Aki Kurose Middle School Addition and Modernization Project

Draft Project SEPA Checklist

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

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While the Aki Kurose Middle School Addition and Modernization Project Draft State Environmental Policy Act (SEPA) Environmental Checklist is accessible and Americans with Disabilities Act (ADA) compliant, the attached figures and attachments that support the checklist contain complex material that are not accessible. The following is a description of what is contained in the figures and attachments:

Figure 1, Vicinity Map. Figure 1 is an aerial photograph of the Aki Kurose project area and surrounding neighborhood. The project area is outlined in red. There is an inset map showing where the site is located within the City of Seattle.

Figure 2, Conceptual Site Plan (subject to change). Figure 2 is a conceptual site plan of the proposed project and shows where portables will be removed, landscaping will be installed, buildings will be demolished or modernized, and informal parking areas will be constructed.

Attachment A, Preliminary Hazardous Materials Survey Report. Attachment A provides project background, building descriptions, and an overview of the asbestos survey process; findings about asbestos-containing material (ACM), lead-containing paint (LCP), mercury-containing components, and polychlorinated biphenyl (PCB)-containing components; and recommendations. Attached to the end of Attachment A are Appendix A, Historical PLM Bulk Sampling information; Appendix B, Historical AA Lead Paint Chip Sampling Information; and Appendix C, Certifications. Tables in Attachment A organize data that support the findings in the report.

Attachment B, Transportation Technical Report. Attachment B provides a project description and background conditions related to the roadway network, traffic volumes and operations, parking supply and occupancy, traffic safety, transit facilities and service, and non-motorized facilities. The report also describes impacts on transportation from the proposed project and the school operating at its planned capacity of up to 1,000 students. The report describes recommended measures to reduce potential traffic and parking impacts. Attachment B includes Appendix A, Level of Service Definitions, and Appendix B, Parking Utilization Study Data. Figures and tables in the report and its appendices depict and organize data that support the findings in the report.

Attachment C, Geotechnical Report. Attachment C provides a summary, site and project description, exploratory methods, site conditions, and preliminary conclusions and recommendations related to geotechnical conditions and explorations of the project area. Attachment C includes Appendix A, Field Exploration Procedures and Logs; Appendix B, Laboratory Testing Procedures and Results; and Appendix C, Seismic Inputs and the ASCE 7 Hazards Report. Figures and tables in the report and its appendices depict and organize data that support the findings in the report.

Attachment D, Draft Arborist Report. Attachment D consists of an inventory and assessment of eight trees within the project area and 16 trees adjacent to the project area. Attachment D provides a summary, observations, municipal regulations, discussion of construction impacts, and recommendations related to trees. Attachment D includes Appendix A, Glossary; Appendix B, References; Appendix C, Photographs; Appendix D, Assumptions & Limiting Conditions; Appendix E, Methods; and Appendix F, Tree Protection Specifications, which includes a table of trees, a site map with tree locations, and a memorandum related to photo documentation. Figures and tables in Attachment D and its appendices depict and organize data that support the findings in the report.

Attachment E, Site Plan. Attachment E is an engineering plan sheet including a vicinity map and depicting the proposed building footprint, existing building footprint, the area where the proposed and existing building footprint areas overlap, the proposed driveway revision, the existing Brighton Playfield driveway, proposed pervious and impervious area, the property line, and easement locations. Attachment E includes the legal description, parcel number, and project notes.

Attachment F, Greenhouse Gas Emissions Worksheet. Attachment F calculates the estimated greenhouse gas emissions associated with the project over the life of the project.

Attachment G, Photographs. Attachment G includes nine photographs of the existing building, nearby views, and project area. This attachment also includes a map key to where each photograph was taken.

Attachment H, Historic and Cultural Resources Background Materials. Attachment H includes five documents related to cultural resources in the project area. These include the staff report for designation of Aki Kurose Middle School; the Landmarks Preservation Board June 16, 2021, meeting minutes; the historic property inventory form for Caspar Sharples Junior High School; the August 12, 2024, letter to Richard Best from the Washington State Department of Archaeology and Historic Preservation (DAHP); and the historic property inventory form for Caspar Sharples Junior High School.

This concludes the description of the figures and attachments for the Aki Kurose Middle School Addition and Modernization Project Draft SEPA Environmental Checklist.

Aki Kurose Middle School Addition and Modernization Project

Draft SEPA Checklist

October 18, 2024

PREPARED FOR:

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PREPARED BY:

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ENVIRONMENTAL CHECKLIST

A. BACKGROUND

1. Name of the proposed project, if applicable:

Aki Kurose Middle School Addition and Modernization Project

2. Name of applicant:

Seattle Public Schools

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

Vincent Gonzales, Senior Project Manager
Seattle Public Schools, Seattle School District No. 1
2445 Third Avenue S
Seattle, WA 98134
206.252.0151

4. Date checklist prepared:

October 2024

5. Agency requesting checklist:

Seattle Public Schools

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

Construction is expected to begin in summer 2026 and be completed by summer 2028. Construction will include modernization and structural improvements of the existing building and construction of the new two-story addition.

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

Portables may be needed in the future to accommodate operations or education programming. The new two-story addition is structurally designed for the future addition of a third floor. Other than these two considerations, there are no other plans for expansion or activity related or connected to this project.

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

- *BTA V Final Master Plan*, Section 5.4, *Aki Kurose Middle School*, Mahlum Architects, Inc., February 2022, containing:
    - *Structural Existing Condition Assessment*, PCS Structural.
    - *Aki Kurose Middle School Mechanical Conditional Assessment*, Metrix Engineers.
    - *Electrical Condition Assessment*, Hargis.

    - *BTA V Limited Geotechnical Engineering Feasibility Analysis and Limited Assessment of Existing Foundation Piles, Aki Kurose Middle School*, Associated Earth Sciences, Inc. (AESI).
    - *Civil Narrative*, AHBL.
    - *Structural Condition Assessment and Structural Narrative*, PCS Structural Solutions.
    - *Aki Kurose Middle School Modernization and Addition Mechanical Basis of Design*, Metrix Engineers.
- *Preliminary Hazardous Materials Survey Report*, PBS, October 6, 2023 (included as **Attachment A**).
- *Transportation Technical Report*, Heffron Transportation, Inc., October 8, 2024 (included as **Attachment B**).
- *Preliminary Geotechnical Engineering Report*, WSP, March 22, 2023 (included as **Attachment C**).
- *Formation Thermal Conductivity Test & Data Analysis*, GRTI, February 25, 2024.
- *Draft Arborist Report*, Tree Solutions, Inc., August 9, 2024 (included as **Attachment D**).
- *Draft Cultural Resources Literature Review Short Report*, ESA, September 6, 2024.

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.

No other government approvals of other proposals directly affecting the property are known to be pending. Seattle Public Schools (SPS) intends to obtain approval from Seattle Parks & Recreation (SPR) for the use of a portion of SPR property that forms a paved lane for fire department apparatus access and limited vehicular egress.

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

The following permits/approvals may be required for this project:

<u>Seattle Department of Construction and Inspections (SDCI)</u>

- Demolition Permit
- Construction Permit
- Land Use Departures (for increased lot coverage and increased building height, and potentially for setback and parking)
- Clearing and Grading Permit
- Other: Mechanical Permit/Electrical Permit/Fire Alarm/Elevator Permits, Side Sewer Permit

Seattle Department of Transportation (SDOT)

- Street Improvement Plan Lite

Washington Department of Ecology (Ecology)

- National Pollutant Discharge Elimination System (NPDES) Permit

Puget Sound Clean Air Agency

- Notice of Demolition

Washington Department of Archaeology and Historic Preservation (DAHP)

- Governor's Executive Order 21-02

11. Give 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.

Project Background

Seattle Public Schools (SPS) periodically proposes public school levies to fund their projects. The SPS Buildings, Technology, and Academics/Athletics Capital Levy V (BTA V) Capital Levy program generally includes projects proposed for funding for improvements to school buildings, playground and athletic field improvements, art and science equipment improvements, important classroom technology and support for student learning, district technology systems, and technology infrastructure. Aki Kurose Middle School was analyzed in the BTA V Capital Levy State Environmental Policy Act (SEPA) Checklist issued in 2021 (SPS 2021a). It is one of the middle schools to receive funding for modernization and an addition.

Following passage of the BTA V school levy in 2022, SPS proceeded with project planning and is now ready to provide SEPA project-level review for the project at Aki Kurose Middle School.

This Checklist for the Aki Kurose Middle School Addition and Modernization Project has been prepared in compliance with SEPA (Chapter 43.21C of the Revised Code of Washington [RCW]), the state SEPA rules (Chapter 197-11 of the Washington Administrative Code [WAC]), and the School Board's Policy on SEPA Compliance (Policy No. 6890). It is an information document and was developed to ensure that the public, agencies, decision-makers, and other interested parties are informed about the potential environmental impacts of the project and the measures being used to mitigate any potential impacts.

Site Background and Description

Aki Kurose Middle School is located in the Rainier Valley neighborhood of Seattle (see **Figure 1**, Vicinity Map). The school building dates back to 1952 and was designed by William Mallis. The building occupies most of the 4.8-acre site. The existing building is a one- and two-story structure with courtyards open to the north, facing Brighton

Playfield. The building was constructed as five units (Units A–E), with concrete walls defining the units. The building has received minor updates over the past 70 years.

Because the current building does not meet SPS' Standard Middle School Educational Specification (SPS 2021b) for 1,000-student capacity, SPS explored options that ranged from modernization and addition to partial building demolition and addition.

SPS emphasized the importance of maintaining the existing structure to the fullest extent possible and also considered preserving interior features, to respect the historic nature of the building and align with an SPS goal of carbon neutrality by preserving existing assets rather than constructing new ones.

Proposed Project

SPS now proposes to: (1) demolish the northwest one-story portion of the structure (Unit A), which is approximately 25,000 square feet; (2) modernize Units B−E, which are approximately 145,000 square feet in total; build a new approximately 60,000-square foot two-story classroom wing addition attached to the existing school building in the northwest portion of the site; (3) build outdoor learning areas; and (4) add vehicular parking. These additions and improvements will modernize the school facilities and provide additional capacity to serve the school's needs.

At the conclusion of the project, the campus will be approximately 195,000 square feet and will have permanent capacity for up to 1,000 grade 6–8 students (see **Figure 2**, Conceptual Site Plan). Units B−E will receive seismic upgrades, major structural system upgrades or replacements, and envelope updates while maintaining the overall historic character of the building. The project will also include the following:

- Construction of a conditioned bridge connecting the east and west wings of the existing building.
- Site improvements for student learning and gathering in the main courtyard.
- Construction of a new student courtyard at the building addition in the northwest portion of the site.
- New water systems for domestic and fire protection, sanitary sewer, storm drainage, and frontage street improvements. Relocation of portables.
- Construction of a bike storage shelter near the new addition.

During construction, the school will be temporarily closed and students will attend school in a different building.

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.

Aki Kurose Middle School is located at 3928 S Graham Street, Seattle, WA 98118 on a 4.8-acre site in the Rainier Valley neighborhood in southeast Seattle. It is bounded by S Graham Street to the south, 39th Avenue S to the west, Brighton Playfield to the north, and 42nd Avenue S to the east (see **Figure 1**, Vicinity Map).

The site is located in the SW quarter of Section 22, Township 24, Range 4. The project location is shown on **Figure 1**, Vicinity Map and the proposed site plan is shown on **Figure 2**, Conceptual Site Plan. The site consists of King County parcel number 333250-1090, as described below.

> LOTS 1 THROUGH 38, INCLUSIVE, BLOCK 10 AND ALL OF BLOCK 9, HILLMAN CITY DIVISION NO. 5, ACCORDING TO THE PLAT THEREOF RECORDED IN VOLUME 10 OF PLATS, PAGE 64, RECORDS OF KING COUNTY, WASHINGTON;
>
> TOGETHER WITH ALL OF VACATED SOUTH BATEMAN STREET AND ALL OF THE VACATED ALLEY IN SAID BLOCK 10, HILLMAN CITY DIVISION NO. 5, AS VACATED UNDER CITY OF SEATTLE ORDINANCE NO. 78241;
>
> TOGETHER WITH THAT PORTION OF LOT 10, SUNNYSIDE FIVE ACRE TRACTS, ACCORDING TO THE PLAT THEREOF RECORDED IN VOLUME 2 OF PLATS, PAGE 120, IN KING COUNTY, WASHINGTON, LYING SOUTHERLY OF A LINE 125 FEET NORTHERLY OF AND PARALLEL WITH THE CENTER LINE OF VACATED SOUTH BATEMAN STREET;
>
> EXCEPT THAT PORTION THEREOF IN ROADS;
>
> (ALSO KNOWN AS PARCEL A OF CITY OF SEATTLE LOT BOUNDARY ADJUSTMENT NO. 2402540, RECORDED UNDER RECORDING NO. 20040702900002, RECORDS OF KING COUNTY, WASHINGTON).
>
> SITUATED IN THE COUNTY OF KING, STATE OF WASHINGTON.

B. ENVIRONMENTAL ELEMENTS

1. Earth

a. General description of the site:

The site was leveled for construction of the school building and is therefore relatively flat. However, there is an approximate 6-foot grade change along the south property line, uphill from the sidewalk to the entrance doors. Also, a retaining wall at the northeast corner of the site borders an on-site sunken paved court and sidewalk. The sidewalk slopes up to meet the street (Mahlum 2022b).

Circle or highlight one: $\boxed{\text{Flat}}$, rolling, hilly, steep slopes, mountainous, other:

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

The existing topography is flat at developed areas with no steep slope areas on-site. The highest elevation, at 150 feet, occurs in the northwest corner of the site, and the lowest point, at 145 feet, is near the south property edge (AESI 2021). The steepest slope of the site is less than 1 percent.

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.

Associated Earth Sciences Inc. (AESI) performed field explorations, a visual reconnaissance of the site, and a review of selected applicable geologic literature. AESI concluded that the site is comprised of three types of materials: dense bedrock, loose recessional outwash, and fill soils. The fill soils are mainly comprised of silts with some sands and gravels. The site does not contain agricultural lands of long-term commercial significance (AESI 2021).

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

The site is not located in a potential slide area or area with known, past slides (SDCI 2024).

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.

The estimated earthwork volumes are approximately 15,000 cubic yards (CY) cut and 15,000 CY fill. It is assumed that no on-site soils will be usable as structural fill.

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

Construction activities at the site will expose soils, increasing the potential for soil erosion; however, measures will be implemented to mitigate potential impacts (see Response to Question B.1.h).

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

Approximately 77 percent of the project site will be covered with impervious surfaces after project construction. Existing impervious surface covers approximately 79 percent of the site. See **Attachment E**, Site Plan.

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

Temporary erosion and sediment control (TESC) best management practices (BMPs) will be employed during construction activities to decrease the potential for and the amount of sediment deposited onto City streets or allowed to flow into stormwater conveyance facilities. A TESC Plan will be prepared in accordance with the requirements of the City's adopted stormwater manual (City of Seattle 2021).

Planned measures include installing filter socks in existing catch basins and setting up straw wattles, silt fencing, and interceptor swales around the perimeter to capture and keep construction stormwater on-site and route stormwater to sediment settlement tank(s). All construction activity and disturbance will occur within defined work limits. Staging and laydown areas for construction equipment and materials will occur within the work limits. Construction vehicles will access the site using existing streets.

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.

Construction activities will produce air emissions including vehicle emissions, fugitive dust, and odors due to the use of heavy machinery. Air emissions related to construction will be temporary, lasting as long as the construction period.

Another consideration regarding air quality and climate relates to greenhouse gas (GHG) emissions. To evaluate climate change impacts of the project relative to the requirements of the City of Seattle, a GHG Emissions Worksheet has been prepared (included as **Attachment F**). The GHG Emissions Worksheet estimates the emissions from the following sources related to the project: embodied emissions, energy-related emissions, and transportation-related emissions. The project will require approximately 18,700 square feet of concrete and roughly 12,600 square feet of porous asphalt.

In total, the estimated lifespan emissions for the project would be approximately 177,522 metric tons of carbon dioxide equivalent ($MTCO_2e$). Based on a building lifespan of 40 years, annual emissions would be 4,438 $MTCO_2e$, which is below Ecology's reporting threshold of 10,000 $MTCO_2e$ per year per business (Ecology 2024a).

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

There are no off-site sources of emissions or odors that will affect the project.

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

Emissions during construction will be short term and temporary. Air emissions during operations will be less than significant. Measures to reduce or control emissions include not allowing idling and maintaining construction vehicles and equipment.

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 are no surface waterbodies on or in the immediate vicinity of the site (USFWS 2024a). The nearest body of water is Lake Washington, located approximately 1 mile to the east.

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 project will not require any work over, in, or adjacent to waters or wetlands.

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 will be placed in or removed from surface waters or wetlands.

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

The project will not require surface water withdrawals or diversions.

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

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Maps, the site is not located within the 100-year floodplain (FEMA 2024).

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.**

The project does not include any discharges of waste materials to surface waters.

b. Groundwater

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.**

Groundwater will not be withdrawn from a well for drinking. Groundwater was encountered on-site at depths ranging from 8 to 11 feet. The contractor may encounter the need for dewatering in advance of excavations, and will be prepared to intercept any groundwater seepage entering the excavations and route it to a suitable discharge location (AESI 2021). All regulations and permit conditions related to water discharge and dewatering, such as the NPDES Construction Stormwater General Permit conditions, will be followed during construction.

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.**

No waste material will be discharged into the ground. The project site will not use septic tanks.

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.**

Existing stormwater runoff is collected in a tight-lined storm system and conveyed to a City of Seattle 18-inch concrete stormwater drainage main located within the paved lane (access road) between the school and Brighton Playfield. This stormwater main flows east then turns south onto 42nd Avenue S, outflowing to Lake Washington, a “Designated Receiving Waterbody.” The main is not capacity-constrained. Therefore, formal flow control systems are not required on the project.

After the project is constructed, runoff will be collected by a series of catch basins and roof drainage collection systems. Before discharging to the City of Seattle stormwater main, drainage from the site will be treated as required to meet water quality standards and regulations. BMPs will be employed to meet requirements. A roof drain and foundation drain line will be routed around the perimeter of the newly constructed structure. The on-site stormwater collection and conveyance system will include an estimated 672 linear feet of stormwater pipe.

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

No waste material will be discharged to ground or surface waters as a result of construction or operation of the project.

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

Neither drainage patterns nor outfalls will change due to project construction or operation.

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

Before construction, SPS will identify site-specific BMPs in the construction contract documents that the construction contractor will be required to implement to reduce potential impacts on surface and groundwater quality. These may include but are not limited to:

- Preparation and implementation of a Stormwater Pollution Prevention Plan (SWPPP), which includes a TESC Plan, to prevent sediment from affecting drainage systems or leaving the project site. Other erosion control measures will be incorporated, as necessary, in accordance with City of Seattle and Ecology requirements.
- Erosion control measures could include the use of catch basin inlet protection, a stabilized construction entrance, perimeter silt fences and mulch in exposed areas, armoring subgrade soils needed as working areas with rocks, interceptor swales, hay bales, sediment traps, and other appropriate cover measures as specified in the SWPPP.
- All debris and spoil material will be transported off-site to an appropriate disposal facility.

After construction and during school operation, the project may integrate green infrastructure, such as bioretention planting areas and bioretention cells, which may be used to treat any new and replaced pollution-generating impervious surfaces.

The City of Seattle Stormwater Code (Title 22 Seattle Municipal Code [SMC]) requires enhanced water quality treatment for this project because it includes more than 5,000 square feet of new or replaced pollution-generating impervious surfaces.

Because this site directly discharges into a receiving waterbody (Lake Washington), water quality control is required for areas subject to vehicular traffic and synthetic fields.

The project will include the construction of an approximately 680-square-foot on-site stormwater management system and water quality runoff treatment (bioretention) system. BMPs implemented during school operation could include vegetated roofs, permeable pavement surfaces, and rainwater harvesting.

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?

For the Draft Arborist Report (**Attachment D**), Tree Solutions, Inc. inventoried, tagged, and assessed eight trees within the project boundary and assessed 16 trees adjacent to the site. The Draft Arborist Report states that a minimum of two trees will need to be replaced on the project site for trees that are dead, hazardous, or not appropriate for the site. **Attachment E**, Site Plan, indicates that two trees on the project site will be removed as part of the project. Plans will be finalized when design progresses in accordance with tree retention and protection laws and regulations, including SMC 25.11 (Tree Protection Code).

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

No threatened or endangered plant species are known to be on or near the site (WDFW 2024; USFWS 2024b).

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

A Landscaping Plan will be prepared for the site prior to construction and as part of the 30 percent Design Plans. Additional proposed measures to preserve and enhance vegetation may include the following:

- Plant material selection will draw from the regional character and include drought-tolerant, native, and adapted plants selected for suitability in the Puget Sound Lowlands, including trees, shrubs, and groundcover.
- Existing soils will be amended and mulched to ensure the long-term health and success of the investments made in newly landscape areas.

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

King County iMap does not map any noxious weeds as occurring on the site (King County 2024a).

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:

The site is located in an urban residential neighborhood and typical animals found there are squirrels, raccoons, opossums, rabbits, and rodents. Birds known to occur in urban areas near bodies of water include songbirds, hawks, and shorebirds, including hummingbirds, Bald eagle, gulls, American crow, robin, and Steller's jay.

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

No threatened or endangered wildlife species are known to be on or near the site.

According to the Washington Department of Fish and Wildlife (WDFW) Priority Habitats and Species (PHS) program maps, there are no listed species on the project site (WDFW 2024). The U.S. Fish and Wildlife Service (USFWS) Environmental Conservation Online System (ECOS) Information for Planning and Consultation (IPaC) tool does not designate critical habitat for threatened or endangered species on the site (USFWS 2024b). The IPaC online tool does map north American wolverine, marbled murrelet, and yellow-billed cuckoo, all species listed as Threatened, as occurring within the region. However, suitable habitats for these species such as old-growth forests, riparian forests, and/or large prairies do not exist on-site or in the vicinity. There are no other threatened or endangered species known to be on or near the project site. Therefore, the potential for threatened or endangered animal species to be present is low.

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

The Puget Sound region is located within the Pacific Flyway, which is a flight corridor for migrating waterfowl and other avian fauna. The Pacific Flyway extends from Alaska to Mexico and South America. No portion of the project will interfere with or alter the Pacific Flyway (USFWS 2024b).

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

A Landscape Plan will be prepared prior to construction. Any trees that are removed will be replaced with new trees in accordance with SMC 25.11 (Tree Protection Code), and native plants will enhance habitat for wildlife.

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

Invasive animal species in the area include Norway rat and rodents that are typically found in urban areas.

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 for building, pedestrian, and facilities lighting will be required for the completed project. The project is expected to include the installation of solar photovoltaic panels on the roof of the new building addition and the bike storage shelter.

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

The new two-story building addition will cast additional shadows; however, they will be limited to the school property, the southwest corner of Brighton Playfield, and 39th Avenue S, and will not likely affect the 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:

Up to 2,500 square feet of roof-mounted solar photovoltaic panels may be installed to produce electricity for on-site energy needs. In addition, SPS follows Superintendent Procedure 6810SP for Natural Resource Conservation (SPS 2022), which includes sustainable measures and practices for the use of lighting and long-term resource conservation (Mahlum 2022b).

7. Environmental Health

a. 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.

The project site is not listed as contaminated on Ecology's *What's in My Neighborhood?* website; ten cleanup sites are located within a 0.25-mile radius of the school. The cleanup site closest to the project site, located at 3816 S Graham Street (300 feet west of the site), received a No Further Action finding (meaning cleanup completed) from Ecology. No underground storage tanks are known to be located on or near the site (Ecology 2024b). If contamination from nearby cleanup sites is found or suspected in groundwater during demolition or construction, exposure to hazards may occur.

The Tacoma Smelter Plume is a 1,000-square-mile area within which air pollution from a copper smelter may have settled on surface soil. The project site is located within the plume and has a predicted arsenic concentration of under 20 parts per million (Ecology 2024c). Arsenic and lead are toxic metals that pose risks if one accidentally ingests or inhales contaminated soil. In most areas, arsenic and lead pose only a very small, long-term health risk (Ecology 2024c). See Response to Question 7(a)(5) for measures that will reduce contamination risk associated with the plume.

As with any construction project, there is the potential for accidental spills of hazardous materials from construction equipment and vehicles. Spilled materials could include fuels, lubricants, solvents, antifreeze, and similar substances. If not contained, these contaminants could enter groundwater or surface water. School operation is not expected to generate environmental health hazards.

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

   Ecology's *What's in My Neighborhood?* database and Dirt Alert Interactive Map did not identify on-site contamination from present or past uses (Ecology 2024b,d).

   Attachment A, Preliminary Hazardous Materials Survey Report, is a limited hazardous materials survey of the existing school building. The survey was prepared in conjunction with the project and to support compliance with applicable regulatory requirements that a "good faith inspection" for asbestos-containing materials (ACM) is performed prior to construction. All accessible areas of the school were inspected for the presence of ACM, lead-containing paint (LCP), polychlorinated biphenyl (PCB)-containing light ballasts, mercury-containing fluorescent lamps, and regulated metals in masonry mortar.

   Various materials were determined to contain greater than 1 percent asbestos. Lead was detected in various painted coatings sampled as part of previous projects at the site. All fluorescent light tubes were presumed to contain mercury (PBS 2023). See **Attachment A**, Preliminary Hazardous Materials Survey Report for further details.

2. **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.**

   There are no known existing hazardous chemicals or conditions that would affect project development.

3. 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 likely be limited to gasoline and other petroleum-based products required for the maintenance and operation of construction equipment and vehicles.

4. Describe special emergency services that might be required.

The SPS Safety and Security Department has documented four phases of emergency management, including prevention and mitigation, preparedness, response, and recovery (SPS 2024). The project will not require any other special emergency services.

5. Proposed measures to reduce or control environmental health hazards, if any:

Care will be taken during construction to avoid spills or leaks of petroleum-based products or chemicals used for construction. The contractor will follow due diligence processes to evaluate and, as necessary, mitigate potential impacts identified. Contractors will be required to comply with all applicable health and safety regulations, including State of Washington Department of Labor and Industries General Occupational Health Standards, Chapter 296-62 WAC, and General Safety and Health Standards, Chapter 296-24 WAC.

Related to the potential for encountering asbestos during demolition, the Contractor will be required to comply with asbestos laws and regulations, including Washington Department of Labor and Industries requirements, the Asbestos School Hazard Abatement Reauthorization Act (ASHARA), and the Asbestos Hazard Emergency Response Act (AHERA). Part 3 of **Attachment A**, Preliminary Hazardous Materials Survey Report, recommends measures to reduce potential impacts related to identified contaminated or hazardous materials or substances.

During excavation, appropriate health and safety measures will be required where contaminated soils, sediment, surface water, or groundwater could be present, including measures such as the following:

- Using personal protective equipment.
- Providing worker training and certification.
- Conducting visual and olfactory screening of groundwater for indications of contamination.
- If suspect soils or groundwater are encountered, performing sampling and laboratory analysis to characterize the materials for proper management, handling, and disposal in accordance with regulations.

b. Noise

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

People on-site hear noise from Brighton Playfield, traffic from Martin Luther King Jr. Way S and Rainier Avenue S and overflights from or to Boeing Field or Sea-Tac International Airport. The City of Seattle regulates noise via the Seattle Noise Ordinance (SMC 25.08). The ordinance sets a limit for exterior sound levels based on land use, establishes quiet hours, and prohibits construction and maintenance activities during certain hours of the day.

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

Construction: Heavy construction equipment will be used and may include track hoes, backhoes, dump trucks, and forklifts. Construction will take place during a temporary school closure, during which students will attend school at an SPS interim site. Noise will not exceed allowed sound levels for construction and will be limited to permitted construction hours described in the Seattle Noise Ordinance (SMC 25.08.425).

Operations: Noise from the renovated middle school will be audible to neighbors but is expected to be generally similar to existing noise levels because school is currently in operation at the site. Increased capacity will allow enrollment to increase over time from approximately 785 to 1,000 students. Noise sources from middle school activities typically include student voices, school bells, regular vehicular traffic, and building mechanical equipment. Noise during use of outdoor physical spaces is expected to be similar to existing levels. Noise generally occurs during normal school operating hours (approximately 8:55 a.m. to 3:45 p.m.). Any increase in noise due to increased enrollment would be gradual and would remain limited according to the school bell schedule and calendar.

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

General measures that may be imposed on the project to reduce or control noise impacts include those listed below:

- Construction equipment is maintained in good condition and equipped with mufflers. If feasible, stay away from noise-sensitive receivers. Vehicle idling should be minimized by turning off engines when not in use.
- Residents in the vicinity of the school should be notified before construction starts.

- Construction activities will be restricted to hours designated by SMC 25.08.425. The Seattle Land Use Code allows construction equipment operations between the hours of 7 a.m. and 10 p.m. on weekdays and 9 a.m. and 10 p.m. on weekends and holidays. Construction would generally occur between 7 a.m. and 5 p.m. on weekdays. Construction occurring at night or on holidays is not currently planned. Weekend construction could occur in some cases.
- If construction activities exceed permitted noise levels, SPS will instruct contractors to implement measures to reduce noise impacts to comply with the noise ordinance, which may include additional muffling of equipment.
- School operations will adhere to the Seattle Noise Ordinance.
- The code further regulates noises considered “unreasonable” including “loud and raucous, and frequent repetitive or continuous sounds made by the amplified or unamplified human voice” between the hours of 10 p.m. and 7 a.m. During these hours, the maximum allowable noise from one property to another within residential districts is reduced to 45 Leq (dBA) (i.e., Equivalent Continuous Sound Pressure Level, A-weighted decibels).

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 site is currently used and will continue to be used as a middle school. The school building is surrounded by Seattle Parks’ Brighton Playfield to the north; single-family residential uses to the east, south, and west; and a mix of multi-family residential neighborhood commercial uses along Martin Luther King Jr. Way S to the west (SDCI 2024). The project will not affect current land uses on nearby or adjacent properties.

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 nonforest use?

The site has been developed as a school since 1952 (HistoryLink 2024). The site is not used for working farmland or forest lands and does not contain agricultural or forest land of long-term significance.

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:

No working farm or forest lands are located near the project site. The project will not affect or be affected by working farm or forest land operations.

c. Describe any structures on the site.

The project site includes the existing middle school structure and temporary portable classrooms that will be relocated prior to the start of construction.

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

The project involves the demolition of Unit A (see **Figure 2**, Conceptual Site Plan), in addition to the relocation of the portable classrooms. The utilities supporting the portable classrooms will be demolished.

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

The site is currently zoned Neighborhood Residential (NR3) (SDCI 2024). Public schools and accessory uses are permitted in all neighborhood residential zones according to the Seattle Land Use Code (SMC 23.51B.002).

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

The City of Seattle Comprehensive Plan designates the site as a Neighborhood Residential (OPCD 2020).

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

The project site is not within a Shoreline Master Program designated area (SDCI 2024).

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

There are no steep slopes (defined by SMC 25.09.012 as slopes with an incline of 40 percent or more within a vertical elevation change of at least 10 feet) on the site, and no areas that have been classified as critical areas by the City (SDCI 2024).

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

Approximately 107 faculty and staff currently work at Aki Kurose Middle School. Employment is expected to increase by up to 20 teachers if student enrollment increases from current enrollment of approximately 785 students to a maximum of 1,000 students after the project is completed. No people will reside in the completed project because it will be used exclusively for school purposes.

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

The project will not displace any people.

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

No displacement will result from this project; therefore, no mitigation measures are proposed.

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

The project is consistent with existing allowable land use of the site as a school and falls under the permitted uses in SMC 23.51B.002. The project is also compatible with future land use, as the site will continue to be used as a middle school.

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

No impacts on agricultural or forest lands of long-term commercial significance will occur. Therefore, no mitigation measures are proposed.

9. Housing

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

No housing units will be provided.

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

No housing units will be eliminated.

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

No housing will be created or eliminated; therefore, no measures are proposed.

10. Aesthetics

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

The tallest height of any new structure will be approximately 47 feet, about the same as the tallest point of the existing school building (see **Attachment E**, Site Plan).

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

Views in the near ground will be enhanced due to additional landscaping and outdoor learning areas associated with the project design. The two-story classroom addition is not expected to obstruct views in the immediate vicinity.

The nearby residential buildings and the existing school building are one or two stories; therefore, the addition of a two-story building will not substantially alter views. See **Attachment G**, Photographs.

SMC 25.05.675P protects public views of significant natural and human-made features (Mount Rainer, 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 certain public places identified in SMC 25.05.675 Attachment 1. Neither the project site nor the adjacent Brighton Playfield are on the list of public places whose views are protected.

Mount Rainier is visible from certain locations within Brighton Playfield and blocked from view in other locations due to view obstruction by existing buildings and trees. Mount Rainier can be seen from the hill and walkways northwest of Brighton Playfield (**Photos 1–3** in **Attachment G**). These views will not be affected by the construction of the project.

Views of Mount Rainier from the highest elevation of Brighton Playfield (at the western side near the tennis courts [**Photos 1–2]**) are currently partially or fully obscured by trees and chain-link fencing. The proposed two-story addition will not obscure the existing view. Views from the walkway between the tennis courts and soccer field (**Photo 3**) will not be affected by the new school building, and the reduction in height of the building (see **Photo 5**) will enhance views.

Views from adjacent residences facing the school will be altered as a portion of the existing one-story building will be demolished and replaced with a new two-story building, which will include new exterior façades, and a different roof line (see **Attachment E**, Site Plan). However, the character and use of the site as school buildings will not change. The new building has been designed to be aesthetically appealing and recede into the landscape, and along with additional landscaping, will be an improvement over the aesthetics of the view of the older existing school.

For example, the current views of the site from single-family residences located to the east of the project site on 42nd Avenue S (**Photos 4 and 5**) are of the school buildings. The current view from residences located west of the project site on 39th Avenue S (**Photos 8 and 9**) are also dominated by the existing school buildings. After project construction, the view of the site from these locations will be of a newer school building that is taller but similar in height and scale and a new parking area visible from 39th Avenue S. The current view of the site from the residences located on S Graham Street south of the project site is also of classroom buildings (**Photos 6 and 7**). After project construction, the view from these residences will be of the existing buildings and a new building in the background.

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

No views will be greatly altered; therefore, no measures are proposed. Proposed landscaping and the outdoor learning area will provide a more diverse viewshed (Mahlum 2022b).

11. Light and Glare

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

Approximately five new lighting units, either wall-mounted or on light poles, will be installed in new parking and loading areas. Outdoor lighting will only be used in the evening and be angled to not produce glare. After-hours use of the school will be similar to current uses, and indoor lighting will employ occupancy sensors and automatically turn off when not in use (Mahlum 2022b).

Existing site lighting includes mounted fixtures on the school building at points of entry, and flood and other wall-mounted lights in limited areas. The existing interior lighting system will be replaced with more energy-efficient lighting using occupancy sensors, limiting the use of overhead lighting to when rooms are occupied (Mahlum 2022b).

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

No lighting or sources of glare will create safety hazards or interfere with views. Outdoor lighting will be limited to the parking areas along 39th Avenue S and two loading areas along 42nd Avenue S.

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

No off-site sources of light or glare will affect this project.

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

Proposed design features described in Responses to Questions 11.a and 11.b will reduce potential light and glare impacts.

12. Recreation

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

The primary recreation opportunity near the project site is Seattle Parks' Brighton Playfield, a 12-acre park north of and adjacent to the school property. Brighton Playfield includes grass sports fields, play structures, and an asphalt jogging path, in addition to beach volleyball, basketball, and tennis courts. In addition, Chief Sealth Trail, a 3.6-mile biking and walking trail, is located approximately 0.5 miles away. Hitts Hill Park, a small, forested park with walking trails, is located approximately 0.5 miles away.

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

No recreational uses will be permanently displaced as a result of this project. Students will be located off-site during construction and school will not be open or in session; therefore, community use of the gymnasium will be temporarily displaced. If staging occurs in the southwest corner of Brighton Playfield, recreation uses in that location would be temporarily displaced, for the duration of staging activities.

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

During construction, access to Brighton Playfield will be maintained. Impacts on Brighton Playfield will be short-term and temporary. During construction, including improvements to the school gymnasium, students will be relocated off-site and the gymnasium will not be available for student or community use. In the future, recreation opportunities for students will be improved with the addition of basketball half courts and a garden in the location of the current courtyard (see **Figure 2**, Conceptual Site Plan), in addition to gymnasium modernization.

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.

No recorded buildings, structures, or sites located on or near the site are currently listed in the National Register of Historic Places (NRHP), Washington Heritage Register, or Seattle Landmarks List (DAHP 2024; Seattle Department of Neighborhoods 2024).

The City of Seattle acquired the parcel to construct Aki Kurose Middle School in 1950; the school building was designed by architect William Mallis and opened in 1952 as Caspar W. Sharples Junior High School (Sherwood 1977; Thompson and Marr 2002:158-160). It was renamed Aki Kurose Middle School in 1999 (Thompson and Marr 2002:158-160).

Designation under the Seattle Landmarks Ordinance carries with it regulatory authority regarding alterations or demolition of a Landmark. This is acknowledged in the City's SEPA policies, SMC 25.05.675.H, and provides that, if a building is designated as a Landmark, compliance with Chapter 25.12 (the City's Landmarks Ordinance) shall constitute compliance with SEPA, but "*[i]f the project is rejected for nomination [as a city landmark], the project shall not be conditioned or denied for historical preservation purposes*" (SMC 25.05.675.H.2.c).

In 2021, SPS nominated the school to the Seattle Landmarks Preservation Board (Board); a nomination report was prepared on February 17, 2021 (David Peterson Historic Resource Consulting 2021). The Board voted to approve the nomination on May 5, 2021. The nomination report was reviewed by Board staff who prepared a Staff Report on Designation for the Board on June 9, 2021, which recommended designation under Criteria C and D (Doherty and Sodt 2021a). The nomination was reviewed by the Board during its June 16, 2021, meeting (Doherty and Sodt 2021b). According to the minutes for this meeting, nomination report co-author David Peterson stated his opinion that "*there has been a significant loss of integrity with loss of much of the glass block and because of that, the school fails to meet the Criterion D. He said the building would have been significant if it had remained unchanged. He said the school occupies a full block and could potentially meet Criterion F*." Nomination report co-author Susan Boyle stated her opinion that "*the school's importance lies with the institution and not the building. She said the school responded to conditions and was not seminal. Regarding Criterion F, she said the school is prominent in the neighborhood as shown in aerial photo*" (Doherty and Sodt 2021b). Members of the Board evaluated the school's eligibility against the designation standards, in particular regarding Criteria C, D, E, and F. A motion to approve the designation of the school under Criteria D and F was made but the motion failed upon Board voting (Doherty and Sodt 2021b). Accordingly, the school is not a City of Seattle Landmark and is ineligible for a subsequent nomination until 2031 under SMC 25.12.850. See **Attachment H**, Historic and Cultural Resources Background Materials.

A DAHP Historic Property Inventory (HPI) form was prepared for the school in 2021 and updated in 2024 (Property ID: 724380 Caspar Sharples Junior High School) (Elenga 2024a; Houser 2021). On August 12, 2024, Richard Best at SPS received a letter from Maureen Elenga, DAHP Architectural Historian, in response to SPS' submittal of a DAHP EZ Form for the project's compliance with Governor's Executive Order 21-02 (EO 21-02), which was assigned DAHP Project Tracking Code 2024-08-05668 (Elenga 2024b). In this letter, Ms. Elenga states that the Aki Kurose Middle School Addition and Modernization Project was reviewed on behalf of the State Historic Preservation Office (SHPO) under the provisions of EO 21-02 and that it is the opinion of DAHP that DAHP Property ID: 724380 (Caspar Sharples Junior High School) is not eligible for listing in the NRHP. Furthermore, DAHP concluded that no historic resources will be impacted by the project, a finding consistent with recommendations provided by SPS as part of the EO 21-02 consultation. See **Attachment H**, Historic and Cultural Resources Background Materials.

There are 25 buildings and one City park (Brighton Playfield) on parcels adjacent to the project site. Of these 26 total resources, 22 will be 45 years of age or older at the start of planned construction in 2026 (King County 2024a). The buildings include residential houses, a church building, and a park shelter. The project does not propose impacts on any of these adjacent resources. The age threshold for consideration as a Seattle Landmark is 25 years or older. Of the adjacent 26 resources, 24 meet this age threshold.

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.

SPS has prepared a cultural resources literature review in support of preparation of this Checklist. This report will be submitted to DAHP, and a redacted version can be requested from SPS or DAHP.

To date, no archaeological sites, cemeteries, or disclosed traditional cultural properties within or adjacent to the project boundaries have been recorded with DAHP (DAHP 2024).

There have been four cultural resources assessments and five historic structures surveys completed within 1.0 mile of the project boundaries. The nearest assessment was completed in Brighton Playfield for park renovations; no archaeological resources were identified (Wilson and Lockwood 2019). The nearest recorded archaeological site is approximately 0.95 miles from the project site and dates to the historic era. The project location is classified in the DAHP Statewide Predictive Model as a mix of Moderately Low to High Risk for containing precontact-era cultural resources (DAHP 2024).

Aki Kurose Middle School is located within the ancestral lands of the Duwamish people, whose traditional language is Southern Lushootseed and who are part of a larger cultural group known generally as the Southern Coast Salish people (Lane 1975a; Suttles and Lane 1990). The Southern Coast Salish group encompasses the Duwamish, Snoqualmie, Suquamish, and Tulalip Tribes, and additional groups in the Puget Sound region whose ancestral lands were primarily farther from the project site: the Puyallup, Nisqually, and Squaxin people (Suttles and Lane 1990). The memberships of the Snoqualmie Indian Tribe, Suquamish Tribe, Muckleshoot Indian Tribe, and Tulalip Tribes include successors of the Duwamish at the time of the 1855 Treaty of Point Elliott (Lane 1974, 1975b, 1988; Miller and Blukis Onat 2004:24-25, 56-108; Muckleshoot Indian Tribe 2023; Suquamish Tribe 2023). The Duwamish, Snoqualmie, and Suquamish Tribes state they have been in the Puget Sound region since time immemorial; this is also supported by archaeological evidence within the region (Duwamish Tribal Services 2018; Kopperl et al. 2016; Snoqualmie Indian Tribe 2023; Suquamish Tribe 2023).

No places with Lushootseed names are known to exist directly within the project area (Hilbert et al. 2001; Thrush 2007; Waterman 1922). The Lushootseed name for Beacon Hill is *qʷátsíč* (Greenish-Yellow Spine), located west of the Project Area. This is considered to refer to the appearance of the former trees on the hillside (placename #38 in Thrush 2007), which were described by surveyors in the 1850s as an abundance of maples, alders, and other deciduous trees on the hillsides. A trail once led along the ridge of Beacon Hill between Elliott Bay and *ƛəƛàcas* (Small Island) to the southeast of the school, in today's Rainier Beach neighborhood (placename #126 in Hilbert et al. 2001; placename #94 in Thrush 2007). To the east of the school, on the shores of Lake Washington, are three other places with known Lushootseed names based on available resources. Directly east is *x̌ax̌aʔúlč* (Taboo Container) at today's Martha Washington Park in Brighton Beach (placename #95 in Thrush 2007; placename #127 in Hilbert et al. 2001). Northeast is the isthmus *cəq́álapsəb* (High on the Neck) (placename #96 in Thrush 2007; placename #128 in Hilbert et al. 2001), which connected the mainland with *sqəbáq́st* (Noses), which is also known as Bailey Peninsula (placename #97 in Thrush 2007; placename #129 in Hilbert et al. 2001).

The earliest survey of the project area did not record any homesteads, trails, or other notable features; one Native American trail passed to the northeast of the project area leading inland from Bailey Peninsula, and a wagon road passed on the west side leading from Steilacoom to Seattle (U.S. Surveyor General 1861, 1863). The project area remained sparsely developed into the late 1890s (Anderson Map Company 1888, 1890; McKee and Reynolds 1894; USGS 1895). The project area was annexed by Seattle in 1906−1907 (Baist Map Company 1905). The project area was platted in 1888 and re-platted into smaller lots in the early 1900s to encourage development. Residential development followed, and the Brighton Beach neighborhood formed in 1912 (Baist Map Company 1908, 1912; Kroll Map Company 1912). In 1913, the City purchased the land for today's Brighton Playfield. However, the playfield was not fully built until 1930.

In 1950, the City closed the S Bateman Street right-of-way and issued a 99-year lease of the southern strip of Brighton Playfield for construction of a school. The City also acquired the block between S Bateman Street and S Graham Street (Block 10) to form today's school site. No playfield structures or features are known to have existed in the leased portion. The acquired block featured residences dating to at least 1908; these residences were removed prior to school construction (Baist Map Company 1908, 1912; NETROnline 2023; Pacific Aerial Surveys 1937; Sanborn Map Company 1917, 1929, 1951; Sherwood 1977; Thompson and Marr 2002).

Geology within the project site consists of Oligocene-aged sedimentary bedrock and Pleistocene-aged glacial outwash unlikely to have experienced substantial natural deposition since the end of the last Ice Age (Troost et al. 2005). As a result, past cultural traces, if deposited, would have tended to remain at ground surface or become shallowly mixed into the topsoil.

A preliminary review of archival resources, Light Detection and Ranging (LiDAR) imagery (King County 2024b), and seven geotechnical borings conducted in 2022 (WSP 2023) reveal that the project site contains sandy silt resulting from weathering of the siltstone bedrock below. Site preparation for construction of the original school is interpreted to have involved mechanical grading, including cutting and removal of surface soils, which have the greatest potential to contain intact archaeological deposits. As a result, the potential for the project site to contain intact precontact archaeological sites appears low.

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 following information was reviewed to complete this Checklist: previous archaeological survey reports (DAHP 2024), historical maps (Baist Map Company 1905, 1908, 1912; Kroll Map Company 1920; McKee and Reynolds 1894; Sanborn Map Company 1917, 1929, 1951; USGS 1895; U.S. Surveyor General 1861, 1863), government landowner records (U.S. Bureau of Land Management 1995), aerial photographs (NETROnline 2023; Pacific Aerial Surveys 1937), published ethnographies and regional histories (David Peterson Historic Resource Consulting 2021; Duwamish Tribal Services 2018; Hilbert et al. 2001; Kopperl et al. 2016; Lane, 1974, 1975a, 1975b, 1988; Snoqualmie Indian Tribe 2023; Thompson and Marr 2002; Thrush 2007; Waterman 1922), and geological maps and reports (King County 2024b; WSP 2023; Troost et al. 2005).

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.

SPS is receiving state capital funds from the Washington Office of Superintendent of Public Instruction (OSPI). Use of state funds requires that the project go through additional cultural resources review under EO 21-02. While separate from SEPA, the EO 21-02 review process requires consultation between SPS and DAHP and Affected Tribes regarding potential impacts on cultural resources, which include archaeological resources and historic buildings and structures. SPS has completed EO 21-02 consultation with DAHP (DAHP Project Tracking Code 2024-08-05668) and Affected Tribes.

On August 8, 2024, SPS requested to initiate EO 21-02 consultation with DAHP and the following Affected Tribes: Duwamish Tribe, Muckleshoot Indian Tribe, Snoqualmie Indian Tribe, Suquamish Tribe, and Tulalip Tribes. As of August 23, 2024, SPS has received responses from the DAHP, Duwamish Tribe, Snoqualmie Indian Tribe, and Suquamish Tribe. The DAHP responded on August 12, 2024, and stated that it is DAHP's opinion that the school is not eligible for listing in the NRHP and that no historic resources will be impacted by the current project as proposed (Elenga 2024b). The Duwamish Tribe responded on August 7, 2024, and "*noted disturbance in 1952 and requested native plants be included in final landscaping*." The Snoqualmie Indian Tribe responded on August 8, 2024, stating that it "*concur[s] with ESA's recommendation [of preparing an inadvertent discovery plan]*" and again on August 10, 2024, requesting "*to be on-site during ground disturbing activities*." The Suquamish Tribe responded on

August 6, 2024, with "*no comments or concerns on this project*." Communication logs are on file at SPS and were provided to ESA on August 23, 2024.

Due to the low potential for intact archaeological deposits, and the widespread presence of impervious surfaces across the project site, ESA is not recommending a subsurface archaeological survey unless otherwise requested by EO 21-02 consulting parties. SPS has prepared an Inadvertent Discovery Plan (Wilson and Lockwood 2019) for use during project construction and will ensure that the contractor receives cultural resources orientation prior to beginning ground disturbance. SPS will notify the Affected Tribes in advance of construction and invite them to observe the work. At all times during construction, state laws regarding cultural resources, including Archaeological Sites and Resources (RCW 27.53), Indian Graves and Records (RCW 27.44), Human Remains (RCW 68.50), and Abandoned and Historic Cemeteries and Historic Graves (RCW 68.60), are in force if archaeological sites or human remains are discovered. Based on the results of the analysis, measures to avoid, minimize, or compensate for the loss of, changes to, and disturbance to resources will be determined based on the nature, location, and potential impacts on any archaeological resource.

14. Transportation

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.

Vehicles access the site from 39th Avenue S and 42nd Avenue S. A vehicular access driveway on 39th Avenue S connects to a small, paved parking area with approximately 10 stalls at the northwest corner of the site. There are two driveways on 42nd Avenue S that serve two separate service/delivery and loading dock areas on the east side of the school building, where there are also two parking stalls.

A paved central courtyard is used primarily for school employee parking (a total of about 46 vehicles). Vehicular access to the central courtyard occurs from a paved lane (access road) between the school and Brighton Playfield. The paved lane does not have formal curb-cuts but can be accessed from both 39th Avenues S and 42nd Avenue S. SPED Special Education (SPED) school buses use the paved lane as a load/unload area. A curb pullout area along the site's S Graham Street frontage is designated for school load and unload. About 125 feet of this curb space west of 42nd Avenue S is designated for automobiles; the remaining 390 feet of curb space west to 39th Avenue S is designated for school buses. The load/unload zones are in effect from 7 to 10 a.m. and from 1 to 5 p.m.

The project will enhance the central courtyard for outdoor learning and community use and will no longer allow vehicle access for employees or visitors. SPS is coordinating with SPR to implement vehicular access control for the paved lane, likely through installation of lockable barriers. Pedestrian, bicycle, and emergency-vehicle access will be retained; all other vehicle access to the paved lane will be prevented.

The northwest portion of the site (west of the existing school building and new addition) will be improved to provide on-site parking for approximately 20 vehicles. The existing vehicular access driveway on 39th Avenue S will be retained to serve this parking area. Vehicles parking in the northern nine stalls will exit this lot to the north using the one-way exit onto the SPR paved lane and then west onto 39th Avenue S; all others parked in this lot could exit either to the north, or at the same location as the entry.

The service area on the east side of the site will be improved to accommodate deliveries and access to solid waste containers. Access to this area will continue to be provided from the exiting northern access driveway on 42nd Avenue S, located about 195 feet north of S Graham Street.

Two parking stalls will be provided in the area currently used for deliveries. Access to this area will continue to be provided by the existing southern access driveway on 42nd Avenue S, located about 105 feet north of S Graham Street.

The existing school bus load zone on S Graham Street will be extended eastward to accommodate SPED buses that would no longer use the paved lane. This will eliminate the existing school load zone for automobiles on S Graham Street. To replace that function, new school load zones for automobiles are proposed along the northern portions of the school's frontage along 39th Avenue S and 42nd Avenues S. The curb-side parallel on-street parking in these areas will be designated for school-load only during morning arrival and afternoon dismissal periods. Both the family-vehicle and school-bus load/unload areas could be used outside of these times for general parking (e.g., evenings and weekends for events). See **Attachment B**, Transportation Technical Report, for more information.

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?

Yes, King County Metro (Metro) provides bus service along Martin Luther King (MLK) Jr Way S to the west of the site and along Rainier Avenue S to the east. Metro Route 160 stops 800 feet west of the site on MLK Jr Way S. One quarter-mile east on Rainier Avenue S, there are stops serving both northbound and southbound Metro Routes 7 and 9.

Sound Transit's 1 Line Link light rail service operates along MLK Jr. Way S west of the site. The 1 Line serves 19 stations over almost 25 miles between the Northgate Station in North Seattle and the Angle Lake station in SeaTac. The 1 Line operates about 20 hours per day with trains every 8 to 10 minutes for most of the day. The nearest stations are located about 0.6 miles south of the site at S Othello Street (Othello Station) and about 1.1 miles north of the site at S

Angeline Street (Columbia City Station). Sound Transit's Graham Street Station Project will add a new street-level station to the existing 1 Line of the Link light rail network on MLK Jr. Way S in the vicinity of S Graham Street, with completion anticipated in 2031.

School bus transportation is available for middle school students who qualify for transportation. During the 2023-24 school year, the school was served by eight general education buses and six SPED buses. According to SPS policy, middle school students who live within SPS boundaries more than 2 miles from their assigned school are eligible for transportation. SPS-arranged transportation is provided for those students attending a middle school in their attendance area or linked service area. All students 18 and under are eligible for fare-free transit in King County. See **Attachment B**, Transportation Technical Report, for more information.

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).

As described in Response to Question 14.a, the project will eliminate vehicular access to the central courtyard. While the project will change on-site parking layouts, it will retain the other access driveways. The project will also adjust the curbside load/unload areas to accommodate SPED buses together with general education buses along the north side of S Graham Street and to relocate the automobile load/unload to segments of 39th and 42nd Avenues S. The preferred circulation pattern for family-vehicle drop-off and pick-up will be clockwise (north on 39th Avenue S, east on S Juneau Street, and south on 42nd Avenue S).

The project will involve constructing frontage and curb ramp improvements along S Graham Street, 39th Avenue S, and 42nd Avenue S and/or non-motorized facilities in some locations adjacent to the school, as required by the City, through the Street Improvement Permit (SIP) process. See **Attachment B**, Transportation Technical Report, for more information.

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

The project will not use or occur in the immediate vicinity of water or air transportation. The school is located within 0.6 miles of Sound Transit's Othello Station that provides light rail service between Des Moines and Northgate. A future station is planned to open in 2031 at S Graham Street. Some school employees or visitors may use light rail to access the site vicinity. See **Attachment B**, Transportation Technical Report, for more information.

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 nonpassenger vehicles). What data or transportation models were used to make these estimates?

The traffic analysis conducted for this SEPA Checklist reflects conditions with the project, assuming increased enrollment capacity up to 1,000 students (a net increase of 215 students compared to the school's 2023–24 enrollment). 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 approximately 440 trips per day (220 in, 220 out). The peak traffic volumes will continue to occur in the morning just before classes begin (between 8 and 9 a.m. and in the afternoon around dismissal (between 3:30 and 4:30 p.m.).

During the 2023–24 school year, the school was served by eight general education buses and six smaller SPED buses; no change in the number of buses is expected. 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 likely represent about 2 to 3 percent of the total daily traffic. For more information about the expected school traffic generation, refer to **Attachment B**, Transportation Technical Report.

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

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

The project will not result in significant adverse impacts on the transportation system in the site vicinity. During construction, students, faculty, and staff will be relocated to the Van Asselt School interim site located at 7201 Beacon Avenue S. The following measures have been incorporated into the project to reduce the traffic and parking impacts with the project.

Prior to construction, SPS will require the selected contractor to develop a Construction Transportation Management Plan (CTMP) that addresses traffic and pedestrian control during construction. The CTMP will define truck routes, lane closures, walkway closures, and parking disruptions. To the extent possible, the CTMP will 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 daily at the truck exit points (such as street sweeping or on-site truck wheel cleaning) to reduce tracking dirt off-site.

For operations, SPS will require the following:

- Prior to re-opening the expanded school, SPS and the school will develop a Transportation Management Plan (TMP) to educate parents and students about the preferred access and circulation patterns for the school. This will include directing family drivers to use 39th Avenue S, S Juneau Street, and 42nd Avenue S as a clockwise route when driving students to school in the morning or picking students up from school in the afternoon.
- SPS and the school administration will develop a Neighborhood Communication Plan (NCP) to inform nearby neighbors of large school events each year (those expected to draw 1,000 people or more). The NCP will be updated annually (or as events are scheduled) and will provide information about the dates, times, and rough magnitude of attendance. The communication is intended to allow neighbors to plan for the occasional increase in on-street parking demand that would occur during large events.
- SPS will work with SDOT to confirm the locations, extent, and signage (such as times of restrictions) of the school load zones along S Graham Street, 39th Avenue S, and 42nd Avenue S.

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.

The project will increase student capacity at the school. Enrollment will increase over time from 785 students during the 2023-24 school year to the school full capacity after construction, 1,000 students, reflecting an increase of 215 students, or 27 percent increase. Increased enrollment will increase demand for public services. Public service providers have planning processes in place as required by law, and plan for changes in demand with periodic projection planning and capital facility planning. The increase in enrollment over time of 27 percent is not expected to result in a significant adverse impact on public service providers because providers plan for change in future demand through required planning processes. The enrollment increase will not result in the need for additional facilities or funding outside of the required planning processes.

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

Local public service providers will be made aware of any potential roadway impacts that could adversely affect response times during construction. If public streets are blocked, a permit would be obtained from the Seattle Department of Transportation and will include a Traffic Control Plan and provisions to maintain emergency service access, if required. Impacts during operation will be addressed through required planning processes, such as enrollment and population projections and capital facilities planning.

16. Utilities

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

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.

Utilities will be removed, relocated, or upgraded as needed for the project. Depending on project design, upgrades could be needed for electric and other utilities.

Seattle City Light will continue to provide electricity service to the school. Electrical upgrades could include connections to the new building addition.

Seattle Public Utilities will continue to provide water service and would upgrade service as needed. The project will connect to the water main within 39th Avenue S right-of-way to provide a new 8-inch loop with hydrants, 4-inch domestic service, and 6-inch fire sprinkler service. An estimated 256 linear feet of 8-inch ductile iron pipe will be needed with new hydrants, 206 linear feet of 6-inch ductile iron pipe for fire sprinkler service, and 205 linear feet of 4-inch ductile iron pipe for domestic service (Mahlum 2022b).

Waste Management will continue to provide waste and recycling services to the school. Telephone services are offered by various providers and would be upgraded to provide service in the modernized and new buildings.

Seattle Public Utilities will continue to provide sewer services and would upgrade service as needed. Approximately 205 linear feet of new 6-inch sewer will be installed and connect to the main within 39th Avenue S. (Mahlum 2022b).

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.

Vincent R. Gonzales

Type name of signee: Vincent Gonzales, Senior Project Manager

Position and agency/organization: Seattle Public Schools

Date submitted: October 18, 2024

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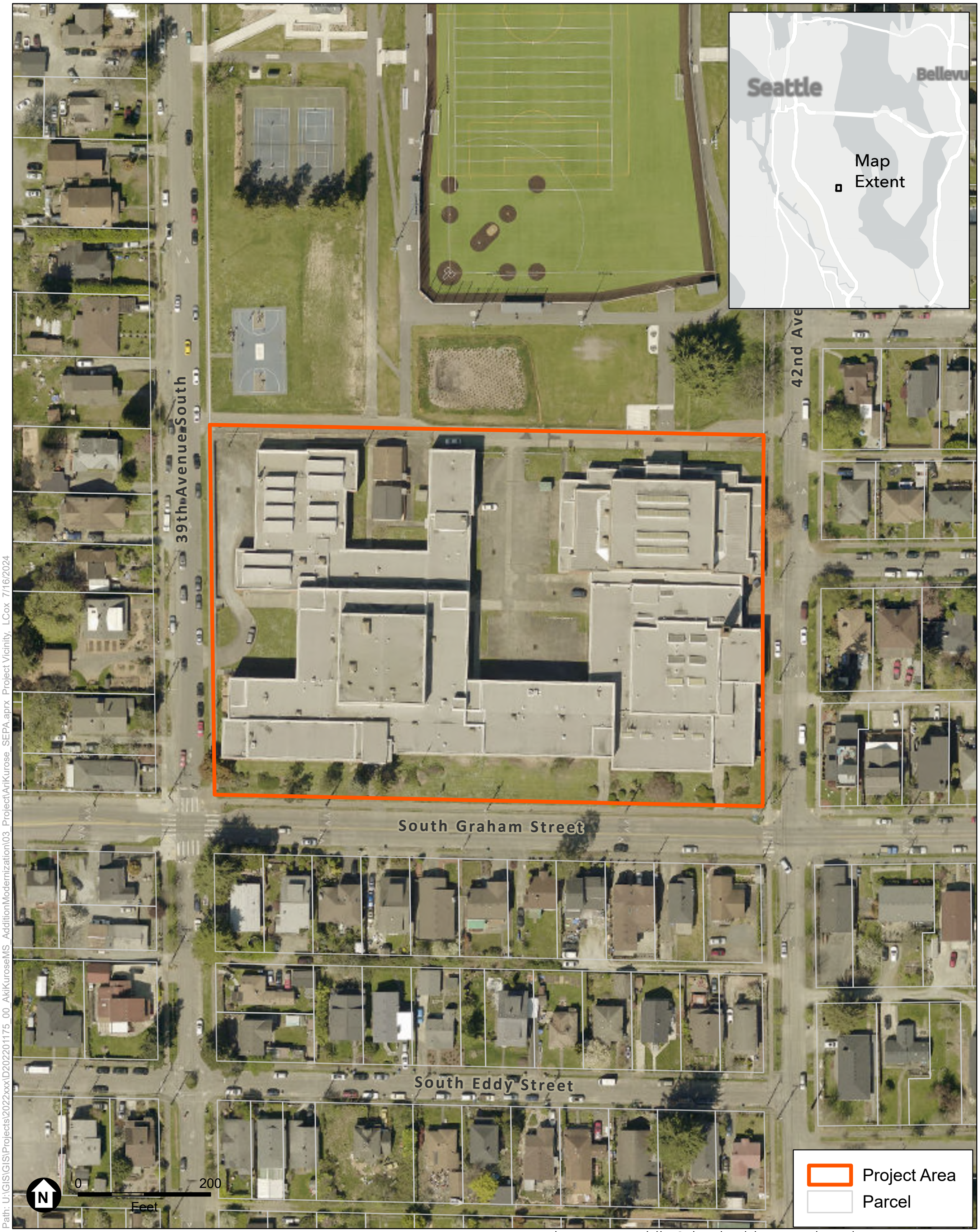
FIGURES



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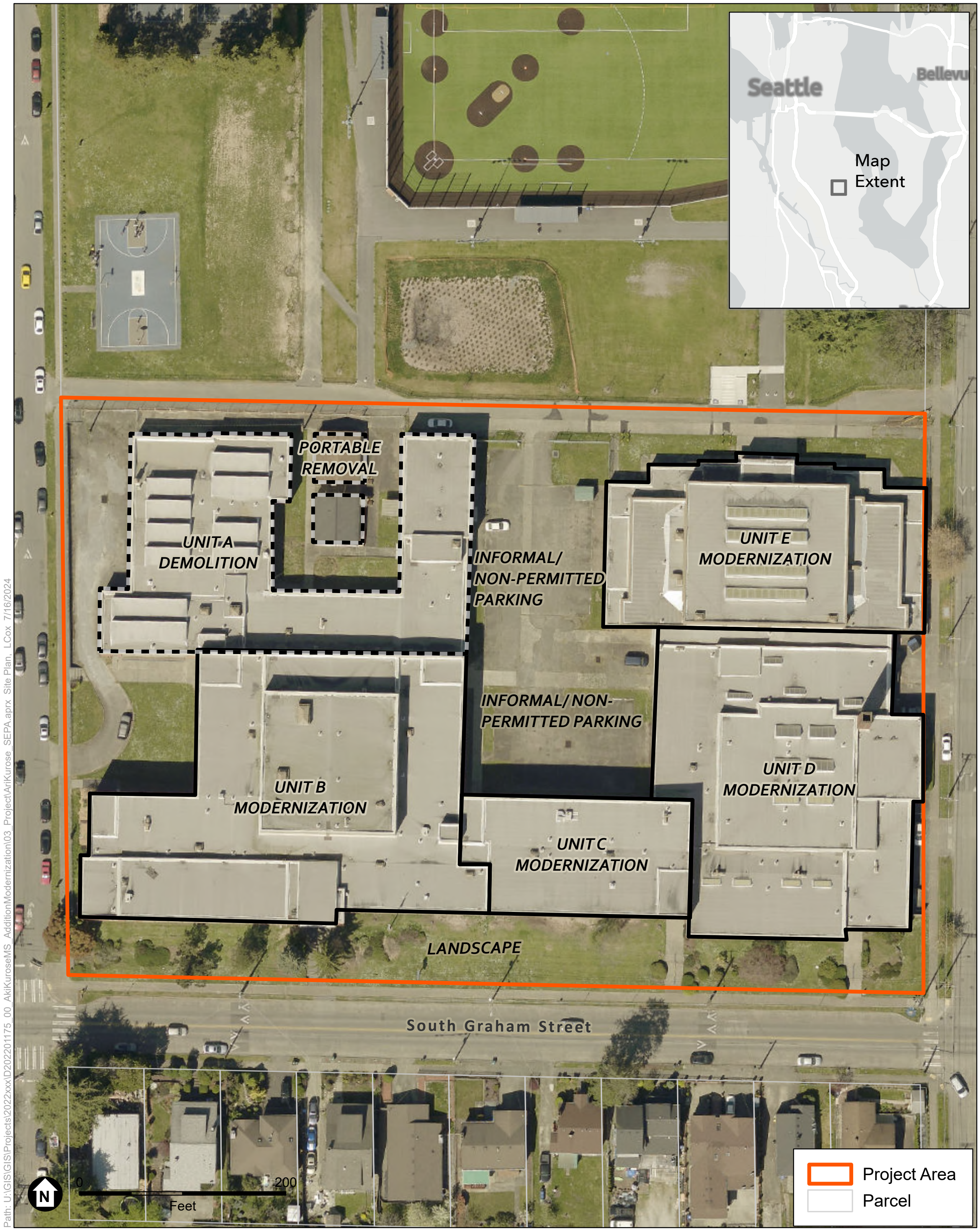
Aki Kurose Middle School Addition and Modernization Project

Source(s): OSM 2023, King County 2021

Figure 1
Vicinity Map

ESA



Source(s): OSM 2023, King County 2021

Aki Kurose Middle School Addition and Modernization Project

Figure 2
Conceptual Site Plan

Draft. Last Updated 7/16/2024

ESA

ATTACHMENT A: PRELIMINARY HAZARDOUS MATERIALS SURVEY REPORT

Preliminary Hazardous Materials Survey Report

Aki Kurose Middle School Renovation and Addition

3928 S Graham St
Seattle, WA 98118

Prepared for:

Seattle Public Schools
Mail Stop 22-331
PO Box 34165
Seattle, WA

October 6, 2023
PBS Project No. 40008.285

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1 INTRODUCTION

1.1 Project Background

PBS Engineering and Environmental, Inc. (PBS) performed a limited hazardous materials survey of Aki Kurose Middle School located at 3928 S Graham St, Seattle, Washington, in conjunction with the planned renovation of the school. The intent of this investigation is to ensure that Seattle Public Schools is in compliance with applicable regulatory requirements that a "good faith inspection" for ACMs be performed prior to demolition activities.

At the request of Seattle Public Schools, all accessible areas of the school were inspected for the presence of asbestos-containing materials (ACMs), lead-containing paint (LCP), PCB-containing light ballasts, mercury-containing fluorescent lamps, and regulated metals in masonry mortar.

1.2 Building Descriptions

Aki Kurose Middle School consists of both concrete slab-on-grade and pier foundations with wood-framed, masonry and concrete structure built in the 1950's totaling approximately 168,905 square feet. Interior finishes generally consist of sheet vinyl flooring, carpet, vinyl floor tile, and bare concrete floors, cementitious "magnesite" flooring at doorway thresholds and stair landings, plaster and gypsum wallboard walls, and exposed plaster and 12" acoustical ceiling tiles adhered to plaster ceilings in halls and classrooms. Textured walls and ceilings exist in the Auditorium. The exterior consists of brick veneer with metal framed windows and doors. Sub-floor utility tunnels and crawl spaces exist throughout in various locations.

Heating is supplied to the building by the main boiler room, which serves radiators at various locations throughout. Piping systems are routed through mechanical tunnels and attic spaces with exposed risers at perimeter walls.

1.3 Asbestos Survey Process

All accessible areas were inspected by AHERA Certified Building Inspector Ryan Hunter (Cert. No. IRO-23-7254B Exp. 2/13/2024), Cameron Budnick (Cert. No. IR-23-9630B Exp. 9/19/2024, and Mae Reilly (Cert. No. IR-23-0591C Exp. 6/20/2024) in January and September of 2023. PBS endeavored to inspect all accessible areas of the building. Inaccessible areas consist of those requiring selective demolition, fall protection, or confined space entry protocols in order to gain access.

When observed, suspect materials were sampled. All samples were assigned a unique identification number and transmitted for analysis to Seattle Asbestos Test (NVLAP #201057-0) under chain-of-custody protocols. Samples were analyzed according to EPA Method 600R-93/116 using Polarized Light Microscopy (PLM), which has a reliable limit of quantification of 1% asbestos by volume. Information regarding the type and location of sampled materials can be found on the attached PLM Sample Inventory located in Appendix A.

PBS has reviewed available historical survey data from various dates between 2004 and 2023. Pertinent information has been incorporated into our findings, and excerpts from previous reports are attached.

Suspect ACMs may exist in inaccessible areas. PBS endeavored to determine the presence and estimate the condition of suspect materials in all inaccessible areas included in the scope of work. While PBS has endeavored to identify the ACM that may be found in concealed locations, additional unidentified ACM may exist. Any previously unidentified suspect ACM that is encountered should be presumed to contain asbestos pending sampling.

2 FINDINGS

2.1 Asbestos-Containing Materials (ACMs)

The following materials were determined to contain greater than 1% asbestos:

- **Exposed Straight run pipe insulation and associated hard mudded fittings**
  - First and Second Floor – CR 102, CR 103, CR 113, CR 115, CR 116, CR 117, CR 118, CR 125E, CR 126, CR 128, Main Office, Mechanical Rooms, Fan Rooms, Boiler Room – approx. 800 LF
  - Sub-floor utility tunnels and crawl spaces – approx. 7,200 LF
- **Concealed Straight run pipe insulation and associated hard mudded fittings** – wall and ceiling cavities, etc. throughout – Estimated 1,550 LF
- **Straight run pipe insulation debris** – Dispersed at various locations throughout mechanical utilidors, tunnels, and crawlspace – approx. 200 SF
- **Exposed 9" vinyl floor tile and associated mastic** – Book Room 101, CR 102, CR 103, CR 104, CR 104 Storage, CR 105 Storage, Band Room 106, CR 107, CR 108, CR 109 Storage, CR 110, CR 111, CR 113 Office, CR 115, CR 116, Office Suite 117, Teacher's Lounge 118, Nurse's Office 119, CR 124W, CR 124E, CR 125W, CR 125E, CR 126, CR 127E, CR 127W, CR 128, CR 129, CR 130, Janitor's Storage 131, Staff Lounge 132, Room 133, CR 139, CR 140, Main Office, Cafeteria, Kitchen Serving Area, Boy's Locker Room Office and Vestibule, Girl's Locker Room Office, Student Store, Janitor's Closets, Hallway Storage – approx. 36,500 SF
- **Concealed 9" vinyl floor tile and associated mastic (under carpet)** – 109 A/B – approx. 1,375 SF
- **Magnesite curbs/coving** – Throughout Corridors and Classrooms – approx. 4,000 LF
- **"Red" magnesite flooring** – At Doorway Thresholds and Stair Landings throughout – approx. 250 SF
- **Acoustical ceiling treatment –** Auditorium upper ceiling – approx. 6,000 SF
- **Textured plaster ceiling –** Auditorium underside of balcony – approx. 3,500 SF
- **Cement asbestos board light boxes and balcony fascia –** Auditorium – approx. 300 SF
- **Block insulation on boilers (presumed asbestos-containing)** – Boiler Room – approx. 700 SF (350 SF per boiler)
- **Boiler interior components (e.g. fire brick, packings, blankets, etc.) –** Boiler Room – Presumed to exist and contain asbestos – approx. 5 cubic yards
- **Tank insulation (presumed asbestos-containing)** – Boiler Room – approx. 800 SF
- **Vibration cloths (presumed asbestos-containing)**– Mechanical and Fan Rooms – 200 SF
- **Asbestos cement chalk boards (and associated mastic presumed to contain asbestos) –** Classrooms throughout – approx. 76 EA

  Asbestos cement chalk boards were found to contain asbestos through PLM analysis. Associated mastic should be presumed asbestos-containing until exploratory sampling has been performed and lab analysis is completed.
- **Fire doors** – various locations throughout – Presumed to exist with asbestos cores – approx. 120 EA
- **Speaker box mastic (presumed asbestos-containing) –** Classrooms throughout – approx. 40 EA

- **Exterior window putty at metal framed windows** – CR 107, CR 108, CR 110, CR 111, CR 112, Boy's Locker Room, Girl's Locker Room, Gym Storage, Gym Entrance, Kitchen, Boiler Room, Custodian Offices – approx. 72 EA
- **Exterior window frame caulk at metal framed windows** – CR 107, CR 108, CR 110, CR 111, CR 112, Boy's Locker Room, Girl's Locker Room, Gym Storage, Gym Entrance, Kitchen, Boiler Room, Custodian Offices – approx. 1,150 LF
- **Exterior glass block sealant/caulk** – CR 107, CR 108, Boy's Locker Room, Girl's Locker Room, Gym – approx. 500 LF
- **Exterior clerestory window putty** – Northwest roof sawtooth windows – approx. 880 LF

The following materials were sampled and found not to contain detectable concentrations of asbestos:

- Smooth plaster walls and ceilings
- Gypsum wallboard and joint compound
- 12" glue on acoustical ceiling tile
- Mortar between glass block windows
- Brown sheet vinyl flooring and mastic
- Cement flooring
- Vinyl countertop and mastic
- Black asphaltic vapor barrier at Auditorium stage
- 2'x4' lay-in ceiling tile
- 12" vinyl floor tile and yellow mastic

Refer to the attached historical PLM sample inventories for additional information.

2.2 Lead-Containing Paint (LCP)

PBS reviewed historical sampling of painted surfaces as part of this investigation. Lead was detected in various painted coatings sampled as part of previous projects at the site. Based on historical sampling and the age of the building, all painted coatings are considered lead containing.

Refer to the attached historical lead sample inventories for additional information.

2.3 Mercury-Containing Components

All fluorescent light tubes are presumed to contain mercury. PBS quantified the number of fluorescent tubes that will be impacted by the project for the purposes of mercury vapor recovery prior to demolition activities.

- Approximately 2,000 four-foot fluorescent light tubes and 60 compact fluorescent light bulbs were identified as part of this survey.

2.4 PCB-Containing Components

PBS inspected representative fluorescent light fixture ballasts throughout the building to be removed to facilitate the planned demolition.

- Fluorescent light fixtures throughout the building were inspected and found to contain electronic ballasts. Electronic ballasts do not contain suspect PCB oils.

3 RECOMMENDATIONS

3.1 ACMs

PBS recommends that all ACM to be impacted by the project be removed prior to construction/demolition activities. A qualified Washington State licensed asbestos abatement contractor should be employed to remove all such ACM according to applicable local, state and federal regulations.

The possibility exists that suspect ACM may be present in equipment, wall and ceiling cavities, beneath concrete slabs and buried in site soils included in the scope of the work. These may include, but are not limited to waterproofing membrane, internal gaskets, pipe insulation, piping materials, caulking and sealants of HVAC equipment and construction adhesives and wall mastics. In the event that suspect ACM is uncovered during construction, contractors should stop work immediately and inform the owner promptly for confirmation testing. All untested materials should be presumed asbestos-containing or tested for asbestos content prior to impact.

Additional suspect-ACM may be present in concealed spaces. Caution should always be exercised during selective demolition to prevent impact of suspect-ACMs. All suspect ACMs should be presumed asbestos-containing until properly sampled and analyzed.

3.2 Lead-Containing Components

Representative painted coatings were found to contain lead. Impact of painted surfaces with detectable concentrations of lead requires construction activities to be performed according to Washington State Department of Labor and Industries (L&I) regulations for Lead in Construction. Impact of painted surfaces with detectable concentrations of metals in building materials and products requires construction activities to be performed according to L&I regulations for Lead in Construction (WAC 296-155-176).

Painted coatings may exist in inaccessible areas of the work area or in secondary coatings. Any previously unidentified painted coatings not sampled should be considered lead containing until sampled and proven otherwise. Dust control and housekeeping is crucial in preventing worker and occupant exposures.

3.3 Mercury-Containing Components

Fluorescent lamps are known to contain mercury vapor. PBS recommends that all fluorescent lamps be carefully handled and recycled/disposed of in accordance with the contract documents and applicable regulations during construction activities. Breakage of lamps should be avoided to prevent potential exposures to mercury. L&I requires specific training, handling, engineering controls, and disposal practices when performing this work. All waste shall be handled in accordance with WAC 173-303.

3.4 PCB-Containing Components

PBS recommends all light ballasts be inspected prior to disposal. Magnetic ballasts should be presumed to contain PCBs and properly removed, stored, transported and disposed of in accordance with Washington Administrative Code (WAC) 173-303 Dangerous Waste Regulations and 40 CFR Part 761 Subpart D. Electronic ballasts do not contain PCBs and can be disposed of as general debris in compliance with applicable codes and endpoint facility requirements.

Report prepared by:

Ryan Hunter
Project Manager / AHERA Building Inspector
Cert. # IRO-23-7254B, Exp. 2/13/2024

Report reviewed by:

Tim Ogden
Principal/Sr. Project Manager
AHERA Building Inspector
Cert. # IR-21-2008A, Exp. 04/01/2022

APPENDIX A

Historical PLM Bulk Sampling Information

PLM ASBESTOS SAMPLE INVENTORY

PBS Sample #	Material Type	Sample Location	Lab Description	Lab Result	Lab
40008.281 -001	Plaster Partition Wall	2nd Floor Stairwell at Elevator	Layer 1: White powdery material with sand and paint	NAD	SAT
40008.281 -002	Plaster Partition Wall	2nd Floor Stairwell at Room 201	Layer 1: White/gray sandy/brittle material with paint	NAD	SAT
40008.281 -003	Brown Sheet Vinyl Flooring	2nd Floor Stairwell at Elevator	Layer 1: Brown sheet vinyl	NAD	SAT
			Layer 2: Brown woven fibrous material with trace mastic	NAD	
40008.281 -004	Brown Sheet Vinyl Flooring	2nd Floor Stairwell at Elevator	Layer 1: Brown sheet vinyl	NAD	SAT
			Layer 2: Brown woven fibrous material with trace mastic	NAD	
			Layer 3: Trace black asphaltic material	NAD	
40008.281 -005	12" Acoustical Ceiling Tile	2nd Floor Stairwell at Elevator	Layer 1: Gray fibrous material with paint	NAD	SAT
	Brown Mastic		Layer 2: Brown mastic	NAD	

NAD - No Asbestos Detected

SEATTLE ASBESTOS TEST, LLC

Seattle Laboratory: 4500 9th Ave. NE, Suite 300, Seattle, WA 98105, Tel: 206.633.1111, Fax: 206.633.4747, NVLAP Lab Code: 201057-0

www.seattleasbestostest.com, admin@seattleasbestostest.com

Project Manager:	Mr. Tim Ogden, Mr. Ryan Hunter, Ms. Michelle Dodson	Date Analyzed:	6/10/2021
Client:	PBS Engineering and Environmental, Seattle	Client Job#:	40008.281
Address:	214 E Galer Street, Suite 300, Seattle, WA 98102	Project Location:	Aki Kurose Refuge
Tel:	206.233.9639	Laboratory batch#:	202110407
Date Report Issued:	6/10/2021	Samples Received:	5

Enclosed please find the test results for the bulk samples submitted to our laboratory for asbestos analysis. Analysis was performed using polarized light microscopy (PLM) in accordance with Test Method US EPA - 40 CFR Appendix E of Part 763, Interim Method of Determination of Asbestos in Bulk Insulation Samples and Test Method US EPA/600/R-93/116.

Percentages for this report are done by visual estimate and relate to the suggested acceptable error ranges by the method. Since variation in data increases as the quantity of asbestos decreases toward the limit of detection, the EPA recommends point counting for samples containing between <1% and 10% asbestos (NESHAP, 40 CFR Part 61). Statistically, point counting is a more accurate method. If you feel a point count might be beneficial, please feel free to call and request one.

The test results refer only to the samples or items submitted and tested. The accuracy with which these samples represent the actual materials is totally dependent on the acuity of the person who took the samples. This report must not be used by the client to claim product certification, approval, or endorsement by Seattle Asbestos Test, LLC, NVLAP, NIST, or any agency of the Federal government. The test report or calibration certificate shall not be reproduced except in full, without written approval of the laboratory. If the sample is inhomogeneous the sub-samples of the components are analyzed separately as layers.This report in its entirety consists of this cover leter, the customer sampling COC or data sheet, and the analytical report which is page numbered.

This report is highly confidential and will not be released without your consent. Samples are archived for 30 days after the analysis, and disposed of as hazardous waste thereafter.

Thank you for using our service and let us know if we can further assist you.

Sincerely

Steve (Fanyao) Zhang
Approved Signatory

202110407

PBS

LABORATORY CHAIN OF CUSTODY

Project: Aki Kurose Refuge

Project #: 40008.281

Analysis requested: PLM

Date: 6/9/2021

Relinq'd by/Signature: Ryan Hunter / Ryan Ht

Date/Time: 6/9/2021

Received by/Signature: Carolyn Yeo Cyeo

Date/Time: 6/9/21 14:21

Email ALL INVOICES to: seattleap@pbsusa.com

E-mail results to:

- ☐ Willem Mager
- ☐ Gregg Middaugh
- ☐ Mark Hiley
- ☒ Tim Ogden
- ☒ Ryan Hunter
- ☐ Prudy Stoudt-McRae
- ☐ Janet Murphy
- ☐ Kaitlin Soukup
- ☐ Allison Welch
- ☐ Toan Nguyen
- ☐ Peter Stensland
- ☐ Claire Tsai
- ☐ Holly Tuttle
- ☐ Mike Smith
- ☐ Ferman Fletcher
- ☐ Cameron Budnick
- ☒ Michelle Dodson
- ☐ ____________

TURN AROUND TIME:

- ☐ 1 Hour
- ☐ 2 Hours
- ☐ 4 Hours
- ☒ 24 Hours
- ☐ 48 Hours
- ☐ 3-5 Days
- ☐ Other____________

SAMPLE DATA FORM

Sample #	Material	Location	Lab
40008.281-001	Plaster Partition Wall	Stairwell at Elevator	SAT
40008.281-002	Plaster Partition Wall	Stairwell at Room 201	
40008.281-003	Brown Sheet Vinyl Flooring	Stairwell at Elevator	
40008.281-004	Brown Sheet Vinyl Flooring	Stairwell at Room 201	
40008.281-005	12" ACT w/ Brown Mastic	Stairwell at Elevator	

SEATTLE ASBESTOS TEST

Seattle Laboratory: 4500 9th Ave. NE, Suite 300, Seattle, WA 98105, Tel: 206.633.1111, Fax: 206.633.4747, NVLAP Lab Code: 201057-0

ANALYTICAL LABORATORY REPORT

[PLM] EPA – 40 CFR Appendix E to Subpart E of Part 763, Interim Method of the Determination of Asbestos in Bulk Insulation Samples; EPA 600/R-93/116: Method for the Determination of Asbestos in Bulk Building Materials **[PLM]**

Attn.:	Mr. Tim Ogden, Mr. Ryan Hunter, Ms. Michelle Dodson	**Client:**	PBS Engineering and Environmental, Seattle	**Address:**	214 E Galer Street, Suite 300, Seattle, WA 98102
Job#:	40008.281	**Batch#:**	202110407	**Date Received:**	6/9/2021
Samples Rec'd:	5	**Date Analyzed:**	6/10/2021	**Samples Analyzed:**	5
Project Loc.:	Aki Kurose Refuge				

Analyzed by: Carolyn Yeo

Approved Signatory: Steve (Fanyao) Zhang, President

Lab ID	Client Sample ID	Layer	Description	%	Asbestos Fibers	Non-fibrous Components	%	Non-asbestos Fibers
1	40008.281-001	1	White powdery material with sand and paint		**None detected**	Sand, Filler, Binder, Paint	3	Cellulose
2	40008.281-002	1	White/gray sandy/brittle material with paint		**None detected**	Sand, Filler, Binder, Paint	3	Cellulose
3	40008.281-003	1	Brown sheet vinyl		**None detected**	Vinyl/binder		None detected
		2	Brown woven fibrous material with trace mastic		**None detected**	binder/filler, Mastic/binder	82	Cellulose
4	40008.281-004	1	Brown sheet vinyl		**None detected**	Vinyl/binder		None detected
		2	Brown woven fibrous material with trace mastic		**None detected**	binder/filler, Mastic/binder	85	Cellulose
		3	Trace black asphaltic fibrous material		**None detected**	Asphalt/binder, Filler	66	Cellulose
5	40008.281-005	1	Gray fibrous material with paint		**None detected**	Paint, Filler, Perlite	65	Cellulose
		2	Brown mastic		**None detected**	Mastic/binder	3	Cellulose

PLM ASBESTOS SAMPLE INVENTORY

PBS Sample #		Material Type	Sample Location	Laboratory Description	Lab Result	Lab
40008.191	-001	Light Gray Window Putty	North Elevation, Unit E	Layer 1: Gray brittle material with paint	NAD	SAT
40008.191	-002	Light Gray Window Putty	East Elevation, Unit E	Layer 1: Gray brittle material	2% Chrysotile	SAT
40008.191	-003	Light Gray Window Putty	West Elevation, Unit D	Layer 1: Gray brittle material	NAD	SAT
40008.191	-004	Dark Gray Window Putty	West Elevation, Unit D	Layer 1: Dark-gray brittle material	3% Chrysotile	SAT
40008.191	-005	Dark Gray Window Putty	West Elevation, Unit D	Layer 1: Dark-gray brittle material	3% Chrysotile	SAT
40008.191	-006	Window Frame Caulk	North Elevation, Unit E	Layer 1: Silver brittle material with paint	3% Chrysotile	SAT
40008.191	-007	Window Frame Caulk	West Elevation, Unit E	Layer 1: Silver brittle material with paint	3% Chrysotile	SAT
40008.191	-008	Window Frame Caulk	East elevation, Unit E	Layer 1: Brown brittle material with paint	3% Chrysotile	SAT
40008.191	-009	Caulking around Seam of Glass Block	West Elevation, Unit D	Layer 1: Brown brittle material with paint	4% Chrysotile	SAT
40008.191	-010	12" Worm Pattern Glued Acoustical Ceiling Tile	Hallway, East Side, Unit D	Layer 1: Gray fibrous material with paint	NAD	SAT
		Glue		Layer 2: Brown mastic	NAD	
		Ceiling Plaster		Layer 3: Gray sandy brittle material	NAD	
40008.191	-011	12" Worm Pattern Glued Acoustical Ceiling Tile	West most Stairway, Unit B	Layer 1: Gray fibrous material	NAD	SAT
		Glue		Layer 2: Brown mastic	NAD	
40008.191	-012	Ceiling Plaster	West most Stairway, Unit B	Layer 1: Gray sandy/brittle material	NAD	SAT
40008.191	-013	9" Tan w/Dark Brown and White Streaks	Southeast Entrance, Unit B	Layer 1: Tan/dark brown/white tile	4% Chrysotile	SAT
		Mastic		Layer 2: Black mastic	NAD	
40008.191	-014	9" Tan w/Dark Brown and White Streaks	Northwest Entrance, Unit C	Layer 1: Tan/dark brown/white tile	4% Chrysotile	SAT
		Mastic		Layer 2: Black mastic	NAD	

PLM ASBESTOS SAMPLE INVENTORY

PBS Sample #		Material Type	Sample Location	Laboratory Description	Lab Result	Lab
40008.191	-015	9" Tan w/Dark Brown and White Streaks	Northeast Entrance, Unit D	Layer 1: Tan/dark brown/white tile	4% Chrysotile	SAT
		Mastic		Layer 2: Black mastic	NAD	
40008.191	-016	Light Gray Window Putty	North Elevator, Unit A Bathroom Window	Layer 1: Light gray brittle material with paint	NAD	SAT
40008.191	-017	Dark Gray Window Putty	East #1 Elevation, Unit A	Layer 1: Dark gray brittle material with paint	NAD	SAT
40008.191	-018	Light Gray Window Putty	West Elevation, Unit A	Layer 1: Light gray brittle material with paint	3% Chrysotile	SAT
40008.191	-019	Light Gray Window Putty	East Elevation, Unit B 1st Floor	Layer 1: Light gray brittle material with paint	NAD	SAT
40008.191	-020	Dark Gray Window Putty	East Elevation, Unit B 2nd Foor, 3rd Window from the South	Layer 1: Dark gray brittle material	NAD	SAT
40008.191	-021	Light Gray Window Putty	North Elevation, Unit C 1st Floor, East Sample	Layer 1: Light gray brittle material with paint	4% Chrysotile	SAT
40008.191	-022	Light Gray Window Putty	North Elevation, Unit C 2nd Floor, West Sample	Layer 1: Light gray brittle material	4% Chrysotile	SAT
40008.191	-023	Glass Block Interior Sealant	School Room 139	Layer 1: Tan soft/elastic material	5% Chrysotile	SAT
40008.191	-024	Window Frame Caulk	East Elevation, Unit D	Layer 1: Dark gray brittle material with paint	6% Chrysotile	SAT
40008.191	-025	Glass Block Sealant	North Elevation, Unit A	Layer 1: Tan soft material with paint	3% Chrysotile	SAT
40008.191	-026	Glass Block Sealant	West Elevation, Unit B	Layer 1: Tan soft material with paint	4% Chrysotile	SAT
40008.191	-027	Glass Block Sealant	North Elevation, Unit C	Layer 1: Tan brittle material with paint	3% Chrysotile	SAT
40008.191	-028	Glass Block Sealant	West Elevation, Unit A	Layer 1: Brown brittle material with paint	3% Chrysotile	SAT
40008.191	-029	Mortar between Glass Blocks	West Elevation, Unit D	Layer 1: Gray sandy/brittle material	NAD	SAT
40008.191	-030	Mortar between Glass Blocks	North Elevation, Unit A	Layer 1: Gray sandy/brittle material with paint	NAD	SAT
40008.191	-031	Mortar between Glass Blocks	North Elevation, Unit C	Layer 1: Gray sandy/brittle material with paint	NAD	SAT

NAD = No Asbestos Detected

PLM ASBESTOS SAMPLE INVENTORY

PBS Sample #		Material Type	Sample Location	Laboratory Description	Lab Result	Lab
40008.191	-032	Mortar between Glass Blocks	West Elevation, Unit A	Layer 1: Gray sandy/brittle material	NAD	SAT
40008.191	-033	Window Frame Caulk	Window within Glass Block, West Elevation #2 Unit A	Layer 1: Brown/gray brittle material	3% Chrysotile	SAT
40008.191	-034	Window Frame Caulk	Window within Glass Block, North Elevation Unit A	Layer 1: Silver paint	3% Chrysotile	SAT
				Layer 2: Gray brittle material	4% Chrysotile	
40008.191	-035	9" Tan w/Dark Brown & White Streaks	Unit D, Southwest Entrance	Layer 1: Brown tile	4% Chrysotile	SAT
		Mastic		Layer 2: Brown/black mastic	2% Chrysotile	
40008.191	-035A	Tile Mastic	Unit D, Southwest Entrance	Layer 1: Black Mastic	2% Chrysotile	SAT
40008.191	-036	9" Tan w/Dark Brown & White Streaks	Unit A, East Entrance	Layer 1: Brown tile	3% Chrysotile	SAT
		Mastic		Layer 2: Brown/black mastic	2% Chrysotile	SAT
40008.191	-036A	Floor Tile Mastic	Unit A, East Entrance	Layer 1: Black Mastic	NAD	SAT
40008.191	-037	9" Tan w/Dark Brown & White Streaks	Unit B in front of Boys Restroom	Layer 1: Brown tile	4% Chrysotile	SAT
		Mastic		Layer 2: Brown/black mastic	2% Chrysotile	SAT
40008.191	-037A	Tile Mastic	Unit B in front of Boys Restroom	Layer 1: Black Mastic	2% Chrysotile	SAT
40008.191	-038	9" Tan w/Dark Brown & White Streaks	Unit C in Custodian's office	Layer 1: Brown tile	3% Chrysotile	SAT
		Mastic		Layer 2: Brown/black mastic	2% Chrysotile	
40008.191	-038A	Floor Tile Mastic	Unit C in Custodian's office	Layer 1: Black Mastic	3% Chrysotile	SAT
40008.191	-039	Magnasite Covebase	Hallway next to Room 103, Unit B	Layer 1: Gray thin brittle material with paint	NAD	NVL
				Layer 2: Gray sandy material	NAD	
40008.191	-040	Magnasite Covebase	Northwest Entrance, Unit C	Layer 1: Brown brittle material	2% Chrysotile	NVL
				Layer 2: Gray sandy material	NAD	
40008.191	-041	Magnasite Covebase	Hallway in front of Room 106, Unit A	Layer 1: Brown brittle material	2% Chrysotile	NVL

PLM ASBESTOS SAMPLE INVENTORY

PBS Sample #		Material Type	Sample Location	Laboratory Description	Lab Result	Lab
40008.191	-042	Magnasite Covebase	Hallway in front of Room 118, Unit B	Layer 1: Brown brittle material with paint	2% Chrysotile	NVL
40008.191	-043	Magnasite Covebase	Hallway in front of Girls Gym, Unit E	Layer 1: Brown brittle material	2% Chrysotile	NVL
40008.191	-044	Magnasite Covebase	Hallway in front of Room 132, Unit D	Layer 1: Brown brittle material	2% Chrysotile	NVL
40008.191	-045	Floor Tile Mastic	Unit E, East Entrance	Layer 1: Black Mastic	NAD	SAT
40008.191	-046	Floor Tile Mastic	Unit A next to Room 108	Layer 1: Black Mastic	NAD	SAT

NAD = No Asbestos Detected

PBS
ENVIRONMENTAL

20091085l

Project: Aki Kurose Middle School 2010 BTA

Project # 40008.191

Analysis requested: PLM

Date: 8/19/09

Relinq'd by/Signature:

Date/Time: 8/19/09

Received by/Signature: Leon G. [illegible]

Date/Time: 8/19/09 4:40

Email results to:

- ☐ Brian Stanford
- ☐ Ernest Edwards
- ☐ Gregg Middaugh
- ☐ Mark Hiley
- ☐ Prudy Stoudt-McRae
- ☐ Chuck Greeb
- ☐ Joe Lucas
- ☐ Janet Murphy
- ☐ Harry Goren
- ☒ Ferman Fletcher
- ☐ Tim Ogden
- ☐ Other_______

TURN AROUND TIME:

- ☐ 1 Hour
- ☐ 2 Hours
- ☐ 4 Hours
- x 24 Hours
- ☐ 48 Hours
- ☐ 3-5 Days
- ☐ Other_______

BULK SAMPLE DATA FORM

Lab #	Sample #	Material	Location	Lab
	40008.191-001	Light Grey Window Putty	North Elevation Unit E	
	-002	"	East Elevation Unit E	
	-003	"	West Elevation Unit D	
	-004	Dark Grey Window Putty	"	
	-005	"	"	
	-006	Window Frame Caulk	North Elevation Unit E	
	-007	"	West Elevation Unit E	
	-008	"	East Elevation Unit E	
	-009	Caulking around seam of Glass Block	West Elevation Unit D	
	-010	12" Worm Pattern GACT/Glue/Ceiling Plaster	Hallway E. side Unit D	
	-011	12" Worm Pattern GACT/Glue	W. most stairway Unit B	
	-012	Ceiling Plaster	"	
	-013	9" Tan w/ Dk Brown & White Streaks/mastic	SE entrance Unit B	
	-014	"	NW entrance Unit C	
	-015	"	NE entrance Unit D	

SEATTLE ASBESTOS TEST, LLC

Lynnwood Laboratory: 19711 Scriber Lake Rd, Suite D, Lynnwood, WA 98036; Tel: 425.673.9850, Fax:425.673.9810
Bellevue Laboratory: 12727 Northup Way, Suite 24, Bellevue, WA 98005; Tel: 425.861.1111, Fax: 425.861.1118
Website: http://www.seattleasbestostest.com, E-mail: admin@seattleasbestostest.com

NVLAP Accreditation
Lab Code: 200768-0

ANALYTICAL LABORATORY REPORT

PLM by Method EPA/600/R-93/116

Attn.: Mr. Ferman Fletcher
Client: PBS Engineering and Environmental
Address: 2517 Eastlake Ave. E., Suite 100
Seattle, WA 98102

Client Job #: 40008.191
Laboratory Batch #: 200910851
Date Received: 8/19/2009
Samples Received: 15
Date Analyzed: 8/20/2009
Samples Analyzed: 15

Project: Aki Kurose Middle School 2010 BTA

Lab ID	Client Sample ID	Layer	Description	%	Asbestos Fibers	Non-Fibrous Components	%	Non-asbestos Fibers
1	40008.191-001	1	Gray brittle material with paint		None detected	Paint, Filler, Binder	4	Cellulose
2	40008.191-002	1	Gray brittle material	2	Chrysotile	Filler, Binder	3	Cellulose
3	40008.191-003	1	Gray brittle material		None detected	Filler, Binder	3	Cellulose
4	40008.191-004	1	Dark-gray brittle material	3	Chrysotile	Filler, Binder	2	Cellulose
5	40008.191-005	1	Dark-gray brittle material	3	Chrysotile	Filler, Binder	5	Cellulose
6	40008.191-006	1	Silver brittle material with paint	3	Chrysotile	Paint, Filler, Binder	4	Cellulose
7	40008.191-007	1	Silver brittle material with paint	3	Chrysotile	Paint, Filler, Binder	3	Cellulose
8	40008.191-008	1	Brown brittle material with paint	3	Chrysotile	Paint, Filler, Binder	4	Cellulose
9	40008.191-009	1	Brown brittle material with paint	4	Chrysotile	Paint, Filler, Binder	2	Cellulose
10	40008.191-010	1	Gray fibrous material with paint		None detected	Filler, Glass beads	65	Cellulose, Glass fibers
		2	Brown mastic		None detected	Mastic/binder	5	Cellulose
		3	Gray sandy/brittle material		None detected	Sands, Filler	3	Cellulose
11	40008.191-011	1	Gray fibrous material		None detected	Filler, Perlite	61	Cellulose, Glass fibers
		2	Brown mastic		None detected	Mastic/binder	7	Cellulose
12	40008.191-012	1	Gray sandy/brittle material		None detected	Sands, Filler	2	Cellulose

Analyzed by: Leon Li / Weilong Tai

Report reviewed by: Steve (Fanyao) Zhang, President

SEATTLE ASBESTOS TEST, LLC
Lynnwood Laboratory: 19711 Scriber Lake Rd, Suite D, Lynnwood, WA 98036; Tel: 425.673.9850, Fax:425.673.9810
Bellevue Laboratory: 12727 Northup Way, Suite 24, Bellevue, WA 98005; Tel: 425.861.1111, Fax: 425.861.1118
Website: http://www.seattleasbestostest.com, E-mail: admin@seattleasbestostest.com

NVLAP Accreditation
Lab Code: 200768-0

ANALYTICAL LABORATORY REPORT

PLM by Method EPA/600/R-93/116

Attn.: Mr. Ferman Fletcher
Client: PBS Engineering and Environmental
Address: 2517 Eastlake Ave. E., Suite 100
Seattle, WA 98102

Client Job #: 40008.191
Laboratory Batch #: 200910851
Date Received: 8/19/2009
Samples Received: 15
Date Analyzed: 8/20/2009
Samples Analyzed: 15

Project: Aki Kurose Middle School 2010 BTA

Lab ID	Client Sample ID	Layer	Description	%	Asbestos Fibers	Non-Fibrous Components	%	Non-asbestos Fibers
13	40008.191-013	1	Tan/dark-brown/ white tile	**4**	**Chrysotile**	Vinyl/binder, Mineral grains	3	Cellulose
		2	Black mastic		**None detected**	Mastic/binder	6	Cellulose
14	40008.191-014	1	Tan/dark-brown/ white tile	**4**	**Chrysotile**	Vinyl/binder, Mineral grains	3	Cellulose
		2	Black mastic		**None detected**	Mastic/binder	5	Cellulose
15	40008.191-015	1	Tan/dark-brown/ white tile	**4**	**Chrysotile**	Vinyl/binder, Mineral grains	4	Cellulose
		2	Black mastic		**None detected**	Mastic/binder	7	Cellulose

Analyzed by: Leon Li / Weilong Tai

Report reviewed by: Steve (Fanyao) Zhang, President

PBS ENVIRONMENTAL

SAT Batch: 200910864

Project: Aki Kurose Middle School 2010 BTA **Project #** 40008.191

Analysis requested: PLM **Date:** 8/20/09

Relinq'd by/Signature: **Date/Time:** 8/20/09

Received by/Signature: **Date/Time:** 8/21/09 10:00

Email results to:

- ☐ Brian Stanford
- ☐ Ernest Edwards
- ☐ Gregg Middaugh
- ☐ Mark Hiley
- ☐ Prudy Stoudt-McRae
- ☐ Chuck Greeb
- ☐ Joe Lucas
- ☐ Janet Murphy
- ☐ Harry Goren
- ☒ Ferman Fletcher
- ☐ Tim Ogden
- ☐ Other____________

TURN AROUND TIME:

- ☐ 1 Hour
- ☐ 2 Hours
- ☐ 4 Hours
- x 24 Hours
- ☐ 48 Hours
- ☐ 3-5 Days
- ☐ Other____________

BULK SAMPLE DATA FORM

Lab #	Sample #	Material	Location	Lab
	40008.191-016	Light Grey Window putty	North Elev. Unit A Bathroom Window	SAT
	-017	Dark Grey Window Putty	E. #1 Elevation Unit A	
	-018	Light Grey Window Putty	W. Elevation Unit A	
	-019	"	E. Elevation Unit B 1st floor	
	-020	Dark Grey Window Putty	E. Elevation Unit B 2nd flr. 3rd window from the south	
	-021	Light Grey Window Putty	N. Elevation Unit C 1st floor E. Sample	
	-022	"	N Elev. Unit C 2nd floor W. sample	
	-023	Glass Block Interior Sealant	School Rm 139	
	-024	Window Frame Caulk	E. Elevation Unit D	

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Bellevue Laboratory: 12727 Northup Way, Suite 24, Bellevue, WA 98005; Tel: 425.861.1111, Fax: 425.861.1118
Website: http://www.seattleasbestostest.com, E-mail: admin@seattleasbestostest.com

NVLAP Accreditation
Lab Code: 200768-0

ANALYTICAL LABORATORY REPORT

PLM by Method EPA/600/R-93/116

Attn.: Ferman Fletcher
Client: PBS Engineering and Environmental
Address: 2517 Eastlake Ave. E., Suite 100
Seattle, WA 98102

Client Job #: 40008.191
Laboratory Batch #: 200910864
Date Received: 8/21/2009
Samples Received: 9
Date Analyzed: 8/21/2009
Samples Analyzed: 9

Project: Aki Kurose Middle School 2010 BTA

Lab ID	Client Sample ID	Layer	Description	%	Asbestos Fibers	Non-Fibrous Components	%	Non-asbestos Fibers
1	40008.191-016	1	Light gray brittle material with paint		None detected	Paint, Filler, Binder	2	Cellulose
2	40008.191-17	1	Dark gray brittle material with paint		None detected	Paint, Filler, Binder	3	Cellulose
3	40008.191-18	1	Light gray brittle material with paint	3	Chrysotile	Paint, Filler, Binder	2	Cellulose
4	40008.191-19	1	Light gray brittle material with paint		None detected	Paint, Filler, Binder	3	Cellulose
5	40008.191-20	1	Dark gray brittle material		None detected	Paint, Filler, Binder	4	Cellulose
6	40008.191-21	1	Light gray brittle material with paint	4	Chrysotile	Paint, Filler, Binder	2	Cellulose
7	40008.191-22	1	Light gray brittle material	4	Chrysotile	Paint, Filler, Binder	3	Cellulose
8	40008.191-23	1	Tan soft/elastic material	5	Chrysotile	Binder, Filler	4	Cellulose
9	40008.191-24	1	Dark gray brittle material with paint	6	Chrysotile	Binder, Filler, Paint	4	Cellulose

Analyzed by: Weilong Tai

Report reviewed by: Steve (Fanyao) Zhang, President

PBS
ENVIRONMENTAL

200910871

Project: Aki Kurose Middle School 2010 BTA

Project # 40008.191

Analysis requested: PLM

Date: 8/21/09

Relinq'd by/Signature:

Date/Time: 8/21/09

Received by/Signature:

Date/Time: 8/21/09 4:10

Email results to:

- ☐ Brian Stanford
- ☐ Ernest Edwards
- ☐ Gregg Middaugh
- ☐ Mark Hiley
- ☐ Prudy Stoudt-McRae
- ☐ Chuck Greeb
- ☐ Joe Lucas
- ☐ Janet Murphy
- ☐ Harry Goren
- ☒ Ferman Fletcher
- ☒ Tim Ogden
- ☐ Other________________

TURN AROUND TIME:

- ☐ 1 Hour
- ☐ 2 Hours
- ☐ 4 Hours
- x 24 Hours
- ☐ 48 Hours
- ☐ 3-5 Days
- ☐ Other________________

BULK SAMPLE DATA FORM

Lab #	Sample #	Material	Location	Lab
	40008.191-025	Glass Block Sealant	North Elevation Unit A	NVL
	-026	"	West Elevation Unit B	
	-027	"	North Elevation Unit C	
	-028	"	West Elevation Unit A	
	-029	Mortar Between Glass Blocks	West Elevation Unit D	
	-030	"	North Elevation Unit A	
	-031	"	North Elevation Unit C	
	-032	"	West Elevation Unit A	

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Bellevue Laboratory: 12727 Northup Way, Suite 24, Bellevue, WA 98005; Tel: 425.861.1111, Fax: 425.861.1118
Website: http://www.seattleasbestostest.com, E-mail: admin@seattleasbestostest.com

NVLAP Accreditation
Lab Code: 200768-0

ANALYTICAL LABORATORY REPORT

PLM by Method EPA/600/R-93/116

Attn.: Mr. Ferman Fletcher/Tim Ogden
Client: PBS Engineering and Environmental
Address: 2517 Eastlake Ave. E., Suite 100
Seattle, WA 98102

Client Job #: 40008.191
Laboratory Batch #: 200910871
Date Received: 8/21/2009
Samples Received: 8
Date Analyzed: 8/24/2009
Samples Analyzed: 8

Project: Aki Kurose Middle School 2010 BTA

Lab ID	Client Sample ID	Layer	Description	%	Asbestos Fibers	Non-Fibrous Components	%	Non-asbestos Fibers
1	40008.191-025	1	Tan soft material with paint	3	Chrysotile	Paint, Filler, Binder	4	Cellulose
2	40008.191-026	1	Tan soft material with paint	4	Chrysotile	Paint, Filler, Binder	5	Cellulose
3	40008.191-027	1	Tan brittle material with paint	3	Chrysotile	Paint, Filler, Binder	3	Cellulose
4	40008.191-028	1	Brown brittle material with paint	3	Chrysotile	Paint, Filler, Binder	4	Cellulose
5	40008.191-029	1	Gray sandy/brittle material		None detected	Sands, Filler	3	Cellulose
6	40008.191-030	1	Gray sandy/brittle material with paint		None detected	Sands, Filler, Paint	3	Cellulose
7	40008.191-031	1	Gray sandy/brittle material with paint		None detected	Sands, Filler, Paint	2	Cellulose
8	40008.191-032	1	Gray sandy/brittle material		None detected	Sands, Filler	4	Cellulose

Analyzed by: Leon Li / Weilong Tai

Report reviewed by: Steve (Fanyao) Zhang, President

20091090５

PBS
ENVIRONMENTAL

Project: Aki Kurose MS 2010 BTA

Project # 40008.191

Analysis requested: PLM

Date: 8/27/09

Relinq'd by/Signature:

Date/Time: 8/27/09

Received by/Signature:

Date/Time: 8/27/09 9:45

Email results to:

- ☐ Brian Stanford
- ☐ Ernest Edwards
- ☐ Gregg Middaugh
- ☐ Mark Hiley
- ☐ Prudy Stoudt-McRae
- ☐ Chuck Greeb
- ☐ Joe Lucas
- ☐ Janet Murphy
- ☐ Harry Goren
- ☒ Ferman Fletcher
- ☐ Tim Ogden
- ☐ Other____________

TURN AROUND TIME:

- ☐ 1 Hour
- ☐ 2 Hours
- ☐ 4 Hours
- x 24 Hours
- ☐ 48 Hours
- ☐ 3-5 Days
- ☐ Other____________

BULK SAMPLE DATA FORM

Lab #	Sample #	Material	Location	Lab
	40008.191-033	Window Frame Caulk	Window within Glass Block West Elevation #2 Unit A	SAT
	-034	"	Window within Glass Block North Elevation Unit A	
	-035	9" Tan w/ Dk Brown & White Streaks/Mastic	Unit D SW entrance	
	-036	"	Unit A East Entrance	
	-037	"	Unit B in front of Girls Restroom	
	-038	"	Unit C in front of Security Offic	

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Bellevue Laboratory: 12727 Northup Way, Suite 24, Bellevue, WA 98005; Tel: 425.861.1111, Fax: 425.861.1118
Website: http://www.seattleasbestostest.com, E-mail: admin@seattleasbestostest.com

NVLAP Accreditation
Lab Code: 200768-0

ANALYTICAL LABORATORY REPORT

PLM by Method EPA/600/R-93/116

Attn.: Mr. Ferman Fletcher
Client: PBS Engineering and Environmental
Address: 2517 Eastlake Ave. E., Suite 100
Seattle, WA 98102

Client Job #: 40008.191
Laboratory Batch #: 200910905
Date Received: 8/27/2009
Samples Received: 6
Date Analyzed: 8/27/2009
Samples Analyzed: 6

Project: Aki Kurose MS 2010 BTA

Lab ID	Client Sample ID	Layer	Description	%	Asbestos Fibers	Non-Fibrous Components	%	Non-asbestos Fibers
1	40008.191-033	1	Brown /gray brittle material	3	**Chrysotile**	Binder, Filler	4	Cellulose
2	40008.191-034	1	Silver paint	3	**Chrysotile**	Paint, Filler	2	Cellulose
		2	Gray brittle material	4	**Chrysotile**	Filler, Binder	3	Cellulose
3	40008.191-035	1	Brown tile	4	**Chrysotile**	Vinyl/binder, Mineral grains	2	Cellulose
		2	Brown/Black mastic	3	**Chrysotile**	Mastic/binder	9	Cellulose
4	40008.191-036	1	Brown tile	3	**Chrysotile**	Vinyl/binder, Mineral grains	3	Cellulose
		2	Brown/Black mastic	2	**Chrysotile**	Mastic/binder	9	Cellulose
5	40008.191-037	1	Brown tile	4	**Chrysotile**	Vinyl/binder, Mineral grains	4	Cellulose
		2	Brown/Black mastic	2	**Chrysotile**	Mastic/binder	6	Cellulose
6	40008.191-038	1	Brown tile	3	**Chrysotile**	Vinyl/binder, Mineral grains	4	Cellulose
		2	Brown/Black mastic	2	**Chrysotile**	Mastic/binder	7	Cellulose

Analyzed by: Weilong Tai

Report reviewed by: Steve (Fanyao) Zhang, President

PBS # 200910090101

Project: Aki Kurose BTA 2010 Renovations **Project #:** 40008.191

Analysis requested: PLM **Date:** 10/5/09

Relinq'd by/Signature: **Date/Time:** 10/5/09

Received by/Signature: SHABNAM **Date/Time:** 10/6/09 / 9:35

Fax results to:

☐	Brian Stanford	☐	Prudy Stoudt-McRae	x	Ferman Fletcher
☐	Ernest Edwards	☐	Joe Lucas	☐	Tim Ogden
☐	Gregg Middaugh	☐	Janet Murphy	☐	Mike Smith
☐	Mark Hiley	☐	Willem Mager	☐	Chuck Greeb

TURN AROUND TIME:

☐	1 Hour	x	24 Hours	☐	3-5 Days
☐	2 Hours	☐	48 Hours	☐	Other________
☐	4 Hours				

BULK SAMPLE DATA FORM

Lab #	Sample #	Material	Location	Lab
	40008.191-035A	Mastic	Unit D, SW Entrance	
	-036A	"	Unit A, East Entrance	
	-037A	"	Unit B in front of Boy's Room	
	-038A	"	Unit C in Custodian's closet	
	-045	"	Unit E, East Entrance	
	-046	"	Unit A next to Room 108	

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PBS ENGINEERING+ENVIRONMENTAL, 2517 Eastlake Ave E., #100, Seattle, WA 98102, (206)233-9639, FaX: (206)762-4780

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Bellevue Laboratory: 12727 Northup Way, Suite 24, Bellevue, WA 98005; Tel: 425.861.1111, Fax: 425.861.1118
Website: http://www.seattleasbestostest.com, E-mail: admin@seattleasbestostest.com

NVLAP Accreditation
Lab Code: 200768-0

ANALYTICAL LABORATORY REPORT
PLM by Method EPA/600/R-93/116

Attn.: Mr. Ferman Fletcher
Client: PBS Engineering and Environmental
Address: 2517 Eastlake Ave. E., Suite 100
Seattle, WA 98102

Client Job #: 40008.191
Laboratory Batch #: 200969061
Date Received: 10/1/1969
Samples Received: 6
Date Analyzed: 10/6/2009
Samples Analyzed: 6

Project: Aki Kurose BTA 2010 Renovations

Lab ID	Client Sample ID	Layer	Description	%	Asbestos Fibers	Non-Fibrous Components	%	Non-asbestos Fibers
1	40008.191-035A	1	Black mastic	2	Chrysotile	Mastic/binder	4	Cellulose
2	40008.191-036A	1	Black mastic		None detected	Mastic/binder	2	Cellulose
3	40008.191-037A	1	Black mastic	2	Chrysotile	Mastic/binder	3	Cellulose
4	40008.191-038A	1	Black mastic	3	Chrysotile	Mastic/binder	6	Cellulose
5	40008.191-045	1	Black mastic		None detected	Mastic/binder	4	Cellulose
6	40008.191-046	1	Black mastic		None detected	Mastic/binder	4	Cellulose

Analyzed by: Weilong Tai

Report reviewed by: Steve (Fanyao) Zhang, Presiden

September 4, 2009

NVL LABS
HAZARDOUS MATERIALS SERVICES

Ferman Fletcher
PBS Environmental (Seattle)
2517 Eastlake Ave E, Suite 100
Seattle, WA 98102

RE: Bulk Asbestos Fiber Analysis, NVL Batch # 2910381.00

Dear Mr. Fletcher,

Enclosed please find test results for the bulk samples submitted to our laboratory for analysis. Examination of these samples was conducted for the presence of identifiable asbestos fibers using polarized light microscopy (PLM) with dispersion staining in accordance with U.S. EPA/600/R-93/116 Test Method.

For samples containing more than one separable layer of materials, the report will include findings for each layer (labeled Layer 1 and Layer 2, etc. for each individual layer). The asbestos concentration in the sample is determined by visual estimation.

For those samples with asbestos concentrations between 1 and 10 percent based on visual estimation, the EPA recommends a procedure known as point counting (NESHAPS, 40 CFR Part 61). Point counting is a statistically more accurate means of quantification for samples with low concentrations of asbestos. If you would like us to further refine the concentration estimates of asbestos in these samples using point counting, please let me know.

This report is considered highly confidential and will not be released without your approval. Samples are archived for two weeks following analysis. Samples that are not retrieved by the client are discarded after two weeks.

Thank you for using our laboratory services. Please do not hesitate to call if there is anything further we can assist you with.

Sincerely,

Nick Ly, Technical Director

ACCREDITED LABORATORY AIHA Environmental Lead & Industrial Hygiene See aihalqap.org for details

NVLAP Lab Code 102063-0

Enc.: Sample Results

NVL LABORATORIES, INC
4708 AURORA AVE N
SEATTLE, WA 98103.6516
TEL **206.547.0100**
FAX 206.634.1936
nvllabs@nvllabs.com

www.nvllabs.com
1.888.NVL.LABS (685.5227)

NVL Laboratories, Inc.
4708 Aurora Ave. N., Seattle, WA 98103
Tel: 206.547.0100, Fax: 206.634.1936
www.nvllabs.com

For the scope of accreditation under NVLAP Lab Code 102063-0

Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: PBS Environmental (Seattle)
Address: 2517 Eastlake Ave E, Suite 100
Seattle, WA 98102

Attention: Mr. Ferman Fletcher
Project Location: Aki Kurose 2010 BTA

Batch #: 2910381.00
Client Project #: 40008.191
Date Received: 09/03/2009
Samples Received: 6
Samples Analyzed: 6
Method: EPA/600R-93/116

Lab ID: 29081340 **Client Sample #: 40008.191-039**
Location: Aki Kurose 2010 BTA

Layer 1 of 2 **Description:** Gray thin brittle material with paint

Non-Fibrous Materials:	Other Fibrous Materials:%		**Asbestos Type: %**	
Binder/Filler, Fine grains, Paint	None Detected	ND	**None Detected**	**ND**

Layer 2 of 2 **Description:** Gray sandy material

Non-Fibrous Materials:	Other Fibrous Materials:%		**Asbestos Type: %**	
Binder/Filler, Sand	None Detected	ND	**None Detected**	**ND**

Lab ID: 29081341 **Client Sample #: 40008.191-040**
Location: Aki Kurose 2010 BTA

Layer 1 of 2 **Description:** Brown brittle material

Non-Fibrous Materials:	Other Fibrous Materials:%		**Asbestos Type: %**	
Binder/Filler, Fine grains, Mica	Cellulose	2%	**Chrysotile**	**2%**

Layer 2 of 2 **Description:** Gray sandy material

Non-Fibrous Materials:	Other Fibrous Materials:%		**Asbestos Type: %**	
Binder/Filler, Sand	None Detected	ND	**None Detected**	**ND**

Lab ID: 29081342 **Client Sample #: 40008.191-041**
Location: Aki Kurose 2010 BTA

Layer 1 of 1 **Description:** Brown brittle material

Non-Fibrous Materials:	Other Fibrous Materials:%		**Asbestos Type: %**	
Binder/Filler, Fine grains, Mica	Cellulose	1%	**Chrysotile**	**2%**

Lab ID: 29081343 **Client Sample #: 40008.191-042**
Location: Aki Kurose 2010 BTA

Layer 1 of 1 **Description:** Brown brittle material with paint

Non-Fibrous Materials:	Other Fibrous Materials:%		**Asbestos Type: %**	
Binder/Filler, Fine grains, Mica Paint	Cellulose	1%	**Chrysotile**	**2%**

Sampled by: Client
Analyzed by: Lyudmila Veh **Date:** 09/04/2009
Reviewed by: Nick Ly **Date:** 09/04/2009

~~Nick Ly, Technical Director~~

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using EPA 600/R-93/116 Method with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government.

NVL Laboratories, Inc.
4708 Aurora Ave. N., Seattle, WA 98103
Tel: 206.547.0100, Fax: 206.634.1936
www.nvllabs.com

NVLAP

For the scope of accreditation under NVLAP Lab Code 102063-0

Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: PBS Environmental (Seattle)
Address: 2517 Eastlake Ave E, Suite 100
Seattle, WA 98102

Attention: Mr. Ferman Fletcher
Project Location: Aki Kurose 2010 BTA

Batch #: 2910381.00
Client Project #: 40008.191
Date Received: 09/03/2009
Samples Received: 6
Samples Analyzed: 6
Method: EPA/600R-93/116

Lab ID: 29081344 **Client Sample #: 40008.191-043**
Location: Aki Kurose 2010 BTA
Layer 1 of 1 **Description:** Brown brittle material

Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %	
Binder/Filler, Fine grains, Mica	Cellulose	2%	**Chrysotile**	**2%**

Lab ID: 29081345 **Client Sample #: 40008.191-044**
Location: Aki Kurose 2010 BTA
Layer 1 of 1 **Description:** Brown brittle material

Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %	
Binder/Filler, Fine grains, Mica	Cellulose	3%	**Chrysotile**	**2%**

Sampled by: Client
Analyzed by: Lyudmila Veh **Date:** 09/04/2009
Reviewed by: Nick Ly **Date:** 09/04/2009 Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using EPA 600/R-93/116 Method with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government.

PBS

BATCH ID
2910381.00

Project: Aki Kurose 2010 BTA **Project #:** 40008.191

Analysis requested: PLM **Date:** 9/3/09

Relinq'd by/Signature: **Date/Time:** 9/3/09

Received by/Signature: **Date/Time:** 9/3/09 15:00

Fax results to:

- ☐ Brian Stanford
- ☐ Ernest Edwards
- ☐ Gregg Middaugh
- ☐ Mark Hiley
- ☐ Prudy Stoudt-McRae
- ☐ Joe Lucas
- ☐ Janet Murphy
- ☐ Willem Mager
- x Ferman Fletcher
- ☐ Tim Ogden
- ☐ Mike Smith
- ☐ Chuck Greeb

TURN AROUND TIME:

- ☐ 1 Hour
- ☐ 2 Hours
- ☐ 4 Hours
- x 24 Hours
- ☐ 48 Hours
- ☐ 3-5 Days
- ☐ Other________

BULK SAMPLE DATA FORM

Lab #	Sample #	Material	Location	Lab
	40008.191-039	Magnasite Covebase	Hallway Next to Room 103 Unit B	NVL
	-040	"	Northwest Entrance Unit C	
	-041	"	Hallway in front of Rm 106 Unit A	
	-042	"	Hallway in front of Rm 118 Unit B	
	-043	"	Hallway in front of Girls Gym Unit E	
	-044	"	Hallway in front of Rm 132 Unit D	
		Analyzed by L. Veh	09.04.09 at 08:30	
		Emailed by:	9/4/09 14:28	

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PLM Asbestos Sample Inventory

PBS Sample #	Material Type	Sample Location	Lab Description	Lab Result	Lab
40008.170 -001	White Straight Run Pipe Insulation	501 Pipe Chase	Layer 1; White powdery material	7% Chrysotile 28% Amosite	SAT
40008.170 -002	Gray and White Straight Run Pipe Insulation	501 Pipe Chase	Layer 1: White woven fibrous material with paint	NAD	
			Layer 2: White/gray fibrous material	35% Chrysotile	SAT
40008.170 -003	Floor Debris	501 Pipe Chase	Layer 1: White/gray sandy brittle material	NAD	SAT
			Layer 2: White chalky material with paper	NAD	
40008.170 -004	Gypsum Wallboard and Joint Compound	Room 23	Layer 1: White powdery material with paint	NAD	SAT
			Layer 2: White chalky material with paper	NAD	
40008.170 -005	Green Ceramic Floor Tile Grout/Plaster Bed	Room 528	Layer 1: Green ceramic tile	NAD	SAT
			Layer 2: Yellow mastic	NAD	
			Layer 3: Gray sandy brittle material	NAD	
40008.170 -006	White Ceramic Wall Tile and Grout	Room 501	Layer 1: White Ceramic Tile	NAD	SAT
			Layer 2: Gray sandy brittle material	NAD	
40008.170 -007	Unit Ventilator Heat Shield	Room 304	Layer 1; Tan fibrous material with paint	NAD	SAT
40008.170 -008	Caulk at Sink and Skim Coat	Room 23	Layer 1: White powdery material with paint and tan fibrous material	NAD	SAT
			Layer 2: White soft material with paint	NAD	SAT
40008.170 -009	Plaster/Paper/Fiberglass Batting	Room 501	Layer 1: Gray sandy brittle material	NAD	SAT
			Layer 2: White chalky material with paper	NAD	
			Layer 3: Black fibrous material	NAD	

NAD = No Asbestos Detected

19711 Scriber Lake Road, Suite D, Lynnwood, WA 98036, 425.673.9850

NVLAP ACCREDITATION
LAB CODE: 200768-0

ANALYTICAL LABORATORY REPORT

PLM by Method EPA/600/R-93/116

Client: PBS Environmental
Address: 130 Nickerson St. #107,
Seattle, WA 98109

Attention: Ms. Janet Murphy
Project: Aki Kurose

Client Job #: 40008.170
Laboratory Batch #: 200621352
Date Received: 11/22/2006
Samples Received: 9
Date Analyzed: 11/24/2006
Samples Analyzed: 9
Client Project #: N/A

Lab ID	Client Sample ID	Layer	Description	%	Asbestos Fibers	Non-Fibrous Components	%	Non-asbestos Fibers
2006207091	01	1	White powdery material	**7**	**Chrysotile**	Binder/filler, Paint	14	Cellulose
				28	**Amosite**			
2006207092	02	1	White woven fibrous material with paint		**None detected**	Binder/filler, Paint	85	Cellulose
		2	White/gray fibrous material	**35**	**Chrysotile**	Binder/filler	50	Cellulose
2006207093	03	1	White/gray sandy brittle material		**None detected**	Binder/filler, Sand	5	Cellulose
		2	White chalky material with paper		**None detected**	Binder/filler Gypsum/binder	25	Cellulose
2006207094	04	1	White powdery material with paint		**None detected**	Binder/filler, Paint	4	Cellulose
		2	White chalky material with paper		**None detected**	Binder/filler Gypsum/binder	25	Cellulose
2006207095	05	1	Green ceramic		**None detected**	Ceramic/binder		None detected
		2	Yellow mastic		**None detected**	Mastic/binder	4	Cellulose
		3	Gray sandy brittle material		**None detected**	Binder/filler, Sand	2	Cellulose

Analyzed by: Weilong Tai

Reviewed by: Steve (Fanyao) Zhang, President

19711 Scriber Lake Road, Suite D, Lynnwood, WA 98036, 425.673.9850

NVLAP ACCREDITATION
LAB CODE: 200768-0

ANALYTICAL LABORATORY REPORT

PLM by Method EPA/600/R-93/116

Client: PBS Environmental
Address: 130 Nickerson St. #107,
Seattle, WA 98109

Attention: Ms. Janet Murphy
Project: Aki Kurose

Client Job #: 40008.170
Laboratory Batch #: 200621352
Date Received: 11/22/2006
Samples Received: 9
Date Analyzed: 11/24/2006
Samples Analyzed: 9
Client Project #: N/A

Lab ID	Client Sample ID	Layer	Description	%	Asbestos Fibers	Non-Fibrous Components	%	Non-asbestos Fibers
2006207096	06	1	White ceramic		**None detected**	Ceramic/binder		None detected
		2	Gray sandy brittle material		**None detected**	Binder/filler, Sand	4	Cellulose
2006207097	07	1	Tan fibrous material with paint		**None detected**	Binder/filler, Paint	85	Cellulose
2006207098	08	1	White powdery material with paint and tan fibrous material		**None detected**	Binder/filler, Paint	55	Cellulose
		2	White soft material with paint		**None detected**	Binder/filler, Paint	4	Cellulose
2006207099	09	1	Gray sandy brittle material		**None detected**	Binder/filler, Sand	2	Cellulose
		2	White chalky material with paper		**None detected**	Binder/filler gypsum/binder	27	Cellulose
		3	Black fibrous material		**None detected**	Binder/filler	95	Cellulose, Synthetic fibers

Analyzed by: Weilong Tai

Reviewed by: Steve (Fanyao) Zhang, President

Seattle Public Schools
Aki Kurose Middle School Renovation

PBS Engineering and Environmental
PBS Project #40008.092

PLM ASBESTOS SAMPLE INVENTORY

PBS Sample #		Material Type	Sample Location	Lab Description	Lab Results	Laboratory
40008.092	-001	Cement Flooring	Auditorium Stage	Gray sandy material with trace asphaltic mastic	NAD	NVL Laboratories
40008.092	-002	Cement Flooring	Auditorium Stage	Gray sandy material with trace asphaltic mastic	NAD	NVL Laboratories
40008.092	-003	Window Putty	Hallway Display at Auditorium	Gray brittle material	3% Chrysotile	NVL Laboratories
40008.092	-004	Window Putty	Hallway Display at Auditorium	SAMPLE NOT ANALYZED		NVL Laboratories
40008.092	-005	Cementitious Green Board	Room 110	Gray cementitious material with paint	30% Chrysotile	NVL Laboratories
40008.092	-006	Cementitious Green Board	Room 210	SAMPLE NOT ANALYZED		NVL Laboratories
40008.092	-007	Brown Mastic / Black Mastic	Room 211 at Window Ceiling	Brown mastic	NAD	NVL Laboratories
40008.092	-008	Clerestory Window Putty	Room 110	Grey brittle material	3% Chrysotile	NVL Laboratories
40008.092	-009	Clerestory Window Putty	Room 110	SAMPLE NOT ANALYZED		NVL Laboratories
40008.092	-010	Debris/	Auditorium Attic	Layer 1: White brittle/fibrous material with wood debris	3% Chrysotile	NVL Laboratories
		Blown-in Insulation		Layer 2: Gray fibrous material	NAD	
40008.092	-011	Mastic/ Even-holed Ceiling Tile	Room 211	Layer 1: Brown brittle mastic with fibrous material	NAD	NVL Laboratories
				Layer 2: White brittle material	NAD	
40008.092	-012	Mastic/ Even-holed Ceiling Tile	Room 211	Layer 1: Brown brittle mastic with fibrous material	NAD	NVL Laboratories
				Layer 2: White brittle material	NAD	
40008.092	-013	Brown Sheet Vinyl / Mastic	Room 211	Layer 1: Tan tile	NAD	NVL Laboratories
				Layer 2: Brown brittle mastic with fibrous material	NAD	
				Layer 3: Black asphaltic fibrous felt	NAD	

Seattle Public Schools
Aki Kurose Middle School Renovation

PBS Engineering and Environmental
PBS Project #40008.092

PBS Sample #		Material Type	Sample Location	Lab Description	Lab Results	Laboratory
40008.092	-014	Brown Sheet Vinyl / Mastic	Room 210	Layer 1: Tan tile Layer 2: Brown brittle mastic with fibrous material Layer 3: Black asphaltic fibrous felt	NAD NAD NAD	NVL Laboratories
40008.092	-015	Vinyl Countertop / Mastic	Room 110	Layer 1: Brown rubbery material with paint Layer 2: White brittle material with mastic	NAD NAD	NVL Laboratories
40008.092	-016	Vinyl Countertop / Mastic	Room 110	Layer 1: Brown rubbery material Layer 2: White brittle material with mastic	NAD NAD	NVL Laboratories
40008.092	-017	Acoustical Ceiling Texture	Auditorium	White fibrous material with paint	<1% Chrysotile	NVL Laboratories
40008.092	-018	Textured Ceiling Plaster	Auditorium - Underside of Balcony	White fibrous/brittle material with wood debris	3% Chrysotile	NVL Laboratories
40008.092	-019	Textured Ceiling Plaster	Auditorium - Underside of Balcony	SAMPLE NOT ANALYZED		NVL Laboratories
40008.092	-020	12" Fissured Ceiling Tile / Mastic	Auditorium - Underside of Balcony	Layer 1: Brown mastic Layer 2: Grey fibrous material with paint	NAD NAD	NVL Laboratories
40008.092	-021	12" Fissured Ceiling Tile / Mastic	Auditorium - Underside of Balcony	Brown brittle material with fibrous material and paint	NAD	NVL Laboratories
40008.092	-022	Hard Pipe Insulation	Tunnel at Room 112	White powdery/fibrous material	10% Chrysotile & 15% Amosite	NVL Laboratories
40008.092	-023	Hard Mudded Fitting	Tunnel at Room 112	White powdery/fibrous material	10% Chrysotile & 15% Amosite	NVL Laboratories
40008.092	-024	Vapor Barrier - 2 Layers	Auditorium Stage Floor	Black asphaltic fibrous felt	NAD	NVL Laboratories
40008.092	-025	Rope Packing - Waste Line	Utility Tunnel - Abandoned Material	Light gray fibrous material	85% Chrysotile	NVL Laboratories
40008.092	-026	Brown Ceiling Tile Mastic/ Ceiling Tile	Outside Office in Hall	Layer 1: Brown brittle mastic Layer 2: Tan fibrous material with paint	NAD NAD	NVL Laboratories

PBS Sample #		Material Type	Sample Location	Lab Description	Lab Results	Laboratory
40008.092	-027	Brown Ceiling Tile Mastic/ Ceiling Tile	Rm 123H	Layer 1: Brown brittle mastic Layer 2: Tan fibrous material with paint	NAD NAD	NVL Laboratories
40008.092	-028	Brown Ceiling Tile Mastic/ Ceiling Tile	Rm off 119	Layer 1: Brown brittle mastic Layer 2: Tan fibrous material with paint	NAD NAD	NVL Laboratories
40008.092	-029	Brown Ceiling Tile Mastic	Rm 123F	Brown brittle mastic	NAD	NVL Laboratories
40008.092	-030	Glass Block Grout	Rm 210	Grey sandy material	NAD	NVL Laboratories

NAD = No Asbestos Detected

NVL Laboratories, Inc.

4708 Aurora Ave. N., Seattle, WA 98103
Tel: 206.547.0100, Fax: 206.634.1936
www.nvllabs.com

NVLAP #102063

Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: PBS Environmental (Seattle)
Address: 130 Nickerson St
Seattle, WA 98109
Attention: Mr. Tim Ogden
Project Location: Aki Kurose

Batch #: 2400900.00
Client Project #:40008.092
Samples Received: 5
Samples Analyzed: 5
Method: EPA/600R-93/116

Lab ID : 24004182 Client Sample #: 40008.092-026
Location: Aki Kurose

Layer 1 of 2 Description: Brown brittle mastic

Non-Fibrous Materials:	Other Fibrous Materials:%	**Asbestos Type: %**
Fine particles,Mastic/binder	Talc fibers 4%	**None Detected ND**

Layer 2 of 2 Description: Tan fibrous material with paint

Non-Fibrous Materials:	Other Fibrous Materials:%	**Asbestos Type: %**
Fine particles,Adhesive/binder,Paint	Cellulose 60%	**None Detected ND**

Lab ID : 24004183 Client Sample #: 40008.092-027
Location: Aki Kurose

Layer 1 of 2 Description: Brown brittle mastic

Non-Fibrous Materials:	Other Fibrous Materials:%	**Asbestos Type: %**
Fine particles,Mastic/binder	Talc fibers 4%	**None Detected ND**

Layer 2 of 2 Description: Tan fibrous material with paint

Non-Fibrous Materials:	Other Fibrous Materials:%	**Asbestos Type: %**
Fine particles,Adhesive/binder,Paint	Cellulose 60%	**None Detected ND**

Lab ID : 24004184 Client Sample #: 40008.092-028
Location: Aki Kurose

Layer 1 of 2 Description: Brown brittle mastic

Non-Fibrous Materials:	Other Fibrous Materials:%	**Asbestos Type: %**
Fine particles,Mastic/binder	Talc fibers 3%	**None Detected ND**

Layer 2 of 2 Description: Tan fibrous material with paint

Non-Fibrous Materials:	Other Fibrous Materials:%	**Asbestos Type: %**
Fine particles,Adhesive/binder,Paint	Cellulose 60%	**None Detected ND**

Lab ID : 24004185 Client Sample #: 40008.092-029
Location: Aki Kurose

Layer 1 of 1 Description: Brown brittle mastic

Non-Fibrous Materials:	Other Fibrous Materials:%	**Asbestos Type: %**
Fine particles,Mastic/binder	Talc fibers 3%	**None Detected ND**

Lab ID : 24004186 Client Sample #: 40008.092-030
Location: Aki Kurose

Sampled by: Client
Analyzed by: Lyudmila Manzar **Date:** 01/26/2004
Reviewed by: Munaf Khan **Date:** 01/26/2004

Munaf Khan, Laboratory Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using EPA 600/R-93/116 Method with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government.

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Tel: 206.547.0100 Emerg. Pager: 206.344.1878
1.888.NVL.LABS (685.5227)

CHAIN of CUSTODY SAMPLE LOG

NVL LABS HAZARDOUS MATERIALS SERVICES

Client PBS Environmental (Seattle)
Address 130 Nickerson St
Suite 107
Seattle, WA 98109
Project Manager Mr. Tim Ogden
Project Location Aki Kurose

NVL Batch Number 2400900.00
Client Job Number 40008.092
Total Samples 5 **Rush Samples**
Turn Around Time 1 24-Hrs **Rush TAT**
Due Date 01/26/2004 **Time** 4:30 PM
Email address

Phone: (206) 233-9639 **Fax:** (206) 762-4780 **Office:** (800) 628-9639 **Cell:** (206) 484-6287

☐ **Asbestos Air** ☐ PCM (NIOSH 7400) ☐ TEM (NIOSH 7402) ☐ TEM (AHERA) ☐ TEM (EPA Level II) ☐ Other

☒ **Asbestos Bulk** ☒ PLM (EPA/600/R-93/116) ☐ PLM (EPA Point Count) ☐ PLM (EPA Gravimetry) ☐ TEM BULK

☐ **Mold/Fungus** ☐ Mold Air ☐ Mold Bulk ☐ **Rotometer Calibration**

METALS	Det. Limit	Matrix		RCRA Metals ☐ All 8		Other Metals
☐ Total Metals	☐ ppm (AAS)	☐ Air Filter	☐ Paint Chips in %	☐ Arsenic (As)	☐ Lead (Pb)	☐ All 3
		☐ Drinking water	☐ Paint Chips in cm2	☐ Barium (Ba)	☐ Mercury (Hg)	☐ Copper (Cu)
☐ TCLP	☐ ppb (GFAA)	☐ Dust/wipe (Area)	☐ Waste Water	☐ Cadmium (Cd)	☐ Selenium (Se)	☐ Nickel (Ni)
		☐ Soil	☐ Other	☐ Chromium (Cr)	☐ Silver (Ag)	☐ Zinc (Zn)

☐ **Other Types of Analysis** ☐ Fiberglass ☐ Silica ☐ Nuisance Dust ☐ Respirable Dust ☐ Other (Specify)

Condition of Package ☒ Good ☐ Damaged (no spillage) ☐ Severe damage (spillage)

	Lab ID	Client Sample Number	Comments (e.g Sample area, Sample Volume, etc)	A/R
1	**24004182**	40008.092-026	Brown Ceiling Tile Mastic-Outside Office in Hallway	
2	**24004183**	40008.092-027	Brown Ceiling Tile Mastic-Room 123H From 1ft. Holed tiles	
3	**24004184**	40008.092-028	Brown Ceiling Tile Mastic-Storage Rm off Rm 119	
4	**24004185**	40008.092-029	Brown Ceiling Tile Mastic-Room 123F	
5	**24004186**	40008.092-030	Glass Block Grout- Rm 210	
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				

	Print Below	Sign Below	Company	Date	Time
Sampled by	Client				
Relinquished by	Gwen McCullough	Gwen G. McCullough	PBS	1/23/04	4:40PM
Received by	Michelle Stratton		NVL-AUR	1/23/04	4:30 PM
Relinquished by					
Analyzed by	L. Manzar	LManzar	MV	01.26.04	13:45
Results Called by					
☐ Faxed ☐ Emailed					

Special Instructions: Unless requested in writing, all samples will be disposed of two (2) weeks after analysis.

Entered By: Michelle Stratton

January 26, 2004

NVL LABS
HAZARDOUS MATERIALS SERVICES

RECEIVED
FEB - 3 2004

Tim Ogden
PBS Environmental (Seattle)
130 Nickerson St
Suite 107
Seattle, WA 98109

RE: Bulk Asbestos Fiber Analysis; NVL Batch # 2400900.00

Dear Mr. Ogden,

Enclosed please find test results for the bulk samples submitted to our laboratory for analysis. Examination of these samples was conducted for the presence of identifiable asbestos fibers using polarized light microscopy (PLM) with dispersion staining in accordance with U.S. EPA/600/R-93/116 Test Method.

NVLAP Lab #: 102063

For samples containing more than one separable layer of materials, the report will include findings for each layer (labeled Layer 1 and Layer 2, etc. for each individual layer). The asbestos concentration in the sample is determined by visual estimation.

AIHA Environmental Lead and Industrial Hygiene ACCREDITED LABORATORY

For those samples with asbestos concentrations between 1 and 10 percent based on visual estimation, the EPA recommends a procedure known as point counting (NESHAPS, 40 CFR Part 61). Point counting is a statistically more accurate means of quantification for samples with low concentrations of asbestos. If you would like us to further refine the concentration estimates of asbestos in these samples using point counting, please let me know.

This report is considered highly confidential and will not be released without your approval. Samples are archived for two weeks following analysis. Samples that are not retrieved by the client are discarded after two weeks.

Thank you for using our laboratory services. Please do not hesitate to call if there is anything further we can assist you with.

Sincerely,

Munaf Khan

Munaf Khan, Laboratory Director

Enc.: Sample Results

NVL LABORATORIES, INC
4708 AURORA AVE N
SEATTLE, WA 98103-6516
TEL 206.547.0100
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nvllabs@nvllabs.com

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NVL Laboratories, Inc.

NVLAP #102063

4708 Aurora Ave. N., Seattle, WA 98103
Tel: 206.547.0100, Fax: 206.634.1936
www.nvllabs.com

Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: PBS Environmental (Seattle)
Address: 130 Nickerson St
Seattle, WA 98109
Attention: Mr. Ernest Edwards
Project Location: Aki Kurose Middle School Renovation

Batch #: 2400337.00
Client Project #:40008.092
Samples Received: 15
Samples Analyzed: 12
Method: EPA/600R-93/116

Lab ID : 24001697 Client Sample #: 40008.092-001
Location: Aki Kurose Middle School Renovation
Layer 1 of 1 Description: Gray sandy material with trace asphaltic mastic

Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %	
Sand,Asphalt/binder	None Detected	ND	**None Detected**	**ND**

Lab ID : 24001698 Client Sample #: 40008.092-002
Location: Aki Kurose Middle School Renovation
Layer 1 of 1 Description: Gray sandy material with trace asphaltic mastic

Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %	
Sand,Asphalt/binder	None Detected	ND	**None Detected**	**ND**

Lab ID : 24001699 Client Sample #: 40008.092-003
Location: Aki Kurose Middle School Renovation
Layer 1 of 1 Description: Grey brittle material

Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %	
Calcareous binder	Cellulose	2%	**Chrysotile**	**3%**

Lab ID : 24001700 Client Sample #: 40008.092-004 **SAMPLE NOT ANALYZED**

Lab ID : 24001701 Client Sample #: 40008.092-005
Location: Aki Kurose Middle School Renovation
Layer 1 of 1 Description: Gray cementitious material with paint

Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %	
Calcareous binder,Paint	Cellulose	5%	**Chrysotile**	**30%**

Lab ID : 24001702 Client Sample #: 40008.092-006 **SAMPLE NOT ANALYZED**

Lab ID : 24001703 Client Sample #: 40008.092-007
Location: Aki Kurose Middle School Renovation
Layer 1 of 1 Description: Brown mastic

Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %	
Mastic/binder	Cellulose	3%	**None Detected**	**ND**

Sampled by: Client
Analyzed by: Steve Zhang **Date:** 01/14/2004
Reviewed by: Nick Ly **Date:** 01/14/2004
Nick Ly, ~~Technical Director~~

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using EPA 600/R-93/116 Method with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government.

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NVLAP #102063

Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: PBS Environmental (Seattle)
Address: 130 Nickerson St
Seattle, WA 98109
Attention: Mr. Ernest Edwards
Project Location: Aki Kurose Middle School Renovation

Batch #: 2400337.00
Client Project #:40008.092
Samples Received: 15
Samples Analyzed: 12
Method: EPA/600R-93/116

Lab ID : 24001704 Client Sample #: 40008.092-008
Location: Aki Kurose Middle School Renovation

Layer 1 of 1 Description: Grey brittle material

Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %	
Calcareous binder	Cellulose	2%	Chrysotile	3%

Lab ID : 24001705 Client Sample #: 40008.092-009 **SAMPLE NOT ANALYZED**

Lab ID : 24001706 Client Sample #: 40008.092-010
Location: Aki Kurose Middle School Renovation

Layer 1 of 2 Description: White brittle/fibrous material with wood debris

Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %	
Wood,Fine particles	Cellulose	5%	Chrysotile	3%

Layer 2 of 2 Description: Gray fibrous material

Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %	
Fine particles	Mineral wool	85%	None Detected	ND

Lab ID : 24001707 Client Sample #: 40008.092-011
Location: Aki Kurose Middle School Renovation

Layer 1 of 2 Description: Brown brittle mastic with fibrous material

Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %	
Mastic/binder,Fine particles	Cellulose	15%	None Detected	ND

Layer 2 of 2 Description: White brittle material

Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %	
Calcareous binder	Cellulose	2%	None Detected	ND

Lab ID : 24001708 Client Sample #: 40008.092-012
Location: Aki Kurose Middle School Renovation

Layer 1 of 2 Description: Brown brittle mastic with fibrous material

Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %	
Mastic/binder,Fine particles	Cellulose	15%	None Detected	ND

Layer 2 of 2 Description: White brittle material

Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %	
Calcareous binder	None Detected	ND	None Detected	ND

Sampled by: Client
Analyzed by: Steve Zhang **Date:** 01/14/2004
Reviewed by: Nick Ly **Date:** 01/14/2004

Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using EPA 600/R-93/116 Method with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government.

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NVLAP #102063

Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: PBS Environmental (Seattle)
Address: 130 Nickerson St
Seattle, WA 98109
Attention: Mr. Ernest Edwards
Project Location: Aki Kurose Middle School Renovation

Batch #: 2400337.00
Client Project #:40008.092
Samples Received: 15
Samples Analyzed: 12
Method: EPA/600R-93/116

Lab ID : 24001709 Client Sample #: 40008.092-013
Location: Aki Kurose Middle School Renovation

Layer	Description	Non-Fibrous Materials	Other Fibrous Materials:%	Asbestos Type: %
Layer 1 of 3	Tan tile	Calcareous binder	Cellulose 3%	None Detected ND
Layer 2 of 3	Brown brittle mastic with fibrous material	Mastic/binder,Fine particles	Cellulose 15%	None Detected ND
Layer 3 of 3	Black asphaltic fibrous felt	Asphalt/binder	Cellulose 45%	None Detected ND

Lab ID : 24001710 Client Sample #: 40008.092-014
Location: Aki Kurose Middle School Renovation

Layer	Description	Non-Fibrous Materials	Other Fibrous Materials:%	Asbestos Type: %
Layer 1 of 3	Tan tile	Calcareous binder	Cellulose 2%	None Detected ND
Layer 2 of 3	Brown brittle mastic with fibrous material	Calcareous binder,Mastic/binder	Cellulose 35%	None Detected ND
Layer 3 of 3	Black asphaltic fibrous felt	Asphalt/binder,Fine particles	Cellulose 45%	None Detected ND

Lab ID : 24001711 Client Sample #: 40008.092-015
Location: Aki Kurose Middle School Renovation

Layer	Description	Non-Fibrous Materials	Other Fibrous Materials:%	Asbestos Type: %
Layer 1 of 2	Brown rubbery material with paint	Rubber/binder	None Detected ND	None Detected ND
Layer 2 of 2	White brittle material with mastic	Calcareous binder,Mastic/binder	Cellulose 3%	None Detected ND

Sampled by: Client
Analyzed by: Steve Zhang **Date:** 01/14/2004
Reviewed by: Nick Ly **Date:** 01/14/2004 Nick Ly, Technical Director

PBS ENVIRONMENTAL

BATCH ID
2400337.00

Project: Aki Kurose Middle School Renovation

Project #: 40008.092

Analysis requested: PLM

Date: 01/12/04

Relinq'd by/Signature: [signature]

Date/Time: 1-13-04 / 0930

Received by/Signature: [signature]

Date/Time: 1-13-04/9:30

Fax results to:

- ☐ Brian Stanford
- ☒ Ernest Edwards
- ☐ Gregg Middaugh
- ☐ Mark Hiley
- ☐ Prudy Stoudt-McRae
- ☐ Tod Pettingill
- ☐ Gwen McCullough
- ☐ Harry Goren
- ☐ Tim Ogden
- ☐ Other______

TURN AROUND TIME:

- ☐ 1 Hour
- ☐ 2 Hours
- ☐ 4 Hours
- ☑ 24 Hours
- ☐ 48 Hours
- * ProgressiveAnalysis
- ☐ 3-5 Days
- ☐ Other______

BULK SAMPLE DATA FORM

Lab #	Sample #	Material	Location	Lab
*	40008.092- 001	cement Flooring	Auditorium Stage	NVL
	40008.092- 002	" "	" "	
*	40008.092- 003	window Putty	Hallway display at auditorium	
	40008.092- 004	" "	" " " "	
*	40008.092- 005	Cementitious Green Board	Room 110	
	40008.092- 006	" " "	Room 210	
	40008.092- 007	Brown Mastic/Black Mastic	Room 211 at window ceiling	
*	40008.092- 008	Clerstory window Putty	Room 110	
	40008.092- 009	" " "	" "	
	40008.092- 010	Blown-in insul / Plaster	Auditorium Attic	
*	40008.092- 011	Even-Holed Ceiling tile/mastic	room 211	
	40008.092- 012	" " " / "	" "	
	40008.092- 013	Brown sheet vinyl / mastic	Room 211	
	40008.092- 014	" " " / "	" 210	
	40008.092- 015	Vinyl countertop / mastic	Room 110	

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HAZARDOUS MATERIALS
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HAZARDOUS MATERIALS SERVICES

January 14, 2004

Ernest Edwards
PBS Environmental (Seattle)
130 Nickerson St
Suite 107
Seattle, WA 98109

RECEIVED
JAN 22 2004

RE: Bulk Asbestos Fiber Analysis; NVL Batch # 2400337.00

Dear Mr. Edwards,

Enclosed please find test results for the bulk samples submitted to our laboratory for analysis. Examination of these samples was conducted for the presence of identifiable asbestos fibers using polarized light microscopy (PLM) with dispersion staining in accordance with U.S. EPA/600/R-93/116 Test Method.

NVLAP
Lab #: 102063

For samples containing more than one separable layer of materials, the report will include findings for each layer (labeled Layer 1 and Layer 2, etc. for each individual layer). The asbestos concentration in the sample is determined by visual estimation.

AIHA
Environmental Lead and Industrial Hygiene
ACCREDITED LABORATORY

For those samples with asbestos concentrations between 1 and 10 percent based on visual estimation, the EPA recommends a procedure known as point counting (NESHAPS, 40 CFR Part 61). Point counting is a statistically more accurate means of quantification for samples with low concentrations of asbestos. If you would like us to further refine the concentration estimates of asbestos in these samples using point counting, please let me know.

This report is considered highly confidential and will not be released without your approval. Samples are archived for two weeks following analysis. Samples that are not retrieved by the client are discarded after two weeks.

Thank you for using our laboratory services. Please do not hesitate to call if there is anything further we can assist you with.

Sincerely,

Nick Ly, Technical Director

Enc.: Sample Results

NVL LABORATORIES, INC
TEL 206.547.0100

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NVL Laboratories, Inc.

NVLAP

4708 Aurora Ave. N., Seattle, WA 98103
Tel: 206.547.0100, Fax: 206.634.1936
www.nvllabs.com

#102063

Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: PBS Environmental (Seattle)
Address: 130 Nickerson St
Seattle, WA 98109
Attention: Mr. Ernest Edwards
Project Location: Aki Kurose Middle School Renovation

Batch #: 2400339.00
Client Project #:40008.092
Samples Received: 9
Samples Analyzed: 8
Method: EPA/600R-93/116

Lab ID : 24001718 Client Sample #: 40008.092-016
Location: Aki Kurose Middle School Renovation

Layer 1 of 2 Description: Brown rubbery material

Non-Fibrous Materials:	Other Fibrous Materials:%		**Asbestos Type: %**	
Rubber/binder	None Detected	ND	**None Detected**	**ND**

Layer 2 of 2 Description: White brittle material with mastic

Non-Fibrous Materials:	Other Fibrous Materials:%		**Asbestos Type: %**	
Mastic/binder,Calcareous binder	None Detected	ND	**None Detected**	**ND**

Lab ID : 24001719 Client Sample #: 40008.092-017
Location: Aki Kurose Middle School Renovation

Layer 1 of 1 Description: White fibrous material with paint

Non-Fibrous Materials:	Other Fibrous Materials:%		**Asbestos Type: %**	
Fine particles,Paint	Glass fibers	45%	**Chrysotile**	**<1%**

Lab ID : 24001720 Client Sample #: 40008.092-018
Location: Aki Kurose Middle School Renovation

Layer 1 of 1 Description: White fibrous/brittle material with wood debris

Non-Fibrous Materials:	Other Fibrous Materials:%		**Asbestos Type: %**	
Calcareous binder,Wood	Cellulose	25%	**Chrysotile**	**3%**

Lab ID : 24001721 Client Sample #: 40008.092-019 **SAMPLE NOT ANALYZED**

Lab ID : 24001722 Client Sample #: 40008.092-020
Location: Aki Kurose Middle School Renovation

Layer 1 of 2 Description: Brown mastic

Non-Fibrous Materials:	Other Fibrous Materials:%		**Asbestos Type: %**	
Mastic/binder	Cellulose	3%	**None Detected**	**ND**

Layer 2 of 2 Description: Grey fibrous material with paint

Non-Fibrous Materials:	Other Fibrous Materials:%		**Asbestos Type: %**	
Paint,Fine particles	Glass fibers	45%	**None Detected**	**ND**

Lab ID : 24001723 Client Sample #: 40008.092-021
Location: Aki Kurose Middle School Renovation

Sampled by: Client
Analyzed by: Steve Zhang **Date:** 01/14/2004
Reviewed by: Nick Ly **Date:** 01/14/2004 Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using EPA 600/R-93/116 Method with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government.

NVL Laboratories, Inc.
4708 Aurora Ave. N., Seattle, WA 98103
Tel: 206.547.0100, Fax: 206.634.1936
www.nvllabs.com

NVLAP #102063

Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: PBS Environmental (Seattle)
Address: 130 Nickerson St
Seattle, WA 98109
Attention: Mr. Ernest Edwards
Project Location: Aki Kurose Middle School Renovation

Batch #: 2400339.00
Client Project #:40008.092
Samples Received: 9
Samples Analyzed: 8
Method: EPA/600R-93/116

Layer 1 of 1 **Description:** Brown brittle mastic with fibrous material and paint

Non-Fibrous Materials:	Other Fibrous Materials:%	Asbestos Type: %
Mastic/binder,Fine particles,Paint	Glass fibers 35%	**None Detected ND**

Lab ID : 24001724 **Client Sample #: 40008.092-022**
Location: Aki Kurose Middle School Renovation

Layer 1 of 1 **Description:** White powdery/fibrous material

Non-Fibrous Materials:	Other Fibrous Materials:%	Asbestos Type: %
Calcareous binder,Fine particles	Cellulose 15%	**Chrysotile 10%**
		Amosite 15%

Lab ID : 24001725 **Client Sample #: 40008.092-023**
Location: Aki Kurose Middle School Renovation

Layer 1 of 1 **Description:** White powdery/fibrous material

Non-Fibrous Materials:	Other Fibrous Materials:%	Asbestos Type: %
Fine particles,Calcareous binder	Cellulose 25%	**Chrysotile 10%**
		Amosite 15%

Lab ID : 24001726 **Client Sample #: 40008.092-024**
Location: Aki Kurose Middle School Renovation

Layer 1 of 1 **Description:** Black asphaltic fibrous felt

Non-Fibrous Materials:	Other Fibrous Materials:%	Asbestos Type: %
Asphalt/binder,Fine particles	Cellulose 65%	**None Detected ND**

Sampled by: Client
Analyzed by: Steve Zhang **Date:** 01/14/2004
Reviewed by: Nick Ly **Date:** 01/14/2004

Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using EPA 600/R-93/116 Method with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government.

PBS ENVIRONMENTAL

BATCH ID 2400339.00

Project: Aki Kurose Middle School Renovation

Project #: 40008.092

Analysis requested: PLM

Date: 01/12/04

Relinq'd by/Signature: [signature]

Date/Time: 01-13-04 / 0930

Received by/Signature: [signature]

Date/Time: 1-13-04 938

Fax results to:

- ☐ Brian Stanford
- ☒ Ernest Edwards
- ☐ Gregg Middaugh
- ☐ Mark Hiley
- ☐ Prudy Stoudt-McRae
- ☐ Tod Pettingill
- ☐ Gwen McCullough
- ☐ Harry Goren
- ☐ Tim Ogden
- ☐ Other________

TURN AROUND TIME:

- ☐ 1 Hour
- ☐ 2 Hours
- ☐ 4 Hours
- ☒ 24 Hours
- ☐ 48 Hours
- * ProgressiveAnalysis
- ☐ 3-5 Days
- ☐ Other________

BULK SAMPLE DATA FORM

Lab #	Sample #	Material	Location	Lab
	40008.092- 016	vinyl countertop / mastic	Room 110	NVL
	40008.092- 017	acoustical ceiling texture	Auditorium	
*	40008.092- 018	Textured ceiling plaster	auditorium - underside of Balcony	
	40008.092- 019	" " "	" - " " "	
*	40008.092- 020	12" fissured ceiling tile / mastic	" - " " "	
	40008.092- 021	" " " " / "	" - " " "	
	40008.092- 022	Hard pipe insulation	tunnel at Room 112	
	40008.092- 023	Hard mudded fitting	" " " "	
	40008.092- 024	Vapor Barrier - 2 layers	auditorium stage floor	
	40008.092-			
	40008.092-			
	40008.092-			
	40008.092-			
	40008.092-			
	40008.092-			

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HAZARDOUS MATERIALS
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NVL LABS
HAZARDOUS MATERIALS SERVICES

January 14, 2004

RECEIVED
JAN 2 2 2004

Ernest Edwards
PBS Environmental (Seattle)
130 Nickerson St
Suite 107
Seattle, WA 98109

RE: Bulk Asbestos Fiber Analysis; NVL Batch # 2400339.00

Dear Mr. Edwards,

Enclosed please find test results for the bulk samples submitted to our laboratory for analysis. Examination of these samples was conducted for the presence of identifiable asbestos fibers using polarized light microscopy (PLM) with dispersion staining in accordance with U.S. EPA/600/R-93/116 Test Method.

NVLAP Lab #: 102063

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AIHA Environmental Lead and Industrial Hygiene ACCREDITED LABORATORY

For those samples with asbestos concentrations between 1 and 10 percent based on visual estimation, the EPA recommends a procedure known as point counting (NESHAPS, 40 CFR Part 61). Point counting is a statistically more accurate means of quantification for samples with low concentrations of asbestos. If you would like us to further refine the concentration estimates of asbestos in these samples using point counting, please let me know.

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Thank you for using our laboratory services. Please do not hesitate to call if there is anything further we can assist you with.

Sincerely,

Nick Ly, Technical Director

Enc.: Sample Results

NVL LABORATORIES, INC
4708 AURORA AVE N
SEATTLE WA 98103-6516
TEL 206.547.0100
FAX 206.634.1936
nvllabs@nvllabs.com

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1.888.NVL.LABS (685.5227)

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www.nvllabs.com

NVLAP #102063

Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: PBS Environmental (Seattle)
Address: 130 Nickerson St
Seattle, WA 98109
Attention: Mr. Ernest Edwards
Project Location: Aki Kurose Middle School Renovation

Batch #: 2400400.00
Client Project #:40008.092
Samples Received: 1
Samples Analyzed: 1
Method: EPA/600R-93/116

Lab ID : 24001930 Client Sample #: 40008.092-025
Location: Aki Kurose Middle School Renovation

Layer 1 of 1 Description: Light gray fibrous material

Non-Fibrous Materials:	Other Fibrous Materials:%	Asbestos Type: %
Fine particles,Binder/Filler	Synthetic fibers 5%	**Chrysotile 85%**

Sampled by: Client
Analyzed by: Lyudmila Manzar **Date:** 01/14/2004
Reviewed by: Munaf Khan **Date:** 01/14/2004

Munaf Khan, Laboratory Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using EPA 600/R-93/116 Method with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government.

PBS ENVIRONMENTAL

BATCH ID
2400400.00

Project: Aki Kurose Middle School Renovation

Project #: 40008.092

Analysis requested: PLM

Date: 01/12/04

Relinq'd by/Signature: [signature]

Date/Time: 1-13-04 /

Received by/Signature: R. C-[signature] NVL

Date/Time: 1-13-04 2:05pm

Fax results to:

- ☐ Brian Stanford
- ☒ Ernest Edwards
- ☐ Gregg Middaugh
- ☐ Mark Hiley
- ☐ Prudy Stoudt-McRae
- ☐ Tod Pettingill
- ☐ Gwen McCullough
- ☐ Harry Goren
- ☐ Tim Ogden
- ☐ Other___

TURN AROUND TIME:

- ☐ 1 Hour
- ☐ 2 Hours
- ☐ 4 Hours
- ☒ 24 Hours
- ☐ 48 Hours
- * ProgressiveAnalysis
- ☐ 3-5 Days
- ☐ Other___

BULK SAMPLE DATA FORM

Lab #	Sample #	Material	Location	Lab
	40008.092-025	Rope Packing - waste Line	utility tunnel	NVL
	40008.092-			
	40008.092-			
	40008.092-			
	40008.092-			
	40008.092-			
	40008.092-			
	40008.092-			
	40008.092-			
	40008.092-			
	40008.092-			
	40008.092-			
	40008.092-			
	40008.092-			
	40008.092-	Analyzed by L. Manzak 01.14.04 at 10:05		

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PBS ENVIRONMENTAL, 130 NICKERSON ST. #107, SEATTLE, WASHINGTON 98109, (206)-233-9639, FAX: (206)-762-4780

NVL LABS

HAZARDOUS MATERIALS SERVICES

January 14, 2004

Ernest Edwards
PBS Environmental (Seattle)
130 Nickerson St
Suite 107
Seattle, WA 98109

RECEIVED
JAN 22 2004

RE: Bulk Asbestos Fiber Analysis; NVL Batch # 2400400.00

Dear Mr. Edwards,

Enclosed please find test results for the bulk samples submitted to our laboratory for analysis. Examination of these samples was conducted for the presence of identifiable asbestos fibers using polarized light microscopy (PLM) with dispersion staining in accordance with U.S. EPA/600/R-93/116 Test Method.

NVLAP
Lab #: 102063

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Environmental Lead and Industrial Hygiene
ACCREDITED LABORATORY

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Thank you for using our laboratory services. Please do not hesitate to call if there is anything further we can assist you with.

Sincerely,

Munaf Khan

Munaf Khan, Laboratory Director

NVL LABORATORIES, INC
TEL 206.547.0100

Enc.: Sample Results

www.nvllabs.com
1.888.NVL.LABS

Bulk Sample Summary Report

Space	Sample	Description	Result
171	040695B446	H1 - Wall Plaster, Main Hall. Painted white surface over white chalky matl over grey sandy matl. N wall W end. Walls are homogenous	No asbestos detected.
129A	960102B002	H1 - Wall plaster, OfficeRm106, Rm H. Painted white surface over thin layer white chalky material over grey sandy material. SW corner	No asbestos detected.
135	971113B001	H1 - accoustical ceiling plaster from auditorium; sampled from fallen debris in southwest corner of balcony.	No asbestos detected.
141	971112B001	H1 - accoustical ceiling plaster from south west corner of auditorium in balcony.	No asbestos detected.
135	102491B280	H1 - acoustical ceiling plaster, Auditorium-Wht fibrs crunch lumpy w/pale grn paint	4% CHRYSOTILE
135	102491B281	H1 - acoustical ceilintg plaster, Auditorium-Wht/Offwht fibrs crunch lumpy w/pale grn pnt	1% CHRYSOTILE
135	971114B002	H1 - blown in insulation in attic above auditorium; sampled from northeast corner.	No asbestos detected.
135	971114B001	H1 - ceiling plaster from auditorium; sampled from northeast corner.	No asbestos detected.
138	060592B122	H1 - Magnasite molding from east wall, Classrm124	<1% CHRYSOTILE using point counting.
1 6A	060592B123	H1 - Magnasite molding from west wall, Storeroom	<1% CHRYSOTILE using point counting
129B	960102B001	H1 - OfficeWkRmD. Wall plaster. Painted white surface over thin layer white chalky material over grey sandy material. NE corner of Rm.	No asbestos detected.
162A	050892B106	H1 - Plaster debris in pipechase, 2 layers, white chalky and sandy material	No asbestos detected.
180	040695B449	H1 - Wall Plaster, E/W Hall by Gylm. Painted yellow surface over white chalky material over grey sandy material. S wall W end. See flr plan.	No asbestos detected.
180	040695B448	H1 - Wall Plaster, E/W Hall by Gym. Painted green surface over white chalky matl over lathe. N wall W end. Refer to flr plan	No asbestos detected.
180	040695B447	H1 - Wall Plaster, E/W Hall by Gym. Painted green surface over white chalky matl over lathe. N wall E end. Matl/color are found in entry way to gyms/rms on N wall. Refer to flr plan	No asbestos detected.
180	040695B450	H1 - Wall Plaster, E/W Hall by Gym. Painted Yellow surface over white chalky material over grey sandy material. Middle S wall. See floor plan.	No asbestos detected.
180	040695B452	H1 - Wall Plaster, E/W Hall by Gym. Painted Yellow surface over white chalky material over grey sandy material. N wall @ Gym door entry (boys). See flr plan.	No asbestos detected.
180	040695B451	H1 - Wall Plaster, E/W Hall by Gym. Painted Yellow surface over white chalky material over grey sandy material. S wall E end. See floor plan.	No asbestos detected.
138	060592B121	H1 - Wall plaster, east wall, Classrm124	No asbestos detected.

H1=Surfacing
H2=TSI
H3=Miscellaneous

Bulk Sample Summary Report

AKI KUROSE

Space	Sample	Description	Result
201	060592B126	H1 - Wall plaster, east wall, Classrm213	No asbestos detected.
171	040695B445	H1 - Wall Plaster, Main Hall. Painted white surface over white chalky material over grey sandy material. N wall E end. Homogenous walls	No asbestos detected.
171	040695B444	H1 - Wall Plaster, Main Hall. Painted white surface over white chalky material over grey sandy matl. Middle of S wall. Walls are homogenous	No asbestos detected.
590	060392B119	H2 - White fibrous debris in main entry space to tunnel off Main Office area, south corridor tunnel.	15% CHRYSOTILE, 15% AMOSITE
227	980713BP08	H3 - 12x12 ceiling tile, ant pattern; Hallway, middle south wall.	No asbestos detected.
204	980713BP05	H3 - 12x12 floor tile and mastic, dark brown (mat. 24).	No asbestos detected.
115	980713BL01	H3 - 12x12 floor tile and mastic, yellow with white and yellow brush marks (mat. 12).	2% Chrysotile asbestos in tile.
177	980713BL03	H3 - 12x12 floor tile, biege with white and gray brush marks (mat. 21).	No asbestos detected.
206A	980713BL02	H3 - 12x12 floor tile, yellow and brown marks (mat. 23).	No asbestos detected.
163	980713BP10	H3 - 2x4 ceiling tile, ant pattern; Security office; SW corner.	No asbestos detected.
115	980713BP03	H3 - 2x4 ceiling tile, seagull pattern; Office #114, SE corner.	No asbestos detected.
156	00718B001	H3 - Black mastic underneath gym floor, east side.	No asbestos detected.
126	061592B133	H3 - Blackboard in Classroom 110.	No asbestos detected.
144	000605B001	H3 - Brown sheet vinyl flooring and backing in elevated kitchen area of Room 133.	No asbestos detected.
146	010394B004	H3 - ceiling tile (new) over exhaust hood.	No asbestos detected.
146	010394B005	H3 - ceiling tile (old) near corner vent.	No asbestos detected.
227	980713BP07	H3 - Ceiling tile mastic, dark (Mat #2); Hallway, middle south wall.	No asbestos detected.
105A	980713BP09	H3 - Ceiling tile mastic, dark brown (Mat #4); Office Y Entry, NW corner.	1% Actinolite asbestos.
163	980713	H3 - ceiling tile; Security office	No asbestos detected

H1=Surfacing
H2=TSI
H3=Miscellaneous

Bulk Sample Summary Report

Space	Sample	Description	Result
139	980713BP02	H3 - Cove base mastic, white (mat. 32).	No asbestos detected.
207A	980713BP06	H3 - Sheet flooring, brown and white streaks (mat. 22).	No asbestos detected.
124C	980713BP04	H3 - Sheet flooring, gray and white mosaic (mat. 13).	No asbestos detected.
201	060592B125	H3 - Sheet linoleum with backing, brown color	No asbestos detected.
210	000620B001	H3 - Sheet vinyl flooring in LRC. Sample inlcudes carpet matic.	No asbestos detected.
138A	980713BP01	H3 - Sheetrock and joint compound; Room 124W, NE corner	No asbestos detected.
130	000714B001	H3 - tan 9x9 floor tile and black mastic. Sample from Room 105 (PIC).	8% Chrysotile asbestos in tile only.
129E	000705B001	H3 - Tan floor tile with brown/white streaks and gold matic.	No asbestos detected.
129E	000705B002	H3 - Tan floor tile with rust/off-white streaks and black mastic.	6% Chrysotile asbestos in tile only.
139	060592B124	H3 - vinyl floor tile and mastic, grey 12x12, adjacent to radiator, Classrm125	12% CHRYSOTILE, Mastic negative
138A	060592B120	H3 - vinyl floor tile, Classrm124, adjacent to radiator, homogenous to entire room	12% CHRYSOTILE, Mastic negative.
144	101395B538	H3 - vinyl floor tile, Sheet linoleum counter, Daycare/nursery. Light grey w black backing. SE corner of Rm	No asbestos detected.
143	040893B114	H3 - Vinyl linoleum counter, top east side of room , grey, Classrm132	No asbestos detected.
143	040893B115	H3 -Vinyl counter top east side of room, grey, Classrm132	No asbestos detected.
122	81188A661	H3 ceiling tile, Portable Building P	No asbestos detected.
135	81188A660	H3 ceiling tile-Auditorium	No asbestos detected.
210	8188A658	H3 ceiling tile-LRC	No asbestos detected.
115	81188A659	H3 ceiling tile-Office	No asbestos detected.
204	81188A657	H3 ceiling tile-Teachers lounge	No asbestos detected.

H1=Surfacing
H2=TSI
H3=Miscellaneous

AKI KUROSE

Bulk Sample Summary Report

Space	Sample	Description	Result
145	031591B103	H3 Window Putty-Lunchroom skylights-Sparkly gray putty	7% CHRYSOTILE

H1=Surfacing
H2=TSI
H3=Miscellaneous

Homogeneous Materials List

Mat. #	Type	Description	Sample #	Lab Result
1	Surf	Plaster and skim coat	See sample report	No asbestos detected.
2	Misc.	12x12 CT, seagull pattern	81188A660	No asbestos detected.
3	Misc.	9x9 VFT and mastic, tan with dark brown and white streaks		Assumed ACBM
4	Misc.	12x12 CT, uniform punch medium hole	See sample report	No asbestos detected.
5	Misc.	9x9 VFT and mastic, tan with red and brown with white streaks		Assumed ACBM
6	Misc.	9x9 VFT and mastic, brown with dark brown and white streaks		Assumed ACBM
7	TSI	Magnesia pipe insulation and fitting		Assumed ACBM
8	Misc.	9x9 VFT and mastic, gray with black and white streaks		Assumed ACBM
9	Misc.	Sheetrock and joint compound	980713BP01	No asbestos detected.
10	TSI	Aircell pipe insulation and fitting		Assumed ACBM
11	Misc.	2x4 ceiling tile, seagull pattern	980713BP03	No asbestos detected.
12	Misc.	12x12 VFT and mastic, yellow with white and yellow brush stroke	980713BL01	2% Chrysotile asbestos in tile.
13	Misc.	Linoleum floor sheeting, gray and white mosaic	970713BP04	No asbestos detected.
14	Misc.	Magnasite flooring	060592B122 – 123	<1% Chrysotile asbestos
15	Surf.	Acoustical plaster	See sample report	1-4% chrysotile asbestos
16	Misc.	Linoleum floor sheeting, dark brown	060592B125	No asbestos detected.
17	Misc.	9x9 VFT and mastic, green with dark green and white streaks		Assumed ACBM
18	TSI	Boiler and tank insulation		Assumed ACBM
19	Misc.	Flex connection for air-duct		Assumed ACBM

20	Misc.	2x4 ceiling tile, ant pattern	980713BP10	No asbestos detected.
21	Misc.	12x12 VFT, beige with white and gray brush strokes	980713BL03	No asbestos detected.
22	Misc.	Linoleum floor sheeting, brown and white streaks	970713BP06	No asbestos detected.
23	Misc.	12x12 VFT, yellow and brown water marks	980713BL02	No asbestos detected.
24	Misc.	12x12 VFT and mastic, dark brown	980713BP05	No asbestos detected.
25	Misc.	9x9 VFT and mastic, red with white streaks		Assumed ACBM
26	Misc.	Cement asbestos board		Assumed ACBM
27	Misc.	12x12 CT, ant pattern	980713BP08	No asbestos detected.
29	Misc.	4x8 tectum ceiling panel		Assumed ACBM until analyzed.
30	TSI	Dark brown attic insulation	971114B002	Assumed ACBM until analyzed.
31	Misc.	Electrical wire insulation		Assumed ACBM
32	Misc.	Cove base mastic, white	980713BP02	No asbestos detected.
33	Misc.	Ceiling tile mastic, dark brown (Mat #2)	980713BP07	No asbestos detected.
34	Misc.	Ceiling tile mastic, dark brown (Mat #4)	980713BP09	1% Actinolite asbestos

APPENDIX B

Historical AA Lead Paint Chip Sampling Information

AA LEAD PAINT CHIP SAMPLE INVENTORY

PBS Sample #	Paint Color / Component or Substrate	Sample Location	Results (mg/kg)	Results (%)	Lab
40008.281 -Pb01	White / Concrete / Wall	2nd Floor Stairwell at Elevator	<77	<0.0077	NVL
40008.281 -Pb02	Brown / Wood / Trim	2nd Floor Stairwell at Elevator Partition	<170	<0.017	NVL
40008.281 -Pb03	White / GWB / Wall	2nd Floor Stairwell #3	1500	0.15	NVL
40008.281 -Pb04	White /GWB / Wall	2nd Floor Stairwell #2	6600	0.066	NVL
40008.281 -Pb05	Brown / Wood / Trim	2nd Floor Stairwell #2	1000	0.10	NVL

mg/kg = Milligrams per kilogram
< = Less than the Limit of Detection

June 10, 2021

Ryan Hunter
PBS Environmental - Seattle
214 E Galer St. Suite. 300
Seattle, WA 98102

NVL Batch # 2110328.00

RE: **Total Metal Analysis**
Method: EPA 7000B Lead by FAA <paint>
Item Code: FAA-02

Client Project: 40008.281
Location: Aki Kurose Refuge

Dear Mr. Hunter,

NVL Labs received 2 sample(s) for the said project on 6/9/2021. Preparation of these samples was conducted following protocol outlined in EPA 3051/7000B , unless stated otherwise. Analysis of these samples was performed using analytical instruments in accordance with EPA 7000B Lead by FAA <paint>. The results are usually expressed in mg/Kg and percentage (%). Test results are not blank corrected.

For recent regulation updates pertaining to current regulatory levels or permissible exposure levels, please call your local regulatory agencies for more detail.

At NVL Labs all analyses are performed under strict guidelines of the Quality Assurance Program. This report is considered highly confidential and will not be released without your approval. Samples are archived after two weeks from the analysis date. Please feel free to contact us at 206-547-0100, in case you have any questions or concerns.

Sincerely,

Yasuyuki Hida, Laboratory Analyst

Enc.: Sample results

Phone: 206 547.0100 | Fax: 206 634.1936 | Toll Free: 1.888.NVL.LABS (685.5227)
4708 Aurora Avenue North | Seattle, WA 98103-6516

Analysis Report

Total Lead (Pb)

Client: PBS Environmental - Seattle
Address: 214 E Galer St. Suite. 300
Seattle, WA 98102

Attention: **Mr. Ryan Hunter**
Project Location: Aki Kurose Refuge

Batch #: 2110328.00
Matrix: Paint
Method: EPA 3051/7000B
Client Project #: 40008.281
Date Received: 6/9/2021
Samples Received: 2
Samples Analyzed: 2

Lab ID	Client Sample #	Sample Weight (g)	RL in mg/Kg	Results in mg/Kg	Results in percent
21068724	40008.281-Pb01	0.1307	77	< 77	<0.0077
21068725	40008.281-Pb02	0.0300	170	< 170	<0.017

Comments: Small sample size(<0.05g) for 40008.281-Pb02.

Sampled by: Client
Analyzed by: Shalini Patel — Date Analyzed: 06/10/2021
Reviewed by: Yasuyuki Hida — Date Issued: 06/10/2021

Yasuyuki Hida, Laboratory Analyst

mg/ Kg =Milligrams per kilogram
Percent = Milligrams per kilogram / 10000
RL = Reporting Limit
'<' = Below the reporting Limit
Note : Method QC results are acceptable unless stated otherwise.
Unless otherwise indicated, the condition of all samples was acceptable at time of receipt.

Bench Run No: 2021-0610-04
FAA-02

LEAD LABORATORY SERVICES

Company	PBS Environmental - Seattle	**NVL Batch Number**	**2110328.00**
Address	214 E Galer St. Suite. 300 Seattle, WA 98102	**TAT**	1 Day **AH** No
		Rush TAT	
Project Manager	Mr. Ryan Hunter	**Due Date**	6/10/2021 **Time** 3:15 PM
Phone	(206) 233-9639	**Email**	ryan.hunter@pbsusa.com
		Fax	(866) 727-0140

Project Name/Number: 40008.281 **Project Location:** Aki Kurose Refuge

Subcategory Flame AA (FAA)

Item Code FAA-02 EPA 7000B Lead by FAA <paint>

Total Number of Samples 2

Rush Samples

	Lab ID	Sample ID	Description	A/R
1	21068724	40008.281-Pb01		A
2	21068725	40008.281-Pb02		A

	Print Name	Signature	Company	Date	Time
Sampled by	Client				
Relinquished by	Courier				

Office Use Only	Print Name	Signature	Company	Date	Time
Received by	Kelly AuVu		NVL	6/9/21	1515
Analyzed by	Shalini Patel		NVL	6/10/21	
Results Called by					
☐ **Faxed** ☐ **Emailed**					

Special Instructions:

Date: 6/9/2021
Time: 3:34 PM
Entered By: Fatima Khan

LABORATORY CHAIN OF CUSTODY

2110328

Project: Aki Kurose Refuge

Project #: 40008.281

Analysis requested: FAA – Total Lead Paint Chip Analysis

Date: 6/9/2021

Relinq'd by/Signature: Ryan Hunter / Ry Ht

Date/Time: 6/9/2021

Received by/Signature: [illegible]

Date/Time: 6/9/~~2020~~ 2021 1515 Courier

Email ALL INVOICES to: seattleap@pbsusa.com

E-mail results to:

- ☐ Willem Mager
- ☐ Gregg Middaugh
- ☐ Mark Hiley
- ☒ Tim Ogden
- ☒ Ryan Hunter
- ☐ Prudy Stoudt-McRae
- ☐ Janet Murphy
- ☐ Kaitlin Soukup
- ☐ Allison Welch
- ☐ Toan Nguyen
- ☐ Peter Stensland
- ☐ Claire Tsai
- ☐ Holly Tuttle
- ☐ Mike Smith
- ☐ Ferman Fletcher
- ☐ Cameron Budnick
- ☒ Michelle Dodson
- ☐ ______

TURN AROUND TIME:

- ☐ 1 Hour
- ☐ 2 Hours
- ☐ 4 Hours
- ☒ 24 Hours
- ☐ 48 Hours
- ☐ 3-5 Days
- ☐ Other______

SAMPLE DATA FORM

Sample #	Material	Location	Lab
40008.281-Pb01	White / Concrete / Wall	Stairwell at Elevator	NVL
40008.281-Pb02	Brown / Wood / Trim	Stairwell at Elevator Partition	

June 22, 2021

Ryan Hunter
PBS Environmental - Seattle
214 E Galer St. Suite. 300
Seattle, WA 98102

NVL Batch # 2111106.00

RE: Total Metal Analysis
Method: EPA 7000B Lead by FAA <paint>
Item Code: FAA-02

Client Project: 40008.281
Location: Aki Kurose Refuge

Dear Mr. Hunter,

NVL Labs received 3 sample(s) for the said project on 6/22/2021. Preparation of these samples was conducted following protocol outlined in EPA 3051/7000B , unless stated otherwise. Analysis of these samples was performed using analytical instruments in accordance with EPA 7000B Lead by FAA <paint>. The results are usually expressed in mg/Kg and percentage (%). Test results are not blank corrected.

For recent regulation updates pertaining to current regulatory levels or permissible exposure levels, please call your local regulatory agencies for more detail.

At NVL Labs all analyses are performed under strict guidelines of the Quality Assurance Program. This report is considered highly confidential and will not be released without your approval. Samples are archived after two weeks from the analysis date. Please feel free to contact us at 206-547-0100, in case you have any questions or concerns.

Sincerely,

Nick Ly, Technical Director

Enc.: Sample results

Phone: 206 547.0100 | Fax: 206 634.1936 | Toll Free: 1.888.NVL.LABS (685.5227)
4708 Aurora Avenue North | Seattle, WA 98103-6516

Analysis Report

Total Lead (Pb)

NVL

Client: PBS Environmental - Seattle
Address: 214 E Galer St. Suite. 300
Seattle, WA 98102

Attention: **Mr. Ryan Hunter**
Project Location: Aki Kurose Refuge

Batch #: 2111106.00
Matrix: Paint
Method: EPA 3051/7000B
Client Project #: 40008.281
Date Received: 6/22/2021
Samples Received: 3
Samples Analyzed: 3

Lab ID	Client Sample #	Sample Weight (g)	RL in mg/Kg	Results in mg/Kg	Results in percent
21074291	40008.281-Pb03	0.1362	73	1500	0.15
21074292	40008.281-Pb04	0.1142	88	660	0.066
21074293	40008.281-Pb05	0.0384	130	1000	0.10

Comments: Small sample size(<0.05g) for 40008.281.Pb05.

Sampled by: Client
Analyzed by: Shalini Patel — Date Analyzed: 06/22/2021
Reviewed by: Nick Ly — Date Issued: 06/22/2021

Nick Ly, Technical Director

mg/ Kg =Milligrams per kilogram
Percent = Milligrams per kilogram / 10000
RL = Reporting Limit
'<' = Below the reporting Limit
Note : Method QC results are acceptable unless stated otherwise.
Unless otherwise indicated, the condition of all samples was acceptable at time of receipt.

Bench Run No: 2021-0622-06
FAA-02

LEAD LABORATORY SERVICES

NVL

Company PBS Environmental - Seattle
Address 214 E Galer St. Suite. 300
Seattle, WA 98102
Project Manager Mr. Ryan Hunter
Phone (206) 233-9639

NVL Batch Number **2111106.00**
TAT 1 Day **AH** No
Rush TAT
Due Date 6/23/2021 **Time** 8:00 AM
Email ryan.hunter@pbsusa.com
Fax (866) 727-0140

Project Name/Number: 40008.281 **Project Location:** Aki Kurose Refuge

Subcategory Flame AA (FAA)
Item Code FAA-02 EPA 7000B Lead by FAA <paint>

Total Number of Samples 3 Rush Samples

	Lab ID	Sample ID	Description	A/R
1	21074291	40008.281-Pb03		A
2	21074292	40008.281-Pb04		A
3	21074293	40008.281-Pb05		A

	Print Name	Signature	Company	Date	Time
Sampled by	Client				
Relinquished by	Drop Box				

Office Use Only	Print Name	Signature	Company	Date	Time
Received by	Kelly AuVu		NVL	6/22/21	800
Analyzed by	Shalini Patel		NVL	6/22/21	
Results Called by					
☐ **Faxed** ☐ **Emailed**					

Special Instructions:

Date: 6/22/2021
Time: 8:58 AM
Entered By: Kelly AuVu

PBS

LABORATORY CH 2111106

Project: Aki Kurose Refuge

Project #: 40008.281

Analysis requested: FAA – Total Lead Paint Chip Analysis

Date: 6/9/2021

Relinq'd by/Signature: Ryan Hunter /

Date/Time:

Received by/Signature:

Date/Time: 6/22/21 8:08

Email ALL INVOICES to: seattleap@pbsusa.com

E-mail results to:

- ☐ Willem Mager
- ☐ Gregg Middaugh
- ☐ Mark Hiley
- ☒ Tim Ogden
- ☒ Ryan Hunter
- ☐ Prudy Stoudt-McRae
- ☐ Janet Murphy
- ☐ Kaitlin Soukup
- ☐ Allison Welch
- ☐ Toan Nguyen
- ☐ Peter Stensland
- ☐ Claire Tsai
- ☐ Holly Tuttle
- ☐ Mike Smith
- ☐ Ferman Fletcher
- ☐ Cameron Budnick
- ☒ Michelle Dodson
- ☐ ____________

TURN AROUND TIME:

- ☐ 1 Hour
- ☐ 2 Hours
- ☐ 4 Hours
- ☒ 24 Hours
- ☐ 48 Hours
- ☐ 3-5 Days
- ☐ Other____________

SAMPLE DATA FORM

Sample #	Material	Location	Lab
40008.281-Pb03	White / GWB / Wall	Stairwell #3	NVL
40008.281-Pb04	White / GWB / Wall	Stairwell #2	
40008.281-Pb05	Brown / Wood / Trim	Stairwell #2	

AA LEAD PAINT CHIP SAMPLE INVENTORY

PBS Sample #	Paint Color / Component or Substrate	Sample Location	Results (mg/kg)	Results (%)	Lab
40008.191 -Pb01	Pink/Wood/Glass Block Frame	West Elevation, Unit D	22000.0	2.2000	NVL
40008.191 -Pb02	Pink/Concrete/Exterior Sill	East Elevation, Unit B	21000.0	2.1000	NVL
40008.191 -Pb03	Pink/Concrete/Exterior Sill	West #2 Elevation, Unit A	23000.0	2.3000	NVL
40008.191 -Pb04	Pink/Concrete/Post at Glass Block	North Elevation, Unit C	40000.0	4.0000	NVL

mg/kg = Milligrams per kilogram
< = Less than the Limit of Detection

August 24, 2009

NVL LABS & HAZARDOUS MATERIALS SERVICES

Ferman Fletcher
PBS Environmental (Seattle)
2517 Eastlake Ave E, Suite 100
Seattle, WA 98102

RE: Metals Analysis; NVL Batch # 2909785.01

Dear Mr. Fletcher,

Enclosed please find the test results for samples submitted to our laboratory for analysis. Examination of these samples was conducted using analytical instruments in accordance to U.S. EPA, NIOSH, OSHA and other ASTM methods.

NVLAP #102063

AIHA Environmental Lead and Industrial Hygiene ACCREDITED LABORATORY

AIHA - IH #101861

For matrix materials submitted as paint, dust wipe, soil or TCLP samples, analysis for the presence of total metals is conducted using published U.S. EPA Methods. Paint and soil results are usually expressed in mg/Kg which is equivalent to parts per million (ppm). Lead (Pb) in paint is usually expressed in mg/Kg (ppm) , Percent (%) or mg/cm^2 by area. Dust wipe sample results are usually expressed in ug/wipe and ug/ft^2. TCLP samples are reported in mg/L (ppm). For air filter samples, analyses are conducted using NIOSH and OSHA Methods. Results are expressed in ug/filter and ug/m^3. Other matrix materials are analyzed accordingly using published methods or specified by client. The reported test results pertain only to items tested. Lead test results are not blank corrected.

For recent regulation updates pertaining to current regulatory levels or permissible exposure levels, please call your local regulatory agencies for more details.

This report is considered highly confidential and will not be released without your approval. Samples are archived for two weeks following analysis. Samples that are not retrieved by the client are discarded after two weeks.

Thank you for using our laboratory services. if you need further assistance please feel free to call us at 206-547-0100 or 1-888-NVLLABS.

Sincerely,

Nick Ly, Technical Director

Enclosure:

NVL LABORATORIES, INC
4708 AURORA AVE N
SEATTLE, WA 98103.6516
TEL 206.547.0100
FAX 206.634.1936
nvllabs@nvllabs.com

www.nvllabs.com
1.888.NVL.LABS (685.5227)

NVL Laboratories, Inc.

4708 Aurora Ave. N., Seattle, WA 98103
Tel: 206.547.0100, Fax: 206.634.1936
www.nvllabs.com

Analysis Report

AIHA - IH # 101861
WA - DOE # C1765

AIHA Environmental Lead and Industrial Hygiene ACCREDITED LABORATORY

Total Lead (Pb)

Client: PBS Environmental (Seattle)
Address: 2517 Eastlake Ave E, Suite 100
Seattle, WA 98102

Attention: Mr. Ferman Fletcher
Project Location: Aki Kurose Middle School 2010 BTA

Batch #: 2909785.01
Matrix: Paint Chips
Method: EPA 7000B
Client Project #: 40008.191
Date Received: 08/21/2009
Samples Received: 1
Samples Analyzed: 1

Lab ID	Client Sample #	Sample Weight	RL in mg/Kg	Results in mg/Kg	Results in percent
29077835	40008.191-Pb01	0.2295	42.0	22000.0	2.2000

Sampled by: Client
Analyzed by: Brittany Vogel
Reviewed by: Nick Ly

Date Analyzed: 08/24/2009
Date Issued: 08/24/2009

Nick Ly, Technical Director

mg/ Kg =Milligrams per kilogram
Percent = Milligrams per kilogram / 10000
Note : Method QC results are acceptable unless stated otherwise.
Unless otherwise indicated, the condition of all samples was acceptable at time of receipt.

RL = Reporting Limit
'<' = Below the reporting Limit

Bench Run No: 29-0821-04

HAZARDOUS MATERIALS
MANAGEMENT • TRAINING • LAB SERVICES

NVL LABS
HAZARDOUS MATERIALS SERVICES

September 25, 2009

Ferman Fletcher
PBS Environmental (Seattle)
2517 Eastlake Ave E, Suite 100
Seattle, WA 98102

RE: Metals Analysis; NVL Batch # 2911353.00

Dear Mr. Fletcher,

Enclosed please find the test results for samples submitted to our laboratory for analysis. Examination of these samples was conducted using analytical instruments in accordance to U.S. EPA, NIOSH, OSHA and other ASTM methods.

For matrix materials submitted as paint, dust wipe, soil or TCLP samples, analysis for the presence of total metals is conducted using published U.S. EPA Methods. Paint and soil results are usually expressed in mg/Kg which is equivalent to parts per million (ppm). Lead (Pb) in paint is usually expressed in mg/Kg (ppm), Percent (%) or mg/cm^2 by area. Dust wipe sample results are usually expressed in ug/wipe and ug/ft^2. TCLP samples are reported in mg/L (ppm). For air filter samples, analyses are conducted using NIOSH and OSHA Methods. Results are expressed in ug/filter and ug/m^3. Other matrix materials are analyzed accordingly using published methods or specified by client. The reported test results pertain only to items tested. Lead test results are not blank corrected.

NVLAP
102063

AIHA
Environmental Lead and Industrial Hygiene
ACCREDITED LABORATORY

AIHA - IH
#101861

For recent regulation updates pertaining to current regulatory levels or permissible exposure levels, please call your local regulatory agencies for more details.

This report is considered highly confidential and will not be released without your approval. Samples are archived for two weeks following analysis. Samples that are not retrieved by the client are discarded after two weeks.

Thank you for using our laboratory services. if you need further assistance please feel free to call us at 206-547-0100 or 1-888-NVLLABS.

Sincerely,

Nick Ly, Technical Director

Enclosure:

NVL LABORATORIES, INC
4708 AURORA AVE N
SEATTLE, WA 98103.6516
TEL **206.547.0100**
FAX 206.634.1936
nvllabs@nvllabs.com

www.nvllabs.com
1.888.NVL.LABS (685.5227)

NVL Laboratories, Inc.

4708 Aurora Ave. N., Seattle, WA 98103
Tel: 206.547.0100, Fax: 206.634.1936
www.nvllabs.com

Analysis Report

AIHA - IH # 101861
WA - DOE # C1765

AIHA Environmental Lead and Industrial Hygiene ACCREDITED LABORATORY

Total Lead (Pb)

Client: PBS Environmental (Seattle)
Address: 2517 Eastlake Ave E, Suite 100
Seattle, WA 98102

Attention: Mr. Ferman Fletcher
Project Location: Aki Kurose BTA 2010

Batch #: 2911353.00
Matrix: Paint Chips
Method: EPA 7000B
Client Project #: 40008.191
Date Received: 09/24/2009
Samples Received: 3
Samples Analyzed: 3

Lab ID	Client Sample #	Sample Weight	RL in mg/Kg	Results in mg/Kg	Results in percent
29086245	40008.191-Pb02	0.2142	39.0	21000.0	2.1000
29086246	40008.191-Pb03	0.1950	42.0	23000.0	2.3000
29086247	40008.191-Pb04	0.2070	40.0	40000.0	4.0000

Sampled by: Client
Analyzed by: Alla Prysyazhnyuk   Date Analyzed: 09/25/2009
Reviewed by: Nick Ly   Date Issued: 09/25/2009

Nick Ly, Technical Director

mg/ Kg =Milligrams per kilogram
Percent = Milligrams per kilogram / 10000
RL = Reporting Limit
'<' = Below the reporting Limit
Note : Method QC results are acceptable unless stated otherwise.
Unless otherwise indicated, the condition of all samples was acceptable at time of receipt.

Bench Run No: 29-0925-03

PBS

BATCH ID
2911353.00

Project: AKi Kurose BTA 2010 **Project #:** 40008.191

Analysis requested: AAs for Pb **Date:** 9/24/09

Relinq'd by/Signature: [signature] **Date/Time:** 9/24/09

Received by/Signature: [signature] NW **Date/Time:** 9/24/09 14:05

Analyzed by: Alla Pugsyxdmgak [signature] 9/25/09 10:55 a.m.

Fax results to:

- ☐ Brian Stanford
- ☐ Ernest Edwards
- ☐ Gregg Middaugh
- ☐ Mark Hiley
- ☐ Prudy Stoudt-McRae
- ☐ Joe Lucas
- ☐ Janet Murphy
- ☐ Willem Mager
- ☒ Ferman Fletcher
- ☐ Tim Ogden
- ☐ Mike Smith
- ☐ Chuck Greeb

TURN AROUND TIME:

- ☐ 1 Hour
- ☐ 2 Hours
- ☐ 4 Hours
- ☒ 24 Hours
- ☐ 48 Hours
- ☐ 3-5 Days
- ☐ Other____________

BULK SAMPLE DATA FORM

Lab #	Sample #	Material	Location	Lab
	40008 191-Pb02	Pink/concrete/ext. window sill	E elevation Unit B	NVL
	-Pb03	"	West #2 elevation Unit A	
	-Pb04	Pink/concrete/Partition @ Glass block	N. elevation Unit C	

S:\Masters\Office\Tech Forms & Templates\Lab Chain-of-Custody.doc

AA PAINT CHIP SAMPLE INVENTORY

PBS Sample #	Paint Color/Component/Substrate	Sample Location	Lab Result (mg/kg)	Lab Result (%)	Lab
40008.170-Pb -001	White/Gray/Plaster/Wall	Room 109	<43.00	<0.0043	NVL
40008.170-Pb -002	Tan/Plywood/Wall	Room 23	<45.0	<0.0045	NVL
40008.170-Pb -003	White/Metal/Sink Undercoat	Room 400	1000	0.1	NVL

"<" = Below the Analytical Limit of Detection
mg/kg = milligram/kilogram

NVL Laboratories, Inc.

4708 Aurora Ave. N., Seattle, WA 98103
Tel: 206.547.0100, Fax: 206.634.1936
www.nvllabs.com

Analysis Report

AIHA - IH # 101861
WA - DOE # C1765

AIHA Environmental Lead and Industrial Hygiene ACCREDITED LABORATORY

Total Lead (Pb)

Client: PBS Environmental (Seattle)
Address: 130 Nickerson St Suite 107
Seattle, WA 98109

Attention: Ms. Janet Murphy
Project Location: AKI KUROSE

Batch #: 2616062.00
Matrix: Paint Chips
Method: EPA 7000B
Client Project #: 40008.170
Date Received: 11/24/2006
Samples Received: 3
Samples Analyzed: 3

Lab ID	Client Sample #	Sample Weight	RL in mg/Kg	Results in mg/Kg	Results in percent
26110811	Pb1	0.1976	43.0	< 43.0	< 0.0043
26110812	Pb2	0.1893	45.0	< 45.0	< 0.0045
26110813	Pb3	0.0917	94.0	1000.0	0.1000

Sampled by: Client
Analyzed by: Ahmad Izzat
Date Analyzed: 11/27/2006

DRAFT

mg/ Kg =Milligrams per kilogram
Percent = Milligrams per kilogram / 10000
RL = Reporting Limit
'<' = Below the reporting Limit
Note : Method QC results are acceptable unless stated otherwise.
Unless otherwise indicated, the condition of all samples was acceptable at time of receipt.

Bench Run No: 26-1127-8

Seattle Public Schools
Aki Kurose Middle School Renovation

PBS Engineering and Environmental
PBS Project #40008.092

AA PAINT CHIP SAMPLE INVENTORY

PBS Sample #		Paint Color/Component/Substrate	Sample Location	Lab Result (mg/kg)	Lab Result (%)	Lab
40008.092	Pb006	Black /Wall / Gypsum Wallboard	Room 215W	<56.0	<0.0056	NVL Laboratories
40008.092	Pb007	Yellow-Beige / Wall / Plaster	Room 101	330.0	0.0330	NVL Laboratories
40008.092	Pb008	Black / Countertop / Wood	Room 210	900.0	0.0900	NVL Laboratories
40008.092	Pb009	Tan / Windowsill / Metal	Room 112 - Clerestory	36000.0	3.6000	NVL Laboratories
40008.092	Pb010	Blue /Wall / Plaster	Room 214E	2700.0	0.2700	NVL Laboratories
40008.092	Pb011	Taupe / Wall / Plaster	Room 209- Library	1500.0	0.1500	NVL Laboratories

mg/kg = Milligrams per kilogram
< = Below the Limit of Detection

PBS ENVIRONMENTAL

BATCH ID
2400338.00

Project: ______________________ **Project #:** ______________________

Analysis requested: AA – Total Lead **Date:** 01/12/04

Relinq'd by/Signature: [signature] **Date/Time:** 1-13-04 / 0930

Received by/Signature: [signature] **Date/Time:** 1-13-04-9:30

Fax results to:

- ☐ Brian Stanford
- ☑ Ernest Edwards
- ☐ Gregg Middaugh
- ☐ Mark Hiley
- ☐ Prudy Stoudt-McRae
- ☐ Tod Pettingill
- ☐ Gwen McCullough
- ☐ Harry Goren
- ☐ Tim Ogden
- ☐ Other______________

TURN AROUND TIME:

- ☐ 1 Hour
- ☐ 2 Hours
- ☐ 4 Hours
- ☑ 24 Hours
- ☐ 48 Hours
- * ProgressiveAnalysis
- ☐ 3-5 Days
- ☐ Other______________

Lab #	Sample #	Material	Location	Lab
	40008-092-Pb006	Black/Glue/wall	Room 215 W	NVL
	40008-092-Pb007	yellow-Beige/Plaster/wall	Room 101	
	40008-092-Pb-008	Black/wood/countertop	Room 210	
	40008-092-Pb009	Tan/metal/window sill	Room 112-Clerestory	
	40008-092-Pb010	Blue/Plaster/wall	Room 214 E	
	40008-092-Pb011	Tope/Plaster/wall	Room 209-Library	

S:\Masters\Office\Tech Forms & Templates\Lab Chain-of-Custody.doc

PBS ENVIRONMENTAL, 130 NICKERSON ST. #107, SEATTLE, WASHINGTON 98109, (206)-233-9639, FAX: (206)-762-4780

NVL Laboratories, Inc.
4708 Aurora Ave. N., Seattle, WA 98103
Tel: 206.547.0100, Fax: 206.634.1936
www.nvllabs.com

Analysis Report

AIHA - IH #101861

AIHA Environmental Lead and Industrial Hygiene ACCREDITED LABORATORY

Total Lead (Pb)

Client: PBS Environmental (Seattle)
Address: 130 Nickerson St
Seattle, WA 98109
Attention: Mr. Ernest Edwards
Project Location: n/a

Batch #: 2400338.00
Matrix: Paint Chips
Method: EPA 7000B
Client Project #:n/a
Samples Received: 6
Total Samples Analyzed:6

Lab ID	Client Sample #	Sample Weight	RL in mg/Kg	Results in mg/Kg	Results in percent
24001712	40008.092-Pb006	0.1795	56.0	< 56.0	< 0.0056
24001713	40008.092-Pb007	0.2007	50.0	330.0	0.0330
24001714	40008.092-Pb008	0.0950	110.0	900.0	0.0900
24001715	40008.092-Pb009	0.1955	51.0	36000.0	3.6000
24001716	40008.092-Pb010	0.2009	50.0	2700.0	0.2700
24001717	40008.092-Pb011	0.1945	51.0	1500.0	0.1500

Sampled by: Client
Analyzed by: Holly Tuttle Date: 01/14/2004

DRAFT

mg/ Kg =Milligrams per kilogram
Percent = Milligrams per kilogram / 10000

RL = Reporting Limit
'<' = Below the reporting Limit

Note : Method QC results are acceptable unless stated otherwise.

Bench Run No: 24-0113-4

APPENDIX E

Certifications

THIS IS TO CERTIFY THAT

RYAN HUNTER

HAS SUCCESSFULLY COMPLETED THE TRAINING COURSE

for

ASBESTOS INSPECTOR REFRESHER

In accordance with TSCA Title II, Part 763, Subpart E, Appendix C of 40 CFR

Course Date: 02/13/2023

Course Location: Online

Certificate: IRO-23-7254B

CCB #SRA0615 4-Hr Training

4-Hour Online AHERA Inspector Refresher Training; AHERA is the Asbestos Hazard Emergency Response Act enacting Title II of Toxic Substance Control Act (TSCA)

Expiration Date: 02/13/2024

For verification of the authenticity of this certificate contact:
PBS Engineering and Environmental Inc.
4412 S Corbett Avenue
Portland, OR 97239
503.248.1939

Andy Fridley, Instructor

THIS IS TO CERTIFY THAT

MAE REILLY

HAS SUCCESSFULLY COMPLETED THE TRAINING COURSE

for

ASBESTOS INSPECTOR REFRESHER

In accordance with TSCA Title II, Part 763, Subpart E, Appendix C of 40 CFR

Course Date: 06/20/2023

Course Location: Online Training,

Certificate: IR-23-0591C

CCB #SRA0615 4-Hr Training

4-Hour AHERA Inspector Refresher Training; AHERA is the Asbestos Hazard Emergency Response Act enacting Title II of Toxic Substance Control Act (TSCA)

Expiration Date: 06/20/2024

For verification of the authenticity of this certificate contact:
PBS Engineering and Environmental Inc.
4412 S Corbett Avenue
Portland, OR 97239
503.248.1939

Andy Fridley, Instructor

THIS IS TO CERTIFY THAT

CAMERON BUDNICK

HAS SUCCESSFULLY COMPLETED THE TRAINING COURSE

for

ASBESTOS INSPECTOR REFRESHER

In accordance with TSCA Title II, Part 763, Subpart E, Appendix C of 40 CFR

Course Date: 09/19/2023

Course Location: Portland, OR

Certificate: IR-23-9630B

CCB #SRA0615 4-Hr Training

4-Hour AHERA Inspector Refresher Training; AHERA is the Asbestos Hazard Emergency Response Act enacting Title II of Toxic Substance Control Act (TSCA)

Expiration Date: 09/19/2024

For verification of the authenticity of this certificate contact:
PBS Engineering and Environmental Inc.
4412 S Corbett Avenue
Portland, OR 97239
503.248.1939

Andy Fridley, Instructor

THIS IS TO CERTIFY THAT

PETER STENSLAND

HAS SUCCESSFULLY COMPLETED THE TRAINING COURSE

for

ONLINE AHERA ASBESTOS INSPECTOR REFRESHER

In accordance with TSCA Title II, Part 763, Subpart E, Appendix C of 40 CFR

Course Date: 06/05/2023

Course Location: Online

Certificate: IRO-23-9342B

PBS

CCB #SRA0615 4-Hr Training

4-Hour Online AHERA Inspector Refresher Training; AHERA is the Asbestos Hazard Emergency Response Act enacting Title II of Toxic Substance Control Act (TSCA)

Expiration Date: 06/05/2024

For verification of the authenticity of this certificate contact:
PBS Engineering and Environmental Inc.
4412 S Corbett Avenue
Portland, OR 97239
503.248.1939

Andy Fridley, Instructor

ATTACHMENT B: TRANSPORTATION TECHNICAL REPORT

TRANSPORTATION TECHNICAL REPORT

for the

Aki Kurose Middle School Renovation and Addition

PREPARED FOR:

Seattle Public Schools

PREPARED BY:

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

October 8, 2024

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1. INTRODUCTION

This report presents the transportation impact analyses for the Seattle Public Schools' (SPS) proposed modernization of and addition to Aki Kurose Middle School, which is located at 3928 S Graham Street in the Hillman City neighborhood of Seattle. 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 for this project.

1.1. Project Description

The Aki Kurose Middle School site is bounded on the south by S Graham Street, on the west by 39th Avenue S, on the east by 42nd Avenue S, and on the north by Seattle Parks and Recreation's (SPR's) Brighton Playfield. SPS is proposing to modernize and construct an addition to Aki Kurose Middle School. The following sections describe the existing site and the proposed project.

1.1.1. Existing Site

The existing school building contains about 169,730 square feet (sf)[1] of floor area. The site has a vehicular access driveway on 39th Avenue S that connects to a small paved area at the northwest corner of the site used for parking (approximately 10 stalls). There are two driveways on 42nd Avenue S that serve two separate service/delivery and loading dock areas on the east side of the school building where there are also two parking stalls. A paved central courtyard is used primarily for school employee parking (a total of about 46 vehicles). Vehicular access to the central courtyard occurs via a paved lane mostly on SPR property on the north side of the site. Although the paved lane does not have formal curb-cuts, it can be accessed from both 39th and 42nd Avenues S. Special Education (SPED) school buses use the paved lane as a load/unload area. A curb pullout area along the site's S Graham Street frontage is designated for school load/unload. About 125 feet of this curb space west 42nd Avenue S is designated for automobiles; the remaining 390 feet of curb space west to 39th Avenue S is designated for school buses. The load/unload zones are in effect from 7:00 to 10:00 A.M. and from 1:00 to 5:00 P.M.

According to information published in *Building for Learning, Seattle Public Schools Histories, 1862-2000*,[2] the school opened as Caspar W. Sharples Junior High School in 1952 with enrollment of 1,350 students in grades six through nine. The school was named for a prominent Seattle physician who was one of the first to take Washington State's medical exam. The site consisted of 4.8 acres of school district-owned property and 12.9 acres of the Brighton Playfield, which was leased for 99 years from the Seattle Parks Department. Enrollment peaked during the 1959-1960 school year with 1,878 students housed in the original building and 17 portables. Enrollment decreased as other neighborhood schools opened, declining to 950 students by 1974. The site was closed as a regular school in 1981 and hosted multiple interim and alternative programs from 1981 until 1999. In 1999, the school returned to operation as a regular middle school and was renamed for Aki Kurose, a 25-year educator in the district who was decorated for her work toward peace and cultural understanding. The school's current operational capacity is 900 students.[3] Enrollment in October 2023, when new traffic counts were taken for this analysis, was 786 students.[4] During the 2023-24 school year, the school had 107 employees (6 part-time),

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1 Mahlum, *BTA V Master Planning*, Section 5.4 | Aki Kurose Middle School, February 2022.
2 Nile Thompson and Carolyn J. Marr; *Building for Learning, Seattle Public Schools Histories, 1862-2000;* 2002.
3 *2021 Facilities Master Plan Update, Appendix E*: 2020-21 Middle School Operational Capacity Charts, p. 45, 2021.
4 SPS P223 Enrollment Report, October 2023.

including teachers, instructional assistants, administrators, and all support and custodial staff[5] and school hours were 8:55 A.M. to 3:45 P.M. with early release at 2:30 P.M. on Wednesdays.

1.1.2. Proposed Site Changes

The proposed project would modernize a majority of the existing building and demolish building Unit A as well as two portable classroom buildings all located near the northwest corner of the site. A new two-story classroom wing would be constructed in their place. When complete, the school would accommodate up to 1,000 middle school students in 6th through 8th grades, an increase of 100 students over the school's existing 900-student capacity. SPS indicated that total staffing could increase by about 15 to 122 total employees if the school were enrolled to its proposed capacity of 1,000 students.[6]

The project would enhance the central courtyard for outdoor learning and community use and would no longer allow vehicle access to this area for employees or visitors. SPS is coordinating with SPR to implement vehicular access control for the paved lane, likely through installation of lockable barriers. Pedestrian, bicycle, and emergency-vehicle access would be retained; but all other vehicle access between 39th and 42nd Avenues S using the paved lane would be prevented.

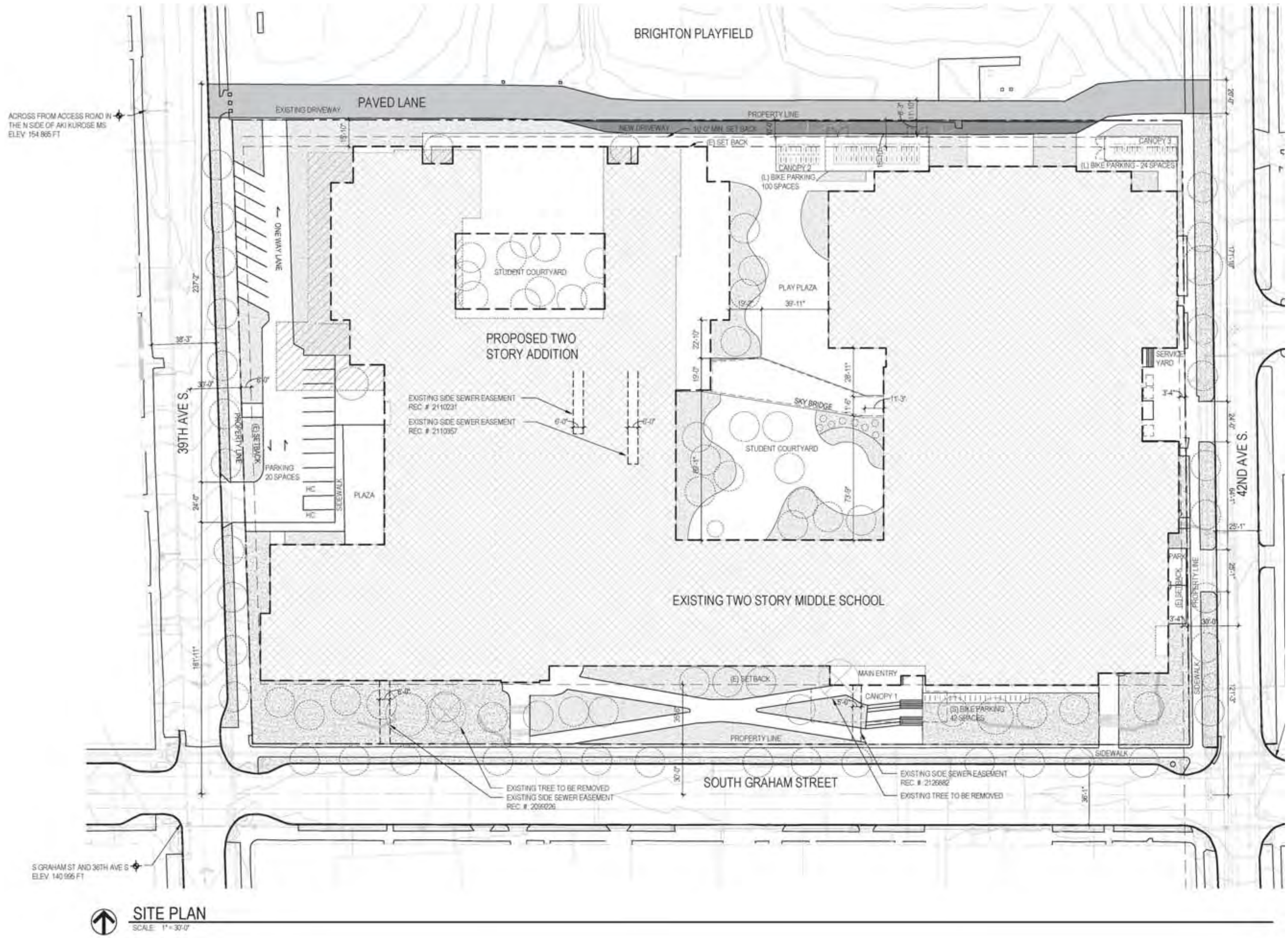
The northwest portion of the site (west of the existing school building and new addition) would be improved to provide on-site parking for 20 vehicles. The existing vehicular access driveway on 39th Avenue S would be retained to serve this parking area. Vehicles parking in the northern nine stalls would exit this lot to the north using the one-way exit onto the SPR paved lane and then west onto 39th Avenue S; all others parked in this lot could exit either to the north, or at the same location as the entry. The service area on the east side of the site would be improved to accommodate deliveries in addition to solid waste containers. Access to this area would continue to be provided from the exiting northern access driveway on 42nd Avenue S, located about 195 feet north of S Graham Street. Two parking stalls would be provided in the area currently used for deliveries. Access to this area would continue to be provided by the existing southern access driveway on 42nd Avenue S, located about 105 feet north of S Graham Street.

The existing school-bus load zone on S Graham Street would be extended eastward to accommodate SPED buses that would no longer use the paved lane. This would eliminate the existing school load zone for automobiles on S Graham Street. To replace that function, new school load zones for automobiles are proposed along the northern portions of the school's frontage along 39th and 42nd Avenues S. The curb-side parallel on-street parking in these areas would be designated for school-load only during morning arrival and afternoon dismissal periods. Both the family-vehicle and school-bus load/unload areas could be used outside of these times for general parking (e.g., evenings and weekends for events).

The modernized and expanded school would also have 166 bicycle parking spaces (124 long-term covered and secured spaces on northeast portion of the site and 42 short-term spaces at the southeast corner of the site near the main entry off S Graham Street).

Construction is planned to begin in summer 2026, with the modernized school planned to reopen in fall 2028. Future analyses (without and with the project) presented in this report reflect year 2028 conditions. During construction, students, faculty, and staff will be relocated to the Van Asselt School interim site located at 7201 Beacon Avenue S. Figure 1 shows the site plan with the location of the proposed new classroom building, parking areas, and access.

5 Email communication, C. Hendricks, December 1, 2023.
6 Email communication, C. Hendricks communication with Aki Kurose Middle School Principal, December 2023.



Source: Integrus, Site Plan Sheet G010, August 14, 2024

Figure 1

Project Site Plan

2. BACKGROUND CONDITIONS

This section presents the existing and future conditions without the proposed project. The impacts of the proposed project were evaluated against these base conditions. For comparison, and to provide an analysis of potential changes to traffic and parking impacts, year 2028 without-project conditions assume Aki Kurose Middle School would continue operating with its current enrollment (786 students) even though the current capacity is 900 students. This provides a worst-case analysis of potential transportation impacts when compared to existing conditions. 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.

Figure 2 shows the project site location and vicinity. The following nine intersections were selected for study based on the changes proposed, local traffic counts, and travel routes used by family drivers, buses, and staff to access and egress the site area.

- S Juneau Street / 39th Avenue S
- S Juneau Street / 42nd Avenue S
- S Bateman Street / 42nd Avenue S
- Brighton Access Drive / 39th Avenue S
- Brighton Access Drive / 42nd Avenue S
- S Graham Street / Martin Luther King (MLK) Jr Way S
- S Graham Street / 39th Avenue S
- S Graham Street / 42nd Avenue S
- S Graham Street / Rainier Avenue S

2.1. Roadway Network

2.1.1. Existing Condition

The area surrounding the site predominantly consists of single-family residences to the east and south. Brighton Playfield is to the north, and provides of a variety of athletic courts and play facilities, a playground, and a public restroom facility. West of the site, uses transition from single-family residences along 39th Avenue S to multi-family housing, retail stores, and commercial services along MLK Jr Way S.

Key roadways that serve the site are summarized in below. Roadway classifications are based on the City's Street Classification Map.[7] Speed limits are 25 miles per hour (mph) on arterials (unless otherwise marked) and 20 mph on local access streets.

[7] Seattle Department of Transportation (SDOT), Interactive Street Classification Maps, accessed October 2023.

AKI KUROSE MIDDLE SCHOOL
Renovation and Addition

Figure 2

Project Site and Vicinity

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Table 1. Study Area Roadways – Near Site

Street	Classification [1]	Speed Limit	Lanes	Non-Motorized, Parking, and Transit Characteristics
S Juneau St	Local Access	20 mph	Approx. 25-feet of pavement for two directions of travel (on-street parking can limit to one lane)	Between 39th Ave S and Rainier Ave S, sidewalks provided on both sides with curbs and ramps at intersections. On-street parking on both sides. Speed humps between intersections; traffic circles at some intersections. Intersection with 39th Ave S is east-west stop-controlled.
S Graham St	Minor Arterial	25 mph (20 mph in school zone)	Two travel lanes (one in each direction) plus curb lane parallel parking on both sides.	Sidewalks on both sides with curbs and ramps at intersections. On-street parking on both sides east of 42nd Street; south side east of 39th St. North side (between 39th and 42nd Aves S) restricted to school load only during posted hours. Speed humps between intersections. Marked crosswalks on all legs of signalized Rainier Ave S intersection, west leg of 44th Ave S intersection, east leg of 42nd Ave S intersection, all legs of 39th Ave S intersection, and all legs of signalized MLK Jr Wy S intersection.
S Bateman St	Local Access	20 mph	Approx. 25-feet of pavement for two directions of travel (on-street parking can limit to one lane)	Between 42nd and 44th Aves S, sidewalks on both sides with curbs and ramps at intersections. On-street parking on both sides.
MLK Jr Wy S	Principal Arterial	25 mph	Four lanes (two in each direction) plus turn lanes at intersections; light rail tracks in median.	Sidewalks on both sides with curbs and ramps at intersections. On-street parking not allowed. Marked crosswalks on all legs of signalized S Graham St intersection. King County Metro stops north and south of S Graham St intersection.
Rainier Ave S	Principal Arterial	25 mph	Five lanes (one travel lane and one transit-only lane in each direction, plus one center turning lane)	Sidewalks on both sides with curbs and ramps at intersections. On-street parking not allowed. Marked crosswalks on all legs of signalized S Graham St intersection. King County Metro stops on both sides south of S Graham St.
39th Ave S	Local Access	20 mph	Approx. 25-feet of pavement for two directions of travel (on-street parking can limit to one lane)	South of Graham St, sidewalks on both sides with curbs and ramps at intersections. On-street parking on both sides. Speed humps between intersections and traffic circles at intersections. North of Graham St, curbs, ramps, and sidewalk on east side with intermittent sidewalk on the west. Designated as a neighborhood greenway, marked with signs and sharrows. Graham St intersection has north-south stop-control with marked crosswalks on all legs.
42nd Ave S	Local Access	20 mph	Approx. 25-feet of pavement for two directions of travel (on-street parking can limit to one lane)	Curbs and sidewalks on both sides with ramps at all intersections except at S Raymond St. South of S Juneau St, on-street parking on east side only. Speed humps between intersections.

2.1.2. Planned Improvements

The following plans and programs were reviewed to determine if any planned transportation improvements could affect the roadways and intersections near Aki Kurose Middle School by 2028 when the modernization and addition project is planned to be complete and occupied.

City of Seattle's Adopted 2024-2029 Capital Improvement Programs (CIP) [8] – The CIP contains funding for 11 transit projects, including funding for Transit-Plus Multimodal Corridor projects in alignment with priority transit corridors identified in Seattle's *Transit Master Plan*. Spot improvements along Rainier Avenue S were substantially completed in 2023 to improve the corridor as part of the long-term plan to implement a RapidRide R Line along this corridor. There is not currently funding identified to implement the R Line route, though it remains a part of King County Metro's RapidRide growth plan,[9] which indicates the service is planned for 2030. No other specific improvements to the transportation network were identified in the site vicinity.

Adopted Seattle Bicycle Master Plan (BMP)[10] – The plan included a number of proposed improvements to both the City-wide and local bicycle facility infrastructure around the Aki Kurose Middle School site, including a protected bicycle lane on MLK Jr Way S, local connectors, and an additional neighborhood greenway on 42nd Avenue S. The *Seattle Bicycle Master Plan – 2019-2024 Implementation Plan*[11], which lists projects completed, funded, and or removed, also defines the priorities of the projects. The implementation plan does not identify any additional projects for implementation in the site vicinity by 2028, though MLK Jr Way S adjacent to the site is included in the *2019-2024 Implementation Plan* as a study area for future project work.

Seattle's Neighborhood Greenway Network[12] – Neighborhood greenway information provided by SDOT indicates no additional greenways currently in design or planning stages in the site vicinity.

City of Seattle's Pedestrian Master Plan [13] and ***2023-2024 PMP Implementation Plan Report***[14] – The *Master Plan* includes the area around the site as part of the Southeast Sector's Priority Investment Network, and the *2023-2024 Implementation Report* includes it as part of the South Sector's Priority Investment Network. Specifically, streets adjacent to the site are designated as a Residential Urban Village and notes non-arterial missing sidewalks along S Juneau Street. As part of the *Safe Routes to Schools 5-Year Action Plan 2021-2025*[15] (and *Vision Zero*), no adjacent projects were identified that would impact roadways or access near the site.

Levy to Move Seattle – Workplan Report[16] – This document outlines SDOT's workplan to deliver citywide transportation projects and services funded in part or in full by the *Levy to Move Seattle* (approved by voters in 2015). The nine-year workplan (2016-2024) documents achievements and challenges and sets the agency's plan for future years. No other specific improvements to the transportation network were identified in the site vicinity in the report.

None of the improvements identified in the City's planning documents are anticipated to affect the roadway network operations or intersection capacity within the study area by 2028. Therefore, existing roadway and traffic control were assumed to remain the same for the future conditions.

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8 City of Seattle, online access July 2024. https://www.seattle.gov/city-budget-office/capital-improvement-program-archives/2024-2029-adopted-cip
9 King County Metro, online access July 2024. https://kingcounty.gov/en/dept/metro/travel-options/bus/rapidride
10. City of Seattle, March 2015.
11 SDOT, June 13, 2019.
12 https://www.seattle.gov/transportation/projects-and-programs/programs/greenways-program, Map updated May 2024, Accessed July 2024.
13 City of Seattle June 2017.
14 City of Seattle, February 2023.
15 Seattle Department of Transportation December 2021.
16 SDOT, November 2018.

2.2. Traffic Volumes

2.2.1. Existing Traffic Volumes

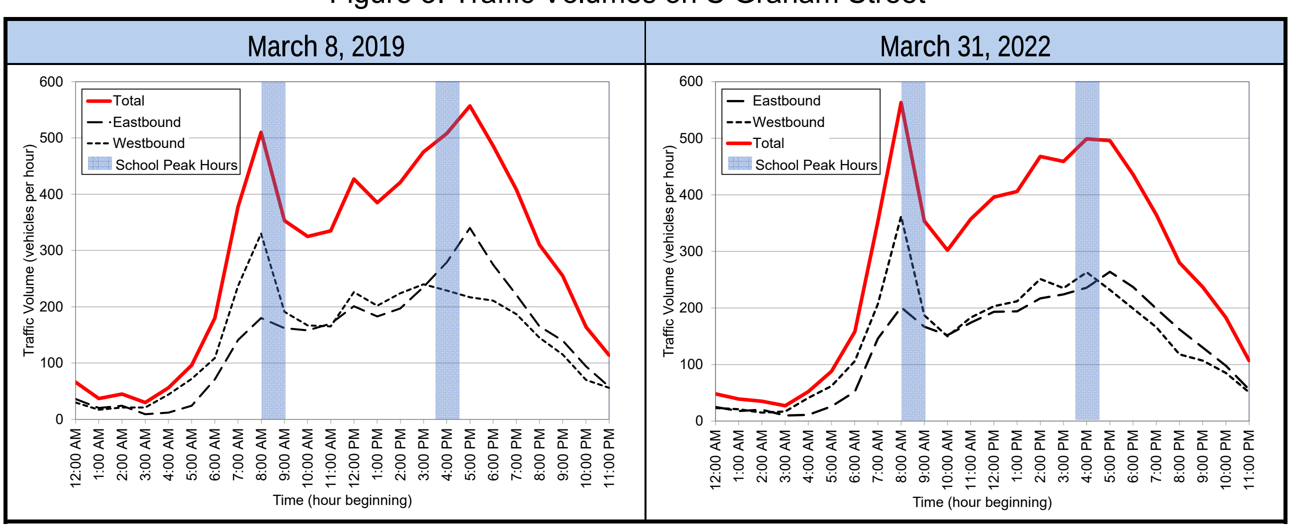
At the time of this analysis, the school day at Aki Kurose Middle School started at 8:55 A.M. and ended at 3:45 P.M. with early release at 2:30 P.M. on Wednesdays. To capture the existing traffic conditions during the arrival and dismissal peak periods, traffic counts were performed from 7:30 to 9:30 A.M. and from 2:30 to 4:30 P.M. on Tuesday, October 10, 2023 at the nine study-area intersections. The counts indicated that the morning and afternoon peak hours for school traffic occur from 8:00 to 9:00 A.M. and from 3:30 to 4:30 P.M., respectively. Figure 4 shows the existing (2023) traffic volumes for the morning and afternoon peak hours.

2.2.2. Historical Traffic Volumes

Historic traffic data from the City of Seattle Department of Transportation (SDOT), Idax Data Solutions (a private data collection vendor), and other consultant studies were obtained and compiled to document traffic volume changes. SDOT counts of the S Graham Street / MLK Jr Way S intersection from June 2017 were compared to the volumes from the new counts performed at that location in October 2023 (described above). The 2023 data indicated that morning peak hour volumes at that location have grown by about 2.2% per year and afternoon volumes have grown by about 1.2% per year. SDOT also performs monthly seven-day machine counts in two locations in the vicinity of the school site—on MLK Jr. Way S north of S Andover Street and on Rainier Avenue S south of S Othello Street. Data for the AM and PM peak hours and the peak eight-hour volumes were reviewed for the period from 2019 through 2023. Based on these counts, the volumes on both roadways have remained relatively consistent.

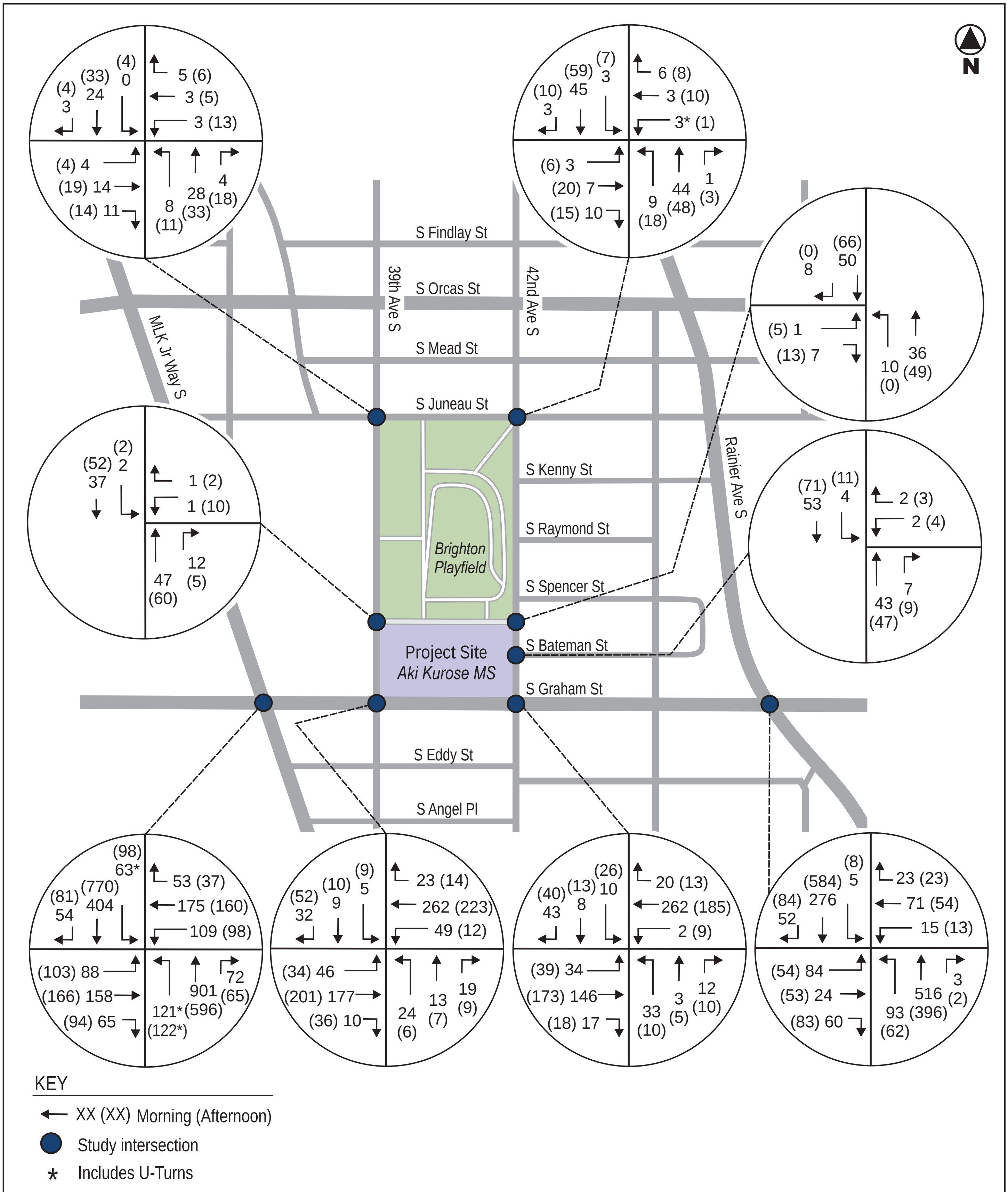
Data from the S Graham Street / Rainier Avenue S intersection published in the traffic analysis for the *6211 Rainier Ave S Townhomes*[17] project indicate morning peak hour volumes there have declined by over 4% per year. A comparison of average weekday hourly data from two seven-day machine counts on S Graham Street between 39th and 42nd Avenue S (collected by Idax in March 2019 and March 2022) found overall declines of about 1% per year, but increases in morning peak hour volumes (by about 3% per year) and declines in afternoon volumes (by about 1% per year). Figure 3 shows the average hourly volumes from both counts.

Figure 3. Traffic Volumes on S Graham Street



Source: Idax Data Solutions, March 8, 2019 and March 31, 2022.

17 William Popp Associates, September 18, 2018.



AKI KUROSE MIDDLE SCHOOL
Renovation and Addition

Figure 3
Existing (2023) Traffic Volumes
Morning and Afternoon Peak Hours

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2.2.3. Forecast Without-Project Traffic Volumes

The renovation and addition project is planned to be complete and occupied by fall 2028. Forecasts of 2028 morning and afternoon peak hour traffic volumes were developed using a combination of forecast pipeline development traffic and background traffic growth rates.

SDCI's Property and Building Activity permit map was reviewed to identify future development projects planned in the area that could generate traffic at study-area intersections. Based on that review, 19 projects (listed in Table 2 on the following page) were identified for specific inclusion in the traffic forecasts. New traffic from most of these developments is primarily expected to add trips to the MLK Jr. Way S and Rainier Avenue S corridors with some passing through the S Graham Street intersections. Other smaller development projects are expected to have negligible impacts to traffic and parking within the study area during the identified peak hours.

Review of historical count data indicated divergent patterns by location and among the various time periods (with some locations remaining unchanged, some with increases and some with decreases). To account for recent and ongoing development throughout Seattle and within the site vicinity, a 2.2% annual growth rate was applied to the 2023 morning peak hour volumes and a 1.2% annual growth rate was applied to the 2023 afternoon peak hour volumes to estimate 2028-without-project volumes at all but one of the study area intersections. A 0.5% annual growth rate was applied at the S Graham Street / MLK Jr. Way S intersection due to the high volumes of pipeline traffic already included at that location. This forecasting method results in overall traffic volume growth of 10% to 15% (2% to 3% annually) in the morning peak hour and 6% to 10% (1% to 2% annually) in the afternoon peak hour. These rates are higher than most applied for traffic analyses of other developments in the site vicinity and may result in conservatively-high (worst-case) estimates of future traffic volumes.

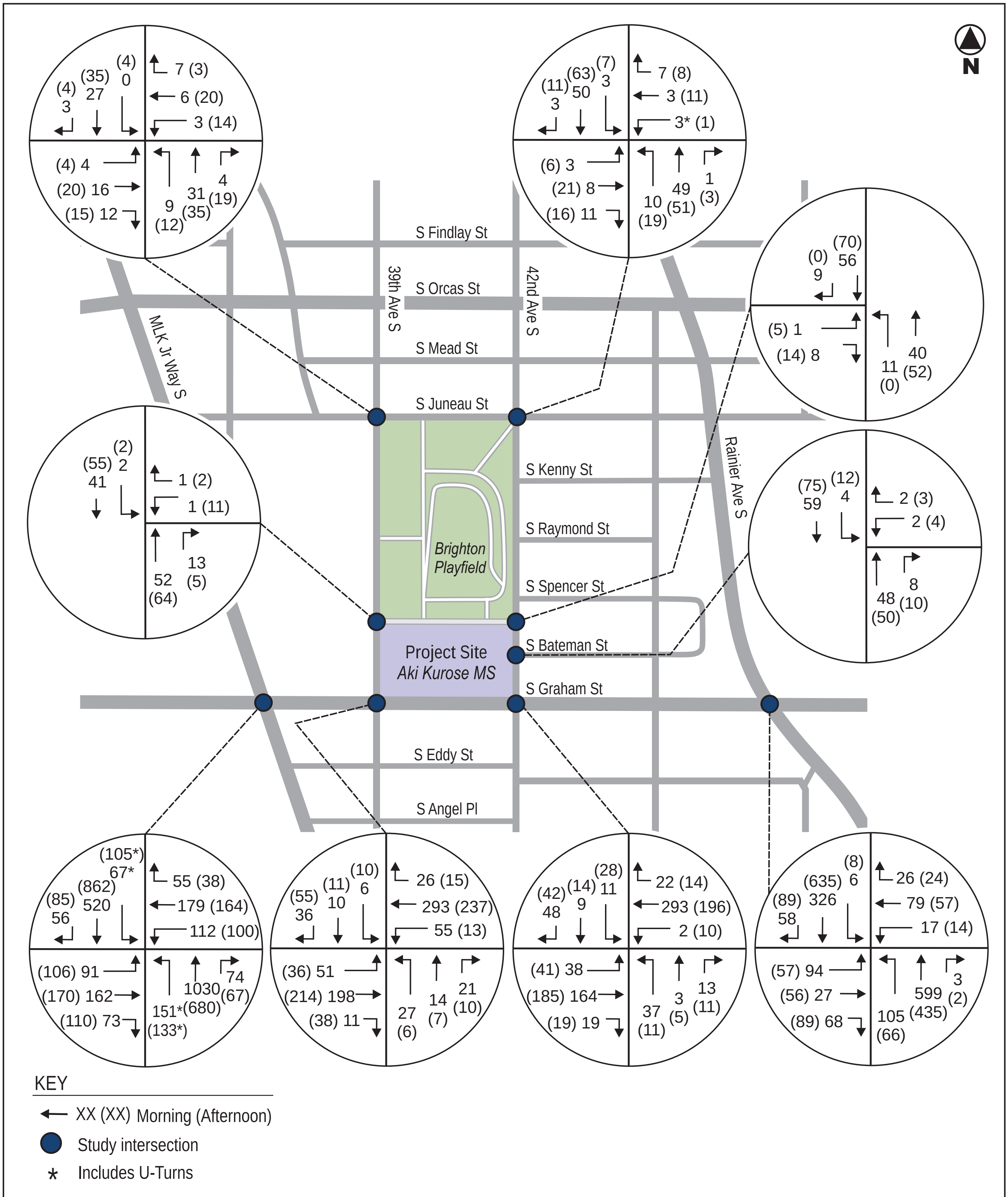
Typically, without-project traffic volumes would be adjusted to reflect the permitted enrollment capacity of Aki Kurose Middle School. However, to present a conservative worst-case analysis, the enrollment at the time of the traffic counts (786 students) was assumed unchanged for 2028-without-project conditions. Figure 5 shows the forecast 2028-without-project morning and afternoon peak hour traffic volumes.

Table 2. Pipeline Development Projects Included in Traffic Forecasts

Permit #	Project Address	Program	Pipeline Net Trip Estimates Morning	Afternoon	PM	Sources
3034508-LU	4419 S Brandon St	29 apartment units, retail, no pkg (remove existing 6,400-sf retail bldg.)	0	0	0	Heffron Transp.[1]
3036025-LU	5722 35th Ave S	260 units, 153 pkg stalls	53	46	74	Transpo Group [2] Heffron Transp.[3]
3041030-LU 3041031-LU	5718 MLK Jr. Wy S	52 affordable housing units, 51 pkg stalls	26	12	19	Heffron Transp.[1]
3038001-LU	4001 S Willow St	192 apartment units, retail, 12 parking stalls	48	29	48	Heffron Transp.[1]
3041610-LU	5900 MLK Jr. Wy S	746 affordable housing units, 537 pkg spaces	146	85	142	Heffron Transp.[1]
3040528-LU	5960 MLK Jr. Wy S	429 apartment units, no pkg	107	63	105	Heffron Transp.[1]
3034284-LU 3029015-LU 3027372-LU 3027345-LU	7315 MLK Jr Way S 3900 S Holly Park Dr 3939 S Othello St 7343 MLK Jr. Wy S	457 apartment units, 5,240 sf retail, 19,944 sf office, 49,000 sf clinic, 13,779 sf community ctr, 254 pkg stalls	342	334	288	Heffron Transp.[4]
3026698-LU	6033 MLK Jr. Wy S	42,000 sf bldgs. with retail, office, and restaurant	31	17	35	Heffron Transp.[5] Heffron Transp.[3]
3034249-LU	6515 38th Ave S	113 apartment units	23	12	20	Gibson [5] Heffron Transp.[3]
3038640-LU	6730 Rainier Ave S	2 single family residences, 24 townhouses; 28 pkg stalls	8	8	12	Heffron Transp.[4]
3036779-LU	3803 Warsaw St	131 apartment units	33	20	33	Heffron Transp.[1]
3029140-LU	6211 Rainier Ave S	20 townhome units	9	6	10	Popp [6] Heffron Transp.[3]
3040408-LU	4200 S Webster St	203 apartment units, 35 pkg spaces	51	31	51	Heffron Transp.[1]
3026791-LU	7713 Rainier Ave S	32 apartment units w/ retail & restaurant, 17 pkg spaces	44	28	60	Gibson [8] Heffron Transp.[3]
3027659-LU	7930 Rainier Ave S	182 apartment units, child care, & office, 123 pkg spaces	90	69	109	Transpo [9] Heffron Transp.[3]
3034255-LU	9420 Rainier Ave S	65 apartment units with retail, 26 pkg spaces	24	23	37	Kimley Horn [10] Heffron Transp.[3]

Source: SDCI Property and Building Activity portal, April 2023.

1. *Traffic study not available, trips estimated by Heffron Transportation, Inc. based on available program data.*
2. *Program and AM and PM peak trip estimates information from Transpo Group, Transportation Impact Analysis 5722 35th Avenue S Apartments, Sept. 2020.*
3. *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.*
4. *Heffron Transportation, Inc., Othello Mixed Use Project Transportation Technical Report, Feb. 1, 2019 and Othello Square - Building A (MUP# 3034284-LU Trip Generation and Parking Assessment, Jan. 11, 2020.*
5. *Heffron Transportation, Inc., Saigon Plaza – Mixed Use Project (MUP #3026698) Transportation & Parking Analysis, January 15, 2019.*
6. *Gibson Traffic Consultants, Correction Notice #1 Response: 6515 38th Ave S, March 31, 2020.*
7. *William Popp Associates, Traffic and Parking Study for 6211 Rainier Ave S Townhomes, September 18, 2018.*
8. *Gibson Traffic Consultants, Correction Notice #2 Response: Le Rainier, SDCI #3026791-LU, Oct. 30, 2019.*
9. *Program and AM and PM peak trip estimates information from Transpo Group, Transportation Impact Analysis 7930 Rainier Avenue SDCI #3027659, September 2019.*
10. *Program and AM and PM peak trip estimates information from Kimley Horn, Correction Notice Response Memo 9420 & 9428 Rainier Avenue S, April 5, 2023.*



AKI KUROSE MIDDLE SCHOOL
Renovation and Addition

Figure 5
Forecast-2028-Without-Project Traffic Volumes
Morning and Afternoon Peak Hours

heffron transportation inc

2.3. 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), 6th Edition*[18] using the *Synchro 11* 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, phase splits, and channelization for study-area intersections were provided by SDOT[19] and field verified. For the 2028-without-project conditions analysis of signalized intersections, the pedestrian signal timings were updated to match current SDOT policy and phase splits were optimized, while holding cycle lengths constant.

Table 3 summarizes existing and forecast 2028-without-project levels of service at the study-area intersections for morning and afternoon peak hours. As shown, the two signalized intersections currently operate at LOS D or better during both peak hours. The unsignalized intersections currently operate at LOS A overall (with all movements at LOS C or better). The assumed traffic increases due to background growth and pipeline development are projected to add delay to a number of locations, especially the S Graham Street / MLK Jr. Way S intersection. That added delay is forecast to would degrade operations to LOS E during both the morning and afternoon peak hours. All unsignalized study-area intersections are forecast to remain operating at LOS A overall with all movements operating at LOS D or better during both morning and afternoon peak hours.

18 Transportation Research Board 2016.
19 Email communication, M. Dunlap, SDOT, January 17, 2024.

Table 3. Level of Service Summary – Existing and 2028-Without-Project Conditions

Intersections	Morning Peak Hour (8:00-9:00 A.M.)				Afternoon Peak Hour (3:30-4:30 P.M.)			
	Existing		2028 w/o Project		Existing		2028 w/o Project	
Signalized	LOS [1]	Delay [2]	LOS	Delay	LOS	Delay	LOS	Delay
S Graham St / MLK Jr Wy S	D	45.1	E	62.0	D	46.4	E	60.2
S Graham St / Rainier Ave S	C	20.5	C	22.5	C	20.7	C	21.8
Traffic Circle Controlled [3]	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
S Juneau St / 42nd Ave S	A	3.2	A	3.2	A	3.6	A	3.7
Stop Controlled	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
S Juneau St / 39th Ave S	A	4.2	A	4.3	A	4.8	A	4.9
Northbound approach	A	7.3	A	7.3	A	7.4	A	7.5
Eastbound Left Turn	A	9.4	A	9.5	B	10.2	B	10.3
Westbound Left Turn	A	9.2	A	9.3	B	10.7	B	10.9
Southbound Approach	A	0.0	A	0.0	A	7.4	A	7.5
S Graham St / 39th Avenue S	A	4.5	A	5.3	A	3.4	A	3.6
Northbound approach	C	20.2	D	25.7	C	15.5	C	16.0
Eastbound Left Turn	A	8.8	A	9.0	A	8.7	A	8.7
Westbound Left Turn	A	7.9	A	7.9	A	8.0	A	8.0
Southbound Approach	C	15.9	C	18.6	C	15.3	C	16.1
S Graham St / 42nd Avenue S	A	4.2	A	4.8	A	4.8	A	5.2
Northbound approach	C	20.5	C	25.0	C	16.4	C	17.5
Eastbound Left Turn	A	8.8	A	9.0	A	8.5	A	8.5
Westbound Left Turn	A	7.8	A	7.8	A	7.8	A	7.9
Southbound Approach	C	16.6	C	18.4	C	20.0	C	21.9
Uncontrolled [4]	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
S Bateman St / 42nd Ave S	A	0.8	A	0.7	A	1.0	A	1.0
Westbound Approach	A	9.1	A	9.2	A	9.4	A	9.5
Southbound Left Turn	A	7.5	A	7.6	A	7.5	A	7.5
Brighton Paved Lane / 39th Ave S	A	0.4	A	0.3	A	1.3	A	1.4
Westbound Approach	A	9.1	A	9.1	A	9.9	A	10.0
Southbound Left Turn	A	7.5	A	7.5	A	7.6	A	7.6
Brighton Paved Lane / 42nd Ave S	A	1.9	A	1.9	A	2.1	A	2.1
Northbound Left Turn	A	7.5	A	7.5	A	0.0	A	0.0
Eastbound Approach	A	9.9	A	10.0	B	10.1	B	10.2

Source: Heffron Transportation, Inc., July 2024.

1. *Level of service.*
2. *Average seconds of delay per vehicle.*
3. *Intersection controlled by traffic circle; evaluated using roundabout methodology.*
4. *Intersections are uncontrolled; evaluated as stop-controlled for T approaches.*

2.4. 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 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. Therefore, on-street parking at and around the Aki Kurose Middle School site was surveyed in November 2023 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 renovated and expanded school (which is presented later in Section 3.4). The following sections describe the parking supply as well as the current parking occupancy and utilization rates.

2.4.1. Methodology and Study Area

A detailed on-street parking study was performed according to the methodology outlined in the City's Tip #135,[20] 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 included all roadways within an 800-foot *walking* distance from the school site, as is typically required by the City of Seattle. The 800-foot walking distance results in a study area that extends just west of MLK Jr Way S, just south of S Juneau Street, just west of 44th Avenue S, and S Morgan Street to the south. Details about parking supply and occupancy are provided in the following sections. The study area consists primarily of single-family residential land uses. Many of the residential garages and driveways in the vicinity are accessed via the street; area residents also regularly use on-street parking.

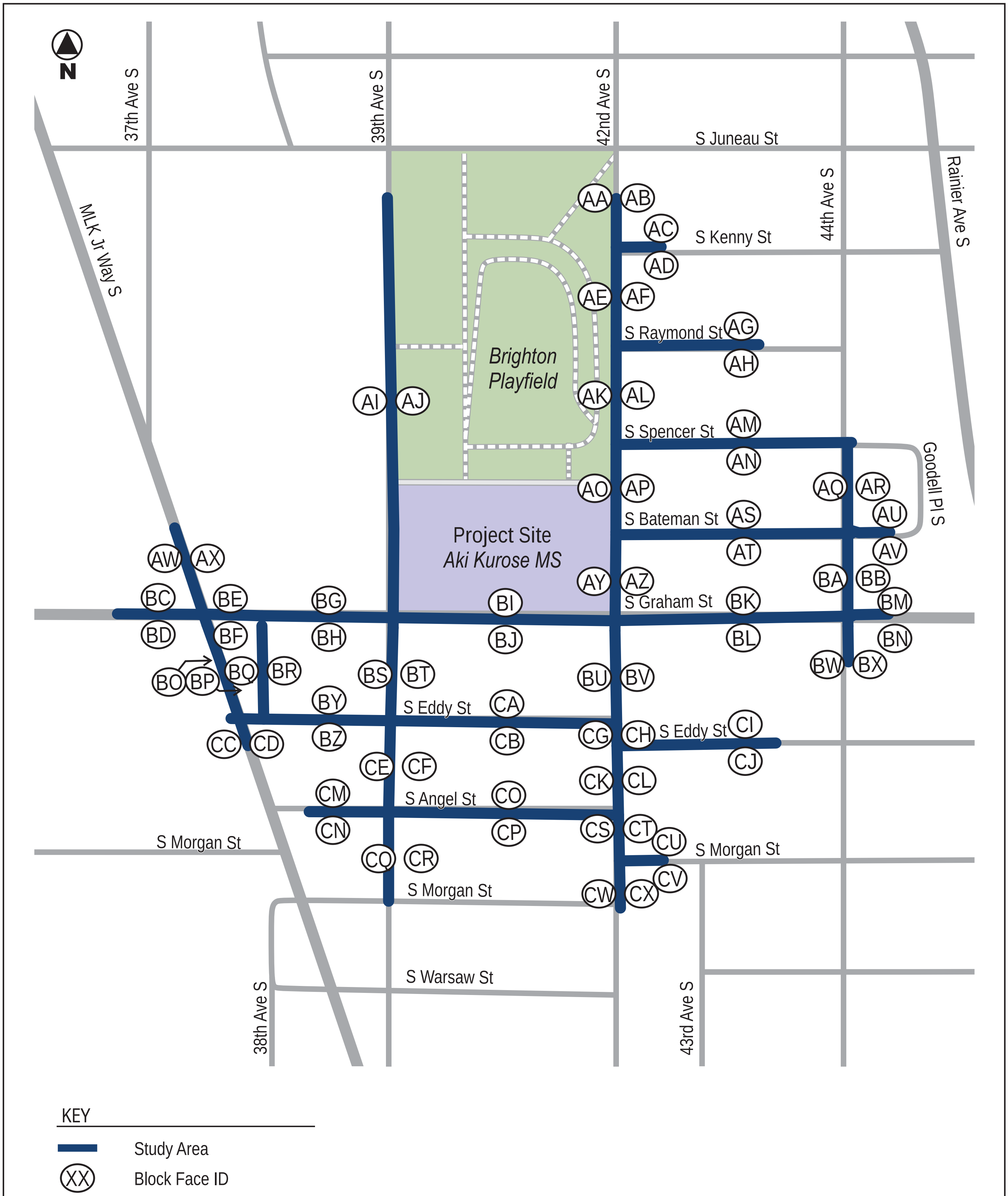
2.4.2. Existing On-Street Parking Supply

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 S Bateman Street, between 42nd Avenue S and 44th Avenue S is one block face (identified as block face 'AS' 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 that there are 630 on-street parking spaces within the study area and 606 have no signed restrictions. After accounting for school-bus and school load zones along the school frontage (totaling 24 spaces), the total supply is 606 spaces in the early morning, 630 spaces mid-morning and 630 spaces in the evening. It is noted that parking along the west side of 42nd Avenue S adjacent to the school site and Brighton Playfield was not allowed prior to 2018; however, no-parking signs were removed in 2018.

20 SDCI, October 5, 2022.



AKI KUROSE MIDDLE SCHOOL
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Figure 6
Study Area for On-Street Parking Occupancy Surveys

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2.4.3. On-Street Parking Occupancy

School-day parking occupancy counts were performed in October and November 2023. The first count was conducted in the early evening (between 5:15 and 6:00 P.M.) on Thursday, October 19, 2023 to capture occupancy during the school's "Curriculum Night" event. Additional counts were performed on Thursday, November 2 and Tuesday, November 7, 2023 at several times including: early morning (between 7:00 and 7:45 A.M.), the time when staff 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 two evening periods (between 5:15 and 6:00 P.M. and between 7:30 and 8:15 P.M.), to capture conditions when school events would typically occur. The counts were compiled and the results are summarized in Table 4. On-street parking utilization was calculated using the methodology described in Tip #135 and is the number of vehicles parked on-street divided by the number of legal on-street parking spaces within the study area. The study area utilization totals are also shown. Detailed summaries of the on-street parking occupancy by block face for all counts are provided in Appendix B.

Table 4. On-Street Parking Demand Survey Results – October/November 2023

Time Period Surveyed	Parking Supply	Total Vehicles Parked	% Utilization
Weekday Early Morning (7:00 to 7:45 A.M.)			
Thursday, November 2, 2023	606	224	37%
Tuesday, November 7, 2023	606	201	33%
Average	606	213	35%
Weekday Mid-Morning (10:30 to 11:15 A.M.)			
Thursday, November 2, 2023	630	218	35%
Tuesday, November 7, 2023	630	199	32%
Average	*630*	*209*	*33%*
Weekday Evening (7:30 to 8:15 P.M.)			
Thursday, November 2, 2023	630	261	41%
Tuesday, November 7, 2023	630	232	37%
Average	*630*	*247*	*39%*
Early Evening Event Comparison (5:15 to 6:00 P.M.)			
Tuesday, November 7, 2023 (Non-Event)	630	200	32%
Thursday, October 19, 2023 (Curriculum Night)	*630*	*342*	*54%*

Source: Heffron Transportation, Inc., November 2023.

As shown, the surveys determined that average parking utilization ranged from 33% to 39% occupied on school days/evenings; the average number of unused parking spaces ranged from about 380 to 430 spaces. The "Curriculum Night" event observations found increased parking occupancy (54%) in the overall study area. Based on comparison to parking on the non-event night, the school's event generated an on-street parking demand of 142 vehicles.

2.4.4. Off-Street Parking

Although Aki Kurose Middle School has no officially permitted on-site parking, the site has several paved surfaces that are regularly used for parking. In total these areas accommodate an estimated 58 vehicles. The paved surfaces that are used for on-site parking can be accessed from 39th Avenue S or 42nd Avenue S using the SPR-owned paved lane that aligns between Brighton Playfield and the school. Counts of parked vehicles were conducted on-site at the same times as described in previous sections for on-street parking. The school-day counts found averages of 4 vehicles parked on-site in the early morning (before school), 55 vehicles parked mid-morning, and 6 parked in the evening. During the Curriculum Night event, 50 vehicles were parked on-site; at the same time on a non-event evening, there were 15 vehicles parked.

2.4.5. Combined School-Day Parking Demand

Since some school-related parking demand likely occurs on-street, rates that consider on-site and on-street demand were derived. Based on a comparison of early morning and mid-morning school day counts on the block faces closest to the site, some school-related parking demand occurs on-street—estimated at 24 to 32 vehicles. The combined (on- and off-site) school day parking demand is estimated to range from 74 to 88 vehicles, which reflect a range of 0.69- to 0.82-vehicles-per-employee. This range of rates, derived specifically for Aki Kurose Middle School, is lower than the middle school rate of 1.40-vehicles-per-employee published in ITE's *Parking Generation Manual*[21] and accounts for the higher number of employees who may not be on campus simultaneously (e.g., special education, food service and janitorial support, etc.) as well as those who may travel to and from the site using transit and non-motorized modes. The range of derived rates is very similar to those observed at SPS's Mercer Middle School and are reasonable for application to this project.

2.5. Traffic Safety

Collision data for the study area intersections and roadway segments along the project site frontages were obtained from SDOT's Open Data Portal. An extended period was examined, between January 1, 2018 and the most recent records available at the time—September 1, 2023—5.7 years. The data, summarized in Table 5, were examined to determine if there are any unusual traffic safety conditions that could impact or be impacted by the proposed project. Unsignalized intersections with five or more collisions per year and signalized intersections with 10 or more collisions per year are considered high collision locations by the City of Seattle.

There were 59 collisions reported within the overall study area during the data period. Of those, 35 occurred west of the site at the signalized S Graham Street / MLK Jr Way S intersection, which reflects a collision rate of 6.2 per year. None of the studied intersections met the criteria for a high-collision location for the time period evaluated. None of the reported collisions resulted in fatalities; however, it is noted that there was a reported fatality pedestrian collision on MLK Jr. Way S just south of S Graham Street on September 28, 2023 involving an apparently impaired driver.[22] Overall, these data do not indicate any unusual traffic safety conditions.

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21 ITE, 6th Edition, October 2023.
22 Seattle Times, September 28, 2023.

Table 5. Study Area Collision Summary

Intersection	Rear-End	Side-Swipe	Left Turn	Right Angle	Ped / Cycle	Other [a]	Total for 5.7 Years	Average/ Year
S Juneau Street / 39th Avenue S	0	0	0	0	0	0	0	0.0
S Juneau Street / 42nd Avenue S	0	0	0	1	0	0	1	0.2
S Bateman Street / 42nd Avenue S	0	0	0	0	0	0	0	0.0
S Graham Street / MLK Jr Way S	8	5	1	13	4	4	35	6.2
S Graham Street / 39th Avenue S	3	0	0	3	0	0	6	1.1
S Graham Street / 42nd Avenue S	0	0	0	2	0	0	2	0.4
S Graham Street / Rainier Avenue S	5	3	0	0	1	3	12	2.1
Access Drive / 39th Avenue S	0	0	0	0	0	0	0	0.0
Access Drive / 42nd Avenue S	0	0	0	0	0	0	0	0.0
Roadway Segment	**Rear-End**	**Side-Swipe**	**Left Turn**	**Right Angle**	**Ped / Cycle**	**Other**	**Total for 4 Years**	**Average/ Year**
S Graham Street, between 39th Ave S and 42nd Ave S	0	0	0	0	0	3	3	0.5
39th Avenue S, between Access Drive and S Graham St	0	0	0	0	0	0	0	0.0
42nd Ave S, between Access Drive and S Graham Street	0	0	0	0	0	0	0	0.0
Access Drive, between 39th Ave S and 42nd Ave S	0	0	0	0	0	0	0	0.0

Source: City of Seattle Department of Transportation, January 1, 2018 through September 1, 2023, https://data-seattlecitygis.opendata.arcgis.com/datasets/collisions, Accessed October 1, 2023.

a. *'Other' collisions included three vehicle struck parked vehicle, two vehicle struck fixed object, one with insufficient information to determine collision type, and four collisions involving a motor vehicle and a railway vehicle.*

2.6. Transit Facilities and Service

King County Metro (Metro) provides bus service along MLK Jr Way S to the west of the site and along Rainier Avenue S to the east. A stop serving southbound Route 160 buses is located 800 feet west on MLK Jr Way S. One quarter mile east on Rainier Avenue S, there are stops serving both northbound and southbound Routes 7 and 9. Table 6 summarizes the transit service provided within one-half mile of the Aki Kurose Middle School project site.

Table 6. Existing Transit Service within One-Half Mile of the Project Site

Route	Closest Stops	Areas Served	Typical Weekday Headways [a] (minutes)
7	S Graham St / Rainier Ave S	Downtown Seattle, Columbia City and Rainier Beach	8 – 10
9	S Graham St / Rainier Ave S	Broadway, First Hill, International District, Columbia City, Rainier Beach	Six morning peak trips Five afternoon peak trips
106	S Graham St / MLK Jr Way S	International District, Rainier Beach, Skyway, Renton	15 – 32

Sources: Sound Transit and King County Metro Transit online schedules and route information, September 2023.

a. *Headway is the time between consecutive trains or buses by direction.*

Sound Transit's 1 Line Link light rail service operates along MLK Jr. Way S west of the school site. The 1 Line serves 19 stations connecting nearly 25 miles between the Northgate Station in North Seattle and the Angle Lake station in SeaTac. The line operates about 20 hours per day with trains every 8 to 10 minutes for most of the day. The nearest stations are located about 0.6-mile to the south at S Othello Street (Othello Station) and about 1.1 mile north at S Angeline Street (Columbia City Station).

School bus transportation is available for eligible Aki Kurose Middle School students. During the 2023-24 school year, the school was served by eight general education school buses and six SPED buses.[23] As outlined in the current *Transportation Service Standards:*[24]

> *Middle school students who live within the boundaries of the Seattle School District and who live more than two miles from their assigned school are eligible for transportation. District arranged transportation is provided for those students attending a middle school in their attendance area or linked service area. All students 18 and under are eligible for fare-free transit in King County.*
>
> *Exceptions are allowed in the following areas:*
> *a. Students who require specialized transportation services as determined by their IEP, 504 plan, or 506 program.*
> *b. Students requiring medical transportation as approved by District Health Services.*

Sound Transit's Graham Street Station Project will add a new street-level station to the existing 1 Line of the Link light rail network on MLK Jr. Way S in the vicinity of S Graham Street. The station was studied as part of the 1 Line environmental review and included in the voter-approved Sound Transit 3 (ST3) system plan to enhance connectivity and accessibility. The new station is intended to bridge the 1.6-mile gap between the Columbia City and Othello stations and increase access to the 1 Line and larger Link light rail network. It would also include improvements to station-area roadways, sidewalks, and pedestrian crossings for better access to and from the station. Planning and design for the new station is ongoing and expected to continue through 2028; construction is planned to begin in 2028 with completion and station opening anticipated in 2031.

2.7. Non-Motorized Facilities

The facilities supporting walking, biking, and other non-motorized transportation on key roadways near the project site were described in detail in *Section 2.1.2.* Sidewalks exist along each of the project site's frontages. There are marked crosswalks on all legs of the intersection of S Graham Street with 39th Avenue S and on the west leg of its intersection with 42nd Avenue S. The neighborhood greenway adjacent to the site on 39th Avenue S extends to both the north and the south through Rainier Valley and is marked by signage as well as painted sharrows in the site vicinity.

The October 2023 counts at the study-area intersection indicated the highest volumes of pedestrian activity at the S Graham Street / 39th Avenue S intersection, where there were more than 175 pedestrian crossings in the morning peak period and nearly 270 in the afternoon peak period. The S Graham Street / 42nd Avenue S intersection had the next highest number of pedestrian crossings with about 155 in the morning peak period and nearly 190 in the afternoon peak period. Very little bicycle activity was observed; between zero and three bicyclists observed at all of the intersections during both morning and afternoon two-hour count periods.

The City of Seattle's currently adopted and proposed *CIPs* were reviewed to determine if any pedestrian facility improvements are planned in the area. As described previously *Section 2.1.2*, the *CIPs* did not

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23 General Education bus data from email communication, S. Richard, Director of Transportation, Seattle Public Schools, June 7, 2024; SPED bus data from site driveway counts, 2023.

24 SPS, *Transportation Service Standards 2023-2024*, Effective Sept. 1, 2023.

include any improvements planned in the vicinity, other than those already completed along 39th Avenue S. Also noted previously, the *BMP* identified planned bicycle infrastructure improvements in the vicinity, such as a protected bicycle lane along MLK Jr Way S. While the *Seattle Bicycle Master Plan – 2019-2024 Implementation Plan* does not allocate funding for any projects near the site by 2028 when the project would be complete and occupied, MLK Jr Way S is designated as a study area for future improvement projects.

3. PROJECT IMPACTS

This section describes the conditions that would exist with the Aki Kurose Middle School renovation and addition project and the school operating at its planned capacity of up to 1,000 students. The analysis also reflects changes to the curbside load/unload areas for both SPED buses and passenger vehicles. 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 project would eliminate vehicular access to the central courtyard. While the project would change on-site parking layouts, it would retain the other access driveways. The project would also adjust the curbside load/unload areas to accommodate SPED buses together with general education buses along the north side of S Graham Street and to relocate the automobile load/unload to segments of 39th and 42nd Avenues S. The preferred circulation pattern for family-vehicles dropping off or picking up students would be clockwise (north on 39th Avenue S, east on S Juneau Street, and south on 42nd Avenue S).

The project would also construct frontage improvements required by SDOT as part of the Street Improvement permit (SIP) process. This may include upgrades to accessible curb ramps and/or non-motorized facilities in some locations adjacent to the school. . No other changes to the surrounding roadway network are proposed.

3.2. Traffic Volumes

With the proposed project, Aki Kurose Middle School would have capacity for up to 1,000 students, which would increase daily and peak hour traffic compared to existing (2023) conditions. The proposed changes to access and locations for vehicle parking would also change how staff and some visitors access the site. The following describes the method used to estimate changes to site-generated traffic in the area.

3.2.1. School Trip Generation

Trip generation estimates for school projects can be developed using one of two methods. For new schools, rates published in the Institute of Transportation Engineers' (ITE's) *Trip Generation Manual*[25] are typically applied. For replacements, renovations, or expansions of existing schools, it is preferred to use counts of traffic at the existing school. This method works best for schools located in areas where school-related traffic can be isolated and identified, and traffic counts can be used to develop rates specifically for that school. For Aki Kurose Middle School, trip generation rates were derived from the video traffic counts performed at and around the school. The resulting rates were compared to published ITE trip generation rates.

Based on the data collected, the existing school generated an estimated 0.77 morning peak hour trips per student and 0.49 afternoon peak hour trips per student. These rates are somewhat higher than rates published for Middle School / Junior High (Land Use 522) in ITE's *Trip Generation Manual*, (published average rates are: 0.74 trips per student in the morning peak hour and 0.36 trips per student in the afternoon peak hour); however, they are within the range of results reported by ITE. Since these rates were derived specifically for the existing school, they are appropriate for use in evaluating future conditions with the renovated and expanded school.

The rates derived specifically for Aki Kurose Middle School were applied based on the proposed capacity (1,000 students). Table 7 presents the resulting trip estimates for the proposed renovated school, the existing school (at its October 2023 enrollment level), and the net change in trips expected due to the

[25] ITE, 11th Edition, September 2021.

project. These estimates include school bus trips, employee trips, and family-vehicle trips. As shown, the renovated school is estimated to generate increases of 165 trips (89 in, 76 out) in the morning peak hour and 104 trips (56 in, 48 out) in the afternoon peak hour. It is noted that compared to the school's existing capacity of 900 students, the renovated and expanded school is estimated to generate smaller increases—77 morning peak hour trips and 49 afternoon peak hour trips.

Table 7. Aki Kurose Middle School – Trip Generation Estimates

Site Condition	Capacity / Enrollment	Morning Peak Hour (8:00–9:00 A.M.)			Afternoon Peak Hour (3:30–4:30 P.M.)		
		In	Out	Total	In	Out	Total
Renovated Aki Kurose Middle School	1,000 students [a]	417	353	770	188	298	486
Existing Aki Kurose Middle School	786 students [b]	328	277	605	148	234	382
Net Change	214 students	89	76	165	40	64	104

Source: Heffron Transportation, Inc., November 2023.

a. *Planned capacity of renovated/expanded school*

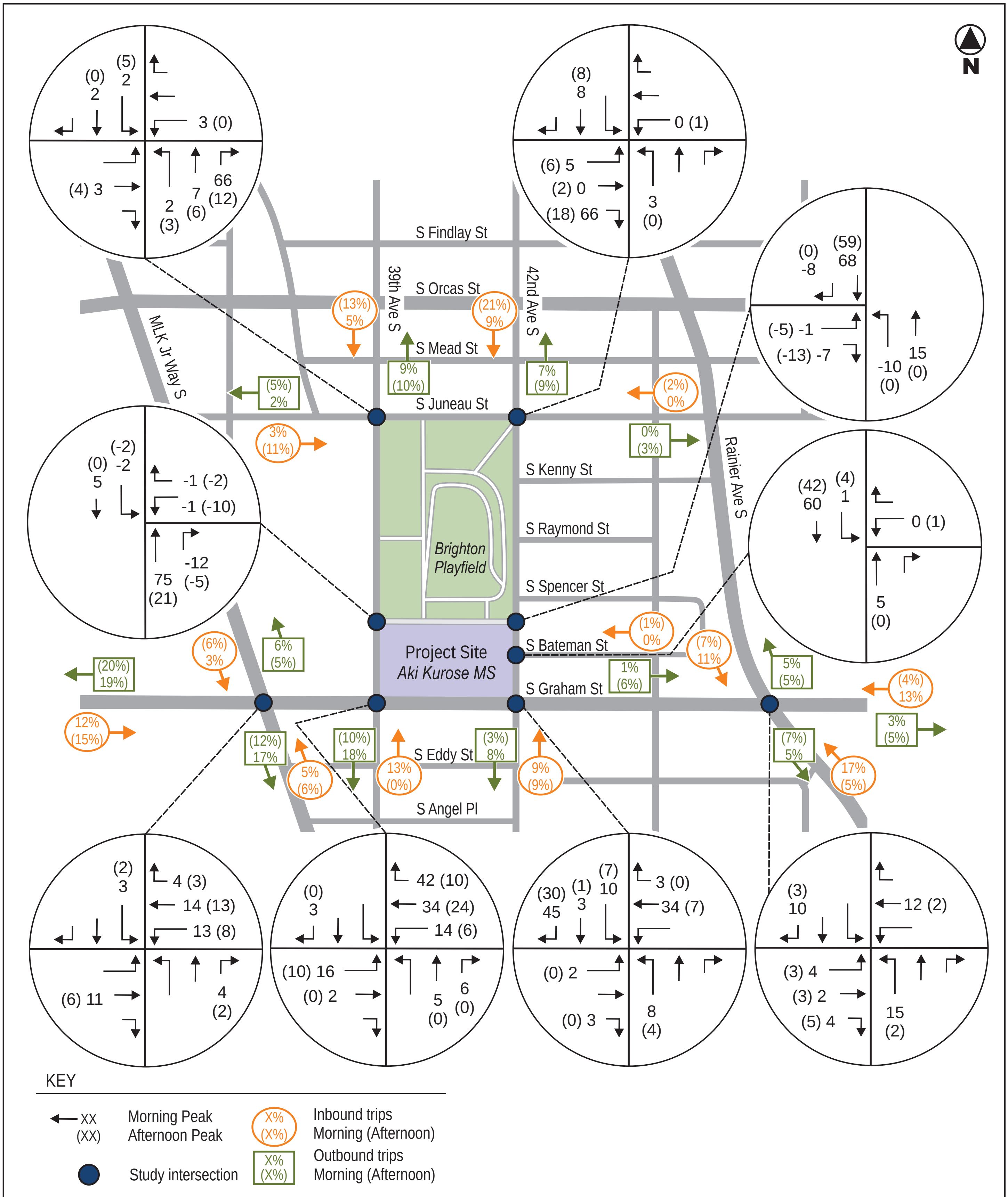
b. *Enrollment as of October 2023 when traffic data were collected for this analysis, SPS P223 Enrollment Report, October 2023.*

3.2.2. Trip Distribution and Assignment

As described, the proposed modernization and addition project would modify the central courtyard for outdoor learning and community spaces making that area unavailable for vehicle parking. The project would also adjust the curbside load/unload areas to accommodate SPED buses together with general education buses along the north side of S Graham Street and to relocate the automobile load/unload to segments of 39th and 42nd Avenues S. The changes to parking locations on the site are expected to slightly change the trip patterns for staff and some visitors on the local roadway network, as more are expected to use on-street parking along 39th and 42nd Avenues S.

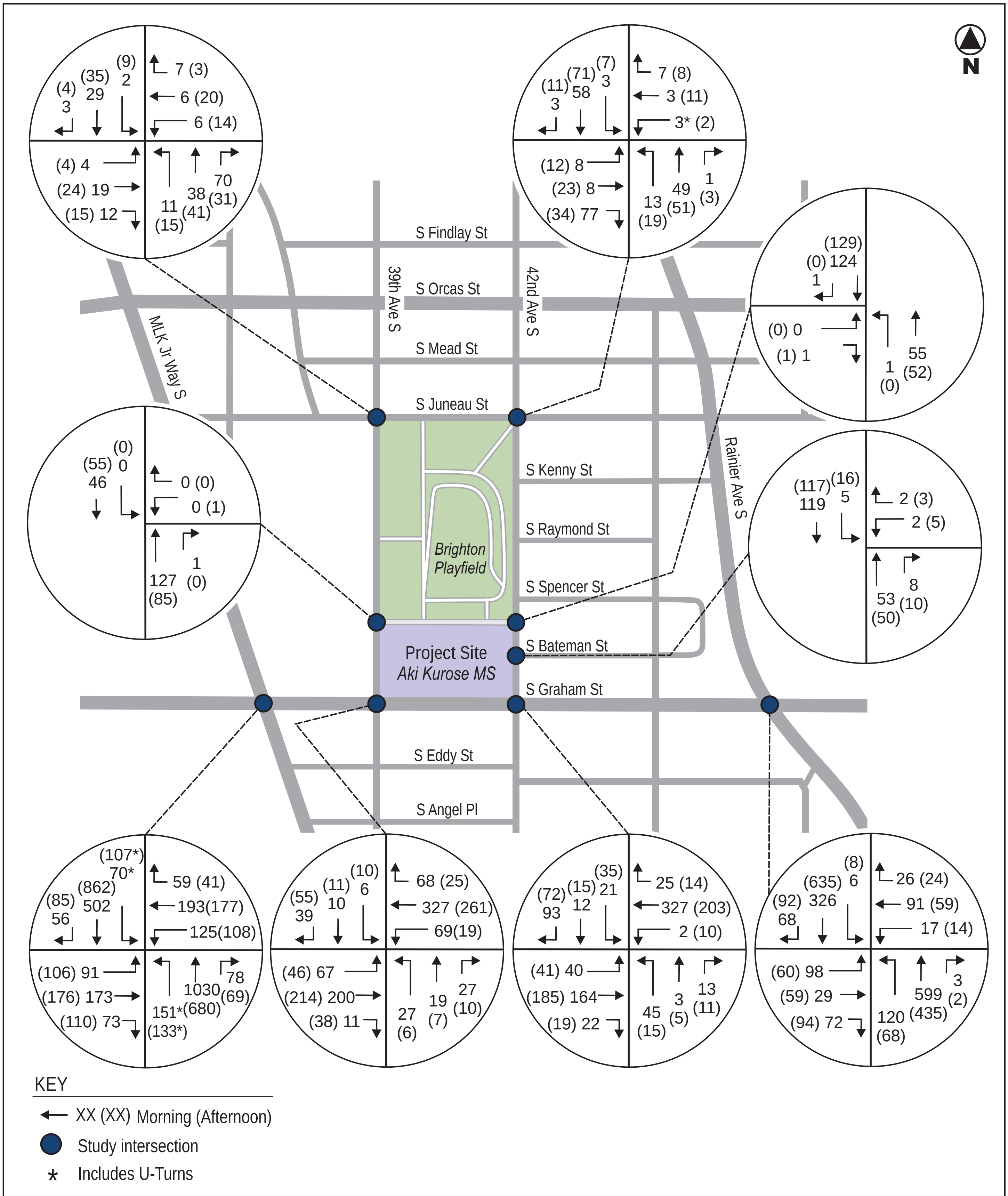
Project trip distribution patterns and assignments were developed for the morning and afternoon peak hours using a combination of the school's enrollment and draw areas and traffic counts and directional patterns at intersections adjacent to the site. The derived trip distribution patterns were applied to the estimated net increased in school-generated trips to determine the net changes in trips expected with the project. Figure 7 shows the traffic distribution patterns and assignments of the changes in trips for the morning and afternoon.

The changes in school trips were combined with the forecast 2028-without-project traffic volumes to reflect future conditions with the renovated and expanded school. Figure 8 shows the forecast 2028-with-project volumes for the morning and afternoon peak hours.



AKI KUROSE MIDDLE SCHOOL
Renovation and Addition

Figure 7
Net Project Trip Distribution and Assignment
Morning and Afternoon Peak Hours



AKI KUROSE MIDDLE SCHOOL
Renovation and Addition

Figure 8
Forecast-2028-With-Project Traffic Volumes
Morning and Afternoon Peak Hours

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3.3. Traffic Operations

Intersection levels of service for future with-project conditions were evaluated using the same methodology described previously. The analyses account for changes in pedestrian crossing activity, peaking characteristics of school traffic, school-bus trips, and the potential changes to on-site parking and access at the site. Table 8 shows the results of the analysis; without-project conditions are shown for comparison.

Table 8. Level of Service Summary – Forecast 2028 Conditions Without- and With-Project

	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	
Intersections								
Signalized	LOS [1]	Delay [2]	LOS	Delay	LOS	Delay	LOS	Delay
S Graham St / MLK Jr Wy S	E	62.0	E	65.9	E	60.2	E	60.9
S Graham St / Rainier Ave S	C	22.5	C	24.1	C	21.8	C	22.5
Traffic Circle Controlled [3]	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
S Juneau St / 42nd Ave S	A	3.2	A	3.5	A	3.7	A	3.9
Stop Controlled	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
S Juneau St / 39th Ave S	A	4.3	A	3.1	A	4.9	A	4.8
Northbound approach	A	7.3	A	7.3	A	7.5	A	7.5
Eastbound Left Turn	A	9.5	B	10.2	B	10.3	B	10.9
Westbound Left Turn	A	9.3	A	9.9	B	10.9	B	11.5
Southbound Approach	A	0.0	A	7.7	A	7.5	A	7.6
S Graham St / 39th Avenue S	A	5.3	A	8.2	A	3.6	A	4.1
Northbound approach	D	25.7	E	48.1	C	16.0	C	18.9
Eastbound Left Turn	A	9.0	A	9.8	A	8.7	A	9.3
Westbound Left Turn	A	7.9	A	8.0	A	8.0	A	8.1
Southbound Approach	C	18.6	D	27.1	C	16.1	C	20.0
S Graham St / 42nd Avenue S	A	4.8	A	9.7	A	5.2	A	8.2
Northbound approach	C	25.0	E	49.2	C	17.5	C	22.2
Eastbound Left Turn	A	9.0	A	9.4	A	8.5	A	8.8
Westbound Left Turn	A	7.8	A	7.9	A	7.9	A	7.9
Southbound Approach	C	18.4	D	28.3	C	21.9	D	29.3
Uncontrolled [4]	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
S Bateman St / 42nd Ave S	A	0.7	A	0.5	A	1.0	A	1.0
Westbound Approach	A	9.2	A	9.6	A	9.5	A	9.9
Southbound Left Turn	A	7.6	A	7.5	A	7.5	A	7.5
Brighton Paved Lane / 39th Ave S	A	0.3	A	0.0	A	1.4	A	0.1
Westbound Approach	A	9.1	A	0.0	A	10.0	B	10.1
Southbound Left Turn	A	7.5	A	0.0	A	7.6	A	0.0
Brighton Paved Lane / 42nd Ave S	A	1.9	A	0.1	A	2.1	A	0.1
Northbound Left Turn	A	7.5	A	7.6	A	0.0	A	0.0
Eastbound Approach	A	10.0	B	10.3	B	10.2	B	10.1

Source: Heffron Transportation, Inc., July 2024.
1. *Level of service.*
2. *Average seconds of delay per vehicle.*
3. *Intersection controlled by traffic circle; evaluated using roundabout methodology.*
4. *Intersections are uncontrolled; evaluated as stop-controlled for T approaches.*

As shown, traffic generated by the proposed renovated and expanded school could result in modest increases to delays at the study-area intersections. Both signalized intersections are forecast to remain operating at LOS E or better with the project during both analysis peak hours. The unsignalized intersections are forecast to remain operating at LOS A overall with all movements at LOS E or better during both peak hours. Based on these results, the project would not result in significant adverse impacts to study-area traffic operations.

3.4. Parking Supply and Demand

3.4.1. Changes to Parking Supply

Automobile parking for 22 vehicles (20 on the west side and 2 on the east side) would be provided on site for regular school-day use and for evening/weekend events.

3.4.2. Parking Demand

School Day Parking

School-day parking at middle schools is primarily influenced by staffing levels and family-volunteer activity. With the proposed renovated school operating at its planned capacity of 1,000 students, the school could have 15 additional employees and its parking demand is anticipated to increase from current levels. Based on the range of rates derived from parking demand counts presented earlier in this report, the renovated school could generate demand ranging from 84 to 100 vehicles on school days. The variation in demand is expected due to fluctuations in the number of part-time staff and volunteers that may be on campus on a given day. Up to 22 vehicles could be accommodated within the on-site parking areas. The remaining 62 to 78 vehicles are expected to use on-street parking near the site—most likely along 39th and 42nd Avenues S. School-generated on-street parking demand represents a net increase of 30 to 54 vehicles (compared to the current estimated on-street parking demand of 24 to 32 vehicles). The parking occupancy results presented previously found between 380 and 430 unused spaces on school days within 800 feet of the school site. The increase in overspill demand is forecast to increase utilization. However, overall utilization is forecast to remain below 45%, and well below the 85%-occupancy level considered acceptable by the City, above which it may consider parking management measures to manage utilization levels.

Event Parking

Aki Kurose Middle School would continue to host events periodically throughout the school year. Many of the events have relatively modest attendance including PTSA monthly board meetings and monthly general membership meetings, parent meetings for clubs, and film screening nights. Larger events 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 or October. With an enrollment capacity of 1,000 students, some of the events (those influenced by the number of students enrolled) would likely have increased parking demand compared to the existing school. Other events, such as concerts, may not experience changes in attendance or parking demand, since those are more related to venue capacity (number of seats available).

The on-street parking survey results indicated an average of 380 to 430 unused on-street parking spaces (out of 630 total) in the school vicinity on evenings without events at the school. Up to 288 additional spaces could be utilized before the study-area reaches 85% occupancy, which is the level at which the City may examine additional parking management measures.

Observations of parking occupancy 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 (142 vehicles parked along areas streets and 50 vehicles parked on site). Based on enrollment at that time, the event generated about 0.24 vehicles per enrolled student. With the school operating at its planned future capacity (1,000 students), it would generate demand of up to 240 vehicles. Even after accounting for the reduced number of vehicles that could park on site, the unused on-street supply could accommodate the event and on-street occupancy is forecast at about 66%.

Although the project would not result in significant adverse impacts to parking due to events, it would eliminate access to the central courtyard area currently used for event-related parking. Therefore, to minimize occasional event-related parking impacts on nearby residents, it is recommended that the District and school administration develop a Neighborhood Communication Plan for School Events expected to have attendance higher than 1,000 people. The communication would be intended to allow neighbors to plan for the occasional increase in on-street parking demand that would continue to occur with large events.

3.5. 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 is not expected to result in adverse impacts to traffic safety within the study area.

3.6. Transit

Transit trips are expected to continue to be generated by some students, teachers, and staff at the site. With the renovation and addition project, all added students would be eligible to ride public transit (Metro and Sound Transit) fare free. As a result, SPS would continue coordination with Metro to confirm service availability and capacity on local routes. Yellow school buses are expected to continue to serve the site; however, the number of buses is likely to be influenced by the level of transit use by students.

3.7. Non-Motorized Facilities

Aki Kurose Middle School would continue to generate pedestrian trips within the site vicinity. Increased use of transit by students may also result in increases in the numbers of students walking between the site and nearby Metro or Link transit stops. The site frontages already have sidewalks and marked crosswalks along primary school walking routes.

On site, the project would provide the code-required bicycle parking supply with 166 bicycle parking spaces (124 long-term covered and secured spaces on northeast portion of the site and 42 short-term spaces at the southeast corner of the site near the main entry off S Graham Street). This would be a substantial increase compared to current conditions and is expected to accommodate the level of demand for the expanded school. These changes are expected to enhance the non-motorized environment.

3.8. Short-Term Construction Impacts

Construction is planned to start in summer 2026 and end prior to fall 2028 when the renovated and expanded school is planned to be ready for occupancy. Aki Kurose Middle School students would be temporarily relocated off-site (to the Van Asselt School) for the duration of the construction effort.

3.8.1. Construction-Period Access Operations

The construction effort would include demolition and earthwork that would consist of excavation and fill that require export of about 700 bank cubic yards (cy) of material from the site and import of about 1,600 bank cy of fill material. Assuming 15% swell/fluff and an average of 20-cubic yards per truck (truck/trailer combination), the combined transport effort could generate about 132 truckloads over the duration of the project. The initial demolition and earthwork effort would occur from July through October 2026 (about 60 work days). If consolidated to two weeks, this would correspond to an average of 13 truckloads per day (13 trucks in, 13 trucks out) and 1 to 2 truckloads per hour over ten days. This volume of truck traffic may be noticeable to residents living adjacent to the site, but would be short in duration and would not result in significant traffic impacts. Site-generated traffic during construction is expected to be much lower than conditions with the school operating normally and students on campus.

The construction of the project would also generate employee, equipment, and material delivery trips to and from the site. It is anticipated that construction workers would arrive at the construction site before the AM peak traffic period on local area streets and depart the site prior to the PM peak period; construction work shifts for schools are usually from 7:00 A.M. to 3:30 P.M., with workers arriving between 6:30 and 6:45 A.M., but not starting work 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. Parking for construction personnel is expected to occur on-site and adjacent roadways.

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 2026 with occupancy of the renovated and expanded school in fall 2028. During the construction effort, Aki Kurose Middle School students and staff would be temporarily relocated to the Van Asselt School site about 1.3 miles to the southwest.
- SPS would make frontage improvements as required by SDOT through the SIP process. During construction, pedestrians would be routed around or directed to avoid construction area using temporary walkways, fencing, and signage.
- Construction personnel are expected to park on-site and on-street in the site vicinity. Unused on-street supply is expected to accommodate the temporary added demand during construction.
- Earthwork export effort during construction is estimated to require an average of about 13 truckloads per day and 1 to 2 truckloads (1 to 2 trucks in and 1 to 2 trucks out) per hour on a typical eight-hour construction work day. This volume of truck traffic would be noticeable to residents living adjacent to the site, but is not expected to result in adverse impacts to traffic operations in the site vicinity. Since students would be located off-site for the duration of the construction effort, site-generated traffic is expected to be much lower than conditions with the school operating normally.

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

- The proposed Aki Kurose Middle School would have capacity of up to 1,000 students and could have up to 122 faculty and staff members. The proposed capacity is 100 students more than the school's current capacity of 900 students.
- Compared to 2023-24 conditions when the school had an enrollment of 786 students, the renovated and expanded school is estimated to generate increases of 165 trips in the morning peak hour (8:00 to 9:00 A.M.) and 104 trips in the afternoon peak hour (3:30 to 4:30 P.M.), if enrolled to its planned capacity of 1,000 students.
- The project would enhance the central courtyard for outdoor learning and community use and would no longer allow vehicle access for employees or visitors. The area west of the existing school building would be improved to provide on-site parking for 20 vehicles with access from 39th Avenue S and egress to the SPR paved lane and west onto 39th Avenue S. Two parking stalls would be provided in the area currently used for deliveries.
- The project would change how some staff, family-drivers, school buses, deliveries, and those using non-motorized modes access the site. However, traffic operations for the two signalized study area intersections are forecast to remain at LOS E or better and LOS A overall with all movements at LOS E or better for unsignalized locations.
- The proposed changes to curb-side school load/unload designations would provide more capacity than the current conditions. The preferred circulation pattern for family-vehicles dropping off or picking up students would be clockwise (north on 39th Avenue S, east on S Juneau Street, and south on 42nd Avenue S). Instructions would be incorporated into a Transportation Management Plan (TMP) described in Recommendation B below.

- Automobile parking for 22 vehicles would be provided on site; on-street load/unload areas could be used for parking on evenings and weekends for events. At the proposed capacity of 1,000 students, the renovated and expanded school could generate parking demand ranging from 88 to 100 vehicles on school days. The project could increase on-street parking by 30 to 54 vehicles. The increase in overspill demand could slightly increase utilization to 45%. However, this level is acceptable to the City and the project-related impacts would not be considered significant.
- Occasional evening events would continue to draw large attendances. The available on-site and on-street parking supply would be sufficient to accommodate these occasional events. Parking demand for the largest event—typically Curriculum Night once each year—is forecast to be accommodated by unused on-street parking with utilization at about 66%.

4.3. Recommendations

Even though the proposed Aki Kurose Middle School renovation and addition project would not adversely affect the transportation system in the site vicinity, the following measures are recommended to reduce the traffic and parking impacts with the project.

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 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. **Transportation Management Plan (TMP):** Prior to re-opening the renovated school, the District and school administration should establish a Transportation Management Plan (TMP) that encourages reduced automobile trips to and from the site and educates parents and students about the preferred access and circulation patterns for the school site. This would include directing family drivers to circulate clockwise around the block using 39th Avenue S northbound, S Juneau Street eastbound, and 42nd Avenue S southbound when driving students to school in the morning or picking students up from school in the afternoon.

C. **Develop Neighborhood Communication Plan for School Events:** The District and school administration should develop a neighborhood communication plan to inform nearby neighbors of large events (those expected to draw 1,000 people or more) 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.

D. **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-load zones planned on 39th Avenue S and 42nd Avenue S as well as the extended school bus load zone planned on S Graham 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

Project **Aki Kurose MS**

Block Face ID	Street Name	Street Segment	Side of Street	Parking Supply: Unrestricted	15min School Load 7-10a, 1-5p Exc Sat/Sun/Hol	School Bus Only 7-10a, 1-5p Exc Sat/Sun/Hol	Disabled	**Total Parking Spaces**	Total Spaces by Survey Period: ***Morning (7:00AM)***	***Mid-Morning (10:30AM)***	***Evening (After 5pm)***
AA	42ND AVE S	800' BOUNDARY AND S KENNY ST	W	5	0	0	0	**5**	***5***	***5***	***5***
AB	42ND AVE S	800' BOUNDARY AND S KENNY ST	E	4	0	0	0	**4**	***4***	***4***	***4***
AC	S KENNY ST	42ND AVE S AND 800' BOUNDARY	N	4	0	0	0	**4**	***4***	***4***	***4***
AD	S KENNY ST	42ND AVE S AND 800' BOUNDARY	S	5	0	0	0	**5**	***5***	***5***	***5***
AE	42ND AVE S	S KENNY ST AND S RAYMOND ST	W	11	0	0	0	**11**	***11***	***11***	***11***
AF	42ND AVE S	S KENNY ST AND S RAYMOND ST	E	8	0	0	0	**8**	***8***	***8***	***8***
AG	S RAYMOND ST	42ND AVE S AND 800' BOUNDARY	N	12	0	0	0	**12**	***12***	***12***	***12***
AH	S RAYMOND ST	42ND AVE S AND 800' BOUNDARY	S	11	0	0	0	**11**	***11***	***11***	***11***
AI	39TH AVE S	800' BOUNDARY AND S GRAHAM ST	W	33	0	0	0	**33**	***33***	***33***	***33***
AJ	39TH AVE S	800' BOUNDARY AND S GRAHAM ST	E	51	0	0	0	**51**	***51***	***51***	***51***
AK	42ND AVE S	S RAYMOND ST AND S SPENCER ST	W	11	0	0	0	**11**	***11***	***11***	***11***
AL	42ND AVE S	S RAYMOND ST AND S SPENCER ST	E	8	0	0	0	**8**	***8***	***8***	***8***
AM	S SPENCER ST	42ND AVE S AND 44TH AVE S	N	21	0	0	0	**21**	***21***	***21***	***21***
AN	S SPENCER ST	42ND AVE S AND 44TH AVE S	S	21	0	0	1	**22**	***22***	***22***	***22***
AO	42ND AVE S	S SPENCER ST AND S BATEMAN ST	W	7	0	0	0	**7**	***7***	***7***	***7***
AP	42ND AVE S	S SPENCER ST AND S BATEMAN ST	E	7	0	0	0	**7**	***7***	***7***	***7***
AQ	44TH AVE S	S SPENCER ST AND S BATEMAN ST	W	5	0	0	0	**5**	***5***	***5***	***5***
AR	44TH AVE S	S SPENCER ST AND S BATEMAN ST	E	7	0	0	0	**7**	***7***	***7***	***7***
AS	S BATEMAN ST	42ND AVE S AND 44TH AVE S	N	21	0	0	0	**21**	***21***	***21***	***21***
AT	S BATEMAN ST	42ND AVE S AND 44TH AVE S	S	24	0	0	0	**24**	***24***	***24***	***24***
AU	S BATEMAN ST	44TH AVE S AND 800' BOUNDARY	N	0	0	0	0	**0**	***0***	***0***	***0***
AV	S BATEMAN ST	44TH AVE S AND 800' BOUNDARY	S	0	0	0	0	**0**	***0***	***0***	***0***
AW	M L KING JR WAY S	800' BOUNDARY AND S GRAHAM ST	W	0	0	0	0	**0**	***0***	***0***	***0***
AX	M L KING JR WAY S	800' BOUNDARY AND S GRAHAM ST	E	0	0	0	0	**0**	***0***	***0***	***0***
AY	42ND AVE S	S BATEMAN ST AND S GRAHAM ST	W	6	0	0	0	**6**	***6***	***6***	***6***
AZ	42ND AVE S	S BATEMAN ST AND S GRAHAM ST	E	9	0	0	0	**9**	***9***	***9***	***9***
BA	44TH AVE S	S BATEMAN ST AND S GRAHAM ST	W	6	0	0	0	**6**	***6***	***6***	***6***

Project **Aki Kurose MS**

Block Face ID	Street Name	Street Segment	Side of Street	Parking Supply: Unrestricted	15min School Load 7-10a, 1-5p Exc Sat/Sun/Hol	School Bus Only 7-10a, 1-5p Exc Sat/Sun/Hol	Disabled	**Total Parking Spaces**	Total Spaces by Survey Period: *Morning (7:00AM)*	*Mid-Morning (10:30AM)*	*Evening (After 5pm)*
BB	44TH AVE S	S BATEMAN ST AND S GRAHAM ST	E	7	0	0	0	**7**	*7*	*7*	*7*
BC	S GRAHAM ST	800' BOUNDARY AND M L KING JR WR WAY S	N	0	0	0	0	**0**	*0*	*0*	*0*
BD	S GRAHAM ST	800' BOUNDARY AND M L KING JR WR WAY S	S	0	0	0	0	**0**	*0*	*0*	*0*
BE	S GRAHAM ST	M L KING JR ER WAY S AND 38TH AVE S	N	0	0	0	0	**0**	*0*	*0*	*0*
BF	S GRAHAM ST	M L KING JR ER WAY S AND 38TH AVE S	S	0	0	0	0	**0**	*0*	*0*	*0*
BG	S GRAHAM ST	38TH AVE S AND 39TH AVE S	N	0	0	0	0	**0**	*0*	*0*	*0*
BH	S GRAHAM ST	38TH AVE S AND 39TH AVE S	S	1	0	0	0	**1**	*1*	*1*	*1*
BI	S GRAHAM ST	39TH AVE S AND 42ND AVE S	N	0	6	18	0	**24**	*0*	*24*	*24*
BJ	S GRAHAM ST	39TH AVE S AND 42ND AVE S	S	17	0	0	0	**17**	*17*	*17*	*17*
BK	S GRAHAM ST	42ND AVE S AND 44TH AVE S	N	24	0	0	0	**24**	*24*	*24*	*24*
BL	S GRAHAM ST	42ND AVE S AND 44TH AVE S	S	20	0	0	0	**20**	*20*	*20*	*20*
BM	S GRAHAM ST	44TH AVE S AND 800' BOUNDARY	N	2	0	0	0	**2**	*2*	*2*	*2*
BN	S GRAHAM ST	44TH AVE S AND 800' BOUNDARY	S	3	0	0	0	**3**	*3*	*3*	*3*
BO	M L KING JR WAY S	S GRAHAM ST AND S EDDY ST	W	0	0	0	0	**0**	*0*	*0*	*0*
BP	M L KING JR WAY S	S GRAHAM ST AND S EDDY ST	E	0	0	0	0	**0**	*0*	*0*	*0*
BQ	38TH AVE S	S GRAHAM ST AND S EDDY ST	W	7	0	0	0	**7**	*7*	*7*	*7*
BR	38TH AVE S	S GRAHAM ST AND S EDDY ST	E	2	0	0	0	**2**	*2*	*2*	*2*
BS	39TH AVE S	S GRAHAM ST AND S EDDY ST	W	0	0	0	0	**0**	*0*	*0*	*0*
BT	39TH AVE S	S GRAHAM ST AND S EDDY ST	E	5	0	0	0	**5**	*5*	*5*	*5*
BU	42ND AVE S	S GRAHAM ST AND S EDDY N ST	W	9	0	0	0	**9**	*9*	*9*	*9*
BV	42ND AVE S	S GRAHAM ST AND S EDDY N ST	E	5	0	0	0	**5**	*5*	*5*	*5*
BW	44TH AVE S	S GRAHAM ST AND 800' BOUNDARY	W	5	0	0	0	**5**	*5*	*5*	*5*
BX	44TH AVE S	S GRAHAM ST AND 800' BOUNDARY	E	3	0	0	0	**3**	*3*	*3*	*3*
BY	S EDDY ST	38TH AVE S AND 39TH AVE S	N	13	0	0	0	**13**	*13*	*13*	*13*
BZ	S EDDY ST	38TH AVE S AND 39TH AVE S	S	12	0	0	0	**12**	*12*	*12*	*12*
CA	S EDDY ST	39TH AVE S AND 42ND N AVE S	N	21	0	0	0	**21**	*21*	*21*	*21*
CB	S EDDY ST	39TH AVE S AND 42ND N AVE S	S	21	0	0	0	**21**	*21*	*21*	*21*

Project **Aki Kurose MS**

				Parking Supply					Total Spaces by Survey Period		
Block Face ID	Street Name	Street Segment	Side of Street	Unrestricted	15min School Load 7-10a, 1-5p Exc Sat/Sun/Hol	School Bus Only 7-10a, 1-5p Exc Sat/Sun/Hol	Disabled	**Total Parking Spaces**	***Morning (7:00AM)***	***Mid-Morning (10:30AM)***	***Evening (After 5pm)***
CC	M L KING JR WAY S	S EDDY ST AND 800' BOUNDARY	W	0	0	0	0	**0**	***0***	***0***	***0***
CD	M L KING JR WAY S	S EDDY ST AND 800' BOUNDARY	E	0	0	0	0	**0**	***0***	***0***	***0***
CE	39TH AVE S	S EDDY ST AND S ANGEL PL	W	8	0	0	0	**8**	***8***	***8***	***8***
CF	39TH AVE S	S EDDY ST AND S ANGEL PL	E	8	0	0	0	**8**	***8***	***8***	***8***
CG	42ND AVE S	S EDDY N ST AND S EDDY S ST	W	0	0	0	0	**0**	***0***	***0***	***0***
CH	42ND AVE S	S EDDY N ST AND S EDDY S ST	E	0	0	0	0	**0**	***0***	***0***	***0***
CI	S EDDY ST	42ND S AVE S AND 800' BOUNDARY	N	13	0	0	0	**13**	***13***	***13***	***13***
CJ	S EDDY ST	42ND S AVE S AND 800' BOUNDARY	S	18	0	0	0	**18**	***18***	***18***	***18***
CK	42ND AVE S	S EDDY S ST AND S ANGEL PL	W	5	0	0	0	**5**	***5***	***5***	***5***
CL	42ND AVE S	S EDDY S ST AND S ANGEL PL	E	2	0	0	0	**2**	***2***	***2***	***2***
CM	S ANGEL PL	800' BOUNDARY AND 39TH AVE S	N	9	0	0	0	**9**	***9***	***9***	***9***
CN	S ANGEL PL	800' BOUNDARY AND 39TH AVE S	S	9	0	0	0	**9**	***9***	***9***	***9***
CO	S ANGEL PL	39TH AVE S AND 42ND AVE S	N	17	0	0	0	**17**	***17***	***17***	***17***
CP	S ANGEL PL	39TH AVE S AND 42ND AVE S	S	19	0	0	0	**19**	***19***	***19***	***19***
CQ	39TH AVE S	S ANGEL PL AND S MORGAN ST	W	7	0	0	0	**7**	***7***	***7***	***7***
CR	39TH AVE S	S ANGEL PL AND S MORGAN ST	E	5	0	0	0	**5**	***5***	***5***	***5***
CS	42ND AVE S	S ANGEL PL AND S MORGAN N ST	W	3	0	0	0	**3**	***3***	***3***	***3***
CT	42ND AVE S	S ANGEL PL AND S MORGAN N ST	E	3	0	0	0	**3**	***3***	***3***	***3***
CU	S MORGAN ST	42ND N AVE S AND 800' BOUNDARY	N	3	0	0	0	**3**	***3***	***3***	***3***
CV	S MORGAN ST	42ND N AVE S AND 800' BOUNDARY	S	3	0	0	0	**3**	***3***	***3***	***3***
CW	42ND AVE S	S MORGAN N ST AND S MORGAN S ST	W	0	0	0	0	**0**	***0***	***0***	***0***
CX	42ND AVE S	S MORGAN N ST AND S MORGAN S ST	E	0	0	0	0	**0**	***0***	***0***	***0***
			TOTAL	**606**	**6**	**18**	**1**	**630**	***606***	***630***	***630***

Project **Aki Kurose MS**

				Parking Supply				Parking Occupancy										
					Total Spaces by Survey Period			Morning (7:00AM)			Mid-Morning (10:30AM)			Evening (7:30PM)			Non- Event	Event
Block Face ID	Street Name	Street Segment	Side of Street	**Total Parking Spaces**	***Morning (7:00AM)***	***Mid-Morning (10:30AM)***	***Evening (After 5pm)***	Thursday 11.9.23	Tuesday 11.14.23	Average	Thursday 11.9.23	Tuesday 11.14.23	Average	Thursday 11.9.23	Tuesday 11.14.23	Average	Tuesday 11.7.23	Thursday 10.19.23 (Curriculum Night) 5:15PM
AA	42ND AVE S	800' BOUNDARY AND S KENNY ST	W	**5**	***5***	***5***	***5***	0%	0%	0%	0%	0%	0%	40%	60%	50%	0%	60%
AB	42ND AVE S	800' BOUNDARY AND S KENNY ST	E	**4**	***4***	***4***	***4***	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	25%
AC	S KENNY ST	42ND AVE S AND 800' BOUNDARY	N	**4**	***4***	***4***	***4***	25%	25%	25%	25%	25%	25%	50%	25%	38%	25%	25%
AD	S KENNY ST	42ND AVE S AND 800' BOUNDARY	S	**5**	***5***	***5***	***5***	20%	40%	30%	0%	40%	20%	40%	20%	30%	20%	40%
AE	42ND AVE S	S KENNY ST AND S RAYMOND ST	W	**11**	***11***	***11***	***11***	0%	0%	0%	0%	0%	0%	91%	64%	77%	18%	91%
AF	42ND AVE S	S KENNY ST AND S RAYMOND ST	E	**8**	***8***	***8***	***8***	25%	38%	31%	38%	25%	31%	63%	25%	44%	50%	63%
AG	S RAYMOND ST	42ND AVE S AND 800' BOUNDARY	N	**12**	***12***	***12***	***12***	83%	92%	88%	83%	58%	71%	100%	83%	92%	83%	67%
AH	S RAYMOND ST	42ND AVE S AND 800' BOUNDARY	S	**11**	***11***	***11***	***11***	73%	82%	77%	55%	27%	41%	82%	82%	82%	100%	45%
AI	39TH AVE S	800' BOUNDARY AND S GRAHAM ST	W	**33**	***33***	***33***	***33***	52%	9%	30%	42%	30%	36%	48%	33%	41%	21%	55%
AJ	39TH AVE S	800' BOUNDARY AND S GRAHAM ST	E	**51**	***51***	***51***	***51***	25%	4%	15%	37%	29%	33%	51%	41%	46%	14%	69%
AK	42ND AVE S	S RAYMOND ST AND S SPENCER ST	W	**11**	***11***	***11***	***11***	18%	0%	9%	0%	0%	0%	82%	45%	64%	64%	109%
AL	42ND AVE S	S RAYMOND ST AND S SPENCER ST	E	**8**	***8***	***8***	***8***	63%	38%	50%	25%	38%	31%	63%	38%	50%	50%	75%
AM	S SPENCER ST	42ND AVE S AND 44TH AVE S	N	**21**	***21***	***21***	***21***	62%	86%	74%	52%	48%	50%	76%	76%	76%	67%	67%
AN	S SPENCER ST	42ND AVE S AND 44TH AVE S	S	**22**	***22***	***22***	***22***	77%	77%	77%	64%	68%	66%	73%	68%	70%	59%	73%
AO	42ND AVE S	S SPENCER ST AND S BATEMAN ST	W	**7**	***7***	***7***	***7***	0%	0%	0%	0%	14%	7%	57%	29%	43%	0%	114%
AP	42ND AVE S	S SPENCER ST AND S BATEMAN ST	E	**7**	***7***	***7***	***7***	0%	0%	0%	43%	43%	43%	57%	14%	36%	0%	71%
AQ	44TH AVE S	S SPENCER ST AND S BATEMAN ST	W	**5**	***5***	***5***	***5***	20%	20%	20%	20%	20%	20%	20%	40%	30%	40%	40%
AR	44TH AVE S	S SPENCER ST AND S BATEMAN ST	E	**7**	***7***	***7***	***7***	43%	43%	43%	29%	29%	29%	57%	14%	36%	29%	43%
AS	S BATEMAN ST	42ND AVE S AND 44TH AVE S	N	**21**	***21***	***21***	***21***	52%	71%	62%	48%	62%	55%	62%	81%	71%	71%	62%
AT	S BATEMAN ST	42ND AVE S AND 44TH AVE S	S	**24**	***24***	***24***	***24***	46%	54%	50%	29%	33%	31%	50%	63%	56%	54%	67%
AU	S BATEMAN ST	44TH AVE S AND 800' BOUNDARY	N	0	*0*	*0*	*0*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AV	S BATEMAN ST	44TH AVE S AND 800' BOUNDARY	S	0	*0*	*0*	*0*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AW	M L KING JR WAY S	800' BOUNDARY AND S GRAHAM ST	W	0	*0*	*0*	*0*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AX	M L KING JR WAY S	800' BOUNDARY AND S GRAHAM ST	E	0	*0*	*0*	*0*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AY	42ND AVE S	S BATEMAN ST AND S GRAHAM ST	W	**6**	***6***	***6***	***6***	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	83%
AZ	42ND AVE S	S BATEMAN ST AND S GRAHAM ST	E	**9**	***9***	***9***	***9***	0%	0%	0%	22%	22%	22%	0%	0%	0%	0%	89%
BA	44TH AVE S	S BATEMAN ST AND S GRAHAM ST	W	**6**	***6***	***6***	***6***	0%	0%	0%	0%	0%	0%	50%	0%	25%	0%	17%

Project **Aki Kurose MS**

				Parking Supply				Parking Occupancy										
					Total Spaces by Survey Period			Morning (7:00AM)			Mid-Morning (10:30AM)			Evening (7:30PM)			Non- Event	Event
Block Face ID	Street Name	Street Segment	Side of Street	**Total Parking Spaces**	***Morning (7:00AM)***	***Mid-Morning (10:30AM)***	***Evening (After 5pm)***	Thursday 11.9.23	Tuesday 11.14.23	Average	Thursday 11.9.23	Tuesday 11.14.23	Average	Thursday 11.9.23	Tuesday 11.14.23	Average	Tuesday 11.7.23	Thursday 10.19.23 (Curriculum Night) 5:15PM
BB	44TH AVE S	S BATEMAN ST AND S GRAHAM ST	E	**7**	***7***	***7***	***7***	29%	43%	36%	29%	43%	36%	71%	71%	71%	43%	14%
BC	S GRAHAM ST	800' BOUNDARY AND M L KING JR WR WAY S	N	0	*0*	*0*	*0*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BD	S GRAHAM ST	800' BOUNDARY AND M L KING JR WR WAY S	S	0	*0*	*0*	*0*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BE	S GRAHAM ST	M L KING JR ER WAY S AND 38TH AVE S	N	0	*0*	*0*	*0*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BF	S GRAHAM ST	M L KING JR ER WAY S AND 38TH AVE S	S	0	*0*	*0*	*0*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BG	S GRAHAM ST	38TH AVE S AND 39TH AVE S	N	0	*0*	*0*	*0*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH	S GRAHAM ST	38TH AVE S AND 39TH AVE S	S	**1**	***1***	***1***	***1***	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
BI	S GRAHAM ST	39TH AVE S AND 42ND AVE S	N	**24**	*0*	***24***	***24***	Illegal	NA	Illegal	0%	8%	4%	0%	0%	0%	0%	88%
BJ	S GRAHAM ST	39TH AVE S AND 42ND AVE S	S	**17**	***17***	***17***	***17***	35%	41%	38%	88%	65%	76%	6%	18%	12%	29%	112%
BK	S GRAHAM ST	42ND AVE S AND 44TH AVE S	N	**24**	***24***	***24***	***24***	38%	33%	35%	33%	54%	44%	42%	29%	35%	42%	71%
BL	S GRAHAM ST	42ND AVE S AND 44TH AVE S	S	**20**	***20***	***20***	***20***	20%	15%	18%	20%	15%	18%	15%	30%	23%	30%	40%
BM	S GRAHAM ST	44TH AVE S AND 800' BOUNDARY	N	**2**	***2***	***2***	***2***	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
BN	S GRAHAM ST	44TH AVE S AND 800' BOUNDARY	S	**3**	***3***	***3***	***3***	0%	0%	0%	0%	0%	0%	0%	33%	17%	33%	0%
BO	M L KING JR WAY S	S GRAHAM ST AND S EDDY ST	W	0	*0*	*0*	*0*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BP	M L KING JR WAY S	S GRAHAM ST AND S EDDY ST	E	0	*0*	*0*	*0*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BQ	38TH AVE S	S GRAHAM ST AND S EDDY ST	W	**7**	***7***	***7***	***7***	43%	43%	43%	71%	71%	71%	43%	14%	29%	71%	29%
BR	38TH AVE S	S GRAHAM ST AND S EDDY ST	E	**2**	***2***	***2***	***2***	50%	50%	50%	150%	100%	125%	50%	50%	50%	150%	300%
BS	39TH AVE S	S GRAHAM ST AND S EDDY ST	W	0	*0*	*0*	*0*	NA	NA	NA	Illegal	NA	Illegal	NA	NA	NA	NA	NA
BT	39TH AVE S	S GRAHAM ST AND S EDDY ST	E	**5**	***5***	***5***	***5***	100%	100%	100%	140%	100%	120%	60%	80%	70%	60%	140%
BU	42ND AVE S	S GRAHAM ST AND S EDDY N ST	W	**9**	***9***	***9***	***9***	0%	0%	0%	0%	0%	0%	0%	11%	6%	11%	78%
BV	42ND AVE S	S GRAHAM ST AND S EDDY N ST	E	**5**	***5***	***5***	***5***	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
BW	44TH AVE S	S GRAHAM ST AND 800' BOUNDARY	W	**5**	***5***	***5***	***5***	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
BX	44TH AVE S	S GRAHAM ST AND 800' BOUNDARY	E	**3**	***3***	***3***	***3***	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
BY	S EDDY ST	38TH AVE S AND 39TH AVE S	N	**13**	***13***	***13***	***13***	46%	31%	38%	15%	31%	23%	23%	46%	35%	46%	23%
BZ	S EDDY ST	38TH AVE S AND 39TH AVE S	S	**12**	***12***	***12***	***12***	17%	17%	17%	17%	17%	17%	33%	25%	29%	33%	25%
CA	S EDDY ST	39TH AVE S AND 42ND N AVE S	N	**21**	***21***	***21***	***21***	43%	43%	43%	29%	24%	26%	24%	43%	33%	14%	29%
CB	S EDDY ST	39TH AVE S AND 42ND N AVE S	S	**21**	***21***	***21***	***21***	52%	48%	50%	38%	33%	36%	38%	38%	38%	24%	38%

Project **Aki Kurose MS**

Block Face ID	Street Name	Street Segment	Side of Street	Parking Supply: Total Parking Spaces	Total Spaces by Survey Period: Morning (7:00AM)	Total Spaces by Survey Period: Mid-Morning (10:30AM)	Total Spaces by Survey Period: Evening (After 5pm)	Parking Occupancy: Morning (7:00AM): Thursday 11.9.23	Morning (7:00AM): Tuesday 11.14.23	Morning (7:00AM): Average	Mid-Morning (10:30AM): Thursday 11.9.23	Mid-Morning (10:30AM): Tuesday 11.14.23	Mid-Morning (10:30AM): Average	Evening (7:30PM): Thursday 11.9.23	Evening (7:30PM): Tuesday 11.14.23	Evening (7:30PM): Average	Non- Event: Tuesday 11.7.23	Event: Thursday 10.19.23 (Curriculum Night) 5:15PM
CC	M L KING JR WAY S	S EDDY ST AND 800' BOUNDARY	W	0	*0*	*0*	*0*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CD	M L KING JR WAY S	S EDDY ST AND 800' BOUNDARY	E	0	*0*	*0*	*0*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CE	39TH AVE S	S EDDY ST AND S ANGEL PL	W	**8**	***8***	***8***	***8***	63%	38%	50%	63%	63%	63%	63%	63%	63%	75%	50%
CF	39TH AVE S	S EDDY ST AND S ANGEL PL	E	**8**	***8***	***8***	***8***	13%	75%	44%	0%	38%	19%	0%	13%	6%	13%	0%
CG	42ND AVE S	S EDDY N ST AND S EDDY S ST	W	0	*0*	*0*	*0*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CH	42ND AVE S	S EDDY N ST AND S EDDY S ST	E	0	*0*	*0*	*0*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CI	S EDDY ST	42ND S AVE S AND 800' BOUNDARY	N	**13**	***13***	***13***	***13***	46%	46%	46%	46%	31%	38%	31%	23%	27%	23%	31%
CJ	S EDDY ST	42ND S AVE S AND 800' BOUNDARY	S	**18**	***18***	***18***	***18***	44%	33%	39%	33%	33%	33%	28%	33%	31%	33%	33%
CK	42ND AVE S	S EDDY S ST AND S ANGEL PL	W	**5**	***5***	***5***	***5***	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
CL	42ND AVE S	S EDDY S ST AND S ANGEL PL	E	**2**	***2***	***2***	***2***	100%	100%	100%	100%	100%	100%	100%	50%	75%	100%	100%
CM	S ANGEL PL	800' BOUNDARY AND 39TH AVE S	N	**9**	***9***	***9***	***9***	67%	22%	44%	56%	11%	33%	78%	33%	56%	33%	56%
CN	S ANGEL PL	800' BOUNDARY AND 39TH AVE S	S	**9**	***9***	***9***	***9***	56%	56%	56%	78%	44%	61%	67%	67%	67%	44%	33%
CO	S ANGEL PL	39TH AVE S AND 42ND AVE S	N	**17**	***17***	***17***	***17***	35%	35%	35%	29%	24%	26%	29%	18%	24%	6%	18%
CP	S ANGEL PL	39TH AVE S AND 42ND AVE S	S	**19**	***19***	***19***	***19***	37%	37%	37%	42%	37%	39%	37%	32%	34%	26%	32%
CQ	39TH AVE S	S ANGEL PL AND S MORGAN ST	W	**7**	***7***	***7***	***7***	29%	0%	14%	43%	0%	21%	29%	0%	14%	0%	0%
CR	39TH AVE S	S ANGEL PL AND S MORGAN ST	E	**5**	***5***	***5***	***5***	40%	40%	40%	20%	60%	40%	20%	20%	20%	20%	80%
CS	42ND AVE S	S ANGEL PL AND S MORGAN N ST	W	**3**	***3***	***3***	***3***	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
CT	42ND AVE S	S ANGEL PL AND S MORGAN N ST	E	**3**	***3***	***3***	***3***	0%	0%	0%	67%	0%	33%	0%	0%	0%	0%	0%
CU	S MORGAN ST	42ND N AVE S AND 800' BOUNDARY	N	**3**	***3***	***3***	***3***	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
CV	S MORGAN ST	42ND N AVE S AND 800' BOUNDARY	S	**3**	***3***	***3***	***3***	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
CW	42ND AVE S	S MORGAN N ST AND S MORGAN S ST	W	0	*0*	*0*	*0*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CX	42ND AVE S	S MORGAN N ST AND S MORGAN S ST	E	0	*0*	*0*	*0*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
			TOTAL	**630**	***606***	***630***	***630***	**37%**	**33%**	**35%**	**35%**	**32%**	**33%**	**41%**	**37%**	**39%**	**32%**	**54%**

Project **Aki Kurose MS**

Block Face ID	Street Name	Street Segment	Side of Street	Parking Supply: Total Parking Spaces	Total Spaces by Survey Period: *Morning (7:00AM)*	Total Spaces by Survey Period: *Mid-Morning (10:30AM)*	Total Spaces by Survey Period: *Evening (After 5pm)*	% Parking Occupancy: Morning (7:00AM): Thursday 11.9.23	Morning (7:00AM): Tuesday 11.14.23	Morning (7:00AM): Average	Mid-Morning (10:30AM): Thursday 11.9.23	Mid-Morning (10:30AM): Tuesday 11.14.23	Mid-Morning (10:30AM): Average	Evening (7:30PM): Thursday 11.9.23	Evening (7:30PM): Tuesday 11.14.23	Evening (7:30PM): Average	Non- Event: Tuesday 11.7.23	Event: Thursday 10.19.23 (Curriculum Night) 5:15PM
AA	42ND AVE S	800' BOUNDARY AND S KENNY ST	W	**5**	***5***	***5***	***5***	0%	0%	0%	0%	0%	0%	40%	60%	50%	0%	60%
AB	42ND AVE S	800' BOUNDARY AND S KENNY ST	E	**4**	***4***	***4***	***4***	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	25%
AC	S KENNY ST	42ND AVE S AND 800' BOUNDARY	N	**4**	***4***	***4***	***4***	25%	25%	25%	25%	25%	25%	50%	25%	38%	25%	25%
AD	S KENNY ST	42ND AVE S AND 800' BOUNDARY	S	**5**	***5***	***5***	***5***	20%	40%	30%	0%	40%	20%	40%	20%	30%	20%	40%
AE	42ND AVE S	S KENNY ST AND S RAYMOND ST	W	**11**	***11***	***11***	***11***	0%	0%	0%	0%	0%	0%	91%	64%	77%	18%	91%
AF	42ND AVE S	S KENNY ST AND S RAYMOND ST	E	**8**	***8***	***8***	***8***	25%	38%	31%	38%	25%	31%	63%	25%	44%	50%	63%
AG	S RAYMOND ST	42ND AVE S AND 800' BOUNDARY	N	**12**	***12***	***12***	***12***	83%	92%	88%	83%	58%	71%	100%	83%	92%	83%	67%
AH	S RAYMOND ST	42ND AVE S AND 800' BOUNDARY	S	**11**	***11***	***11***	***11***	73%	82%	77%	55%	27%	41%	82%	82%	82%	100%	45%
AI	39TH AVE S	800' BOUNDARY AND S GRAHAM ST	W	**33**	***33***	***33***	***33***	52%	9%	30%	42%	30%	36%	48%	33%	41%	21%	55%
AJ	39TH AVE S	800' BOUNDARY AND S GRAHAM ST	E	**51**	***51***	***51***	***51***	25%	4%	15%	37%	29%	33%	51%	41%	46%	14%	69%
AK	42ND AVE S	S RAYMOND ST AND S SPENCER ST	W	**11**	***11***	***11***	***11***	18%	0%	9%	0%	0%	0%	82%	45%	64%	64%	109%
AL	42ND AVE S	S RAYMOND ST AND S SPENCER ST	E	**8**	***8***	***8***	***8***	63%	38%	50%	25%	38%	31%	63%	38%	50%	50%	75%
AM	S SPENCER ST	42ND AVE S AND 44TH AVE S	N	**21**	***21***	***21***	***21***	62%	86%	74%	52%	48%	50%	76%	76%	76%	67%	67%
AN	S SPENCER ST	42ND AVE S AND 44TH AVE S	S	**22**	***22***	***22***	***22***	77%	77%	77%	64%	68%	66%	73%	68%	70%	59%	73%
AO	42ND AVE S	S SPENCER ST AND S BATEMAN ST	W	**7**	***7***	***7***	***7***	0%	0%	0%	0%	14%	7%	57%	29%	43%	0%	114%
AP	42ND AVE S	S SPENCER ST AND S BATEMAN ST	E	**7**	***7***	***7***	***7***	0%	0%	0%	43%	43%	43%	57%	14%	36%	0%	71%
AQ	44TH AVE S	S SPENCER ST AND S BATEMAN ST	W	**5**	***5***	***5***	***5***	20%	20%	20%	20%	20%	20%	20%	40%	30%	40%	40%
AR	44TH AVE S	S SPENCER ST AND S BATEMAN ST	E	**7**	***7***	***7***	***7***	43%	43%	43%	29%	29%	29%	57%	14%	36%	29%	43%
AS	S BATEMAN ST	42ND AVE S AND 44TH AVE S	N	**21**	***21***	***21***	***21***	52%	71%	62%	48%	62%	55%	62%	81%	71%	71%	62%
AT	S BATEMAN ST	42ND AVE S AND 44TH AVE S	S	**24**	***24***	***24***	***24***	46%	54%	50%	29%	33%	31%	50%	63%	56%	54%	67%
AU	S BATEMAN ST	44TH AVE S AND 800' BOUNDARY	N	0	*0*	*0*	*0*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AV	S BATEMAN ST	44TH AVE S AND 800' BOUNDARY	S	0	*0*	*0*	*0*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AW	M L KING JR WAY S	800' BOUNDARY AND S GRAHAM ST	W	0	*0*	*0*	*0*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AX	M L KING JR WAY S	800' BOUNDARY AND S GRAHAM ST	E	0	*0*	*0*	*0*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AY	42ND AVE S	S BATEMAN ST AND S GRAHAM ST	W	**6**	***6***	***6***	***6***	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	83%
AZ	42ND AVE S	S BATEMAN ST AND S GRAHAM ST	E	**9**	***9***	***9***	***9***	0%	0%	0%	22%	22%	22%	0%	0%	0%	0%	89%
BA	44TH AVE S	S BATEMAN ST AND S GRAHAM ST	W	**6**	***6***	***6***	***6***	0%	0%	0%	0%	0%	0%	50%	0%	25%	0%	17%

Project **Aki Kurose MS**

				Parking Supply				% Parking Occupancy										
					Total Spaces by Survey Period			Morning (7:00AM)			Mid-Morning (10:30AM)			Evening (7:30PM)			Non- Event	Event
Block Face ID	Street Name	Street Segment	Side of Street	Total Parking Spaces	*Morning (7:00AM)*	*Mid-Morning (10:30AM)*	*Evening (After 5pm)*	Thursday 11.9.23	Tuesday 11.14.23	Average	Thursday 11.9.23	Tuesday 11.14.23	Average	Thursday 11.9.23	Tuesday 11.14.23	Average	Tuesday 11.7.23	Thursday 10.19.23 (Curriculum Night) 5:15PM
BB	44TH AVE S	S BATEMAN ST AND S GRAHAM ST	E	**7**	***7***	***7***	***7***	29%	43%	36%	29%	43%	36%	71%	71%	71%	43%	14%
BC	S GRAHAM ST	800' BOUNDARY AND M L KING JR WR WAY S	N	0	*0*	*0*	*0*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BD	S GRAHAM ST	800' BOUNDARY AND M L KING JR WR WAY S	S	0	*0*	*0*	*0*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BE	S GRAHAM ST	M L KING JR ER WAY S AND 38TH AVE S	N	0	*0*	*0*	*0*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BF	S GRAHAM ST	M L KING JR ER WAY S AND 38TH AVE S	S	0	*0*	*0*	*0*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BG	S GRAHAM ST	38TH AVE S AND 39TH AVE S	N	0	*0*	*0*	*0*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH	S GRAHAM ST	38TH AVE S AND 39TH AVE S	S	**1**	***1***	***1***	***1***	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
BI	S GRAHAM ST	39TH AVE S AND 42ND AVE S	N	**24**	*0*	***24***	***24***	Illegal	NA	Illegal	0%	8%	4%	0%	0%	0%	0%	88%
BJ	S GRAHAM ST	39TH AVE S AND 42ND AVE S	S	**17**	***17***	***17***	***17***	35%	41%	38%	88%	65%	76%	6%	18%	12%	29%	112%
BK	S GRAHAM ST	42ND AVE S AND 44TH AVE S	N	**24**	***24***	***24***	***24***	38%	33%	35%	33%	54%	44%	42%	29%	35%	42%	71%
BL	S GRAHAM ST	42ND AVE S AND 44TH AVE S	S	**20**	***20***	***20***	***20***	20%	15%	18%	20%	15%	18%	15%	30%	23%	30%	40%
BM	S GRAHAM ST	44TH AVE S AND 800' BOUNDARY	N	**2**	***2***	***2***	***2***	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
BN	S GRAHAM ST	44TH AVE S AND 800' BOUNDARY	S	**3**	***3***	***3***	***3***	0%	0%	0%	0%	0%	0%	0%	33%	17%	33%	0%
BO	M L KING JR WAY S	S GRAHAM ST AND S EDDY ST	W	0	*0*	*0*	*0*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BP	M L KING JR WAY S	S GRAHAM ST AND S EDDY ST	E	0	*0*	*0*	*0*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BQ	38TH AVE S	S GRAHAM ST AND S EDDY ST	W	**7**	***7***	***7***	***7***	43%	43%	43%	71%	71%	71%	43%	14%	29%	71%	29%
BR	38TH AVE S	S GRAHAM ST AND S EDDY ST	E	**2**	***2***	***2***	***2***	50%	50%	50%	150%	100%	125%	50%	50%	50%	150%	300%
BS	39TH AVE S	S GRAHAM ST AND S EDDY ST	W	0	*0*	*0*	*0*	NA	NA	NA	Illegal	NA	Illegal	NA	NA	NA	NA	NA
BT	39TH AVE S	S GRAHAM ST AND S EDDY ST	E	**5**	***5***	***5***	***5***	100%	100%	100%	140%	100%	120%	60%	80%	70%	60%	140%
BU	42ND AVE S	S GRAHAM ST AND S EDDY N ST	W	**9**	***9***	***9***	***9***	0%	0%	0%	0%	0%	0%	0%	11%	6%	11%	78%
BV	42ND AVE S	S GRAHAM ST AND S EDDY N ST	E	**5**	***5***	***5***	***5***	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
BW	44TH AVE S	S GRAHAM ST AND 800' BOUNDARY	W	**5**	***5***	***5***	***5***	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
BX	44TH AVE S	S GRAHAM ST AND 800' BOUNDARY	E	**3**	***3***	***3***	***3***	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
BY	S EDDY ST	38TH AVE S AND 39TH AVE S	N	**13**	***13***	***13***	***13***	46%	31%	38%	15%	31%	23%	23%	46%	35%	46%	23%
BZ	S EDDY ST	38TH AVE S AND 39TH AVE S	S	**12**	***12***	***12***	***12***	17%	17%	17%	17%	17%	17%	33%	25%	29%	33%	25%
CA	S EDDY ST	39TH AVE S AND 42ND N AVE S	N	**21**	***21***	***21***	***21***	43%	43%	43%	29%	24%	26%	24%	43%	33%	14%	29%
CB	S EDDY ST	39TH AVE S AND 42ND N AVE S	S	**21**	***21***	***21***	***21***	52%	48%	50%	38%	33%	36%	38%	38%	38%	24%	38%

Project **Aki Kurose MS**

				Parking Supply				% Parking Occupancy										
					Total Spaces by Survey Period			Morning (7:00AM)			Mid-Morning (10:30AM)			Evening (7:30PM)			Non- Event	Event
Block Face ID	Street Name	Street Segment	Side of Street	Total Parking Spaces	*Morning (7:00AM)*	*Mid-Morning (10:30AM)*	*Evening (After 5pm)*	Thursday 11.9.23	Tuesday 11.14.23	Average	Thursday 11.9.23	Tuesday 11.14.23	Average	Thursday 11.9.23	Tuesday 11.14.23	Average	Tuesday 11.7.23	Thursday 10.19.23 (Curriculum Night) 5:15PM
CC	M L KING JR WAY S	S EDDY ST AND 800' BOUNDARY	W	0	*0*	*0*	*0*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CD	M L KING JR WAY S	S EDDY ST AND 800' BOUNDARY	E	0	*0*	*0*	*0*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CE	39TH AVE S	S EDDY ST AND S ANGEL PL	W	**8**	***8***	***8***	***8***	63%	38%	50%	63%	63%	63%	63%	63%	63%	75%	50%
CF	39TH AVE S	S EDDY ST AND S ANGEL PL	E	**8**	***8***	***8***	***8***	13%	75%	44%	0%	38%	19%	0%	13%	6%	13%	0%
CG	42ND AVE S	S EDDY N ST AND S EDDY S ST	W	0	*0*	*0*	*0*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CH	42ND AVE S	S EDDY N ST AND S EDDY S ST	E	0	*0*	*0*	*0*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CI	S EDDY ST	42ND S AVE S AND 800' BOUNDARY	N	**13**	***13***	***13***	***13***	46%	46%	46%	46%	31%	38%	31%	23%	27%	23%	31%
CJ	S EDDY ST	42ND S AVE S AND 800' BOUNDARY	S	**18**	***18***	***18***	***18***	44%	33%	39%	33%	33%	33%	28%	33%	31%	33%	33%
CK	42ND AVE S	S EDDY S ST AND S ANGEL PL	W	**5**	***5***	***5***	***5***	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
CL	42ND AVE S	S EDDY S ST AND S ANGEL PL	E	**2**	***2***	***2***	***2***	100%	100%	100%	100%	100%	100%	100%	50%	75%	100%	100%
CM	S ANGEL PL	800' BOUNDARY AND 39TH AVE S	N	**9**	***9***	***9***	***9***	67%	22%	44%	56%	11%	33%	78%	33%	56%	33%	56%
CN	S ANGEL PL	800' BOUNDARY AND 39TH AVE S	S	**9**	***9***	***9***	***9***	56%	56%	56%	78%	44%	61%	67%	67%	67%	44%	33%
CO	S ANGEL PL	39TH AVE S AND 42ND AVE S	N	**17**	***17***	***17***	***17***	35%	35%	35%	29%	24%	26%	29%	18%	24%	6%	18%
CP	S ANGEL PL	39TH AVE S AND 42ND AVE S	S	**19**	***19***	***19***	***19***	37%	37%	37%	42%	37%	39%	37%	32%	34%	26%	32%
CQ	39TH AVE S	S ANGEL PL AND S MORGAN ST	W	**7**	***7***	***7***	***7***	29%	0%	14%	43%	0%	21%	29%	0%	14%	0%	0%
CR	39TH AVE S	S ANGEL PL AND S MORGAN ST	E	**5**	***5***	***5***	***5***	40%	40%	40%	20%	60%	40%	20%	20%	20%	20%	80%
CS	42ND AVE S	S ANGEL PL AND S MORGAN N ST	W	**3**	***3***	***3***	***3***	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
CT	42ND AVE S	S ANGEL PL AND S MORGAN N ST	E	**3**	***3***	***3***	***3***	0%	0%	0%	67%	0%	33%	0%	0%	0%	0%	0%
CU	S MORGAN ST	42ND N AVE S AND 800' BOUNDARY	N	**3**	***3***	***3***	***3***	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
CV	S MORGAN ST	42ND N AVE S AND 800' BOUNDARY	S	**3**	***3***	***3***	***3***	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
CW	42ND AVE S	S MORGAN N ST AND S MORGAN S ST	W	0	*0*	*0*	*0*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CX	42ND AVE S	S MORGAN N ST AND S MORGAN S ST	E	0	*0*	*0*	*0*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
			TOTAL	**630**	***606***	***630***	***630***	**37%**	**33%**	**35%**	**35%**	**32%**	**33%**	**41%**	**37%**	**39%**	**32%**	**54%**

ATTACHMENT C: GEOTECHNICAL REPORT

PRELIMINARY GEOTECHNICAL ENGINEERING REPORT

AKI KUROSE MIDDLE SCHOOL ADDITION AND MODERNIZATION
SEATTLE, WASHINGTON
PROJECT # PS22205930

Prepared for:

SEATTLE PUBLIC SCHOOLS

2445 Third Avenue South, Seattle, WA 98134

MARCH 22, 2023

PRELIMINARY GEOTECHNICAL ENGINEERING REPORT

AKI KUROSE MIDDLE SCHOOL ADDITION AND MODERNIZATION
SEATTLE, WASHINGTON
PROJECT # PS22205930

Prepared for:

Seattle Public Schools
2445 Third Avenue South, Seattle, WA 98134

Prepared by:

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March 22, 2023

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March 22, 2023

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1 SUMMARY

The following summary of project geotechnical considerations is presented for introductory purposes and should be used only in conjunction with the full text of this report.

Project Description: The project calls for demolition of the northwestern portion of the existing structure at Aki Kurose Middle School in Seattle, Washington (Figure 1). The portion to be demolished is denoted as Unit A (Figure 2), along with the existing portables located within the central courtyard of Unit A. The replacement building is anticipated to consist of a three-story addition to accommodate approximately 1,000 students. At the time of this study, no specific details of the construction type or anticipated foundation loads for the building are available. Modernization of the remaining portion of the middle school will include seismic upgrades, systems upgrades, and possible re-configuration of interiors. Anticipated site improvements may also include upgrade of underground utilities, a new parking lot, replacement of existing sidewalks, roadway improvements, and new stormwater treatment structures.

Exploratory Methods: WSP USA Environment & Infrastructure Inc. (WSP) explored the site subsurface conditions by advancing seven borings (B-1 through B-7) across the project site (Figure 2). Four of the borings were advanced at each corner of the proposed new additions, with the remaining three located across the site to determine general subsurface conditions in support of the modernization portion of the project. Boring depths ranged from 15 to 35 feet below ground surface (bgs). During our explorations, soil samples were collected for laboratory analysis to determine the index properties of the subsurface soils. Boring logs can be found in Appendix A, along with a description of field exploration procedures.

Soil Conditions: Our explorations indicate the site is directly underlain by weathered bedrock-siltstone varying to a silty sandstone at the anticipated foundation elevations for most of the Unit A addition, except for the southeastern portion of Unit A where completely weathered bedrock of medium stiff consistency was observed to a depth of 10 feet bgs. Soft to medium stiff cohesive soils were also identified on the eastern and southeastern portions of the campus. These soft soils were found to extend to depths on the order of 5 to 15 feet bgs.

Groundwater Conditions: Our exploration program took place on December 19–22, 2022. Groundwater seepage and wet soils were encountered in Borings B-2 and B-4 at the time of drilling. Because of the observed seepage, groundwater monitoring wells were installed in both borings. At the time of drilling, the groundwater level in Boring B-2/MW-1 was 25.8 feet (bgs), and the groundwater level in B-4/MW-2 was 14.5 feet bgs. Following installation of wells MW-1 and MW-2, groundwater was measured at 13.7 and 7 feet bgs, respectively. There was no groundwater seepage in Borings B-1, B-3, B-5, B-6, and B-7.

Stormwater Infiltration: Subsurface soils encountered by our preliminary phase exploration program did not identify any soils suitable for infiltration of stormwater. Additionally, the western portion of the site is shown on the online Seattle GIS maps and is mapped as “Green Stormwater Infiltration Evaluation Not Required.” Soil conditions on the eastern portions of the site were found to have either relatively shallow bedrock or unconsolidated soils with fines content of the site soils which generally exceeded 70 percent. Based on the preliminary investigation, it does not appear feasible to infiltrate stormwater on site.

Foundations: In WSP’s opinion, conventional spread footings will provide adequate support for the proposed Unit A building, if the subgrades are properly prepared. Preliminary allowable bearing capacities are anticipated to range from 3 to 6 kips per square foot (ksf). Due to observed soil and bedrock conditions, we expect that the existing subgrade will need to be over-excavated to a depth of 6.5 feet bgs along the southern half of Unit A in order to fully remove the soft to medium stiff silts and fat clays that are not suitable for subgrade support of the building foundations. WSP recommends a 4-inch protective cap of clean compacted granular fill be placed over prepared foundation subgrades, due to the high fines content of most of the site soils and the weathered siltstone encountered across the site, and in preparation for any wet weather work that may be planned.

2 SITE AND PROJECT DESCRIPTION

The project site is the Aki Kurose Middle School campus at 3928 South Graham Street in Seattle, Washington (Figure 1). The school property encompasses approximately 4.8 acres and is identified as King County tax parcel number 3332501090. The school property boundaries are generally defined by South Graham Street to the south, 39th Avenue South to the west, Brighton Playfield to the north, and 42nd Avenue South to the east. The southern two-thirds of the site was initially developed with single-family residences, and the current middle school was constructed in 1952. No significant additions or alterations to the original footprint have been made to the building since its original construction. The building is divided into five units denoted as Unit A through Unit E, with each unit divided by concrete walls within the building. Two portable classrooms were placed within the courtyard in the central portion of Unit A.

Preliminary development plans call for demolition of the northwestern portion of the existing structure identified as Unit A and replacing it with a new three-story school building. The remaining structures (Units B, C, D, and E) are to receive seismic upgrades and potential interior reconfiguration. Site improvements are anticipated to include upgraded underground utilities, a new parking lot located on the west side of the site, and new paved walkways and roadway improvements with the City of Seattle right-of-way. New stormwater treatment facilities are being considered but infiltration of stormwater is not being proposed.

3 EXPLORATORY METHODS

WSP explored surface and subsurface conditions at the project site between December 19 and December 22, 2022. Our exploration and testing program comprised the following elements:

- A visual surface reconnaissance of the site;
- Seven borings (designated B-1 through B-7), two which were completed with 2-inch diameter monitoring wells for evaluating and measuring groundwater levels;
- Laboratory testing of selected soil samples, evaluating moisture content, grain size, #200 washes, and Atterberg limits; and
- A review of published geologic maps and seismic information in the site vicinity.

Table 1 summarizes the approximate locations, surface elevations, and termination depths of our subsurface explorations, and Figure 2 depict their approximate locations.

Table 1: Approximate Locations, Elevations, and Depths of Explorations

Exploration	Location at Proposed Facility	Surface Elevation1 (feet)	Termination Depth (feet)
B-1	Northeast corner of Unit A	147.5	16.5
B-2/MW-1	Southeast corner of Unit A	147.5	36.5
B-3	Northeast corner of Unit E (gymnasium)	148	26
B-4/MW-2	Southeast corner of Unit D	145	35.5
B-5	Northwest corner of Unit A	148	15
B-6	Southwest corner of Unit A	147.5	26.5
B-7	Southwest corner of Unit B (Administration)	142.5	21.5

Note:
1. Elevation datum: NAVD88 and NAD83/2011 per Boundary and Topographic Survey – Aki Kurose Middle School by Bush, Roed & Hitchings, Inc, dated November 1, 2022.

WSP selected the boring locations based on the conceptual plans for the Unit A addition and potential upgrades to the remaining existing building layout, as well as the constraints of surface access and underground utility conflicts. We estimated the relative location of each exploration by measuring from existing features and scaling these measurements onto the site topographic survey provided by Bush, Roed & Hitchings, Inc. We then estimated their elevations by interpolating between contour lines and spot elevations shown on the topographic survey plan. Consequently, the data listed in Table 1 and the locations depicted on Figure 2 should be considered accurate only to the degree permitted by our data sources and implied by our measuring methods.

4 SITE CONDITIONS

This section presents our observations, measurements, and interpretations regarding existing surface, soil, and groundwater conditions, critical areas/geologic hazards, and seismic conditions at the project site.

4.1 SURFACE CONDITIONS

Surface description: The existing middle school building occupies most of the project site. Other improvements include an asphalt-surfaced lane along the northern edge of the middle school that serves as access to a parking lot located in the north-central portion of the parcel. A small parking area is located on the northwest corner of the Unit A portion of the middle school building. The site is landscaped with grass lawn and various deciduous and evergreen trees along the south side of the school building.

Topography: The ground surface in the vicinity of the project site slopes gently down to the south and east, with the building pad having been graded to approximately elevation 148 feet. A 4- to 6-foot-tall concrete retaining wall is present along the west and northwest property lines to accommodate the grade change between 39th Avenue South and the lower building pad. Along 42nd Avenue South, the building pad is at or slightly above the adjacent road elevations, gently sloping down to the sidewalk and roadway. The south side of the school building topography slopes gently to moderately down 5 to 8 feet to the sidewalk and adjacent South Graham Street.

4.2 SOIL CONDITIONS

According to the USGS geologic map *The Geologic Map of Seattle – A Progress Report* (Troost, 2005), the site is mapped primarily as underlain by the Blakely Formation (Tb), described as medium grained sandstone varying to siltstone that is fresh to highly weathered. A narrow deposit of recessional outwash (Qvr) is shown to mantle the eastern portion of the site.

WSP observed and logged a total of seven borings (B-1 through B-7) to depths of 15 to 36.5 feet bgs on the project site. Our borings encountered variable conditions across the site, but soil/rock conditions disclosed by our borings were in general agreement with the published mapping. The western portion of the site was directly underlain by hard, gray, sandy silt interpreted as highly weathered siltstone (becoming moderately weathered with depth), interpreted as belonging to the Blakely Formation. Where the siltstone was found to be highly weathered, it was interpreted as a residual soil originating from the bedrock with the structure of the rock often intact. Standard, hollow-stem auger drilling methods were successfully used to advance into the weathered bedrock, and standard penetration tests (SPTs) using a split-spoon sampler were able to retrieve samples of the weathered siltstone. Variations in the amount of weathering and composition of the siltstone resulted in variability in the density/consistency of the bedrock. Borings B-1, B-5, and B-6, advanced on the northern and western portions of the site, encountered the bedrock within the upper 5 feet bgs, with corresponding relative density/consistency classified as very dense/hard. The remaining borings (B-2, B-3, B-4, and B-7) drilled along the central, southern and eastern portions of the site disclosed generally poorer conditions, with the highly to completely weathered soils extending to depths ranging from 5 to 10 feet bgs and found to be generally of a softer consistency. Recessional outwash extended to 5 feet bgs in B-3 and 30 feet bgs in B-4. Figure 2 shows the approximate location of each exploration boring, while Figure 3 presents geologic cross sections A–A’, B–B’, and C–C’.

Geotechnical laboratory test results for selected soil samples are summarized in Table 2, with the laboratory testing data found in Appendix B. All the soils tested had high fines (silt and clay) content and moisture content. WSP's interpretation is that the site soils in their current condition are at or above optimum moisture contents for compaction and are highly moisture sensitive.

Table 2: Laboratory Test Results

Sample ID	Sample Depth (feet)	Soil Type	Moisture Content (percent)	Gravel Content (percent)	Sand Content (percent)	Silt/Clay Content (percent)
B-1/S-2	2.5	Sandy Silt – Residual Soil (ML)	22	NT	NT	80
B-2/S-1	2.5	Elastic Silt – Residual Soil (MH)	29	NT	NT	NT
B-2/S-3	7.5	Elastic Silt – Residual Soil (MH)	39	NT	NT	NT
B-2/S-4	10	Elastic Silt – Residual Soil (MH)	34	NT	NT	NT
B-3/S-1	2.5	Sandy Silt – Recessional deposit (ML)	37	NT	NT	77
B-3/S-2	5	Silty Clay – Residual Soil (ML)	21	NT	NT	NT
B-4/S-1	2.5	Sandy Silt – Recessional deposit (ML)	18	NT	NT	55
B-4/S-5	15	Silty Sand – Recessional deposit (SM)	54	NT	NT	NT
B-4/S-6	20	Silty Sand – Recessional deposit (SM)	23	5	70	25
B-5/S-1	2.5	Sandy Silt – Residual Soil (ML)	22	NT	NT	76
B-5/S-3	7.5	Sandy Silt – Residual Soil (ML)	18	NT	NT	NT
B-6/S-1	2.5	Fat Clay – Residual Soil (CH)	33	NT	NT	NT
B-6/S-2	5	Fat Clay – Residual Soil (CH)	27	NT	NT	82
B-6/S-4	10	Clay with sand – Residual Soil (CL-CH)	23	NT	NT	73
B-7/S-1	2.5	Sandy Silt – Residual Soil (ML)	34	NT	NT	86
B-7/S-2	5	Sandy Silt – Residual Soil (ML)	26	NT	NT	NT

Abbreviations:
NT= not tested

WSP does not recommend any of the site soils be used as structural fill, as they would be very difficult to use due to their moisture sensitivity. Additionally, prepared subgrade soils will need to be protected from disturbance, especially during wet weather.

4.3 GROUNDWATER CONDITIONS

At the time of our exploration (December 2022), groundwater was encountered in boring B-2, at an approximate depth of 25.8 feet bgs. Due to the observed wet soil and borehole seepage, a monitoring well was installed to obtain more accurate groundwater levels. Boring B-4 also encountered groundwater, at a depth of 14.5 feet bgs. MW-2 was installed in Boring B-4. Groundwater was not encountered in any of the other borings. Groundwater measurements were then taken one to two days after the wells were installed and again recently. Groundwater levels are summarized in Table 3 below. Groundwater levels tend to fluctuate throughout the year in response to changing precipitation patterns, construction activities, and site utilization. Because our explorations were performed during the wet season (mid-winter), the groundwater conditions may represent the yearly higher levels.

Table 3: Groundwater Elevations

Exploration	Surface Elevation (feet)	Groundwater Elevation ATD (feet)	Groundwater Elevation (feet) 12/22/2022	Groundwater Elevation (feet) 03/10/2023
B-2/MW-1	147.5	121.7	133.8	141.1
B-4/MW-2	145	130.5	138	137.5

Abbreviations:
ATD = At Time of Drilling

4.4 CRITICAL AREAS/GEOLOGIC HAZARDS

WSP reviewed Title 25, Chapter 25.09 (Environmentally Critical Areas) of the *Seattle Municipal Code* (City of Seattle, 2023). WSP also accessed the City of Seattle Department of Construction and Inspections GIS portal for mapped environmentally critical areas. Based on the City of Seattle GIS portal, there are no steep slopes present on site or immediately adjacent to the site that meet the definition for (1) landslide-prone areas per SMC 25.09.012.A3, or (2) the steep slope erosion hazard per SMC 25.09.012.A4.

No other mapped hazards were identified on the City of Seattle GIS portal.

4.5 SEISMIC CONDITIONS

WSP assumes that the proposed new middle school building (Unit A) will be designed in accordance with the *2021 International Building Code* (IBC, 2021) and the *Seattle Building Code* (City of Seattle, 2018). Based on our review, the soils underlying the middle school property have been determined to be Site Class D.

Seismic parameters for the site latitude and longitude were determined using the ASCE 7 Hazard Tool (ASCE, 2023). The assumed inputs and the ASCE 7 Hazards Report are provided in Appendix C.

Liquefaction is a sudden increase in porewater pressure and sudden loss of soil shear strength caused by shear strains, as could result from an earthquake. Research has shown that saturated, loose, saturated sands are most susceptible to liquefaction. Based on our review of groundwater conditions and soil type, the risk of liquefaction at this site is low. However, we still performed a liquefaction analysis at boring locations where the onset of liquefaction is possible during strong ground motions from the design earthquake.

The subsurface explorations revealed potentially liquefiable recessional outwash soils in the southeast corner of the site at the location of Boring B-4, approximately 7.5 to 10 feet bgs (Elevation 137.5 to 135 feet). A groundwater table at 7 feet bgs was assumed for the analysis, which represents the groundwater level measured in MW-2. Using this groundwater level, SPT data on the reference boring log, and assumed fines contents based on soil descriptions and laboratory testing, a liquefaction analysis was conducted using the seismic input parameters in Table 4.

Table 4: Liquefaction Assessment Seismic Input Parameters – Site Class D

Parameter	Value
Site Class	D
Site-Adjusted Peak Ground Acceleration PGA_M	0.708g
Earthquake Magnitude (Mw)	7.13

Abbreviations:
Mw = moment magnitude
PGA_M = MCE_G peak ground acceleration adjusted for site class effects

Based on the analysis, the very soft to soft sandy silts below the groundwater table are susceptible to liquefaction (factor of safety less than 1.0). The potentially liquefiable zone was identified in Boring B-4 from 7.5 to 10.0 feet bgs. A liquefaction-induced settlement of up to 1 inch is predicted for the design-level earthquake.

Please note that based on the information we have, the only location our evaluation predicts liquefaction may occur is from 7.5 to 10 feet bgs at the location of Boring B-4 (the southeast corner of Unit D). Liquefaction is not expected to occur in the vicinity of Unit A. Therefore, the recommendations in this report assume that liquefaction will not affect the demolition and construction of the new Unit A building but will need to be considered in the upgrades to the Unit D building.

5 PRELIMINARY CONCLUSIONS AND RECOMMENDATIONS

This section presents our preliminary geotechnical engineering conclusions and recommendations concerning site preparation, foundations, floors, stormwater infiltration, and structural fill. ASTM International (ASTM) specification codes cited herein refer to the most current applicable ASTM standards. *Seattle Standard Specifications* (City of Seattle, 2020) are referenced for mineral aggregates and controlled density fill. Washington State Department of Transportation (WSDOT) specification codes cited herein refer to the current *Standard Specifications for Road, Bridge, and Municipal Construction* (WSDOT, 2023).

5.1 SITE PREPARATION

Preparation of the project site for construction of any potential buildings and associated infrastructure would include temporary drainage, erosion and sediment control, demolition of existing structures, paved surfaces, sidewalks, removal or abandonment of utilities, clearing, stripping, grading, and subgrade compaction.

<u>Temporary Drainage</u>: We recommend intercepting and diverting any potential sources of surface or near-surface water within the construction zones before stripping and demolition. Because the selection of an appropriate drainage system will depend on the water quantity, season, weather conditions, construction sequence, and methods selected by the contractor, final decisions regarding drainage systems are best made in the field at the time of construction. Nonetheless, we anticipate that curbs, berms, silt fences, or ditches placed around the work areas will adequately intercept surface water runoff.

<u>Erosion Control Measures</u>: Temporary erosion and sediment controls should be implemented prior to disturbing the ground surface with earthwork. The project civil engineer should prepare plans and specifications complying with City of Seattle standards to prevent erosion and runoff during construction. The contractor would need to understand that design plans and specifications represent the minimum requirements and that additional measures and modifications specific to the construction activities and the weather may be needed throughout the construction period.

<u>Demolition</u>: One of the first steps in site preparation would consist of demolishing the existing Unit A structure. As-built plans indicate Unit A is founded on conventional footings and slab-on-grade floors. Demolition of any paved surfaces, concrete sidewalks, and existing above-grade structures that may be in the way of proposed site improvements will also need to be completed. Any associated underground structural elements or utilities, such as old footings, stem walls, catch basins, manholes, and drainpipes should be exhumed as part of this demolition operation. Pipes less than 2 feet below any future structures should be removed, and pipes deeper than 2 feet below proposed structures could be filled with concrete or lean mix and left in-place. Excavations created during demolition should be backfilled and compacted with structural fill or controlled density fill, depending on the design allowable bearing capacity, in accordance with the recommendations contained herein. No collapsed concrete or loose fill should remain in the excavation.

<u>Clearing and Stripping</u>: After surface and near-surface water sources have been controlled, the construction areas should be cleared and stripped of all trees, root balls, bushes, sod, topsoil, debris, asphalt, and concrete. Surface stripping of topsoil, debris and vegetation will primarily be outside the limits of existing pavement and gravel

shoulder within the former pea-patch areas. WSP estimates the stripping depth of 1 foot on average, but significant variations could exist. Furthermore, it should be noted if stripping operations proceed during wet weather, a generally greater stripping depth might be necessary to remove disturbed, wet soils; therefore, stripping would best be performed during a period of dry weather.

Subgrade Compaction: Exposed subgrades for pavements and other structures should be compacted with a large vibratory roller to a dense, unyielding state. Any localized zones of loose granular soils observed within a subgrade should be compacted to a firm/unyielding condition when subgrade soils are near their optimum moisture content. In contrast, any debris, organic, soft, or wet soils should be over-excavated and replaced with a suitable structural fill.

Excavation Conditions: The upper site soils and weathered siltstone is anticipated to be excavated using conventional earthmoving equipment. However, for excavations extending deeper or where siltstone that is less weathered is encountered, additional effort should be planned for—these excavations are expected to require use of larger-than-usual equipment, use of hydraulic impact hammers to break the bedrock in advance of excavation, or similar methods. Blasting is not recommended at this site due to the risk of vibration damage to existing facilities.

Wet-Weather Considerations: As discussed above, the on-site soils would be extremely difficult to use as structural fill in good weather and essentially impossible during wet weather due to the high fines content of the residual and recessional outwash soils. Consequently, the project specifications should include provisions for importing clean, granular fill for all site filling. For general structural fill purposes, we recommend using a well-graded sand or gravel, such as Selected Backfill (Mineral Aggregate Type 17) per City of Seattle Standard 9-03.10 or Shoulder Ballast (Mineral Aggregate Type 13) per City of Seattle Standard 9-03.7(2) (City of Seattle, 2020).

5.2 PERMANENT AND TEMPORARY SLOPES

A temporary cut slope may be required to accommodate the construction of the proposed addition and site improvements. This section provides the engineering information and recommendations for both temporary and permanent cuts.

Permanent Slopes: All permanent cut slopes and fill slopes should be adequately inclined to minimize long-term raveling, sloughing, and erosion. WSP generally recommends that no slopes be steeper than 2H:1V (horizontal: vertical). For all soil types, the use of flatter slopes (such as 3H:1V) would further reduce long-term erosion potential and facilitate vegetation growth.

Slope Protection: WSP recommends that a permanent berm, swale, or curb be constructed along the top edge of all permanent slopes to intercept surface flow. Also, a hardy vegetative groundcover should be established as soon as feasible to further protect the slopes from erosion due to runoff water. In no case should any temporary or permanent runoff be directed toward the steep slope hazard area west of the site.

Temporary cut slopes: Temporary open cuts can be made where adequate lateral space is available, and excavation sidewalls should be adequately sloped back to minimize sloughing and erosion. Cut slopes with workers below are required to adhere to the Occupational Safety and Health Administration/Washington Industrial Safety and Health Act (OSHA/WISHA) requirements. Table 5 presents WSP's interpretation of soil types and corresponding OSHA/WISHA cut slope inclinations when workers are below. However, appropriate inclinations will ultimately depend on the actual soil conditions exposed during earthwork.

Table 5: Soil Types and Maximum Allowable Slope Inclinations for Temporary Excavations

Soil Type	OSHA/WISHA Soil Type	Maximum Inclination
Soft to medium stiff silt (residual soils)	C	1.5H:1V
Very stiff to hard silt and sandy silt, dense sandy silt (residual soils)	B	1H:1V
Moderately weathered, weak to very weak siltstone (bedrock)	A	0.75H:1V

Abbreviations
H = horizontal
V = vertical
OSHA = Occupational Safety and Health Administration
WISHA = Washington Industrial Safety and Health Act

5.3 FOUNDATION RECOMMENDATIONS

In WSP's opinion, conventional spread footings will provide adequate support for the proposed construction of the new Unit A building, if the subgrades are properly prepared. We offer the following comments and recommendations for the purposes of footing design and construction.

<u>Footing Depths and Widths</u>: For frost and erosion protection, the bottoms of all exterior footings should bear at least 18 inches bgs, whereas the bottoms of interior footings need bear only 12 inches below the surrounding slab surface level. To minimize post-construction settlements, continuous (wall) and isolated (column) footings should be at least 18 inches and 24 inches wide, respectively.

<u>Bearing Subgrades</u>: The following types of subgrade soils are anticipated to be encountered during construction of the new Unit A building, and were encountered during the drilling of the borings at the corners of the existing Unit A (Borings B-1, B-2, B-5, and B-6):

- *<u>Topsoil</u>:* The soft topsoil encountered at the southeast corner of Unit A is **not suitable to support foundation bearing loads**. This unit was likely fully removed during the original construction of Unit A. However, if any topsoil is encountered during subgrade preparation it should be fully removed.
- *<u>Soft to Medium Stiff Residual Soils</u>:* The soft to medium stiff native residual soils have a high fines content and would be difficult to compact to a dense and unyielding condition. The soft to medium stiff residual soils were encountered in Boring B-2. **The soft to medium stiff native residual soils are not suitable to support foundation bearing loads in their current condition**. These soils should be over-excavated and replaced with structural fill during subgrade preparation.
- *<u>Stiff to Hard Residual Soils</u>:* The very stiff to hard native residual soils identified at the site would support moderate to high bearing pressures. However, some of the very stiff residual soils have been identified as fat clays, which are considered expansive soils. Fat clays can increase in volume as soil moisture increases and decrease in volume when the soil becomes very dry, and thus the soil can undergo considerable volumetric changes during seasonal moisture fluctuations. **The stiff to hard residual soils are suitable to support foundation bearing loads except where the soil consists of expansive fat clays, in the upper 6.5 feet**. Please see the over-excavations section below for specific recommendations of removal of this soil.
- *<u>Weathered and Unweathered Siltstone/Sandstone</u>:* The native siltstone and sandstone identified in the vicinity of Unit A have high blow counts and would support high bearing pressures along the north side of the building. The native siltstone and sandstone have a lower strength along the south side of the building, but would still support moderate to high bearing pressures.
- *<u>Structural Fill</u>:* Newly placed structural fill that has been properly compacted would provide a suitable subgrade.
- *<u>Controlled Density Fill</u>:* Where higher bearing capacity foundations are required, the excavation should be backfilled full depth with Controlled Density Fill for Structure Backfill per City of Seattle Standard 2-10.2(3)A3 (City of Seattle, 2020).

<u>Over-Excavation</u>: Loose, soft to medium stiff, organic, expansive, or unsuitable soils encountered below structures should be over-excavated and replaced with structural fill that is properly placed and compacted. Because foundation stresses are transferred outward as well as downward into the bearing soils, over-excavation should extend horizontally outward from the edge of each footing a distance equal to the excavation depth, effectively creating a 1H:1V prism outward from all sides of the footing. **We expect that the subgrade will need to be over-excavated to a depth of 6.5 feet bgs along the southern half of Unit A**, to fully remove the soft to medium stiff silts and fat clays which are not suitable for subgrade support of the building foundations. This is a conservative estimate that may be reduced during construction depending on the actual depths of these soils encountered during excavation. Full-time subgrade observation should be performed to identify the depth at which soils are suitable for subgrade support of the foundation.

<u>Protective Footing Subgrade Cap</u>: Due to the high fines content of most of the site soils and weathered siltstone encountered across the site and in preparation for any wet weather work that may be planned, we recommend a 4-inch protective cap of clean compacted granular fill, such as 1.5-inch crushed gravel (Mineral Aggregate

Type 21) per City of Seattle Standard 9-03.9 (City of Seattle, 2020). This protective cap would protect footing subgrades from softening due to water accumulation or degradation from light construction activities during footing forming and rebar installation.

Bearing Capacities: Preliminary allowable bearing capacities are anticipated to range from 3 ksf to 6 ksf. Once the locations, sizes, and elevations of foundations have been determined, WSP can provide more specific bearing pressures for specific footing locations. Please note that this range of preliminary allowable bearing capacities is based on the assumption that the bearing soils consist of the siltstone/sandstone, or a structural fill that has been properly placed and compacted.

5.4 SLAB-ON-GRADE FLOORS

In WSP's opinion, soil-supported slab-on-grade floors can be used in the proposed buildings if the subgrades are properly prepared. We offer the following comments and recommendations concerning this floor type.

Floor Subbase: All soil-supported slab-on-grade floors should bear on at least very stiff residual soils or at least 8 inches of structural fill. Localized over-excavation and replacement of loose, soft to stiff, or organic rich soils may be needed, depending on the location of the floor slabs. The condition of subgrade soils should be evaluated by a WSP representative in case over-excavation of unsuitable soils is needed.

Capillary Break: To reduce the upward wicking of water from the soil subgrade, it is important that a capillary break be placed over the subgrade soils. The capillary break should consist of a minimum 4-inch-thick layer of washed, crushed gravel, such as 1.5-inch crushed gravel (Mineral Aggregate Type 21) per City of Seattle Standard Specifications 9-03.9 (City of Seattle, 2020). The angular shape of the specified gravel would provide some surface support strength for temporary construction activities. It would also tend to distribute surface loads and reduce the potential for differential settlement of the subgrade fill soils. An alternate capillary break material can be considered consistent with the architect's recommendations for a vapor retarder system.

Vapor Barrier: We recommend a vapor barrier at least 10 mils thick be placed directly above the capillary break to impede moisture from migrating upward through the slab. During subsequent casting of the concrete slab, the contractor should exercise care to avoid puncturing this vapor barrier. The identification of alternatives to prevent vapor transmission is outside of our expertise. A qualified architect or building envelope consultant can make recommendations for reducing vapor transmission through the slab, based on the building use and flooring specifications.

5.5 UNDERGROUND UTILITIES

We anticipate the project will include installation of new underground utilities across the site at various depths. The following conclusions and recommendations are intended to be consistent with the City of Seattle standards.

Temporary Excavations: Configuration and maintenance of safe working conditions, including temporary excavation stability, is the responsibility of the contractor. All applicable local, state, and federal safety codes should be followed. Temporary excavations with workers below should either be shored or sloped in accordance with Safety Standards for Construction Work, Part N (Washington Administrative Code 296-155-650 through 66411). We interpret the on-site soils could be Washington Administrative Code Soil Type A, B, or C. Please refer to Table 5 to review the expected soil types and applicable maximum allowable slope inclinations for temporary excavations. The soil type should be confirmed after the initial excavations have begun. In all cases, the utility installation should be in accordance with City guidelines.

Excavation Conditions: The near-surface site soils and weathered siltstone can be excavated using conventional earthmoving equipment. Additional effort is expected to be required to excavate into the unweathered Blakeley formation at greater depths. This may require use of hydraulic points to break the bedrock in advance of excavation, or similar methods. Blasting is not recommended at this site due to the risk of vibration damage to existing facilities.

Dewatering: At the time of our explorations, groundwater was encountered at Elevation 134 feet in Boring B-2 and at Elevation 138 feet in Boring B-4, approximately 14 and 7 feet bgs, respectively. We expect that if groundwater or perched groundwater is encountered within the utility trenches or excavations, a sump and pump system should be sufficient to temporarily dewater the trench.

Bedding Soils: Utility pipe bedding should extend at least 6 inches outward from the pipe in all directions for proper pipe support and protection during backfilling activities. We recommend using crushed surfacing top-course per WSDOT Standard Specification 9-03.9(3) or "Gravel Backfill for Pipe Bedding" per WSDOT Standard Specification 9-03.12(3) (WSDOT, 2023).

Trench Backfill: Utility trench backfill should consist of well-graded granular soils, such as "Gravel Borrow," per WSDOT Standard Specification 9-03.14(1) (WSDOT, 2023). We do not recommend the use of on-site soils for utility trench backfill.

Backfill Compaction: Utility trench backfill placed under pavement should be compacted to at least 95 percent of the maximum dry density, based on the Modified Proctor test (ASTM D-1557).

5.6 STRUCTURAL FILL

The term "structural fill" refers to any materials used under foundations and floors, behind retaining walls, under pavements and sidewalks, or to backfill trenches. Our comments, conclusions, and recommendations concerning structural fill are presented in the following paragraphs.

Materials: Typical structural fill materials include gravel, crushed rock, quarry spalls, controlled-density fill, lean-mix concrete, and well-graded mixtures of sand and gravel (commonly called "gravel borrow" or "pit-run"). Recycled asphalt, concrete, and glass, which are derived from pulverizing the parent materials, are also potentially useful as structural fill in certain applications. Soils used for structural fill should not contain any organic matter or debris, or any individual particles greater than 6 inches in diameter.

Fill Placement: Structural fill should be placed in horizontal lifts not exceeding 8 inches in loose thickness, and each lift should be thoroughly compacted with a mechanical vibratory compactor.

Compaction Criteria: Using the Modified Proctor test (ASTM D-1557) as the standard, we recommend structural fill be used for the applications and compacted to the minimum densities shown in Table 6.

Subgrade Verification and Compaction Testing: Regardless of material or location, all structural fill should be placed over firm, unyielding subgrades prepared in accordance with Section 5.1 of this report. The condition of all subgrades should be verified by a representative geotechnical engineer before filling or construction begins. In addition, fill soil compaction should be verified by means of in-place density tests performed during fill placement so the adequacy of the soil compaction efforts may be evaluated as earthwork progresses.

Soil Moisture Considerations: The suitability of soils used for structural fill depends primarily on their grain-size distribution and moisture content when they are placed. As the "fines" content (the soil fraction passing the U.S. No. 200 Sieve) increases, soils become more sensitive to small changes in moisture content. Soils containing more than about 5 percent fines (by weight) cannot be consistently compacted to a firm, unyielding condition when the moisture content is more than 2 percent above or below optimum. For fill placement during wet-weather site work, we recommend using "clean" fill, which refers to soils that have a fines content of 5 percent or less (by weight) based on the soil fraction passing the U.S. No. 4 Sieve.

Table 6: Structural Fill Application and Compaction

Fill Application	Minimum Compaction
Utility trench backfill (upper 2 feet)	95%
Utility trench backfill (below 2 feet)	90%
Slab-on-grade floors	95%
Below foundations	95%
Concrete sidewalk subgrade	90%
Asphalt pavement and curb subbase	95%
Asphalt pavement subgrade (upper 2 feet)	95%
Asphalt pavement subgrade (below 2 feet)	90%
Retaining wall foundations	95%
Retaining wall backfill	90%

6 RECOMMENDED ADDITIONAL SERVICES

Because there are still some ambiguities on how the site soils will affect the design and construction of the project, an additional geotechnical subsurface exploration program should be conducted. The number and location of explorations should be determined after the design team has determined the locations of the new structures. In the meantime, WSP tentatively recommends the following geotechnical subsurface explorations to better define the subsurface conditions:

- Two additional borings along the eastern and southern sides of Unit A, to better predict the extents of required over excavation for subgrade preparation; and
- Two additional borings at the north and south edges of Unit C and one additional boring near the northeast corner of Unit D, to ensure that larger deposits of potentially liquefiable soils or expansive soils do not exist.

Additionally, because the new building's future performance and utilities will depend on proper site preparation, fill placement, and construction procedures, monitoring and testing by experienced geotechnical personnel should be considered an integral part of the construction process. Consequently, we recommend the following geotechnical construction monitoring be performed:

- Review the final plans and specifications to verify that the geotechnical engineering recommendations were interpreted and incorporated correctly;
- Attend a pre-construction conference with the design team and contractor to discuss important geotechnical construction issues;
- Observe all exposed subgrades to confirm that suitable soil conditions have been reached and determine if over-excavation is needed and appropriate subgrade compaction; and
- Monitor and test the placement of all structural fill to verify conformance with the construction specifications.

A more detailed scope of work for construction monitoring services is best prepared after the project plans and specifications have been approved for construction, and , if possible, after a construction schedule is available.

7 LIMITATIONS

1. The work performed in the preparation of this report and the conclusions presented herein are subject to the following:

    a. The Contract between WSP and the Client, including any subsequent written amendment or Change Order duly signed by the parties (hereinafter together referred to as the "Contract");

    b. Any and all time, budgetary, access and/or site disturbance, risk management preferences, constraints or restrictions as described in the Contract, in this report, or in any subsequent communication sent by WSP to the Client in connection to the Contract; and

    c. The limitations stated herein.

2. ***Standard of care:*** WSP has prepared this report in a manner consistent with the level of skill and care ordinarily exercised by reputable members of WSP's profession, practicing in the same or similar locality at the time of performance, and subject to the time limits and physical constraints applicable to the scope of work, and terms and conditions for this assignment. No other warranty, guaranty, or representation, expressed or implied, is made or intended in this report or any other communication (oral or written) related to this project. The same are specifically disclaimed, including the implied warranties of merchantability and fitness for a particular purpose.

3. ***Limited locations:*** The information contained in this report is restricted to the site and structures evaluated by WSP and to the topics discussed explicitly in it and does not apply to any other aspects, areas, or locations.

4. ***Information utilized:*** The information, conclusions, and estimates contained in this report are based exclusively on: i) information available at the time of preparation, ii) the accuracy and completeness of data supplied by the Client or by third parties as instructed by the Client, and iii) the assumptions, conditions and qualifications/limitations outlined in this report.

5. ***Accuracy of information:*** No attempt has been made to verify the accuracy of any information provided by the Client or third parties, except as expressly stated in this report (hereinafter "Supplied Data"). WSP cannot be held responsible for any loss or damage, of either contractual or extra-contractual nature, resulting from conclusions that are based on reliance on the Supplied Data.

6. ***Report interpretation:*** This report must be read and interpreted in its entirety, as some sections could be inaccurately interpreted when taken individually or out of context. This report's contents are based on the conditions known and information provided as of the date of preparation. The text of the final version of this report supersedes any other previous versions produced by WSP.

7. ***No legal representations:*** WSP makes no representations whatsoever concerning the legal significance of its findings or as to other legal matters touched on in this report, including but not limited to ownership of any property or the application of any law to the facts set forth herein. With respect to regulatory compliance issues, regulatory statutes are subject to interpretation and change. Such interpretations and regulatory changes should be reviewed with legal counsel.

8. ***Decrease in property value:*** WSP shall not be responsible for any decrease, real or perceived, of the property or site's value or failure to complete a transaction as a consequence of the information contained in this report.

9. ***No third-party reliance:*** This report is for the sole use of the party to whom it is addressed unless expressly stated otherwise in the report or Contract. Any use or reproduction that any third party makes of the report, in whole or in part, or any reliance thereon or decisions made based on any information or conclusions in the report is the sole responsibility of such third party. WSP does not represent or warrant the accuracy, completeness, merchantability, fitness for purpose, or usefulness of this document, or any information contained in this document, for use or consideration by any third party. WSP accepts no responsibility whatsoever for damages or loss of any nature or kind suffered by any such third party as a result of actions taken or not taken, or decisions made in reliance on this report or

anything set out therein, including without limitation, any indirect, special, incidental, punitive, or consequential loss, liability, or damage of any kind.

10. ***Assumptions:*** Where design recommendations are given in this report, they apply only if the Client's project is constructed substantially in accordance with the details stated in this report. It is the Client's sole responsibility to provide to WSP changes made in the project, including but not limited to details in the design, conditions, engineering, or construction that could in any manner whatsoever impact the validity of the recommendations made in the report. WSP shall be entitled to additional compensation from Client to review and assess the effect of such changes to the project.

11. ***Time dependence:*** If the project contemplated by the Client is not undertaken within a period of 18 months following the submission of this report, or within the time frame understood by WSP to be contemplated by the Client at the commencement of WSP's assignment, and/or if any changes are made—for example, to the elevation, design or nature of any development on the site, its size and configuration, the location of any development on the site and its orientation, the use of the site, performance criteria, and the location of any physical infrastructure—the conclusions and recommendations presented herein should not be considered valid unless the impact of the said changes is evaluated by WSP, and the conclusions of the report are amended or are validated in writing accordingly.

    Advancements in the practice of geotechnical engineering, engineering geology, and hydrogeology and changes in applicable regulations, standards, codes, or criteria could impact the contents of the report, in which case, a supplementary report may be required. The requirements for such a review remain the sole responsibility of the Client or their agents.

    WSP will not be liable to update or revise the report to consider any events or emergent circumstances or facts occurring or become apparent after the report's date.

12. ***Limitations of visual inspections:*** Where conclusions and recommendations are given based on a visual inspection conducted by WSP, they relate only to the natural or man-made structures, slopes, etc. inspected at the time the site visit was performed. These conclusions cannot and are not extended to include those portions of the site or structures that were not reasonably available, in WSP's opinion, for direct observation.

13. ***Limitations of site investigations:*** Site exploration identifies specific subsurface conditions only at those points from which samples have been taken and only at the time of the site investigation. Site investigation programs are a professional estimate of the scope of investigation required to provide a general profile of subsurface conditions.

    The data derived from the site investigation program and subsequent laboratory testing are interpreted by trained personnel and extrapolated across the site to form an inferred geological representation, and an engineering opinion is rendered about overall subsurface conditions and their likely behavior with regard to the proposed development. Despite this investigation, conditions between and beyond the borehole/test hole locations may differ from those encountered at the borehole/test hole locations and the actual conditions at the site might differ from those inferred to exist, since no subsurface exploration program, no matter how comprehensive, can reveal all subsurface details and anomalies.

    Geotechnical engineers develop final sub-surface/bore/profile logs based on their interpretation of field logs and laboratory evaluation of field samples. Customarily, only the final bore/profile logs are included in geotechnical engineering reports.

    Bedrock, soil properties, and groundwater conditions can be significantly altered by environmental remediation and/or construction activities, such as the use of heavy equipment or machinery, excavation, blasting, pile-driving, or draining or other activities conducted either directly on site or on adjacent terrain. These properties can also be indirectly affected by exposure to unfavorable natural events or weather conditions, including freezing, drought, precipitation, and snowmelt.

    During construction, excavation is frequently undertaken that exposes the actual subsurface and groundwater conditions between and beyond the test locations, which may differ from those encountered at the test locations. It is recommended that WSP be retained during construction to confirm that the subsurface conditions throughout the site do not deviate materially from those encountered at the test locations, that construction work has no negative impact on the geotechnical aspects of the design, to adjust recommendations in accordance with conditions as additional site information is gained, and to deal quickly with geotechnical considerations if they arise.

Interpretations and recommendations presented herein may not be valid if an adequate level of review or inspection by WSP is not provided during construction.

14. ***Factors that may affect construction methods, costs, and scheduling:*** The performance of rock and soil materials during construction is greatly influenced by the means and methods of construction. Where comments are made relating to possible methods of construction, construction costs, construction techniques, sequencing, equipment, or scheduling, they are intended only for the guidance of the project design professionals and those responsible for construction monitoring. The number of test holes may not be sufficient to determine the local underground conditions between test locations that may affect construction costs, construction techniques, sequencing, equipment, scheduling, operational planning, etc.

    Any contractors bidding on or undertaking the works should draw their own conclusions as to how the subsurface and groundwater conditions may affect their work, based on their own investigations and interpretations of the factual soil data, groundwater observations, and other factual information.

15. ***Groundwater and dewatering:*** WSP will accept no responsibility for the effects of drainage and/or dewatering measures if WSP has not been specifically consulted and involved in the design and monitoring of the drainage and/or dewatering system.

16. ***Environmental and hazardous materials aspects:*** Unless otherwise stated, the information contained in this report in no way reflects on the environmental aspects of this project since this aspect is beyond the scope of work and the Contract. Unless expressly included in the scope of work, this report specifically excludes the identification or interpretation of environmental conditions such as contamination, hazardous materials, wildlife conditions, rare plants, or archeology conditions that may affect use or design at the site. This report specifically excludes the investigation, detection, prevention, or assessment of conditions that can contribute to moisture, mold, other microbial contaminant growth, and/or other moisture-related deterioration, such as corrosion and decay or rot in buildings or their surroundings. Any statements in this report or on the boring logs regarding odors, colors, and unusual or suspicious items or conditions are strictly for informational purposes.

17. ***Sample disposal:*** WSP will dispose of all uncontaminated soil and rock samples after 30 days following the final geotechnical report's release. Should the Client request that the samples be retained for a longer time, the Client will be billed for such storage at an agreed-upon rate. Contaminated samples of soil, rock, or groundwater are the property of the Client, and the Client will be responsible for the proper disposal of these samples unless previously arranged for with WSP or a third party.

18. ***Effect of iron minerals:*** This report does not address issues related to the discovery or presence of iron minerals, such as pyrite, or the effects of iron minerals, if any, in the soil or to be used in concrete. Should specific information be required, additional testing may be requested by the Client for which WSP shall be entitled to additional compensation.

8 REFERENCES

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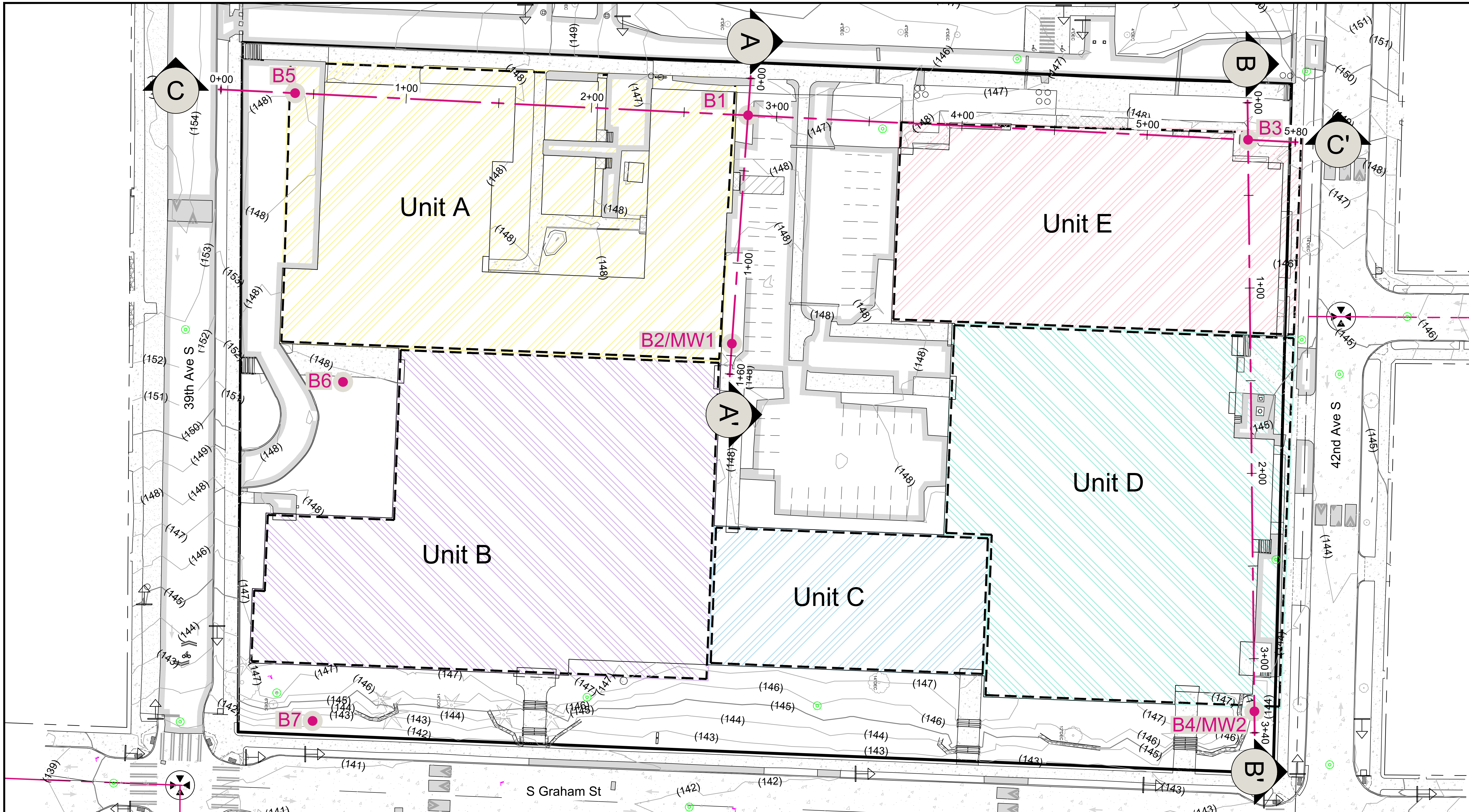
FIGURES

CLIENT	PROJECT	DATE
SEATTLE PUBLIC SCHOOLS	AKI KUROSE MIDDLE SCHOOL GEOTECHNICAL DESIGN	FEBRUARY 2023
		SCALE: AS SHOWN
WSP USA Environment & Infrastructure Inc. 4020 Lake Washington Blvd NE, Suite 200 Kirkland, Washington 98033	TITLE: SITE VICINITY	PROJECT NO.: PS22205930
		FIGURE: 1

DRAWN BY: APS CHECKED BY: BL

C:\Users\adam.stenberg\OneDrive - WSP O365\WSP\PS22205930\AKI MiddleSchool_020323.dwg - Vicinity - Feb. 03, 2023 3:25pm - adam.stenberg



LEGEND

B7 BORING LOCATION AND IDENTIFICATION

C C' CROSS SECTION LOCATION

0 25 50

APPROXIMATE SCALE IN FEET

CLIENT

SEATTLE PUBLIC SCHOOLS

WSP USA
Environment & Infrastructure Inc.
4020 Lake Washington Blvd NE, Suite 200
Kirkland, Washington 98033

wsp

PROJECT

AKI KUROSE MIDDLE SCHOOL
GEOTECHNICAL DESIGN

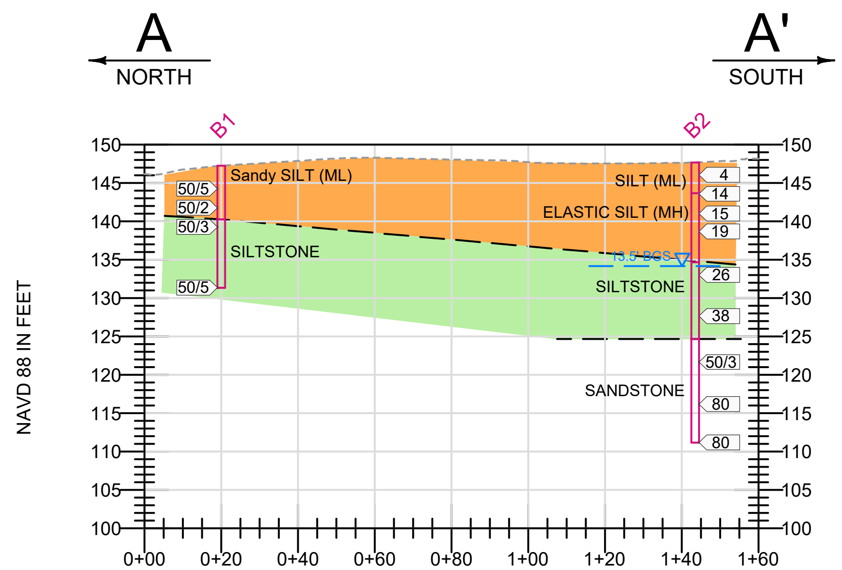
TITLE

SITE EXPLORATION

DATE	MARCH 2023
SCALE	AS SHOWN
PROJECT NO.	PS22205930
FIGURE	2

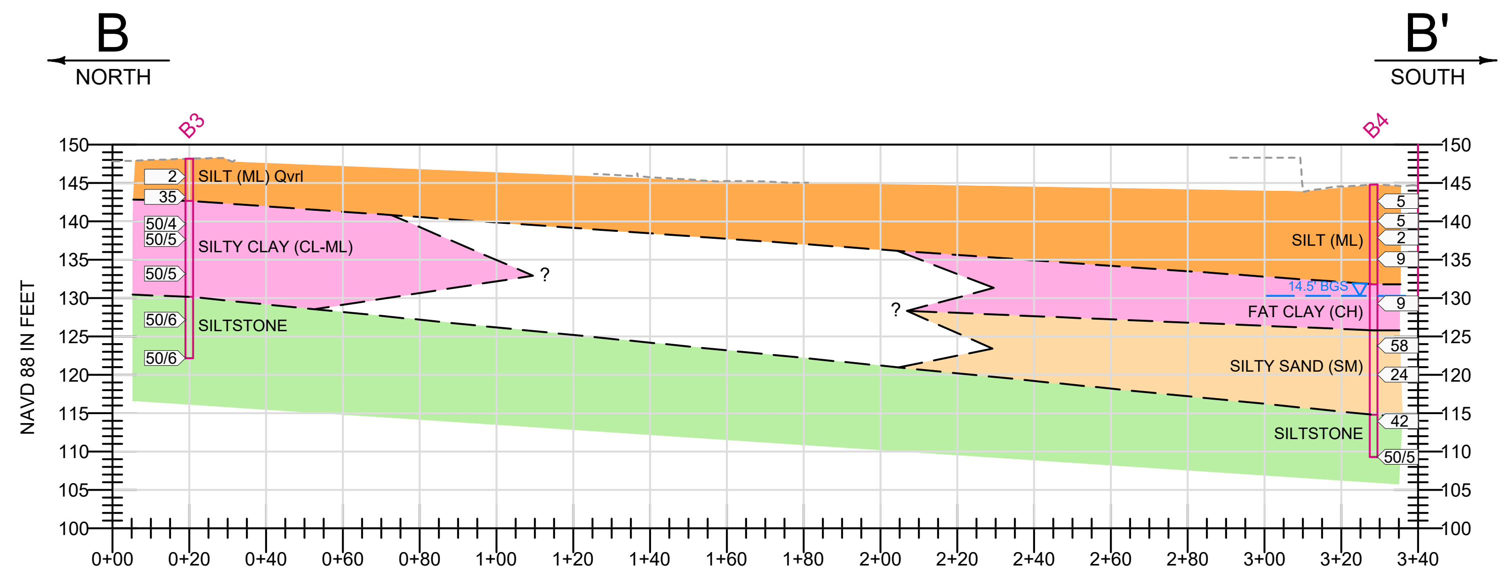
DRAWN BY: PM CHECKED BY: JKH

C:\Users\adam.stenberg\OneDrive - WSP O365\WSP\PS22205930\AKI MiddleSchool_020323.dwg - SiteExploration - Mar. 06, 2023 5:20pm - adam.stenberg



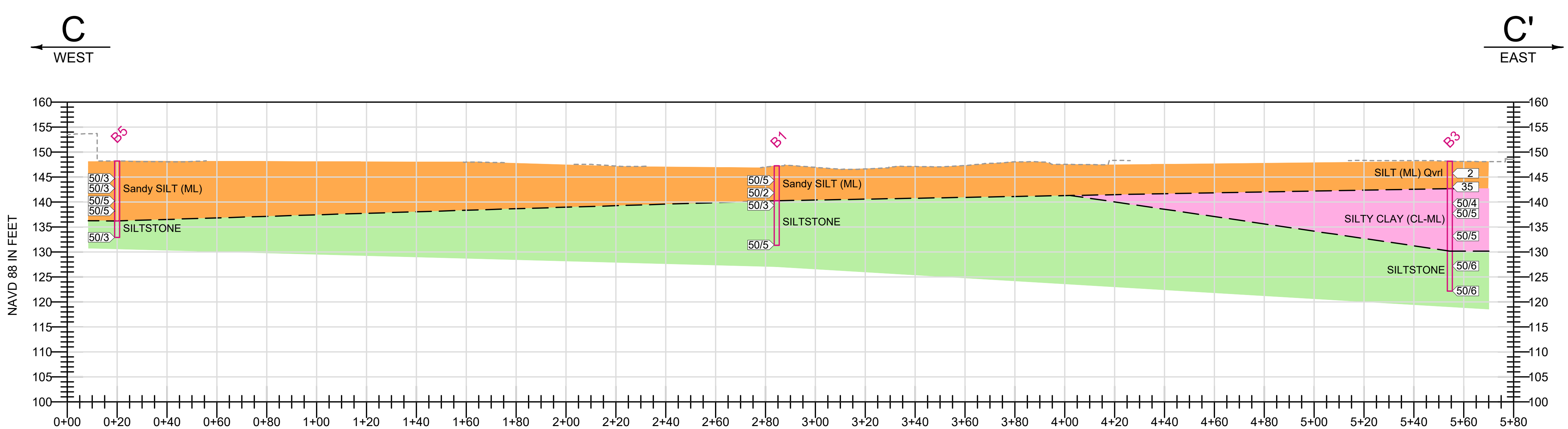
CROSS SECTION A

Scale: AS SHOWN



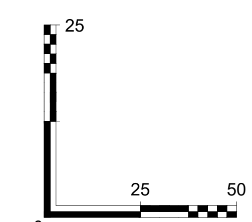
CROSS SECTION B

Scale: AS SHOWN



CROSS SECTION C

Scale: AS SHOWN



APPROXIMATE SCALE IN FEET
VERTICAL EXAGGERATION = 2X

LEGEND

- EXISTING GROUND SURFACE
- 13.5' BGS — GROUNDWATER ENCOUNTERED
- 50/3 — BLOWS OVER INCHES AT APPROXIMATE SAMPLE DEPTH
- ? ? — NO GEOLOGIC DATA
- MODERATELY WEATHERED SILTSTONE / SANDSTONE (INTERBEDDED)

DRAWN BY: PM CHECKED BY: JKH

CLIENT	SEATTLE PUBLIC SCHOOLS
	WSP USA Environment & Infrastructure Inc. 4020 Lake Washington Blvd NE, Suite 200 Kirkland, Washington 98033
PROJECT	AKI KUROSE MIDDLE SCHOOL GEOTECHNICAL DESIGN
TITLE	CROSS SECTIONS A-A', B-B', AND C-C'
DATE	MARCH 2023
SCALE	AS SHOWN
PROJECT NO.	PS22205930
FIGURE	3

APPENDIX A

FIELD EXPLORATION PROCEDURES AND LOGS

APPENDIX A—FIELD EXPLORATION PROCEDURES AND LOGS

The following paragraphs describe procedures associated with the field explorations and field tests WSP conducted for this project. Descriptive logs of our explorations are enclosed in this appendix.

AUGER BORING PROCEDURES

Our exploratory borings were advanced with a hollow-stem auger, using a truck-mounted drill rig operated by an independent drilling firm working under subcontract to WSP. A WSP geotechnical engineer continuously observed the borings, logged the subsurface conditions, and collected representative soil samples. All samples were stored in watertight containers and later transported to the laboratory for further visual examination and testing. After each boring was completed, the borehole was backfilled with a mixture of bentonite chips and soil cuttings, and the surface was patched with asphalt or concrete (where appropriate).

Throughout the drilling operation, soil samples were obtained at a continuous, 2.5- or 5-foot depth intervals through the Standard Penetration Test (SPT) per ASTM International Method D-1586. This testing and sampling procedure consists of driving a standard 2-inch-diameter steel split-spoon sampler 18 inches into the soil with a 140-pound hammer free-falling 30 inches. The number of blows required to drive the sampler through each 6-inch interval is counted, and the total number of blows struck during the final 12 inches is recorded as the Standard Penetration Resistance, or" SPT blow count." If a total of 50 blows are struck within any 6-inch interval, the driving is stopped, and the blow count is recorded as 50 blows for the actual penetration distance. The resulting Standard Penetration Resistance values indicate the relative density of granular soils and the relative consistency of cohesive soils.

The enclosed boring logs describe the vertical sequence of soils and materials encountered in each boring, based primarily on our field classifications and supported by subsequent laboratory examination and testing. Where a soil contact was observed to be gradational, our logs indicate the average contact depth. Where a soil type changed between sample intervals, we inferred the contact depth. Our logs also graphically indicate the blow count, sample type, sample number, and approximate depth of each soil sample obtained from the borings, as well as any laboratory tests performed on these soil samples. If any groundwater was encountered in a borehole, the approximate groundwater depth is depicted on the boring log. Groundwater depth estimates are typically based on soil samples' moisture content, the wetted height on the drilling rods, and the water level measured in the borehole after the auger has been extracted

PROJECT: Aki Kurose Middle School Addition & Modernizations **JOB No.** PS22205930 **BORING No.** B-1

Location: NE corner Unit A bldg

Approximate ground surface elevation: 148 feet

DEPTH (feet)	Soil Description	USCS/USGS GRAPHICS	SAMPLE TYPE	SAMPLE NUMBER	GROUND WATER	PENETRATION RESISTANCE (Blows per foot)	TESTING
0	Hard, dry to damp, light tan to light grayish tan, sandy SILT (Residual Soil) ML				N/E		
			90%	S-1		50/5	
5	Becomes light orange tan, with bands of oxidation, occasional organics		75%	S-2		50/2	80
	SILTSTONE, light gray, fine grained, moderately weathered, very weak (Tb)		100%	S-3		50/3	
10			90%	S-4		50/5	
15			75%	S-5		50/5	
	Boring terminated at approximately 15.9 feet						
20							
25							
30							

PENETRATION RESISTANCE: ▲ Standard; ##/# Blows over inches; △ Other; Blows per foot (0, 10, 20, 30, 40, 50)

MOISTURE CONTENT: Plastic Limit — Liquid Limit (0, 20, 40, 60, 80, 100)

LEGEND

- 2.00-inch OD split-spoon sampler
- N/E No groundwater encountered
- 200 Wash (% fines shown)

wsp

4020 Lake Washington Blvd NE, Ste 200
Kirkland, WA 98033

Drilled by: *Holt Drilling* Hammer Type: Automatic Date drilled: *December 20, 2022* Logged By: *JP*

Drilling Method: HSA

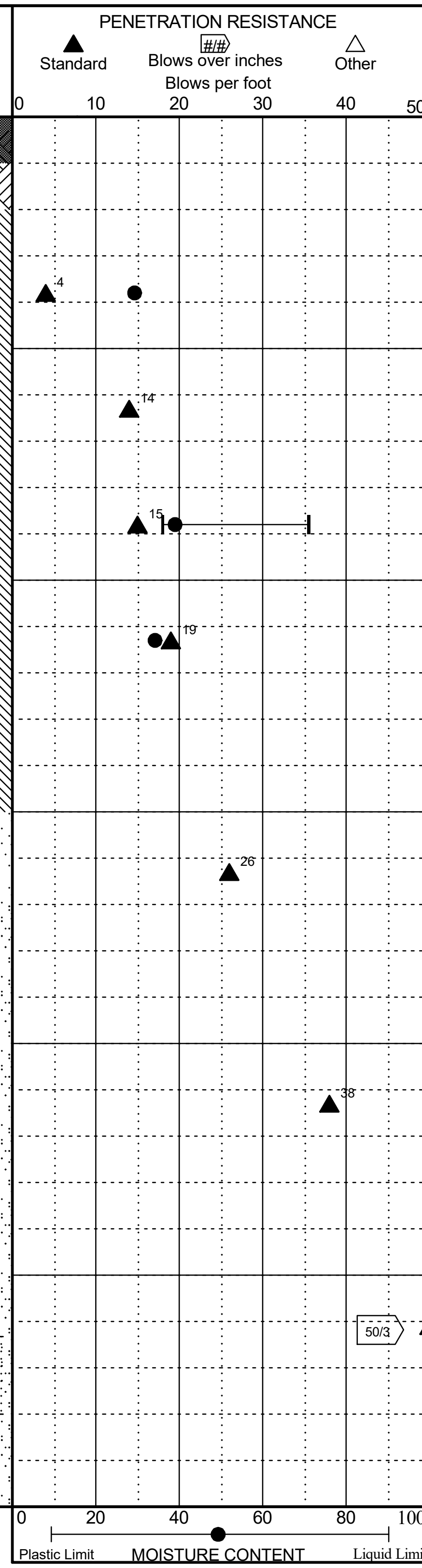
KIRKLAND_GEO_2018_WOOD.GLB 2018 BOING_LOG FORMAT W/O B1-B7.GPJ KIRKLAND_TEMPLATE_2017.GDT PRINTDATE 03/09/23

PROJECT: Aki Kurose Middle School Addition & Modernizations **JOB No.** PS22205930 **BORING No.** B-2

Location: SE corner Unit A bldg

Approximate ground surface elevation: 148 feet

DEPTH (feet)	Soil Description	SAMPLE TYPE	SAMPLE NUMBER	PENETRATION RESISTANCE (Blows per foot)	TESTING
0	Soft, moist, medium brown SILT with frequent organics (TOPSOIL) ML				
1	Soft to medium stiff, moist, brown SILT (Residual Soil) ML				
2.5		90%	S-1	4	
4	Stiff, moist, medium gray with scattered orange mottling, elastic SILT with sand (Residual Soil) MH				
5		30%	S-2	14	
7.5		100%	S-3	15	35
10	Becomes very stiff	100%	S-4	19	
13	Very stiff, moist, gray, sandy SILT with interbedded layers of SILTSTONE, dark grayish brown, highly to completely weathered, extremely weak (Residual Soil/Tb)				
15		90%	S-5	26	
20		100%	S-6	38	
23	SANDSTONE, very thinly bedded with SILTSTONE, gray, fine to medium grain, moderately to highly weathered, very weak (Tb)				
25	groundwater seepage noted	100%	S-7	50/3	



LEGEND

2.00-inch OD split-spoon sampler

Observed groundwater level

Perched water level at time of drilling

Atterberg Test (PI shown)

Observation well:

Monument

Bentonite Fill with PVC Pipe

Groundwater Level

Sand Fill with Slotted PVC Pipe

Pipe Cap

Slough at Bottom of Hole

wsp

4020 Lake Washington Blvd NE, Ste 200
Kirkland, WA 98033

Drilled by: *Holocene Drilling* Hammer Type: Automatic Date drilled: *December 20, 2022* Logged By: *JP*

Drilling Method: HSA

Location: SE corner Unit A bldg

Approximate ground surface elevation: 148 feet

DEPTH (feet)	Soil Description	USCS/USGS GRAPHICS	SAMPLE TYPE	SAMPLE NUMBER	GROUND WATER	PENETRATION RESISTANCE (Blows per foot)	TESTING
30	Becomes with lenses of silty fine SANDSTONE, highly weathered, very weak (Tb)		90%	S-8		80	
35			90%	S-9		80	
36.5	Boring terminated at approximately 36.5 feet						
40							
45							
50							
55							
60							

PENETRATION RESISTANCE: ▲ Standard; #/# Blows over inches; △ Other. Blows per foot: 0 10 20 30 40 50

MOISTURE CONTENT: 0 20 40 60 80 100 — Plastic Limit, Liquid Limit

LEGEND

- 2.00-inch OD split-spoon sampler
- Observed groundwater level
- P ATD — Perched water level at time of drilling
- Atterberg Test (PI shown)

Observation well:

- Monument
- Bentonite Fill with PVC Pipe
- Groundwater Level
- Sand Fill with Slotted PVC Pipe
- Pipe Cap
- Slough at Bottom of Hole

wsp

4020 Lake Washington Blvd NE, Ste 200
Kirkland, WA 98033

Drilled by: *Holocene Drilling* Hammer Type: Automatic Date drilled: *December 20, 2022* Logged By: *JP*

Drilling Method: HSA

PROJECT: Aki Kurose Middle School Addition & Modernizations **JOB No.** PS22205930 **BORING No.** B-3

Page 1 of 1

Location: NE corner Unit E bldg (gymnasium)

Approximate ground surface elevation: 148 feet

DEPTH (feet)	Soil Description
0	CONCRETE
	Very soft, moist, brown with dark brown to orange mottling, sandy SILT with trace gravel occasional organics (Qvr) ML
5.5	Very hard, damp to moist, bluish gray, silty CLAY with sand with scattered seams of clean sand with trace gravel (Residual Soil) CL-ML
18	SILTSTONE varying to silty SANDSTONE, highly weathered, very weak (Tb)
26	Boring terminated at approximately 26 feet

GROUND WATER: N/E

SAMPLE NUMBER	Recovery	Penetration Resistance (Blows per foot)	TESTING
S-1	20%	2	77 (200 Wash)
S-2	90%	35	5 (Atterberg Test)
S-3	50%	50/4	
S-4	90%	50/5	
S-5	100%	50/5	
S-6	90%	50/6	
S-7	100%	50/6	

PENETRATION RESISTANCE: Standard ▲, Blows over inches (#/#), Other △; Blows per foot 0 10 20 30 40 50

MOISTURE CONTENT: 0 20 40 60 80 100; Plastic Limit, Liquid Limit

LEGEND

- 2.00-inch OD split-spoon sampler
- N/E No groundwater encountered
- 200 Wash (% fines shown)
- Atterberg Test (PI shown)

4020 Lake Washington Blvd NE, Ste 200
Kirkland, WA 98033

Drilled by: *Holocene Drilling* Hammer Type: Automatic Date drilled: *December 22, 2022* Logged By: *JP*

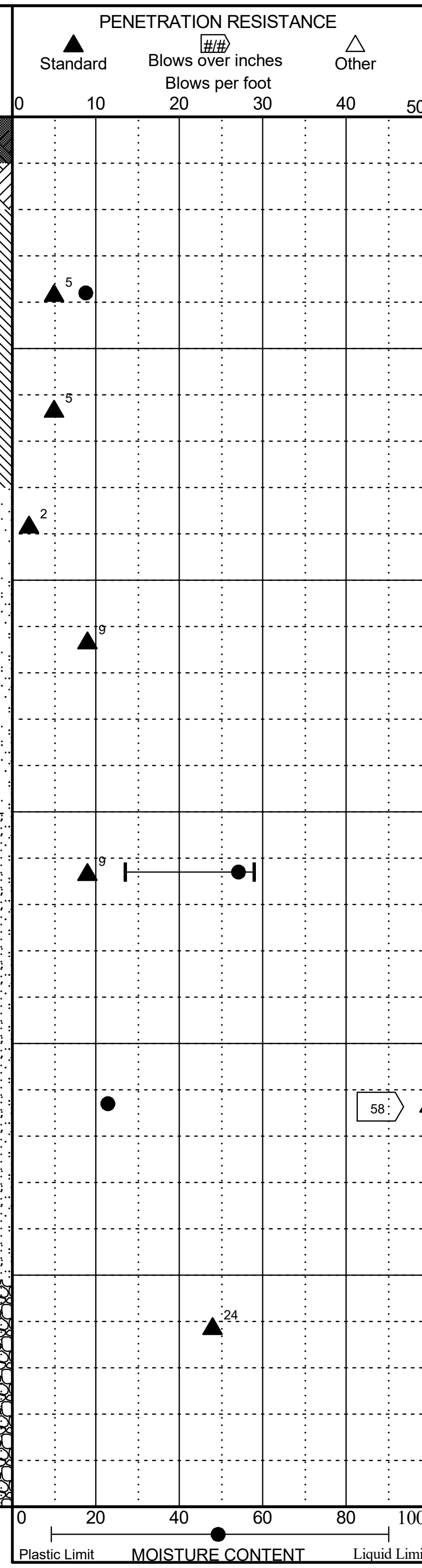
Drilling Method: HSA

PROJECT: **Aki Kurose Middle School Addition & Modernizations** **JOB No.** **PS22205930** **BORING No. B-4**

Location: SE corner Unit D bldg

Approximate ground surface elevation: 145 feet

DEPTH (feet)	Soil Description	Sample Type	Sample Number	Penetration Resistance (blows/foot)	Testing
0	Soft, moist, dark brown SILT with scattered organics (TOPSOIL)				
	Very soft to soft, moist to wet, medium brown with orange mottling, sandy SILT with occasional organics; wood debris (Qvrl) ML	50%	S-1	5	55
5		90%	S-2	5	
		75%	S-3	2	
10	Possible log, wood fragments and wood fiber comprised entire sample. 1 to 2 feet thick	30%	S-4	9	
	Medium stiff, bluish gray fat CLAY, high plasticity, scattered pockets of organics (Qvrl) CH				
15		75%	S-5	9	31
20	Very dense, wet, gray to brownish gray, silty fine SAND (Qvr) SM	75%	S-6	58	25
25	Becomes medium dense	100%	S-7	24	
30					



LEGEND

- 2.00-inch OD split-spoon sampler
- Observed groundwater level
- P / ATD — Perched water level at time of drilling
- 200 Wash (% fines shown)
- Grain Size Analysis (% fines shown)
- Atterberg Test (PI shown)

Observation well:

- Monument
- Bentonite Fill with PVC Pipe
- Groundwater Level
- Sand Fill with Slotted PVC Pipe
- Pipe Cap
- Slough at Bottom of Hole

wsp

4020 Lake Washington Blvd NE, Ste 200
Kirkland, WA 98033

Drilled by: *Holocene Drilling* Hammer Type: Automatic Date drilled: *December 21, 2022* Logged By: *JP*

Drilling Method: HSA

PROJECT: **Aki Kurose Middle School Addition & Modernizations** JOB No. **PS22205930** BORING No. **B-4**

Soil Description

Location: SE corner Unit D bldg

Approximate ground surface elevation: 145 feet

DEPTH (feet)	Soil Description	USCS/USGS GRAPHICS	SAMPLE TYPE	SAMPLE NUMBER	GROUND WATER	PENETRATION RESISTANCE (Blows per foot)	TESTING
30	SILTSTONE, Moderately weathered, brownish gray, very weak, occasional seams of silty fine sand SILTSTONE (Tb)		100%	S-8		42	
35	Grades to SANDSTONE, fissile, light gray, fine to medium grained, moderately weathered, very weak		100%	S-9		50/6	
	Boring terminated at approximately 35.5 feet						

PENETRATION RESISTANCE: ▲ Standard; #/# Blows over inches; △ Other; Blows per foot (0, 10, 20, 30, 40, 50)

MOISTURE CONTENT: Plastic Limit, Liquid Limit (0, 20, 40, 60, 80, 100)

LEGEND

- 2.00-inch OD split-spoon sampler
- Observed groundwater level
- P Perched water level at time of drilling (ATD)
- 200 Wash (% fines shown)
- Grain Size Analysis (% fines shown)
- Atterberg Test (PI shown)

Observation well:
- Monument
- Bentonite Fill with PVC Pipe
- Groundwater Level
- Sand Fill with Slotted PVC Pipe
- Pipe Cap
- Slough at Bottom of Hole

wsp

4020 Lake Washington Blvd NE, Ste 200
Kirkland, WA 98033

Drilled by: *Holocene Drilling* Hammer Type: Automatic Date drilled: *December 21, 2022* Logged By: *JP*

Drilling Method: HSA

PROJECT: Aki Kurose Middle School Addition & Modernizations **JOB No.** PS22205930 **BORING No.** B-5

Location: NW corner Unit A bldg
Approximate ground surface elevation: 148 feet

DEPTH (feet)	Soil Description	USCS/USGS GRAPHICS	SAMPLE TYPE	SAMPLE NUMBER	GROUND WATER	PENETRATION RESISTANCE (Blows per foot)	TESTING
0	2-inches asphalt surfacing over 4 -inches of crushed rock (FILL)				N/E		
	Hard, moist, gray fine sandy SILT, finely laminated (Residual Soil) ML						76
			30%	S-1		50/3	
5			100%	S-2		50/3	
			90%	S-3		50/5	
10			100%	S-4		50/5	
	SILTSTONE, finely laminated, bluish gray, fine grained, highly weathered, very weak (Tb)						
15			100%	S-5		50/3	
	Boring terminated at approximately 15.3 feet						

PENETRATION RESISTANCE: ▲ Standard; ##/ Blows over inches; △ Other
Blows per foot: 0 10 20 30 40 50

MOISTURE CONTENT: Plastic Limit — Liquid Limit (0 20 40 60 80 100)

Page 1 of 1

LEGEND

- 2.00-inch OD split-spoon sampler
- N/E No groundwater encountered
- 200 Wash (% fines shown)

wsp
4020 Lake Washington Blvd NE, Ste 200
Kirkland, WA 98033

Drilled by: *Holocene Drilling* Hammer Type: Automatic Date drilled: *December 19, 2022* Logged By: *JP*

Drilling Method: HSA

PROJECT: Aki Kurose Middle School Addition & Modernizations **JOB No.** PS22205930 **BORING No.** B-6

Location: SW corner Unit A bldg
Approximate ground surface elevation: 148 feet

DEPTH (feet)	Soil Description	SAMPLE TYPE	SAMPLE NUMBER	GROUND WATER	PENETRATION RESISTANCE (Blows per foot)	TESTING
0	Grass sod over:			N/E		
	Very stiff, moist, medium brown with orange mottling, fat CLAY with sand (Residual Soil) CH	100%	S-1			
	Becomes gray				19	Atterberg 43
5		100%	S-2		29	200 Wash 82
	Hard to very hard, moist, light reddish tan silty CLAY with sand (Residual Soil) CL-CH	100%	S-3		37	
10		100%	S-4		38	200 Wash 73
	SILTSTONE, bluish gray, moderately weathered, weak with scattered thin layers of SANDSTONE (Tb)					
15		100%	S-5		41	
20		100%	S-6		44	
25		95%	S-7		50/5	
	Boring terminated at approximately 26.4 feet					
30						

PENETRATION RESISTANCE: ▲ Standard; ##/## Blows over inches; △ Other

MOISTURE CONTENT: Plastic Limit — ● — Liquid Limit (0, 20, 40, 60, 80, 100)

LEGEND

- 2.00-inch OD split-spoon sampler
- N/E No groundwater encountered
- Atterberg Test (PI shown)
- 200 Wash (% fines shown)

wsp
4020 Lake Washington Blvd NE, Ste 200
Kirkland, WA 98033

Drilled by: *Holocene Drilling* Hammer Type: Automatic Date drilled: *December 19, 2022* Logged By: *JP*

Drilling Method: HSA

PROJECT: Aki Kurose Middle School Addition & Modernizations **JOB No.** PS22205930 **BORING No.** B-7

Location: SW corner Unit B bldg
Approximate ground surface elevation: 143 feet

DEPTH (feet)	Soil Description	SAMPLE TYPE	SAMPLE NUMBER	GROUND WATER	PENETRATION RESISTANCE (Blows per foot)	TESTING
0	Grass sod over:			N/E		
0–5	Stiff, moist, brown with rust mottling, sandy SILT with scattered organics (Residual Soil) ML	70%	S-1		13	86
5	Becomes very stiff, gray	85%	S-2		21	17
7	Completely to highly weathered, massive gray SILTSTONE with scattered shell fragments (Tb)	90%	S-3		35	
10		100%	S-4		49	
14	Moderately weathered, bluish gray fine grain SANDSTONE/SILTSTONE, fissile (Tb)	100%	S-5		50/5	
20		65%	S-6		45	
21.5	Boring terminated at approximately 21.5 feet					

PENETRATION RESISTANCE: ▲ Standard; ##/# Blows over inches; △ Other; Blows per foot 0 10 20 30 40 50

MOISTURE CONTENT: 0 20 40 60 80 100 — Plastic Limit, Liquid Limit

LEGEND

- 2.00-inch OD split-spoon sampler
- N/E No groundwater encountered
- 200 Wash (% fines shown)
- Atterberg Test (PI shown)

wsp
4020 Lake Washington Blvd NE, Ste 200
Kirkland, WA 98033

Drilled by: *Holocene Drilling* Hammer Type: Automatic Date drilled: *December 21, 2022* Logged By: *JP*

Drilling Method: HSA

APPENDIX B

LABORATORY TESTING PROCEDURES AND RESULTS

APPENDIX B—LABORATORY TESTING PROCEDURES AND RESULTS

The following paragraphs describe procedures associated with the laboratory tests conducted for this project. Laboratory test results are enclosed in this appendix.

VISUAL CLASSIFICATION PROCEDURES

Visual soil classifications were conducted on all samples in the field and on selected samples in the laboratory. All soils were classified in general accordance with the Unified Soil Classification System, which includes color, relative moisture content, primary soil type (based on grain size), and any accessory soil types. The resulting soil classifications are presented on the exploration logs contained in Appendix A.

MOISTURE CONTENT DETERMINATION PROCEDURES

Moisture content determinations were performed on representative samples to aid in the identification and correlation of soil types. All determinations were made in general accordance with ASTM International Method D-2216. The results of these tests are shown on the exploration logs contained in Appendix A.

GRAIN-SIZE ANALYSIS PROCEDURES

A grain size analysis indicates the range of soil particle diameters included in a particular sample. Grain-size analyses were performed on representative samples in general accordance with ASTM International Method D-422. The results of these tests are presented on the enclosed grain-size distribution graphs and were used in soil classifications shown on the exploration logs contained in Appendix A.

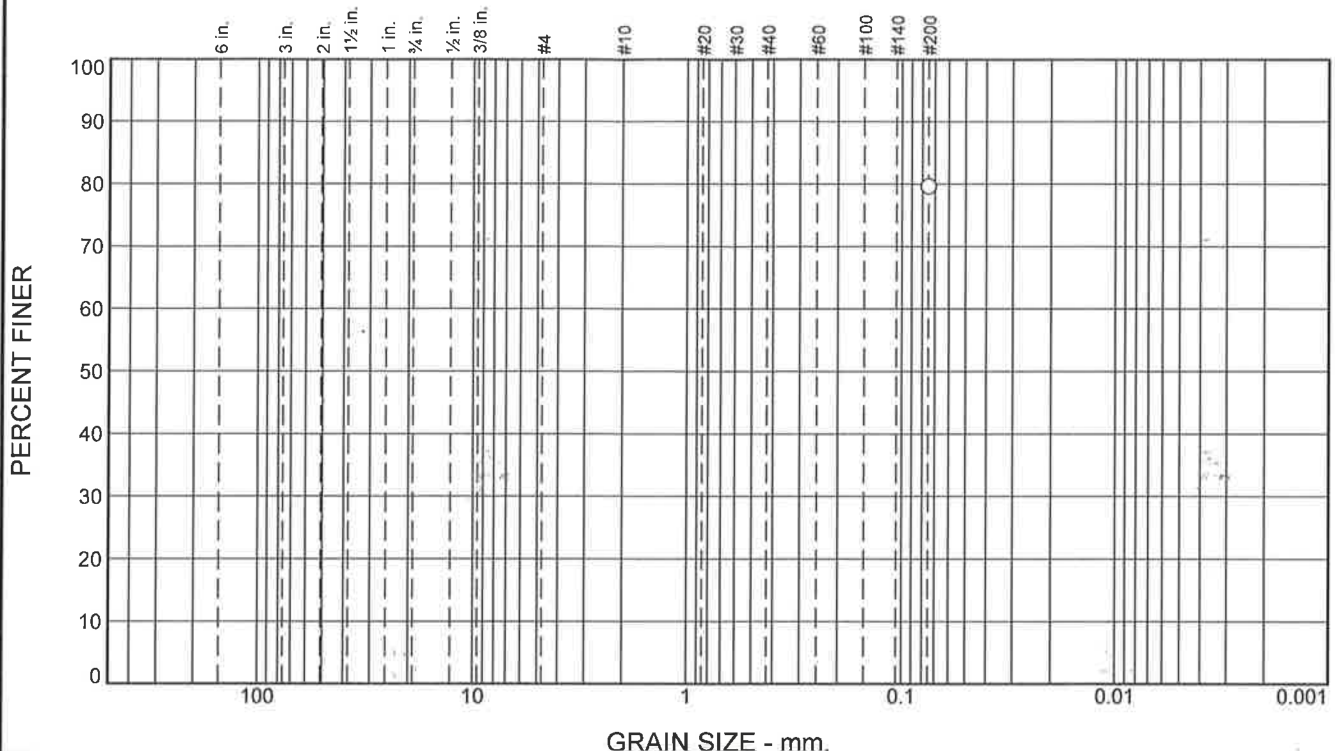
200-WASH PROCEDURES

A 200-wash is a procedure in which the fine-grained soil fraction is separated from the sand and gravel by washing the soil on a U.S. No. 200 Sieve. A 200-wash was performed on selected soil samples obtained from our borings in general accordance with ASTM International Method D-1140, Test Method for Amount of Material in Soils Finer than the No. 200 (75-mm) Sieve. The results of these analyses were used in soil classifications shown on the exploration log presented in Appendix A.

ATTERBERG LIMIT DETERMINATION PROCEDURES

Atterberg limits are used primarily for classifying and indexing cohesive soils. The liquid and plastic limits, which are defined as the moisture contents of a cohesive soil at arbitrarily established limits for liquid and plastic behavior, were determined for selected samples in general accordance with ASTM D-4318. The result of this test is presented on the enclosed Atterberg limit graph and on the boring log contained in Appendix A.

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
						80	

TEST RESULTS			
Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
#200	80		

* (no specification provided)

Material Description

Fine silty soil

Atterberg Limits (ASTM D 4318)

PL= LL= PI=

Classification

USCS (D 2487)= AASHTO (M 145)=

Coefficients

D_{90}= D_{85}= D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Remarks

Moisture content = 21.7%

Date Received: 1/30/2023 **Date Tested:** 2/3/2023

Tested By: T. Fuller

Checked By: M. Holtz

Title: Laboratory Supervisor

Source of Sample: B-1, S-2 5'
Sample Number: 8436

Date Sampled: 1/30/2023

O'Neill Service Group
17619 NE 67th Ct Suite 100
Redmond, WA 98052

Client: WSP
Project: Aki Kurose Middle School Modernization, PS22205930
Project No: 1774 **Figure** 8436

O'Neill Service Group

Moisture Content Aggregate/Soils
ASTM C566, D2216
AASHTO T255, T265

PROJECT NAME: Aki Kurose Middle School	CLIENT: WSP
PROJECT NUMBER: 1774	DATE SAMPLED: 1/30/2023
LAB ID NUMBER: 8437	DATE RECEIVED: 1/30/2023
MATERIAL: Fine silty soil	DATE TESTED: 2/3/2023
SOURCE: B-2, S-1 @ 2.5'	SAMPLED BY: Client

Average Moisture Content (%)	**29.3%**

Specification: ASTM C566, ASTM D2216, AASHTO T255, AASHTO T265

Remarks: ______

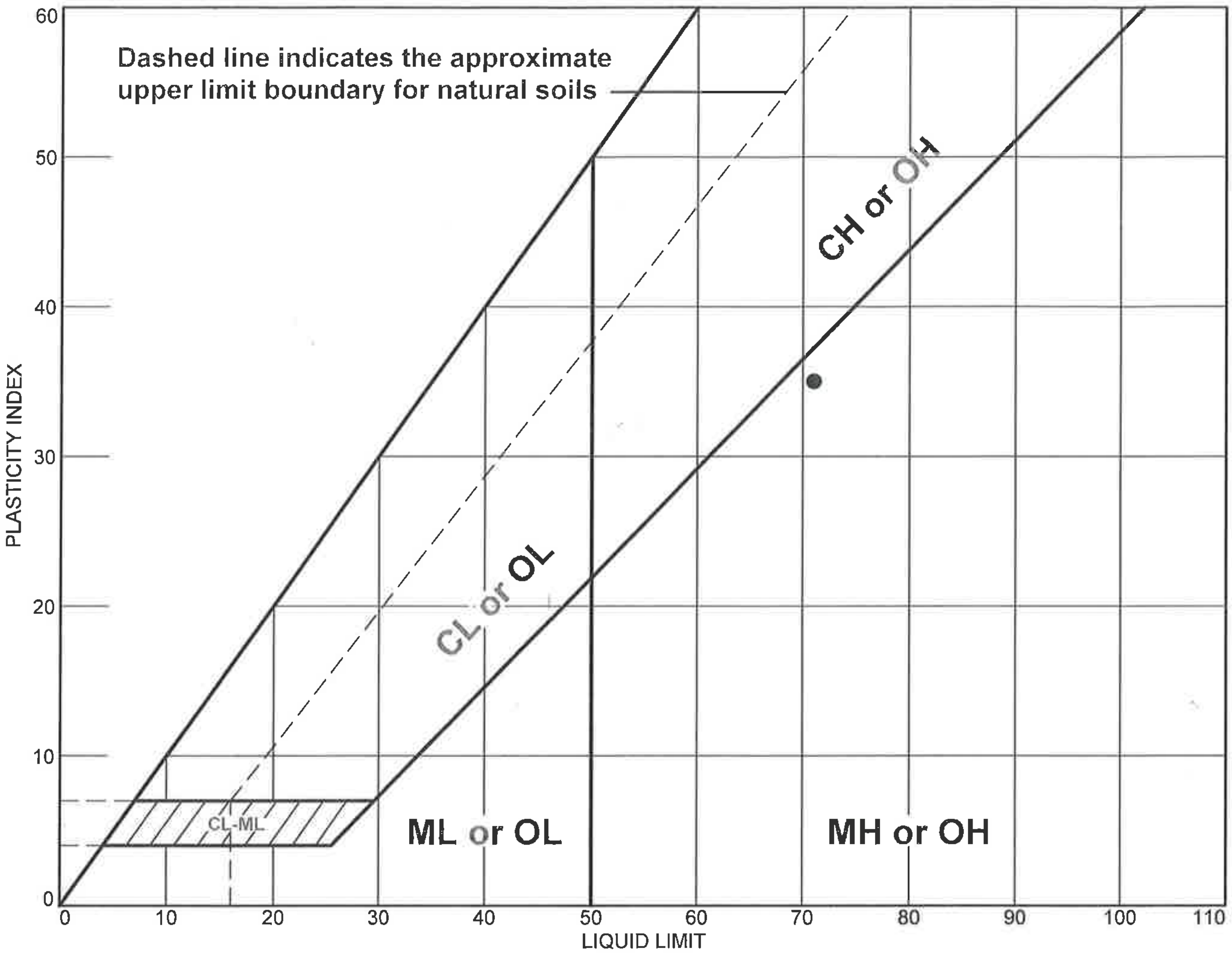
Equipment Used: Lab Scale ID# 14 Lab Oven ID# 6

Conformance: ______

Non Conformance: ______

Tested By:	T. Fuller
Calculated By:	T. Fuller
Reviewed By:	M. Holtz MH

LIQUID AND PLASTIC LIMITS TEST REPORT



	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	Fine Silty Soil	71	36	35			

Project No. 1774 **Client:** WSP

Project: Aki Kurose Middle School Modernization, PS22205930

● **Source of Sample:** B-2, S-3 @ 7.5' **Sample Number:** 8438

Remarks:

● Sampled on 1/30/23, Received on 1/30/23, tested on 2/3/23. Moisture Content = 39.0%

O'Neill Service Group
17619 NE 67th Ct Suite 100
Redmond, WA 98052

Figure 8438

These results are for the exclusive use of the client for whom they were obtained. Results relate to only the material tested.

Tested By: T. Fuller **Checked By:** M. Holtz

OSG O'Neill Service Group

Moisture Content Aggregate/Soils
ASTM C566, D2216
AASHTO T255, T265

PROJECT NAME: Aki Kurose Middle School	CLIENT: WSP
PROJECT NUMBER: 1774	DATE SAMPLED: 1/30/2023
LAB ID NUMBER: 8439	DATE RECEIVED: 1/30/2023
MATERIAL: Fine silty soil	DATE TESTED: 2/3/2023
SOURCE: B-2, S-4 @ 10'	SAMPLED BY: Client

Average Moisture Content (%)	**34.2%**

Specification: ASTM C566, ASTM D2216, AASHTO T255, AASHTO T265

Remarks:

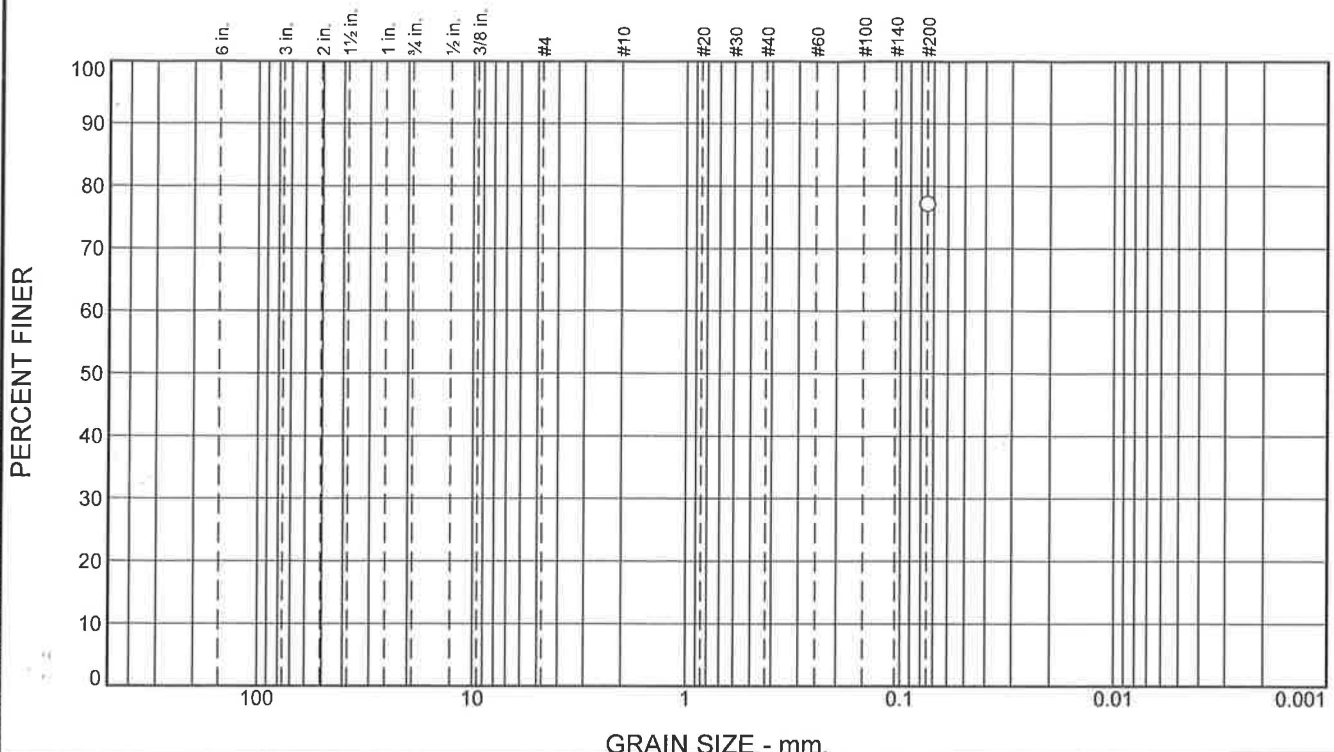
Equipment Used: Lab Scale ID# 14 Lab Oven ID# 6

Conformance:

Non Conformance:

Tested By:	T. Fuller
Calculated By:	T. Fuller
Reviewed By:	M. Holtz

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
						77	

TEST RESULTS

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
#200	77		

* (no specification provided)

Material Description

Fine Silty soil

Atterberg Limits (ASTM D 4318)

PL= LL= PI=

Classification

USCS (D 2487)= AASHTO (M 145)=

Coefficients

D_{90}= D_{85}= D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Remarks

Moisture content = 36.6%

Date Received: 1/30/2023 **Date Tested:** 2/3/2023

Tested By: T. Fuller

Checked By: M. Holtz

Title: Laboratory Supervisor

Source of Sample: B-3, S-1 @ 2.5'
Sample Number: 8440

Date Sampled: 1/30/2023

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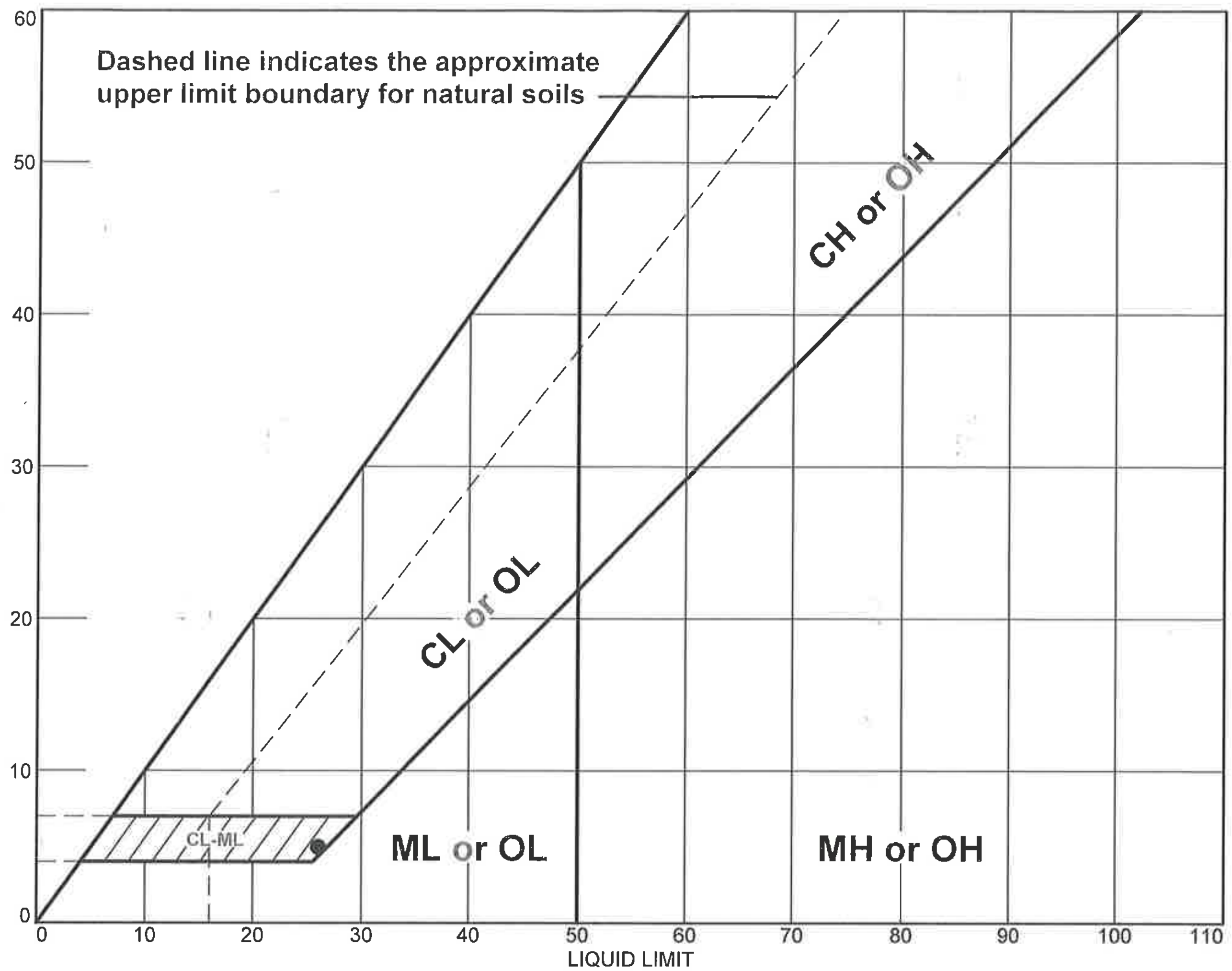
Redmond, WA 98052

Client: WSP
Project: Aki Kurose Middle School Modernization, PS22205930

Project No: 1774 **Figure** 8440

LIQUID AND PLASTIC LIMITS TEST REPORT



These results are for the exclusive use of the client for whom they were obtained. Results relate to only the material tested.

	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	Fine silty soil	26	21	5			

Project No. 1774 **Client:** WSP

Project: Aki Kurose Middle School Modernization, PS22205930

● **Source of Sample:** B-3, S-2 @ 5' **Sample Number:** 8441

Remarks:

● Sampled on 1/30/23, Received on 1/30/23, tested on 2/3/23. Moisture content = 20.9%

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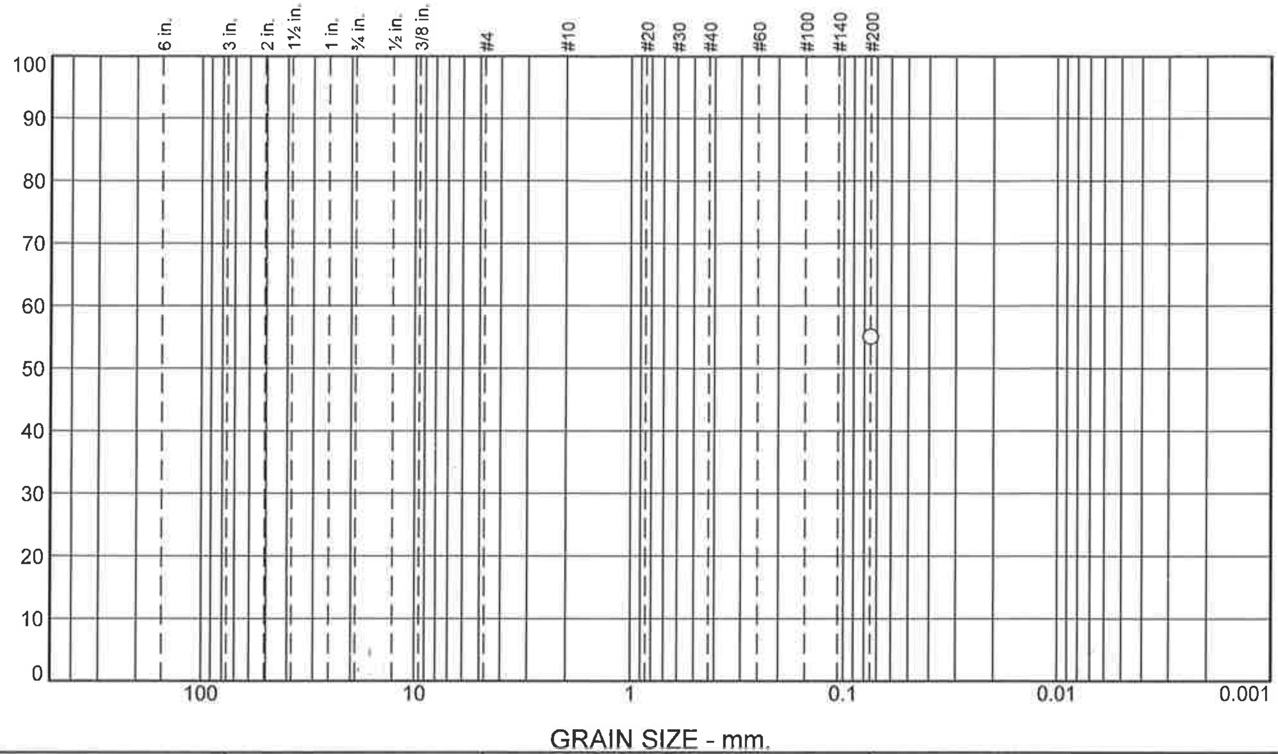
Figure 8441

Tested By: T. Fuller **Checked By:** M. Holtz

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
						55	

TEST RESULTS			
Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
#200	55		

* (no specification provided)

Material Description

Fine silty soil

Atterberg Limits (ASTM D 4318)

PL= LL= PI=

Classification

USCS (D 2487)= AASHTO (M 145)=

Coefficients

D_{90}= D_{85}= D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Remarks

Moisture content = 17.6%

Date Received: 1/30/2023 **Date Tested:** 2/3/2023
Tested By: T. Fuller
Checked By: M. Holtz M Holtz
Title: Laboratory Supervisor

Source of Sample: B-4, S-1 @ 2.5' **Date Sampled:** 1/30/2023
Sample Number: 8442

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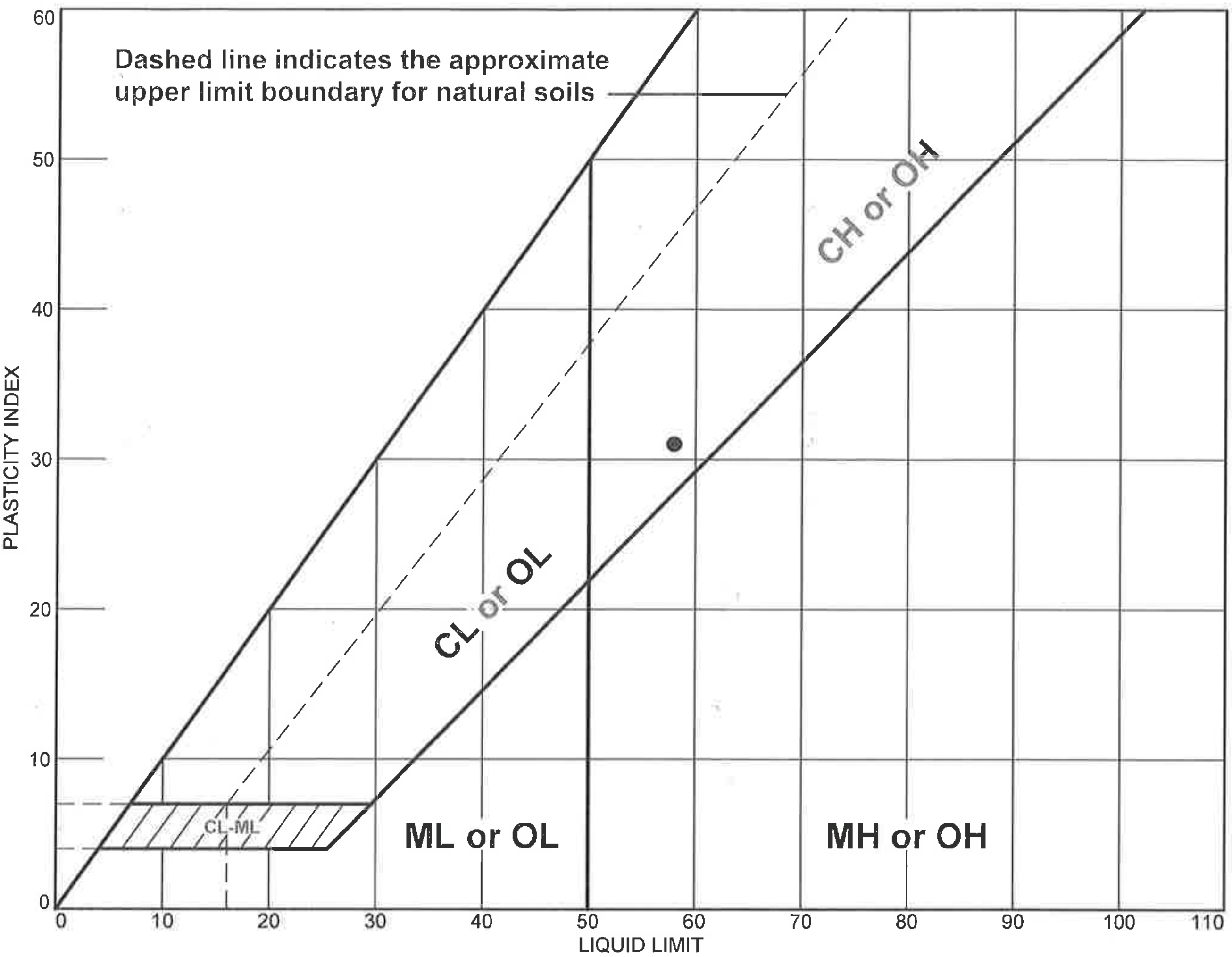
Redmond, WA 98052

Client: WSP
Project: Aki Kurose Middle School Modernization, PS22205930
Project No: 1774 **Figure** 8442

LIQUID AND PLASTIC LIMITS TEST REPORT



	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	Fine silty soil	58	27	31			

Project No. 1774 **Client:** WSP

Project: Aki Kurose Middle School Modernization, PS22205930

● **Source of Sample:** B-4, S-5 @ 15' **Sample Number:** 8443

Remarks:

● Sampled on 1/30/23, Received on
1/30/23, tested on 2/3/23.
Moisture content = 54.2%

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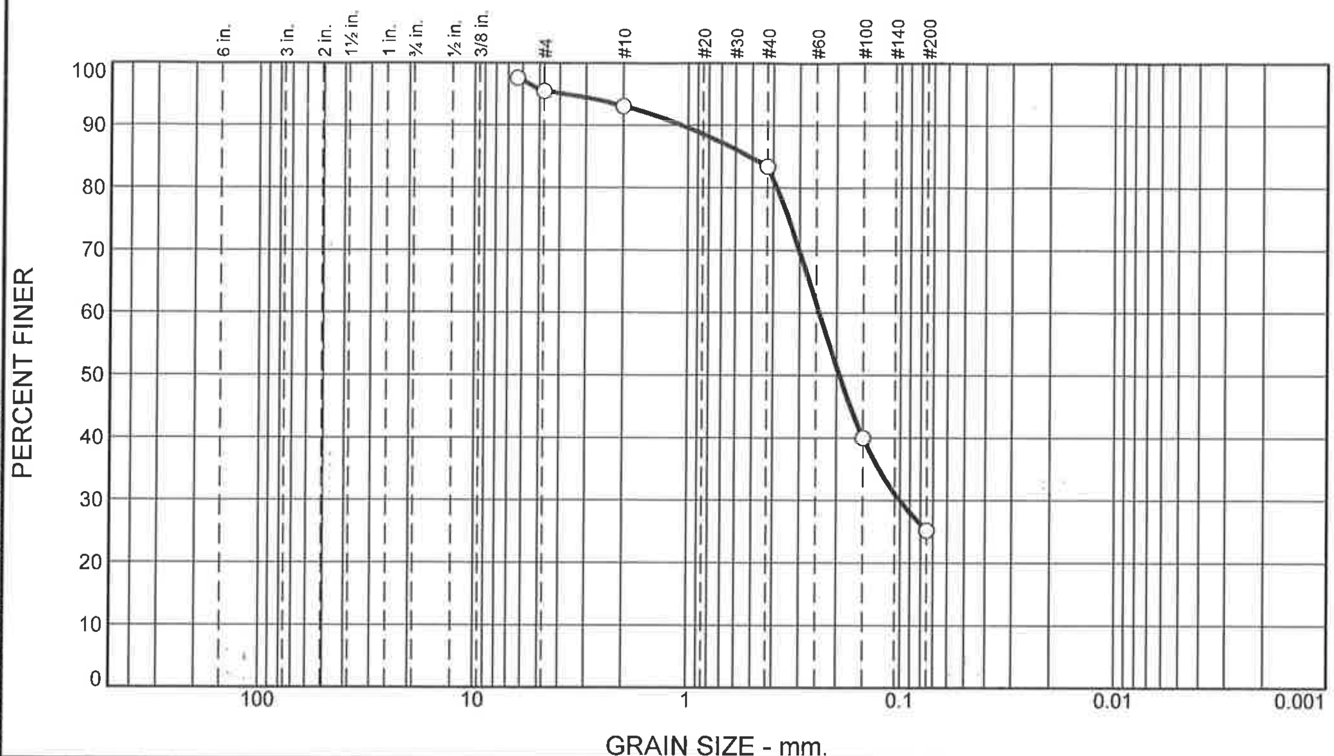
Redmond, WA 98052

Figure 8443

These results are for the exclusive use of the client for whom they were obtained. Results relate to only the material tested.

Tested By: T. Fuller **Checked By:** M. Holtz

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
			2	10	58	25	

Test Results (ASTM C 136 & ASTM C 117)			
Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
1/4	98		
#4	95		
#10	93		
#40	83		
#100	40		
#200	25		

* (no specification provided)

Material Description

Fine silty soil

Atterberg Limits (ASTM D 4318)

PL= LL= PI=

Classification

USCS (D 2487)= AASHTO (M 145)=

Coefficients

D_{90}= 1.0710 D_{85}= 0.5188 D_{60}= 0.2425
D_{50}= 0.1943 D_{30}= 0.1005 D_{15}=
D_{10}= C_u= C_c=

Remarks

Moisture content = 22.9%

Date Received: 1/30/2023 **Date Tested:** 2/3/2023

Tested By: T. Fuller

Checked By: M. Holtz

Title: Laboratory Supervisor

Source of Sample: B-4, S-6 @ 20'
Sample Number: 8444

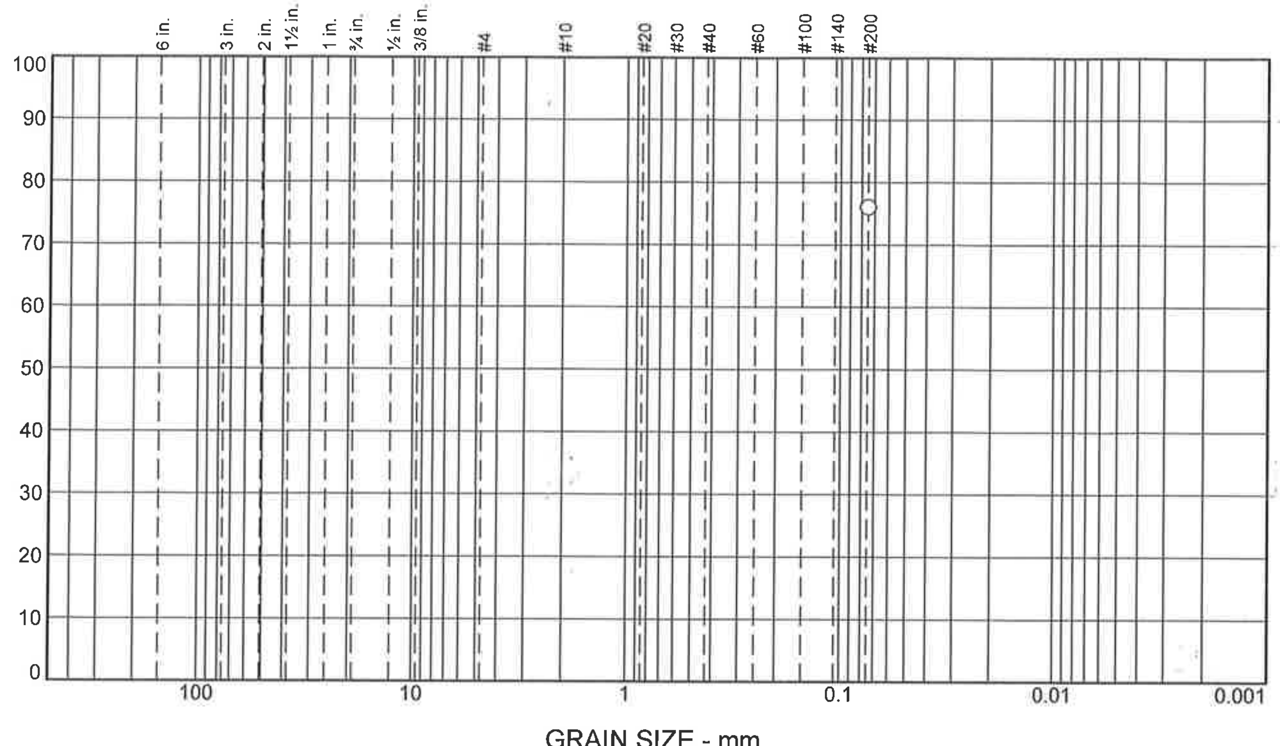
Date Sampled: 1/30/2023

O'Neill Service Group
17619 NE 67th Ct Suite 100
Redmond, WA 98052

Client: WSP
Project: Aki Kurose Middle School Modernization, PS22205930
Project No: 1774 **Figure** 8444

These results are for the exclusive use of the client for whom they were obtained. Results relate to only the material tested.

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
						76	

TEST RESULTS			
Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
#200	76		

* (no specification provided)

Material Description

Fine silty soil

Atterberg Limits (ASTM D 4318)

PL= LL= PI=

Classification

USCS (D 2487)= AASHTO (M 145)=

Coefficients

D_{90}= D_{85}= D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Remarks

Moisture content = 21.9%

Date Received: 1/30/2023 **Date Tested:** 2/3/2023

Tested By: T. Fuller

Checked By: M. Holtz

Title: Laboratory Supervisor

Source of Sample: B-5, S-1 @ 2.5'
Sample Number: 8445

Date Sampled: 1/30/2023

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Redmond, WA 98052

Client: WSP
Project: Aki Kurose Middle School Modernization, PS22205930

Project No: 1774 **Figure** 8445

These results are for the exclusive use of the client for whom they were obtained. Results relate to only the material tested.

OSG **O'Neill Service Group**

Moisture Content Aggregate/Soils
ASTM C566, D2216
AASHTO T255, T265

PROJECT NAME: Aki Kurose Middle School	CLIENT: WSP
PROJECT NUMBER: 1774	DATE SAMPLED: 1/30/2023
LAB ID NUMBER: 8446	DATE RECEIVED: 1/30/2023
MATERIAL: Fine silty soil	DATE TESTED: 2/3/2023
SOURCE: B-5, S-3 @ 7.5'	SAMPLED BY: Client

Average Moisture Content (%)	**17.7%%**

Specification: ASTM C566, ASTM D2216, AASHTO T255, AASHTO T265

Remarks: ______________________

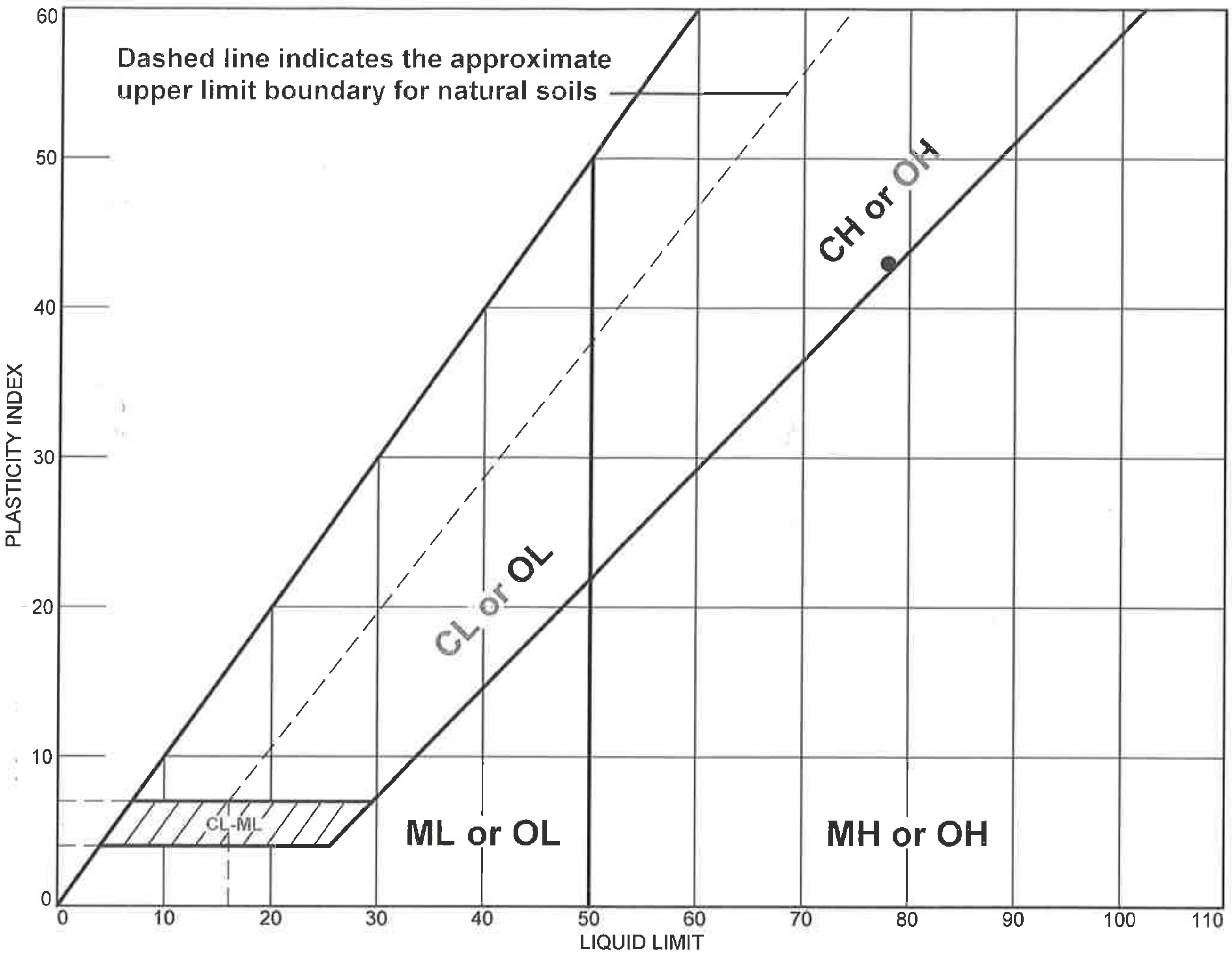
Equipment Used: Lab Scale ID# 14 Lab Oven ID# 6

Conformance: ________

Non Conformance: ________

Tested By:	T. Fuller
Calculated By:	T. Fuller
Reviewed By:	M. Holtz

LIQUID AND PLASTIC LIMITS TEST REPORT



	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	Fine sitly soil	78	35	43			

Project No. 1774 **Client:** WSP

Project: Aki Kurose Middle School Modernization, PS22205930

● **Source of Sample:** B-6, S-1 @ 2.5' **Sample Number:** 8447

Remarks:

● Sampled on 1/30/23, Received on 1/30/23, tested on 2/3/23. Moisture content = 33.0%

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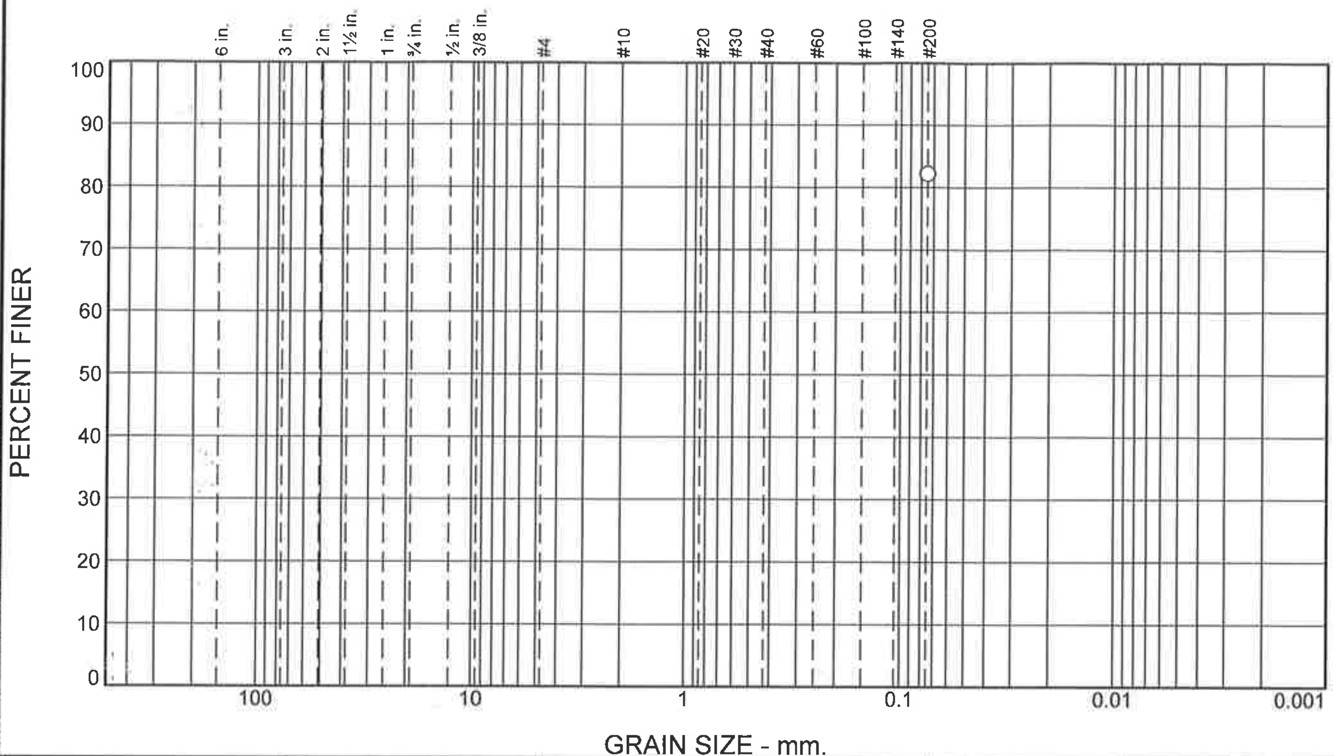
Redmond, WA 98052

Figure 8447

These results are for the exclusive use of the client for whom they were obtained. Results relate to only the material tested.

Tested By: T. Fuller **Checked By:** M. Holtz

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
						82	

TEST RESULTS			
Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
#200	82		

* (no specification provided)

Material Description

Fine silty soil

Atterberg Limits (ASTM D 4318)

PL= LL= PI=

Classification

USCS (D 2487)= AASHTO (M 145)=

Coefficients

D_{90}= D_{85}= D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Remarks

Moisture content = 27.4%

Date Received: 1/30/2023 **Date Tested:** 2/3/2023
Tested By: T. Fuller
Checked By: M. Holtz MHoltz
Title: Laboratory Supervisor

Source of Sample: B-6, S-2 @ 5'
Sample Number: 8448
Date Sampled: 1/30/2023

O'Neill Service Group
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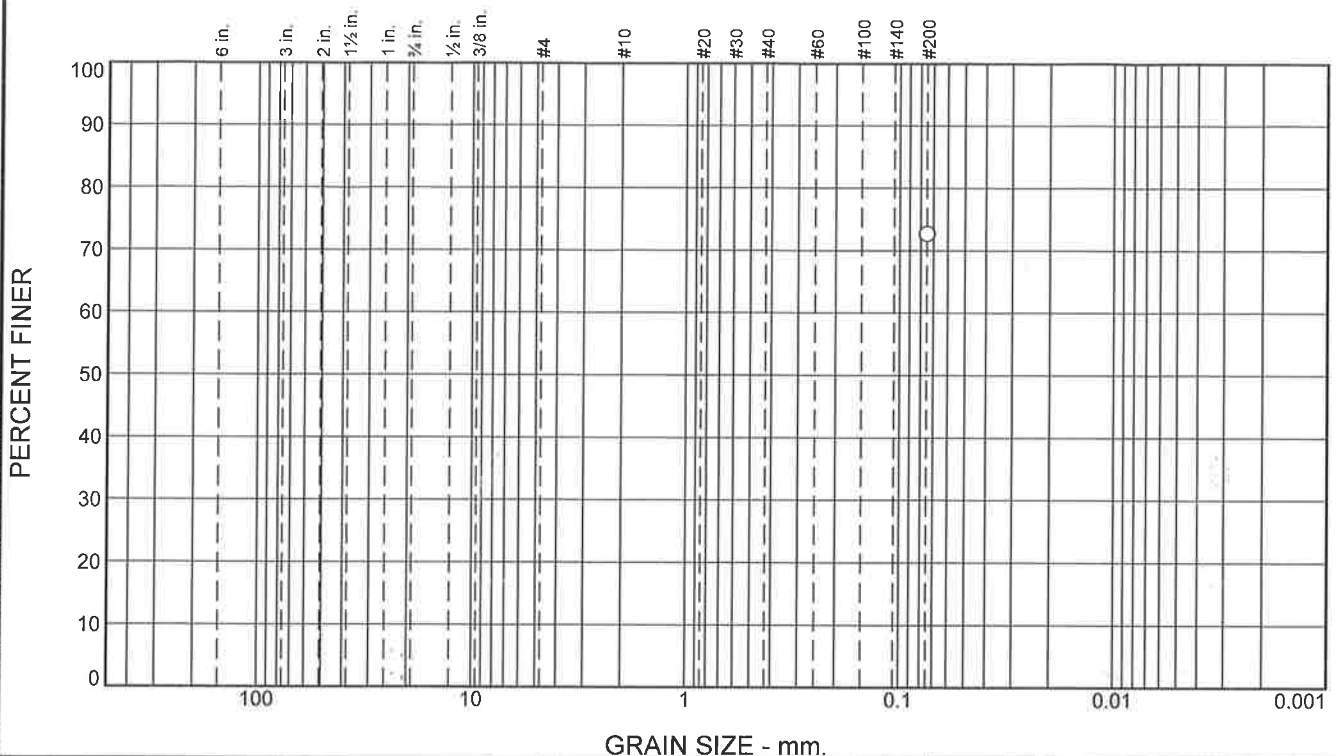
Redmond, WA 98052

Client: WSP
Project: Aki Kurose Middle School Modernization, PS22205930
Project No: 1774 **Figure** 8448

These results are for the exclusive use of the client for whom they were obtained. Results relate to only the material tested.

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
						73	

TEST RESULTS			
Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
#200	73		

* (no specification provided)

Material Description

Fine silty soil

Atterberg Limits (ASTM D 4318)

PL= LL= PI=

Classification

USCS (D 2487)= AASHTO (M 145)=

Coefficients

D_{90}= D_{85}= D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Remarks

Moisture content = 23.0%

Date Received: 1/30/2023 **Date Tested:** 2/3/2023

Tested By: T. Fuller

Checked By: M. Holtz

Title: Laboratory Supervisor

Source of Sample: B-6, S-4 @ 10' **Date Sampled:** 1/30/2023

Sample Number: 8449

O'Neill Service Group
17619 NE 67th Ct Suite 100
Redmond, WA 98052

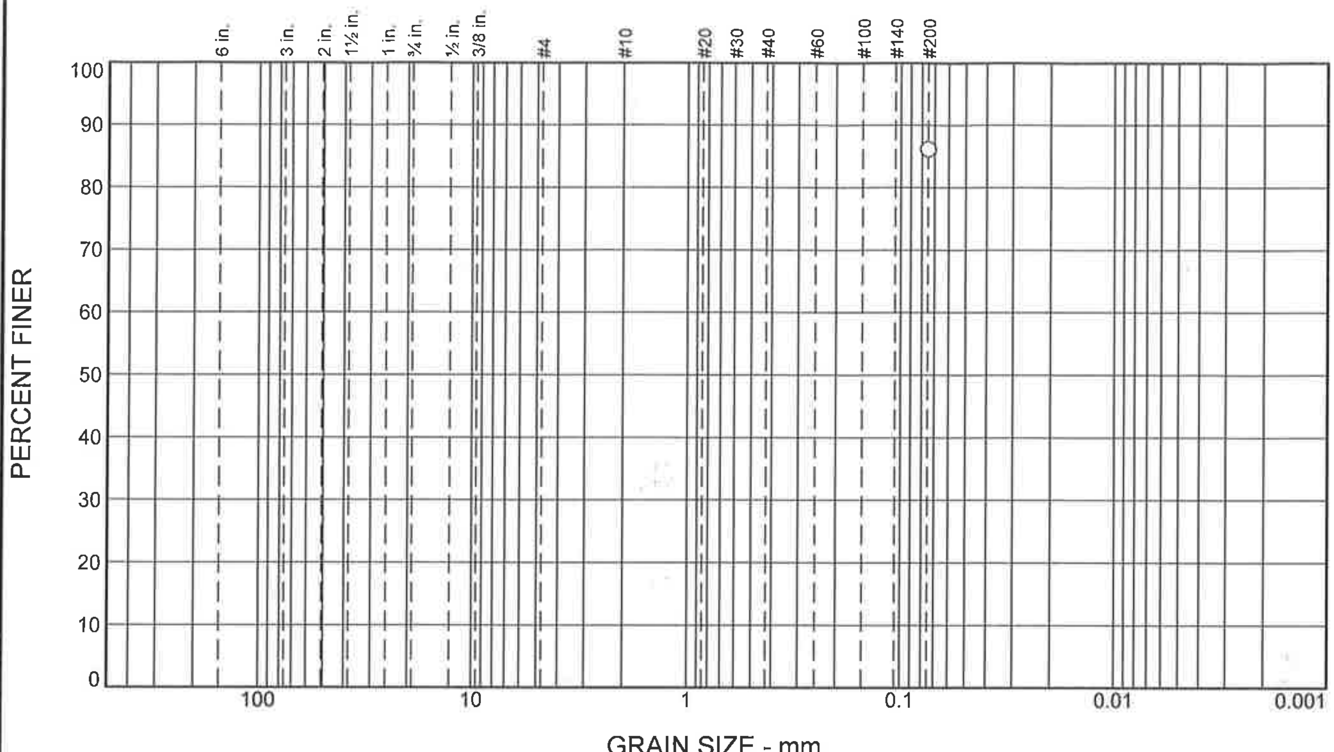
Client: WSP

Project: Aki Kurose Middle School Modernization, PS22205930

Project No: 1774 **Figure** 8449

These results are for the exclusive use of the client for whom they were obtained. Results relate to only the material tested.

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
						86	

TEST RESULTS			
Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
#200	86		

* (no specification provided)

Material Description

Fine silty soil

Atterberg Limits (ASTM D 4318)

PL= LL= PI=

Classification

USCS (D 2487)= AASHTO (M 145)=

Coefficients

D_{90}= D_{85}= D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Remarks

Moisture content = 33.6%

Date Received: 1/30/2023 **Date Tested:** 2/3/2023

Tested By: T. Fuller

Checked By: M. Holtz

Title: Laboratory Supervisor

Source of Sample: B-7, S-1 @ 2.5'
Sample Number: 8450

Date Sampled: 1/30/2023

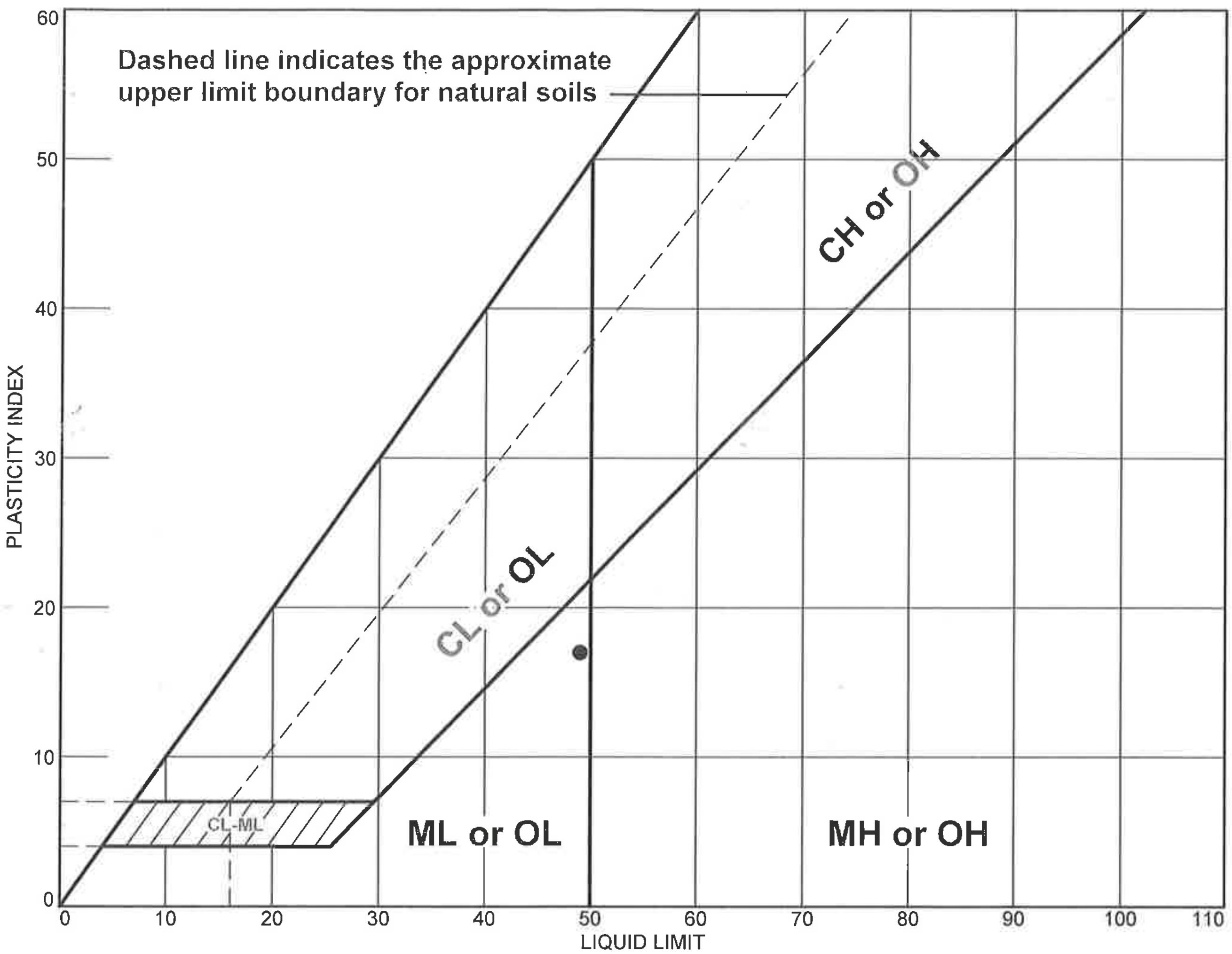
O'Neill Service Group
17619 NE 67th Ct Suite 100
Redmond, WA 98052

Client: WSP
Project: Aki Kurose Middle School Modernization, PS22205930

Project No: 1774 **Figure** 8450

These results are for the exclusive use of the client for whom they were obtained. Results relate to only the material tested.

LIQUID AND PLASTIC LIMITS TEST REPORT



	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	Fine silty soil	49	32	17			

Project No. 1774 **Client:** WSP

Project: Aki Kurose Middle School Modernization, PS22205930

● **Source of Sample:** B-7, S-2 @ 5' **Sample Number:** 8451

Remarks:
● Sampled on 1/30/23, Received on 1/30/23, tested on 2/3/23.
Moisture content = 25.7%

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Redmond, WA 98052

Figure 8451

These results are for the exclusive use of the client for whom they were obtained. Results relate to only the material tested.

Tested By: T. Fuller **Checked By:** M. Holtz

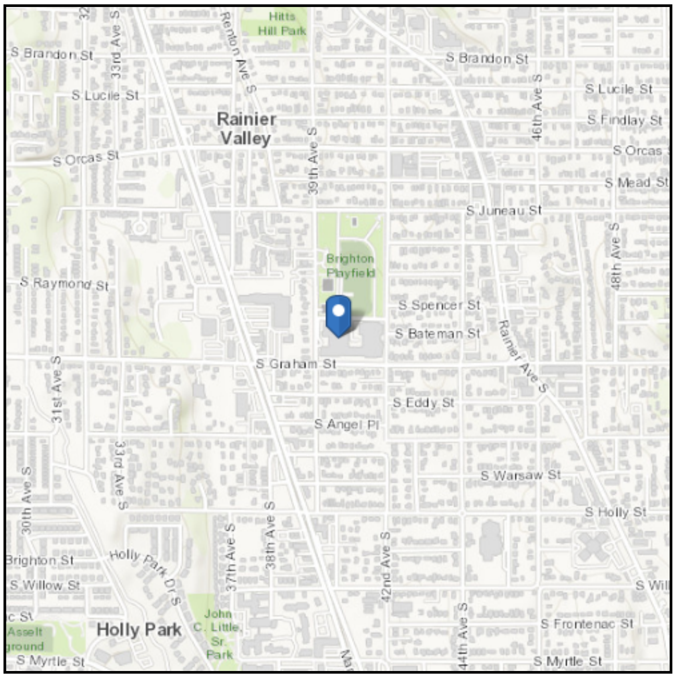
APPENDIX C

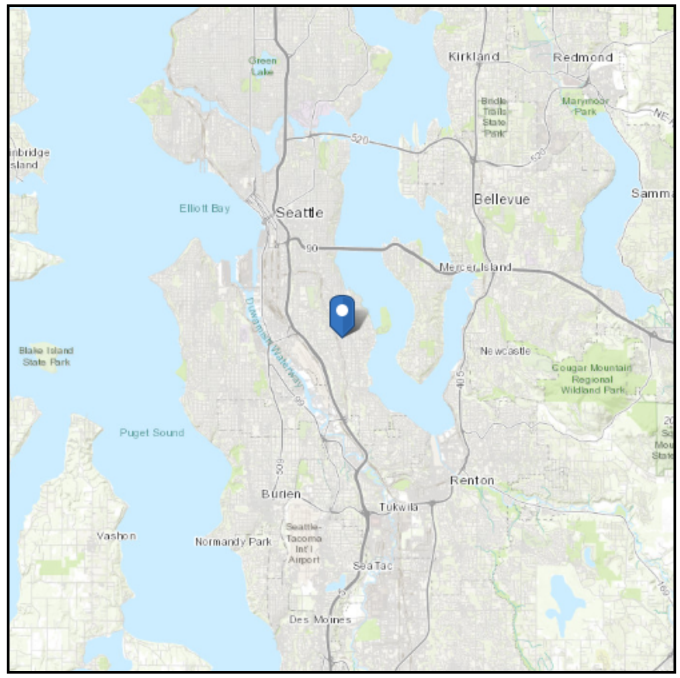
SEISMIC INPUTS AND THE ASCE 7 HAZARDS REPORT

Address:
3928 S Graham St
Seattle, Washington
98118

ASCE 7 Hazards Report

Standard:	ASCE/SEI 7-16	**Latitude:**	47.546628
Risk Category:	III	**Longitude:**	-122.28255
Soil Class:	D - Stiff Soil	**Elevation:**	146.2 ft (NAVD 88)





ASCE
AMERICAN SOCIETY OF CIVIL ENGINEERS

Seismic

Site Soil Class: D - Stiff Soil

Results:

S_S :	1.501	S_{D1} :	N/A
S_1 :	0.52	T_L :	6
F_a :	1	PGA :	0.644
F_v :	N/A	PGA_M :	0.708
S_{MS} :	1.501	F_{PGA} :	1.1
S_{M1} :	N/A	I_e :	1.25
S_{DS} :	1.001	C_v :	1.4

Ground motion hazard analysis may be required. See ASCE/SEI 7-16 Section 11.4.8.

Data Accessed: Wed Feb 22 2023

Date Source: USGS Seismic Design Maps

The ASCE 7 Hazard Tool is provided for your convenience, for informational purposes only, and is provided "as is" and without warranties of any kind. The location data included herein has been obtained from information developed, produced, and maintained by third party providers; or has been extrapolated from maps incorporated in the ASCE 7 standard. While ASCE has made every effort to use data obtained from reliable sources or methodologies, ASCE does not make any representations or warranties as to the accuracy, completeness, reliability, currency, or quality of any data provided herein. Any third-party links provided by this Tool should not be construed as an endorsement, affiliation, relationship, or sponsorship of such third-party content by or from ASCE.

ASCE does not intend, nor should anyone interpret, the results provided by this Tool to replace the sound judgment of a competent professional, having knowledge and experience in the appropriate field(s) of practice, nor to substitute for the standard of care required of such professionals in interpreting and applying the contents of this Tool or the ASCE 7 standard.

In using this Tool, you expressly assume all risks associated with your use. Under no circumstances shall ASCE or its officers, directors, employees, members, affiliates, or agents be liable to you or any other person for any direct, indirect, special, incidental, or consequential damages arising from or related to your use of, or reliance on, the Tool or any information obtained therein. To the fullest extent permitted by law, you agree to release and hold harmless ASCE from any and all liability of any nature arising out of or resulting from any use of data provided by the ASCE 7 Hazard Tool.

ATTACHMENT D: DRAFT ARBORIST REPORT

Project No. TS - 8083

Arborist Report
DRAFT

To:	Seattle Public Schools c/o Vincent Gonzales
Site:	Aki Kurose Middle School – 3928 S Graham St, Seattle, WA 98118
Re:	Tree Inventory and Assessment
Date:	August 9, 2024
Project Arborist:	Sean Dugan, Registered Consulting Arborist # 457 ISA Board Certified Master Arborist PN- 5459B ISA Qualified Tree Risk Assessor Charlie Vogelheim, ISA Certified Arborist PN- 9375A ISA Qualified Tree Risk Assessor
Reverences:	Aki Kurose MS Renovation and Addition
Attached:	Tree Inventory - Table of Trees Site Map Photographic Documentation

Summary
Tree Solutions Inc. inventoried, tagged and assessed eight trees[1] within the project boundaries. I also assessed 16 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, two met the criteria of tier 2 per the definition in Seattle Director's Rule 07-2023.

I reviewed conceptual development plans for tree retention feasibility. I have not reviewed finalized plans.

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 must be on the plan set .

[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 Charlie Vogelheim and Sean Dugan of Tree Solutions Inc. on April 4, 2023 to the above referenced site. We were asked to complete a tree inventory and assessment by Vincent Gonzales, Project Manager for Capital Projects at Seattle Public Schools, to acquire information for project planning. We returned to the site on July 11, 2024 to take photos of the summer foliage of the deciduous trees and to collect data on trees that had been planted since our first visit.

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, or if they were planted in the adjacent right of way (ROW). Alphabetical tree identifiers are used for trees off-site on adjacent properties and the Seattle Department of Transportation (SDOT) identifier for the ROW trees.

Observations

Site

The 209,157 square foot site fronts S. Graham Street in the Hillman City neighborhood of Seattle. School buildings, portable structures, and visitor/employee parking lots currently exist on-site. The landscape around the buildings was mostly hardscapes and lawn with some landscaped shrubbery.

According to the Seattle Department of Construction and Inspections GIS map there are no environmentally critical areas on-site.

Trees

On-site Trees

We assessed all regulated trees on the school property. We have attached an aerial photograph with the approximate location of the trees to serve as the site map. All of the on-site trees are located along the southern border of the property in the landscaping that fronts the entrance of the school.

Information specific to each tree can be found in the attached Tree Inventory - Table of Trees. Two of the eight trees on-site (trees 177 and 182) are considered tier 2 trees as defined in Director's Rule 07-2023. Both are in fair to excellent health and structural condition.

Tree 174 is a tier 3 Arborvitae (*Thuja occidentalis*) tree located near the southwest corner of the existing structure. The tree is in good health condition and the structure is considered fair condition. There is a hollow in the main trunk near a forked attachment point. There is a seam at the junction, which decreases the stability of the structure.

Tree 177, an tier 2 Sitka spruce (*Picea sitchensis*) tree, appears to be slightly stressed from insect damage.

Tree 181 was a European white birch (*Betula pendula*) tree that had dieback from bronze birch borer. This tree had been removed when we did our July 2024 site visit.

Tree 182 is an tier 2 Japanese maple (*Acer palmatum*) tree in excellent health and structural condition. This tree has a nice form and should be considered a high value tree for retention.

<u>Adjacent Site Trees</u>
Trees A and B were tier 2 trees in the park north of the property with overhanging canopies

There were five trees planted in the ROW during our initial April 2023 visit however nine additional trees had been planted in the ROW when we did our July 2024 visit. Several smaller recently planted trees in the ROW appear to have damage from string mowers and one tree has died from such damage (TRE-1055664 Photo 1).

I have included an aerial photograph / survey of the site to serve as the site map and attached a table of trees that has detailed information about each tree.

Municipal Regulations

Tree Removal

<u>Private Property Trees (SDCI)</u>
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 07-2023	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.

Vegetation in Critical Areas

All vegetation and trees (on both public and private property) within Environmentally Critical Areas (ECAs) are regulated by SMC 25.09.070 [4].

All vegetation and trees located within the Shoreline District are protected by SMC 25.60A.

Tree Protection

Information regarding specific tree protection requirements can be found in the Seattle Public Schools Section 015639 Tree and Plant Protection Specification (TPPS).

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 G) 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[5]. No disturbance is allowed

[4] Seattle Municipal Code 25.09.070 Standards for Trees and Vegetation in Critical Areas

[5] Email from SDOT Urban Forestry, Ben Roberts September 12, 2023

within this area without SDOT site visit, approved TVSPP, and tunnelling may be required for utility installation.

Tree Replacement Requirements

Private Property Trees (SDCI)
On private property, a minimum of one tree replacement must be planted for each tier 1, 2 and 3 tree removed (SMC 25.11.090). Replacement tree species must have a mature canopy that is proportional to the one removed. If on-site replanting is not feasible, the applicant may make a payment in-lieu.

Maintenance and monitoring of all replacement trees is required for five years after planting. Maintenance and monitoring include sufficient action to ensure survival of replacement trees, replacement of failed trees, photographic documentation of planting success retained for the five-year period after planting (SMC 25.11.090.B).

Table 2. Replanting Requirements / Payment In-Lieu

Tree category*	Replacement Qty	Replacement Requirements**		Payment In-Lieu Amount***
Tier 1, Tier 2 which are ≥ 24" DSH	1	5-yr maintenance & monitoring period • 80% survival is required if 2 or more replacement trees are required. • 100% survival is required if only 1 replacement is required.	OR	\$17.87 / in² of tree removed, not less than \$8,080
Tier 1, Tier 2 which are < 24" DSH	1	5-yr maintenance & monitoring period • 80% survival is required if 2 or more replacement trees are required. • 100% survival is required if only 1 replacement is required.	OR	\$8,080 per tree
Tier 3	1	5-yr maintenance & monitoring period • 80% survival is required if 2 or more replacement trees are required. • 100% survival is required if only 1 replacement is required.	OR	\$2,833 per tree
Tier 4	0			none

** Classification based on definitions in Seattle Municipal Code (SMC) 25.11.050 and Director's Rule 7-2023*
*** Tree Replacement based on requirements outlined in SMC 25.11.090, Director's Rule 8-2023, and Executive Order 2023-03.*
****Payment In-Lieu fees are defined in Director's Rule 8-2023.*

Trees in the ROW
All healthy site-appropriate trees removed within the ROW (including a greenbelt) require an SDOT Urban Forestry Tree Removal Permit and require tree replacements at a 3:1 ratio[6]. A minimum of 2 replacements are required for trees dead, hazardous, or not appropriate for the site.

Street tree replanting (species, clearance, root barriers, mulching, irrigation, soil preparation, and maintenance) should follow the SDOT Street Tree Manual and Standard Plan 100a.

[6] Executive Order 2023-03: One Seattle Tree Plan.

Discussion – Construction Impacts

Proposed Plans

Front Entrance
The conceptual drawings for this project suggest that most of the work done around the on-site trees will be updates to the landscape and walkways. The buildings adjacent to the trees appear to only propose internal updates, which should not negatively impact trees.

Trees 179 and 180 tier 3 trees are in an area adjacent to stairs leading up to the school's main entrance. Tree 179 is a Colorado spruce (*Picea pugens*) tree in excellent health and structural condition. Tree 180 is a Norway spruce (*Picea aibes*) tree in good health and structural condition. Both trees likely have roots intertwined with the rockery and possibly under the current walkway and staircase.

Conceptual drawings suggest this entrance pathway may be altered with the addition of a new ramp. It is possible that tree roots extend into the subgrade below the pavement. If retention of these trees is desired, these trees will need to be taken into consideration for the design and installation of pathways within their driplines.

Southwest Corner
Tree 174 is a tier 3 arborvitae (*Thuja occidentalis*) tree and Tree 175 is an tier 3 Fraser photinia (*Photinia x fraseri*) tree. Both are growing above a retaining wall parallel to 38th Ave S on the southwest corner of the site (Photo 4). These trees are reliant upon the wall, which should be considered if the plans are to remove or alter this wall.

SDOT Trees
In areas where there are grass islands/planting strips that connect trees, the entire grass area should be fenced as one unit to prevent compaction from the storage of materials or foot traffic. Constructing wood boxes, or suitable equivalent, around the perimeter of the grassy area is an effective means of tree protection.

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. These plans are needed prior to finalization of this report.
- Follow all requirements outlined in SMC 25.11.060 [7] for site planning.
- Include tree IDs, BTPAs, 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.

[7] Seattle Municipal Code 25.11.060. Requirements for Trees when Development is Proposed

- 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.[8]
- Hire a Registered SDOT Tree Service Provider to perform all pruning on SDOT trees.

Post-Construction

- Plant tree replacements.
- 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,

Sean Dugan,
Principal Consulting Arborist

Charlie Vogelheim,
Consulting Arborist

[8] 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.

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)

Feeder Root Zone: an area encircling the base of a tree equal to twice the diameter of the dripline (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 7-2023 "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 25.09.070. Standards for Trees and Vegetation in Critical Areas.

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 7-2023 - Designation of Tier-2 Trees*". Seattle, WA, 2023.

Torgelson, N. "*Director's Rule 8-2023 - Payment in Lieu of Tree Replacement Pursuant to the Tree Protection Code*". Seattle, WA, 2023.

Appendix C Photographs

Photo 1. SDOT ROW tree TRE-1055664 that has died from string mower damage at the base. Other newly planted trees show similar damage but have not died. (April 2023)

Photo 2. Tree 179 growing in a rockery and adjacent to the main stairway. The tree's roots are likely intertwined with the rockery and should be taken into consideration when designing and installing the new school entrance. (April 2023)

Photo 3. Tree 180 in front of the main stairway entrance. This tree likely has roots intertwined with the rockery and beneath the pathway. (April 2023)

Photo 4. Trees 174 and 175 are growing adjacent to and are dependent on the retaining wall along 38th Ave S. (April 2023)

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 [$(\text{stem})^2 + (\text{stem})^2 + (\text{stem})^2$]. 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 when applicable.

Trees growing in the ROW planting strips have previously been identified by the Seattle Department of Transportation (SDOT) and been given an identification (ID) number by that department with the prefix TRE. Those trees were not tagged by Tree Solutions Inc.

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

Aki Kurose Middle School, Seattle, WA

Arborist: CV SD
Date of Inventory: 4/1/23, 7/11/24
Table Prepared: 8/9/24

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.
DSH for multi-stem trees are noted as 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 7-2023.
Fees-in-Lieu for removed trees are calculated using the methods defined in the SMC 25.11.115 (ordinance 126821).
Tree Protection Area is calculated as 10 times DSH or greater depending on tree species, health, and age.
Species tolerance to construction disturbance is from Trees and Development by Nelda Matheny and James Clark, published by the International Society of Arboriculture in 1998.
Letters are used to identify trees on neighboring properties with overhanging canopies.
Dripline is measured from the center of the tree to the outermost extent of the canopy.

							Dripline Radius (feet)									
Tree ID	**Scientific Name**	**Common Name**	**DSH** (inches)	**DSH Multistem**	**Health Condition**	**Structural Condition**	**N**	**E**	**S**	**W**	**Tier 2 Threshold**	**Tier Level**	**Jurisdiction (SDOT/SDCI)**	**Basic Tree Protection Area** (feet)	**Tree Protection Area** (feet)	**Notes**
174	*Thuja occidentalis*	Arborvitae	12.6		Good	Fair	4.5	4.5	3.5	9.5	*24.0*	3	SDCI	13	11	Split and hollow in main trunk at 4 feet, not a good junction.
175	*Photinia x fraseri*	Fraser photinia	19.2	7, 11, 10, 6, 8	Good	Good	16.8	14.8	15.8	22.8	*24.0*	3	SDCI	19	16	Measured at 3 feet at narrowest part below unions. Reliant upon the wall and enveloping the fence to west. Needs clearance pruning over road to west.
176	*Pinus edulis*	Colorado pinon pine	14.4	10.4, 10	Good	Good	7.6	8.6	19.6	20.6	*24.0*	3	SDCI	14	12	Wounds on east side, growing into powerlines to south.
177	*Picea sitchensis*	Sitka spruce	7.5		Fair	Good	7.3	7.3	7.3	8.3	*6.0*	2	SDCI	8	6	Stressed from insect damage, figure out treatment program. Surface roots with mower damage to north.
178	*Pinus edulis*	Colorado pinon pine	14.3		Fair	Good	9.6	7.6	10.6	11.6	*24.0*	3	SDCI	14	12	Two inch hanger on west side in canopy. Sparse foliage, some dieback at the tips, surface roots with mower damage to north.
179	*Picea pungens*	Colorado spruce	16.8		Excellent	Excellent	7.7	12.7	11.7	10.7	*24.0*	3	SDCI	17	14	Roots likely intertwined with rockery at base.
180	*Picea abies*	Norway spruce	15.7		Good	Good	13.7	13.7	14.7	13.7	*24.0*	3	SDCI	16	13	A little chlorotic, roots intertwined with rockery. Adjacent to stairs, probably roots under stairs.
181	*Betula pendula*	European white birch	16.5		Dead	Dead	-	-	-	-	*24.0*	-	SDCI	-	-	Dieback from bronze birch borer. Tree removed by 2024 visit.
182	*Acer palmatum*	Japanese maple	12.0		Excellent	Excellent	16.5	13.5	13.5	16.5	*12.0*	2	SDCI	12	10	Measured at narrowest point below union.
							Offsite Trees									
A	*Robinia pseudoacacia*	Black locust	45.5		Good	Good	27.9	30.9	37.9	40.9	*24.0*	2	SPR	46	38	Slight lean to southwest, possible overextend branches to west.
B	*Cedrus deodara*	Deodar cedar	47.7		Good	Fair	36.0	37.0	42.0	42.0	*24.0*	2	SPR	48	40	Compaction around base, some surface roots. Large 2 foot diameter pruning wound to south west with physical decay pocket. Topped at about 50 feet.

Table of Trees

Aki Kurose Middle School, Seattle, WA

Arborist: CV SD
Date of Inventory: 4/1/23, 7/11/24
Table Prepared: 8/9/24

Tree ID	Scientific Name	Common Name	DSH (inches)	DSH Multistem	Health Condition	Structural Condition	N	E	S	W	Tier 2 Threshold	Tier Level	Jurisdiction (SDOT/SDCI)	Basic Tree Protection Area (feet)	Tree Protection Area (feet)	Notes
TRE-1055664	*Cornus kousa*	Kousa dogwood	1.9		Dead	Dead	0.1	0.1	0.1	0.1	-	-	SDOT	-	-	Died from mower damage.
TRE-1107157	*Ulmus procera*	English elm	2.1		Good	Fair	2.1	2.1	2.1	2.1	-	-	SDOT	-	-	Mower damage at base, growing under power lines.
TRE-1107158	*Ulmus procera*	English elm	2.4		Good	Good	2.1	2.1	2.1	2.1	-	-	SDOT	-	-	Mower damage at base, growing under utility and power lines.
TRE-1109600	*Rhamnus purshiana*	Cascara	2.0		Good	Good	2.1	2.1	2.1	2.1	-	-	SDOT	-	-	
TRE-1109609	*Prunus x subhirtella 'Autumnalis Rosea'*	Autumn flowering cherry	12.9		Good	Good	21.5	11.5	16.5	18.5	-	-	SDOT	-	-	Corrected lean to the north. Sidewalk lift to the west from root damage.
TRE-1109610	*Malus sp.*	Crabapple	7.7		Good	Good	11.3	9.3	11.3	12.3	*20.0*	-	SDOT	-	-	Lots of mechanical damage from vehicles on the east side,
TRE-1141505	*Nyssa sylvatica 'Green Gable'*	Green Gable™ Tupelo	2.0		Fair	Good	3.1	3.1	3.1	3.1	*24.0*	-	SDOT	-	-	
TRE-1141506	*Ginkgo biloba*	Gingko biloba	1.0		Good	Good	2.0	2.0	2.0	2.0	-	-	SDOT	-	-	Transplant stress.
TRE-1141507	*Ginkgo biloba*	Gingko biloba	1.0		Fair	Fair	2.0	2.0	2.0	2.0	-	-	SDOT	-	-	Leader was topped at 5 feet. Transplant stress.
TRE-1141508	*Parrotia persica*	Persian ironwood	2.0		Fair	Good	2.1	2.1	2.1	2.1	-	-	SDOT	-	-	Drought stress.
TRE-1141509	*Parrotia persica*	Persian ironwood	2.0		Fair	Good	3.1	3.1	3.1	3.1	-	-	SDOT	-	-	Transplant stress.
TRE-1153676	*Malus "Schmidtcutleaf"*	Golden Raindrops® Crabapple	1.0		Poor	Good	2.0	2.0	2.0	2.0	*20.0*	-	SDOT	-	-	Extremely drought stressed.
TRE-1153682	*Nyssa sylvatica 'Wildfire'*	Wildfire Tupelo	1.0		Good	Good	2.0	2.0	2.0	2.0	-	-	SDOT	-	-	
TRE-1153683	*Parrotia persica*	Persian ironwood	2.0		Fair	Good	2.1	2.1	2.1	2.1	-	-	SDOT	-	-	Stressed canopy likely from transplant.

Tree Solutions Inc
Consulting Arborists

2940 Westlake Ave N #200
Seattle, WA 98109
206-528-4670

Seattle Public Schools - Aki Kurose MS
3928 S Graham St
Seattle, WA 98118
Parcel: 3332501090

Legend

- Assessed Trees
- King County Parcels

Feet
0 15 30 60

N

Site Map

Date: July 12, 2024

Arborist:
Charlie Vogelheim
ISA PN-9375A
ISA TRAQ

Project No. TS - 8083

TO:	Seattle Public Schools c/o Vincent Gonzales
SITE:	Aki Kurose Middle School – 3928 S. Graham St. Seattle WA. 98118
RE:	Photo documentation Submittal Section No.: 01 56 39 - 1.10 C.1 Tree and Plant Protection
DATE:	May 1, 2023
PROJECT ARBORISTS:	Sean Dugan, ASCA Registered Consulting Arborist #457 ISA Board Certified master Arborist PN-5459B ISA Qualified Tree Risk Assessor Charlie Vogelheim, ISA Certified Arborist PN- 9375A ISA Qualified Tree Risk Assessor

The initial photograph documentation for the Tree and Plant Protection were taken in April 2023, prior to construction activities, and when the deciduous trees were beginning to come out of dormancy. Per submittal requirement 1.10 C.1, photographs will need to be re-taken of the deciduous trees produce a full canopy of leaves.

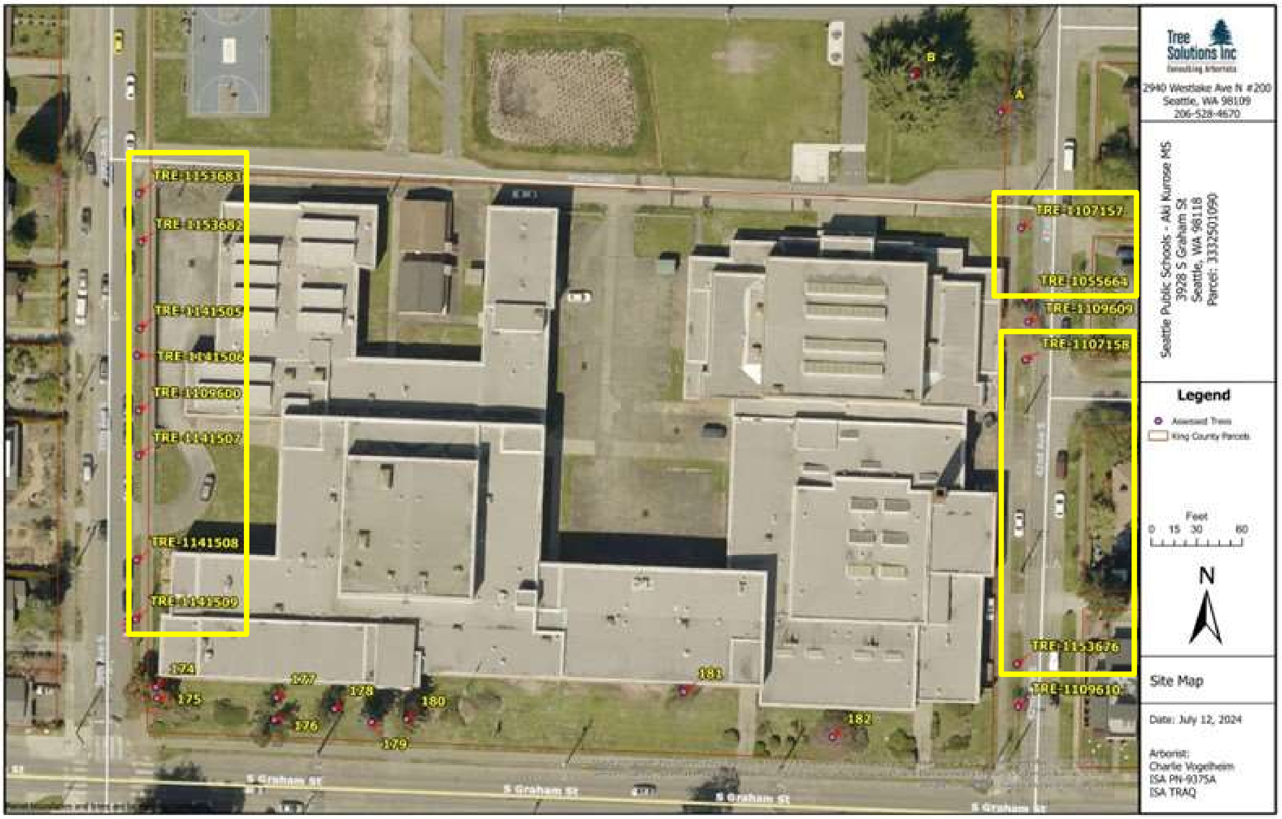


Figure 1. Site map with tree locations. Trees within the yellow boxes were not planted when initial photographs were taken and are not in this document. Photographs for these trees are included in the photo documentation document dated July 31, 2024.

Tree 174:

North: **April 4, 2023**

South: **April 4. 2023**

East: **April 4, 2023**

West: **April 4, 2023**

Tree 175:

North: **April 4, 2023**

South: **April 4. 2023**

East: **April 4, 2023**

West: **April 4, 2023**

Tree 176:

North: **April 4, 2023**

South: **April 4. 2023**

East: **April 4, 2023**

West: **April 4, 2023**

Tree 177:


North: **April 4, 2023**


South: **April 4. 2023**


East: **April 4, 2023**


West: **April 4, 2023**

Tree 178:

North: **April 4, 2023**

South: **April 4. 2023**

East: **April 4, 2023**

West: **April 4, 2023**

Tree 179:

North: **April 4, 2023**

South: **April 4. 2023**

East: **April 4, 2023**

West: **April 4, 2023**

Tree 180:

North: **April 4, 2023**

South: **April 4. 2023**

East: **April 4, 2023**

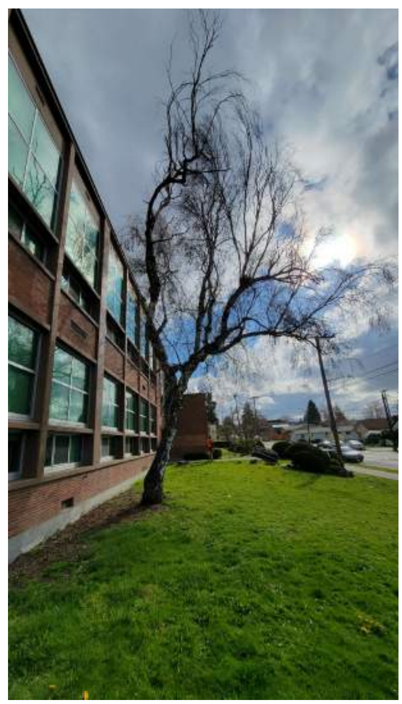
West: **April 4, 2023**

Tree 181:

North: **April 4, 2023**

South: **April 4. 2023**

East: **April 4, 2023**



West: **April 4, 2023**

Tree 182:

North: **April 4, 2023**

South: **April 4. 2023**

East: **April 4, 2023**

West: **April 4, 2023**

Off-Site Tree A:


North: **April 4, 2023**


South: **April 4. 2023**


East: **April 4, 2023**


West: **April 4, 2023**

Off-Site Tree B:


North: **April 4, 2023**


South: **April 4. 2023**


East: **April 4, 2023**


West: **April 4, 2023**

ROW TRE-110609:

North: **April 4, 2023**

South: **April 4. 2023**

East: **April 4, 2023**

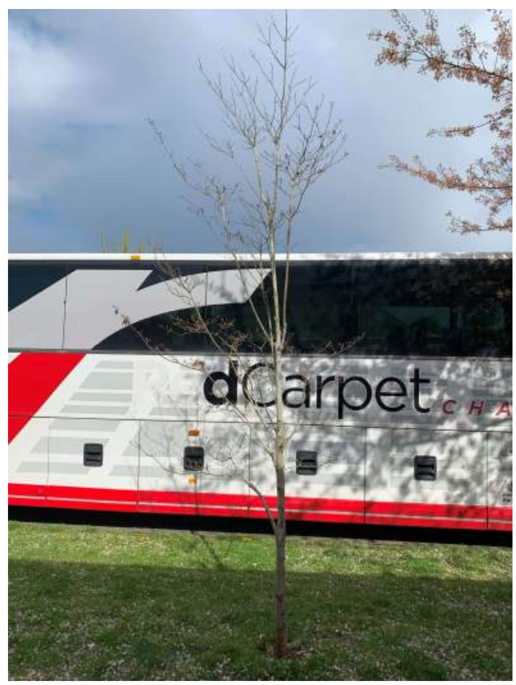
West: **April 4, 2023**

ROW TRE-1055664: Tree is Dead and will not fully foliate.

North: **April 4, 2023**

South: **April 4. 2023**

East: **April 4, 2023**



West: **April 4, 2023**

ROW TRE-1107157:

North: **April 4, 2023**

South: **April 4. 2023**

East: **April 4, 2023**

West: **April 4, 2023**

ROW TRE-1107158:

North: **April 4, 2023**

South: **April 4. 2023**

East: **April 4, 2023**

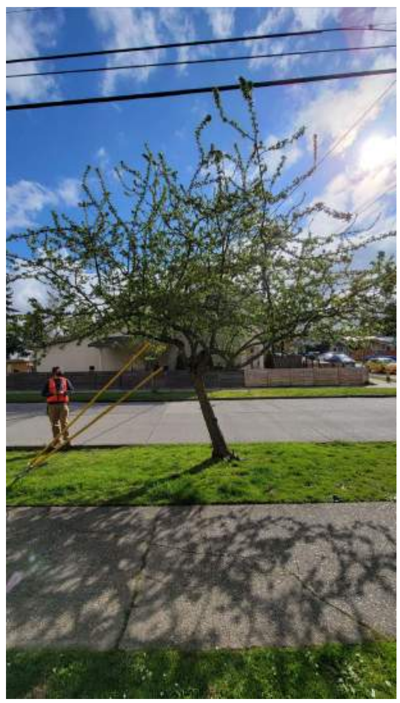
West: **April 4, 2023**

ROW TRE-1109610:

North: **April 4, 2023**

South: **April 4. 2023**

East: **April 4, 2023**



West: **April 4, 2023**

Tree Solutions Inc
Consulting Arborists

Project No. TS - 8083

TO:	Seattle Public Schools c/o Vincent Gonzales
SITE:	Aki Kurose Middle School – 3928 S. Graham St. Seattle WA. 98118
RE:	Photo documentation Submittal Section No.: 01 56 39 - 1.10 C.1 Tree and Plant Protection
DATE:	July 31, 2024
PROJECT ARBORISTS:	Sean Dugan, ASCA Registered Consulting Arborist #457 ISA Board Certified master Arborist PN-5459B ISA Qualified Tree Risk Assessor Charlie Vogelheim, ISA Certified Arborist PN- 9375A ISA Qualified Tree Risk Assessor

The initial photograph documentation for the Tree and Plant Protection were taken in April 2023, prior to construction activities, and when the deciduous trees were beginning to come out of dormancy. Per submittal requirement 1.10 C.1, photographs were re-taken of the deciduous trees produce a full canopy of leaves in July 2024. This document includes summer photographs as well as additional trees that were planted by SDOT within adjacent parking strips.

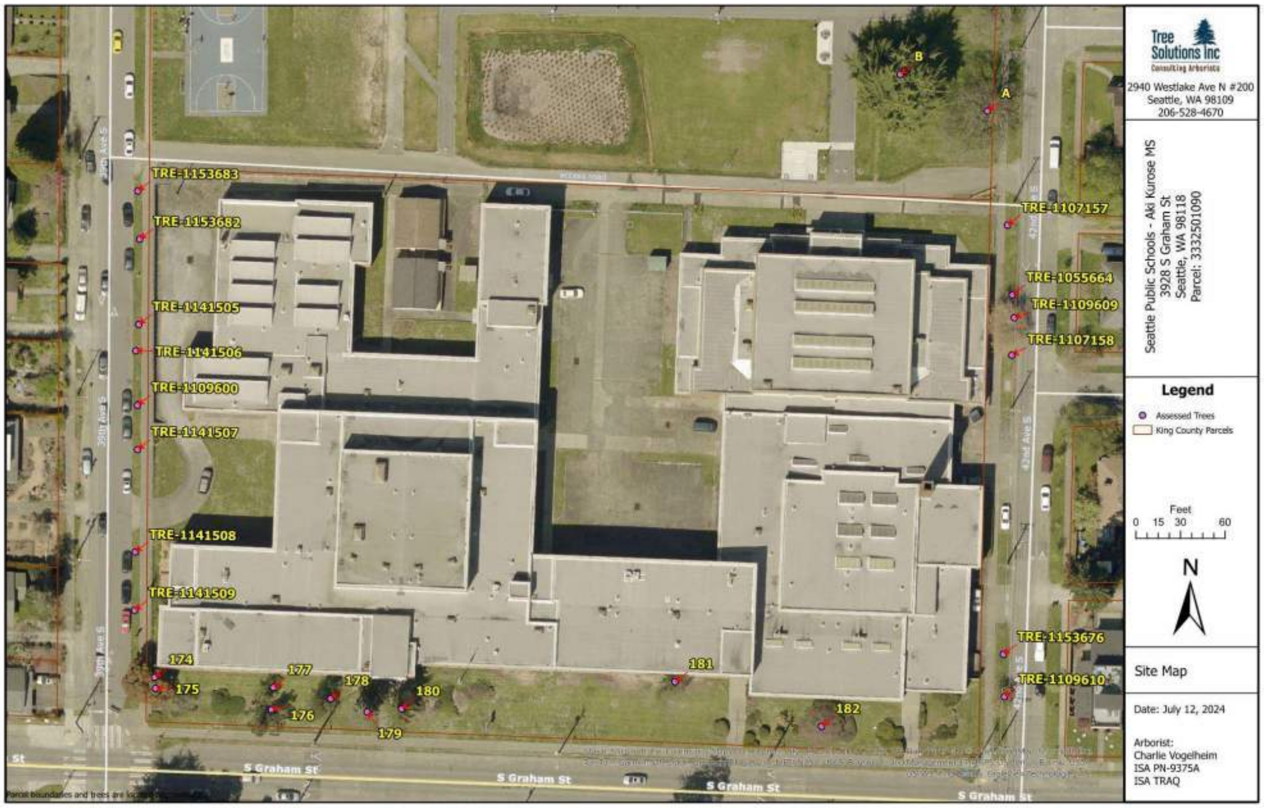


Figure 1. Site map with tree locations

Tree 181:

July 11, 2024 – Tree 181 has been removed.

Tree 182

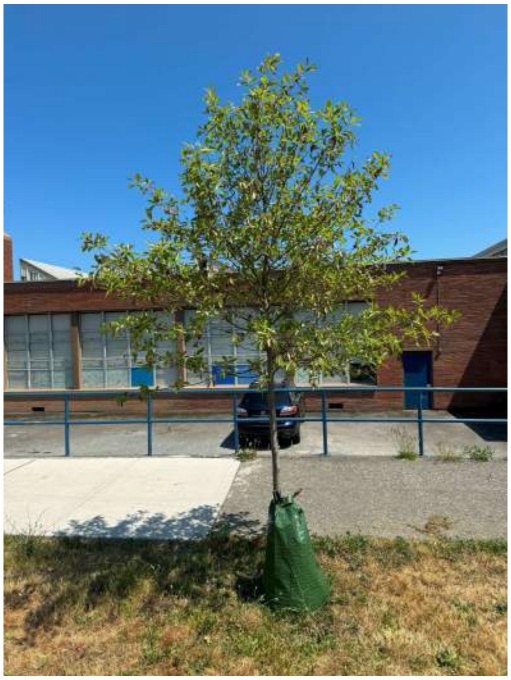
West – July 11, 2024

East – July 11, 2024

South – July 11, 2024

North – July 11, 2024

TRE-1141505:



West – July 11, 2024

East – July 11, 2024

South – July 11, 2024

North – July 11, 2024

TRE-1153682:

West – July 11, 2024

East – July 11, 2024

South – July 11, 2024

North – July 11, 2024

TRE-1153683:

West – July 11, 2024

East – July 11, 2024

South – July 11, 2024

North – July 11, 2024

TRE-1107157

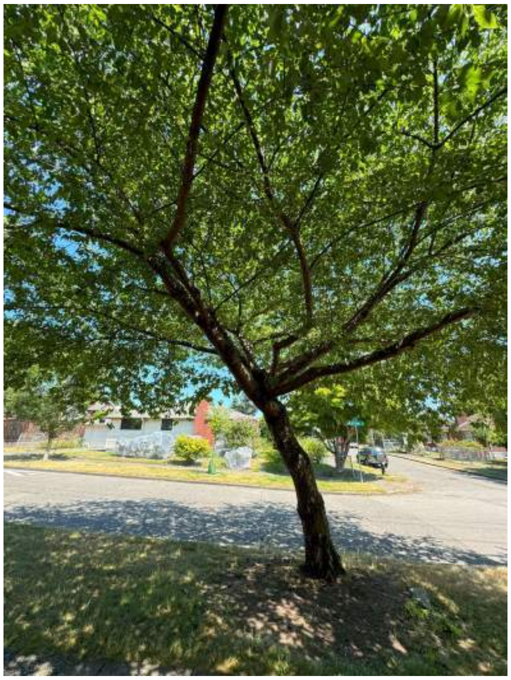

West – July 11, 2024


East – July 11, 2024


South – July 11, 2024


North – July 11, 2024

TRE-1109609



West – July 11, 2024

East – July 11, 2024

South – July 11, 2024

North – July 11, 2024

TRE-1107158

West – July 11, 2024

East – July 11, 2024

South – July 11, 2024

North – July 11, 2024

TRE-1153676

West – July 11, 2024

East – July 11, 2024

South – July 11, 2024

North – July 11, 2024

TRE-1109610


West – July 11, 2024


East – July 11, 2024


South – July 11, 2024


North – July 11, 2024

TRE-1141509

West – July 11, 2024

East – July 11, 2024

South – July 11, 2024

North – July 11, 2024

TRE-1141508

West – July 11, 2024

East – July 11, 2024

South – July 11, 2024

North – July 11, 2024

TRE-1141507

West – July 11, 2024

East – July 11, 2024

South – July 11, 2024

North – July 11, 2024

TRE-1109600

West – July 11, 2024

East – July 11, 2024

South – July 11, 2024

North – July 11, 2024

TRE-1141506

West – July 11, 2024

East – July 11, 2024

South – July 11, 2024

North – July 11, 2024

Tree A

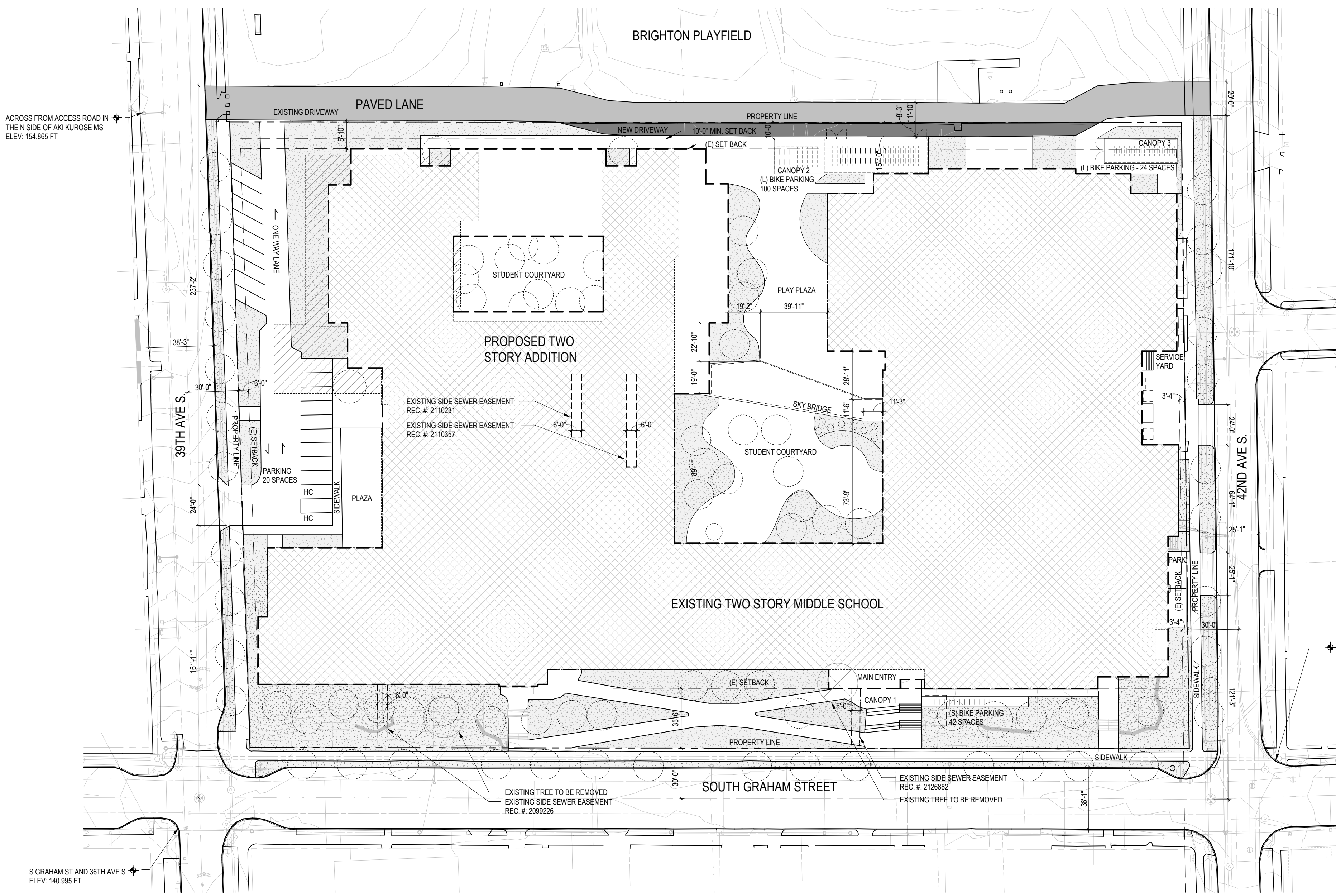

West – July 11, 2024


East – July 11, 2024


South – July 11, 2024


North – July 11, 2024

ATTACHMENT E: SITE PLAN



SITE PLAN

SCALE: 1" = 30'-0"

PROJECT INFORMATION

LEGAL DESCRIPTION:

LOTS 1 THROUGH 38, INCLUSIVE, BLOCK 10 AND ALL OF BLOCK 9, HILLMAN CITY DIVISION NO. 5, ACCORDING TO THE PLAT THEREOF RECORDED IN VOLUME 10 OF PLATS, PAGE 64, RECORDS OF KING COUNTY, WASHINGTON;

TOGETHER WITH ALL OF VACATED SOUTH BATEMAN STREET AND ALL OF THE VACATED ALLEY IN SAID BLOCK 10, HILLMAN CITY DIVISION NO. 5, AS VACATED UNDER CITY OF SEATTLE ORDINANCE NO. 78241;

TOGETHER WITH THAT PORTION OF LOT 10, SUNNYSIDE FIVE ACRE TRACTS, ACCORDING TO THE PLAT THEREOF RECORDED IN VOLUMNE 2 OF PLATS, PAGE 120, IN KING COUNTY, WASHINGTON, LYING SOUTHERLY OF A LINE 125 FEET NORTHERLY OF AND PARALLEL WITH THE CENTER LINE OF VACATED SOUTH BATEMAN STREET;

EXCEPT THAT PORTION THEREOF IN ROADS;

(ALSO KNOWN AS PARCEL A OF CITY OF SEATTLE LOT BOUNDARY ADJUSTMENT NO. 2402540, RECORDED UNDER RECORDING NO. 20040702900002, RECORDS OF KING COUNTY, WASHINGTON).

SITUATE IN THE COUNTY OF KING, STATE OF WASHINGTON.

PARCEL NUMBER:
333250-1090

PROJECT NOTES:
PROPOSED MAXIMUM HEIGHT OF THE NEW ADDITION = 35'-0"
PROPOSED MAXIMUM HEIGHT OF THE NEW ADDITION
INCLUDING PENTHOUSE = 47'-0"

PROPOSED # OF TREES REMOVED = 2
PROPOSED ONSITE STORMWATER MANAGEMENT
SYSTEM AND WATER QUALITY RUNOFF TREATMENT = 680 SF

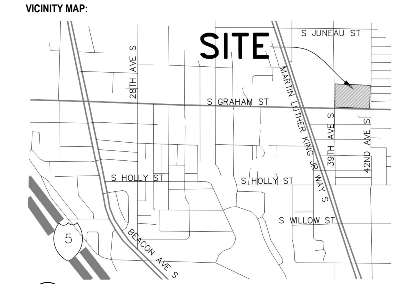
PROPOSED BUILDING FOOTPRINT = 126,804 SF
PROPOSED IMPERVIOUS SITE AREA = 35,138 SF
PROPOSED PERVIOUS SITE AREA= 47,215 SF

EXISTING BUILDING FOOTPRINT = 122,620 SF
EXISTING IMPERVIOUS SITE AREA = 43,048 SF
EXISTING PERIVOUS SITE AREA= 43,488 SF

REQUIRED PARKING = 0 SPACES
REQUIRED LONG TERM BIKE PARKING = 123
REQUIRED SHORT TERM BIKE PARKING = 41

PROPOSED PARKING = 20 SPACES
PROPOSED LONG TERM BIKE PARKING = 124
PROPOSED SHORT TERM BIKE PARKING = 42

VICINITY MAP:



SCALE: NTS

LEGEND

- PROPOSED BUILDING FOOTPRINT
- EXISTING BUILDING FOOTPRINT
- PROPOSED / EXISTING OVERLAP AREA
- PROPOSED DRIVEWAY REVISION
- EXISTING DRIVEWAY OF BRIGHTON PLAYFIELD
- PROPOSED PERVIOUS AREA
- PROPOSED IMPERVIOUS AREA

INTEGRUS
A COLLABORATION OF YGH & INTEGRUS ARCHITECTURE
117 SOUTH MAIN STREET, SUITE 100, SEATTLE, WA. 98104
TELEPHONE: (206)628-3137 FAX: (206)628-3138

SEATTLE PUBLIC SCHOOLS
AKI KUROSE MIDDLE SCHOOL

3928 S GRAHAM ST.
SEATTLE, WA 98118

Date:	8/14/2024
Job No.:	22361.00
Drawn By:	BCT
Checked by:	SW

Revisions

#	Date	Description

SITE PLAN

G010

Schematic Design

ATTACHMENT F: GREENHOUSE GAS EMISSIONS WORKSHEET

King County Local Services

PERMITS

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		168.3	39	646	361	175954
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

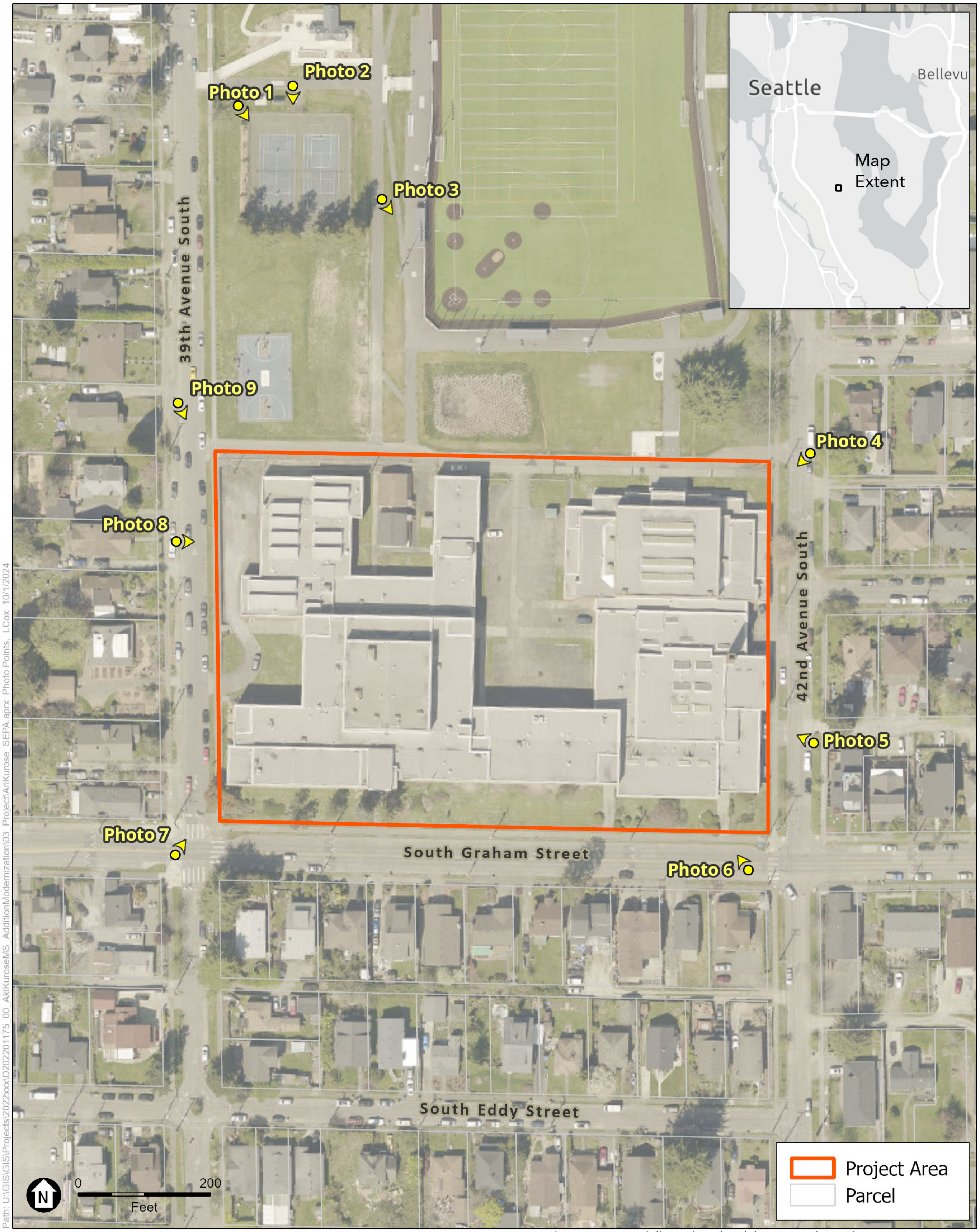
Section II: Pavement.........................

Pavement..		31.36				1568

Total Project Emissions: **177522**

Data entry fields

ATTACHMENT G: PHOTOGRAPHS



Path: U:\GIS\GIS\Projects\2022xxx\D202201175_00_AkiKuroseMS_AdditionModernization\03_Project\AkiKurose_SEPA.aprx Photo Points LCox 10/1/2024

Source(s): OSM 2023, King County 2021

Aki Kurose Middle School Addition and Modernization Project

Key to View Assessment Figure Locations

ESA

Photo 1

View of Project Site Facing Southeast from Brighton Playfield Located at 6000 39th Avenue S. Mount Rainier is visible in the gap between trees. This view would potentially be obscured by the proposed two-story addition; however, the existing view is already partially obstructed by fencing.

Photo 2

View of Project Site Facing South from Brighton Playfield Located at 6000 39th Avenue S. The school is partially obscured by trees, and no views of the mountains would be obstructed.

Photo 3

View of Project Site Facing South from Brighton Playfield Located at 6000 39th Avenue South. Mount Rainier is visible between the football goalposts. The chimney on the east side of the school building will be removed, enhancing views of Mount Rainier from the playfield.

Photo 4

View of Project Site Facing Southwest from Residence Located at 4202 S Spencer.

Photo 5
View of Project Site Facing Northwest from Residence Located at 4200 42nd Avenue S.

Photo 6
View of Project Site Facing Northwest from Corner of S Graham Street and 42nd Avenue S.

Photo 7
View of Project Site Facing North from Corner of S Graham Street and 39th Avenue S.

Photo 8
View of Project Site Facing East from Residence Located at 6115 39th Avenue S.

Photo 9
View of Project Site Facing Southeast from Residence Located at 5959 39th Avenue S.

ATTACHMENT H: HISTORIC AND CULTURAL RESOURCES BACKGROUND MATERIALS

The City of Seattle

Landmarks Preservation Board

Mailing Address: PO Box 94649, Seattle WA 98124-4649
Street Address: 600 4th Avenue, 4th Floor

STAFF REPORT ON DESIGNATION **LPB 291/21**

Name and Address of Property: Aki Kurose Middle School
3928 S Graham Street

Legal Description: Lots 1 through 38, inclusive, Block 10 and all of Block 9, Hillman City Division No. 5, according to the plat thereof recorded in Volume 10 of Plats, page 64, records of King County, Washington; Together with all of vacated South Bateman Street and all of the vacated alley in said Block 10, Hillman City Division No. 5, as vacated under City of Seattle Ordinance No. 78241; Together with that portion of Lot 10, Sunnyside Five Acre Tracts, according to the plat thereof recorded in Volume 2 of Plats, page 120, in King County, Washington, lying Southerly of a line 125 feet Northerly of and parallel with the centerline of vacated South Bateman Street; Except that portion thereof in roads; (Also known as Parcel A of the City of Seattle Lot Boundary Adjustment No. 2402540, recorded under Recording No. 20040702900002, records of King County, Washington).

On May 5, 2021, the Seattle Landmarks Preservation Board voted to approve nomination of the subject property and scheduled a public meeting to be held on June 16, 2021.

Staff recommends consideration of the following features and characteristics:

- The site.
- The exterior of the building.

This recommendation is based upon satisfaction of the following designation standards of SMC 25.12.350:

C. It is associated in a significant way with a significant aspect of the cultural, political, or economic heritage of the community, City, state or nation.

D. *It embodies the distinctive visible characteristics of an architectural style, or period, or a method of construction.*

SUGGESTED LANGUAGE FOR APPROVAL OF DESIGNATION:

"I move that the Board approve the designation of Aki Kurose Middle School at 3928 S Graham Street as a Seattle Landmark; noting the legal description above; that the designation is based upon satisfaction of Designation Standards C and D; that the features and characteristics of the property identified for preservation include: the site, and the exterior of the building.

SUGGESTED LANGUAGE FOR DISAPPROVAL OF DESIGNATION:

"I move that the Board not approve the designation of Aki Kurose Middle School at 3928 S Graham Street as a Seattle Landmark, as it does not meet any of the standards, as required by SMC 25.12.350."   (or give other reasons)

Issued: June 9, 2021

The City of Seattle

Landmarks Preservation Board

Mailing Address: PO Box 94649, Seattle WA 98124-4649
Street Address: 600 4th Avenue, 4th Floor

LPB 300/21

MINUTES
Landmarks Preservation Board Meeting
City Hall
Remote Meeting
Wednesday June 16, 2021 - 3:30 p.m.

<u>Board Members Present</u>
Roi Chang
Russell Coney
Matt Inpanbutr
Jordon Kiel
Kristen Johnson
John Rodezno
Harriet Wasserman

<u>Staff</u>
Sarah Sodt
Erin Doherty
Melinda Bloom

<u>Absent</u>
Dean Barnes

Chair Jordan Kiel called the meeting to order at 3:30 p.m.

In-person attendance is currently prohibited per Washington State Governor's Proclamation No. 20-28.5. Meeting participation is limited to access by the WebEx Event link or the telephone call-in line provided on agenda.

ROLL CALL

061621.1 PUBLIC COMMENT

Colleen McAleer, Laurelhurst Community Club said she appreciated the board's great work. Regarding Battelle's requested extension, she said we have heard this before from the owner. She said they have worked different programs. She said if there is not a short leash on extensions it becomes a continuum, and the extensions lead to this longer fencing which is another issue that will come up before the board. She said it also came from the Hearing Examiner and some of the objections we had was it not conforming to the standards. She said the owner has not paid $40,000 in City fees to SDCI which could possibly have effect on the quickness of their getting permits or Controls and Incentives. She noted the deterioration of the landmarked landscape. She said at the last ARC meeting one of the members asked the owner once again for a landscape maintenance plan because that is an integral part of why it was landmarked. She said she sent an email to Ms. Doherty that the owner may request tree removal because a tree fell down. She said they are supportive of development of the site but that it is important that board give a shorter leash on extensions to know what is going on with these long extensions that have really wreaked havoc on the site. She said the owner should know there are consequences, and they should pay their bills.

061621.2 MEETING MINUTES

May 19, 2021 Deferred.

Agenda was reordered. Controls and Incentives moved to the end.

061621.4 DESIGNATIONS

061621.41 The Fairfax
1508 10th Avenue E

Jeff Murdock, Historic Seattle said the building was constructed in 1923 and designed by architect James Eustace Blackwell who was also the first owner. He said the three-story building is a load bearing brick masonry over concrete basement foundation walls. On the north side, square vertical masonry piers run from the ground to the parapet, stiffening the wall and tying into the interior timber structural system, which is supported by 8" x 8" timber columns. He said there are 14 apartments and three separate narrow primary elevations. He said the window groupings are each framed by a pair of diagonal pilasters that run from the ground to the top of the parapet. Each of the piers is capped by a Gothic style finial. He noted Gothic Revival decorative elements repeated in an ensemble of details such as pointed arch cast panels installed on the parapet, a pointed arched opening under the entry stair, cast iron balustrade with point arch details, and window details on the doors.

He provided context of the neighborhood and site and noted the unusual-shaped lot. He said the building responds to the site dimensions. He said the apartments are accessed on each side of the double-loaded corridor with two apartments on each side. He said there is a rear door to the fire escape and exit stair. He said interior stair connects basement up to rooftop.

Mr. Murdock said the original front door remains on the 10th Avenue East elevation. He said the north side is much simpler with building set back. He said fire stairs are non-original. He noted the party wall condition on the south elevation. He said there are some original windows in the light court. He said the roof was recently replaced and parapet braced and noted the original finials and crockets. He said the roof deck and sauna are non-original.

Responding to board member question about alterations at nomination meeting, he said two windows were replaced and met Secretary of Interior Standards (SOI) with no impact to integrity. He said balustrade above entry porch was originally wood and was replaced with steel / wrought iron. He said on a non-public elevation, fire stair was installed, and upper windows have been changed. On the south elevation a window was added and on the front elevation a window was added. He said the building has high integrity.

Mr. Murdock said the building was painted, likely in the 1980s. He noted the Gothic Revival features of this building include verticality, instead of a horizontal cornice the pier buttresses extend to the top of the building and are terminated by finials with crockets; pier buttresses, simple diagonal piers organize the façade and extend from the ground to the top of the building, reinforcing the building's verticality; pointed arches throughout building including exterior railings, parapet friezes, door glazing details, and interior stair and exterior railings; trefoil decorative elements on interior stair balustrade and on front porch roof.

He said the building meets Criterion D. He said the style was commonly applied to church designs. He said there are numerous examples of the English Gothic and Tudor Revival are found throughout the city. A unique subset of the style, the Collegiate Gothic, is exemplified by the collection of academic building called for and designed by the office of Bebb & Gould in their Regents plan for the University of Washington. He noted integration of the Gothic Revival style for tall buildings in the Woolworth Building (New York), Chicago Tribune Tower, and in Seattle's Terminal Sales Annex. He said

Blackwell used simplified Gothic design elements on both the Fairfax and Shafer buildings including towers, buttresses, finials, and emphasis on vertical expression.

Susan Beardsley, resident/owner said James Eustace Blackwell began as a civil engineer and became one of the most prolific architects in the Northwest. She said he designed everything from drydocks and warehouses, to apartments and residences. He was a founding member of the Washington Chapter of the American Institute of Architects and served as its President in 1905. She said he was active in municipal affairs and served on Committee on Parks, Buildings and Grounds and on the Streets and Roads Committee. He was a member of the first Zoning Commission in 1923.

She said Blackwell moved to Tacoma in 1890 where he partnered with architect Robert L. Robertson and designed the Louderback Building, the Voorhees Grain Elevator, and the Puyallup Opera House. He moved to Seattle in 1900. She said he was the sole designer for the Luna Park hotel, pavilion and bath house in West Seattle. He was hired put an addition on the Mutual Life Building and he maintained an office there from 1904 – 1910. He designed and built his own home, the Galbraith-Bacon warehouse and pier, M. F. Backus warehouse, and E. O Graves warehouse, and Gray's Harbor Electric Company plant among others.

Ms. Beardsley said Blackwell formed a partnership with Frank Lidstone Baker in 1908 which lasted until about 1917. Included in their work was the W.W. Chapin residence, James Kerr residence, Grand Trunk Pacific Dock, and the Bellingham Armory, among others. She said the firm added two floors to the Washington Shoe Building, showing respect for the original design. They built three Carnegie libraries: Wenatchee, Burlington, and Olympia.

She said after the partnership with Baker dissolved, Blackwell's activities involved Seattle's municipal affairs. He served as Superintendent of Buildings from 1920-1922. When his term was over, he returned to his architectural practice and designed the Fairfax Apartments in 1923 and the Shafer Building in 1924 which bear several similar design features. She said he was a tireless worker and died at age 83 while showing plans to a client.

Ms. Beardsley said the building meets criteria D, E, and F. She said F is relevant because of the odd-shaped lot which was created when the Leary family wanted traffic directed away from their homes. She said Blackwell used every square inch of the parcel to build this building. She said the building adds to the beauty and quality of this part of Capitol Hill.

Mr. Inpanbutr asked when the building was painted.

Ms. Beardsley said it was likely painted in the early 1980s.

Mr. Inpanbutr supported designation based on criteria D and E and said he was less convinced with F, but the curve is unusual, and the building was sited around that.

Mr. Coney supported designation based on D, E, and F. He said the building has always been noticeable and prominent in the neighborhood. He said the building contributes and stands alone on the residential side of the street. He said the building is significant in both style and period.

Ms. Chang said she appreciated the presentation and the new elevation showing alterations was helpful. She said it is apparent most of the significant alterations happened out of view except for the balcony over entry. She supported designation based on criteria D and E and said she was not convinced about F.

Ms. Johnson supported designation based on criteria D and E but that she didn't feel strongly one way or the other about Criterion F. She said it is a very nice building and that it was nice to see an example of similar styles. She said it was a nice time period. She said it is a handsome building and the style was adapted to the site in a unique way.

Mr. Rodezno supported designation based on criteria D and E; he noted the Collegiate style, arches, and finials. He noted Blackwell's contribution to early Seattle's built environment and that he was a founding member of Washington Chapter of AIA. He didn't support Criterion F.

Ms. Wasserman supported designation based on criteria D, E, and F. She said it was a lovely presentation.

Mr. Kiel supported designation based on criteria D and F, but not F.

Action: I move that the Board approve the designation of The Fairfax at 1508 10th Avenue E as a Seattle Landmark; noting the legal description above; that the designation is based upon satisfaction of Designation Standards D, and E; that the features and characteristics of the property identified for preservation include: the site, the exterior of the building, and the main interior stairway.

MM/SC/KJ/MI 7:0:0 Motion carried.

061621.42 <u>Aki Kurose Middle School</u>
3928 S Graham Street

Messrs. Kiel and Inpanbutr recused themselves.

Full nomination report in DON file.

David Peterson, Historic Resource Consulting provided context of the site and neighborhood which he said is primarily residential. He said the school was designed by architect William Mallis and constructed in 1952. He said the school is laid out in three large volumes, the auditorium, the cafeteria and the gym with the rest of the campus wrapped around. Mallis used his 'kit of parts' in creating the design.

Susan Boyle, BOLA said the site is situated between main thoroughfares Rainier Avenue and former Empire Way boulevards the site was very rural and undeveloped in the 1930s. She said Holly Park was constructed in 1942 for war and Boeing workers and later became home to working-class families.

Mr. Peterson said the school service area was large and had a diverse demographic in the 1970s – 1980s.

Ms. Boyle said residents at this time were predominantly from European and Russian ancestry.

Mr. Peterson said Mallis did many school projects in the 1920s – 1930s. He dabbled in Art Deco and Moderne in the late 1930s. He said after WWII he got a commission from Seattle Public Schools (SPS) to design schools to accommodate the huge expansion of population and workers. He designed his first modern style building at View Ridge Elementary (Seattle), using prismatic glass which was popularized in the late 1940s as a way to provide light in double loaded corridors. At Lincoln Elementary School (Ellensburg), Mallis started using strip windows which were to become a design element in his kit of parts. Mallis worked out his 'kit of parts' during design of school buildings including David Denny Junior High (Seattle), Nathan Eckstein Junior High (Seattle). He said that Mallis honed the modern design and began to break up façades; this is a great example of Modern style by him. He said the biggest alteration is the windows.

Ms. Boyle said the glass block was a performance device. The use of glass block windows in schools began to be a popular solution for lighting classrooms in the late 1930s, as it provided an abundance of daylight with no glare. Glass block had only transitioned from a largely experimental product to a readily available building material with advances in manufacturing in 1934. The introduction of light-directing blocks in the 1940s which had prisms on the interior face that would direct light upwards towards the ceiling and diffuse it through the room proved popular in schools. Most of the glass block installations for schools were used as large panels above a row of operable plate glass windows, as in the configuration used by Mallis. Mallis's first use of glass block was at Nathan Eckstein Middle School in 1948-50.

Mr. Peterson said there has been a significant loss of integrity with loss of much of the glass block and because of that, the school fails to meet the Criterion D. He said the building would have been significant if it had remained unchanged. He said the school occupies a full block and could potentially meet Criterion F.

Ms. Boyle said the school's importance lies with the institution and not the building. She said the school responded to conditions and was not seminal. Regarding Criterion F, she said the school is prominent in the neighborhood as shown in aerial photo.

Mr. Coney said window changes are reversible and glass blocks could be put back in.

Mr. Peterson said it is possible but said he is not sure SPS would want to do so. The windows were changed for energy efficiency.

Mr. Coney said he hears the excuse, 'energy efficiency' when the overall plant system could be made more efficient. He said glass block is thicker.

Mr. Rodezno asked why the glass was replaced and asked if SPS has a threshold for how it determines energy efficiency.

Mr. Peterson said the drawing set for replacement windows was just a few sheets. He said it was a relatively minor upgrade for the building in terms of design.

Ms. Boyle said energy efficiency was a big push in the 1970s.

Ms. Doherty said she does not know the reasoning here, but said that SPS noted a challenge at Nathan Eckstein Middle School with heat gain issues at the glass block and a desire to increase shading and ventilation. She also noted for the record that Mr. Kiel had left the meeting, and that while Mr. Inpanbutr had recused himself from this item, he was still in attendance in the audience.

Mr. Coney said he supported designation and noted letter from SPS that stated designation would have no negative impacts. He said it is unfortunate to take a negative approach and said he wished it were more positive. He said this part of Seattle has fewer landmarks and fewer schools landmarked. He said the school meets Criterion D. He said perhaps the glass block could be replaced to get the prismatic light on the ceiling. He noted the parallel to Nathan Eckstein School.

Ms. Chang said she was undecided. She said the windows were featured characteristics that best fit definition. She said the siting draws attention and the school is distinctive in a residential area between two smaller commercial corridors. She did not support Criterion C. She said she wished the replacement windows were more appealing.

Mr. Rodezno said it was nice to see the building nominated. He supported designation based on criteria C and D. He said Criterion D is the strongest but noted that criteria E and F could be supported. He said the style is a distinct modern style. He said Criterion E is met because Mallis's use of prismatic glass brought daylight into a public building and was used in multiple schools along with sawtooth and horizontal glass block. He said Mallis was prioritizing daylight and the users' well-being. He said he would like to see the glass block there and said the remaining glass block should remain in place.

Ms. Wasserman supported designation. She said the replacement glass should be more attractive. She said Criterion F is met because the school is such a huge feature in the area. She said the school meets Criterion D even with the changes. She said she wouldn't argue about any other criteria included.

Ms. Johnson said she was undecided and said just the scale was impressive along the block. She said the design makes a big statement especially with repeated window pattern. She said there is not a lot of decoration and when pieces were removed, it made a difference. She didn't support designation although she appreciated the arguments for, especially the one about fewer landmarks in this area.

Mr. Coney said the auditorium and gymnasium are significant aspects. It is important to have a landmark in this part of town. He said there have been other instances where windows were replaced and still the building was designated. He said window replacement is reversible, especially if modernized in a nice way. He said it could be better than what was used to replace the windows. He asked for support, to go with the majority of board members for the benefit of the community.

Action: I move that the Board approve the designation of Aki Kurose Middle School at 3928 S Graham Street as a Seattle Landmark; noting the legal description above; that the designation is based upon satisfaction of Designation Standards D and F; that the features and characteristics of the property identified for preservation include: the site, and the exterior of the building.

MM/SC/HW/RUS 4:1:1 Motion failed. Ms. Johnson opposed. Mr. Inpanbutr recused himself.

Mr. Inpanbutr left the audience and returned to the Board panel.

061621.3 CONTROLS & INCENTIVES

061621.31 La Quinta Apartments
1710 E Denny Way
Request for extension

Ms. Doherty explained the owner's request for a three-month extension. She said she submitted a draft C&I agreement to the owner who needs additional time to review it. She said ownership is an estate so there is more than one person that needs to weigh in.

Jessica Clawson, McCullough Hill Leary said the estate is trying to think about what to do; the property will probably be sold.

Mr. Inpanbutr said the request is reasonable.

Action: I move to defer consideration of Controls and Incentives for La Quinta Apartments, 1710 E. Denny Way, for three months.

MM/SC/MI/HW 6:0:0 Motion carried.

061621.32 Battelle Memorial Institute / Talaris Conference Center
4000 NE 41st Street
Request for extension

Ms. Doherty explained the owner's request for a six-month or twelve-month extension.

Jessica Clawson, McCullough Hill Leary said there is an application in to redevelop the property and they were recently before the ARC to talk about proposed fence for security. She said the project is still going through EIS and there is not a lot of progress on the application which is why they asked for six-month extension.

Ms. Doherty noted the public comment provided and clarified that the fence Certificate of Approval application is not related to the Controls and Incentives agreement extension.

Ms. Johnson said she has seen a couple proposals at ARC and asked if any more briefings are planned or if they are waiting on SDCI.

Ms. Clawson said there is not much changed and there will be no real update until the EIS is underway.

Ms. Chang asked for clarification on the EIS / SDCI review and why it takes so long.

Ms. Clawson said it is basic land use and noted the owner applied to subdivide the property for 60 single family homes. She said some buildings would be preserved. She said SDCI will make the threshold determination. It is easier if there are not significant impacts on environment but here SDCI thought there could be significant adverse impacts to tree removal and destruction of historic resources. She said that requires and Environmental Impact Study, EIS be provided. Alternatives to proposed action are provided or a different course of action is stated. It is hard to agree to controls when the findings of the study have yet to come out.

Ms. Doherty asked if the property owner has started the EIS.

Ms. Clawson said they don't have the alternatives yet, so they are waiting on the city to set them.

Ms. Doherty said in the EIS scoping summary the alternatives are noted. She asked if the owner is questioning that.

Ms. Clawson said yes they are.

Ms. Doherty asked if they are continuing to discuss this with SDCI before proceeding.

Ms. Clawson said yes.

Ms. Johnson said SDCI takes a long time, up to 12 months. She said it makes sense with this property to have updates.

Mr. Coney said keep it to six-month extension. He said the board asked for a landscape maintenance plan and asked if the owner is doing anything.

Ms. Clawson said they do maintain the property to ensure it is not a hazard. She said as it gets dry, they will keep the brush down and keep things trimmed. She said they won't do elite landscaping, just keep it safe.

Ms. Wasserman said she hates to see the deterioration. She said to keep the deferment to six months so board will know the status.

Mr. Rodezno agreed with Mr. Coney and Ms. Wasserman on a six-month extension. He said the developer / owner has not been forthright with the board. He said a level of checks in place is critical as the owner won't do it on their own.

Action: I move to defer consideration of Controls and Incentives for Battelle Memorial Institute / Talaris Conference Center, 4000 NE 41st Street, for six months.

MM/SC/MI/HW 6:0:0 Motion carried.

061621.5 STAFF REPORT

Respectfully submitted,

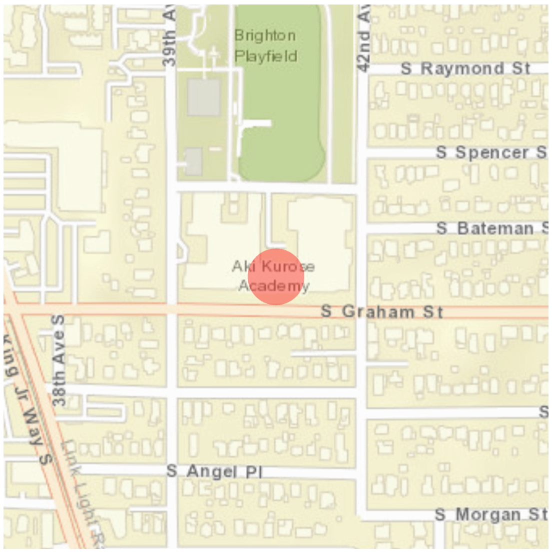
Erin Doherty, Landmarks Preservation Board Coordinator

Sarah Sodt, Landmarks Preservation Board Coordinator

Historic Property Report

Historic Name: Caspar Sharples Junior High School Property ID: 724380

Location



Address: 3928 S Graham St, Seattle, Washington, 98118

Geographic Areas: King County, T24R04E22, Seattle Certified Local Government, SEATTLE SOUTH Quadrangle

Information

Number of stories:

Construction Dates:

Construction Type	Year	Circa
Built Date	1952	☐
Remodel	2006	☐

Historic Use:

Category	Subcategory
Education	Education - School

Historic Context:

Category
Architecture
Education
Black or African American - African American

Architect/Engineer:

Category	Name or Company
Builder	Poston Construction Co
Architect	Mallis & DeHart
Architect	Waldron Akira Architects (2006)

Thematics:

Local Registers and Districts

Name	Date Listed	Notes

Project History

Project Number, Organization, Project Name	Resource Inventory	SHPO Determination	SHPO Determined By, Determined Date
2016-01-00010, , Architect File		Survey/Inventory	
2024-08-05668, , Aki Kurose Middle School Modernization and Addition		Determined Not Eligible	Maureen Elenga, 8/12/2024

Photos

AKMS_3.jpg

AKMS_ca1970.jpg

AKMS_1958.jpg

AKMS_2.jpg

Seattle Daily Times August 7, 1949

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Preliminary Plans Approved for 2 New Schools

FOR RAINIER VALLEY: The School Board has approved preliminary plans for this big new junior high school, to be constructed at 39th Avenue South and Graham Street, to serve the Rainier Valley district. It will be adjacent to Brighton Playfield, with part of the $2,000,000 structure devoted to fieldhouse facilities. Construction bids are expected to be asked this fall.

AkiKuroseSchool_Seattle1.jpg

LPBCurrentNom_CasparSharplesSchool_Seattle.pdf

Historic Property Report

Historic Name: Caspar Sharples Junior High School　　Property ID: 724380

Inventory Details - 3/29/2021

Common name: Aki Kurose Middle School

Date recorded: 3/29/2021

Field Recorder: Michael Houser

Field Site number:

SHPO Determination

Styles:

Period	Style Details
Modern Movement (1930-1970)	Modern

Inventory Details - 8/8/2024

Common name:	Aki Kurose Middle School
Date recorded:	8/8/2024
Field Recorder:	Maureen Elenga
Field Site number:	
SHPO Determination	

August 12, 2024

Richard Best
Seattle School District No. 1
2445 3rd Ave S
Seattle, WA 98134

In future correspondence please refer to:
Project Tracking Code: 2024-08-05668
Property: Aki Kurose Middle School Modernization and Addition
Re: Not Eligible for National Register of Historic Places

Dear Richard Best:

Thank you for contacting the Washington State Department of Archaeology and Historic Preservation (DAHP) regarding the above referenced proposal. This action has been reviewed on behalf of the State Historic Preservation Officer (SHPO) under provisions of Governor's Executive Order 21-02. Our review is based upon documentation provided in your submittal.

First, it is our opinion that Property ID: 724380 Caspar Sharples Junior High School 3928 S Graham St, Seattle, Washington 98118 is not eligible for listing in the National Register of Historic Places. It is also our opinion that no historic resources will be impacted by the current project as proposed.

As a result of our opinion, further contact with DAHP on this proposal is not necessary. However, if new information about affected resources becomes available and/or the project scope of work changes significantly, please resume consultation as our assessment may be revised. Also, if any archaeological resources are uncovered during construction, please halt work immediately in the area of discovery and contact the appropriate Native American Tribes and DAHP for further consultation.

Thank you for the opportunity to review and comment. If you have any questions, please feel free to contact me.

Sincerely,

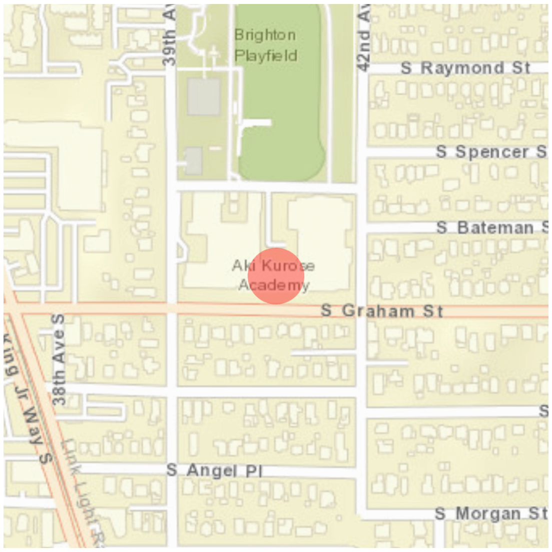
Maureen Elenga, M.A.
Architectural Historian - Transportation Reviewer
(360) 972-4539
Maureen.Elenga@dahp.wa.gov

Historic Property Report

Historic Name: Caspar Sharples Junior High School

Property ID: 724380

Location



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Geographic Areas: King County, T24R04E22, Seattle Certified Local Government, SEATTLE SOUTH Quadrangle

Information

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Construction Type	Year	Circa
Built Date	1952	☐

Historic Use:

Category	Subcategory
Education	Education - School

Historic Context:

Category
Architecture
Education
Black or African American - African American

Architect/Engineer:

Category	Name or Company
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Architect	Mallis & DeHart

Historic Property Report

Historic Name: Caspar Sharples Junior High School   Property ID: 724380

Thematics:

Local Registers and Districts

Name	Date Listed	Notes

Project History

Project Number, Organization, Project Name	Resource Inventory	SHPO Determination	SHPO Determined By, Determined Date
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Historic Property Report

Historic Name: Caspar Sharples Junior High School Property ID: 724380

Photos

Seattle Daily Times August 7, 1949

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AkiKuroseSchool_Seattle1.jpg

LPBCurrentNom_CasparSharplesSchool_Seattle.pdf

Inventory Details - 3/29/2021

Common name:	Aki Kurose Middle School
Date recorded:	3/29/2021
Field Recorder:	Michael Houser
Field Site number:	
SHPO Determination	

Styles:

Period	**Style Details**
Modern Movement (1930-1970)	Modern