected to increase average delays at the study-area intersections by between 0 and 13.6 seconds per vehicle in the morning and 0 to 3 seconds in the afternoon. The signalized intersections are forecast to remain operating at LOS D or better and the unsignalized intersections are forecast to remain operating at LOS A overall (with all movements at LOS C or better).

[10] Transportation Research Board 2022.
[11] Valentina Castellanos Ramirez, SDOT, March 24, 2026.

Table 2. Level of Service Summary – Existing and 2029-Without-Project Conditions

Intersections	Morning Peak Hour (8:00–9:00 A.M.)				Afternoon Peak Hour (3:30–4:30 P.M.)			
	Existing		2029 w/o Project		Existing		2029 w/o Project	
Signalized	**LOS [1]**	**Delay [2]**	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**
NE Ravenna Blvd / NE 65th St – SB	C	27.1	D	40.7	C	20.4	C	22.6
NE Ravenna Blvd / NE 65th St – NB	C	29.6	D	38.7	C	20.2	C	21.5
NE 65th St / 8th Ave NE	C	21.8	C	23.1	B	19.9	C	22.5
Stop Controlled	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**
NE Ravenna Blvd SB / NE 68th St	*A*	*1.1*	*A*	*4.6*	*A*	*1.2*	*A*	*3.5*
Westbound / All Movements	B	11.0	C	15.2	B	11.1	B	13.1
Southbound Left Turns	A	7.3	A	7.4	A	7.3	A	7.3
NE Ravenna Blvd NB / NE 68th St	*A*	*2.2*	*A*	*6.6*	*A*	*1.9*	*A*	*5.1*
Northbound Left Turns	A	7.3	A	7.3	A	7.3	A	7.3
Eastbound / All Movements	B	10.5	B	14.0	B	11.1	B	13.4
Westbound / All Movements	B	10.5	B	14.1	B	11.2	B	13.1
NE 68th Street / Oswego Pl NE	*A*	*3.7*	*A*	*1.7*	*A*	*3.8*	*A*	*2.1*
Eastbound Left Turns	A	7.4	A	8.0	A	7.3	A	7.8
Southbound / All Movements	A	8.8	B	10.5	A	8.8	B	10.4
NE 68th Street / Weedin Pl NE	*A*	*0.8*	*A*	*5.1*	*A*	*1.2*	*A*	*4.2*
Northbound Left Turns	A	7.8	A	8.1	A	7.6	A	7.8
Eastbound / All Movements	B	10.5	B	13.9	B	10.3	B	12.3
NE 65th Street / Oswego Pl NE	*A*	*0.2*	*A*	*0.2*	*A*	*0.2*	*A*	*0.2*
Eastbound Left Turns	A	0.0	A	0.0	A	8.3	A	8.5
Southbound / All Movements	A	9.2	A	9.4	A	9.6	A	9.9

Source: Heffron Transportation, Inc., April 2026.

1. *LOS = Level of service.*
2. *Delay = Average seconds of delay per vehicle.*

2.5. Parking Supply and Occupancy

The State of Washington adopted SEPA-related amendments on January 20, 2023 which removed parking as an element of the environment in WAC 197-11-444(2)(c)(iv) and removed the parking-related question from the environmental checklist in WAC 197-11-960(B)(14)(c). Pursuant to these amendments, the City of Seattle and SPS no longer identifies or requires analysis of parking impacts for SEPA review. However, the City has requested detailed parking studies for SPS projects that apply for code departures. The City may examine the potential need for parking management measures if on-street occupancy rates reach 85% or higher.[12] Therefore, on-street parking at and around the John Marshall School site was surveyed in March 2026 to determine the existing parking supply and occupancy. The results of those surveys were used to estimate how parking occupancy could be affected by new parking demand generated by the proposed modernized and expanded school (which is presented later in Section 3.5). The following sections describe the on-street parking supply as well as the observed parking occupancy and utilization rates.

12 SDOT, Seattle Transportation Plan – Curbside Management Element, parking management occupancy goals, May 2024.

2.5.1. Methodology and Study Area

A detailed on-street parking study was performed according to the methodology outlined in the City's Tip #135,[13] which outlines the City's preferred methodology to determine the number and type of on-street parking spaces that may exist within a defined study area, and how much of that supply is utilized at different times of the day.

The study area for the on-street parking analysis consists of all roadways within an 800-foot *walking* distance from the project site, as typically required by the City of Seattle. The study area was measured from the edge of the John Marshall School parcel, and includes all streets within an 800-foot walking distance. It extends to just west of 5th Avenue NE, just south of NE 65th Street, just east of 8th Avenue NE, and south of NE 72nd Street. The overall study area consists of a mix of single-family, multi-family and commercial land uses. Most residential properties have street facing driveways and some may also use on-street parking.

2.5.2. Existing On-Street Parking Supply

The study area was separated into individual block faces. A block face consists of one side of a street between two cross-streets. For example, the north side of NE 70th Street, between Oswego Place NE and 5th Avenue NE is one block face (identified as block face 'AQ' for this study). Figure 6 shows the study area and block face designations.

Each block face was measured and analyzed to determine the number of legal on-street parking spaces. First, common street features—such as driveways, fire hydrants, and special parking zones— and their buffer requirements were identified according to Seattle's Municipal Code Regulations. The remaining unobstructed lengths between street features were converted to legal on-street parking spaces using values in the City's Tip #135. Detailed parking supply by block face is provided in Appendix B.

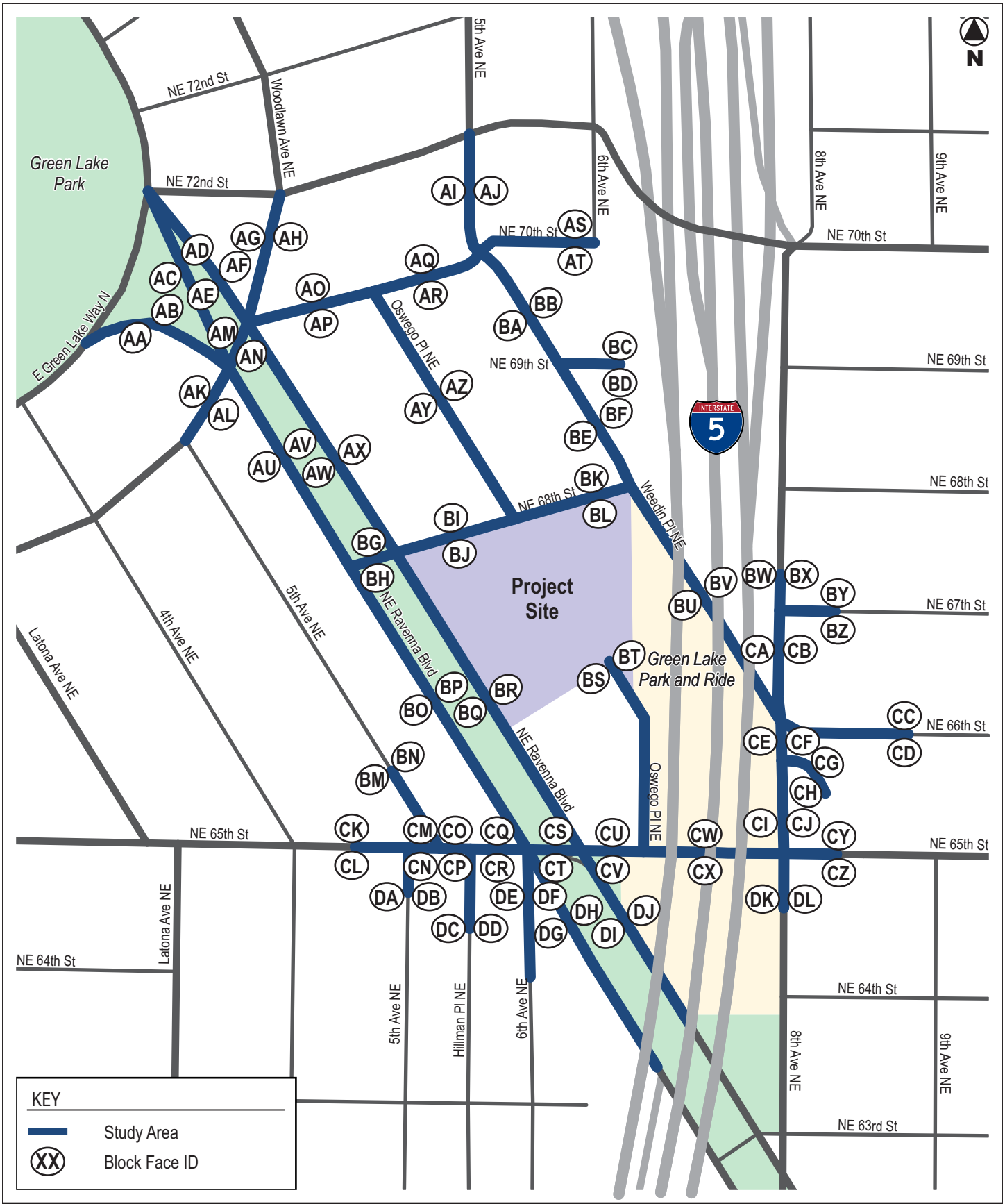
The parking supply survey determined there are 382 on-street parking spaces in the study area; 204 spaces have no restrictions, 20 spaces have time limits, 33 spaces require payment, 30 spaces are part of Restricted Parking Zone (RPZ) #19, 47 spaces restrict overnight parking, 18 stalls have school bus loading restrictions, and the remaining stalls have a mix of load zone and disabled parking restrictions.

2.5.3. On-Street Parking Occupancy

Parking occupancy counts were performed during three time periods in March 2026—early morning (between 7:00 and 7:30 A.M.), the time when staff would typically begin to arrive at the school, mid-morning (between 10:30 and 11:15 A.M.), the time when school-day parking is typically highest, and evening (between 7:30 and 8:15 P.M.) when occasional school events could occur. Counts were performed on Tuesday, March 17, and Thursday, March 19, 2026.

The counts for each period were compiled, and on-street parking utilization was calculated using the methodology described in Tip #135, which is the number of vehicles parked on-street divided by the number of legal on-street parking stalls. Table 3 summarizes the findings for the study area; detailed parking occupancy by block face are provided in Appendix B.

[13] SDCI, October 5, 2022.



JOHN MARSHALL SCHOOL
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Figure 6
Study Area for On-Street
Parking Occupancy Surveys

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Table 3. On-Street Parking Utilization Survey Results

Time Period Surveyed	Parking Supply	Total Vehicles Parked	Utilization Rate % Stalls Occupied
Morning (beginning at 7:00 A.M.)			
Tuesday, March 17, 2026	364	254	70%
Thursday March 19, 2026	364	246	68%
Average	**364**	**250**	**69%**
Mid-Morning (beginning at 10:30 A.M.)			
Tuesday, March 17, 2026	382	248	65%
Thursday March 19, 2026	382	248	65%
Average	**382**	**248**	**65%**
Evening (beginning at 7:30 P.M.)			
Tuesday, March 17, 2026	382	279	73%
		282	
			73%

Source: Heffron Transportation, Inc., March 2026

As shown, the surveys determined that average on-street parking utilization in the study area was below 70% during the early morning and mid-morning periods with 110 to 143 unused spaces. In the evening, average on-street parking utilization increased to 73% with about 102 unused spaces. It should be noted that during the occupancy survey, parking along both sides of Weedin Place NE south of NE 68th Street (block faces 'BU' and 'BV') had temporary no parking restrictions which prevented parking during the morning and mid-morning periods. Streetview imagery from September 2025 indicates these block faces are not typically utilized when John Marshall School is not in operation, while earlier imagery from 2017 and 2019 indicates that between 20 to 25 vehicles have historically parked along these block faces (which have 36 spaces total) when the school was in operation. Since the school was not being used at the time of the study, it is unlikely the restriction impacted the results of the survey. Overall, these occupancy rates are below the 85% threshold that the City would use to consider management measures.

As noted previously in Section 2.3.2, three pipeline development projects were identified in the site vicinity (two located east of I-5 and one on NE Ravenna Boulevard just north of NE 68th Street). The two developments east of I-5 could have mid-weekday parking demand of 5 to 8 vehicles on street, but would mostly occur outside the John Marshall School parking study area. The development on NE Ravenna Boulevard proposed 36 parking stalls, which would accommodate its midday demand. Therefore, these projects are not expected to affect study-area on-street parking conditions during the school day.

2.5.4. Off-Street Parking

The John Marshall School site's main parking areas (north and northeast lots) are accessed from NE 68th Street and there are 65 striped stalls within the fenced lots. These include about 11 stalls located in the northeast parking area extends beyond the school parcel boundary to the east; approximately 13 of the 65 marked spaces are located outside the property. Conversely, the school's parcel boundary extends beyond its fencing into the adjacent park-and-ride lot to the east, where approximately 21 spaces currently exist. Counts of parked vehicles in these on-site lots were conducted at the same times as described in previous sections for on-street parking. The school-day counts found between 3 and 8 vehicles parked in the early morning and mid-morning periods. These vehicles are likely associated with the SPS Department of Technology staff that currently work in the building.

School-day parking demand at middle and elementary schools is primarily influenced by staffing levels and family-volunteer activity. Because John Marshall School was not being used as an interim site at the time of the analysis, representative field counts of on-site parking demand were not possible. Studies by Heffron Transportation at three Seattle middle schools (Mercer, Madison, and Aki Kurose), indicate school-day peak parking demand rates ranging from 0.66 to 0.85 parked vehicles per employee. These rates account for parking demand generated by all users, including employees and visitors. However, the John Marshall School site is located within a Major Transit Service Area[14] and less than ½-mile of the Roosevelt Link Station, which are expected to reduce employee parking demand rates compared to other Seattle middle schools. The parking rates were adjusted based on the neighborhood mode-of-travel characteristics based on two sources: mode-of-travel survey data from the *2024 American Community Survey (ACS)*[15] and *Census Transportation Planning Products (CTPP)*[16] for residents and employees working in Census tracts 36.01 and 36.02 (the tracts that include the John Marshall School site and surrounding area). These indicated that over the five-year periods, excluding those who worked from home, about 36% to 40% commuted by non-auto modes (transit, walk, and bike or another mode like scooter). Since these data reflect some years prior to the October 2021 Roosevelt Link Station opening, they may also reflect lower levels of transit than current conditions.

For future-2029-without-project conditions, parking demand estimates for a middle school with 756 students and an estimated 82 employees,[17] were derived using adjusted parking rates ranging from 0.39 to 0.52 vehicles per employee. Based on these rates, the existing interim school could generate parking demand of 32 to 42 vehicles. Most or all of the demand could be accommodated on-site.

2.6. Traffic Safety

Collision data for the study area intersections and roadway segments were obtained from SDOT's Open Data Portal for the period from January 1, 2021 to the most recent date available at the time of this analysis—February 16, 2026 (5.13 years). The available data were examined to determine if there are any unusual traffic safety conditions that could impact or be impacted by the proposed project. Table 4 summarizes the collision data.

Unsignalized intersections with five or more collisions per year and signalized intersections with 10 or more collisions per year are considered high collision locations (HCLs) by the City. Intersections are also considered HCLs if there are five or more pedestrian or cyclist collisions in the preceding three years. As shown, all of the study area intersections averaged fewer than three collision per year, and none met the criteria for an HCL during the period of time evaluated. None of the reported collisions resulted in fatalities. Over the five-year period, five collisions involved pedal-cyclists and vehicles (four at the NE 65th Street / 8th Avenue NE intersection and one at the NE Ravenna Boulevard / NE 65th Street intersection). One collision involved a vehicle striking a pedestrian at the NE 65th Street / 8th Avenue NE intersection. Overall, these data do not indicate unusual traffic safety conditions.

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14 SDCI, *Director's Rule 01-2026* (effective January 30, 2026). The definition of "transit service area, major" in SMC §23.84A.038 means an area within 2,640 feet walking distance of a stop served by a major transit service, as shown on a map adopted by this Director's Rule.

15 US Census Bureau, *2024 ACS 5-Year Estimates Detailed Tables Workers 16 years and over, Data for King County Census Tracts 36.01 and 36.02,* obtained April 2026.

16 American Association of State Highway Transportation Officials (AASHTO), *Census Transportation Planning Products (CTPP)*. Means of Transportation to Work compiled from the US Census Bureau, 2017-2021 American Community Survey Estimates, accessed April 2026.

17 Employee estimate based on current number of staff at Robert Eagle Staff Middle School with 778 students, March 2026.

Table 4. Collision Summary

Intersection	Rear-End	Side-Swipe	Left Turn	Angle	Ped / Cycle	Other	Total for 5.13 Years	Average/ Year
NE 65th St / 8th Ave NE	1	0	1	4	5	0	11	2.2
NE Ravenna Blvd / NE 65th St – SB	0	0	1	0	1	0	2	0.4
NE 65th Street / Oswego Pl NE	1	1	0	0	0	0	2	0.4
NE Ravenna Blvd / NE 65th St – NB	0	0	0	0	0	0	0	0.0
NE Ravenna Blvd SB / NE 68th St	0	0	0	0	0	0	0	0.0
NE Ravenna Blvd NB / NE 68th St	0	0	0	0	0	0	0	0.0
NE 68th Street / Oswego Pl NE	0	0	0	0	0	0	0	0.0
NE 68th Street / Weedin Pl NE	0	0	0	0	0	0	0	0.0
Roadway Segment	**Rear-End**	**Side-Swipe**	**Left Turn**	**Right Angle**	**Ped / Cycle**	**Other [a]**	**Total for 5.13 Years**	**Average/ Year**
Oswego Pl NE (between NE 65th St and Dead End)	0	0	0	0	0	1	1	0.2
NE Ravenna Blvd SB (between NE 65th and NE 68th Streets) [b]	1	0	0	0	0	0	1	0.2
NE Ravenna Blvd NB (between NE 65th and NE 68th Streets) [b]	0	0	0	0	0	0	0	0.0
NE 68th Street (between NE Ravenna Blvd and Weedin Pl NE)	0	0	0	0	0	0	0	0.0

Source: City of Seattle Department of Transportation, January 1, 2021 through February 16, 2026, https://data-seattlecitygis.opendata.arcgis.com/datasets/collisions, Accessed April 10, 2026.

a. *'Other' collisions included one vehicle striking another going the same direction.*

2.7. Transit Facilities and Service

King County Metro Transit (Metro) provides bus service along NE Ravenna Boulevard within 200 feet of the John Marshall School site. The northbound stop is located just north of NE 68th Street; the southbound stop is located south of NE 68th Street. These stops are served by Routes 45 and 62. The Green Lake Park-and-Ride is located adjacent to the site just to the south and is served by Routes 45, 62, and Route 79. The following describes each route.

Route 45 provides all-day service, seven days per week between the Loyal Heights neighborhood and Children's Hospital with stops in the Greenwood, Roosevelt, and University District areas. It operates with weekday headways (time between consecutive buses) of 8 to 16 minutes.

Route 62 provides all-day service, seven days per week between the Sand Point neighborhood and Downton Seattle with stops in the Ravenna, Roosevelt, Green Lake, Wallingford, and South Lake Union areas. It operates with weekday headways of 8 to 17 minutes for most of the day.

Route 79 provides all-day service on weekdays between the University District and the Green Lake Park-and-Ride with stops in the Ravenna, Sand Point, and Wedgwood neighborhoods. It operates with headways of about 60 minutes between about 6:30 A.M. and 10:00 P.M.

Sound Transit's Roosevelt Station is located about 0.4 mile east of the site at the NE 65th Street / 12th Avenue NE intersection. It is served by Sound Transit's Link 1 Line and Link 2 Line light rail service with connections north to Lynnwood, south to Federal Way, and east to Bellevue and Redmond. The Roosevelt Station is also served by Metro Routes 45, 62, and 79 operating along NE 65th Street.

As outlined in the current *Transportation Service Standards,*[18] "*students are eligible for district transportation within their assigned attendance area as referenced in the Student Assignment Plan and as described in this section (A) of the Transportation Service Standards.*" In most cases, the John Marshall School site has been outside of the walk boundary of interim schools that occupy the building. Therefore, all students have been eligible for school-bus transportation while their school was housed at the John Marshall School site on an interim basis. In addition, all students aged 18 and younger in King County are eligible for fare-free transit.

Most of the east curb of NE Ravenna Boulevard adjacent to the school is reserved for "School Bus Only, 7-9 AM and 1-4 PM;" the south curb of NE 68th Street was previously signed 'School Bus Only' from 7:00 A.M. to 4:00 P.M., but is now unrestricted.

2.8. Non-Motorized Facilities

Sidewalks exist on both sides of the arterial streets and most local access streets in the vicinity of the project site. A segment of Oswego Place NE north of NE 65th Street has no sidewalk on the east side. The signalized NE 65th Street intersections have crosswalks and pedestrian signals across all legs with sidewalk connections. There are also crosswalks with signage across NE Ravenna Boulevard at NE 68th Street (south legs). There are protected bike lanes in both directions of NE 65th Street and NE Ravenna Boulevard; the bike lanes on NE 65th Street transition to *sharrows*[19] west of NE Ravenna Boulevard.

As described previously, the *STP* identifies locations that are in the City's proposed Bike+ network; it includes a proposed Bike+ Arterial upgrade for NE 65th Street west of NE Ravenna Boulevard.

[18] SPS, *Revised Transportation Service Standards 2025-26: Ridership Eligibility*, Effective Sept. 1, 2025.
[19] Sharrows are roadway facilities with pavement markings that indicate automobiles and bicycles share the travel lane.

3. PROJECT IMPACTS

This section describes the conditions that would exist with the John Marshall Interim School Modernization and Addition Project and the school operating at its highest planned interim enrollment capacity with up to 1,000 middle school students. Vehicle trip estimates associated with the school addition were added to the 2029-without-project traffic volume forecasts. Level of service analyses were performed to determine the proposed project's impact on traffic operations in the study area. Parking demand and the potential change to on-street parking utilization was also estimated.

3.1. Transportation Network

The District would request that the school frontage on the south side of NE 68th Street be designated for 'School Load Only' for family automobile load and unload. Based on load zones at other Seattle middle schools, the restrictions are likely to be in effect from 7:00 to 9:00 A.M. and from 2:00 to 4:00 P.M. The frontage could be used for general parking at other times. School buses would continue to use the load zone on the east (northbound) side of NE Ravenna Boulevard. Frontage improvements including curb and ramp replacement and sidewalk repairs along NE Ravenna Boulevard, NE 68th Street, and Oswego Place NE would be completed as required by SDOT. No other physical changes to the surrounding transportation network are proposed as part of the project.

3.2. Traffic Volumes

The proposed project would result in new vehicular, pedestrian, and bicycle activity on the surrounding transportation network. With the addition, the school is expected to have a peak enrollment capacity of up to 1,000 students—244 more students that were enrolled at the site when Jane Addams K-8 occupied the building from 2014 to 2016. The school project is expected to generate increases in daily and peak hour traffic compared to without-project conditions. The following describes the method used to estimate project-generated traffic.

3.2.1. School Trip Generation

Trip generation estimates for school projects are generally developed using one of two methods. For new schools, rates published in the Institute of Transportation Engineers' (ITE) *Trip Generation Manual*[20] can be applied. ITE has compiled surveys of vehicle trip generation for existing sites throughout the United States, and has developed rates based on numbers of students and school-building sizes.

As discussed previously, the John Marshall School is planned to temporarily house an elementary school (with up to 650 students) or a middle school (with up to 1,000 students) while their respective buildings are renovated or replaced. Based on review of the range of potential interim use scenarios, it was determined that a middle school operating at the planned enrollment capacity of up to 1,000 students would result in the highest estimated peak hour trip generation and largest change from its highest prior use over the previous 10 years. It is the worst-case scenario analyzed in this report.

For expansions of existing schools, actual counts of the existing school are preferred. This method works best for schools located in areas where school-related traffic can easily be isolated and identified, and traffic counts can be used to develop rates specifically for that school. However, since the site is currently not being used to house students, average trip generation rates were derived from counts at and around four SPS middle schools—Whitman, Madison, Aki Kurose, and Washington. The derived average rates for other SPS middle schools are comparable to published ITE average rates (slightly lower during the

[20] ITE, 12th Edition, August 2025.

morning peak hour and slightly higher during the afternoon peak hour) and well within the range of published data.

The derived SPS rates were applied to the proposed enrollment capacity for an interim middle school at John Marshall School (1,000 students). Table 5 presents the resulting trip estimates for the expanded school. Since the building has and could still accommodate a middle school of the size comparable to Jane Addams K-8 (as it did from 2014 to 2016), trip estimates for this level of use were derived to reflect 2029-without-project conditions with a 756-student middle school, also shown in Table 5. These estimates include school bus trips, employee trips, and family-vehicle trips. As shown, at full enrollment capacity, the expanded school is estimated to generate net increases of 167 trips in the morning peak hour and 86 trips in the afternoon peak hour.

Table 5. John Marshall School Addition – Trip Generation Estimates

Site Condition	Capacity / Enrollment	Morning Peak Hour (8:00–9:00 A.M.)			Afternoon Peak Hour (3:15–4:15 P.M.)		
		In	Out	Total	In	Out	Total
Proposed School with Addition	1,000 students [a]	364	321	685	151	202	353
Existing School	756 students [b]	275	243	518	114	153	267
Net Change from Due to Project	244 students	89	78	167	37	49	86

Source: Heffron Transportation, Inc., April 2026.

a. Reflects planned capacity of school to house a middle school.

b. Number of students enrolled at Jane Addams (now Hazel Wolf) K-8 in 2015-16 when housed at the John Marshall School site.

For comparison, trip generation estimates for a 650-student elementary school were also developed as this is the largest size expected to be located at the John Marshall School site on an interim basis. They were compared to trip generation estimates for the site when it was occupied by West Woodland Elementary with enrollment of 473 students during the 2020-21 school year. For this analysis, average morning arrival and afternoon dismissal peak hour trip generation rates were derived from video trip generation counts at 18 existing SPS elementary schools. The average morning peak hour trip generation rate was found to be 0.71 trips per student; the afternoon peak hour rate was found to be 0.49 trips per student. These rates are comparable to or higher than to the average rates published for Elementary Schools (Land Use 520) in the *Trip Generation Manual* (0.75 trips per student in the morning peak hour and 0.45 trips per student in the afternoon peak hour). Since these rates were derived from counts at other Seattle elementary schools and reflect current trends related to family-vehicle drop-off and pick-up activities, they are most appropriate for use in evaluating trip generation for a temporary elementary school located at the John Marshall site.

Based on the derived rates described, a 650-student elementary is estimated to generate net increases of 126 morning peak hour trips and 86 afternoon peak hour trips compared to when the site was occupied by West Woodland Elementary; it would also generate less traffic than a 1,000-student middle school.

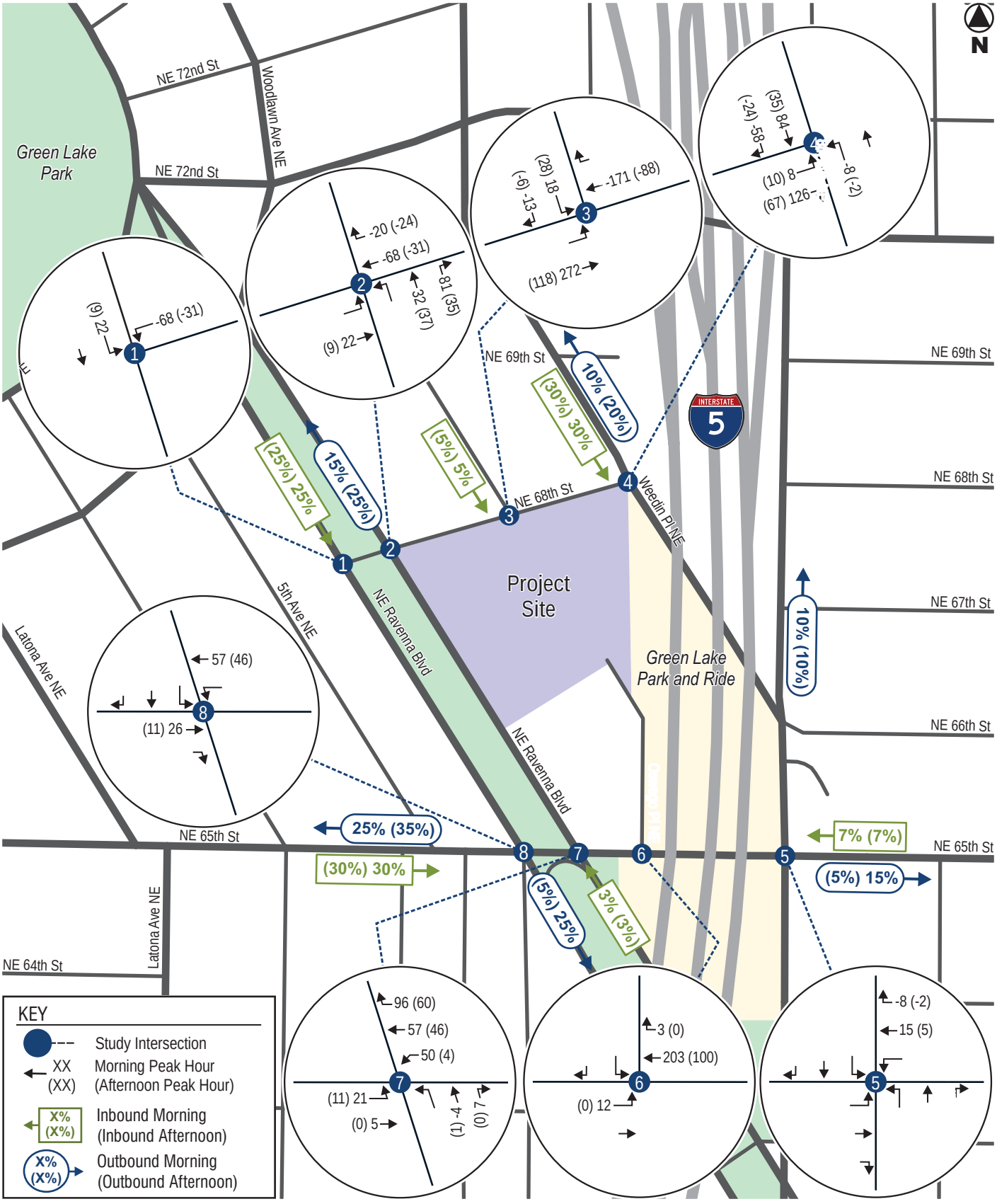
3.2.2. Trip Distribution and Assignment

Any middle school that may be housed on an interim basis at the John Marshall School site would most likely be located in the northern area of Seattle. The site is located within the Eckstein enrollment area; the Jane Addams enrollment area is located to the northeast, and the Whitman enrollment area is located to the northwest. Hamilton was recently renovated and Robert Eagle Staff is recently constructed.

Trip distribution patterns for school trips were developed to reflect the highest potential traffic impact in the study area. The distribution patterns also reflect the existing and expected future travel characteristics of the local roadway network including the location of on-site parking supply, student drop-off/pick-up areas, bus loading areas, and the access driveways. Most of the morning and afternoon peak hour trips typically consist of passenger vehicles (for student drop off and pick up) and school buses. Some trips are also generated by teachers or staff.

School buses would continue to use the load/unload zone on the east (northbound) side of NE Ravenna Boulevard. Passenger-vehicle load/unload for students is expected to occur along the south curb-side of NE 68th Street (eastbound direction) adjacent to the school. Figure 7 shows the traffic distribution patterns and assignments of the estimated net changes in morning and afternoon peak hour trips. The estimated net changes in site vicinity traffic account for the elimination of the on-site drive-through load/unload area that occurred within the parking lot (entering from NE 68th Street at the west and exiting at the east). Trips would instead use the NE 68th Street curb-side between NE Ravenna Boulevard and Weedin Place NE with heavier eastbound traffic flows and limited westbound flows.

The estimated changes in peak hour school trips were combined with the forecast-2029-without-project traffic volumes to reflect future conditions with the expanded school. Figure 8 shows the forecast 2029 with-project morning and afternoon peak hour traffic volumes.



JOHN MARSHALL SCHOOL
INTERIM SITE MODERNIZATION
AND ADDITION PROJECT

Figure 7
Project Trip Distribution and Assignments
Morning and Afternoon Peak Hours

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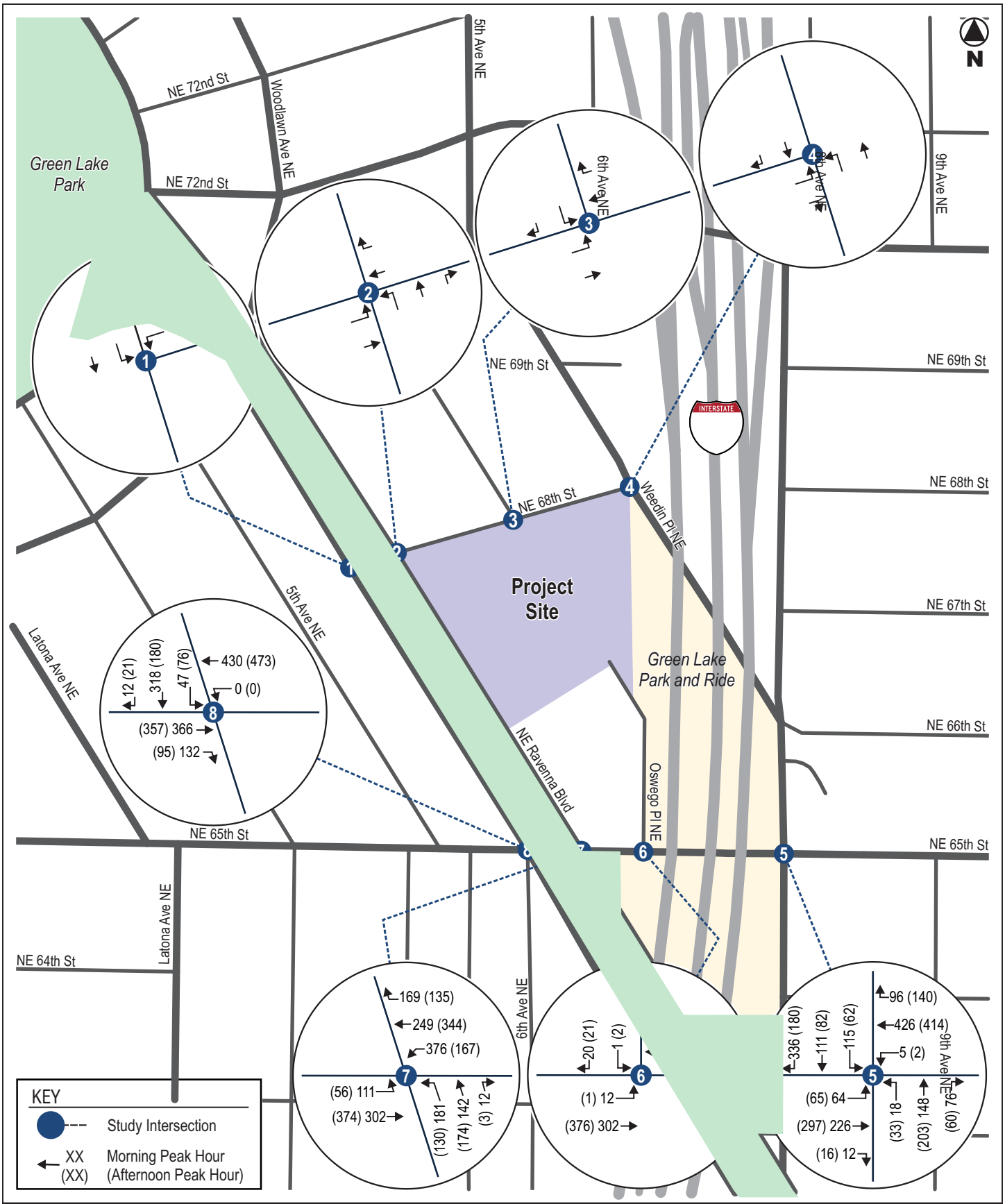

JOHN MARSHALL SCHOOL
INTERIM SITE MODERNIZATION AND ADDITION PROJECT

Figure 8
Forecast-2029-With-Project Traffic Volumes
Morning and Afternoon Peak Hours

heffron transportation inc

3.3. Traffic Operations

Intersection levels of service for future with-project conditions were evaluated using the same methodology described previously. The additional enrollment capacity is expected to increase pedestrian trips between the building and family vehicles parked nearby on-street, particularly during morning arrival and afternoon dismissal periods. The numbers of pedestrian crossings at the nearby study intersections were increased to address this activity. The operational analyses accounted for these potential increases, the peaking characteristics of school traffic (school drop-off and pick-up primarily occurs during about 20 minutes in the peak hours), and the potential increases in school bus trips to and from the site with a larger-capacity school. Table 6 shows the results of the analysis; levels of service for without-project conditions are shown for comparison.

Table 6. Level of Service Summary – Forecast 2029 Conditions Without- and With-Project

Intersections	Morning Peak Hour (8:00–9:00 A.M.)				Afternoon Peak Hour (3:30–4:30 P.M.)			
	Without Project		With Project		Without Project		With Project	
Signalized	**LOS [1]**	**Delay [2]**	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**
NE Ravenna Blvd / NE 65th St – SB	D	40.7	D	41.6	C	22.6	C	21.5
NE Ravenna Blvd / NE 65th St – NB	D	38.7	D	50.2	C	21.5	C	22.8
NE 65th St / 8th Ave NE	C	23.1	C	22.8	C	22.5	C	21.9
Stop Controlled	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**
NE Ravenna Blvd SB / NE 68th St	*A*	*4.6*	*A*	*2.6*	*A*	*3.5*	*A*	*2.3*
Westbound / All Movements	C	15.2	B	13.8	B	13.1	B	12.6
Southbound Left Turns	A	7.4	A	7.4	A	7.3	A	7.4
NE Ravenna Blvd NB / NE 68th St	*A*	*6.6*	*A*	*5.2*	*A*	*5.1*	*A*	*4.1*
Northbound Left Turns	A	7.3	A	7.3	A	7.3	A	7.4
Eastbound / All Movements	B	14.0	C	18.9	B	13.4	C	16.0
Westbound / All Movements	B	14.1	B	12.8	B	13.1	B	13.5
NE 68th Street / Oswego Pl NE	*A*	*1.7*	*A*	*1.7*	*A*	*2.1*	*A*	*2.7*
Eastbound Left Turns	A	8.0	A	7.5	A	7.8	A	7.4
Southbound / All Movements	B	10.5	B	11.0	B	10.4	B	10.7
NE 68th Street / Weedin Pl NE	*A*	*5.1*	*B*	*17.0*	*A*	*4.2*	*A*	*7.4*
Northbound Left Turns	A	8.1	A	8.1	A	7.8	A	7.9
Eastbound / All Movements	B	13.9	D	34.6	B	12.3	C	16.0
NE 65th Street / Oswego Pl NE	*A*	*0.2*	*A*	*0.3*	*A*	*0.2*	*A*	*0.3*
Eastbound Left Turns	A	0.0	A	9.5	A	8.5	A	8.7
Southbound / All Movements	A	9.4	A	10.0	A	9.9	A	9.9

Source: Heffron Transportation, Inc., April 2026.

1. *LOS = Level of service.*
2. *Delay = Average seconds of delay per vehicle.*

As shown, traffic generated by the proposed project is expected to add delay to some of the study-area intersections. Average delays are forecast to decrease at some locations where traffic would be added to lower-delay movements. The three signalized intersections are forecast to remain operating at LOS D or

better during both peak hours and the unsignalized intersections are forecast to remain operating at LOS B or better overall with all movements operating at LOS D or better during both peak hours. Based on these results, the project would not result in significant adverse impacts to traffic operations in the study area.

3.4. Site Access and Circulation

3.4.1. School Buses

School bus load/unload would occur along the NE Ravenna Boulevard frontage of the school site where it is currently signed and has occurred when prior schools were housed at the site on an interim basis. A departure from City code would not be required for on-street bus loading. The number of school buses would vary depending on the school occupying the building; it is expected range from 4 to 12 full size buses plus 3 to 8 shorter SPED buses. The designated bus load/unload zone has capacity to accommodate about 9 full size buses at a time. During years in which the occupying school operates more buses than can be accommodated in the bus zone, SPS would need to stage the school bus arrivals to ensure that they do not exceed the available space. During morning student delivery, buses arrive at different times, unload, and then leave the site after students are discharged. Therefore, staged bus arrivals may not be needed for mornings. However, in the afternoon, buses typically arrive and wait for dismissal. If the school has more buses than load space, afternoon arrivals will need to be staged. This practice already occurs for some Seattle schools and bus drivers typically find an on-street parking space to wait for the load/unload. Some bus drivers may choose to park in legal on-street parking areas along the northbound lane of NE Ravenna Boulevard south of the site while awaiting the second phase of student loading.

3.4.2. Morning Arrival

Passenger vehicle load/unload would occur in the on-street school load zone on the south side of NE 68th Street. It is estimated that this area could accommodate about 17 vehicles at the same time. The morning arrival queue can be modeled directly using Poisson arrival methodologies for a multi-channel service system (i.e., the number of drop-off spaces that can be used simultaneously). Observations conducted by Heffron staff at other Seattle middle schools have found that it takes an average of about 15 to 20 seconds for students to exit a vehicle while at the drop-off space. The higher end of this range equates to a service rate for each drop-off space of 3 vehicles per minute (or a rate of 180 vehicles per hour).

As noted previously, the John Marshall School site would likely be outside of the walk boundary of interim schools that occupy the building. Therefore, all students are likely to be eligible for school-bus transportation while their school is housed at the site on an interim basis. But, to provide a conservative worst-case analysis, data from counts at permanent school sites were used to evaluate possible queuing conditions. The forecast morning peak hour arrival volume at John Marshall School with enrollment at its planned capacity of 1,000 students is estimated at 364 vehicles; however, 12 of those trips are expected to be destined to the school-bus load zone on NE Ravenna Boulevard and 43 would be staff destined to on-site or on-street parking. The remaining 309 trips could be family drivers bringing students to school and using the automobile load/unload loop.

School arrival traffic in the morning tends to be compressed into a 15 to 20-minute period. Counts performed at Mercer Middle School in November 2021 found arriving student trips in the morning compressed with about 39% occurring in the peak 15 minutes. Queue analysis was performed for the peak 15-minute period assuming an equivalent hourly traffic flow of 482 vehicles per hour (39% × 309 × 4). Although the load zone would have sufficient length for up to 17 vehicles to unload at a time, only 10 were assumed for this analysis. This information was entered into a queueing model, which predicted an estimated 95th-percentile queue of 8 vehicles. Therefore, the estimated load zone is expected to accommodate morning drop-off activities.

Some family drivers may choose to use on-street parking in the vicinity to drop off students a block or more from the school in order to limit time in the load/unload zone. The number of families that choose this option would likely vary depending on many factors including: the school-of-origin (which school is occupying the site at that time); the starting and ending points for family drivers during the drop-off or pick-up trips (e.g., beginning at home and then destined to/from work or back home); availability of school-bus and/or Orca passes for those students; and weather conditions.

3.4.3. Afternoon Dismissal

Although the queue analysis and estimation model are reasonable for application to morning arrival queues, the afternoon queueing conditions are different. Parents often arrive prior to school dismissal during a time when no vehicles are being loaded (or serviced). This causes vehicle queues to develop prior to the student dismissal. Field observation conducted by Heffron Transportation staff at other schools has found that the maximum afternoon queues occur just prior to dismissal, and typically dissipate in within 10 to 15 minutes after dismissal as students load into their vehicles.

Heffron Transportation staff observed the afternoon vehicle queue just prior to dismissal at Aki Kurose Middle School in October 2016. Aki Kurose had a student enrollment of 741 students,[21] and 32 queued vehicles were counted along the school frontages just prior to dismissal. Factoring up to reflect an enrollment of 1,000 students results in an estimated afternoon queue of 44 vehicles. Based upon these observations, it is expected that without management measures, maximum afternoon vehicle queues generated by the proposed school would likely exceed the 17-stall capacity of the load zone along NE 68th Street and with potential to spill out on to NE Ravenna Boulevard. Therefore, a Transportation Management Plan (TMP)—with measures to address and minimize possible queuing impacts—is recommended in the Mitigation section. As typically occurs at most Seattle elementary and middle schools, family drivers are expected to use unoccupied on-street parking stalls (or off-street parking such as in the nearby park-and-ride lot) to wait for dismissal and the load zone to become available or to park and walk students from the building. The on-street parking utilization study results indicate there is adequate unused parking to accommodate the excess queuing demand in the early afternoon. Consistent monitoring of the load/unload area and related queuing conditions is recommended at the beginning of each school year followed by regular monitoring as needed to address queuing concerns.

The potential for queues to extend beyond the NE 68th Street load zone could be mitigated by measures implemented as part of the TMP and staff management of the load/unload zone. Consistent staff monitoring of the load/unload area and related queuing conditions is recommended at the beginning of each school year followed by regular monitoring as needed to address queuing concerns.

3.4.4. Site Access Operations

The analysis indicates that the school driveway intersection on NE 68th Street would operate at LOS A overall with all movements at LOS A during both peak hours.

[21] *Seattle Public Schools*, Online Enrollment Reporting (P223), October 2016.

3.5. Parking Supply and Demand

3.5.1. Changes to Parking Supply

Because the school site is located within an Urban Center, there is no City of Seattle minimum code requirement for parking supply and no code-departure for reduced parking would be required. However, the project would reconfigure and reduce on-site parking, providing a total of 18 stalls in two lots (2 ADA stalls in the northeast lot and 16 stalls in the south lot).

The project would convert the existing school bus only zone on NE 68th Street to a school load zone for automobiles. During the morning arrival and afternoon departure periods, these spaces would be signed for School Load Only, but could be available for parking at other times of day. No other changes have been identified in the study area that would affect the on-street parking supply.

3.5.2. Parking Demand

School Day Parking

With the proposed addition and the school operating at its planned capacity of 1,000 students, the school could have up to 108 employees (about 27 more than would be expected for a middle school in the existing building without the project). Parking demand estimates were derived using the same rates and mode-of-travel assumptions described previously in Section 2.5.4. Based on the expected number of employees at the enrollment capacity, the school could generate peak demand of 43 to 55 parked vehicles with variations likely depending on the number of part-time staff and visitors/volunteers on site at any given time. Of these, 16 vehicles could be accommodated on site and 27 to 39 vehicles would need to park off-site. Some school parking (19 to 25 vehicles) may continue to occur within the paved I-5 right-of-way that is adjacent to the northeast lot. Some of the excess demand is expected to use nearby on-street parking.

As presented previously, there are 382 on-street parking spaces within the site vicinity, and 248 vehicles were parked in them during the midday hours, leaving 134 unused spaces. This occupancy level reflected conditions with the John Martshall School unoccupied by students. Combined with the potential overspill demand, the number of unused parking spaces with the proposed school occupied by an interim 1,000-student middle school would range from 132 to 95 spaces. Overall school-day utilization is expected to remain between 65% and 75%, which is acceptable parking utilization by the City and school impacts would not be considered significant.

Event Parking

John Marshall School may host events periodically throughout the school year. Many of the events would have relatively modest attendance including PTSA monthly board meetings and monthly general membership meetings, parent meetings for clubs, and film screening nights. Larger events could include the Winter Concert, Math Night, Science Night, Multicultural Night, Jazz, Band, and Orchestra Concerts, Talent Shows, and/or fundraising events. The largest evening events held for middle schools are typically the annual Open House (Curriculum Night) in late September.

The on-street parking survey results indicated an average of 102 unused on-street parking spaces (out of 382 total) in the school vicinity on evenings. Up to 57 additional spaces could be utilized before reaching 85% occupancy, which is the level at which the City considers parking to be effectively full and may examine additional parking management measures. The adjacent Green Lake Park-and-Ride lot could be used for occasional evening event parking. Observations of the northern portion of this lot during weekday evenings indicate that about 70 stalls were unoccupied.

Observations of large-event parking demand were conducted by Heffron Transportation during the Aki Kurose Middle School Curriculum Night on Thursday, October 19, 2023. Based on a comparison to non-event-might conditions, the event is estimated to have generated 192 parked vehicles. Based on enrollment at that time, the event generated about 0.24 vehicles per enrolled student. With the John Marshall School occupied as an interim middle school operating at its planned future capacity (1,000 students) and with no transit adjustment, it could generate demand of up to 240 vehicles. After accounting for the vehicles that could park on site or off-street within the Green Lake Park-and-Ride lot, the overspill could exceed the available supply. In this case, on-street parking within 800 feet of the school site would be at or above 100% utilized.

It is recommended that the District development an Event Management Plan to reduce parking impacts during events that have potential attendance of 500 or more. Measures could include: 1) separating large events by grade to reduce overall attendance on any given evening; 2) holding large events at an off-site location; and/or 3) making use of off-site parking (e.g., Green Lake Park-and-Ride lot or Calvary Christian Assembly church located at 6801 Roosevelt Way NE about a 7-minute walk from the site). Based on the historical event schedules and attendance provided by middle school principals, there are typically between 7 and 10 events each year that could attract attendance of 500 or more, including Curriculum Night, Math Night, Literacy Night, and family affinity group nights. However, the principals indicated that these larger events could be split over two or more nights, if needed to reduce peak event parking demand.[22]

3.6. Traffic Safety

The collision data provided for the study area did not indicate any unusual collision patterns that would impact or be impacted by the proposed project. The project could increase traffic at the study-area intersections and statistically, the number of collisions could increase as traffic increases. The project does not include changes to the roadway network that are expected to result in new adverse safety concerns.

3.7. Transit

Some transit trips are expected to be generated by teachers or staff at the site. Based on the mode-of-travel data presented previously in the Parking section (2.5.4), about 26% of school employees (about 28) may use transit for daily commutes. Some student trips may also occur on Metro Transit since all students aged 18 and younger in King County are eligible for fare-free transit. SPS coordinates with Metro to address expected student demand on certain routes. The John Marshall School site is expected to be outside of the walk boundary for interim schools that will occupy the building. Therefore, all students are likely to be eligible for school-bus transportation while their school is housed at the site on an interim basis. Based on these factors, the project is not expected to result in significant adverse impacts to transit facilities or service.

3.8. Non-Motorized Facilities

John Marshall School, with increased enrollment capacity, is expected to generate pedestrian trips within the site vicinity. It is anticipated that some increase in pedestrian activity would occur along NE Ravenna Boulevard adjacent to the school, and NE 68th Street to the north. There could also likely be increases in bicycle trips within the site vicinity by staff and students who live within cycling distance.

The site frontages already have sidewalks and marked crosswalks at nearby intersections. The bicycle lanes along NE Ravenna Boulevard offer additional opportunities for employees and students to bicycle

[22] Email description of personal communication, C. Hendricks, C. Watters (Mercer MS), and C. Lowery (Aki Kurose MS), May 7, 2007.

to and from the site. On site, the project would provide 30 bicycle parking spaces (20 long-term covered and secured spaces and 10 short-term spaces). The proposed number of bicycle parking stalls is fewer than would be required by City code and a departure would be requested. Since John Marshall School will be used as an interim site, school populations would be transient and relocated for one to three years. Few if any students are expected to live in proximity to allow for regular bicycling to and from school. The number of stalls proposed is intended to support staff and students that may live within cycling distance. The project is not expected to result in adverse impacts to non-motorized facilities.

3.9. Short-Term Construction Impacts

Construction is planned to start in summer 2027 and end prior to fall 2029 when the school is planned to be ready for occupancy as an interim school. The school would not be occupied during construction.

3.9.1. Construction-Period Parking Conditions

Some parking by construction workers may occur on site and some are also expected to park on-street in the site vicinity. Although parking demand generated by construction workers may be noticeable to some local residents, the parking occupancy on the surrounding roadways was found to be about 65% to 69% utilized during weekdays with 110 to 134 unused spaces on weekdays. The unused spaces are expected to accommodate the temporary added demand during construction and is not expected to result in significant adverse impacts to study-area parking conditions.

3.9.2. Construction-Period Earthwork and Employee Activity

The construction effort would include some demolition and earthwork (excavation and fill for storm systems and for paving) estimated to require transporting up to about 4,400 cubic yards (cy) of material. Assuming an average of 20-cubic yards per truck (truck/trailer combination), the excavation and fill effort could generate about 220 truckloads (220 trucks in, 220 trucks out). The earthwork cut, fill, grading, and stripping activities are typically scheduled to occur during summer months. Assuming all transport occurs over about five weeks, this would result in an average of about 9 truck trips per day (9 in, 9 out) and 1 or 2 truck trips per hour over 25 weekdays. This volume of truck traffic may be noticeable to residents living in the immediate vicinity. Access would occur using NE 65th Street, northbound NE Ravenna Boulevard, and eastbound NE 68th Street.[23] Hauling and deliveries would be concentrated at the northeast portion of the site; the Oswego Place NE access would be designated for emergency egress and special deliveries only. The hauling and earthwork efforts would be short in duration and would not result in significant adverse traffic impacts.

The construction effort would also involve employee and equipment trips to and from the site. Construction workers usually arrive before the morning peak traffic period and depart prior to the commuter PM peak period; school construction work shifts are usually from 7:00 A.M. to 3:30 P.M., with workers arriving between 6:30 and 6:45 A.M., but work not starting until 7:00 A.M. The number of workers at the project site at any one time would vary depending upon the construction element being implemented.

[23] Skanska Logistics Plan, March 2026.

4. SUMMARY AND RECOMMENDATIONS

The following sections summarize the findings and recommendations of the analysis.

4.1. Short-Term Conditions – Construction

- Construction is planned to begin in summer 2027 with occupancy of the school possible by fall 2029. During construction, the school would not be occupied as an interim school.

- Earthwork and demolition transport during construction is estimated to require an average of 9 truck trips per day (9 in, 9 out) and 1 to 2 truck trips per hour over 25 days. This volume of truck traffic may be noticeable to residents living in the immediate vicinity. Access would occur using NE 65th Street, northbound NE Ravenna Boulevard, and eastbound NE 68th Street. The earthwork hauling effort would be short in duration and would not result in significant adverse traffic impacts.

It is recommended that the contractor and SPS develop a Construction Transportation Management Plan. Details to be included in this plan are described in Section 4.3.

4.2. Long-Term Conditions – Operations

- With the proposed addition, John Marshall School could serve as an interim school site for either a 1,000-students middle school or a 650-student elementary school. Based on staffing at SPS middle school, it could have up to 108 faculty and staff members.

- A middle school would generate more traffic than an elementary school, and was therefore, used as the worst-case analysis condition.

- Compared use up to its current capacity, an interim 1,000-student middle school could generate net increases of 167 trips (89 in, 78 out) in the morning peak hour (8:00 to 9:00 A.M.) and 86 trips (37 in, 49 out) in the afternoon peak hour (3:15 to 4:15 P.M.).

- The additional traffic and pedestrian activity generated by the proposed project is expected to add delay to some study-area intersections and turning movements during morning and afternoon peak hours. The three signalized intersections are forecast to remain operating at LOS D or better during both peak hours and the unsignalized intersections are forecast to remain operating at LOS B or better overall with all movements operating at LOS D or better during both peak hours.

- School bus load/unload would continue to occur along the NE Ravenna Boulevard frontage where it is currently located. During years in which the occupying school operates more buses than can be accommodated in the bus zone, SPS would platoon school bus arrivals to ensure that they do not exceed the available space.

- Passenger-vehicle load/unload would occur curb-side along the south side of NE 68th Street along the school's frontage. The estimated 17-vehicle queuing capacity is expected to accommodate morning drop-off activities. Management measures would be implemented to minimize afternoon vehicle queues.

- At the proposed enrollment capacity of 1,000 students, the school may generate peak demand of 43 to 55 parked vehicles. Of these, 16 vehicles could be accommodated on site and 27 to 39

vehicles would need to park off-site. Some school parking (up to 26 additional vehicles) may continue to occur within the paved I-5 right-of-way that is adjacent to the northeast lot. Some of the excess demand is expected to use nearby on-street parking.

- Occasional large evening events could draw large attendances. With the John Marshall School occupied as an interim middle school operating at its planned future capacity (1,000 students), it could generate demand of up to 240 vehicles. It is recommended that the District develop an Event Management Plan to reduce parking impacts during events that have potential attendance higher than 500 people.

4.3. Recommendations

The following sections identify measures to reduce adverse impacts during short-term construction and long-term operations of John Marshall School with the proposed addition and planned interim school use. With these measures the project would not result in significant adverse transportation impacts.

4.3.1. Short-Term Conditions – Construction

A. **Construction Transportation Management Plan (CTMP):** The District should require the selected contractor to develop a Construction Transportation Management Plan (CTMP) that addresses traffic and pedestrian control during construction of the new facility. It would define truck routes, lane closures, walkway closures, and parking or load/unload area disruptions, as necessary. To the extent possible, the CTMP would direct trucks along the shortest route to arterials and away from residential streets to avoid unnecessary conflicts with resident and pedestrian activity. The CTMP may also include measures to keep adjacent streets clean on a daily basis at the truck exit points (such as street sweeping or on-site truck wheel cleaning) to reduce tracking dirt offsite.

4.3.2. Long-Term Conditions – Operations

B. **Initial School Transportation Management Plan (TMP):** Prior to opening the expanded school for interim use by a middle or elementary school, the District should establish a Transportation Management Plan (TMP) designed to minimize automobile trips to and from the site and to educate parents and students about the preferred access and circulation patterns for the interim school. The TMP should include the following key components.

1. *Communicate bus transportation options for students*
2. *Communication of other transportation options to families*
3. *Communication of ride-sharing opportunities*
4. *Directions for load/unload and parking procedures*
5. *School bus staging and load/unload procedures*

Consistent staff monitoring of the load/unload area and related queuing conditions is recommended at the beginning of each school year followed by regular monitoring as needed to address queuing concerns.

C. **Subsequent School TMPs:** Prior to occupancy for interim use by other schools, the District should update the TMP to reflect any needed modifications. School bus staging adjustments may be needed if most or all students qualify based on distance from the site.

D. **Event Management Plan:** Prior to each school year, the District should work with the school principal to develop an Event Management Plan to reduce parking impacts during large evening events (those expected to have 500 or more attendees/participants). Measures could include: 1)

separating large events by grade to reduce overall attendance on any given evening; 2) holding large events at an off-site location; and/or 3) securing agreements for off-site/off-street parking such as at the adjacent Green Lake Park-and-Ride lot or nearby church parking lots).

E. **Develop Neighborhood Communication Plan for School Events:** The District and school administration should develop a neighborhood communication plan to inform nearby neighbors of events each year. The plan should be updated annually (or as events are scheduled) and should provide information about the dates, times, and rough magnitude of attendance. The communication would be intended to allow neighbors to plan for the occasional increase in on-street parking demand that would occur with large events. SPS should coordinate the Neighborhood Communication Plan with each principal prior to occupation by their school.

F. **Update right-of-way and curb-side signage:** The District should work with SDOT to confirm the locations, extent, and signage (such as times of restrictions) of the school-bus load zone on NE Ravenna Boulevard and the passenger-vehicle load/unload zone on NE 68th Street.

APPENDIX A

LEVEL OF SERVICE DEFINITIONS

Levels of service (LOS) are qualitative descriptions of traffic operating conditions. These levels of service are designated with letters ranging from LOS A, which is indicative of good operating conditions with little or no delay, to LOS F, which is indicative of stop-and-go conditions with frequent and lengthy delays. Levels of service for this analysis were developed using procedures presented in the *Highway Capacity Manual, Sixth Edition* (Transportation Research Board, 2016).

Signalized Intersections

Level of service for signalized intersections is defined in terms of average delay for all vehicles that travel through the intersection. Delay can be a cause of driver discomfort, frustration, inefficient fuel consumption, and lost travel time. Specifically, level-of-service criteria are stated in terms of the average delay per vehicle in seconds. Delay is a complex measure and is dependent on a number of variables including: number and type of vehicles by movement, intersection lane geometry, signal phasing, the amount of green time allocated to each phase, transit stops and parking maneuvers. Table A-1 shows the level of service criteria for signalized intersections from the *Highway Capacity Manual, Sixth Edition.*

Table A-1. Level of Service for Signalized Intersections

Level of Service	Average Control Delay Per Vehicle
A	≤ 10 seconds
B	> 10 – 20 seconds
C	> 20 – 35 seconds
D	> 35 – 55 seconds
E	> 55 – 80 seconds
F	> 80 seconds

Source: Transportation Research Board, Highway Capacity Manual, Exhibit 19.8, 2016.

Unsignalized Intersections

For unsignalized intersections, level of service is based on the average delay per vehicle for each turning movement. The level of service for all-way stop or roundabout-controlled intersections is based upon the average delay for all vehicles that travel through the intersection. The level of service for a one- or two-way, stop-controlled intersection, delay is related to the availability of gaps in the main street's traffic flow, and the ability of a driver to enter or pass through those gaps. Table A-2 shows the level of service criteria for unsignalized intersections from the *Highway Capacity Manual, Sixth Edition*.

Table A-2. Level of Service Criteria for Unsignalized Intersections

Level of Service	Average Control Delay per Vehicle
A	0 – 10 seconds
B	> 10 – 15 seconds
C	> 15 – 25 seconds
D	> 25 – 35 seconds
E	> 35 – 50 seconds
F	> 50 seconds

Source: Transportation Research Board, Highway Capacity Manual, Exhibit 20.2, 2016.

APPENDIX B

PARKING UTILIZATION STUDY DATA

Block Face ID	Street Name	Street Segment	Side of Street	Parking Supply																							Total Spaces by Survey Period		
				Unrestricted	1hr 7a-6p Exc Sun/Hol	1hr 5a-7p Everyday	2hr 7a-6p Exc Sun/Hol	2hr 7a-4p Mon-Fri, 7a-6p, Sat, No PArking 4-6p Mon-Fri	Paid, 2-hr Max, 8a-8p Exc Sun	Paid, 30min Max, 8a-8p Exc Sun	2hr 7a-7p Mon-Fri, Exc Zone 19	Disabled, 4hr Limit	Disabled	30min CVLZ 7a-8p Exc Sun/Hol	30min L/U 7a-8p Exc Sun/Hol	30min L/U 7a-6p Exc Sun/Hol	30min L/U Only	3min PLZ	3min PLZ 7a-6p Exc Sun/Hol	PLZ, Sundays Only	No Stops 7a-5p Mon/Thur/Fri	No Parking 2-5a	Metro Busses Only 4-7p Mon-Fri (No Parking 2-5a)	Carshare Only	No Stops 7-9a, 4-6p Exc Sat/Sun/Hol	No Parking 4-6p Exc Sat/Sun/Hol	School Bus Only 7-9a, 1-4p, Exc Sat/Sun/Hol	Total Parking Spaces	*Morning (7:00AM)*	*Mid-Morning (10:30AM)*	*Evening (7:30PM)*
AA	NE RAVENNA SR BV	EAST GREEN LAKE WAY N AND WOODLAWN AVE NE	S	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6	6	6
AB	NE RAVENNA SR BV	EAST GREEN LAKE WAY N AND WOODLAWN AVE NE	N	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
AC	NE RAVENNA EB BV	EAST GREEN LAKE DR N AND WOODLAWN AVE NE	SW	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
AD	NE RAVENNA EB BV	EAST GREEN LAKE DR N AND WOODLAWN AVE NE	NE	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
AE	NE RAVENNA WB BV	NE 71ST ST AND WOODLAWN AVE NE	SW	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
AF	NE RAVENNA WB BV	NE 71ST ST AND WOODLAWN AVE NE	NE	0	0	0	0	0	4	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5	5	5
AG	WOODLAWN AVE NE	NE RAVENNA WB BV AND NE 71ST ST	W	0	0	0	0	0	5	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7	7	7
AH	WOODLAWN AVE NE	NE RAVENNA WB BV AND NE 71ST ST	E	0	0	0	0	0	6	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7	7	7
AI	5TH AVE NE	WEEDIN PL NE AND NE 71ST ST	W	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	0
AJ	5TH AVE NE	WEEDIN PL NE AND NE 71ST ST	E	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	0
AK	WOODLAWN AVE NE	5TH AVE NE AND NE RAVENNA EB BV	NW	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2	2
AL	WOODLAWN AVE NE	5TH AVE NE AND NE RAVENNA EB BV	SE	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	0
AM	WOODLAWN AVE NE	NE RAVENNA EB BV AND NE RAVENNA WB BV	NW	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	0
AN	WOODLAWN AVE NE	NE RAVENNA EB BV AND NE RAVENNA WB BV	SE	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	0
AO	NE 70TH ST	NE RAVENNA WB BV AND OSWEGO PL NE	N	0	0	0	0	0	5	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	6	6	6	6
AP	NE 70TH ST	NE RAVENNA WB BV AND OSWEGO PL NE	S	0	0	0	0	0	3	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	5	5	5	5
AQ	NE 70TH ST	OSWEGO PL NE AND 5TH AVE NE	N	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4
AR	NE 70TH ST	OSWEGO PL NE AND 5TH AVE NE	S	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6	6	6
AS	NE 70TH ST	5TH AVE NE AND 6TH S AVE NE	N	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	0
AT	NE 70TH ST	5TH AVE NE AND 6TH S AVE NE	S	1	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8	8	8
AU	NE RAVENNA EB BV	WOODLAWN AVE NE AND NE 68TH ST	SW	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	16	16	16
AV	NE RAVENNA EB BV	WOODLAWN AVE NE AND NE 68TH ST	NE	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	0
AW	NE RAVENNA WB BV	WOODLAWN AVE NE AND NE 68TH ST	SW	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	0
AX	NE RAVENNA WB BV	WOODLAWN AVE NE AND NE 68TH ST	NE	4	0	0	2	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	8	8	8	8
AY	OSWEGO PL NE	NE 68TH ST AND NE 70TH ST	SW	9	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14	14	14	14
AZ	OSWEGO PL NE	NE 68TH ST AND NE 70TH ST	NE	11	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	12	12	12	12
BA	WEEDIN PL NE	NE 69TH ST AND 5TH AVE NE	SW	5	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	6	6	6	6
BB	WEEDIN PL NE	NE 69TH ST AND 5TH AVE NE	NE	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7	7	7
BC	NE 69TH ST	WEEDIN PL NE AND DEAD END	N	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	0
BD	NE 69TH ST	WEEDIN PL NE AND DEAD END	S	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1
BE	WEEDIN PL NE	NE 68TH ST AND NE 69TH ST	SW	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8	8	8
BF	WEEDIN PL NE	NE 68TH ST AND NE 69TH ST	NE	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	11	11	11
BG	NE 68TH ST	NE RAVENNA EB BV AND NE RAVENNA WB BV	N	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	0
BH	NE 68TH ST	NE RAVENNA EB BV AND NE RAVENNA WB BV	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BI	NE 68TH ST	NE RAVENNA WB BV AND OSWEGO PL NE	N	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7	7	7
BJ	NE 68TH ST	NE RAVENNA WB BV AND OSWEGO PL NE	S	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7	7	7
BK	NE 68TH ST	OSWEGO PL NE AND WEEDIN PL NE	N	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6	6	6

Block Face ID	Street Name	Street Segment	Side of Street	Parking Supply																							Total Parking Spaces	Total Spaces by Survey Period		
				Unrestricted	1hr 7a-6p Exc Sun/Hol	1hr 5a-7p Everyday	2hr 7a-6p Exc Sun/Hol	2hr 7a-4p Mon-Fri, 7a-6p, Sat. No PArking 4-6p Mon-Fri	Paid, 2-hr Max, 8a-8p Exc Sun	Paid, 30min Max. 8a-8p Exc Sun	2hr 7a-7p Mon-Fri, Exc Zone 19	Disabled, 4hr Limit	Disabled	30min CVLZ 7a-8p Exc Sun/Hol	30min L/U 7a-8p Exc Sun/Hol	30min L/U 7a-6p Exc Sun/Hol	30min L/U Only	3min PLZ	3min PLZ 7a-6p Exc Sun/Hol	PLZ, Sundays Only	No Stops 7a-5p Mon/Thur/Fri	No Parking 2-5a	Metro Busses Only 4-7p Mon-Fri (No Parking 2-5a)	Carshare Only	No Stops 7-9a, 4-6p Exc Sat/Sun/Hol	No Parking 4-6p Exc Sat/Sun/Hol	School Bus Only 7-9a, 1-4p, Exc Sat/Sun/Hol		*Morning (7:00AM)*	*Mid-Morning (10:30AM)*	*Evening (7:30PM)*
BL	NE 68TH ST	OSWEGO PL NE AND WEEDIN PL NE	S	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	*7*	*7*	*7*
BM	5TH AVE NE	NE 65TH E ST AND 800' BOUNDARY	SW	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*	*0*
BN	5TH AVE NE	NE 65TH E ST AND 800' BOUNDARY	NE	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	*3*	*3*	*3*
BO	NE RAVENNA EB BV	NE 68TH ST AND NE 65TH ST	SW	20	0	4	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	25	*25*	*25*	*25*
BP	NE RAVENNA EB BV	NE 68TH ST AND NE 65TH ST	NE	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*	*0*
BQ	NE RAVENNA WB BV	NE 68TH ST AND NE 65TH ST	SW	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*	*0*
BR	NE RAVENNA WB BV	NE 68TH ST AND NE 65TH ST	NE	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	18	28	*10*	*28*	*28*
BS	OSWEGO PL NE	NE 65TH ST AND DEAD END	W	9	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	3	0	0	0	0	0	0	13	*13*	*13*	*13*
BT	OSWEGO PL NE	NE 65TH ST AND DEAD END	E	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	*11*	*11*	*11*
BU	WEEDIN W PL NE	8TH AVE NE AND NE 68TH ST	SW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	6	0	0	0	0	16	*16*	*16*	*16*
BV	WEEDIN W PL NE	8TH AVE NE AND NE 68TH ST	NE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	0	0	0	0	0	20	*20*	*20*	*20*
BW	8TH AVE NE	NE 67TH ST AND 800' BOUNDARY	W	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*	*0*
BX	8TH AVE NE	NE 67TH ST AND 800' BOUNDARY	E	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	*3*	*3*	*3*
BY	NE 67TH ST	8TH AVE NE AND 800' BOUNDARY	N	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	*4*	*4*	*4*
BZ	NE 67TH ST	8TH AVE NE AND 800' BOUNDARY	S	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	*5*	*5*	*5*
CA	8TH AVE NE	WEEDIN PL NE AND NE 67TH ST	W	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*	*0*
CB	8TH AVE NE	WEEDIN PL NE AND NE 67TH ST	E	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	*2*	*2*	*2*
CC	NE 66TH ST	8TH AVE NE AND 800' BOUNDARY	N	0	0	0	0	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	*9*	*9*	*9*
CD	NE 66TH ST	8TH AVE NE AND 800' BOUNDARY	S	0	0	0	0	0	0	0	7	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	8	*8*	*8*	*8*
CE	8TH AVE NE	WEEDIN E PL NE AND WEEDIN W PL NE	W	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*	*0*
CF	8TH AVE NE	WEEDIN E PL NE AND WEEDIN W PL NE	E	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*	*0*
CG	WEEDIN E PL NE	WEEDIN PL NE AND 8TH AVE NE	NE	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*	*0*
CH	WEEDIN E PL NE	WEEDIN PL NE AND 8TH AVE NE	SW	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*	*0*
CI	8TH AVE NE	NE 65TH ST AND WEEDIN E PL NE	W	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	3	*3*	*3*	*3*
CJ	8TH AVE NE	NE 65TH ST AND WEEDIN E PL NE	E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	*2*	*2*	*2*
CK	NE 65TH ST	800' BOUNDARY AND 5TH W AVE NE	N	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	*2*	*2*	*2*
CL	NE 65TH ST	800' BOUNDARY AND 5TH W AVE NE	S	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	*3*	*3*	*3*
CM	NE 65TH ST	5TH W AVE NE AND 5TH E AVE NE	N	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*	*0*
CN	NE 65TH ST	5TH W AVE NE AND 5TH E AVE NE	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*0*	*0*	*0*
CO	NE 65TH ST	5TH E AVE NE AND HILLMAN PL NE	N	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	*2*	*2*	*2*
CP	NE 65TH ST	5TH E AVE NE AND HILLMAN PL NE	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	5	*5*	*5*	*5*
CQ	NE 65TH ST	HILLMAN PL NE AND NE RAVENNA EB BV	N	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	*4*	*4*	*4*
CR	NE 65TH ST	HILLMAN PL NE AND NE RAVENNA EB BV	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	*2*	*2*	*2*
CS	NE 65TH ST	NE RAVENNA EB BV AND NE RAVENNA WB BV	N	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*	*0*
CT	NE 65TH ST	NE RAVENNA EB BV AND NE RAVENNA WB BV	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*0*	*0*	*0*
CU	NE 65TH ST	NE RAVENNA WB BV AND OSWEGO PL NE	N	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*	*0*
CV	NE 65TH ST	NE RAVENNA WB BV AND OSWEGO PL NE	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*0*	*0*	*0*

Block Face ID	Street Name	Street Segment	Side of Street	Parking Supply: Unrestricted	1hr 7a-6p Exc Sun/Hol	1hr 5a-7p Everyday	2hr 7a-6p Exc Sun/Hol	2hr 7a-4p Mon-Fri, 7a-6p, Sat, No PArking 4-6p Mon-Fri	Paid, 2-hr Max, 8a-8p Exc Sun	Paid, 30min Max, 8a-8p Exc Sun	2hr 7a-7p Mon-Fri, Exc Zone 19	Disabled, 4hr Limit	Disabled	30min CVLZ 7a-8p Exc Sun/Hol	30min L/U 7a-8p Exc Sun/Hol	30min L/U 7a-6p Exc Sun/Hol	30min L/U Only	3min PLZ	3min PLZ 7a-6p Exc Sun/Hol	PLZ, Sundays Only	No Stops 7a-5p Mon/Thur/Fri	No Parking 2-5a	Metro Busses Only 4-7p Mon-Fri (No Parking 2-5a)	Carshare Only	No Stops 7-9a, 4-6p Exc Sat/Sun/Hol	No Parking 4-6p Exc Sat/Sun/Hol	School Bus Only 7-9a, 1-4p, Exc Sat/Sun/Hol	Total Parking Spaces	Total Spaces by Survey Period: Morning (7:00AM)	Mid-Morning (10:30AM)	Evening (7:30PM)
CW	NE 65TH ST	OSWEGO PL NE AND 8TH AVE NE	N	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
CX	NE 65TH ST	OSWEGO PL NE AND 8TH AVE NE	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CY	NE 65TH ST	8TH AVE NE AND 800' BOUNDARY	N	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
CZ	NE 65TH ST	8TH AVE NE AND 800' BOUNDARY	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DA	5TH AVE NE	800' BOUNDARY AND NE 65TH W ST	W	1	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	3	3	3	3
DB	5TH AVE NE	800' BOUNDARY AND NE 65TH W ST	E	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	0	0
DC	HILLMAN PL NE	800' BOUNDARY AND NE 65TH ST	W	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	0	0
DD	HILLMAN PL NE	800' BOUNDARY AND NE 65TH ST	E	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	0	0
DE	6TH AVE NE	800' BOUNDARY AND NE 65TH ST	W	7	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	7	7	7
DF	6TH AVE NE	800' BOUNDARY AND NE 65TH ST	E	7	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	7	7	7
DG	NE RAVENNA EB BV	NE 65TH ST AND 800' BOUNDARY	SW	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	13	13	13
DH	NE RAVENNA EB BV	NE 65TH ST AND 800' BOUNDARY	NE	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	0	0
DI	NE RAVENNA WB BV	NE 65TH ST AND 800' BOUNDARY	SW	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	0	0
DJ	NE RAVENNA WB BV	NE 65TH ST AND 800' BOUNDARY	NE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	0	0	0	0	11	11	11	11
DK	8TH AVE NE	800' BOUNDARY AND NE 65TH ST	W	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	3	3	3	3
DL	8TH AVE NE	800' BOUNDARY AND NE 65TH ST	E	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2	2
			TOTAL	204	7	4	7	2	31	2	30	1	1	1	2	4	2	3	1	1	3	41	6	4	2	5	18	382	364	382	382

				Supply			Parking Demand									Parking Demand								
				Total Spaces by Survey Period			Morning (7:00AM)			Mid-Morning (10:30AM)			Evening (7:30PM)			Morning (7:00AM)			Mid-Morning (10:30AM)			Evening (7:30PM)		
Block Face ID	Street Name	Street Segment	Side of Street	*Morning (7:00AM)*	*Mid-Morning (10:30AM)*	*Evening (7:30PM)*	Tuesday 3.17.26	Thursday 3.19.26	Average	Tuesday 3.17.26	Thursday 3.19.26	Average	Tuesday 3.17.26	Thursday 3.19.26	Average	Tuesday 3.17.26	Thursday 3.19.26	Average	Tuesday 3.17.26	Thursday 3.19.26	Average	Tuesday 3.17.26	Thursday 3.19.26	Average
AA	NE RAVENNA SR BV	EAST GREEN LAKE WAY N AND WOODLAWN AVE NE	S	***6***	***6***	***6***	0	3	2	0	3	2	4	5	5	0%	50%	25%	0%	50%	25%	67%	83%	75%
AB	NE RAVENNA SR BV	EAST GREEN LAKE WAY N AND WOODLAWN AVE NE	N	*0*	*0*	*0*	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA
AC	NE RAVENNA EB BV	EAST GREEN LAKE DR N AND WOODLAWN AVE NE	SW	*0*	*0*	*0*	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA
AD	NE RAVENNA EB BV	EAST GREEN LAKE DR N AND WOODLAWN AVE NE	NE	*0*	*0*	*0*	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA
AE	NE RAVENNA WB BV	NE 71ST ST AND WOODLAWN AVE NE	SW	*0*	*0*	*0*	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA
AF	NE RAVENNA WB BV	NE 71ST ST AND WOODLAWN AVE NE	NE	***5***	***5***	***5***	3	1	2	0	0	0	2	2	2	60%	20%	40%	0%	0%	0%	40%	40%	40%
AG	WOODLAWN AVE NE	NE RAVENNA WB BV AND NE 71ST ST	W	***7***	***7***	***7***	5	3	4	3	3	3	6	4	5	71%	43%	57%	43%	43%	43%	86%	57%	71%
AH	WOODLAWN AVE NE	NE RAVENNA WB BV AND NE 71ST ST	E	***7***	***7***	***7***	4	5	5	5	5	5	4	7	6	57%	71%	64%	71%	71%	71%	57%	100%	79%
AI	5TH AVE NE	WEEDIN PL NE AND NE 71ST ST	W	*0*	*0*	*0*	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA
AJ	5TH AVE NE	WEEDIN PL NE AND NE 71ST ST	E	*0*	*0*	*0*	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA
AK	WOODLAWN AVE NE	5TH AVE NE AND NE RAVENNA EB BV	NW	***2***	***2***	***2***	2	1	2	1	2	2	1	1	1	100%	50%	75%	50%	100%	75%	50%	50%	50%
AL	WOODLAWN AVE NE	5TH AVE NE AND NE RAVENNA EB BV	SE	*0*	*0*	*0*	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA
AM	WOODLAWN AVE NE	NE RAVENNA EB BV AND NE RAVENNA WB BV	NW	*0*	*0*	*0*	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA
AN	WOODLAWN AVE NE	NE RAVENNA EB BV AND NE RAVENNA WB BV	SE	*0*	*0*	*0*	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA
AO	NE 70TH ST	NE RAVENNA WB BV AND OSWEGO PL NE	N	***6***	***6***	***6***	2	0	1	2	3	3	3	3	3	33%	0%	17%	33%	50%	42%	50%	50%	50%
AP	NE 70TH ST	NE RAVENNA WB BV AND OSWEGO PL NE	S	***5***	***5***	***5***	3	2	3	2	3	3	4	4	4	60%	40%	50%	40%	60%	50%	80%	80%	80%
AQ	NE 70TH ST	OSWEGO PL NE AND 5TH AVE NE	N	***4***	***4***	***4***	6	4	5	6	5	6	6	6	6	150%	100%	125%	150%	125%	138%	150%	150%	150%
AR	NE 70TH ST	OSWEGO PL NE AND 5TH AVE NE	S	***6***	***6***	***6***	7	7	7	7	7	7	7	7	7	117%	117%	117%	117%	117%	117%	117%	117%	117%
AS	NE 70TH ST	5TH AVE NE AND 6TH S AVE NE	N	*0*	*0*	*0*	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA
AT	NE 70TH ST	5TH AVE NE AND 6TH S AVE NE	S	***8***	***8***	***8***	8	7	8	9	8	9	9	8	9	100%	88%	94%	113%	100%	106%	113%	100%	106%
AU	NE RAVENNA EB BV	WOODLAWN AVE NE AND NE 68TH ST	SW	***16***	***16***	***16***	16	15	16	15	15	15	14	17	16	100%	94%	97%	94%	94%	94%	88%	106%	97%
AV	NE RAVENNA EB BV	WOODLAWN AVE NE AND NE 68TH ST	NE	*0*	*0*	*0*	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA
AW	NE RAVENNA WB BV	WOODLAWN AVE NE AND NE 68TH ST	SW	*0*	*0*	*0*	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA
AX	NE RAVENNA WB BV	WOODLAWN AVE NE AND NE 68TH ST	NE	***8***	***8***	***8***	6	5	6	5	5	5	9	8	9	75%	63%	69%	63%	63%	63%	113%	100%	106%
AY	OSWEGO PL NE	NE 68TH ST AND NE 70TH ST	SW	***14***	***14***	***14***	23	16	20	19	18	19	19	17	18	164%	114%	139%	136%	129%	132%	136%	121%	129%
AZ	OSWEGO PL NE	NE 68TH ST AND NE 70TH ST	NE	***12***	***12***	***12***	11	11	11	13	12	13	14	10	12	92%	92%	92%	108%	100%	104%	117%	83%	100%
BA	WEEDIN PL NE	NE 69TH ST AND 5TH AVE NE	SW	***6***	***6***	***6***	5	8	7	9	7	8	8	8	8	83%	133%	108%	150%	117%	133%	133%	133%	133%
BB	WEEDIN PL NE	NE 69TH ST AND 5TH AVE NE	NE	***7***	***7***	***7***	7	9	8	8	9	9	8	9	9	100%	129%	114%	114%	129%	121%	114%	129%	121%
BC	NE 69TH ST	WEEDIN PL NE AND DEAD END	N	*0*	*0*	*0*	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA

				Supply			Parking Demand									Parking Demand								
				Total Spaces by Survey Period			Morning (7:00AM)			Mid-Morning (10:30AM)			Evening (7:30PM)			Morning (7:00AM)			Mid-Morning (10:30AM)			Evening (7:30PM)		
Block Face ID	Street Name	Street Segment	Side of Street	*Morning (7:00AM)*	*Mid-Morning (10:30AM)*	*Evening (7:30PM)*	Tuesday 3.17.26	Thursday 3.19.26	Average	Tuesday 3.17.26	Thursday 3.19.26	Average	Tuesday 3.17.26	Thursday 3.19.26	Average	Tuesday 3.17.26	Thursday 3.19.26	Average	Tuesday 3.17.26	Thursday 3.19.26	Average	Tuesday 3.17.26	Thursday 3.19.26	Average
BD	NE 69TH ST	WEEDIN PL NE AND DEAD END	S	***1***	***1***	***1***	1	1	1	1	1	1	1	1	1	100%	100%	100%	100%	100%	100%	100%	100%	100%
BE	WEEDIN PL NE	NE 68TH ST AND NE 69TH ST	SW	***8***	***8***	***8***	6	9	8	5	9	7	9	10	10	75%	113%	94%	63%	113%	88%	113%	125%	119%
BF	WEEDIN PL NE	NE 68TH ST AND NE 69TH ST	NE	***11***	***11***	***11***	6	5	6	6	7	7	8	11	10	55%	45%	50%	55%	64%	59%	73%	100%	86%
BG	NE 68TH ST	NE RAVENNA EB BV AND NE RAVENNA WB BV	N	*0*	*0*	*0*	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH	NE 68TH ST	NE RAVENNA EB BV AND NE RAVENNA WB BV	S	*0*	*0*	*0*	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA
BI	NE 68TH ST	NE RAVENNA WB BV AND OSWEGO PL NE	N	***7***	***7***	***7***	9	7	8	8	8	8	7	7	7	129%	100%	114%	114%	114%	114%	100%	100%	100%
BJ	NE 68TH ST	NE RAVENNA WB BV AND OSWEGO PL NE	S	***7***	***7***	***7***	4	6	5	5	6	6	8	8	8	57%	86%	71%	71%	86%	79%	114%	114%	114%
BK	NE 68TH ST	OSWEGO PL NE AND WEEDIN PL NE	N	***6***	***6***	***6***	4	6	5	4	5	5	8	7	8	67%	100%	83%	67%	83%	75%	133%	117%	125%
BL	NE 68TH ST	OSWEGO PL NE AND WEEDIN PL NE	S	***7***	***7***	***7***	6	9	8	5	7	6	8	7	8	86%	129%	107%	71%	100%	86%	114%	100%	107%
BM	5TH AVE NE	NE 65TH E ST AND 800' BOUNDARY	SW	*0*	*0*	*0*	4	4	4	5	4	5	4	4	4	Illegal	Illegal	Illegal	Illegal	Illegal	Illegal	Illegal	Illegal	Illegal
BN	5TH AVE NE	NE 65TH E ST AND 800' BOUNDARY	NE	***3***	***3***	***3***	6	6	6	5	4	5	5	5	5	200%	200%	200%	167%	133%	150%	167%	167%	167%
BO	NE RAVENNA EB BV	NE 68TH ST AND NE 65TH ST	SW	***25***	***25***	***25***	21	17	19	21	17	19	20	24	22	84%	68%	76%	84%	68%	76%	80%	96%	88%
BP	NE RAVENNA EB BV	NE 68TH ST AND NE 65TH ST	NE	*0*	*0*	*0*	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA
BQ	NE RAVENNA WB BV	NE 68TH ST AND NE 65TH ST	SW	*0*	*0*	*0*	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA
BR	NE RAVENNA WB BV	NE 68TH ST AND NE 65TH ST	NE	***10***	***28***	***28***	7	12	10	9	11	10	10	14	12	70%	120%	95%	32%	39%	36%	36%	50%	43%
BS	OSWEGO PL NE	NE 65TH ST AND DEAD END	W	***13***	***13***	***13***	4	3	4	6	6	6	6	3	5	31%	23%	27%	46%	46%	46%	46%	23%	35%
BT	OSWEGO PL NE	NE 65TH ST AND DEAD END	E	***11***	***11***	***11***	9	7	8	9	7	8	8	5	7	82%	64%	73%	82%	64%	73%	73%	45%	59%
BU	WEEDIN W PL NE	8TH AVE NE AND NE 68TH ST	SW	***16***	***16***	***16***	TNP	TNP	TNP	TNP	TNP	TNP	0	0	0	TNP	TNP	TNP	TNP	TNP	TNP	0%	0%	0%
BV	WEEDIN W PL NE	8TH AVE NE AND NE 68TH ST	NE	***20***	***20***	***20***	TNP	TNP	TNP	TNP	TNP	TNP	0	0	0	TNP	TNP	TNP	TNP	TNP	TNP	0%	0%	0%
BW	8TH AVE NE	NE 67TH ST AND 800' BOUNDARY	W	*0*	*0*	*0*	2	0	1	0	0	0	0	0	0	Illegal	NA	Illegal	NA	NA	NA	NA	NA	NA
BX	8TH AVE NE	NE 67TH ST AND 800' BOUNDARY	E	***3***	***3***	***3***	0	2	1	2	2	2	3	2	3	0%	67%	33%	67%	67%	67%	100%	67%	83%
BY	NE 67TH ST	8TH AVE NE AND 800' BOUNDARY	N	***4***	***4***	***4***	5	6	6	5	5	5	6	6	6	125%	150%	138%	125%	125%	125%	150%	150%	150%
BZ	NE 67TH ST	8TH AVE NE AND 800' BOUNDARY	S	***5***	***5***	***5***	6	5	6	5	5	5	6	6	6	120%	100%	110%	100%	100%	100%	120%	120%	120%
CA	8TH AVE NE	WEEDIN PL NE AND NE 67TH ST	W	*0*	*0*	*0*	3	0	2	0	0	0	0	0	0	Illegal	NA	Illegal	NA	NA	NA	NA	NA	NA
CB	8TH AVE NE	WEEDIN PL NE AND NE 67TH ST	E	***2***	***2***	***2***	0	2	1	2	2	2	3	3	3	0%	100%	50%	100%	100%	100%	150%	150%	150%
CC	NE 66TH ST	8TH AVE NE AND 800' BOUNDARY	N	***9***	***9***	***9***	7	10	9	10	9	10	8	9	9	78%	111%	94%	111%	100%	106%	89%	100%	94%
CD	NE 66TH ST	8TH AVE NE AND 800' BOUNDARY	S	***8***	***8***	***8***	8	10	9	7	8	8	9	8	9	100%	125%	113%	88%	100%	94%	113%	100%	106%
CE	8TH AVE NE	WEEDIN E PL NE AND WEEDIN W PL NE	W	*0*	*0*	*0*	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA
CF	8TH AVE NE	WEEDIN E PL NE AND WEEDIN W PL NE	E	*0*	*0*	*0*	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA

				Supply			Parking Demand									Parking Demand								
				Total Spaces by Survey Period			Morning (7:00AM)			Mid-Morning (10:30AM)			Evening (7:30PM)			Morning (7:00AM)			Mid-Morning (10:30AM)			Evening (7:30PM)		
Block Face ID	Street Name	Street Segment	Side of Street	*Morning (7:00AM)*	*Mid-Morning (10:30AM)*	*Evening (7:30PM)*	Tuesday 3.17.26	Thursday 3.19.26	Average	Tuesday 3.17.26	Thursday 3.19.26	Average	Tuesday 3.17.26	Thursday 3.19.26	Average	Tuesday 3.17.26	Thursday 3.19.26	Average	Tuesday 3.17.26	Thursday 3.19.26	Average	Tuesday 3.17.26	Thursday 3.19.26	Average
CG	WEEDIN E PL NE	WEEDIN PL NE AND 8TH AVE NE	NE	*0*	*0*	*0*	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA
CH	WEEDIN E PL NE	WEEDIN PL NE AND 8TH AVE NE	SW	*0*	*0*	*0*	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA
CI	8TH AVE NE	NE 65TH ST AND WEEDIN E PL NE	W	***3***	***3***	***3***	3	1	2	1	2	2	1	2	2	100%	33%	67%	33%	67%	50%	33%	67%	50%
CJ	8TH AVE NE	NE 65TH ST AND WEEDIN E PL NE	E	***2***	***2***	***2***	0	0	0	1	0	1	0	0	0	0%	0%	0%	50%	0%	25%	0%	0%	0%
CK	NE 65TH ST	800' BOUNDARY AND 5TH W AVE NE	N	***2***	***2***	***2***	2	2	2	3	1	2	1	2	2	100%	100%	100%	150%	50%	100%	50%	100%	75%
CL	NE 65TH ST	800' BOUNDARY AND 5TH W AVE NE	S	***3***	***3***	***3***	4	2	3	3	2	3	3	2	3	133%	67%	100%	100%	67%	83%	100%	67%	83%
CM	NE 65TH ST	5TH W AVE NE AND 5TH E AVE NE	N	*0*	*0*	*0*	0	1	1	0	0	0	0	1	1	NA	Illegal	Illegal	NA	NA	NA	NA	Illegal	Illegal
CN	NE 65TH ST	5TH W AVE NE AND 5TH E AVE NE	S	*0*	*0*	*0*	0	0	0	0	0	0	1	0	1	NA	NA	NA	NA	NA	NA	Illegal	NA	Illegal
CO	NE 65TH ST	5TH E AVE NE AND HILLMAN PL NE	N	***2***	***2***	***2***	0	0	0	1	0	1	2	2	2	0%	0%	0%	50%	0%	25%	100%	100%	100%
CP	NE 65TH ST	5TH E AVE NE AND HILLMAN PL NE	S	***5***	***5***	***5***	1	0	1	0	0	0	0	0	0	20%	0%	10%	0%	0%	0%	0%	0%	0%
CQ	NE 65TH ST	HILLMAN PL NE AND NE RAVENNA EB BV	N	***4***	***4***	***4***	2	2	2	1	3	2	2	1	2	50%	50%	50%	25%	75%	50%	50%	25%	38%
CR	NE 65TH ST	HILLMAN PL NE AND NE RAVENNA EB BV	S	***2***	***2***	***2***	0	0	0	0	0	0	0	0	0	0%	0%	0%	0%	0%	0%	0%	0%	0%
CS	NE 65TH ST	NE RAVENNA EB BV AND NE RAVENNA WB BV	N	*0*	*0*	*0*	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA
CT	NE 65TH ST	NE RAVENNA EB BV AND NE RAVENNA WB BV	S	*0*	*0*	*0*	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA
CU	NE 65TH ST	NE RAVENNA WB BV AND OSWEGO PL NE	N	*0*	*0*	*0*	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA
CV	NE 65TH ST	NE RAVENNA WB BV AND OSWEGO PL NE	S	*0*	*0*	*0*	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA
CW	NE 65TH ST	OSWEGO PL NE AND 8TH AVE NE	N	*0*	*0*	*0*	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA
CX	NE 65TH ST	OSWEGO PL NE AND 8TH AVE NE	S	*0*	*0*	*0*	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA
CY	NE 65TH ST	8TH AVE NE AND 800' BOUNDARY	N	*0*	*0*	*0*	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA
CZ	NE 65TH ST	8TH AVE NE AND 800' BOUNDARY	S	*0*	*0*	*0*	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA
DA	5TH AVE NE	800' BOUNDARY AND NE 65TH W ST	W	***3***	***3***	***3***	2	2	2	1	1	1	2	2	2	67%	67%	67%	33%	33%	33%	67%	67%	67%
DB	5TH AVE NE	800' BOUNDARY AND NE 65TH W ST	E	*0*	*0*	*0*	0	0	0	1	0	1	0	0	0	NA	NA	NA	Illegal	NA	Illegal	NA	NA	NA
DC	HILLMAN PL NE	800' BOUNDARY AND NE 65TH ST	W	*0*	*0*	*0*	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA
DD	HILLMAN PL NE	800' BOUNDARY AND NE 65TH ST	E	*0*	*0*	*0*	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA
DE	6TH AVE NE	800' BOUNDARY AND NE 65TH ST	W	***7***	***7***	***7***	7	6	7	5	7	6	6	7	7	100%	86%	93%	71%	100%	86%	86%	100%	93%
DF	6TH AVE NE	800' BOUNDARY AND NE 65TH ST	E	***7***	***7***	***7***	7	5	6	5	3	4	6	6	6	100%	71%	86%	71%	43%	57%	86%	86%	86%
DG	NE RAVENNA EB BV	NE 65TH ST AND 800' BOUNDARY	SW	***13***	***13***	***13***	0	0	0	0	0	0	0	0	0	0%	0%	0%	0%	0%	0%	0%	0%	0%
DH	NE RAVENNA EB BV	NE 65TH ST AND 800' BOUNDARY	NE	*0*	*0*	*0*	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA
DI	NE RAVENNA WB BV	NE 65TH ST AND 800' BOUNDARY	SW	*0*	*0*	*0*	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA

				Supply			Parking Demand									Parking Demand								
				Total Spaces by Survey Period			Morning (7:00AM)			Mid-Morning (10:30AM)			Evening (7:30PM)			Morning (7:00AM)			Mid-Morning (10:30AM)			Evening (7:30PM)		
Block Face ID	Street Name	Street Segment	Side of Street	*Morning (7:00AM)*	*Mid-Morning (10:30AM)*	*Evening (7:30PM)*	Tuesday 3.17.26	Thursday 3.19.26	Average	Tuesday 3.17.26	Thursday 3.19.26	Average	Tuesday 3.17.26	Thursday 3.19.26	Average	Tuesday 3.17.26	Thursday 3.19.26	Average	Tuesday 3.17.26	Thursday 3.19.26	Average	Tuesday 3.17.26	Thursday 3.19.26	Average
DJ	NE RAVENNA WB BV	NE 65TH ST AND 800' BOUNDARY	NE	***11***	***11***	***11***	0	0	0	0	0	0	0	0	0	0%	0%	0%	0%	0%	0%	0%	0%	0%
DK	8TH AVE NE	800' BOUNDARY AND NE 65TH ST	W	***3***	***3***	***3***	0	1	1	1	1	1	0	1	1	0%	33%	17%	33%	33%	33%	0%	33%	17%
DL	8TH AVE NE	800' BOUNDARY AND NE 65TH ST	E	***2***	***2***	***2***	0	0	0	1	0	1	0	0	0	0%	0%	0%	50%	0%	25%	0%	0%	0%
			TOTAL	***364***	***382***	***382***	**254**	**246**	**250**	**248**	**248**	**248**	**279**	**282**	**281**	**70%**	**68%**	**69%**	**65%**	**65%**	**65%**	**73%**	**74%**	**73%**

APPENDIX G

Public Comment Summary and Responses

John Marshall School – Interim Site Modernization/Addition Project

SEPA Public Comment Summary and Responses

SEPA regulations recommend that public comments on draft Checklists be considered and responded to but provides flexibility in how the comments are presented. The comment period on the Draft SEPA Checklist for the John Marshall School – Interim Site Modernization/ Addition (John Marshall School) Project was from June 15, 2026 to July 15, 2026. 13 individual comment letters, emails, or postcards were received from the nine (9) individuals listed below.

1. Hipp, Christopher
2. Hubbard, Shaun (letter and postcard)
3. Jackins, Chris (two letters)
4. Ladniak, Carolyn
5. Ladniak, Dathan (letter and postcard)
6. Price, Sharon
7. Shettler, Sandy (two emails)
8. Simmons, Carol
9. Anonymous

For efficiency, the comments have been summarized and similar comments have been grouped together and responded to below. Following each comment, the numbers in brackets refer to the commenter number (above) who submitted a similar comment. The original comment letters are on file with Seattle Public Schools.

Summary of Public Comments and Responses

1. **Determination of Significance (DS)/EIS Preparation. Project has significant adverse environmental impacts. Further detailed environmental review should be provided through an Environmental Impact Statement (EIS). (Commenters 1, 2, 3, 5, 8 and 9)**

   The Seattle Public Schools (SPS) SEPA Responsible Official is reviewing the SEPA Checklist and taking all comments received on the Draft SEPA Checklist into consideration in making a determination of the significance of impacts from the John Marshall School Project.

2. **Request to extend the comment period. (Commenters 3 and 7)**

   Although public comment periods are not required for SEPA Checklists, SPS provided a 30-day comment period for the John Marshall School Project Draft SEPA Checklist which is consistent with previous SPS projects.

3. **Request to hold a SEPA public meeting. (Commenters 2 and 3)**

   Public meetings are not a requirement for SEPA Checklists under WAC 197-11.

4. **Please include me on the list of people to be notified about the status of the environmental review of this project and for City-required zoning departure information and notices of departures meetings. (Commenters 2, 3, 5, 8 and 9)**

   SPS will provide future notifications on the environmental review process to all parties who live within a two-block radius of the project, and those who have requested to be included on future notifications. Notifications regarding the City's departure process are provided by the City of Seattle.

5. **Historic Resources: The John Marshall School building is historically, architecturally, and culturally significant. The building has been determined to be eligible for listing in the NRHP and appears to meet the criteria for Seattle Landmark designation. The project would cause significant adverse impacts through demolition and modifications to the building. Impacts to the east side of the building are minimized and interior features are not evaluated. (Commenters 2, 3, 5, 6 and 7)**

As described in Section B.13 of the SEPA Checklist, the John Marshall School building has been determined eligible for listing in the NRHP and appears to meet the criteria for Seattle Landmark designation except that SPS, as the property owner, has not consented to a formal Landmark designation and the building cannot accordingly be designated as a Seattle Landmark. Nevertheless, the building renovation has been designed with the commitment to retain the majority of the building and preserve historic and character-defining features as part of this project.

The building is a highly intact three-story Georgian Revival-style school constructed in 1926 and designed by Floyd A. Naramore, then Supervising Architect for SPS. The character-defining elements of the building are:

- The three-story classroom bars exterior façades facing NE Ravenna Boulevard and NE 68th Street feature symmetrical Georgian Revival composition with red brick cladding, cast stone ornament, and original window patterns.
- The unreinforced masonry (URM) gymnasium structures are notable for their distinctive arched windows.
- The front lawn and setback along NE Ravenna Boulevard form part of the historic Olmsted-designed boulevard system.

The proposed project would modernize the school facility to meet the contemporary educational needs of SPS while retaining and preserving the character-defining features. New construction is confined to portions of the building that do not define the historic character and is designed to be visually subordinate to the historic character elements of the structure.

Additionally, SPS is in the process of consultation and review with the Washington State Department of Archaeological and Historic Preservation (DAHP) as part of the process for Governor's Executive Order 21-02, which also includes coordination with local Tribes. As part of the consultation process, DAHP concluded that the project as proposed will have no adverse impact on historic resources that are listed in or determined eligible for listing in the NRHP. SPS will continue to coordinate with DAHP and local Tribes to complete the 21-02 process.

6. **Historic Resources: The District's refusal to submit to the City of Seattle Landmarks Board review process increases the likelihood of significant adverse impacts. (Commenter 3)**

   As noted in Section B.13 of the SEPA Checklist, while the building appears to meet the criteria for Landmark designation, SPS, as the property owner has not consented to a formal Landmark designation and the building cannot accordingly be designated as a Landmark. However, the proposed project has been designed with the commitment to retain the majority of the building and preserve the historic character-defining features.

7. **Historic Resources: The Checklist does not evaluate impacts involving the caiman planter sculpture on the front lawn along NE Ravenna Boulevard which was created in 1994 and meets landmarks requirements of being at least 25 years old. The Checklist claims that the proposed project preserves the buildings historic relationship to the Olmsted-designed Ravenna Boulevard and maintains the site's contribution to the resource's significance. (Commenters 3 and 7)**

   The existing caiman planter is not a part of the King County Public Art Collection or noted in the King County archives and is not listed on the Washington Arts Inventory. The proposed project would include the removal of the caiman planter. As described in Section B.13 of the SEPA Checklist, the project design is intended to preserve the building's historic relationship with NE Ravenna Boulevard and maintain the site's contribution to the resource's significance.

8. **Historic Resources: This project is similar to Northgate Elementary which was found eligible for the NRHP but because the project was rushed the Seattle Landmarks Board did not have this critical information before making its determination. It appears John Marshall is eligible for NRHP listing and the District is ignoring it. (Commenter 2)**

   The comment regarding Northgate Elementary is noted. SEPA Checklist notes that the existing building has been determined eligible for listing in the NRHP and appears to meet criteria for Seattle Landmark designation. However, pursuant to the City of Seattle processes, SPS, as the property owner, has not consented to a formal Landmark designation and the building cannot be designated as a Landmark. Nevertheless, the proposed project has been designed with the commitment to retain the majority of the building preserve historic and character-defining features of the building as described in Section B.13 of the SEPA Checklist.

As noted above, SPS is also in the process of consultation and review with DAHP as part of the process for Governor's Executive Order 21-02, which also includes coordination with local Tribes. As part of the consultation process, DAHP concluded that the project as proposed will have no adverse impact on historic resources that are listed in or determined eligible for listing in the NRHP. SPS will continue to coordinate with DAHP to complete the 21-02 process.

9. **Historic Resources: The arched palladium windows in the back of the building are particularly valued by the community. Is there a way to incorporate them? (Commenter 7)**

   The proposed project intends to retain the referenced existing palladium windows.

10. **Historic Resources: Under Historic and Cultural Preservation, the Checklist minimizes impacts to the east side of the building emphasizing views from the west. The school site and buildings are prominent from the east side of the site, for example from the corner of 8th Avenue NE and NE 70th Street. (Commenter 3)**

    As described in Section B.13, the historic character-defining features of the building include the three-story classroom bars exterior façades facing NE Ravenna Boulevard and NE 68th Street, the arch windows associated with the URM gymnasium structures, and the front lawn and setback along NE Ravenna Boulevard. The proposed project would modernize the school facility to meet the contemporary educational needs of SPS while retaining and preserving all the above character-defining features. The proposed work on the building, front lawn, and right-of-way along NE Ravenna Boulevard is relatively minor and the overall viewshed and historic character-defining features of the site would be intended to remain entirely intact.

11. **Cultural Resources: The Checklist states that the project area would be considered to have a moderate potential for buried precontact cultural resource materials. We appreciate that a Cultural Resources Assessment was completed for the project and that a representative from the Duwamish Tribe had the opportunity to be on hand during fieldwork. (Commenter 3)**

    These comments are noted, and SPS considered these comments in making a final SEPA determination for the project.

12. **Environmental Health: Artificial turf should not be installed due to concerns for PFAS and forever chemicals. The use of artificial turf and spreading of PFAS is a significant adverse impact. (Commenters 3, 5, 6)**

    Similar to previous SPS projects, soft-surface play areas would utilize synthetic turf surfaces that contain infill such as envirofill which is a PFAS-free coated sand product. SPS utilizes manufacturers that verify that no PFAS chemicals are contained in their products and their practice of regularly inspecting the performance of their synthetic turf facilities also lowers the risk of wear to the turf.

13. **Water Resources: Planning for the retention and addition of trees and natural elements will help mitigate stormwater impacts of the project which appear to increase. Given winter flooding and climate vulnerability, remodels should improve stormwater management and not exacerbate existing problems due to large amounts of impervious surface. (Commenter 7)**

    As noted in Section B.3 of the SEPA Checklist, stormwater management for the project would comply with applicable City requirements, including the current Seattle Stormwater Manual. The project will result in a decrease in impervious surfaces when compared to existing conditions and the proposed management systems would ensure no significant impacts to stormwater or drainage patterns. Proposed stormwater management features would include new detention chamber systems, as well as several bioretention planters, which will serve to improve the existing stormwater management on the site. Bioretention planters would treat new roof areas of the building and portions of new or existing impervious surfaces.

14. **Air Quality: The increase in vehicles traveling to the site would create a significant air quality impact. (Commenters 2 and 3)**

    Section B.2 of the SEPA Checklist identifies vehicles emissions as the primary source of emissions with the project. As indicated, a GHG emissions worksheet was prepared which estimates emissions from a project, including transportation-related emissions. The increased building space on the site would be estimated to generate approximately 466 MTCO2e annually. For reference, the Washington State Department of Ecology threshold for potential significant GHG emissions is 25,000 MTCO2e annually. Therefore, the proposed project would not be anticipated to generate a significant amount of emissions.

15. **Plants: Will the Tier 2 tree (tree #369) be removed? It appears that the 29 trees adjacent to the site with canopy or root zones extending over the property line would be impacted by the project. The Arborist Report has not reviewed development plans for tree retention feasibility or removals. (Commenter 3)**

    As noted in Section B.4, the Tier 2 Lawson Cypress tree (Tree #369) is identified for removal. Subsequent to the issuance of the Draft SEPA Checklist, the project design has been updated to reduce the number of existing trees that would be removed. A total of 18 trees would be removed with the project, including 16 trees on the project site and two (2) street trees within the public right-of-way. A total of 46 new trees would also be planted on the site, including 18 large-canopy deciduous trees, 19 evergreen trees, and nine (9) small-medium canopy accent trees. Tree protection measures would be implemented during construction for retained trees. All tree work will meet or exceed the City's applicable tree preservation and replacement requirements.

16. **Plants: Existing trees on the site are loved by the community. The project summary indicates that 30 trees will be removed. Which trees would be removed on the site versus within the public right-of-way? What is the approximate size of trees that would be added to the site? (Commenter 7)**

    As noted above, subsequent to the issuance of the Draft SEPA Checklist, the project design has been updated to reduce the number of existing trees that would be removed. A total of 18 trees would be removed with the project, including 16 trees on the project site and two street trees within the public right-of-way. A total of 46 new trees would also be planted on the site, including 18 large-canopy deciduous trees, 19 evergreen trees, and nine (9) small-medium canopy accent trees, resulting in a net increase of trees on the site. All tree work will meet or exceed the City's applicable tree preservation and replacement requirements.

17. **Plants: The project should not remove 50 old-growth trees. The site is one block from I-5 and trees collect and use carbon emissions. They are also critical to the health of students and staff. Update the school without the destruction of the existing trees. (Commenters 4, 5, 6 and 7)**

    The project would retain existing trees to the extent feasible. As noted in Section B.4 of the SEPA Checklist, the project design has been updated to reduce the number of existing trees that would be removed. A total of 18 trees would be removed with the project, including 16 trees on the project site and two street

trees within the public right-of-way. A total of 46 new trees would also be planted on the site. All tree work associated with the proposed project will meet or exceed the City's applicable tree preservation and replacement requirements.

18. **Plants: The John Stanford Memorial Grove appears to be at risk with the proposed project. This is an important grove and place of honor and should be protected. (Commenter 7)**

    The John Stanford Memorial Tree, which is an Alaskan Yellow Cedar, will be retained with the project and protected in accordance with City of Seattle tree protection requirements.

19. **Plants: It is inappropriate to convert existing asphalt to a similar hardscape surface given Seattle's changing climate and progressively hotter temperatures. The project should retain as many existing trees as possible to minimize the urban heat island effect. (Commenter 7)**

    As noted in Section B.1 of the SEPA Checklist, the proposed project would result in a reduction in impervious surfaces on the site from an existing 84 percent to 81 percent with the project. The project design has been updated to reduce the number of existing trees that would be removed. A total of 18 trees would be removed with the project, including 16 trees on the project site and two street trees within the public right-of-way. A total of 46 new trees would also be planted on the site. New landscaping would also be installed along the perimeter and throughout the site, consistent with City of Seattle requirements.

20. **Plants: The plan does not appear to incorporate any natural features that are common at other schools such as food forests, rain gardens, native plant learning labs and mini-forests. Please add these elements to the design. (Commenter 7)**

    As described in Section B.4 of the SEPA Checklist, new landscaping will be installed along the entire site perimeter throughout the project site, including new trees to create a landscape buffer between the proposed field area and the adjacent park and ride. Areas surrounding the proposed building addition will be planted with native, drought resistant, or Pacific Northwest climate adapted shrubs and ground cover. Additional landscaping areas will include bioretention planters located throughout the project site. On the south side of the site, a student garden will also be provided.

21. **Animals: The Checklist states that no eagles are anticipated to be on or within the immediate vicinity of the project but eagles are regularly observed near Green Lake. Disturbance to eagles is an adverse impact. (Commenter 3)**

    Section B.5 of the SEPA Checklist notes that eagles are known to exist in the area; however, no eagles have been observed on or immediately adjacent to the site. It is noted that eagles have been observed at Green Lake which is located approximately 0.25 miles to the west of the project site and that these eagles have adapted to the surrounding urban environment.

22. **Earth: Geothermal wells would be utilized. This is not referenced as an impact under the Earth section and is an adverse impact. (Commenter 3)**

    Potential construction impacts associated with the development of the proposed project (including the development of geothermal wells) are identified in Section B.1 of the SEPA Checklist. The project would comply with applicable City regulations such as implementing a Temporary Erosion and Sedimentation Control (TESC) plan and utilizing construction Best Management Practices (BMPs). The Geotechnical Report (**Appendix B**) also identifies measures to minimize earth impacts and erosion including incorporating erosion control measures into project design, minimizing ground disturbance to the greatest extent possible, and implementing standard erosion control practices.

23. **Noise: All project noise impacts will be significant impacts to adjacent residents. Noise from construction, including installation of geothermal wells will be a significant impact. Impacts from geothermal wells can be avoided through the implementation of alternative systems. The City's 24-hour noise complaint hotline should be posted on the site. (Commenters 2, 3 and 5)**

    Section B.7.b of the SEPA Checklist describes potential short-term (construction) and long-term (operation) noise sources associated with the project and notes that temporary construction-related noise would occur with the development of the project and is regulated by the City of Seattle's Noise Control Code (SMC 25.08). Construction-related noise would be temporary in nature and the proposed project would comply with the provisions of the Noise Control Code.

Additionally, SPS contractually requires that their contractors abide by the Noise Control Code. Measures are also identified to minimize noise from construction, including noise associated with the installation of geothermal wells.

24. **Land Use: The need for zoning departures indicates adverse impacts from the project. The double sided illuminated reader board sign has been found to be an adverse impact in many neighborhoods. The height and scale of rooftop mechanical equipment has adverse light/glare, aesthetic and historic impacts. (Commenters 3 and 5)**

    The Seattle Municipal Code includes development standards for public schools in residential zones (SMC 23.51B.002), and also includes procedures through which departures from the required development standards of the code can be granted for public school structures (SMC 23.79). The need for zoning departures does not indicate that a project will have significant adverse impacts. Due to the existing site characteristics and project design goals, the project is requesting land use departures for the following: building height, setbacks, bicycle parking, and signage (changing-image reader board). The City's departure process is separate from SEPA. SPS is continuing to coordinate with the City regarding the departures for the project and would comply with the City's requirements for the process. Section B.11 of the SEPA Checklist provides a discussion on light and glare associated with the project (including proposed signage) which would comply with applicable provisions of SMC 23.46.020. With implemented design and regulatory measures, no significant light or glare impacts are anticipated.

    The proposed design of the rooftop mechanical equipment, including height and scale, would be intended to complement the existing building conditions and would not be anticipated to result in significant light/glare, aesthetic, or historic impacts.

25. **Land Use: The departures request do not reference bus loading offsite rather than onsite. The site's frontage along Ravenna Boulevard would remain a "School Bus Only" zone and NE 68th Street would be signed "School Load Only" for family vehicle load/unload. In other cases, continuation of offsite bus loading must be reviewed if the school is expanding by a certain percentage. What is this percentage and is the project below it? (Commenter 3)**

    As noted in the Transportation Technical Report (**Appendix F**), school bus load/unload would occur along the NE Ravenna Boulevard frontage of the site

where it is currently signed and has occurred when prior schools were houses at the site on an interim basis. The City of Seattle Department of Construction and Inspections, which is responsible for determining the need for departures from City Code, has determined that a departure would not be required for on-street bus loading.

26. **Land Use: The District seems to be counting on positive City consideration of granting departures from City Code and exceptions from Landmarks controls. There are reasons at hand for the City to turn down such requests. This exceptions process includes consideration of educational need and whether there are approaches that can avoid impacts. Noise impacts from geothermal wells can be avoided by using air-cooled heat pumps as recommended on the Aki Kurose project. (Commenter 3)**

    As noted in Section B.8 of the SEPA Checklist, the City's departure process is separate from SEPA. SPS is continuing to coordinate with the City regarding the departures for the project and would comply with the City's requirements during the process.

    Construction of the proposed project would comply with the provisions of the Noise Control Code and contractors are contractually required by SPS abide by them. Measures are also identified to minimize noise from construction, including noise associated with the installation of geothermal wells.

27. **Aesthetics: The project would have adverse aesthetic impacts. There are large impacts to the I-5 scenic route as the site is viewed daily and clearly by thousands of motorists on the southbound I-5 freeway. (Commenter 3)**

    As noted in Section B.10, view protection from City-designated scenic routes is encouraged and Interstate-5 to the east of the site is designated as a scenic route. While a portion of the proposed project would be visible from Interstate-5, the project would not obstruct views from the highway, nor would it significantly alter the existing viewshed as the project would generally appear as a continuation of the existing building and development in the vicinity.

28. **Light and Glare: Glare from building materials could occur during certain times of day and would be an adverse impact. There are also adverse impacts from the double-sided illuminated reader board sign. (Commenter 3)**

    As described in Section B.11 of the SEPA Checklist, glare from building materials could occur during certain times of day. The presence of existing and new trees/landscaping would provide a buffer between the proposed project and existing off-site uses to reduce light and glare toward adjacent properties. Overall, the resulting light and glare should not increase greatly from existing conditions and with the implementation of design and regulatory measures, no significant glare impacts are anticipated.

29. **Transportation: The added capacity is expected to generate a net increase of about 510 trips per day which would be an adverse impact. (Commenter 3)**

    The Transportation Technical Report (Appendix F) states that the estimated changes in peak hour school trips were combined with the forecast-2029-without-project traffic volumes to reflect future conditions with the expanded school. Intersection levels of service for future with-project conditions were determined. As described in Section 3.3 Traffic Operations (page 26) of the referenced Transportation Technical Report "*…traffic generated by the proposed project is expected to add delay to some of the study-area intersections. Average delays are forecast to decrease at some locations where traffic would be added to lower-delay movements. The three signalized intersections are forecast to remain operating at LOS D or better during both peak hours and the unsignalized intersections are forecast to remain operating at LOS B or better overall with all movements operating at LOS D or better during both peak hours. Based on these results, the project would not result in significant adverse impacts to traffic operations in the study area."*

30. **Transportation: While parking is no longer a required SEPA topic, parking can still enter in City zoning code and parking definitely affects neighborhoods. (Commenter 3)**

    As described in the Transportation Technical Report (page 14 of Appendix F), the State of Washington adopted SEPA-related amendments on January 20, 2023 which removed parking as an element of the environment in WAC 197-11-444(2)(c)(iv) and removed the parking-related question from the environmental checklist in WAC 197-11-960(B)(14)(c). Pursuant to these amendments, the City

of Seattle and SPS no longer identifies or requires analysis of parking impacts for SEPA review. However, the City has requested detailed parking studies for SPS projects that apply for code departures. Because the school site is located within an Urban Center, there is no City of Seattle minimum code requirement for parking supply and no code-departure for reduced parking would be required. School bus load/unload would occur along the NE Ravenna Boulevard frontage of the school site where it is currently signed and has occurred when prior schools were housed at the site on an interim basis. A departure from City code would not be required for on-street bus loading. However, other code departures are expected to be pursued, including providing fewer bicycle parking stalls than required by code. The analysis of parking conditions and the recommendation that the school prepare an Event Management Plan for occasional large evening events is provided to support those departures.

31. **Whether or not impacts are individually considered significant, we believe they together add up to significant adverse environmental impacts, as SEPA regulations recognize may occur. WAC 197-11-330.8(3)(c) states that in determining an impact's significance, the responsible official shall take into account the following, that:….Several marginal impacts when considered together may result in a significant adverse impact. (Commenter 3)**

    The SEPA Checklist describes the proposed project as it relates to the 16 environmental elements listed in the Checklist and identifies potential impacts that are anticipated with the project and applicable mitigations.

32. **At the June 3, 2023 School Board meeting, the Superintendent said the John Marshall project was needed because otherwise the District would need to use portables. But the District has plenty of portables and the Superintendent has publicly stated worries that District permanent capacity might already be too large. (Commenter 3)**

    SPS utilizes their existing school sites in the most efficient manner to serve the needs of the district and has developed educational specifications that provide the best places for students to learn while also considering the future capacity needs of the district, along with the needs of the existing community. The SEPA Checklist identifies potential impacts that could occur with the project, along with appropriate mitigation measures.

33. The Checklist notes that the project would provide a maximum capacity of 650 elementary or 1,000 middle school students. But it also states that historically the existing building was designed for 900 students with a peak enrollment of 1,450 students between 1955 and 1957. This suggests that the existing building without expansion has in the past already successfully demonstrated that it can accommodate the target capacity for the project. (Commenter 3)

SPS utilizes their existing school sites in the most efficient manner to serve the needs of the district and has developed educational specifications that provide the best places for students to learn while also considering the future capacity needs of the district, along with the needs of the existing community. Decisions on development projects for existing facilities are based in part on a variety of factors, including: enrollment projections, conditions of existing facilities, changing educational requirements for classroom size, and the need to provide appropriate facilities for students within the district. The SEPA Checklist identifies potential impacts that could occur with the project, along with appropriate mitigation measures.

34. Earthquake safe schools are needed so upgrading the building for earthquakes makes sense. (Commenters 4 and 5)

These comments are noted, and SPS considered these comments in making a final SEPA determination for the project.

35. On page 9, should "Carbon Dioxide (O2) emissions" be "Carbon Dioxide (CO2) emission"? On page 23, should "policies are which are" be "policies which are"? (Commenter 3)

These comments are noted and the SEPA Checklist has been updated to reflect these comments.