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While Seattle Public Schools endeavors to only post documents optimized for accessibility, due to the nature and complexity of some documents, an accessible version of the document may not be available. In these limited circumstances, the District will provide equally effective alternate access.

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

Eric Becker  
Senior Project Manager  
pebecker@seattleschools.org

While the Viewlands Elementary School Replacement Project Draft State Environmental Policy Act (SEPA) Checklist is accessible and ADA compliant, the attached Figures and Appendices which support the Checklist contains complex material that are not accessible. The following is a description of what is contained in the Figures and Appendices:
• **Figure 1, Viewlands Elementary School Replacement Vicinity, Seattle, Washington**

Figure 1 is an aerial photograph of the Viewlands Elementary School Replacement site and its surrounding neighborhood to within an approximately three-block radius. The school property is outlined in a black line and the vicinity study area is outlined in a red line. The school property is bounded by Northwest 107th Street to the north, 3rd Avenue Northwest to the east, Northwest 105th Street to the South, and Carkeek Park to the west. The existing school facilities are located towards the east end of the site in a North-South orientation and are made up of multiple buildings with exterior circulation. The main entry of the school faces 3rd Avenue Northwest.

• **Figure 2, Viewlands Elementary School Replacement Project Area and Proposed Facilities Map, Seattle, Washington**

Figure 2 shows the project area and proposed facilities for the Viewlands Elementary School Replacement. The new school facility is located towards the south end of the site with an East-West orientation. The main entry will face 3rd Avenue Northwest. Improvements include a covered play area, landscaping, and bicycle parking. Vehicular parking is located towards the north end of the site and accessed via a driveway from 4th Ave Northwest.

• **Figure 3, Viewlands Elementary School Replacement Streams and Swales Map, Seattle, Washington**

Figure 3 is a close-up aerial view of the Viewlands Elementary School Replacement site and shows the stream and swales in the project vicinity. The school property is outlined in a black line and the study area is outlined in a red line. There are Natural Drainage System (NDS) constructed swales on Northwest 107th Street and on Northwest 105th Street which naturally drain to Piper’s Creek in Carkeek Park.

• **Appendix A: Transportation Technical Report**

Appendix A is a Transportation Technical Report prepared by Heffron Transportation Inc. dated June 29, 2020. 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. There are figures and tables throughout this document, including in the Appendices, which graphically depict and organizes data to support the findings in the report. Attached to the end of the report, there are Appendix A – Level of Service Definitions, and Appendix B – Parking Utilization Study Data.
• **Appendix B: Tree Inventory and Arborist Report**

Appendix B is a Tree Inventory and Arborist Report prepared by Tree Solutions Inc. dated November 7, 2019. The report presents the results of the projects arborist investigation of the projects site. The purpose of this report was to inventory all the trees on the site, evaluate the condition of each tree and make recommendations to minimize the impact of construction to the trees. The report also documents trees on neighboring properties, including the right-of-way, if they appeared to be greater than 6-inches diameter and their driplines extend over the property line, or if their presence might impact construction access. There are figures, photos and tables throughout this document, including in the Appendices, which graphically depict and organizes data to support the findings in the report. Attached to the end of the report, there is Appendix A – Assumption & Limiting Conditions, Appendix B – Methods and Appendix C – Tree Protection Specifications.

• **Appendix C: Environmentally Critical Areas Assessment**

Appendix C is an Environmentally Critical Areas Assessment prepared by Environmental Science Associates (ESA) and dated June 22, 2020. This assessment documents the environmentally critical wetlands, streams, and required buffers on and within 200 feet of the Viewlands Elementary School Project. Attached to the end of the assessment are site photos and Figure 1 – Vicinity Map, Figure 2 – Watershed Natural Drainage System (NDS) Vicinity Map and Figure 3 – Streams, Riparian Management Areas, and Stormwater Features Map.

This concludes the SEPA Checklist.
Seattle Public Schools
Viewlands Elementary
SEPA Checklist

DRAFT

June 2020

PREPARED FOR:

SEATTLE PUBLIC SCHOOLS
2445 THIRD AVENUE SOUTH
SEATTLE, WA 98134

PREPARED BY:

ESA
5309 SHILSHOLE AVENUE
NW, STE. 200
SEATTLE, WA 98107
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Figure 1: Project Vicinity
Figure 2: Project Area and Proposed Facilities
Figure 3: Streams and Swales
ENVIRONMENTAL CHECKLIST

A. BACKGROUND

1. Name of the proposed project, if applicable:
   Viewlands Elementary School Replacement Project

2. Name of Applicant:
   Seattle Public Schools (SPS)

3. Address and phone number of applicant and contact person:
   Brian Fabella
   Seattle Public Schools
   2445 3rd Ave S
   Seattle, WA 98134
   206-252-0702

4. Date checklist prepared:
   June 2020

5. Agency requesting checklist:
   Seattle Public Schools (SPS)

6. Proposed timing or schedule (including phasing, if applicable):
   Construction is scheduled to begin in July 2021 and would demolish the current school building and construct a new one with improved outdoor learning facilities, open space areas and parking. The work is expected to last for approximately 2 years ending in April 2023. Some tasks related to move-in and occupancy may extend beyond April. The school is scheduled to open in September of 2023.

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.
   No, there are no plans for future additions or expansions related to this proposal.

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.
   Arborist Report, Tree Solutions Inc. November 7, 2019
   Viewlands Elementary School Cultural Resources Assessment, ESA, 2020
   Viewlands Elementary School Environmentally Critical Areas Assessment, ESA, 2020
Design Narratives, Mahlum, February 27, 2020

Transportation Technical Report for the Viewlands Elementary School Replacement, Heffron Transportation, June 24, 2020

Geotechnical Report: Viewlands Elementary School Replacement Project, Shannon & Wilson, September 2019

Preliminary Hazardous Materials Summary Report: Viewlands Elementary School Modernization, PBS, February 27, 2020

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

There are no other applications pending for the subject property.

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

<table>
<thead>
<tr>
<th>Approval Type</th>
<th>Authority</th>
</tr>
</thead>
<tbody>
<tr>
<td>Departure Process</td>
<td>City of Seattle</td>
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<tr>
<td>Building Permit</td>
<td>City of Seattle</td>
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<td>Grading Permit</td>
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<td>Mechanical Permit</td>
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<td>Drainage and Side Sewer Permit</td>
<td>City of Seattle</td>
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<tr>
<td>Demolition Permit</td>
<td>City of Seattle</td>
</tr>
<tr>
<td>Construction Stormwater General Permit</td>
<td>WA State Department of Ecology</td>
</tr>
</tbody>
</table>

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.

Seattle Public Schools (SPS) proposes to demolish the existing Viewlands elementary school and build a three story K-5 building of approximately 105,000 square feet, providing permanent space for up to 650 students. The plan for the new school is based on the SPS Generic Educational Specifications and the guiding principles developed by the School Design Advisory team (SDAT). The project was reviewed as part of the BEX V Programmatic Environmental Impact Statement (EIS) in 2018, and funds for the project will come from the BEX V Levy that passed in February 2019.

In addition to the new school building the project would provide a teacher parking lot, a parent and school bus drop off area, outdoor play areas, open space and new utility infrastructure to support the new improvements.
During the 2-year construction period, students will be relocated offsite to another SPS facility.

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

The school site is located at 10525 3rd Avenue NW, Seattle, WA 98177. The school site is bounded by NW 107th Street to the north, 3rd Avenue NW to the east, NW 105th Street to the south and Carkeek Park to the west. (Figure 1). The site is located in the southeast quarter of Section 26, Township 26, Range 3. The site is made up of one parcel (parcel 747490-0060) with the following legal description:

RYEBURGS REPLAT OF DELANO PARK BLKS 5-6-7 & VAC ALLEY & POR VAC ST ADJ

Figure 1 shows the project vicinity. Figure 2 shows the project area and proposed facilities. Figure 3 shows the mapped stream and swales in the project vicinity.

B. ENVIRONMENTAL ELEMENTS

1. Earth

A Geotechnical Report investigation was performed at the project site by Shannon & Wilson (2019). The work included a review of existing subsurface information for the property as well as drilling 13 soil borings on the project site. Information from this report is summarized in this section and incorporated throughout the SEPA Checklist as appropriate.

a. General description of the site (underline):

Flat, rolling, hilly, steep slopes, mountainous, other ___________

The overall vertical relief for the project is approximately 39 feet throughout the property. The site is divided into three terraces that run from north to south, parallel 3rd Avenue NW. Each terrace is separated by approximately 10 feet.
b. **What is the steepest slope on the site (approximate percent slope)?**

The City of Seattle designates slopes greater than 40% with a rise of at least 10 feet as critical areas (Seattle Municipal Code [SMC] 25.09.012). The Viewlands Elementary School parcel is located adjacent to a mapped steep slope Environmentally Critical Area (ECA) and a potential slide area ECA (Shannon & Wilson, 2019). No work will be occurring within these ECAs.

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.**

Site exploration identified a surficial layer of top soil that was approximately 6 inches thick. The topsoil was underlain by fill, recessional deposits, and glacial deposits. Fill was encountered the most and consisted of loose to medium dense, brown to gray, silty sand with gravel.

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

According to the Shannon & Wilson report, most of the soils at the site contain sufficient fines to produce an unstable mixture when wet and are highly susceptible to changes in water content. Therefore, measures would be taken to ensure soil remains at the optimal moisture content during construction.

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

Approximately 5.65 acre of the site would be excavated and filled for the construction of the new school. Stripping and demolition volume, which includes all existing landscape and paving/slabs, is estimated at 8,000 cubic yards. The existing ground surface topography will remain essentially the same with only minor grading to shape the ground surface to facilitate surface drainage. Excavation quantities are estimated as follows:

- Cut = 21,750 cubic yards
- Fill = 16,750 cubic yards
No import of soil is required for the project as the existing site fill is suitable for reuse and recompaction. The total site export of soils would be approximately 5,000 cubic yards.

f. **Could erosion occur as a result of clearing, construction, or use? If so, generally describe.**

As with all construction projects, erosion could occur as a result of construction activities, particularly earthwork. The potential for erosion would be minimized with adherence to best management practices (BMPs) (refer to question 1.h. below).

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

The existing site is covered by approximately 40% impervious surface area. The proposed site will be covered by approximately 56% impervious surface area.

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

Temporary and permanent erosion and sediment control measures are required to be implemented throughout construction of this project to meet the required Construction Stormwater General Permit (CSGP) issued by Department of Ecology (Ecology) to meet the National Pollution Discharge Elimination System (NPDES). The permit requires providing construction Best Management Practices (BMPs) to prevent turbid and/or pH imbalanced stormwater runoff as well as controlling other pollution sources during construction.

During demolition and construction, the existing pavement and landscape should be retained to the maximum extent feasible in order to protect underlying soils and help contain sediment. The Contractor will need to schedule their work to minimize the amount of clearing during the wet season.

Temporary controls such as stabilized construction entrances and construction roads, tree protection fencing, silt fence, sedimentation ponds/tanks, catch basin inlet protections, straw wattles, interceptor dikes, and cover measures will be needed. Temporary construction roads and erosion control adjacent to the slopes separating the tiers on-site will be of importance to avoid erosion. The Contractor will be required to control pollutant sources (paint, fuel, concrete, etc.) from entering the storm system. Upon completion of construction, any exposed soils would be covered with landscaping. A combination of trees, shrubs, groundcover and mulch would be used to stabilize and preserve soils.
2. Air

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

During demolition of the existing school and construction of the new school there would be small increases in exhaust emissions from construction vehicles and equipment and a temporary increase in fugitive dust.

When the project is complete, the vehicular traffic accessing the school would create emissions, however, this impact is already present at the school and is not expected to increase significantly.

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 if emissions or odors that would affect the proposed project.

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

Measures that could be incorporated during construction to minimize impacts to air quality include:

- Spray exposed soil and storage areas with water during dry periods.
- Remove particulate matter deposited on paved, public roads and sidewalks to reduce mud and dust; sweep and wash streets frequently to reduce emissions.
- Equip construction equipment with appropriate emission controls.

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.

ESA identified one stream west of school in Carkeek Park, as well as multiple constructed stormwater swales and two ditches located in the vicinity of the project (ESA, 2020. Figure 3). One of the
stormwater swales (Viewlands Swale) is located south of the school adjacent to NW 105th St. According to a University of Washington (UW) monitoring report, the Viewlands Swale was first designed and built as a vegetated swale in 1990, was rebuilt in 1994, and then re-designed to simulate a natural gravel-bed stream reach in 1999 (UW, 2009).

Wetlands are located to the west in Carkeek Park, but none were identified to be in the project area. Refer to Appendix C – Environmentally Critical Areas Assessment for further detail.

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 would not require any work within 200 feet of the stream. Work would occur within 200 feet of the constructed Viewlands Swale.

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 and dredge material would be placed in or removed from surface water or wetlands.

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

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

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

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

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 proposal would not involve any discharges of waste materials to surface waters.
b. **Ground Water:**

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

The proposed project does not involve withdrawal of groundwater or discharge of water to groundwater. No groundwater was encountered during subsurface explorations, which ranged from between 5 and 25 feet below ground surface.

2. Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: 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.

The school would be served by sanitary sewer service provided by Seattle Public Utilities. A 6-inch pipe is proposed and would connect to an existing 8-inch public sewer main located within the 5th Avenue Right of Way (ROW).

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.

Sources of runoff would include impervious surfaces, such as parking lots, walkways and rooftops. Stormwater would be collected using catch basins and trench drains and conveyed via pipes to Bioretention cells. Pervious and landscape surfaces will utilize swales, underdrains and French drains to convey runoff to the flow control system. Piping for conveying flows will mainly consist of 8-inch diameter CPEP (plastic) with some 12-inch diameter proposed downstream of the flow control system. Roof drains and footing drains will be provided for the proposed building. Roof drains will consist of 6-inch diameter PVC pipe and will be routed to the proposed bioretention cells. Footing drains will consist of 4-inch to 6-inch diameter perforated pipe, connected at catch basins leading to the main conveyance system.
The project will discharge downstream of the capacity constrained systems within 107th Street, and there are no capacity constrained systems downstream of the proposed project. The project’s stormwater will discharge to a public storm conveyance system that ultimately discharges to Pipers Creek before draining to the Puget Sound. Flow control will be provided utilizing 60-inch StormTech Chambers, Model #MC-4500, with 12-inches of gravel above and below for a total volume of 78,500 cubic feet (CF).

Stormwater management for the proposed project will comply with all City of Seattle requirements including mitigation measures required by the 2016 City of Seattle Stormwater Manual and Seattle Municipal Code (SMC) 22.800-22.808, which requires the implementation of BMPs to address on-site stormwater management.

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

Runoff from the construction site has the potential to contain sediment and small amounts of equipment-related materials (motor oil, diesel fuel, hydraulic fluid). BMPs such as installing temporary filter fabric in the existing catch basins, providing perimeter controls, and collecting construction stormwater and treating it before discharging would be implemented to minimize sediment from leaving the site and potentially entering surface and ground waters. BMPs to control source controls would be implemented to prevent equipment-related materials and construction materials (paint, dust, etc.) from entering surface waters will be required.

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

The proposal would not alter or affect drainage pattern in the vicinity of the site.

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

The project would be constructed in accordance with applicable state and City of Seattle permits, which will specify a range of BMPs and temporary erosion and sedimentation control (TESC) measures designed to reduce or control potential surface, ground, or runoff water impacts. BMPs may include installation of catch basin filters and/or other appropriate cover measures. BMPs and TESC measures specific to the site and project would be specified by the City in the construction contract documents, and the construction contractor will be required to implement them.
Final BMPs for treating surface waters will include bioretention cells for water quality and onsite stormwater management and a flow control system for controlling rates of runoff prior to discharging offsite. All exposed soils not covered by impervious surfacing will be vegetated.

4. **Plants**

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

      X  deciduous tree:  alder, maple, aspen, other
      X  evergreen tree:  fir, cedar, pine, other
      X  shrubs
      X  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?**

      The proposed project would require the removal of an estimated 187,210 square feet of vegetation, mostly in the form of degraded lawn. The project will also result in the removal of 18 non-exceptional trees on the project site, and 1 exceptional tree (identified as tree number 301 in the Arborist Report in Appendix B). Exceptional trees are defined by the City of Seattle in SMC 25.11.020 as “a tree or group of trees that because of its unique historical, ecological, or aesthetic value constitutes an important community resource, and is deemed as such by the Director according to standards promulgated by the Seattle Department of Construction and Inspections.” The exceptional strawberry tree (*Arbutus Unedo*) is 11.7-inches diameter at breast height (dbh) and located in the courtyard at the school. Due to the site elevations in relation to the roadways and the entry level, the tree would located in a pit approximately 3 feet below grade in the parking lot. As a result, this tree is planned for removal. One additional tree, located in the right of way along 4th Ave NW is planned for removal to accommodate the new driveway. Trees planned for removal are identified on Figure 2.
c. **List threatened or endangered species known to be on or near the site.**

No threatened or endangered plant species or critical habitat are known to be on or near the site (WDFW, 2019). Review of the SDCI GIS mapping database indicates that critical areas are located within the project site: wildlife habitat and riparian corridors. Wildlife habitat and a riparian corridor are mapped in the western and southwestern portions of the project area. This area will be used for staging purposes only; no construction is occurring on this parcel.

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

SPS’s goal is to create a connection between the school’s grounds and Carkeek Park. In all the court and plaza areas, native and adapted planting areas and trees would enhance the pedestrian experience. Selected plants will draw from the regional character using a combination of drought tolerant native and adapted plants selected for suitability in the Puget Sound Lowlands, and specifically to connect to the native plants of Piper’s Creek. Planting would be selected to best survive post-establishment management, which includes minimal maintenance and no water after 2 years, per SPS standards.

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

Garlic mustard is present on the north portion of the site (King County iMap, 2019). Non-native species observed onsite included English ivy and Himalayan blackberry.

5. **Animals**

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

Animals observed on the site are restricted to birds and animals typically found in urban areas.

**Fish:** not applicable

**Amphibians:** none observed

**Reptiles:** none observed

**Birds:** species adapted to urban areas such as gulls, American crow, rock pigeon, chickadee, robin, Steller’s jay, northern flicker, and Bewick’s wren.

**Mammals:** species adapted to urban areas such as deer, Norway rat and other rodents, raccoon, opossum.
b. **List any threatened or endangered species known to be on or near the site.**

According to the WDFW Priority Habitats and Species program maps, no threatened or endangered species are known to be on or near the site. In addition, the U.S. Fish and Wildlife Service (USFWS) Environmental Conservation Online System (ECOS) Information for Planning and Consultation (IPaC) online tool does not designate critical habitat for threatened or endangered species on or near the site.

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

The Puget Sound area is located within the Pacific Flyway, which is a flight corridor for migrating waterfowl and other avian fauna. The Pacific Flyway extends south from Alaska to Mexico and South America. No portion of the proposed project would interfere with or alter the Pacific Flyway.

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

The proposed project is not expected to result in any impacts to wildlife or wildlife habitat. Therefore, no measures are currently proposed.

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

Invasive animal species likely to be in the area include Norway rat and other rodents, raccoon, opossum that are typically found in urban areas. The project would not disturb these species.

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.**

The proposed school would be powered by electricity, which would primarily be used for lighting and heating the building. The school is planned for solar readiness and photovoltaic array for energy efficiency.

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

The project would not affect the potential use of solar energy by adjacent properties.
c. **What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any:**

The following energy saving features are included in the plans for this proposal:

- North and south oriented classrooms for optimum daylighting and reduction in electric lighting.
- Skylights to provide daylighting for student occupied spaces.
- Continuous air barrier and air leakage testing during construction to reduce infiltration and energy loss.
- Vestibules at all main entries to reduce heating and ventilation loads by creating an air lock.
- High performing windows with low-e coatings that would be optimized based on the window orientation.
- Continuous insulation on exterior of building to prevent energy loss from thermal bridging.
- Solar readiness for future installation of solar panels on the roof.
- Daylight controls that automatically dim electric lighting in areas adjacent to windows as well as in non-daylit spaces including corridors, common spaces, interior offices, stairwells, etc.
- High efficiency light emitting diode (LED) lighting for all spaces providing lighting power density of less than 0.65 watts per square foot.
- Vacancy sensors in rooms that would automatically turn lights off when space is unoccupied.
- Motion sensors on exterior drive and parking lot lights that would automatically dim lights to 50 percent when the area is unoccupied. Exterior building-mounted lights will be controlled by timeclock through the EMS system.
- Plug load controllers that automatically switch off 50 percent of electrical outlets in classrooms, work rooms, and offices to reduce vampire loads from printers, monitors, and desk lamps during off hours.
- Air to air heat recovery in classrooms.
- Decoupled heating and ventilation “DOAS” systems in classrooms.
- Low temperature heating water system.
• Central water to water heat pump plant to with supplemental electric boiler. Heat pumps use ground loop heat exchanger (geothermal heat) for heating source.

7. Environmental Health

A Preliminary Hazardous Materials Summary Report (PBS, February 27, 2020) has been prepared for the proposed project and the results of the report are summarized in portions of this section.

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

Accidental spills of hazardous materials from equipment and vehicles could occur during construction. However, a spill prevention and control plan would be developed to prevent the accidental release of contaminants into the environment.

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

According to the Department of Ecology Facility/Site(s) database, Viewlands Elementary School is not known to be contaminated (Ecology, 2019).

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.

As described in the Hazardous Materials Summary Report, PBS Engineering and Environmental tested the school for any regulated materials, such as asbestos-containing materials, lead-containing paint/components, PCB light ballasts, and mercury-containing light tubes, are present.

Asbestos-containing materials and lead-containing paint/components were found to present within the school. PBS also presumes that all fluorescent light tubes contain mercury and magnetic ballasts contain PCBs.
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 be limited to gasoline and other petroleum based products required for maintenance and operation of construction equipment and vehicles and paint and other materials required for construction and renovation.

During operation of the school, chemicals stored and used on site would be limited to cleaning supplies and chemicals needed for science classes. These chemicals would be stored in safe locations.

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

No special emergency services would be required.

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

Site-specific pollution prevention plans and spill prevention and control plans would be developed to prevent or minimize impacts from hazardous materials.

Where hazardous materials, such as asbestos-containing materials, lead-containing paint/components, PCB light ballasts, and mercury-containing light tubes, are present, construction would comply with applicable regulations for removal and disposal. The majority of hazardous materials are removed or abated from the building prior to demolition of the building. Demolition of areas containing hazardous materials would be encapsulated or wetted to contain the dust.

The removal of any hazardous materials will be in accordance with Federal, State, and City of Seattle regulations including adherence to WAC 173-303 which regulates hazardous materials as well as 40 CFR Part 761.62 which regulates PCB’s.

**b. Noise**

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

There are no existing sources of noise in the area that would adversely affect the proposal. Viewlands Elementary School is...
surrounded by single-family residences, a playfield and arterial streets which generate background traffic noise, as well as overhead airplane traffic.

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.

Minor, short-term noise impacts could result due to typical construction activities, primarily temporary operation of construction equipment. Work will occur during day time, week day hours only.

Once completed the project would not be expected to exceed noise levels previously experienced at the school. Therefore, no long-term noise impacts are anticipated as result of the project.

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

To reduce noise impacts during construction, contractors would comply with all local and state noise regulations. Contractors may also implement the following measures to reduce or control noise impacts:

- Per SMC 25.08.25 the hours of construction will be between 7am – 7pm, Monday – Friday; 9am – 7pm Saturday and Sundays.
- Minimize the idling time of equipment and vehicle operation.
- Operate equipment only during hours approved by the City of Seattle.
- Use well-maintained and properly-functioning equipment and vehicles.
- Locate stationary equipment away from receiving properties.
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 as an elementary school and is comprised of one large rectangular building with multiple other small buildings located to the west and south, a play structure and field.

The school is located in a predominantly single-family residential neighborhood. Areas to the north, east and south are single family residential. Carkeek Park is located adjacent to the western boundary of the school.

The project would not affect current land uses. The site has been used as a school since 1954, and would continue to be used as a school.

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 as a result 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 is not currently and has not been previously used for working farmlands or working forest lands. No agricultural or forest land would be converted to other uses. The site has been developed as a school since 1954.

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

The project would not have any affect or be affected by farm or forest land operations, there are no working farm or forest lands.

c. Describe any structures on the site.

Structures on site include the main elementary school building with one large courtyard, Creative Kids Learning Center and eight other school related building as well as a play structure and field.

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

All existing buildings would be demolished, excluding portables, prior to construction, including all site utilities, and surfacing and play areas.
Portables would be removed from the site. The existing stormwater improvements, sanitary sewer, gas service line and water and line along with hydrants would all be demolished.

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

The current zoning classification of the site is single-family residential (SF 7200, City of Seattle, 2019).

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

The City of Seattle comprehensive plan designation of the site as a “Single Family Residential Area” (City of Seattle, 2019a).

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

The project site is not within a shoreline jurisdiction; therefore, there is no applicable shoreline master plan designation.

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

Review of the SDCI GIS mapping database indicates that critical areas are located within the project site: wildlife habitat and riparian corridors. Wildlife habitat and a riparian corridor are mapped in the western and southwestern portions of the project area. Staging is only proposed in these portions of the project site. Wetlands are also found outside of the project site, directly to the west and southwest.

Other critical areas located near the site in Carkeek Park include steep slopes, potential slide areas, wetlands, riparian corridors and wildlife habitat.

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

Approximately, 650 students would attend the new school and 72 to 82 people would be employed.

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

The completed project would not displace any people.
k. Proposed measures to avoid or reduce displacement impacts, if any:

Because no displacement is occurring, no mitigation measures are currently proposed.

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

The proposal consists of demolishing an elementary school and building a new one on the site. As a result, the proposal is compatible with existing land uses.

m. Proposed measures to ensure the proposal is compatible with nearby agricultural and forest lands of long-term commercial significance, if any:

The project is not located near any agricultural or forest lands, so no measures to ensure compatibility are required.

9. Housing

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

No new housing units would be provided as a result of this project.

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

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

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

The project would not have impacts on housing; therefore, no measures have been developed.

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 building onsite would be a section of the new school building, which is approximately 55 feet tall (above finish grade). The exterior material of the building would be largely made up of two varying tones of brick veneer and metal panels located at soffits and penthouses. There
would be two types of metal panels used to correspond with the different brick veneers.

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

Views in the immediate vicinity would be slightly altered due to the presence of the new school, parking lot and play structure; however, these land uses would be similar to those already present at the slight resulting in minimal impacts to visual quality of the area.

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

Aesthetic impacts are anticipated to be minimal and consistent with current land uses; therefore, no mitigation is currently proposed.

11. **Light and Glare**

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

Lighting on the site would remain similar to present conditions. The new school and facilities would have lighting at drive entrances, drive paths, and parking areas to meet the Illuminating Engineering Society of North America guidelines. Additional pedestrian scale luminaires will provide illumination in select locations.

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

Exterior building and property lighting from the completed project would not be a safety hazard and would not be expected to interfere with views.

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

There are no existing off-site sources of light or glare that would affect the proposal.

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

It is anticipated that both exterior and interior lighting would be on timers so that the site would be mostly dark at night. Safety lighting would be designed to minimize light spill over. Evening activities and events could cause increased light, but impacts on adjacent structures are anticipated to be minor.
12. Recreation

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

Carkeek Park is located directly to the west of the project site. Recreation opportunities in the park include hiking and walking. Trails within the vicinity of the project site include Viewlands Trail and Pipers Creek Trail.

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

The proposed project would not displace any existing recreational uses. City of Seattle Parks in the vicinity of the project site would not be impacted by the project.

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

There would be no impacts on recreation, therefore no measures are currently proposed.

13. Historic and Cultural Preservation

The following is based on the Cultural Resources Short Report prepared by ESA (2020).

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 located on or near the site? If so, specifically describe.

The Viewlands Elementary School includes a single story concrete block building that opened on September 8, 1954, plus a 1972 addition consisting of three portable structures (Thompson and Marr 2002). As of April 30, 2020, King County Assessor identifies a total of nine portable structures on the parcel. The original building has not been recorded on a historic property inventory (HPI) form, nor has it been evaluated for listing in the National Register of Historic Places (NRHP).

There are 18 buildings on adjacent parcels that are over 25 years in age, and therefore meet the minimum age threshold for consideration of their eligibility as Seattle Landmarks; some also meet the age threshold for listing on the Washington Heritage Register and/or National Register of Historic Places. The buildings are primarily single-family dwellings, with the earliest constructed in 1918. They have not been fully inventoried, and as of April 30, 2020, none are listed in or have been recommended or
determined eligible for listing in a historic register. The project does not propose direct impacts to any of these buildings.

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.

There are no specific landmarks, features, or other evidence of Indian or historic use or occupation of the subject parcel.

No subsurface cultural resources assessments have been conducted within the subject parcel. The subject parcel is located within the traditional territory of the Southern Coast Salish people, but there are no published Indigenous place names associated with the parcel or its immediate vicinity.

Historical maps indicate that this location was undeveloped at the time of its original survey in 1859 (U.S. Surveyor General, 1859). The subject parcel is within the 1872 William H Cushman land patent claim. With Carkeek Park immediately to the west of the project area, this particular location remained mostly undeveloped as late as 1952. Historic aerial photographs demonstrate that while tax parcels on the east side of 3rd Avenue had grown into a residential neighborhood, the land between 3rd Avenue and Carkeek Park to the west had no such development (NETROnline, 1936).

Prior to construction of Viewlands Elementary School, the nearest school was called “Little Green School;” located at 105th and Greenwood Avenue, this one-room school house built for grades 1 and 2 (Thompson and Marr 2002). It was not until 1954 when Viewlands Elementary opened for its first 584 pupils near the corner of 3rd Avenue NW and 105th (Thompson and Marr 2002).

The subject parcel is classified in the DAHP Statewide Predictive Model as “Very High Risk” for containing intact precontact-era cultural resources (DAHP, 2020). However, the parcel is situated on a glacial upland that is likely to have been used indigenously for occasional resource procurement rather than sustained occupation. Furthermore, the landform is unlikely to have been subject to natural deposition capable of deeply burying and preserving any precontact archaeological sites. Therefore, if the parcel contained precontact archaeological sites, it is probable they were ephemeral, and that site preparation grading for construction of the school in the 1950s would have significantly disturbed or entirely removed them. ESA considers the subject parcel to be low risk for intact precontact archaeological sites.
In light of the fact that the parcel was not developed until construction of the school, the risk for historic-period archaeological sites apart from those associated with construction and maintenance of the school also 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.**

   ESA conducted a literature review of the project area. The literature review study area included the parcel containing the school and all immediately adjacent parcels. Information reviewed included previous archaeological survey reports, published ethnographies, historical maps, government landowner records, aerial photographs and regional histories.

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.**

   No impacts to historic or cultural resources are anticipated. SPS will develop an inadvertent discovery plan (IDP) for project construction. The IDP will set forth procedures and protocols to follow if cultural resources are discovered, including discovery of human remains. SPS will provide tribal representatives with one-week advance notification of the project schedule and invite them to observe construction. Based on the results of the cultural resources literature review, no archaeological monitoring is recommended during project construction.

14. **Transportation**

   A Transportation Technical Report (Heffron Transportation, Inc., July 2020) has been prepared for the proposed project and the results of the report are summarized in this section. For further details on the Transportation Technical Report, please refer to Appendix A of this Checklist.

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

   The Viewlands Elementary School site is bounded by 3rd Avenue NW to the east, NW 107th Street to the north, NW 105th Street to the south, and Carkeek Park to the west. A small surface parking lot (four parking spaces) and loading area for service vehicles are located in the southeast area of the site with an access driveway on 3rd Avenue NW. There is a small gravel parking lot west of the school that has been signed for “Staff Parking Only During School Hours;” however, this lot is located within an undeveloped street ROW, not on school property, and is intended for
Carkeek Park and Viewlands Trail users. The school has no on-site loading/unloading facilities. School buses currently load and unload on NW 107th Street adjacent to the school.

As part of the school replacement project, a new driveway would be constructed from the south leg of the NW 107th Street / 4th Avenue NW intersection to provide access to the school’s new on-site staff and visitor parking and on-site bus load/unload area. The access and 4th Avenue NW extension to the south would be integrated with improved Viewlands Trail access to Carkeek Park. The existing on-street school-bus load zone on the south side of NW 107th Street would be eliminated and would be available for automobile load/unload and on-street parking. The existing school load zone for automobiles on 3rd Avenue NW would be extended for the length of the frontage on 3rd Avenue NW.

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 Transit (Metro) provides bus service in the site vicinity. The closest bus stops are located on 3rd Avenue NW with the northbound stop just north of NW 105th Street and the southbound stop just south of NW 105th Street. These stops are served by Metro Express Route 28, which provides all-day service seven days per week between Broadview/Carkeek Park and Downtown Seattle. On weekdays, the route operates from about 5:00 A.M. to 1:00 A.M. with headways (time between consecutive buses) of 10 to 20 minutes.

c. **How many additional parking spaces would the completed project or non-project proposal have? How many would the project or proposal eliminate?**

The proposal includes construction of a new on-site employee parking lot with 50 spaces and would remove the four existing on-site spaces that are accessed from 3rd Avenue NW. As part of the access reconfiguration, the project would eliminate the gravel area west of the site and south of NW 107th Street, which is within Seattle Department of Transportation (SDOT) right-of-way and is currently used for informal parking (room for about 17 vehicles) by school employees and park and trail users.

d. **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).**

The proposal would provide frontage improvements as required by SDOT and are anticipated to consist of improvements on the north, south, and east frontages, as well as at the northwest corner of the site at the south
extension of 4th Avenue NW. Along 3rd Avenue NW, the existing site access driveway would be removed and the driveway apron would be replaced with vertical curb. The existing mid-block curb-bulb would be removed and replaced with curb-side parking. A sidewalk, curb, gutter, and landscape amenities would be installed along the NW 105th Street frontage between 3rd Avenue NW and the service driveway. The District will coordinate with the SDOT regarding the necessary frontage improvements west of the service driveway. Improvements on the NW 107th Street frontage would include curb and landscape amenities. The extension of 4th Avenue NW south of NW 107th Street would be constructed to accommodate the new school driveway and to provide a separated non-motorized access to the Viewlands Trail and Carkeek Park.

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

The project would not use or occur in the immediate vicinity of water, rail, or air transportation.

f. **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 reflected conditions with the replacement school and increased enrollment capacity up to 650 students (a net increase of about 265 students compared to fall 2019 enrollment). Based on daily trip generation rates published for elementary schools by the Institute of Transportation Engineers, the added capacity at Viewlands Elementary School is expected to generate a net increase of about 500 trips per day (250 in, 250 out). The peak traffic volumes are expected to occur in the morning just before classes begin (between 7:15 and 8:15 A.M.) and in the afternoon around dismissal (between 2:00 and 3:00 P.M.).

The existing school is served by three full-size school buses and three smaller Special Education (SPED) bus; with a larger enrollment, the school could be served by one additional full-size bus. Other truck trips expected to serve the site include deliveries of food and supplies, trash and recycling pick-up, and occasional maintenance. Overall, school buses and small trucks are likely to represent about 3% of the total daily traffic.

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

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

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

Even though the proposed Viewlands Elementary School replacement project would not result in significant adverse impact to the transportation system in the site vicinity, the following measures are recommended to reduce the traffic and parking impacts with the project.

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

B. **Transportation Management Plan (TMP):** Prior to the school reopening, the District and school principal should establish a Transportation Management Plan (TMP) to educate families about the new access and load/unload procedures for the site layout. The TMP should also encourage school bus ridership, carpooling, and supervised walking (such as walking school buses). The plan should require the school to distribute information to families about drop-off and pick-up procedures, as well as travel routes for approaching and leaving the school. It should also instruct staff and parents not to block or partially block any residential driveways with parked or stopped vehicles.

C. **Continue Coordination with Seattle School Safety Committee:** The District should continue its ongoing coordination with SDOT’s the Seattle Schools Traffic Safety Committee to review access for pedestrian and bicycles and determine if any changes should be made to concentrate non-motorized flows at designated crosswalk locations.
D. 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 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 large-attendance events. 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.

E. Update curb-side signage: The District should work with SDOT to confirm the locations, restrictions, and durations for curb-side parking and load/unload zones near the school.

F. Restrict movements from N 107th Street at Greenwood Avenue N to right-turns: If approved by SDOT, coordinate with City to implement restrictions for N 107th Street at Greenwood Avenue N.

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.

   It is unlikely that project would result in an increase in the need for public services. The new school would serve approximately 650 students, as of October 2019 approximately 385 students were enrolled, while the capacity of the school is listed as 351 students. Although the student population would be larger, it is not expected to increase the need of public services.

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

   The project is not anticipated to result in an increased need for public services and utilities. Therefore, no measures have been proposed.

16. Utilities
   a. Underline 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.

On site utilities that would be demolished and rebuilt include the existing sanitary sewer, water and fire lines. Sewer service, water and fire services would all be provided by Seattle Public Utilities. The project proposes a new 6-inch side sewer that would connect to an existing 8-inch public sewer main located within the 5th Avenue right-of-way. The water service for the new building would be supplied from an existing water main on NW 105th Street. A new fire hydrant connection is also proposed south of the new building.

Electricity would continue to be provided by Seattle City Light.

The existing gas service on site would also be decommissioned. Heat would be provided by a dedicated outdoor air system (DOAS).

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.

Signature: __________________________________________

Name of signee: ______________________________________

Position and Agency/Organization: _______________________

Date Submitted: ________________________________________
References


City of Seattle. 2019b. Seattle Department of Construction and Inspections GIS. Available: 


FEMA (Federal Emergency Management Agency). 1995. Flood Insurance Rate Map King County Washington, and Incorporated Areas. Available at: 


U.S. Surveyor General. 1859. Township 26 North, Range 3 East, Survey Map. Electronic document, 


Figure 1
Vicinity Map
Seattle, Washington
Figure 2. Proposed Site Plan
Study Area Streams, Riparian Management Areas, and Stormwater Features
Seattle, Washington

Figure 3

SOURCE: ESA, 2020; ESRI, 2020
Appendix A: Transportation Technical Report
TRANSPORTATION TECHNICAL REPORT

for the

Viewlands Elementary School Replacement

PREPARED FOR:
Seattle Public Schools

PREPARED BY:

Heffron Transportation Inc
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June 29, 2020
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1. INTRODUCTION

This report presents the transportation impact analyses for the Seattle Public Schools’ (SPS) proposed replacement of Viewlands Elementary School. 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 Seattle Public Schools 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

Seattle Public Schools is proposing to replace the existing school on the same 6.5-acre site, which is located at 10525–3rd Avenue NW in Seattle. The following sections describe the existing school site and the proposed project.

1.1.1. Existing School Site

The school site is bounded by 3rd Avenue NW to the east, NW 107th Street to the north, NW 105th Street to the south, and Carkeek Park to the west. The existing school has two single-story buildings connected by a covered play-area, one small building connected by a covered breezeway (total of about 30,000 square feet (sf)), and nine portable buildings (totaling 11,100 sf).\(^1\) Two of the portables are used for the Creative Kids Learning Center, providing pre-K and before and after-school programs. There are hard-surfaced play areas located west of the school buildings both north and south of the Creative Kids Learning Center, and a small fenced-in play area in the southeast area of the site. There is a soft-surface play area located west of the Creative Kids Learning Center. A part of the site consists of an undeveloped area just west of the main campus that is separated by an unimproved section of public right-of-way (ROW); this part of the site is utilized for outdoor environmental learning.

A small surface parking lot (four parking spaces) and loading area for service vehicles are located in the southeast area of the site with an access driveway on 3rd Avenue NW. There is a small gravel parking lot west of the school that has been signed for “Staff Parking Only During School Hours;” however, this lot is located within an undeveloped street ROW, not on school property, and is intended for Carkeek Park and Viewlands Trail users. The school has no on-site loading/unloading facilities. School buses currently load and unload on NW 107th Street adjacent to the school. Passenger vehicle load and unload occurs in a variety of locations around the site and in the near-site neighborhoods as described later in Section 2.2. The project site location and vicinity are shown in Figure 1.

According to information published in *Building for Learning, Seattle Public Schools Histories, 1862-2000,*\(^2\) Viewlands Elementary School opened in 1954 with 584 students. Since enrollment was larger than anticipated, the library was converted into a classroom. Then, in 1972 an expanded learning resource center was opened, special education classes began, and a portable was added as an activity center and for PE classes. The school remained a K-6 school through 1988. The trail on the west side of the school was installed in 1983. In 2007 the school closed and about 200 students were relocated to other elementary schools. Viewlands Elementary re-opened as a K-5 school in 2011.

In October 2019, at the time traffic data were collected for this analysis, enrollment was 385 students\(^3\) in grades Pre-kindergarten through 5th; with 54.\(^4\)

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1 Building areas provided by Mahlum Architects, May, 2020.
3 Seattle Public Schools, P223 Enrollment Report, October 2019.
1.1.2. Proposed Site Changes

The proposed project would entirely replace the existing school on the same site with a multi-story building on the south side of the school site. All of the portables would be removed and the site work would create new landscape, and play areas and parking areas. The school replacement would be funded by the BEX V Capital Levy, which was approved by voters in February 2019. The school would be designed to accommodate up to 650 students including up to 20 pre-kindergarten students (a net increase of about 265 students compared to current enrollment. The District estimates that staffing at the school could increase to between 60 and 72 employees—an increase of 6 to 18 employees.5

The site access configuration was developed with extensive coordination with the Seattle Department of Transportation (SDOT), the Seattle Department of Neighborhoods (DON), and the Seattle Schools Traffic Safety Committee (SSTSC). A new driveway would be constructed from the south leg of the NW 107th Street / 4th Avenue NW intersection to provide access to the school’s new on-site staff and visitor parking and on-site bus load/unload area. The access and 4th Avenue NW extension to the south would be integrated with improved Viewlands Trail access to Carkeek Park. The existing on-street school-bus load zone on the south side of NW 107th Street would be eliminated and would be available for automobile load/unload and on-street parking. The existing school load zone for automobiles on 3rd Avenue NW would be extended for the length of the frontage on 3rd Avenue NW. The project would also improve frontages along NW 107th Street and NW 105th Street. A service and delivery access driveway would be located at the south end of the site from NW 105th Street. Figure 2 shows the proposed site plan.

Construction is planned to begin in summer 2021 with the new school opening in fall 2023. During construction, the students and staff would be relocated to John Marshall School as an interim location. Future analyses (without and with the project) presented in this report reflect year 2023 conditions.

5 Email communication via Mahlum Architects, from Seattle Public Schools, April 2020.
Figure 1
Site Location and Vicinity

Project Site

Viewlands Elementary
School Replacement

04.09.2020
Figure 2
Proposed Site Plan

Source: Mahlum Architects, June 26, 2020
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 new traffic and parking impacts, year 2023 without-project conditions assume the existing Viewlands Elementary School would continue to operate at its current enrollment level. 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 (both on-site and on-street).

Nine intersections were selected for study based on traffic counts and field observations of the travel routes used by family drivers, buses, and staff to access and egress the site area. The following study area intersections were identified for analysis for both the morning and afternoon peak hours.

**Stop-Sign Controlled Intersections**
- NW 110th Street / 3rd Avenue NW
- NW 107th Street / 4th Avenue NW
- NW 107th Street / 3rd Avenue NW
- NW 105th Street / 3rd Avenue NW
- NW 103rd Street / 2nd Avenue NW
- N 107th Street / Greenwood Avenue N

**Signalized Intersections**
- NW 103rd Street / 3rd Avenue NW
- Holman Road NW / 3rd Avenue NW
- N 105th Street / Greenwood Avenue N / Holman Road NW

2.1. **Roadway Network**

The following describes key roadways in the site vicinity. The Viewlands Elementary site is bounded by Carkeek Park to the west, which interrupts the grid of streets. Nearly all access to this site would use streets located to the east. Roadway classifications are based on the City’s Street Classification Map.6 Speed limits are 25 miles per hour (mph) on arterials (unless otherwise marked) and 20 mph on local access streets.

**3rd Avenue NW** is a north-south arterial extending between the City’s northern boundary at N 145th Street to the Ship Canal. It is classified as a Minor Arterial between NW 130th Street and NW 85th Street and along the school site. It is classified as a Collector Arterial beyond these limits. Near the site, 3rd Avenue NW is classified as a Minor Transit Route. The street is 23 feet wide with one travel lane in each direction. Sidewalks and curbs are provided along the school frontage, but intermittently beyond the site. Sharrows7 and speed humps are located south of NW 105th Street. Parallel parking is permitted on both sides of the roadway for much of its length. The parking area located on the north half of the site frontage is designated for school load-only on weekday mornings (7 to 10 A.M.) and afternoons (1 to 4 P.M.). The posted speed limit is 30 miles per hour (mph); however, there is a school zone speed limit of 20 mph in the vicinity of the school that is in effect when children are present. There are pedestrian-actuated Rectangular Rapid Flashing Beacons (RRFB) across 3rd Avenue NW at both NW 107th Street (south leg of intersection) and NW 105th Street (north leg of intersection).

**4th Avenue NW** is a north-south non-arterial local access street that extends from NW 110th Street to NW 107th Street. This unstriped roadway accommodates two-way travel. There are no curbs or, gutters; sidewalks are located on the entire east side of the street. Sidewalks are located on the northern two-thirds of the west side of the street. Parking occurs on both sides of the street. Wide shoulders are provided along most of the street; however, the shoulder spaces narrow towards the south end of the street near NW 107th Street.

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6 Seattle Department of Transportation (SDOT), Interactive Street Classification Maps, accessed March 2020.
7 A “sharrow” is a shared-lane pavement marking that is placed in the roadway lane to highlight the shared space; however, unlike a bicycle lane it does not delineate a particular part of the roadway that a bicyclist should use.
**Greenwood Avenue N** is a north-south roadway extending from Carlyle Hall Road N in Shoreline to N 36th Street in Fremont. Within the City of Seattle, it is classified as a Principal Arterial between N 145th Street to N 105th Street / Holman Road N, and a Minor Arterial south of N 105th Street. North of N 105th Street this roadway is four to five-lanes with two travel lanes in each direction, center turn lanes or medians, intermittent on-street parking, curbs, gutters and sidewalks, and a posted 35 mph speed limit. South of N 105th Street, it is a three-lane roadway with one travel lane in each direction, a center two-way left-turn lane, in-street bike lanes, intermittent on-street parking, and curbs, gutters, and sidewalks, and a posted 30 mph speed limit. Greenwood Avenue N is a Major Transit Route between NW 145th Street and N 85th Street. It is a part of a Minor Freight Network from N 145th Street to N 67th Street.

**Holman Road NW** is a northwest-southeast Principal Arterial section between 15th Avenue NW and Greenwood Avenue N. The roadway continues south as 15th Avenue NW to the Magnolia Bridge. East of Greenwood Avenue N it continues as N 105th Street, then as NE Northgate Way to Lake City Way NE. This roadway has two travel lanes in each direction with a center two-way left-turn lane, curbs, gutters, and sidewalks on both sides. On-street parking is prohibited along this roadway. The posted speed limit is 35 mph. This roadway is classified as a Minor Transit Route.

**NW 110th Street** is an east-west, non-arterial local access street that connects from North Park Avenue N to about NW Puget Drive, where it continues as NW Carkeek Park Road. There is one travel lane in each direction with parallel parking permitted intermittently. There are no curbs or gutters along the roadway; sidewalks are located on the south side of the street between 4th Avenue NW and Phinney Avenue N (on-street parking is mostly prohibited in this section).

**NW 107th Street** is an east-west non-arterial local access street that connects from 4th Avenue NW near Viewlands Elementary School to Fremont Avenue N. This unstriped roadway accommodates two-way travel. There are no curbs or gutters; sidewalks are located on the south side of the street between 4th Avenue NW and Phinney Avenue N. Parking is permitted intermittently, except along the south side west of 3rd Avenue NW, where this section is restricted to school buses only from 7:00 to 10:00 A.M. and from 1:00 to 4:00 P.M.

**NW 105th Street** is an east-west, non-arterial local access street that extends from just west of Viewlands Elementary School to Aurora Avenue N (State Route 99), where it continues east as N Northgate Way. Within the site vicinity (west of Greenwood Avenue N), this unstriped roadway accommodates two-way travel with no curbs or gutters. Parking is permitted between 3rd Avenue NW and Greenwood Avenue N, and sidewalks are provided on the north side of the roadway along this section. West of 3rd Avenue NW, parking is prohibited on school days from 8:00 A.M. to 4:00 P.M. East of Greenwood Avenue N, this roadway is classified as a Principal Arterial, has four or more travel lanes, curbs, gutters, sidewalks, with no on-street parking and a speed limit of 30 mph.

**NW 103rd Street** east of 3rd Avenue NW is an east-west non-arterial local access street that connects to Holman Road NW. This unstriped roadway section accommodates two-way travel and does not have curbs, gutters, or sidewalks; on-street parking is allowed. West of 3rd Avenue NW, this roadway is classified as a Collector Arterial, and after about one block, continues as NW 100th Street to 8th Avenue NW, and then continues west as NW 100th Street until it reaches the Blue Ridge residential community. Curbs, gutters, and sidewalks are provided west of 3rd Avenue NW for much of its length, and the speed limit is 30 mph. Between 3rd Avenue NW and NW 100th Street this roadway is classified as a Minor Transit Route.

Several documents were reviewed to determine if any planned transportation improvements could affect the roadways and intersections near Viewlands Elementary School by 2023 when the new school would be completed. These documents are listed below.
City of Seattle's Adopted 2019-2024 and Proposed 2020-2025 Capital Improvement Programs (CIP) ⁸ – No improvements to the transportation network were identified in the site vicinity.

City of Seattle’s Pedestrian Master Plan Update ⁹ and Pedestrian Master Plan 5-Year Implementation Plan and Progress Report ¹⁰ – The plans include the area around the school as part of the North Sector’s Priority Investment Network and Village Network, identifying missing sidewalks around the school on arterials and non-arterials. Out of 114 schools; Viewlands Elementary School is ranked #26 for walkway project needs and #57 for crosswalk project needs.

Adopted Seattle Bicycle Master Plan (BMP) ¹¹ – The plan proposes future improvements along roadways within the site vicinity. A cycle track (protected bike lanes) are recommended along 3rd Avenue NW between N 107th Street and NW 97th Street. An east-west neighborhood greenway is recommended between Viewlands Elementary and the Interurban North Trail. The Seattle Bicycle Master Plan – 2019-2024 Proposed Implementation Plan ¹² which defines the BMP priorities identifies project #25 Safe Routes to Schools (SRTS) Viewlands Connection – N 110th Street (target year 2020) project is funded through construction. This project is described below.

The Neighborhood Greenways ¹³ website (updated January 24, 2020) indicates Viewlands Elementary School Connection (identified as #25 SRTS Viewlands Connection in the BMP) is in the planning/design phases. The greenway would include N 110th Street west of Fremont Avenue N (at the Interurban Trail), and 1st Avenue NW between NW 110th and NW 107th Streets, and NW 107th Street to 4th Avenue NW. The project would upgrade crosswalk signs to school signs at both NW 107th and NW 110th Streets and would add a crossing beacon (with bicyclist activation buttons) to the north side of the NW 107th Street / 3rd Avenue NW intersection; bicyclist activation buttons would be added to the existing beacon. A new speed cushion would be installed on NW 107th Street between 3rd and 4th Avenues NW and route signs would be provided to direct people to the park entrance at NW 107th Street / 4th Avenue NW. ¹⁴

Levy to Move Seattle – Workplan Report ¹⁵ – 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. There are no projects defined in the site vicinity.

Only the planned greenway improvements on NW 107th Street near the school could affect the study area transportation system. This project is not expected to change the lane geometry or traffic control for vehicles Therefore, the existing roadway and intersection configurations were assumed to remain unchanged for the 2023 analysis presented in this report.

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⁹ City of Seattle June 2017.
¹⁰ City of Seattle, December 2019.
¹¹ City of Seattle, April 2014.
¹⁴ Email communication from Jackson Keenan-Koch, Transportation Planner, SDOT. June 5, 2020.
¹⁵ SDOT, February 2020.
2.2. Traffic Volumes

2.2.1. Existing Conditions

At the time of this analysis, the school day at Viewlands Elementary School started at 7:55 A.M. and ended at 2:25 P.M. To capture the existing traffic conditions during the current arrival and dismissal peak periods, traffic counts were performed from 7:00 to 9:00 A.M. and from 1:30 to 3:30 P.M. on Tuesday, October 15, 2019 at seven of the nine intersections. SDOT performed counts at the 3rd Avenue NW intersections with NW 105th and 107th Streets. The Creative Kids Learning Center is open from 7:00 A.M. to 7:00 P.M. The counts indicated that the morning and afternoon peak hours for school traffic occurred from 7:15 to 8:15 A.M. and from 2:00 to 3:00 P.M., respectively; the existing traffic volumes for the school peak hours are shown on Figure 3.

2.2.2. Future Without-Project Conditions

Future traffic volume forecasts for 2023 conditions without the project were developed using a compound annual growth rate combined with traffic estimates for a planned nearby residential development project. Review of SDOT historical traffic counts on Greenwood Avenue N, north of N 107th Street from 2008 to 2016 found that daily volumes have increased slightly over the years with 0.1% annual growth during the PM peak hour, a daily volume growth of 1.0% per year, and about 1.6% annual growth during the AM peak hour. To reflect growth in non-school traffic that could occur by 2023, a 2.0% compound annual growth rate was applied to the existing (non-school-related) traffic volumes. This is at the higher end of rates used for traffic analyses of other developments in the vicinity and throughout Seattle.

In addition, traffic estimates developed for the nearby residential project at 10540 Greenwood Avenue N\textsuperscript{16} were added to account for this pipeline development project, including estimates during the afternoon peak hour. The combined increases from the assumed annual growth rate and the pipeline traffic were added to estimate 2023 traffic volumes without the project during the morning and afternoon peak hours. The 2023-without-project morning and afternoon peak hour traffic volumes are shown on Figure 4.

\textsuperscript{16} William Pop Associates, 10540 Greenwood Ave N Apartments (SDCI #3022986), Multi-Family Residential SEDU Development, April 24, 2017.
Figure 3
Existing Traffic Volumes
Morning and Afternoon Peak Hours

Viewlands Elementary
School Replacement

Project Site

KEY
Traffic Signal
Stop Sign
Morning Peak Hour Volume
Afternoon Peak Hour Volume

04.09.2020
Figure 4
Forecast (2023) Without-Project Traffic Volumes
Morning and Afternoon Peak Hours
2.4. Traffic Operations

2.4.1. Off-Site Study Area Intersections

Traffic operations are evaluated based on level-of-service (LOS), which is a qualitative measure used to characterize intersection 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/F conditions at unsignalized locations where traffic control measures (such as conversion to all-way-stop-control or signalization) are not warranted or desirable.

Levels of service for the study area intersections were determined using methodologies established in the Highway Capacity Manual (HCM), 6th Edition.\(^\text{17}\) Appendix A summarizes HCM level of service thresholds and definitions for signalized and unsignalized intersections. Levels of service for the study area intersections were determined using the Synchro 10.3 analysis software. The geometries at the study area intersections and key roadways were all field-verified. The models reflect existing intersection geometries and channelization; these characteristics were assumed to remain unchanged for future 2023 conditions.

Three of the study-area intersections are controlled with traffic signals; the remaining intersections are one- or two-way stop controlled. Two of the unsignalized intersections along 3rd Avenue NW (at NW 107th and 105th Street NW) are equipped with pedestrian activated RRFBs to alert drivers when pedestrians are crossing 3rd Avenue NW. In addition, adult crossing guards are stationed at these intersections to assist student crossings during morning arrival and afternoon dismissal peak times. Because of these beacons, traffic on 3rd Avenue NW stops regularly for pedestrian crossings, which also allows side-street movements to occur with reduced delays. Synchro and the HCM methodology are unable to accurately model or evaluate these conditions; therefore, the side-street movements at these intersections operate with lower delay and better levels of service than reported.

Table 1 summarizes existing and forecast 2023 levels of service without the proposed project for both the morning and afternoon peak hour conditions. As shown, most of the intersections currently operate at LOS D or better during the peak hours and would continue to do so in the future without the project. The exception is the signalized intersection at N 105th Street/Greenwood Avenue N, which currently operates at LOS E during the PM peak hour. Some side street movements are also expected to operate at LOS E or F in 2023 without the project. Those include westbound NW 105th Street at 3rd Avenue NW, westbound NW 110th Street at 3rd Avenue NW (morning only), and eastbound and westbound N 107th Street at Greenwood Avenue N.

It should be noted that the school has no on-site loading or unloading facilities. Based on observations at the existing school during morning arrival and afternoon dismissal, passenger vehicles arrive from all directions and short-term parking for load/unload activities primarily occurs along 3rd Avenue NW in front of the school, along NW 105th Street, and along NW 107th Street. During the periods of peak load / unload activity, on-street parking and maneuvering into and out of the parking spaces slows travel around the school.

\(^{17}\) Transportation Research Board 2016.
Table 1. Level of Service Summary – Existing and 2023-Without-Project Conditions

<table>
<thead>
<tr>
<th>Intersections</th>
<th>Morning Peak Hour</th>
<th>Afternoon Peak Hour</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Existing</td>
<td>W/O Project</td>
</tr>
<tr>
<td></td>
<td>LOS 1</td>
<td>Delay 2</td>
</tr>
<tr>
<td>NW 103rd St (west leg) / 3rd Ave NW</td>
<td>B</td>
<td>19.4</td>
</tr>
<tr>
<td>Holman Rd NW / 3rd Ave NW</td>
<td>C</td>
<td>21.4</td>
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<tr>
<td>N 105th St / Greenwood Ave N / Holman Rd NW</td>
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<td>One- or Two-Way Stop Controlled</td>
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<td>Delay</td>
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<td>NW 110th St / 3rd Ave NW</td>
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<td>Southbound Left Turns</td>
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<td>8.2</td>
</tr>
<tr>
<td>Eastbound Movements</td>
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<td>22.6</td>
</tr>
<tr>
<td>Westbound Movements</td>
<td>D</td>
<td>30.9</td>
</tr>
<tr>
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<td>1.9</td>
</tr>
<tr>
<td>Westbound Left Turns</td>
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<td>0.0</td>
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<tr>
<td>Northbound Movements</td>
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<td>0.0</td>
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<tr>
<td>Northbound Left-Turns</td>
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<td>8.9</td>
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<td>Southbound Left Turns</td>
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</tr>
<tr>
<td>Eastbound Movements</td>
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</tr>
<tr>
<td>Westbound Movements</td>
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<td>24.5</td>
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<tr>
<td>NW 105th St / 3rd Ave NW</td>
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</tr>
<tr>
<td>Northbound Left-Turns</td>
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<td>9.3</td>
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<td>Southbound Left Turns</td>
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<td>Eastbound Movements</td>
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<td>19.9</td>
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<td>Westbound Movements</td>
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</tr>
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<td>Northbound Left-Turns</td>
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<td>Eastbound Movements</td>
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</tr>
<tr>
<td>N 107th St / Greenwood Ave N</td>
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<td>34.1</td>
</tr>
<tr>
<td>Westbound Movements</td>
<td>E</td>
<td>36.5</td>
</tr>
</tbody>
</table>

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

2.5. Parking Supply and Occupancy

On-street parking at and around the Viewlands Elementary School site was surveyed to determine the existing parking supply and parking occupancy. This information was then used to estimate how parking utilization could be affected by new parking demand generated by the school replacement.
project (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.

2.5.1. Methodology and Study Area

A detailed on-street parking study was performed, and supply was documented according to the methodology outlined in the City of Seattle’s Tip #117. Although Tip #117 was created for another purpose, it 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 currently 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 to just west of 4th Avenue NW, just north of NW 110th Street, just south of NW 103rd Street, and just east of 1st Avenue NW. 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 alleys; area residents also regularly use on-street parking.

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 east side of 3rd Avenue NW, between NW 105th Street and NW 107th Street is one block face (identified as block face ‘AR’ for this study). The study area and block face designations are shown on Figure 5.

Each block face was measured and analyzed to determine the number of available on-street parking spaces. First, common street features—such as driveways, fire hydrants, and special parking zones—were noted and certain distances adjacent to the street features were noted. No on-street parking capacity was assumed within 30 feet of a signalized or marked intersection, within 20 feet of an uncontrolled intersection, within 15 feet on either side of a fire hydrant, or within 5 feet on either side of a driveway or alley. The remaining unobstructed lengths between street features were converted to legal on-street parking spaces using values in the City’s Tip #117. Based on extensive past experience of Heffron Transportation preparing on-street parking utilization studies, a trend has been observed that the increased popularity of smaller cars and the tendency for drivers to park closer together in areas with higher utilization can result in more available supply than would be suggested by the Tip #117 guidance. Detailed parking supply by block face is provided in Appendix B.

The parking supply survey determined that there are 302 on-street parking spaces within the study area and 262 have no signed restrictions. After accounting for school-bus and time-dependent no parking zones along the school frontage (totaling 40 spaces), the total supply is 280 spaces in the morning, 284 spaces mid-morning, and 302 spaces in the evening.

18 Seattle Department of Planning and Development, Tip 117, Parking Waivers for Accessory Dwelling Units, Updated May 12, 2011.
Figure 5
Study Area for On-Street Parking Utilization Surveys
Existing parking occupancy counts within the study area were performed in October 2019. School-day occupancy counts were performed during early morning (between 7:00 and 7:45 A.M.) to reflect conditions when some staff may be arriving at the school and using on-street supply and mid-morning (between 10:30 and 11:15 A.M.) to reflect conditions when school-day parking is typically highest. Evening counts were performed (between 7:30 and 8:15 P.M.) to reflect conditions when occasional school events could occur. The counts were performed on Thursday October 10, Tuesday, October 22, and Thursday October 24, 2019. The October 10th counts included parking demand for the school’s Bring-Your-Family-to-School Night event (6:00 to 7:00 P.M.). The counts for each day were compiled and averaged. The results of the parking occupancy surveys are summarized in Table 2. Detailed summaries of the on-street parking occupancy by block face for all counts are provided in Appendix B.

On-street parking utilization was calculated using the methodology described in Tip #117 and is the number of vehicles parked on-street divided by the number of legal on-street parking spaces within the study area or on a specific block face. The study area utilization totals are summarized in Table 2. For the purpose of evaluating the potential on-street parking impacts associated with the new school, the City considers utilization rates of 85% or higher to be effectively full. The survey determined that parking utilization was well below this threshold during most time periods. During the evening event on October 10, parking utilization reached 69%. As would be expected the several of the block faces closest to the school were full or over capacity during the event, while block faces farther from the school had unused spaces. Within the study area, unused parking averaged between 179 and 232 spaces over seven separate observations, and there were 94 unused spaces on the event night.

Table 2. Parking Occupancy Survey Results – October 2019

<table>
<thead>
<tr>
<th>Time Period Surveyed</th>
<th>Parking Supply</th>
<th>Total Vehicles Parked</th>
<th>% Utilization</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Weekday Early Morning (7:00 to 7:45 A.M.)</strong>&lt;sup&gt;a&lt;/sup&gt;</td>
<td>280</td>
<td>101</td>
<td>36%</td>
</tr>
<tr>
<td>Thursday, October 10, 2019</td>
<td>280</td>
<td>101</td>
<td>36%</td>
</tr>
<tr>
<td>Tuesday, October 22, 2019</td>
<td>280</td>
<td>101</td>
<td>36%</td>
</tr>
<tr>
<td>Average</td>
<td>280</td>
<td>101</td>
<td>36%</td>
</tr>
<tr>
<td><strong>Weekdays Mid-Morning (10:30 to 11:15 A.M.)</strong>&lt;sup&gt;b&lt;/sup&gt;</td>
<td>284</td>
<td>87</td>
<td>31%</td>
</tr>
<tr>
<td>Thursday, October 10, 2019</td>
<td>284</td>
<td>87</td>
<td>31%</td>
</tr>
<tr>
<td>Tuesday, October 22, 2019</td>
<td>284</td>
<td>90</td>
<td>32%</td>
</tr>
<tr>
<td>Average</td>
<td>284</td>
<td>89</td>
<td>31%</td>
</tr>
<tr>
<td><strong>Weekday Evenings (7:30 to 8:15 P.M.)</strong></td>
<td>302</td>
<td>88</td>
<td>29%</td>
</tr>
<tr>
<td>Tuesday, October 22, 2019</td>
<td>302</td>
<td>88</td>
<td>29%</td>
</tr>
<tr>
<td>Thursday, October 24, 2019</td>
<td>302</td>
<td>70</td>
<td>23%</td>
</tr>
<tr>
<td>Average</td>
<td>302</td>
<td>79</td>
<td>26%</td>
</tr>
<tr>
<td><strong>Weekday Event (6:30 to 7:15 P.M.)</strong></td>
<td>302</td>
<td>208</td>
<td>69%</td>
</tr>
<tr>
<td>Thursday October 10, 2019</td>
<td>302</td>
<td>208</td>
<td>69%</td>
</tr>
</tbody>
</table>

Source: Heffron Transportation, Inc., April 2020

<sup>a</sup> School-bus only (7-10 A.M. & 1-4 P.M.), 5 min School Load Only (7-10 A.M. & 3-6 P.M.) and 5 min School Load Only (7-10 A.M. & 1-4 P.M.) along frontage excluded from total supply this period.

<sup>b</sup> No Parking on School Days (8:00 A.M.- 4:00 P.M.) along frontage excluded from total supply this period.
2.5.2. Off-Street Parking

There is one on-site parking lot (with four spaces) located on east side of the school accessed from 3rd Avenue NW. There is a small gravel area west of the school that has been signed for “Staff Parking Only During School Hours;” however, this lot is located within an undeveloped street right-of-way, not on school property, and is intended for Carkeek Park and Viewlands Trail users. Parking occupancy counts of these lots were performed in October 2019 on the same days and time periods as the on-street parking occupancy counts. Parking occupancy in the small eastern lot was four vehicles throughout the day, zero vehicles during the evening counts, and four vehicles during an evening event. The gravel lot had 16 or 17 vehicles occupying the lot during the school day, zero during the non-event evening counts, and 16 vehicles during the evening event.

2.6. Traffic Safety

Collision data for the study area intersections and the roadway segment along the school’s main frontage were obtained from SDOT. These data, reflecting the period between January 1, 2016 and September 22, 2019 (3.7 years), were examined to determine if there are any unusual traffic safety conditions that could impact or be impacted by the proposed project. Table 3 below summarizes the collision data.

| Table 3. Collision Summary (January 1, 2016 through September 22, 2019) |
|---------------------------------|-----------|--------|--------|--------|--------|--------|--------|---------|--------|
| **Signalized Intersections**    | Rear-End | Side-Swipe | Right Turn | Left Turn | Right Angle | Ped / Cycle | Other \(^a\) | Total for 3.7 Yrs | Average/Year |
| N 105th St / Greenwood Ave N / Holman Rd NW | 2 | 6 | 0 | 3 | 8 | 0 | 2 | 21 | 5.6 |
| Holman Rd NW / 3rd Ave NW | 3 | 5 | 0 | 1 | 1 | 0 | 2 | 12 | 3.2 |
| NW 103rd St (west leg) / 3rd Ave NW | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Unsignalized Intersections** | Rear-End | Side-Swipe | Right Turn | Left Turn | Right Angle | Ped / Cycle | Other \(^a\) | Total for 3.7 Yrs | Average/Year |
| N 107th St / Greenwood Ave N | 2 | 0 | 0 | 1 | 4 | 1 | 0 | 8 | 2.1 |
| NW 110th St / 3rd Ave NW | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 6 | 1.6 |
| NW 107th St / 3rd Ave NW | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NW 105th St / 3rd Ave NW | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NW 103rd St (east leg) / 3rd Ave NW | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Roadway Segment** | Rear-End | Side-Swipe | Right Turn | Left Turn | Right Angle | Ped / Cycle | Other \(^a\) | Total for 3.7 Yrs | Average/Year |
| 3rd Ave NW, (between NW 107th St & NW 105th St) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Source: City of Seattle Department of Transportation, October 2019.

\(^a\) Other collision types include no diagram available, vehicle struck object off roadway, and vehicle overturned or spun out.

Historically, unsignalized intersections with five or more collisions per year and signalized intersections with 10 or more collisions per year are considered high collision (HCL) locations by the City. Intersections are also considered high collision locations if there are five or more pedestrian or cyclist collisions in the preceding three years. Mid-block roadway segments are considered high collision locations if there are 10 or more collisions in the previous year. SDOT staff conducts an annual analysis of high collision
locations. The 2019 Candidate Locations for HCL Reviews,\textsuperscript{19} which lists locations based on the previous three years (2016 through 2018) of recorded collisions, was reviewed for this analysis. None of the study area intersections or mid-block segments are included in the list or meet the definition of an HCL.

There was one recorded collision in 2018 that involved a bicyclist at the N 107\textsuperscript{th} Street / Greenwood Avenue N intersection. This collision occurred on a Sunday evening. None of the reported collisions in the study area for the requested period resulted in fatalities. Overall, these data do not indicate any unusual traffic safety conditions in the study area.

### 2.7. Transit Facilities and Service

King County Metro Transit (Metro) provides bus service in the site vicinity. The closest bus stops are located on 3\textsuperscript{rd} Avenue NW with the northbound stop just north of NW 105\textsuperscript{th} Street and the southbound stop just south of NW 105\textsuperscript{th} Street. These stops are served by Metro Express Route 28, which provides all-day service seven days per week between Broadview/Carkeek Park and Downtown Seattle. On weekdays, the route operates from about 5:00 A.M. to 1:00 A.M. with headways (time between consecutive buses) of 10 to 20 minutes.

In January 2017, King County Metro adopted ‘Metro Connects,’\textsuperscript{20} the 25-year vision plan that will serve as the guiding policy framework for future improvements to the transit network. The plan identifies some changes to routes serving the study area, but none are expected to be in place by 2023 when the school addition project is complete.

School bus transportation is made available to Viewlands Elementary School students who qualify for transportation. The existing school is served by three full-size school buses and three smaller Special Education (SPED) bus.\textsuperscript{21}

### 2.8. Non-Motorized Transportation Facilities

As described in the Roadway Network section, some roadways segments near the school have sidewalks on one or both sides of the street. Five of the nine study area intersections have marked crosswalks as listed below.

- NW 107\textsuperscript{th} Street / 3\textsuperscript{rd} Avenue NW: crosswalk on west and south legs, south leg crosswalk has a pedestrian-actuated Rectangular Rapid Flashing Beacon (RRFB)
- NW 105\textsuperscript{th} Street / 3\textsuperscript{rd} Avenue NW: crosswalk on north (with RRFB) and west legs
- NW 103\textsuperscript{rd} St / 3\textsuperscript{rd} Avenue NW (signalized intersection): crosswalk on west and south legs
- Holman Road NW / 3\textsuperscript{rd} Avenue NW (signalized intersection): crosswalk on all legs
- N 105\textsuperscript{th} St / Greenwood Ave N / Holman Rd N (signalized intersection): crosswalk on all legs

The count data indicated a high level of pedestrian activity between the school site and the area to the east, with more than 130 pedestrian crossings recorded in the morning peak hour at the NW 105\textsuperscript{th} Street / 3\textsuperscript{rd} Avenue NW and nearly 125 at the NW 107\textsuperscript{th} Street / 3\textsuperscript{rd} Avenue NW intersection. Pedestrian

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\textsuperscript{19} SDOT, received April 2019.
\textsuperscript{20} King County Metro, adopted January 2017.
\textsuperscript{21} Email communication, Seattle Public Schools Transportation, E. Reyes, November 2019.
volumes in the afternoon were slightly lower. The count data indicated low bicycle volume, with six or fewer bikes recorded through the nearest two intersections during the analysis hours. It is noted that the counts were conducted in October when weather on the count day was dry and temperatures were mild. The school Principal indicated that bicycle usage at the school site is relatively low, with three to five staff members that bike regularly and zero to two students use their bikes to and from school on a regular basis.

The City of Seattle’s currently adopted CIP and the Safe Routes to School 5-Year Action Plan for Seattle were reviewed to determine if any pedestrian facility improvements are planned in the area. The proposed 2020-2025 CIP includes funding over the next five years to advance the Pedestrian Master Plan recommendations. However, no specific planned non-motorized facility improvements are listed for the study area roadways or intersections in the CIP or the Seattle Pedestrian Master Plan 2020-2024 Implementation Plan and Progress Report. The SDOT action plan identifies the priority of improvements for Seattle schools; Viewlands Elementary School is ranked #26 for walkway project needs and #57 for crosswalk project needs.

The BMP identifies planned bicycle infrastructure improvements. Within the site vicinity, protected bike lanes are recommended along 3rd Avenue NW between NW 107th Street to NW 97th Street. SDOT staff indicated that, along the school frontage on the west side of 3rd Avenue NW, the wider sidewalk would serve in place of the protected bike lane. A neighborhood greenway is recommended along N 110th Street between the Interurban North Trail and Viewlands Elementary School (at NW 107th Street / 3rd Avenue NW). Other sections of roadways in the greater vicinity are also proposed as new greenways. The BMP recommended network is shown on Figure 6. The Neighborhood Greenways website indicates the Viewlands Connection is in the planning/design phases.

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22 Seattle Department of Transportation; Safe Streets, Healthy Schools and Communities; Fall 2015.
23 SDOT, June 2017.
24 SDOT, December 2019.
Figure 6. Bicycle Master Plan Recommended Network

Source: Adopted Seattle Bicycle Master Plan (BMP), City of Seattle, April 2014.
3. PROJECT IMPACTS

This section describes the conditions that would exist with the replaced Viewlands Elementary School operating with up to 650 students. Vehicle trip estimates associated with the school addition were added to the 2023-without-project traffic volume forecasts. Level of service analyses were performed to determine the proposed project’s impact on traffic operations in the study area. Parking demand and the potential change to on-street parking utilization was also estimated.

3.1. Roadway Network

Changes to the site frontages and vehicular site access are proposed based on extensive coordination with SDOT, DON, and SSTSC. A new driveway would be constructed from the south leg of the NW 107th Street / 4th Avenue NW intersection to provide access to the school’s new on-site staff and visitor parking and on-site bus load/unload area. The access and 4th Avenue NW extension to the south would be integrated with improved Viewlands Trail access to Carkeek Park. The existing on-street school-bus load zone on the south side of NW 107th Street would be eliminated and would be available for automobile load/unload and on-street parking. The existing school load zone for automobiles on 3rd Avenue NW would be extended for the length of the frontage on 3rd Avenue NW. The project would also improve frontages along NW 107th Street and NW 105th Street. A service and delivery access driveway would be located at the south end of the site from NW 105th Street.

3.2. Traffic Volumes

The proposed project could generate new vehicular, pedestrian, and bicycle activity on the surrounding transportation network. The school is expected to have an enrollment of up to 650 students. The school is expected to generate an increase in daily and peak hour traffic compared to existing conditions. The following describes the method used to estimate project-generated traffic.

3.2.1. School Trip Generation

Trip generation estimates for school projects are generally developed using one of two methods. For new schools, rates published in the Institute of Transportation Engineers’ Trip Generation Manual can be applied. For modernizations and/or expansions of existing schools, actual counts of the existing school can be used. This latter method works best for schools located in areas where school-related traffic can easily be isolated and identified, and traffic counts can be used to develop rates specifically for that school. This process was evaluated for this site; however, since there is no on-site load/unload capacity at Viewlands Elementary, trip generation estimates were not discernable from the traffic counts performed at surrounding intersections, and along the roadways adjacent to the school. Therefore, trip generation rates from other Seattle elementary school sites were used for this project.

For schools, ITE has compiled surveys of vehicle trip generation for existing sites throughout the United States, and has developed rates and equations based on variables such as number of students and school-building sizes. However, ITE’s trip generation rates likely include suburban school sites in neighborhoods that are less dense than that surrounding the Viewlands Elementary site and with substantial on-site parking. As a result, they may not reflect the urban conditions of this school site. For recent past analyses of modernizations, replacements, and redevelopments of Seattle schools, site-specific traffic generation rates have been developed based on traffic counts conducted at many existing school sites and compared to the published ITE rates. For this analysis, average morning arrival and afternoon dismissal peak hour trip generation rates were derived from video trip generation counts at five existing Seattle Schools: Schmitz Park (before it was closed), Arbor Heights, Loyal Heights,
Olympic Hills, and Thornton Creek. The average morning peak hour trip generation rate was found to be 0.65 trips per student; the afternoon peak hour rate was found to be 0.47 trips per student. These rates are comparable to or higher than to the average rates published for Elementary Schools (Land Use 520) in the *Trip Generation Manual* (0.67 trips per student in the morning peak hour and 0.34 trips per student in the afternoon peak hour). Since these rates were derived from counts at other Seattle elementary schools and reflect current trends related to family-vehicle drop-off and pick-up activities, they are most appropriate for use in evaluating the future conditions with the Viewlands Elementary School replacement with added enrollment capacity.

The derived rates were applied to the proposed new enrollment capacity at Viewlands Elementary (650 students). Table 4 presents the resulting trip estimates for the new Viewlands Elementary School. These estimates include school bus trips, employee trips, and family-vehicle trips. It is estimated that one additional school bus would be required with the new enrollment capacity.27 As shown, the replacement school is expected to increase trip generation at and around the site by 173 trips (95 in, 78 out) in the morning peak hour and by 125 trips (61 in, 64 out) in the afternoon peak hour.

<table>
<thead>
<tr>
<th>Site Condition</th>
<th>Enrollment</th>
<th>Morning Peak Hour</th>
<th>Afternoon Peak Hour</th>
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<tr>
<td></td>
<td></td>
<td>In</td>
<td>Out</td>
</tr>
<tr>
<td>Proposed Viewlands ES Replacement</td>
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<td>233</td>
<td>190</td>
</tr>
<tr>
<td>Existing Viewlands ES</td>
<td>385 students b</td>
<td>138</td>
<td>112</td>
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<tr>
<td>Net Change</td>
<td>265 students</td>
<td>95</td>
<td>78</td>
</tr>
</tbody>
</table>

Table 4. Viewlands Elementary School Project – Trip Generation Estimates


- Proposed future capacity of the school.
- Enrollment (over capacity) of the existing school at the time of site traffic counts (October 2019).

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27 Email communication, via Mahlum Architects, as per Seattle Public Schools, March 2020.
3.2.2. Trip Distribution & Assignment

The expanded Viewlands Elementary School is expected to accommodate growth largely within the existing enrollment area for the school. Trip distribution patterns for the new elementary school trips within the project study area were developed based on observed existing patterns surrounding the school. These distribution patterns reflect the existing and expected future travel characteristics of the local roadway network including changes to vehicular site access, new parking, the new on-site school-bus load area, and expanded 3rd Avenue NW automobile load/unload area. Most of the morning and afternoon peak hour trips would continue to consist of passenger vehicles (for student drop off and pick up) and school buses with a few trips generated by teachers or staff.

The proposed new site access driveway from the south leg of 4th Avenue NW at NW 107th Street would be used by teachers, staff, and school buses. Arriving school buses are expected to continue using NW 110th Street and 4th Avenue NW to access the new on-site bus load/unload area. Departing school buses may use 4th Avenue NW to the north or NE 107th Street, depending on their destinations. The existing passenger-vehicle load/unload zone along the west side of 3rd Avenue NW would be extended for the length of the school frontage (the southern portion is currently designated for on-street parking). Based on direction from SDOT and preferences of the SSTSC, it is expected that family drivers would be encouraged to park (or drop-off/pick-up students) along neighborhood streets a block or more from the site and escort students to and from the school. As the enrollment increases, it is likely that neighborhood streets farther away from the school could experience an increase in this type of activity compared to existing conditions.

With the combination of increased enrollment capacity, site reconfiguration (new on-site staff parking, new on-site school bus load/unload), and expanded passenger vehicle load/unload along the site frontages, some traffic patterns in the area are expected to change. Figure 7 and Figure 8 show the estimated net changes in traffic within the study area for the morning and afternoon peak hours, respectively. The net changes in peak hour trips were combined with the forecast 2023 without-project traffic volumes to reflect future conditions with the replacement school. Figure 9 shows the forecast 2023 with-project morning and afternoon peak hour traffic volumes.
Figure 8
Net Project Trips
Afternoon Peak Hour

Viewlands Elementary School Replacement

KEY
- Traffic Signal
- Stop Sign
- XX Project Trips
- On-Street Activity

06.23.2020
Figure 9
Forecast (2023) With-Project Traffic Volumes
Morning and Afternoon Peak Hours
3.3. Traffic Operations

Intersection levels of service for future with-project conditions were evaluated using the same methodologies described previously. The additional enrollment capacity could result in increased pedestrian trips and could increase the number of pedestrian crossings at the nearby study intersections. The operational analyses accounted for potential increases in pedestrian crossing activity and the peaking characteristics of school traffic (school drop-off and pick-up primarily occurs during about 20 minutes in the peak hour).

3.3.1. Off-Site Study Area Intersections

Levels of service for the off-site study area intersections were calculated using the 2023-with-project traffic volumes. Table 5 shows the results of the analysis; levels of service for the 2023-without-project conditions are provided for comparison.

As shown, the project would not change the overall level of service at any study area intersection. The signalized intersection at N 105th Street/Greenwood Avenue N would continue to operate at LOS E during the PM peak hour with the project, and the project would add less than 1 second of delay. Some side-street movements at unsignalized intersections would be degraded by the additional traffic and/or pedestrian crossings. During the morning peak hour, the lower-volume side-street movements (eastbound at the N 107th Street / Greenwood Avenue N and westbound at the NW 110th Street / 3rd Avenue NW and NW 107th Street / 3rd Avenue NW) are forecast to degrade to LOS F with the project. In some cases, the changes to study-area traffic patterns and volumes results in reduced delays. This may occur when volumes on non-critical movements with low delays are increased. In other locations the upstream platooning of traffic from signals may result in slight decreases in delays at unsignalized intersections.

SDOT does not generally support traffic control changes such as signalization for non-arterial side streets since they can attract cut-through traffic on neighborhood streets. Based on the extensive coordination with SDOT during development of the proposed site access configuration, the levels of side-street delay for low-volume movements are expected to be tolerated for the relatively short morning and afternoon peak periods. In some cases, it may be desirable to implement peak-period turn restrictions to reduce those delays. For example, at the N 107th Street / Greenwood Avenue N intersection, SDOT could consider restricting the westbound and eastbound approaches to right-turns only during peak periods or during all hours. If these side street movements were signed for right-turns only, drivers could use the signalized intersections both north and south of this location to continue their chosen routes with negligible impact to these intersections, and the operations at the N 107th Street / Greenwood Avenue N could be improved.
### Table 5. Level of Service Summary – Forecast 2023 Without- and With-Project Conditions

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<td>F 62.7</td>
<td>E 36.1</td>
<td>E 35.8</td>
</tr>
</tbody>
</table>


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

### 3.3.2. Site Access

Analysis of the site access driveway indicate it would to operate at LOS A overall, with all movements operating at LOS B or better during both the morning and afternoon peak hours. Since this driveway is to serve employees and bus trips only, the traffic during peak times would be relatively minimal.
3.4. Parking Supply and Demand

The proposal includes construction of a new on-site employee parking lot with 50 spaces. The site would continue to have less off-street parking than would be required by Seattle land use code, which is based on assembly spaces. Therefore, it would necessitate a code-departure approval. As part of the building permit approval process for the project, the Seattle Department of Construction and Inspection (SDCI) is anticipated to initiate a Development Standard Departure process with the Seattle Department of Neighborhoods to review this and any other code departures requested by the Seattle Public Schools.

The gravel area to the west of the site is unimproved SDOT right-of-way that is used by school employees for parking and by Carkeek Park and Viewlands Trail users. With the project, this area would be replaced with an extension of 4th Avenue NW and a new school access driveway. The 4th Avenue NW extension would be combined with a Viewlands Trail enhancement that separates access to the school from park access. Carkeek Park and Viewlands Trail users arriving by vehicle would utilize on-street parking when school is in session and during non-school hours.

On-street parking along the south side of NW 107th Street is currently restricted to school-bus use only on school days from 7:00 to 10:00 A.M. and 1:00 to 4:00 P.M. The school-bus load zone would be removed and the frontage would be improved with standard curb, gutter, and sidewalk; the curbside space could be used for parking and/or passenger-vehicle load/unload. On-street parking along the west side of 3rd Avenue NW currently provides room for about 22 vehicles. Its capacity is affected by the existing site access driveway and the mid-block curb bulb. With the proposed project, the existing site access driveway and the mid-block curb-bulb would both be removed, allowing the entire frontage to be used for school load/unload during peak arrival and dismissal times and for parking during other times. With the project, space for about 28 vehicles would be provided along this segment of 3rd Avenue NW.

3.4.1. School Day Parking

School-day parking at elementary schools is primarily influenced by staffing levels and family-volunteer activity. With the new school planned at its increased enrollment capacity (650 students), the school could have up to 18 additional employees. This includes both full and part-time staff, before and after school care, and staff for miscellaneous enrichment programs. Future parking demand estimates were developed based on studies at similar elementary schools in the area and rates published by ITE. Observations performed by Heffron Transportation at numerous Seattle elementary schools indicate school-day parking demand rates ranging from 1.06 to 1.23 vehicles parked per employee. ITE’s Parking Generation includes rates of 0.13-vehicles-per-student and 0.95-vehicles-per-employee. Based on the range of rates available, the proposed project with the enrollment capacity increase and staff up to 72 employees, the project could generate an additional parking demand of 20 to 34 vehicles.

Demand for on-street parking in the area could increase due to higher numbers of staff and school visitors/volunteers. The planned new 50-space on-site parking lot is expected to accommodate the existing employee demand that currently occurs on-site (4 vehicles) and in the gravel area to the west that would be removed (17 vehicles) as well as most or all of the new demand generated by the larger school. Some project-related increase to on-street parking demand could occur, but is estimated to be minimal (about five vehicles or less). As detailed previously, on-street parking within the site vicinity averages between 31% and 36% occupied depending on the time of day, with about 180 unused spaces. Some of the spaces near the school would continue to be restricted for school load/unload during parts of the school day, but would be available for midday use by part-time staff or school volunteers. The increase in school-day on-street parking demand could be accommodated by unused supply and typical utilization is estimated to remain below 40%.

28 Email communication via Mahlum Architects, from Seattle Public Schools, April 2020.
3.4.2. Evening Event Parking

Viewlands Elementary School would continue to host events periodically throughout the school year. The school currently hosts school- and PTSA-sponsored events as well as monthly PTSA meetings (board meetings and general membership meetings). Events occur about once per month during the school year and include: Bring-Your-Family-to-School Night (Curriculum Night), Movie Night, Open House for New Families, Math Night, Literacy/Multicultural Night, Book Fair, and Evening of the Arts. As described previously, parking demand counts were performed during one of the school’s largest events—Bring-Your-Family-To-School Night (Curriculum Night)—October 10, 2019. When demand from that event evening are compared to counts performed on nights without an event (summarized in section 2.5), it can be estimated that the event generated peak demand of about 149 vehicles (20 off-street and 129 on-street). On-street parking within the study area was 69% utilized.

The larger enrollment that would be accommodated by the proposed new Viewlands Elementary School could result in higher attendance for some events. For the largest event—Bring-Your-Family-To-School Night—parking demand could increase by about 85 to 90 vehicles. The existing gravel area west of the site would no longer be available, but the proposed new on-site parking lot (with 50 spaces) and on-site school-bus load/unload area (with 18 spaces) would accommodate some of the added demand; six new spaces would also be added along the west side of 3rd Avenue NW and would be available for evening events. With the larger event demand and accounting for the changes in off-street and on-street supply, on-street parking utilization could increase to about 80%, below the 85% level that the City of Seattle generally considers as effectively full. The other occasional events are expected to have lower attendance and parking demand with utilization expected to remain below the 85% threshold. These analyses indicate that demand from the largest event can be accommodated and would occur very infrequently (once per year). Due to the relative infrequency of the largest event, the event-related parking impacts would not be considered significant. However, to minimize the potential impact, the school should develop a neighborhood communication plan to inform nearby neighbors of events each year. In addition, the school could modify the largest event to reduce total peak demand, such as by separating it into two sessions or into two nights based on grade levels as occurs at some other SPS elementary schools.

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 school expansion is expected to increase traffic and pedestrian traffic activity around the school site. The existing measures implemented around the school, including school-zone speed limits and crossing guards, are expected to continue; the project is not expected to result in significant adverse safety impacts.

3.6. Transit

A small number of transit trips may be generated by the teachers or staff at the site; however, the traffic estimates do not rely on reductions in auto trips to account for any staff transit usage. The closest bus stops are located on 3rd Avenue NW, just north of and south of NW 105th Street. The project is not expected to result in adverse impacts to transit facilities or service.

3.7. Non-Motorized Transportation Facilities

Viewlands Elementary School, with increased enrollment capacity, is expected to generate some additional pedestrian trips within the site vicinity. It is anticipated that the largest increases in pedestrian activity would occur along 3rd Avenue NW, NW 105th Street, and NW 107th Street adjacent to the school. School related bicycle trips are observed to be minimal, but there could be a small increase in bicycle trips within the site vicinity with an increase in enrollment. The project proposes to provide 100 (80 long-term, 20 short-term) bicycle parking spaces, which are expected to accommodate the anticipated level of demand.
The pedestrian-actuated RRFB would remain at both intersections near the site along 3rd Avenue NW at NW 105th Street and NW 107th Street. These intersections and pedestrian signals are expected to continue to be operated by an adult crossing guard to assist in platooning pedestrian crossings during peak morning arrival and afternoon dismissal periods.

The project would provide improvements on the north, south, and east frontages, as well as at the northwest corner of the site at the south extension of 4th Avenue NW. Along 3rd Avenue NW, the existing site access driveway would be removed and the driveway apron would be replaced with vertical curb. The existing mid-block curb-bulb would be removed and replaced with curb-side parking. A sidewalk, curb, gutter, and landscape amenities would be installed along the NW 105th Street frontage between 3rd Avenue NW and the service driveway. The District will coordinate with the SDOT regarding the necessary frontage improvements west of the service driveway. Improvements on the NW 107th Street frontage would include curb and landscape amenities. The extension of 4th Avenue NW south of NW 107th Street would be constructed to accommodate the new school driveway and to provide a separated non-motorized access to the Viewlands Trail and Carkeek Park. The project and associated frontage improvements would reduce conflicts and enhance the non-motorized transportation network. No significant adverse impacts to non-motorized access or facilities is expected with the project.

3.8. Short-term Impacts from Construction

The school would be closed during construction, which is planned to start in July 2021, and end in April 2023 when the school is planned to be ready for occupancy and open for the fall 2023 school year.

3.8.1. Demolition, Earthwork, and Employee Activity

The construction effort would include earthwork that would consist of excavation and fill for foundations and grading. It is estimated to require cut of about 21,750 cubic yards (cy) of material from the site and fill of 16,750 cy. Since the existing soil can be re-used on-site, no import of soil would be required and export is estimated at about 5,000 cy. In addition, about 8,000 cy of other existing materials would also be exported. Assuming an average of 20-cubic yards per truck (truck/trailer combination), the excavation and material removal would generate about 650 truckloads (650 trucks in, 650 trucks out). The earthwork and material export activities are likely to occur between July and October, 2021 (over about 85 days). Assuming the export effort is compressed to about six weeks (30 weekdays), it would result in an average of about 44 truck trips per day (22 in, 22 out) and 5 or 6 truck trips per hour during periods of earthwork transport. This volume of truck traffic would likely be noticeable to residents living adjacent to the site, but not result in significant impacts to traffic operations in the site vicinity.

The construction of the project would also generate employee and equipment 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. Workers would typically arrive between 6:30 and 6:45 A.M., but work not starting until 7:00 A.M. The number of workers at the project site at any one time would vary depending upon the construction element being implemented.

3.8.2. Construction-Period Parking Conditions

During the construction effort, construction personnel may park on site or on-street in the site vicinity. As noted previously, parking occupancy on the surrounding roadways was found to have about more than 180 unused on-street spaces on weekdays with school in session. Therefore, with the temporary removal of school demand and school-related restrictions (since students and teachers would not be on-site during construction), the unused supply is expected to accommodate the temporary added construction-related demand during the 22-month construction period and it is not expected to result in significant adverse impacts to study-area parking conditions.
4. FINDINGS AND RECOMMENDATIONS

4.1. Summary of Findings

The following sections summarize the findings and recommendations of the analysis.

- The proposed Viewlands Elementary School project is proposed to begin construction during the summer of 2021. During construction, the students would be relocated to John Marshall School as an interim location for two years. The school is planned to be re-opened in fall 2023.

- The proposed Viewlands Elementary School replacement project is expected to increase the student capacity to 650 students (up from its current enrollment of 385 students) and could have up to 72 employees (up from the current 54).

- At the proposed capacity and compared to the site’s current enrollment, the new school is projected to generate a net increase of 173 trips during the morning peak hour (from 7:15 to 8:15 A.M.) and 125 trips during the afternoon peak hour (from 2:00 to 3:00 P.M.).

- The project would construct a new on-site staff parking with 50 spaces and an on-site school bus load/unload area accessed from a driveway at the south leg of the NW 107th Street / 4th Avenue NW intersection. The new access and 4th Avenue NW extension to the south would be integrated with improved Viewlands Trail access to Carkeek Park.

- The existing on-street school-bus load zone on the south side of NW 107th Street would be eliminated and would be available for automobile load/unload and on-street parking. The existing school load zone for automobiles on 3rd Avenue NW would be extended for the length of the school frontage. The project would improve frontages along NW 107th Street and NW 105th Street. A service and delivery access driveway would be located at the south end of the site from NW 105th Street.

- Similar to existing conditions, and around most school sites, some traffic congestion is expected during morning arrival and afternoon dismissal periods.

- The LOS at signalized study-area intersections would be unchanged with project-added delays of less than 2 seconds during both peak hours. All unsignalized study-area intersections are forecast to operate at LOS A overall during both peak hours, with all movements at LOS E or better in the afternoon peak hour. During the morning peak hour, the lower-volume side-street movements (eastbound at the N 107th Street / Greenwood Avenue N and westbound at the NW 110th Street / 3rd Avenue NW and NW 107th Street / 3rd Avenue NW) are forecast to operate at LOS F. SDOT is anticipated to tolerate these levels of delay for the relatively low volumes during morning and afternoon peak periods. Alternatively, peak-period turn restrictions could be implemented to reduce delays.

- At the proposed enrollment capacity of 650 students, school-day parking demand may increase by about 20 to 34 vehicles. The planned new 50-space on-site parking lot is expected to accommodate existing and most or all of new demand generated by the larger school. Some project-related increase to on-street parking demand could occur, but is estimated to be minimal (about five vehicles or less). The increase in school-day on-street parking demand could be accommodated by unused supply and typical utilization is estimated to remain below 40%.

- For the largest event, parking demand could increase by about 85 to 90 vehicles. The existing gravel area west of the site would no longer be available, but the proposed new on-site parking lot, on-site school-bus load/unload area, and added on-street parking supply would accommodate some of added demand. With the larger event demand and changes in off-street and on-street supply, on-street parking utilization could increase to about 80%, below the 85% level that the City of Seattle generally considers as effectively full. The other occasional events are expected to...
have lower attendance, parking demand, and on-street utilization. These analyses indicate that demand from the largest event can be accommodated and would occur very infrequently (once per year). Due to the relative infrequency of the largest event, the event-related parking impacts would not be considered significant. However, to minimize the potential impact, the school should develop a neighborhood communication plan to inform nearby neighbors of events each year. In addition, the school could modify the largest event to reduce total peak demand, such as by separating it into two sessions or into two nights based on grade levels as occurs at some other SPS elementary schools.

- Earthwork transport during construction is estimated to require an average of 44 truck trips per day (22 in, 22 out) and about 5 or 6 truck trips per hour, which may be noticeable to residents living adjacent to the site, but would not result in significant impacts to traffic operations.

4.2. Recommendations

Even though the proposed Viewlands Elementary School replacement project would not result in significant adverse impact to the transportation system in the site vicinity, the following measures are recommended to reduce the traffic and parking impacts with the project.

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

B. Transportation Management Plan (TMP): Prior to the school reopening, the District and school principal should establish a Transportation Management Plan (TMP) to educate families about the new access and load/unload procedures for the site layout. The TMP should also encourage school bus ridership, carpooling, and supervised walking (such as walking school buses). The plan should require the school to distribute information to families about drop-off and pick-up procedures, as well as travel routes for approaching and leaving the school. It should also instruct staff and parents not to block or partially block any residential driveways with parked or stopped vehicles.

C. Continue Coordination with Seattle School Safety Committee: The District should continue its ongoing coordination with SDOT’s the Seattle Schools Traffic Safety Committee to review access for pedestrian and bicycles and determine if any changes should be made to concentrate non-motorized flows at designated crosswalk locations.

D. 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 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 large-attendance events. 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.

E. Update curb-side signage: The District should work with SDOT to confirm the locations, restrictions, and durations for curb-side parking and load/unload zones near the school.

F. Restrict movements from N 107th Street at Greenwood Avenue N to right-turns only: If approved by SDOT, coordinate with City to implement restrictions for N 107th Street at Greenwood Avenue N.
APPENDIX A
Level of Service Definitions
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**

<table>
<thead>
<tr>
<th>Level of Service</th>
<th>Average Control Delay Per Vehicle</th>
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</thead>
<tbody>
<tr>
<td>A</td>
<td>( \leq 10 ) seconds</td>
</tr>
<tr>
<td>B</td>
<td>( &gt; 10 - 20 ) seconds</td>
</tr>
<tr>
<td>C</td>
<td>( &gt; 20 - 35 ) seconds</td>
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<tr>
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<tr>
<td>F</td>
<td>( &gt; 80 ) seconds</td>
</tr>
</tbody>
</table>


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**

<table>
<thead>
<tr>
<th>Level of Service</th>
<th>Average Control Delay per Vehicle</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>( 0 - 10 ) seconds</td>
</tr>
<tr>
<td>B</td>
<td>( &gt; 10 - 15 ) seconds</td>
</tr>
<tr>
<td>C</td>
<td>( &gt; 15 - 25 ) seconds</td>
</tr>
<tr>
<td>D</td>
<td>( &gt; 25 - 35 ) seconds</td>
</tr>
<tr>
<td>E</td>
<td>( &gt; 35 - 50 ) seconds</td>
</tr>
<tr>
<td>F</td>
<td>( &gt; 50 ) seconds</td>
</tr>
</tbody>
</table>

APPENDIX B
Parking Utilization Study Data
Appendix B: Arborist Report
Arborist Report

TO: Brian Fabella, Seattle Public Schools
SITE: Viewlands Elementary School, 10525 3rd Ave NW, Seattle, WA 98177
RE: Tree Inventory
DATE: November 7, 2019
PROJECT ARBORIST: Holly Iosso, Registered Consulting Arborist #567
ISA Certified Arborist PN- 6298A
ISA Qualified Tree Risk Assessor
Tyler Bunton
ISA Certified Arborist PN- 8715A, ISA Qualified Tree Risk Assessor
ATTACHED: Table of Trees, Tree Map
REFERENCED DOCS: Site Survey (Pace Engineers / September 2019)

Summary

I inventoried and assessed 73 trees on the two parcels owned by Seattle Public Schools. Based on the City of Seattle Municipal Code (SMC 25.11), trees measuring 6 inches or greater in diameter at standard height (DSH) are required to be assessed for development projects.

Of the trees assessed, 11 met the exceptional tree criteria outlined in the Seattle Director’s Rule 16-20081. Similarly, I found no exceptional tree groves on site. The City defines an exceptional grove as eight or more trees each with a diameter measuring 12 inches or greater with continuously overlapping canopies.

The two parcels are divided by an unopened right-of-way (ROW): 5th Ave NW. There were 34 trees adjacent to the site that required documentation for this property. Trees on neighboring properties, including within this ROW, were documented if they appeared to be greater than 6 inches diameter and their driplines extended over the property line, or if their presence might impact construction access. All trees on adjacent properties were estimated from public property such as the adjacent ROW.

I did not review any plans as of the date of this report and cannot address potential tree removals at this time.

Assignment & Scope of Report

This report outlines the site inspection by Holly Iosso and Tyler Bunton of Tree Solutions Inc, on October 1, and October 21, 2019. Included are observations and data collected on both parcels located at 5601

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1 Sugimura, D.W. “DPD Director’s Rule 16-2008”. Seattle, WA, 2009
4th Ave NW, Seattle. Brian Fabella of Seattle Public Schools, requested these services to acquire information for project planning.

We were asked to evaluate all regulated trees on the site and identify any exceptional trees, as defined by Seattle Director’s Rule 16-2008, with reference to the site survey provided to us by Mr. Fabella. We were asked to produce an Arborist Report outlining our findings.

Specific details about each tree, including species, size, and condition can be found in the attached Tree Table. Also attached is a tree map, which is a marked-up landscape site plan showing tree locations and identifiers.

Observations
Site
The site includes two parcels divided by an unopened ROW. The western parcel is undeveloped. The eastern parcel includes Viewlands Elementary, portable classrooms, and a playground/playfield.

Proposed Plans
Currently there are no development plans.

Trees
Specific details about each tree on site, including size and health condition, and a single-stem equivalent diameter value (for multi-stem trees) are listed in the attached tree table. 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.

Discussion—Construction Impacts
This report is preliminary as we have not reviewed conceptual design or construction plans for this site. However, for planning purposes, the following are recommendations for tree protection based on the referenced landscape plan provided:

All trees intended for retention within the interior of the school site should be protected following tree protection specifications outlined in Appendix C. This includes chain-link fencing surrounding, at a minimum, the dripline of the tree and installation of wood chip mulch to mitigate the stress from construction impacts. If construction access is required through the ROW of 5th Ave NW, nearby trees and root systems will require protection as well.

Please contact me if you have additional questions as construction drawings are developed.

Respectfully submitted,

Holly Iosso,
Sr. Arborist
Site Map / Tree Inventory

Figure 1. Site map, northeast quadrant.
Figure 2. Site map, northwest quadrant.

Figure 3. Site map, southeast quadrant.
Figure 4. Site map, southwest quadrant
Figure 5. SPS parcel west of Viewlands campus
Appendix A - 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 B - Methods
I measured the diameter of each tree at 54 inches above grade, diameter at standard height (DSH). If a tree had multiple stems, I measured each stem individually at standard height and determined a single-stem equivalent diameter by using the method outlined in the City of Seattle Director’s Rule 16-2008. A tree is considered exceptional based on this single-stem equivalent 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.

I did not tag trees on site because it is a school actively in session. However, for the purpose of this report, I assigned each tree a numerical identifier. I used alphabetical identifiers for trees off-site.

I evaluated tree health and structure 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 (Mattheck & Breloer 1994). An understanding of the uniform stress allows me to make informed judgments about the condition of a tree.

When rating tree health, I took into consideration crown indicators such as foliar density, size, color, stem and shoot extensions. When rating tree structure, I evaluated the tree for form and structural defects, including past damage and decay. Tree Solutions has adapted our ratings based on the Purdue University Extension formula values for health condition (see Purdue University Extension bulletin FNR-473-W - Tree Appraisal). These values are a general representation used to assist arborists in assigning ratings. Tree health needs to be evaluated on an individual basis and may not always fall entirely into a single category, however, a single condition rating must be assigned.

**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.
Appendix C – Tree Protection Specifications

- **Tree Protection Fencing:** All trees planned for retention or on neighboring properties that overhang the site shall be protected for the entire duration of the construction project. Tree protection fencing shall consist of chain link fencing installed at the extent of the tree protection area. Where trees are being retained as a group the fencing should encompass the entire area.

- **Soil Protection:** No parking, materials storage, or dumping (including excavated soils) are allowed within the tree protection area. Any heavy machinery should remain outside of the protection area unless soils are protected from the load. Acceptable methods of soil protection include applying 1 inch plywood over 3 to 4 inches of wood chip mulch, or use of Alturna mats (or equivalent product).

- **Duff/Mulch:** Retain and protect as much of the existing duff and understory as possible. Retained trees in areas where there are exposed soils shall have 4 to 6 inches of wood chips applied to help prevent water evaporation and compaction. Keep mulch 1 foot away from the base of the tree.

- **Excavation:** Excavation done at or within the tree protection area should be carefully planned to minimize disturbance. Where feasible consider using alternative methods such as pneumatic excavation which uses pressurized air to blow soil away from the root system, directional drilling to bore utility lines, or hand excavation to expose roots. Excavation done with machinery (backhoe) in proximity of trees should be performed slowly with flat front buckets, removing small amounts of soil at a time with one person on the ground spotting for roots. When roots are encountered, excavation should stop and roots should be cleanly pruned as needed so they are not ripped or torn.

- **Root Pruning:** Root pruning should be limited to the extent possible. All roots shall be pruned with a sharp saw making clean cuts. Avoid fracturing and breaking roots with excavation equipment. Root cuts shall be immediately covered with soil or mulch and kept moist.

- **Irrigation:** Retained trees will require supplemental water if construction occurs during summer drought periods.

- **Pruning:** Any 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 Standard Practices for Pruning. Use of an arborist with an International Society of Arboriculture Certification to perform pruning is strongly advised.
### Table of Trees

**Viewlands Elementary**

**Seattle, WA**

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**Arborist:** H. Iosso / T. Bunton  
**Date of Inventory:** 10.1.2019 AND 10.21.2019  
**Table Prepared:** 10.22.2019

**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, which is calculated using the method defined in the **Director's Rule 16-2008**.

**Letters are used to identify trees on neighboring property with overhanging canopies.**

**Dripline** is measured from the center of the tree to the outermost extent of the canopy.

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<table>
<thead>
<tr>
<th>Tree ID</th>
<th>Scientific Name</th>
<th>Common Name</th>
<th>DSH (inches)</th>
<th>DSH Multistem</th>
<th>Health Condition</th>
<th>Structural Condition</th>
<th>Exceptional Threshold</th>
<th>Exceptional by Size</th>
<th>Notes</th>
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<td>Prunus cerasifera</td>
<td>Cherry plum</td>
<td>6.3</td>
<td>2.5,3,3,4</td>
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<td>9.8</td>
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### Table of Trees

Viewlands Elementary
Seattle, WA

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<th>Common Name</th>
<th>DSH (inches)</th>
<th>DSH Multistem</th>
<th>Health Condition</th>
<th>Structural Condition</th>
<th>N</th>
<th>E</th>
<th>S</th>
<th>W</th>
<th>Exceptional Threshold</th>
<th>Exceptional by Size</th>
<th>Notes</th>
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<tr>
<td>380</td>
<td><em>Acer macrophyllum</em></td>
<td>Bigleaf maple</td>
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<td>29.3</td>
<td>26.3</td>
<td>28.3</td>
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<td>30.0</td>
<td>Exceptional</td>
<td>Kretzschmaria; old tear out on west side. On inside of fence. Recommend advanced testing if development is planned nearby.</td>
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<td>14.4</td>
<td>10.4</td>
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<td>Dead top; recovering. Grows into fence</td>
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<td>Grows into fence.</td>
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<td>17.4</td>
<td>Not Exceptional</td>
<td>-</td>
<td>Bleeding lesions on bark. Likely phytophthora canker. Minor deadwood in canopy.</td>
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<td>18.6</td>
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<td>30.0</td>
<td>-</td>
<td>Area used for camping. Many needles on ground. Trees hacked at 3 ft.</td>
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<td>23.8</td>
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<td>13.8</td>
<td>30.0</td>
<td>-</td>
<td>Grows uphill with adventitious rooting into the slope.</td>
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<td>Not Exceptional except in grove</td>
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Arborist: H. Iosso / T. Bunton

Date of Inventory: 10.1.2019 AND 10.21.2019
Table Prepared: 10.22.2019

www.treesolutions.net
206-528-4670
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<td>Fair</td>
<td>Fair</td>
<td>15.5</td>
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<td>-</td>
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<td>Poor</td>
<td>11.8</td>
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<td>-</td>
<td>Extensive decay from tear-out on west side.</td>
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<td>S</td>
<td>W</td>
<td>Exceptional Threshold</td>
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<td>low risk; growing into fence, dieback and some dead wood; seam at base; split would occur parallel to fence</td>
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Tree present. No tree symbol on survey.

Arborist Tree Inventory
10/21/2019

Tree Solutions Inc.
206-528-4670
Appendix C: Environmentally Critical Areas Assessment
memorandum

date       June 22, 2020

to         Brian Fabella, Project Manager, Seattle Public Schools

from       Christina Hersum

subject    Viewlands Elementary School Environmentally Critical Areas Assessment, Seattle, WA

attached   Figures, Photos

At the request of Seattle Public Schools (SPS), Environmental Science Associates (ESA) conducted an environmentally critical areas assessment of wetlands, streams, and required buffers on and within 200 feet of the Viewlands Elementary School Project (project). The project proposes to demolish and rebuild Viewlands Elementary School within the existing school property (Tax Parcel #7474900060) located at 10525 3rd Avenue NW in Seattle, Washington (Figure 1). This memorandum summarizes ESA’s assessment methods and the results of our investigation. Other types of environmentally critical areas regulated by the City of Seattle (City) (e.g., geologic hazard areas, flood prone areas, and abandoned landfills) were not evaluated and are not addressed in this memo.

The assessment study area includes the school property and areas within 200 feet for a combined area of approximately 17.8 acres. The findings of the assessment are based on an analysis of existing background information, a field investigation conducted by ESA biologists Christina Hersum and Amanda Brophy on January 28, 2020, and a review of the current City of Seattle Municipal Code (SMC) Chapter 25.09 Environmentally Critical Areas.

ESA identified one stream (Stream A) in the study area outside of the school property (Figure 2). The boundary of Stream A was estimated and recorded using a Global Positioning System (GPS device). No wetlands were identified in the study area. Five stormwater swales and two ditches were identified in the study area.

Methods

Review of Existing Information

ESA reviewed existing literature, maps, and other materials to identify wetlands and streams or site characteristics indicative of wetlands and streams in the study area. Key sources of information included the following:

- City of Seattle Department of Construction & Inspections (SDCI) GIS mapping (City of Seattle, 2020a);
- City of Seattle Development Service Office (DSO) Water & Sewer Map (City of Seattle, 2020b);
The study area is located within the City of Seattle, King County, Washington and lies within Section 25, Township 26 North, and Range 3 East; and Water Resources Inventory Area (WRIA) 8 the Cedar-Sammamish River basin and Pipers Creek watershed. The SCDI GIS, USFWS National Wetland Inventory (NWI), and WDFW Priority Habitats and Species (PHS) maps all show a large, freshwater forested wetland in the western study area within Carkeek Park that extends north and south outside of the study area. These sources also map a freshwater emergent wetland in the southern study area adjacent to NW 105th Street. A large area that extends across the westernmost study area and associated with greater Carkeek Park is mapped by both PHS and SDCI. PHS maps this large area as a biodiversity area and corridor, and SDCI maps it as wildlife habitat. SDCI maps riparian corridors in the southwestern and northwestern portion of the study area. WDFW Salmonscape maps an unnamed intermittent/ephemeral stream in the southwestern portion of the study area as well as a tributary to Piper’s Creek. King County iMap does not identify any streams or wetlands within the study area. The DSO maps three ditches in southeastern study area: one adjacent to NW 105th Street, and two along 3rd Avenue NW.

According to SPU’s Broadview Green Grid - Piper’s Creek Watershed Natural Drainage Systems (NDS) Project Vicinity Map (Figure 2), portions of the northern and southern study area fall within the Broadview Green Grid NDS Project area, which include a series of constructed swales, stormwater cascades, small wetland ponds, and larger landscaped areas and smaller areas to help manage stormwater flows within Pipers Creek watershed (SPU, 2003a). Two swales are identified within the study area in the vicinity map: one is located adjacent to the north side of NW 105th Street between 3rd Avenue NW and 5th Avenue NW and labeled as ‘Viewlands Swale’; the second is unlabeled and located adjacent to the north side of NW 107th Street between 4th Avenue NW and 3rd Avenue NW (Figure 2).

According to UW monitoring reports, the Viewlands Swale was first designed and built as a vegetated swale in 1990, was rebuilt in 1994, and then re-designed to simulate a natural gravel-bed stream reach in 1999 (UW,
2001). The 1999 re-design of Viewlands Swale included 15 log weirs with native vegetation, boulders, and logs placed along the banks. The swale along NW 107th Street was designed in 2003 as a stormwater cascade with an open channel, check dams, and native vegetation (UW, 2009).

**On-Site Investigation**

During the site visit, ESA biologists followed the methods required under SMC 25.09 for the identification and determination of wetlands and streams in the study area. This includes methods defined in Regional Supplements to the U.S. Army Corps of Engineers 1987 Wetlands Delineation Manual (Corps, 2010) to determine the presence and extent of wetlands in the study area and the currently-accepted stream identification methods defined by the Corps and Washington State Department of Ecology (Corps, 2014; Ecology, 2010).

**Results**

**Field Investigation**

The majority of the study area is developed and characterized by the school and residential development. The western portion of study area contains Carkeek Park, which is forested and undeveloped. This portion of the study area is characterized by steep slopes that drop to the south and west toward Pipers Creek. The eastern portion of the study area slopes gently to the west and south. A formal, dirt/asphalt trail meanders through the study area within Carkeek Park beginning at the western end of NW 105 Street.

ESA identified one stream (Stream A) within the study area and confirmed the presence of three constructed stormwater swales and two ditches as mapped by SPU and DSO (Figure 3; Photos 1-7). No wetlands were identified within the study area. Stream A is a seasonal stream that originates from a seep emanating from a steep slope (approximately 40-45 percent slope) in the northwestern study area and conveys flow downstream to the west. The ordinary high water mark (OHWM) of Stream A was estimated and not formally delineated due to steep slope hazards. Within the study area, the stream is narrow with an estimated wetted width of one (1) foot. Wetted depths of the stream above ground ranged from 1 to 2 inches and subsurface flow appeared likely based on seep presence. Based on the stream characteristics of wetted width and slope, the stream meets the definition of Ns (Non-fish seasonal) per SMC 25.09.012.D.5(a).

Vegetation in the study area is composed primarily of upland species. In the western study area, big-leaf maple (*Acer macrophyllum*), western hemlock (*Tsuga heterophylla*), red alder (*Alnus rubra*), Douglas fir (*Pseudotsuga heterophylla*), and western red cedar (*Thuja plicata*) provide canopy cover over an understory composed of salmonberry (*Rubus spectabilis*), Indian plum (*Oemleria cerasiformis*), beaked hazelnut (*Corylus cornuta*), snowberry (*Symphoricarpos albus*), red elderberry (*Sambucus racemosa*), Oregon grape (*Mahonia nervosa*) and sword fern (*Polystichum munitum*) (Photos 8-12). English ivy (*Hedera helix*) and Himalayan blackberry (*Rubus armeniacus*) are the non-native plant species present in the western study area. Vegetation within the central study area and on school property is limited to upland grasses within the playfield (Photo 13). These species are characteristic of upland areas that are well-drained and do not support wetland conditions.

Study area soils were typified by relatively coarse texture (e.g. sandy loam) with bright coloration and no redoximorphic concentrations, which is common of well-drained soils that are found in upland (non-wetland) areas. Soil investigations (hand dug soil pits to a depth of 18 inches) found dry soils and no indicators of surface hydrology were observed.
Multiple signs of human disturbance were observed within the western study area in Carkeek Park. Litter and debris were noted and several informal trails traversed the area.

**Regulatory Considerations**

The City of Seattle regulates wetlands and Fish and Wildlife Habitat Conservation Areas (FWHCAs) through its environmentally critical areas ordinance, SMC 25.09. Streams are regulated by the City as riparian watercourses under FWHCAs. According to the designation and definitions of riparian watercourses in SMC 25.09.012.D.5(a):

“The riparian watercourse is the watercourse of Type F, Np, and Ns waters defined in WAC 222-16-030 and 222-16-031 that have fish or wildlife habitat. Pipes, culverts, flow control facilities, water quality facilities, and stormwater conveyances are not regulated as riparian watercourses.”

Based on this provision, and SPU and UW’s documentation of their constructed nature, the stormwater swales and ditches in the study area would not be regulated by the City as riparian watercourses under SMC 25.09. However, Stream A would be regulated by the City as a riparian watercourse, and required to have a riparian management area of 100 feet surrounding the riparian watercourse per SMC 25.09.012.D(a). According to SMC 25.09.200.A(3), existing paved areas of public or private streets are excluded from riparian management area regulations. The southern end of 4th Avenue NW extends into Stream A’s riparian management area, which is paved, and therefore excluded from riparian management area regulations. As shown on Figure 3, the extent of the regulated riparian management area for Stream A remains outside of the school’s property.

PHS mapped biodiversity areas and corridors are regulated by the City under FWHCAs. Per SMC 25.09.200.B.3, development proposed on a parcel containing a FWHCA, except for riparian corridors, must consult with WDFW and comply with any requirements of WDFW as well as the protection standards within SMC 25.09.200.B.3. ESA consulted directly with WDFW biologist, Ezekiel Rohloff, to determine what requirements, if any, would be established for the proposed project. According to WDFW, because only staging is proposed within the mapped biodiversity area and corridor, there will be no timing restrictions or other requirements imposed by WDFW for the proposed project (Rohloff, personal communication, June 19, 2020).

In addition, according to designation and definitions of wetlands in SMC 25.09.012.C.2(a), wetlands do not include:

“Those artificial wetlands intentionally created from nonwetland sites and not used for mitigation, including, but not limited to, irrigation and stormwater ditches, grass-lined swales, canals, detention facilities, wastewater treatment facilities, farm ponds, and landscape amenities...”

Based on this provision, and SPU and UW’s documentation of their constructed nature, the stormwater swales and ditches in the study area would not be regulated by the City as wetlands under SMC 25.09.

**Limitations**

Within the limitations of schedule, budget, and scope-of-work, we warrant that this assessment was conducted in accordance with generally accepted environmental science practices, including the technical guidelines and criteria in effect at the time this assessment was performed. The results and conclusions of this memorandum
represent the author’s best professional judgment, based upon information provided by the project proponent in addition to that obtained during the course of this assessment. No other warranty, expressed or implied, is made.

Thank you for the opportunity to prepare this memorandum. If you have any questions, please do not hesitate to call ESA at (206) 789-9658.
References


Figure 1
Vicinity Map
Seattle, Washington
Figure 2
SPU Broadview Green Grid – Piper’s Creek Watershed Natural Drainage System (NDS) Vicinity Map
Seattle, Washington
Figure 3

Study Area Streams, Riparian Management Areas, and Stormwater Features
Seattle, Washington
Photo 1
Looking at Stream A.

Photo 2
Looking west across Stream A outside of study area.
Looking at the east end of Viewlands Swale.

Looking at west end of Viewlands Swale.
Looking north across swales located adjacent to 4th Avenue NW.

Looking across west end of swale adjacent to NW 107th Street.
Photo 7

Looking across east end of swale adjacent to NW 107th Street.

Photo 8

Looking across southwest portion of study area.
Photo 9
Looking across central study area.

Photo 10
Looking across northwestern study area.
Photo 11
Looking across the northern study area.

Photo 12
Looking across the eastern study area.
Photo 13
Looking northwest across central study area and school playfield.