DATE: Dec. 21, 2020

TO: Recipients of the State Environmental Policy Act Determination of Nonsignificance (SEPA DNS) for Viewlands Elementary School Replacement

FROM: Fred Podesta, SEPA official

Seattle Public Schools (SPS) has determined that the final SEPA environmental checklist dated December 2020, meets our environmental review needs for the current proposal to replace Viewlands Elementary School on the same site. The proposal is funded by the Building Excellence V (BEX V) levy. Project construction is scheduled to begin in June 2021 and be ready for occupancy in the fall of 2023. Students and staff would relocate during construction to the John Marshall School.

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

The final SEPA environmental checklist discusses the potential environmental impacts that could result from construction of the project. A draft of the checklist was released for public comment initially from July 27, 2020, to Aug. 26, 2020. Comments received informed revisions to the final SEPA checklist on which the DNS is based. The responses to written comments received are summarized in the SEPA Public Comments and Seattle Public Schools Responses, included with the SEPA checklist.

Thank you for your participation in the SPS SEPA process. Your involvement has helped to make the Viewlands Elementary School Replacement proposal a much better project.

Fred Podesta, Chief Operations Officer
P.O. Box 34165, MS 22-183, Seattle WA 98124 * 206-252-0102

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

STATE ENVIRONMENTAL POLICY ACT
DETERMINATION OF NONSIGNIFICANCE (DNS)
VIEWLANDS ELEMENTARY SCHOOL REPLACEMENT PROJECT

Date of issuance: Dec. 28, 2020
Lead agency: Seattle Public Schools
Location of proposal: Viewlands Elementary School, 10525 3rd Ave. NW, Seattle, WA (SE Qtr, Section 26, Township 26, Range 3)

Description of proposal – Demolish and replace the existing 41,000 square foot Viewlands Elementary School. The new school would be approximately 103,800 square feet and three stories tall. The new building will provide pre-K to fifth-grade programs. The historical capacity of the school has been 385 students; the new capacity will increase to 650 students. The proposal includes onsite parking for 46 spaces, school bus drop off area, outdoor learning and play areas, open space an electric sign. and new utility infrastructure to support the new improvements. Trail improvements for improved access to Carkeek Park may be provided. During the two-year construction period, students will be relocated offsite to another SPS facility.

The lead agency for this proposal has determined that it will not have a probable significant adverse impact on the environment. An environmental impact statement (EIS) is not required under RCW 43.21C.030(2)(c). This decision was made after review of a completed environmental checklist and other information on file with the lead agency. This information is available to the public on request at the following location: John Stanford Center, 2445 3rd Ave. S, Seattle, WA 98124-1165 (Attn: Brian Fabella, Phone: 206-252-0702) and online at http://www.seattleschools.org/sepa.

This DNS is issued under WAC 197-11-340(2); the lead agency will not act on this proposal prior to Jan. 12, 2021 (15 days from the issuance date listed above) following a concurrent comment and appeal period. Comments and appeals (appealed by written notice setting forth specific factual objections) are to be received no later than Jan. 12, 2021 (15 days), sent to:

Superintendent
Seattle Public Schools
Box 34165, MS 32-151
Seattle, WA 98124-1165

Name of agency making threshold determination: Seattle Public Schools
Responsible Official: Fred Podesta, Chief Operations Officer, Seattle Public Schools
Phone: 206-252-0102
Address: MS 22-183, P.O. Box 34165, Seattle, WA 98124-1165

Date: 12/21/2020 **Signature:** Fred Podesta

Viewlands Elementary School Replacement Project

Final SEPA Checklist

Seattle Public Schools is committed to making its online information accessible and usable to all people, regardless of ability or technology. Meeting web accessibility guidelines and standards is an ongoing process that we are consistently working to improve.

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:

Brian Fabella
Project Manager
brfabella@seattleschools.org

While the Viewlands Elementary School Replacement Project Draft State Environmental Policy Act (SEPA) Checklist is accessible and Americans with Disabilities Act (ADA) compliant, the attached figures and appendices, which support the checklist, contain complex material that

is not accessible. The following is a description of what is contained in the figures and appendices:

- Figure 1, Viewlands Elementary School Replacement Project, Vicinity Map, Seattle, Washington
  Figure 1 is an aerial photograph of the Viewlands Elementary School Replacement site and its surrounding neighborhood 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 toward the east end of the site in a north-south orientation and are made up of multiple buildings with exterior circulation. The school's entrance faces 3rd Avenue Northwest.

- Figure 2, Viewlands Elementary School Replacement Project, Proposed Site Plan, Seattle, Washington
  Figure 2 shows the proposed site plan 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 new playground, covered play area, landscaping, and bicycle parking. Vehicular parking is located toward the north end of the site and accessed via a driveway from 4th Ave Northwest. Also shown are the Riparian Management Area, Wildlife Habitat Conservation Area, and steep slope extents.

- Figure 3, Viewlands Elementary School Replacement Project, Study Area Streams, Riparian Management Areas, and Stormwater Features, Seattle, Washington
  Figure 3 is a close-up aerial view of the Viewlands Elementary School Replacement site and shows the streams 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 Nov. 14, 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 are Appendix A, Level of Service Definitions, and Appendix B, Parking Utilization Study Data.

- Appendix B: Arborist Report
  Appendix B is an Arborist Report prepared by Tree Solutions Inc. dated Nov. 7, 2019. The report presents the results of the arborist's investigation of the project 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 on the trees. The report also documents trees on neighboring properties, including the right-of-way, if they appeared to be greater than 6-inches in diameter, if their driplines extend over the property line, and 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 are Appendix A, Assumptions & 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) dated Oct. 10, 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, SPU Broadview Green Grid – Piper's Creek Watershed Natural Drainage System (NDS) Vicinity Map; and Figure 3, Streams, Riparian Management Areas, and Stormwater Features Map.

- Appendix D: Greenhouse Gas Emission Worksheet
  Appendix E is the Greenhouse Gas Emission Worksheet prepared by Environmental Science Associates (ESA) dated Dec. 5, 2020. This worksheet estimates the embodied Greenhouse Gas Emissions that could be created from this construction project. Note that it is an estimate that analyzed potential emissions that may be created through the extraction, processing, transportation, construction and disposal of building materials as well as emissions created through landscape disturbance (by both soil disturbance and changes in above ground biomass).

- Appendix E: Landmarks Preservation Board Correspondence
  Appendix D is the letter from the Landmarks Preservation Board indicating denial of nomination of Viewlands Elementary School dated Aug. 6, 2020. During the Aug. 5, 2020, meeting of the City's Landmarks Preservation Board, a motion was made to deny the nomination of Viewlands Elementary School at 10525 3rd Ave. NW in Seattle.

The vote to deny was eight in favor and zero opposed. Therefore, the nomination was denied.

This concludes the SEPA checklist.

Seattle Public Schools
Viewlands Elementary
School Replacement Project
SEPA Checklist

FINAL

December 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

PREFACE

The purpose of this Final Environmental Checklist is to identify and evaluate probable environmental impacts that could result for the *Viewlands Elementary School Replacement Project* and to identify measures to mitigate those impacts. The *Viewlands Elementary School Replacement Project* would build a three story PreK - 5 building of approximately 103,800 square feet, providing permanent space for up to 650 students. In addition to the new school building the project would provide staff and visitor parking lot, school bus drop off area, outdoor learning and play areas, open space, trail improvements, and new utility infrastructure to support the new improvements.

The State Environmental Policy Act (SEPA) (Chapter 43.21C of the Revised Code of Washington) requires that all governmental agencies consider the environmental impacts of a proposal before the proposal is decided upon. A Draft SEPA Environmental Checklist was prepared on July 27, 2020 and included a public comment period from July 27-August 26, 2020. This Final SEPA Environmental Checklist has been prepared in compliance with the State Environmental Policy Act; the SEPA Rules, effective April 4, 1984, as amended (Chapter 197-11 of the Washington Administrative Code); Seattle Public Schools SEPA Policy No. 6890; and the Seattle City Code (25.05), which implements SEPA.

This document is intended to serve as SEPA review for the site preparation and replacement of the *Viewlands Elementary School Replacement Project*. Analysis associated with the proposed project contained in this Environmental Checklist is based upon the design plans for the project, which are on file with Seattle Public Schools. The design plans accurately represent the height, location, and configuration of the proposed school building and associated facilities and are considered adequate for analysis and disclosure of environmental impacts.

This Environmental Checklist is organized into three major sections. *Section A* of the Checklist (starting on page 1) provides background information concerning the *Proposed Action* (e.g., purpose, proponent/contact person, project description, project location, etc.). *Section B* (beginning on page 3) contains the analysis of environmental impacts that could result from implementation of the proposed project, based upon review of major environmental parameters. This section also identifies possible mitigation measures. *Section C* (page 29) contains the signature of the proponent, confirming the completeness of this checklist.

Attached to this Environmental Checklist is the Draft SEPA Checklist Comments and Responses.

Appendices to this Environmental Checklist include: *Transportation Technical Report for the Viewlands Elementary School Replacement*, Heffron Transportation, December 4, 2020; *Arborist Report*, Tree Solutions Inc., November 7, 2019; *Viewlands Elementary School Environmentally Critical Areas Assessment*, ESA, October 10, 2020; Greenhouse Gas Emissions worksheet; and the Landmarks Commission denial. Copies of these documents are available from Seattle Public Schools upon request at: SEPAComments@seattleschools.org or calling 206-252-0990.

TABLE OF CONTENTS

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:

December 2020

5. Agency requesting checklist:

Seattle Public Schools (SPS)

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

Construction is expected to begin in June 2021 and would be completed by the fall of 2023. The school would not remain open during construction; students and staff would attend John Marshall School as the interim site for the 2021-2022 and 2022-2023 school year.

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, October 2020

Viewlands Elementary School Environmentally Critical Areas Assessment, ESA, October 10, 2020

Design Narratives, Mahlum, February 27, 2020

Transportation Technical Report for the Viewlands Elementary School Replacement, Heffron Transportation, December 4, 2020

Geotechnical Report: Viewlands Elementary School Replacement Project, Shannon & Wilson, August 4, 2020

Hydrogeological Report: Viewlands Elementary School Replacement Project, Shannon & Wilson, August 26, 2020

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

City of Seattle Department of Planning and Development SEPA GHG Emissions Worksheet Version 1.7, December 4, 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:

Departure Process	City of Seattle
Building Permit	City of Seattle
Grading Permit	City of Seattle
Electrical Permit	City of Seattle
Mechanical Permit	City of Seattle
Drainage and Side Sewer Permit	City of Seattle
Demolition Permit	City of Seattle
Construction Stormwater General Permit	WA State Department of Ecology
Plumbing Permit	Seattle & King County Public Health Department

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 approximately 41,000 square foot Viewlands Elementary School (including portables) which has a current enrollment of 385 students. SPS proposes to build a three story PreK - 5 building of approximately 103,800 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 staff and visitor parking lot, school bus drop off area, outdoor learning and play areas, open space, an electric sign and new utility infrastructure to support the new improvements. As part of the project, the Seattle Department of Transportation and Seattle Parks and Recreation are requesting trail improvements for improved access to Carkeek Park in the unimproved 4th Avenue NW and 5th Avenue NW rights-of-way.

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 proposed site layout. 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 (2020). The work included a review of existing subsurface information for the property as well as 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, 2020). 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.

There are no surface indications or known history of unstable soils on the project site, and none were noted in the Shannon & Wilson report. SDCI maps steep slopes and potential slide area along the western edge of the parcel adjacent to Carkeek Park. No development is proposed in this area.

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 acres 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 associated with the school renovation are estimated as follows:

- Cut = 21,750 cubic yards
- Fill = 16,750 cubic yards

The proposed trail improvements would result in the clearing and grading of approximately 25,000 square feet. Excavation quantities associated with the trail improvements are estimated as follows.

- Cut = 150 cubic yards
- Fill = 150 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.

Another consideration with regard to air quality and climate relates to Greenhouse Gas Emissions (GHG). In order to evaluate climate change impacts of the proposed project relative to the requirements of the City of Seattle, a Greenhouse Gas Emissions Worksheet has been prepared (Appendix D). This worksheet estimates the emissions from the following sources: embodied emissions; energy-related emissions; and, transportation related emissions. In total, the estimated lifespan emissions for the proposed project would approximate 121,117 $MTCO^2e$. Based on an assumed building life of 62.5 years, the proposed building would be estimated to generate approximately 1,938 $MTCO^2e$ annually.

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 of 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 non-fish seasonal stream (type Ns) west of the 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 Cascade Natural Drainage System) is located south of the school adjacent to NW 105th St. The Viewlands Cascade Natural Drainage System was designed and built as a vegetated swale in 2000 to simulate a natural gravel-bed stream reach (UW, 2009; Gaynor, 2020). The swale detains and infiltrates stormwater in the area.

Wetlands are located to the west within 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 or offsite wetland. Work would occur within 200 feet of the constructed Viewlands Swale; however, because these are constructed features they are not regulated as riparian watercourses or wetlands under SMC25.09.012.

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. The new building 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—for the school renovation, and approximately 25,000 square feet for the proposed trail improvements, for a total of roughly 212,000 square feet. The school renovation project will result in the removal of 15 non-exceptional trees on the project site, and 1 exceptional tree (identified as tree number 301 in the Arborist Report in Appendix B), for a total of 16 on-site trees removed. 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 be located in a pit approximately 3 feet below grade in the parking lot. As a result, this tree is planned for removal and mitigation will occur in the form of replacement with one tree of equal or greater canopy at maturity.

Additionally, right-of-way trees will be removed. One tree, located along 4th Avenue NW, is planned for removal to accommodate the new driveway. Two additional trees, located in the right-of-way along 3rd Avenue NW, are planned for removal where the existing mid-block curb-bulb would be removed. With the proposed project, removal of the existing mid-block curb-bulb allows for the entire frontage to be used for school load/unload during peak arrival and dismissal times and for parking during other times. Trees removed from the public right-of-way will be replaced at a 2:1 ratio. The replacement trees will be west of the sidewalk on District property, but will be planted to SDOT standards, in lieu of typical street tree placement. This will allow for the minimum 10-foot wide sidewalk for loading, as well as shared use with bikes. SDOT supports the proposal to remove the existing curb-bulb to allow for the additional loading/unloading area, and requested the landscaping improvements to the west of the sidewalk.

Additionally, two trees in the 4th and 5th Avenue NW rights-of-way will be removed to accommodate the proposed trail improvements requested by Seattle Department of Transportation and Seattle Parks and Recreation. Up to two additional trees may need to be removed to accommodate proposed trail improvements. Trees removed from the public right-of-way will be replaced at a 2:1 ratio.

In total, up to 23 trees are proposed for removal as part of this project. One of these trees is an exceptional tree, and all other trees proposed for removal are not considered exceptional by size or species.

Trees planned for removal are identified by an "**X**" 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).

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 landscape connection between the school's grounds and Carkeek Park and to make the watershed a classroom. In all the court and plaza areas, native and adapted planting areas and trees will enhance educational opportunities, sense of place, and 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. Larger trees found in the park, like Douglas Fir, will be planted adjacent to the park. Planting will be selected to best survive post-establishment management, which includes minimal maintenance and no water after 2 years, per SPS standards. Bioretention facilities will blend into the adjacent planting areas and treat runoff from building roofs and hardscape, attenuating water quantity and treating water quality. Bioretention areas will also act as both formal and informal learning opportunities, with one serving as a backdrop to an outdoor classroom. Most existing trees on site will be retained. Twenty (20) new street trees and more than 50 new on-site trees will be added for a total of (70) trees planted as part of this project. Sixteen (16) on site trees are being removed and up to seven (7) right-of-way trees may be removed for a total of up to 23 trees. Consistent with City of Seattle regulations, new replacement trees provided meet the 1:1 ratio to replace those trees that will be removed as part of the construction process and trees removed from the public right-of-way will be replaced at a 2:1 ratio. In total, proposed landscaping will greatly increase the biodiversity, ecosystem services, cultural interest, and educational value of the site.

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. Area residents reported a number of animals and birds present in the area.

Fish: not applicable; Piper's Creek in Carkeek park is a fish-bearing stream

Amphibians: none observed

Reptiles: garter snake

Birds: species adapted to urban areas such as gulls, bald eagle, red tail hawk, Cooper's hawk, sharp-shinned hawk, great horned owl and barred owl American crow, rock pigeon, chickadee, robin, Steller's jay, northern flicker, and Bewick's wren, warbler and sparrow species, pileated woodpecker, red-bellied sapsucker, downy woodpecker, hairy woodpecker, black-headed grosbeak, cedar waxwing, purple, house and gold finch, vireo species, hermit and other thrushes, red and yellow crowned kinglets, chestnut-backed chickadee, bushtit, Anna's and rufous hummingbirds, brown creeper, red-breasted nuthatch, spotted towhee, Oregon junco, swift, night jar, and Killdeer

Mammals: species adapted to urban areas such as deer, Norway rat and other rodents, raccoon, opossum, coyote, Townsend chipmunk, Douglas squirrel, Eastern gray squirrel, mountain beaver, short-tail weasel, white-footed deer mouse, vole species, mole, Pacific jumping mouse, little brown or other bat species, eastern cottontail rabbit

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 the Eastern gray squirrel and other rodents 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 building will be planned for solar readiness for the addition of a photovoltaic array for energy efficiency in the future.

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.
- Multi-zone Dedicated Outside Air Systems (DOAS) provides ventilation throughout the building including spaces not required by energy code. Heating/cooling equipment is decoupled from ventilation to reduce fan and pump energy.
- Air to air heat recovery provided for all ventilation air sources for the building in excess of efficiency required by energy code.
- Passive heating in majority of building with the use of hydronic heating water radiant panels and baseboard convectors.
- 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 may contain mercury and magnetic ballasts may 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 potentially limited chemicals used

for science classes. These chemicals would all 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 are known, such as asbestos-containing materials, and lead-containing paint/components, or potentially present, such as PCB light ballasts, and mercury-containing light tubes, 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. The installation of approximately 80 geothermal wells would likely be the loudest noise generated during construction. The duration of this work is estimated to be three months, depending on weather. Work will occur during day time, in compliance with SMC 25.08.25.

The Seattle Municipal Code allows for construction and maintenance equipment to exceed the 55 dBA noise limit established in SMC 25.08.410 during the hours of hours of 7:00 a.m. and 10:00 p.m. on weekdays and 9:00 a.m. and 10:00 p.m. on weekends and legal holidays. However, while construction noise is permitted during evenings and weekends, construction would generally occur between 7:00 a.m. and 5:00 p.m. on weekdays.

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:

Construction noise associated with the drilling of the geothermal wells would be within local and state regulation. 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:

- 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.

After construction, the site would continue to serve as a school and no significant changes in noise levels are anticipated over exiting conditions, so no additional mitigation would be required.

8. Land and Shoreline Use

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

The site is currently used as an elementary school and is comprised of one large rectangular building with multiple other small building 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 developed as a school site since 1954, and would continue to be used as a school. Area

residents have reported that the site was used as pastureland and a dairy farm in the 1940s.

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 which approximately 30,000 square feet, 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 four of the portables, prior to construction, including all site utilities, and surfacing and play areas. Four portables would be removed from the site and five portables would be demolished. The existing stormwater improvements, sanitary sewer, gas service line and water 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. This area will largely be used for construction staging purposes, but will also include a small segment sewer and stormwater pipeline to connect to the existing utilities in the NW 105th Street right-of-way in the southwest corner of the project area. Work in this area also includes some trail improvements in the right-of-way at the request of Seattle Parks and Recreation and Seattle Department of Transportation. A sidewalk is proposed for construction along the top of the existing slope, overlapping partially with the mapped habitat area. The project will comply with the City of Seattle's Environmentally Critical Areas code requirements (SMC 25.09). Wetlands are also found outside of the project site, directly to the west and southwest. No work will be conducted within wetlands or wetland buffers.

Other critical areas located near the site in Carkeek Park include steep slopes, potential slide areas, wetlands, riparian corridors (Non-fish seasonal streams) 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 site has been used as an elementary school since the 1950s, the proposed project would not change this land use.

The project would be consistent with all existing land uses and plans, the SMC contains development standards for public schools in residential zones (SMC 23.51B.002. The Seattle Land Use Code (Chapter 23.79) includes a procedure by which departures from the required development standards of the code can be granted for public school structures. The departure process requires SPS to apply to the Director of the Seattle Department of Construction and Inspections

(SDCI) for departures. The project would require departures for the building height, message board, and parking.

The zoning code acknowledges that schools have different requirements than residential buildings and may be permitted through the departures process. The project will meet all requirements established through the departures process, requesting a departure does not indicate that the project will have adverse impacts; departures are a way to minimize the impact of public schools in residential areas. The project would not violate any city codes and complies with the zoning code through the departures process.

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) or 48 feet above the existing average grade (as calculated per Seattle Land Use Code formula). The proposed building is three stories to allow for a smaller building footprint and so that more of the site can be used for outdoor education and recreation space while accommodating on-site bus loading and on-site parking. At the primary frontage on 3rd Avenue NW, the building is one story which is in character with the scale of the surrounding neighborhood. As the topography slopes down NW 105th Street, the building's roof line remains consistent, but will be screened

from the sidewalk and street by existing and new trees. At all frontages, the building is set back further than the code-required setbacks. This reduces the appearance of bulk at the sidewalk, as well as minimizing the visibility of mechanical penthouses.

The City of Seattle created a process that recognizes the unique needs of a school to depart from some development standards, including height, to meet educational specifications and allows departures through a process to ensure the facility is compatible with the character and use of its surrounding. The Departure process is the land use code for schools in residential zones (SMC 23.79.002). A departure from the City Code would be required for the height of the building.

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 of the school in the immediate vicinity would be slightly altered due the presence of the new school, parking lot and play structure; however, these land uses would be similar to those already present at the site resulting in minimal impacts to visual quality of the area. Trail users and adjacent residences would see the redeveloped school where they currently see the existing school. The new school would be taller in height than the existing building, but has been situated on the site to reduce scale and bulk. Views of the Olympic Mountains are visible from the north end of the site along 3rd Avenue NW and will continue to be visible from this location following redevelopment. Following redevelopment, land uses would be similar to those already present at the site. Viewlands Elementary School is not identified as a public place where views are protected and it is not on a scenic drive. There are no protected public views or scenic byways as defined by SMC 25.505.

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?

One electronic changing double-sided, electric changing image message board is proposed on 3rd Avenue NW. The sign will be oriented perpendicular to 3rd Ave NW to allow people traveling northbound and southbound to read the message. The proposed message board would be lit using one color with a dark background and would not be lit from outside lighting such as a ground-level

spotlight shining onto the sign. The message board would use LED lights to display static messages (no flashing, moving, or scrolling images) which could be seen in day or night time but would not provide measurable illumination to the surrounding area. Use of the message board would be restricted to the hours of 7:00 a.m. to 9:00 p.m. The display would not cast light onto the surrounding area and would not create any light or glare impacts.

All other 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.

The Viewlands Elementary School site also functions as an informal neighborhood park featuring a large grass play field, play structure and hardscape play area to the west of the school.

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

During construction informal recreation opportunities provided at Viewlands Elementary School (play field, play structure and hardscape play area) would be unavailable. Construction impacts on recreation would be temporary and minor.

As part of the Viewlands School Replacement, access to Carkeek Park will be improved. First, the sidewalks on NW 105th Street to the south of the site and east of the proposed service driveway will be added, improving access to the park from the east (the existing sidewalk along the north side of the bioswale will remain). Second, the project will replace an entry pathway and native planting at the north end of the site, off of 4th Avenue NW.

On-site, the landscape is designed to bring Carkeek Park into the Viewlands Elementary School site with native planting, outdoor learning places, and a range from active to introspective play spaces. The 57,200 square feet of degraded lawn play field at the site will be replaced with a variety of spaces to enhance play and learning for students. While the overall size of the play area is decreasing on site from existing conditions, the proposed development will result in better use of the spaces, layout and more variety in the types of recreation, for an improved recreational experience. The project will add 2,555 square feet of outdoor learning area where there is no formal opportunity currently. One aging play structure will be replaced and the newer play structure will be re-located. The current site has 7,820 square feet of play equipment area and the redeveloped site will have 3,840 square feet. More contiguous hardscape play area that is more easily supervised will be provided compared with existing, and it will include a loop path, environmental graphics, and play striping. The all-weather paved play area at the school is currently 27,290 square feet in size and will be increased to 34,955 square feet following redevelopment. A covered play area is proposed adjacent to the gym to support PE curriculum and to connect students from the building to a dry, outdoor play space. The covered play area currently consists of 3,450 square feet and will be 3,045 square feet following redevelopment. The redeveloped site will include roughly 7,300 square feet of lawn area. Other new features include a hillside play area with slides, seat stairs, and stone scrambles. New site circulation routes will make the entire campus more usable and accessible for staff, students, and community. Refer to Figure 2 for general site plan layout.

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 permanent impacts on recreation; however; the Seattle Department of Transportation and Seattle Parks and Recreation have requested improvements of the trail in the unimproved 4th Avenue NW and 5th Avenue NW rights-of-way to meet their standards. These rights-of-way will continue to serve as trail access to Carkeek Park, along with a portion to provide maintenance access to the park and SPS property. Details and extents of the trail improvements have not been determined at this time and are currently being discussed with Seattle Department of Transportation and Seattle Parks and Recreation. The location of the potential trail improvements are shown on Figure 2.

13. Historic and Cultural Preservation

The following section is based on the *Cultural Resources Short Report* prepared by ESA (2020). Cultural resources reports are exempt from public disclosure under RCW 42.56.300. Information from the review is summarized in this section.

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). The Landmarks Preservation Board recently denied the nomination of Viewlands Elementary School for designation as a landmark site. Refer to Appendix E for a copy of the correspondence.

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 school was closed in 2007 and reopened in 2011, and has been operated since that time.

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 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,

including the Duwamish Tribe, 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., December 4, 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 undeveloped 4th Avenue NW street right-of-way, 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 / 5th 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/visitor 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's (SDOT's) 4th / 5th Avenue NW right-of-way and is currently used for informal parking (room for about 17 vehicles) by school employees and the general public including park and trail users. Project would provide 46 net new parking spaces on the school site.

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% on school days.

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 / 5th 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. A hammerhead turn-around area, reviewed and approved by the Seattle Fire Department (SFD), would be provided on this dead-end residential street. Modifications to signage and restrictions on the north side of NW 105th Street would be made as required by SDOT as part of the Street Improvement Permits (SIP) process approvals. No changes to signage or restrictions are anticipated on the south side of NW 105th Street. Improvements on the NW 107th Street frontage would include curb and landscape amenities. The extension of 4th / 5th 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.

For more information about the anticipated school traffic generation, refer to Appendix A –*Transportation Technical Report* (Heffron Transportation, Inc., December 4, 2020).

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 will 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 include information about bicycling to and from school and bicycle facilities. It should also instruct staff and parents not to block or partially block any residential driveways with parked or stopped vehicles. The plan would include direction for school-bus drivers to depart the site using northbound 4th Avenue NW.

C. **Continue Coordination with Seattle School Traffic Safety Committee:** The District will 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 will 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.

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 NW 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.

The proposed building heating system would require a ground loop heat exchanger consisting of vertical bores drilled to 350-feet deep.

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:	Brian Fabella
Name of signee:	Brian Fabella
Position and Agency/Organization:	Capital Projects Manager, Seatte Public Schools
Date Submitted:	12-8-2020

References

City of Seattle, 2019. Zoning Map of Seattle North Half. May 2019. Available: https://www.seattle.gov/dpd/research/GIS/webplots/Large_Zoning_Map_(North).pdf. Accessed on September 26, 2019.

City of Seattle. 2019a. City of Seattle Comprehensive Plan. April 2019.

City of Seattle. 2019b. Seattle Department of Construction and Inspections GIS. Available: http://seattlecitygis.maps.arcgis.com/apps/webappviewer/index.html?id=f822b2c6498c4163b0cf908e2241e9c2. Accessed September 26, 2019.

Ecology (Washington State Department of Ecology). 2019. *State Hazardous Materials Sites Map*. Available at: https://apps.ecology.wa.gov/facilitysite/MapData/MapSearch.aspx?RecordSearchMode=New. Accessed September 27, 2019.

Environmental Science Associates, Inc. (ESA). 2020. Viewlands Elementary School Cultural Resources Assessment. October 2020.

Environmental Science Associates, Inc. (ESA). 2020. Viewlands Elementary School Environmentally Critical Areas Assessment. October 10, 2020.

FEMA (Federal Emergency Management Agency). 1995. *Flood Insurance Rate Map King County Washington, and Incorporated Areas*. Available at: https://msc.fema.gov/portal/home. Accessed September 26, 2019.

Gaynor, P. 2020. Personal communication. Viewlands Elementary School Project Comments from Peggy Gaynor. August 26, 2020.

Heffron Transportation, Inc. 2020. *Transportation Technical Report for the Viewlands Elementary School Replacement*. December 4, 2020.

Mahlum. 2020. Design Narratives. February 27, 2020.

NETROnline. 1932. Aerial Coverage. Available at www.HistoricAerials.com, accessed April 30, 2020.

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

Shannon & Wilson, Inc. 2020. *Geotechnical Report: Viewlands Elementary School Replacement Project*. August 4, 2020.

Shannon & Wilson, Inc. 2020. *Draft Hydrogeological Report: Viewlands Elementary School Replacement Project*. August 26, 2020.

Tree Solutions Inc. 2019. Arborist Report. November 7, 2019.

U.S. Surveyor General. 1859. Township 26 North, Range 3 East, Survey Map. Electronic document, https://glorecords.blm.gov/details/survey/default.aspx?dm_id=322329&sid=cafc0mct.fud&surveyDetailsTabIndex=1, accessed April 30, 2020.

University of Washington. 2009. *Broadview Green Grid Natural Drainage System Performance Monitoring*. Prepared for Seattle Public Utilities. Department of Civil and Environmental Engineering. May 2009.

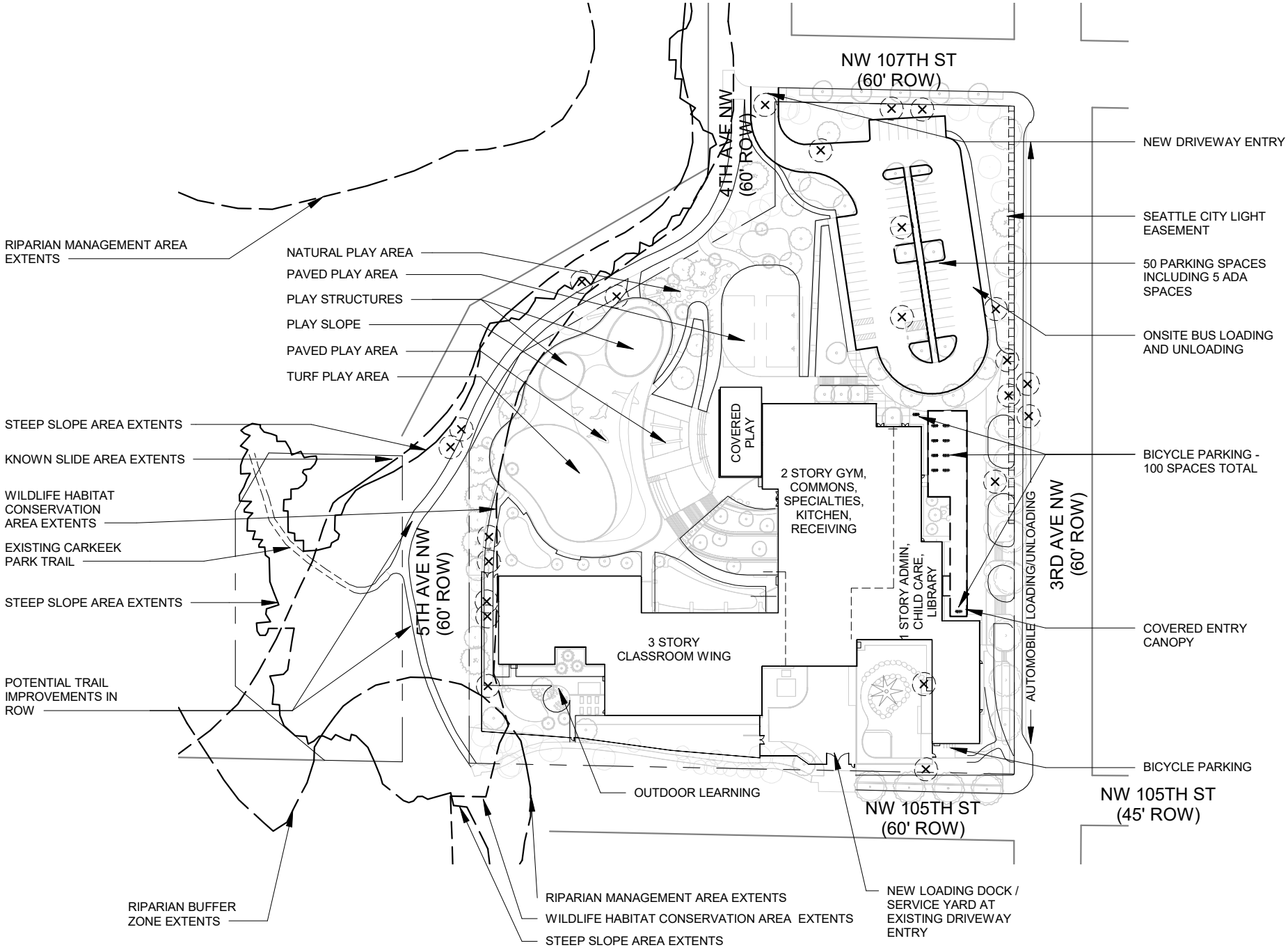
WDFW (Washington State Department of Fish and Wildlife). 2019. *PHS on the Web*. Available at: http://apps.wdfw.wa.gov/phsontheweb/. Accessed September 26, 2019.

SOURCE: NearMap, 2020; ESA, 2020

D190416 SPS Viewlands Elementary

Figure 1
Vicinity Map
Seattle, Washington

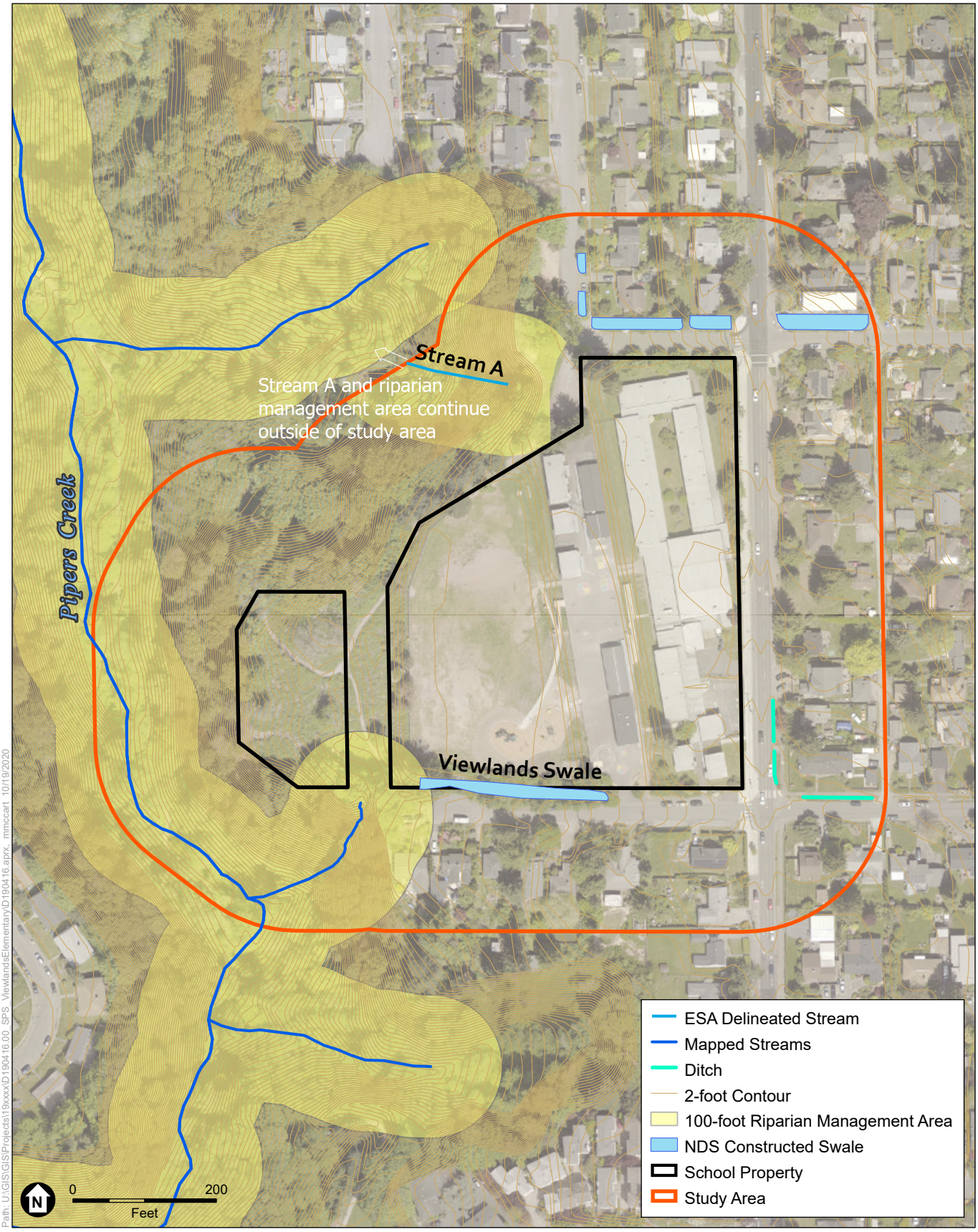
ESA



mahlum

SEPA SITE PLAN
VIEWLANDS ELEMENTARY SCHOOL
SEATTLE PUBLIC SCHOOLS

Figure 2. Proposed Site Plan



SOURCE: King County, 2019; ESA, 2020

D190416 SPS Viewlands Elementary

Figure 3
Study Area Streams, Riparian Management Areas, and Stormwater Features
Seattle, Washington

ESA

DRAFT SEPA CHECKLIST COMMENTS AND RESPONSES

Viewlands Elementary School Replacement Project
SEPA Public Comments and Seattle Public Schools Responses

SEPA regulations recommend that public comments on draft Checklists be considered and responded to, but provides flexibility in how the comments are presented. The comment period on the Draft SEPA Checklist for the Viewlands Elementary School Replacement Project was from July 27 to August 26, 2020. Individual comment letters, emails, or postcards were received from the 12 individuals listed below.

1. Katey Bean
2. Kristen Beers
3. Blair Brooke-Weiss, postcard
4. Joan M Delehanty, postcard
5. Peggy Gaynor (2 emails, 1 letter)
6. Chris Jackins, Seattle Committee to Save Schools
7. Joan Krawchik
8. Adam Krigel
9. Lani McCullough, postcard
10. Rachelle Morrison, postcard
11. Lesley Pfeifer, postcard
12. Deborah Wilder, postcard
13. Lesley Zavar, email and postcard

For efficiency, the comments have been summarized and similar comments have been grouped together and responded to below. Following each comment, the numbers in brackets refer to the commenter number (above) who submitted a similar comment. Any person interested in reading the individual comments may contact SPS for access to them.

1. **<u>Notification</u>. There has been no community outreach or notification about the project. There is confusion over the comment deadline. More time is needed due to the distraction of summer and COVID-19. [Commenter 5]**

   As is standard practice, SPS mailed postcards to all residences within a two block radius of the school to notify recipients of document availability, and the checklist was available for review on the District's website. The District provided a 30-day comment/review period. This is the District's standard protocol for project and document release notification. Viewlands Elementary School was identified on the top of the notice.

2. **<u>Determination of Significance (DS)/EIS Preparation.</u> Project has significant adverse environmental impacts. Further detailed environmental review should be provided through an Environmental Impact Statement (EIS). This project threatens the environmental ecosystem. It is mandatory that a detailed review of its impacts is produced prior to project approval. [Commenter 3, 4, 5, 6, 7, 8, 9, 10, 11, 12]**

   The SPS SEPA Responsible Official is reviewing the revised SEPA Checklist and taking all comments received on the Draft SEPA Checklist into consideration in making a determination of the significance of impacts from the Viewlands Elementary School project.

3. **<u>No Public Meeting.</u> SPS has held public meetings for other similar projects. Why was no public meeting held? [Commenter 3, 5, 6]**

   Public meetings are not required for SEPA Checklists and DNS processes. Draft SEPA checklists are not required either, but SPS publishes draft checklists to give the public an opportunity to provide comments. There are additional opportunities for public input on the project through the Department of Neighborhood's departure process.

4. **<u>Reproduce Public Comments.</u> The Final Checklist should include copies of public comments received. [Commenter 6]**

   As stated above, SPS has summarized the comments for efficiency and included a list of commenters. Comments are identified by commenter number herein in each summarized comment and response. Access to the individual public comments can be obtained by contacting SPS sending a request to SEPAComments@seattleschools.org or calling 206-252-0990.

5. **<u>Project Design</u>. The size and scale of the building and the overall impervious surfaces proposed are too large for the site. Strive for LEED Gold certification. [Commenter 5]**

   By building three stories, more of the site can be used for outdoor education and

recreation space while accommodating on-site bus loading and on-site parking. At the primary frontage on 3rd Ave NW, the building is only one story to align with the scale of the surrounding neighborhood. As the topography slopes down NW 105th Street, the building's roof line remains consistent, but will be screened from the sidewalk and street by existing and new trees. At all frontages, the building is set back further than the code-required setbacks. The mechanical penthouses are further set back. This reduces the appearance of bulk at the sidewalk, as well as minimizing the visibility of mechanical penthouses.

The proposed number of parking spaces is less than the code required number to maximize the amount of play and outdoor learning areas on the site, while maintaining the SPS Educational Specifications for elementary schools, with the added benefit of minimizing impervious surfaces.

State-assisted major school construction projects are required to meet a green building standard. Schools can use standards such as the Washington Sustainable Schools Protocol (WSSP) or the Leadership in Energy and Environmental Design (LEED) standard. Viewlands Elementary School will comply with the WSSP and the Owner's sustainability goals. Viewlands multi-story design complies with WSSP by reducing the building footprint to minimize the area of the site permanently disturbed by buildings. The proposed design includes less than the code required parking and will incorporate pervious paving for outdoor play and walkways where feasible to meet the City's stormwater code for sustainability.

SEPA Document Reference B.6

6. **Enrollment. Why is the school being developed for enrollment of 650 students, when current enrollment is approximately 385 students? Typical elementary schools size is 300 to 400 students. The school replacement seems to be based upon a pre-COVID-19 world and should consider virtual learning. [Commenter 5]**

   Enrollment at Viewlands Elementary School has increased by roughly 50% from 2012 to 2019. Viewlands Elementary School is currently using 9 portable buildings to house 13 portable classrooms to serve students. 10-year resident projections showed a continuing growth trend (approximately 2%) for the northwest region in Seattle Public Schools (SPS). The District is building schools that will last at least 30 years and a 650-seat Viewlands Elementary School would allow SPS to accommodate long-term enrollment growth in the region.

7. **Project Design. The current covered walkways and breezeways make the school design special. However, it may be worth the district pausing during this time of coronavirus, when on August 12, 2020 the Seattle Board votes to give direction to the District to consider outdoor education options as they may be safer. Besides the covered play area, it is unclear if there will be planned areas for students to meet outside and engage in outdoor learning. [Commenter 6, 13]**

Outdoor learning areas are being provided both in a formal outdoor classroom, and several outdoor learning and gathering points. There is also a series of terraces for larger outdoor events, a canopy off the gym for all-weather outdoor play, and a covered entry with seating and bike parking.

8. **<u>Funding</u>. The Checklist notes that the school closed in 2007 and re-opened in 2011. Were construction funds expended in the re-opening process, and if so, what amount of funds was spent? [Commenter 6]**

   The Districts funding expenditures are not a SEPA-related environmental issue.

9. **<u>Site Planning.</u> The Carkeek Park advisory council should be included in the planning process. [Commenter 13]**

   The Viewlands Elementary School Design Advisory Team (SDAT) included community members, and meetings were held with Seattle Parks and Recreation Department throughout the design process. Any member of the public is welcome to comment on the SEPA checklist during the comment period. Outside of SEPA, there are additional opportunities for public input through the City of Seattle Department of Neighborhood's departure process.

10. **<u>Departures-Impacts.</u> The proposed project would not meet city zoning codes, indicating that the project will have probable significant impacts. This information is not included in the Checklist. Due to the omission of the departures discussion in the Checklist, the draft Checklist should be reissued and the comment period extended. [Commenter 4, 6]**

    The project would comply with the City of Seattle land use code. Unlike some cities, the City of Seattle does not have a zoning designation for public facilities such as schools. Therefore, most schools in Seattle are in residential-zoned areas. However, the zoning code acknowledges that schools have different requirements than residential buildings and may require departures from those requirements. Because the departures process is part of the zoning code, the project would meet the requirements of the zoning code. Requesting a departure does not mean the project has an adverse impact; the departure process is a way of minimizing the impact of public schools in residential neighborhoods.

    <u>SEPA Document Reference A. 10, B.8.1.l, and B.10.a</u>

11. **<u>Earth.</u> The Checklist states that "Approximately 5.65 acres of the site would be excavated and filled for the construction of the new school." This is 86.9% of the site and is a significant impact. A 16% increase in impervious surface coverage is too much. [Commenter 5, 6]**

    The total site disturbance as noted in Section B.1.e. of the SEPA checklist is 5.65

acres of the 6.5-acre site. As noted in Section B.1.g. of the SEPA checklist, the impervious surface area at the site will increase by approximately 16%, from approximately 40% impervious currently to approximately 56% after redevelopment. Following construction, the site will be landscaped and replanted as described in section B.4.b of the SEPA checklist.

SEPA Document Reference B.1.e, B.1.g., and B.4.b

12. **Air. With a projected increase of more than 500 vehicle trips per day, localized emissions around the school may increase significantly. [Commenter 5]**

    As stated in the SEPA Checklist after completion of the project vehicular traffic accessing the school would create emissions. However, the school is located on an arterial and vehicle and bus emissions are already present at the school and in the general area. Emissions are not expected to increase significantly over existing conditions.

    SEPA Document Reference B.2.a, and Appendix D

13. **Water. The Checklist identifies that several water bodies including, a stream, two constructed stormwater ponds, two ditches and wetlands are present near the site, however no water was found even 25 feet below the ground surface on site? [Commenter 6]**

    As stated in the SEPA Checklist and the Geotechnical report, no groundwater was encountered during the subsurface exploration.

    SEPA Document Reference B.3.b.1

14. **Water. Figure 3 in the checklist contains incomplete information regarding the two tributaries and where they connect to Piper's Creek. [Commenter 5]**

    Figure 3 in the checklist has been revised to show the length of both tributaries and their connections to Pipers Creek.

    SEPA Document Reference Figure 3

15. **Stormwater. The watershed system has been prone to flashing and an excessive amount of sand has been flushed through the drainage system impacting salmon in Pipers Creek and other stream life. What is the Districts plan for large water events? Stormwater from the school should be 100% contained on site. Confirm that no treated or untreated water will drain to the SPU swale facilities. [Commenter 5, 13]**

    No stormwater will be directed to the SPU swale facilities. All stormwater will be discharged downstream of the swale on 105th Street to a piped system within the

undeveloped 5th Avenue right-of-way. The school site will match pre-developed pasture conditions as required by the City of Seattle's drainage code. This means the site will release stormwater at rates equivalent to if the site was a natural meadow. This will be accomplished by providing roughly 75,000 cubic feet of volume for storing stormwater onsite and then releasing it at a slower rate. Runoff will be treated onsite for water quality through the utilization of bioretention cells, which provides an enhanced water quality treatment suitable for salmon bearing habitats, as well as attenuating stormwater runoff and providing the opportunity for evapotranspiration of stormwater.

16. **<u>Stormwater.</u> Where are the bioretention facilities located on the current proposal. Please call out on plans, including size. Runoff should be treated and infiltrated onsite to the greatest extent possible. [Commenter 5]**

    There are currently five bioretention cells proposed on the project. A 390 square foot (SF) and 650 SF bioretention cell are located near the northwest corner of the parking lot and provide runoff treatment for the parking lot. A 1,750 SF bioretention cell is located north of the classroom wing, southeast of the lower play area and collects roof drainage. A 740 SF bioretention cell is located north of the classroom wing and southwest of the lower play area and collects drainage from the under-drained field. A 775 SF bioretention cell is located south of the classroom wing and collects roof drainage and provides runoff treatment for the service yard.

    Per the City's Stormwater Manual, infiltration is not feasible due to the steep slopes downhill of the project. Onsite stormwater management, as required by the stormwater manual, is being provided to reduce the effective impervious surfaces, including pervious paving and bioretention cells.

17. **<u>Stormwater</u>. Concerned about contaminated runoff entering groundwater or area creeks during construction. Please provide more detail regarding specific treatment methods and where discharge would be directed following treatment. [Commenter 5]**

    The project is required to apply for a Construction Stormwater General Permit (CSWGP) through Washington Department of Ecology as required by the National Pollution Discharge Elimination System (NPDES). The Contractor will provide a Certified Erosion and Sediment Control Lead (CESCL) who will monitor the site for sediment and pH and be responsible for the discharge of stormwater. The Contractor is required to detain stormwater onsite, provide treatment for sediment and pH, and discharge only clean stormwater. The Contractor will provide collection and conveyance systems, including interceptor swales and pumped/piped systems, to direct stormwater to an onsite treatment facility. Treatment facility will likely be a sediment pond designed to meet Ecology's requirements or portable sedimentation tanks with filtration systems and/or pH controls. Once stormwater is monitored to meet the Ecology standards,

stormwater will be discharged to the existing piped system located within the 5th Avenue right-of-way.

18. **<u>Stormwater.</u> The SEPA checklist contains incomplete information regarding the history and origin of the Viewlands Cascade Natural Drainage System (called Viewlands Swale in the checklist. [Commenter 5]**

    The SEPA checklist and Environmentally Critical Areas Assessment Memo have been revised to provide additional detail regarding the Viewlands Cascade Natural Drainage System.

    <u>SEPA Document Reference B.3.a.1. and Appendix C.</u>

19. **<u>Trees.</u> Important trees and plants seem at risk from the project. 26% of significant trees on the site would be removed including one Exceptional tree. The arborist report states "I did not review any plans as of the date of this report and cannot address potential tree removals at this time." Preserve and protect exceptional tree #348 (Colorado spruce). Consider transplanting exceptional tree # 301 (Strawberry tree). [Commenter 5, 6]**

    Site plan identifies trees proposed for removal. The SEPA checklist was updated to provide additional detail of tree removal. Exceptional tree #348 (the Colorado spruce) will be preserved and protected. Figure 2 (Proposed Site Plan) illustrates the location of proposed tree removals; tree removal locations are depicted by an "X" on Figure 2.

    Due to multi-stem growth at the base and the width of the canopy low to the ground, it is not feasible to transplant the Strawberry tree (#301). A tree spade could not get around enough of the root ball without cutting some of the main stems and much of the upper canopy. Replanting is a better long-term option for replacing the tree canopy and lost ecological function of this tree.

    Staff have also noted that this tree has been a maintenance problem because students throw the berries at the walls and other students.

    <u>SEPA Document Reference B.4.b</u>

20. **<u>Vegetation</u>. A significant area of vegetation would be removed "removal of an estimated 187,210 square feet of vegetation, mostly in the form of degraded lawn would be removed." Replant with native, drought-tolerant plants suited to upland conditions. Disturbed areas should be revegetated following construction to mitigate habitat loss. [Commenter 5, 6]**

    As noted in the checklist, the majority of vegetation that will be removed as a result of the project is degraded lawn. An additional approximately 25,000 square feet of clearing will occur as a result of proposed trail improvements being

conducted at the request of the Seattle Department of Transportation and Seattle Parks and Recreation. The trail improvements will be a 6- to 10-foot wide gravel path as shown on Figure 2. Disturbed areas will be replanted with native vegetation following construction.

SEPA Document Reference B.4

21. **Critical Areas. Move perimeter fence outside of all ECA riparian and wildlife buffer areas. [Commenter 5, 6]**

    Site constraints and the need for maintenance access have pushed the project toward the western property line and into the Environmentally Critical Areas (ECA) riparian and wildlife buffer areas despite a concerted attempt to avoid this. These areas will be planted with native plants both within and outside the fence, to restore the western edge of the site from its current condition of invasive blackberry. The net affect will be improvement to the wildlife and habitat areas. The District has been coordinating with the City of Seattle and WDFW regarding potential project impacts and restoration within the ECA buffer areas. The project will comply with the City of Seattle's Environmentally Critical Areas code requirements (SMC 25.09).

    SEPA Document Reference B.4.c and B.4.d

22. **Plants. Native trees should be protected to stabilize the soils around the construction site, retain habitat for wildlife and screen the new school from the Viewlands Trail and Carkeek Park. The plans should also include trees on 3rd Ave NW, as it would help shade the roadway and increase pedestrian safety. If this conflicts with the desired pick-up/drop-off area along the 3rd Ave NW, could trees be planted along the backside of the sidewalk instead? Preserve and protect all native vegetation outside of the current school fencing and the SPU vegetated swales. [Commenter 1, 5]**

    All vegetation outside the work limits will be protected and retained, and trees and vegetation along the southern, northern, and western edges of the site will also be retained to the greatest extent possible. New trees are proposed along 3rd Avenue NW at back of sidewalk as suggested. New street trees will be provided on NW 105th Street and NW 107th Street. Disturbed areas will be replanted with native vegetation following construction.

    SEPA Document Reference B.4.d

23. **Plants. Apple trees on the property may be of be of heirloom varietal and need to be assessed/considered for non-removal. Many trees on or near the site of the new parking lot are over 50 years old. [Commenter 13]**

The project arborist has reviewed the apple trees on site and determined that these are not significant trees per the City of Seattle municipal code. There were no signs of active apple tree management (weeding, mulching, structural pruning, apple harvesting) that would indicate they have heritage or historical value. There are no plaques present, or labels hanging from branches noting the varietal. The Viewlands staff, including some who have been researching the history of the Viewlands site, also confirmed that the apple trees have no significant value. One of the apples trees is planned for removal. Most trees in the northeast corner of the site are being retained. Tree #316 is a 28-inch diameter at standard height (dsh) western red cedar. While tree #316 is an old tree, it is not considered exceptional. The project arborist does not believe any trees in the courtyard are more than 50 years old. The arborist also reviewed tree #348 (which is proposed to be saved) and recommended installing dynamic cabling to mitigate any potential for tree failure in the future.

SEPA Document Reference: Appendix B Arborist Report

24. **Animals. Bats, mountain beaver, and coyotes have been observed around the project site. The checklist did not list all of the birds present in the area including a number of raptors, songbirds, woodpeckers, vireo species, thrushes, hummingbirds and others. Short-tail weasel, mountain beaver, Pacific jumping mice, garter snakes and other animals are present in Carkeek Park. Pacific jumping mouse is an uncommon species that is thriving in the constructed swales and riparian areas around the school. [Commenter 1, 5, 6]**

    Section B.5.a. of the SEPA Checklist has been updated to provide a more complete list of the bird and animal species present at the site and in the area.

    SEPA Document Reference B.5.a

25. **Animals. The Checklist states that "Wildlife habitat and a riparian corridor are mapped in the western and southwestern portions of the project area. This will be used for staging purposes only; no construction is occurring on this parcel". This means that large areas would be used from construction staging, which will be disruptive for wildlife during the two-year construction period. This discussion is misleading and confusing. Any disruption must be mitigated. [Commenter 5, 6, 12]**

    The SEPA checklist has been updated to provide a revised discussion of the work proposed within the wildlife and riparian area. This area will largely be used for staging purposes, but will also include a small segment sewer and stormwater pipeline to connect to the existing utilities in the NW 105th Street right-of-way. Work in this area also includes some trail improvements in the right-of-way at the request of Seattle Parks and Recreation and Seattle Department of Transportation. A sidewalk is proposed for construction along the top of the existing slope, overlapping partially with the mapped habitat area. The project will comply with

the City of Seattle's Environmentally Critical Areas code requirements (SMC 25.09). The areas proposed for staging areas would result in some temporary disruption of potential habitat; however, Carkeek Park offers other areas that provide suitable habitat during the construction period. The SEPA Checklist also states that 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. Therefore, use of these areas for staging and the minor temporary disruption for the utility connection is not likely to result in impacts to wildlife.

SEPA Document Reference B.5.b and B.5.c

26. **Invasive Animal Species. Raccoon and opossum are native and are not a problem in the area. Eastern gray squirrel is destructive and is a problem. The neighborhood currently does not have a rat problem. [Commenter 5]**

    Section B.5.a. of the SEPA Checklist has been updated to provide a more a more accurate listing of invasive animal species present at the site and in the area.

    SEPA Document Reference B.5.a.

27. **Energy. Solar panels should be installed at the time the school opens allowing for the district to save on electricity costs over the long term and help students learn about sustainability. Also consider "Dark Skies" concepts and compliant outdoor lighting. Light pollution would be a major impact on area wildlife and residential neighbors and should be avoided. Support lights being on timers and site mostly dark at night. [Commenter 1, 5]**

    The building will be planned for solar readiness for the addition of a photovoltaic array for energy efficiency in the future. The budget does not currently support installing photovoltaic array when the school opens.

    All exterior luminaires will be Dark Sky friendly with full cutoff below 90 degrees nadir. Site luminaires and most building-mounted luminaires are on time clocks to shut off at night, and will also have integral occupancy sensors to reduce the luminaire output to 50% when the area is unoccupied.

    Nighttime light condition would be similar to or less than current conditions and are not expected to not result in impacts to wildlife or adjacent residences.

28. **Student Safety. Homeless camping is common along the west side of the school and on the trail into the canyon. This presents a safety issue for students. [Commenter 13]**

As is currently the case, the school perimeter will be fenced following construction.

29. **<u>Noise</u>. Noise is a probable significant impact. The checklist states that the hours of construction will be between 7am and 7pm, Monday-Friday and 9am-7pm on weekends. Previous projects have stated that construction activities are allowed to exceed the maximum noise levels between 7am and 10pm on weekdays and 9am to 10pm on weekends. Construction trucks on roadways will create adverse noise impacts. [Commenter 6, 12]**

    Construction noise is exempt from Seattle Municipal Code. The Seattle Municipal code allows for construction and maintenance equipment to exceed the 55 dBA noise limit established in SMC 25.08.410 during the hours of hours of 7am and 10pm on weekdays and 9am and 10 pm on weekends and legal holidays. However, while construction noise is permitted during evenings and weekends, construction would generally occur between 7:00 a.m. and 5:00 p.m. on weekdays. The SEPA checklist has been updated with this information.

    <u>SEPA Document Reference B.7.b.2</u>

30. **<u>Contaminated Materials</u>. The presence of lead, asbestos and mercury is likely. Please share detailed site-specific pollution prevention and control plans. [Commenter 5]**

    The District hired a consultant to complete an inspection of the structures for regulated/hazardous materials following the previous substantial renovations of the school. All identified materials will be removed in accordance with applicable local, state, and federal regulations by properly trained personnel using appropriate work practices, engineering controls, and proper disposal.

31. **<u>Capacity.</u> The project would create a "mega school by increasing the capacity from 351 to 650 students and size of the school from 41,000 square feet to 105,000 square feet. The height of the school building would also double or triple in size. [Commenter 6]**

    The Board of Directors for Seattle Public Schools, in conjunction with the Superintendent, makes decisions about issues such as school capacity. These decisions are not a SEPA issue. Refer to the response to question 5 regarding the building height, and question 6 regarding enrollment.

32. **<u>Land Use</u>. Additional site history should be added, as the site was used as pastureland for a dairy farm in the 1940s. [Commenter 5]**

    The SEPA checklist has been revised to note that the site was reportedly used as pastureland and a dairy farm in the 1940s.

SEPA Document Reference B.8.a

33. Demolished Structures. The proposal should consider ways to reuse as much of the recent play area improvements as possible. [Commenter 5]

The project recognizes the community and volunteer work that went into the play area improvements. The project proposes to salvage and relocate the playground equipment recently installed.

34. Displaced People. Staff will be displaced during construction. Where is the District planning to move the current school population during construction? [Commenter 5]

Viewlands Elementary will move to the John Marshall School interim site during construction.

35. Land Use Compatibility. The new, larger school is not compatible with existing land use and a departure should not be allowed. Figure 2, the proposed site plan, does not provide enough detail to understand the full scale of the scope and structures. More information and detail is needed. [Commenter 5]

The Seattle Municipal Code intent is to grant departures from the requirements of the Municipal Code to accommodate the educational needs of the programs to be located in single family zoned neighborhoods. The details in the SEPA Checklist supplement the depiction of the scope of the project plan.

36. Aesthetics. Will trees be included to shade the proposed parking lot to reduce the potential of creating a heat island? Swales should be used to detain and filter stormwater runoff from the proposed parking lot. [Commenter 1]

Biofiltration cells and swales are proposed to filter stormwater runoff from the proposed parking lot and the service yard. Trees around and within the parking lot will be used to mitigate heat island effects.

37. Views. Views could be impacted for users of Carkeek Park Viewlands Trail entrances on NW 105th and NW 107th, as well as for neighbors on 3rd NW, NW 105th, and NW 107th. The Checklist states there will be minimal impacts to view, but does not provide the current buildings height as a reference pointy. A three-story building replacing a two story building is a probable significant impact. Deny the departure for building height to 55 feet. The building should be 2 story. Take advantage of the site topography. [Commenter 5, 6]

As noted in the SEPA checklist, the views of the site will be altered as a result of the school redevelopment. Currently the site is developed as a school, and will continue to be a school following redevelopment. Trail users and adjacent

residences would see the redeveloped school where they currently see the existing school. The new school would be taller in height than the existing building, but has been situated on the site to reduce scale and bulk. Following redevelopment, land uses would be similar to those already present at the site.

SEPA Document Reference B.10.

38. Electronic sign. The digital message board will be distracting to drivers on 3rd Ave NW and nuisance to the neighbors living on the east side of the street. Can the district use a sign that is not illuminated, tilt it so it's not in the view of homes or have it turned off at a certain time every day? Deny the departure for the electric message board. [Commenter 1, 2, 4, 5]

New signage for the school would be provided in the form of a double-sided, electric changing image message board sign near 3rd Ave NW. The proposed location along 3rd Ave NW was selected because it is the busiest frontage for vehicles, bicycles and pedestrians and is nearest to the Building's main entry.

The sign would be oriented perpendicular to 3rd Ave NW to allow people traveling northbound and southbound to read the message. The sign would be set to turn on no earlier than 7am and to turn off no later than 9pm. The sign is limited to be lit using one color with a dark background. No flashing, scrolling, or moving images allowed.

SPS would use the one proposed message board sign to alert families and the community to events taking place at the school. Messages could be displayed in multiple languages, which a fixed message cannot accomplish. This is also an equitable way to communicate since access to technology is not universal.

39. Recreation. The proposed playground is too small for an elementary school. The playground is used by neighbors as a park. [Commenter 5]

The playground will be smaller than what is currently there, to accommodate on-site bus loop and parking and the larger building. However, the play value and variety of play areas will be greater than the current playground. There will be (2) climbing structures, (1) salvaged from the current playground and 1 new. There will be covered play, an improved field, striped court play, nature play under existing trees, sloped play areas with logs and boulders, and (2) embankment slides with rock scrambles.

40. Recreation. The recreation section is incomplete and misleading. The school currently functions as a neighborhood park. The impacts during construction and the smaller play area represent an impact to the community. Impacts to Carkeek Park Trails users may also occur. [Commenter 5]

The SEPA Checklist was updated to include additional recreational opportunities

and impacts at Viewlands Elementary and Carkeek Park, including proposed trail improvements.

Impacts will be temporary during construction and the result will be improved neighborhood access from both 4th Avenue NW and NW 105th Street. Re-routing of pedestrians to maintain access during construction will be provided if possible.

SEPA Document Reference B.12.a. and b.

41. Transportation. Consider providing safer on-site driveway with drop-off/pick-up zones for parent and student use. This could be provided from NW 4th and/or NW 3rd Avenues and be associated with the proposed parking lot in the northeast corner. This could also feature one-way traffic with up to two curb cuts for entrance and exit, and could be double-loaded with parking/loading on both sides of the driveway. [Commenter 5]

Please see response to Comment #5 noting the site-access constraints and resulting need to accommodate school-bus load/unload on-site. When balanced with the design goals for outdoor play areas and to separate family drivers from school-buses, it is not feasible to accommodate on-site load/unload for family vehicles. In addition, the School Traffic Safety Committee recommended on-site vehicular drop-off be avoided as parents/caregivers can cause congestion and safety concerns on site.

42. Transportation. NW 105th Street is a residential dead end street. Despite the "No Parking" signs, people park on both sides of the street and make dangerous U-turns. Will these signs remain? [Commenter 5]

The proposed school replacement project has been designed to shift the focus of building access away from NW 105th Street. The City of Seattle will require frontage improvements along the north side of NW 105th Street; those improvements are being coordinated among SPS, the design team, and the Seattle Department of Transportation (SDOT). As part of those efforts, a hammerhead turn-around option has been reviewed with the Seattle Fire Department (SFD) to provide for a turnaround on this dead-end residential street. SDOT controls the signage and restrictions for on-street parking. Modifications to signage and restrictions on the north side of NW 105th Street would be made as required by SDOT as part of the Street Improvement Permits (SIP) process approvals. At this time, no changes to signage or restrictions are anticipated on the south side of NW 105th Street.

SEPA Document Reference: Appendix A *Transportation Technical Report*

43. Transportation. It does not appear that the bike parking is conveniently located relative to the protected bike lanes on 3rd Ave NW. Are cyclists supposed to turn left down NW 107th St and then cross the parking lot to reach the bike

parking? If so this poses a safety concerns for children who want to ride their bike to school. A location along NW 105th would be more suitable. [Commenter 1]

SDOT staff indicated that the intent of the wider non-motorized facility that exists along the west side of 3rd Avenue NW is to allow for a shared biking/pedestrian route. Bicyclists destined to and from the school are expected to continue using this facility and enter the site from 3rd Avenue NW to the bike parking near the main entry without crossing access points to the on-site parking lot.
Long term bike parking is located on the east side of the school to the north of the main entry below the canopy. Some of the long term bike parking is covered and secured and the remaining is covered. Short term bike parking is provided adjacent to the main entry, to the north adjacent to the bus loop, and adjacent to the childcare entry. Refer to Figure 2.

44. <u>Traffic.</u> During school start and stop times traffic on 3rd and 4th Ave NW becomes very congested. A traffic study on 4th Ave NW needs to be conducted as the presence of buses contributes to congestion and the corner of 4th Ave NW and 107th becomes impassible. It is unrealistic to place responsibility on crosswalk volunteers to direct traffic while also trying to focus on pedestrians. [Commenter 13]

The *Transportation Technical Report* included counts and analysis of NW 107th Street / 4th Avenue NW intersection. As outlined in the *Transportation Technical Report*, the proposed school replacement project would construct a new on-site school bus load/unload area that would be accessed from the south leg of the NW 107th Street / 4th Avenue NW intersection. This would eliminate the use of the south side of NW 107th Street for school bus load/unload, which does not currently offer sufficient length for the number of buses serving the school and likely contributes to some congestion noted in the comment. The access to the on-site bus load/unload area, which would accommodate the number of buses expected, would also allow buses to egress the site directly to the north, if desired, thus reducing the number of school bus trips expected to use NW 107th Street. Crosswalk volunteers should not be directing vehicular traffic. As noted in the *Transportation Technical Report*, crossing guards are likely to assist in platooning pedestrian crossings during peak morning arrival and afternoon dismissal periods. This would be addressed as part of the Transportation Management Plan (TMP) that would be developed as recommended prior to school re-opening.

<u>SEPA Document Reference: Appendix A *Transportation Technical Report*</u>

45. <u>Traffic.</u> There are probable and significant adverse impacts to traffic. The larger school would generate a net increase of about 500 trips per day. One full size school bus would be added to the current three. The district is recommending to "restrict movements from N 107th Street at Greenwood Ave B to right turns. The volume of truck traffic in the area would likely be noticeable

to residents living adjacent to the site. [Commenter 6]

The comments restate some text from the *Transportation Technical Report*, but do not include the analysis conclusions. As stated in the *Transportation Technical Report*, the project would not result in significant adverse impacts to transportation based on the analysis presented.

SEPA Document Reference: Appendix A *Transportation Technical Report*

46. **Traffic. Viewlands Cascade Swale has wheel stops installed to allow for street runoff from NW 105th to enter the swale. Strongly recommend no street edge improvements on NW 105th. [Commenter 5]**

No street edge improvements are proposed on NW 105th Street adjacent to the swale. Street improvements will be from the service yard driveway east to 3rd Ave NW per Seattle Department of Transportation (SDOT).

47. **Parking. There are probable and significant adverse impacts to parking. The Checklist did not note that the project will provide only 34%of the onsite parking required by the SMC. The project will remove the four existing on-site spaces accessed from 3rd Ave NW and would eliminate the gravel parking area west of the site. [Commenter 6, 12].**

As stated in the *Transportation Technical Report*, the project would construct a new on-site parking lot with 50 spaces. It also noted that the site would continue to have less off-street parking than required by Seattle land use code, which is based on assembly spaces and childcare. Therefore, it would necessitate code-departure approval. The report also stated that the increase in school-day on-street parking demand could be accommodated by unused supply and typical on-street parking utilization is estimated to remain below 40%.

The elimination of the gravel area west of the site would result from access and frontage requirements coordinated with and supported by the Seattle Department of Transportation (SDOT). 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 would separate access to the school from park access. Based on the analysis presented in the technical report, the project would not result in significant adverse impacts to parking.

SEPA Document Reference: Appendix A *Transportation Technical Report*

48. **Parking. The Checklist does not consider on-street parking to be crowded (below 40% on school days, 80% for larger evening events) and indicates that there will not be adverse impacts on-street parking, but daily and larger evening events cause adverse impacts to neighbors. More emphasis needs to be**

placed on solutions to reduce on-street parking. [Commenter 5, 6, 12].

As stated in the *Transportation Technical Report*, the project would construct a new on-site parking lot with 50 spaces. The analysis also stated that the increase in school-day on-street parking demand could be accommodated by unused supply and typical utilization is estimated to remain below 40%. The City of Seattle considers on-street parking as a public resource available to all users. When utilization rates are regularly at or above 85%, the City considers on-street parking as effectively full and may explore options for parking management, such as time or duration restrictions. Those conditions are not expected to occur for on-street parking around Viewlands Elementary due to the proposed project.

To minimize potential occasional evening parking impacts, the District and school administration would implement the *Transportation Technical Report* recommendation that SPS and Viewlands Elementary School administration staff develop a Neighborhood Communication Plan to inform nearby neighbors of large events each year. The plan would be updated annually (or as events are scheduled) and would 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.

SEPA Document Reference: Appendix A *Transportation Technical Report*

49. Parking. Staff parking could be located under a 1-story portion of the school building. A parking lot meeting code (146 spaces) would be large and dominate the site. Allow the departures for parking quantity and long and short-term bicycle parking. [Commenter 5]

A parking area under the school has cost, safety, and spatial challenges that make it infeasible. Refer to the Transportation Technical Report (Appendix A) for a discussion of the departure process related to parking.

SEPA Document Reference: Appendix A *Transportation Technical Report*

50. Parking. There is a steep drop off near the proposed parking lot resulting in potential landslide potential. After hours use of the parking lot is common. There needs to be a reliable closure of the parking lot every night. [Commenter 13]

Slopes between 3rd Avenue and the parking lot are being reduced from an existing slope of roughly 40% to a maximum slope of 33% (average slope of 20%) and a maximum elevation difference of 8 ft. The slope between the parking lot and middle plateau are remaining roughly the same as the existing slope of 33% with no change in steepness and roughly in the same location with a maximum elevation difference of 10 ft. Steep slopes are defined by Seattle's Municipal code

as slopes with greater incline than 40 percent with an elevation change of greater than 10 feet. Potential landslide areas include steep slope areas, which these areas do not meet the definition of. The SDCI GIS does not map the school site as having any steep slopes or potential landslide areas onsite in the existing conditions. The proposed conditions are reducing the existing slopes onsite. Comprehensive planting at slopes with grasses, perennials, shrubs and some trees will help to mitigate erosion and further reduce risk of slope failure.

There will be a vehicular gate which will be operated and managed by the Viewlands Elementary School building administration. Decisions around the operation of the gate will be made in collaboration with the Safety and Security Department of SPS and our community partners team. Given the proximity to the park, there are likely to be security concerns. Security of the building and the partnership with Creative Kids will factor into decisions around the operations of any and all gates, as well as building access.

51. **Cultural Resources. The District and Checklist are not fully informing the public on the impacts of the project. The District is going before the City of Seattle Landmarks Preservation Board to argue that the site has no significant history during the public comment period, without disclosing to public readers that the landmarking process was occurring. Notices have not been send out to the public regarding previous land marking decisions. Families, neighbors and the community often develop connections to their schools and this history is important to preserve. The District needs to take steps to include information about the school's history in the Checklist. [Commenter 6]**

    Seattle Public Schools is proactive in self-nominating buildings for landmark status. Viewlands Elementary School was nominated, and was reviewed by the Landmarks Preservation Board at the August 5, 2020 meeting. All of the Landmarks Board meetings are publicly noticed and open to the public to attend and comment. The Landmarks Preservation Board determined that Viewlands Elementary School did not meet criteria for landmark designation and the school was not designated by the Landmarks Preservation Board. A copy of the correspondence is included as Appendix D to the SEPA checklist.

    SEPA Document Reference: Appendix D

52. **Cultural Resources. The Checklist notes that the site is qualified as very high risk for containing intact precontact era cultural resources The Checklist concludes that the risk is actually low because the sites were probably ephemeral. The checklist reached this conclusion despite no subsurface assessment being conducted. The Duwamish Tribe should be consulted as to what is considered ephemeral. The Duwamish Tribe needs to be included among the tribes notified of the project. [Commenter 6]**

A subsurface investigation is not recommended because the landform itself is unlikely to have been subject to natural deposition that would have been capable of burying and preserving any precontact archaeological sites. Even if these sites had existed and had been preserved, the grading process that occurred in the 1950s prior to the school's construction would have severely damaged them if not removed them from the landscape entirely.

Cultural resources assessment reports for Seattle Public Schools projects are uploaded to the Department of Archaeology and Historic Preservation's (DAHP's) Washington Information System for Architectural and Archaeological Database (WISAARD), the state's on-line repository for architectural and archaeological data. Tribal Historic Preservation Offices, Tribal Cultural Resources Specialists, and other WISAARD users authorized by DAHP are able to access and download these records at no cost. The Duwamish Tribe is on the District's mailing list and will receive a hard copy of the final SEPA checklist and threshold determination.

SEPA Document Reference: B.13

53. **Cultural Resources. Subsurface testing should be conducted as potential evidence of occupation (large basalt flakes) have been recovered in the southwest corner of the site. The plateau above the drainage supports the need to test below 2-3 feet of disturbed soil. Bricks possibly from a dairy factory found on or near the site have also been found and it needs to be determined if they are historically significant. [Commenter 13]**

    The Washington State archaeological database, WISAARD, does not contain any record of dairy factories or large basalt flakes occurring within the project boundaries. No archaeological sites, precontact or historic in nature, have been documented.

54. **Utilities. How will fire safety for nearby resident be addressed until the demolished fire hydrants are replaced? [Commenter 6]**

    No fire hydrants are proposed to be demolished.

55. **Typographical errors. The Checklist is dated June 2020, but the references a "July 2020" transportation report as Appendix A, and the Transportation Report is dated June 29, 2020. Section C does not contain a signature. The references section is labeled page 23, but follows page 28. [Commenter 6]**

    These errors have been corrected in the Final SEPA Checklist.

56. Figure 1. The vicinity map contains an old aerial that does not show all current existing site features. [Commenter 5]

The vicinity map, Figure 1, has been updated with a more recent aerial image.

SEPA document reference Figure 1

Appendix A: Transportation Technical Report

TRANSPORTATION TECHNICAL REPORT

for the

Viewlands Elementary School Replacement

PREPARED FOR:

Seattle Public Schools

PREPARED BY:

heffron transportation inc
6544 NE 61st Street, Seattle, WA 98115
ph: (206) 523-3939 ◆ fx: (206) 523-4949

December 4, 2020

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

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, with Carkeek Park and 5th Avenue NW right-of-way (ROW) 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] One double portable is 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 5th Avenue NW 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 5th Avenue NW ROW, not on school property, and can be used by the general public. 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 employees.[4]

1 Building areas provided by Mahlum Architects, May, 2020.
2 Nile Thompson and Carolyn J. Marr; *Building for Learning, Seattle Public Schools Histories, 1862-2000;* 2002.
3 Seattle Public Schools, P223 Enrollment Report, October 2019.
4 SPS Viewlands Elementary School Online Staff Directory, Accessed April 2020.

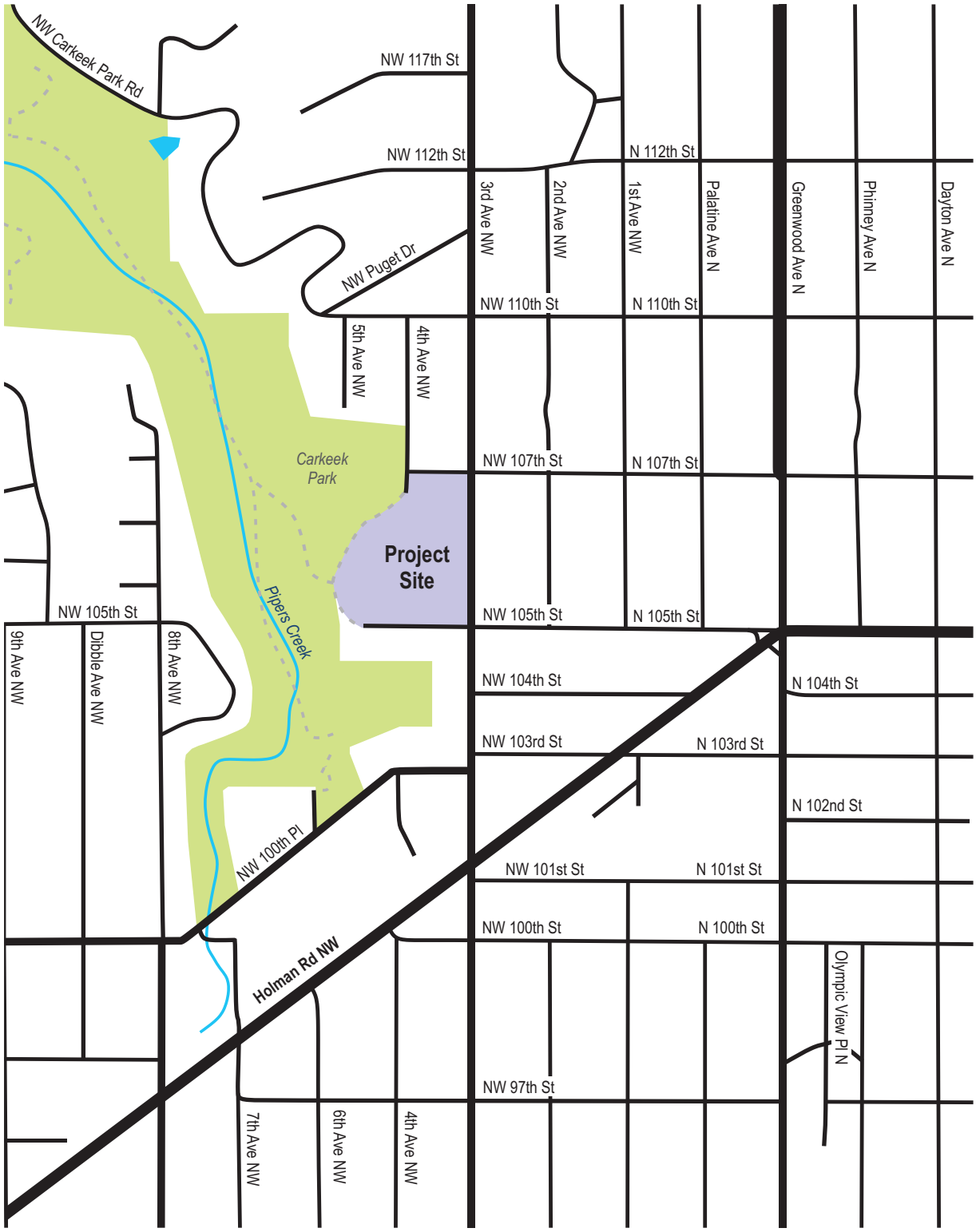
1.1.2. Proposed Site Changes

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 /5th 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.



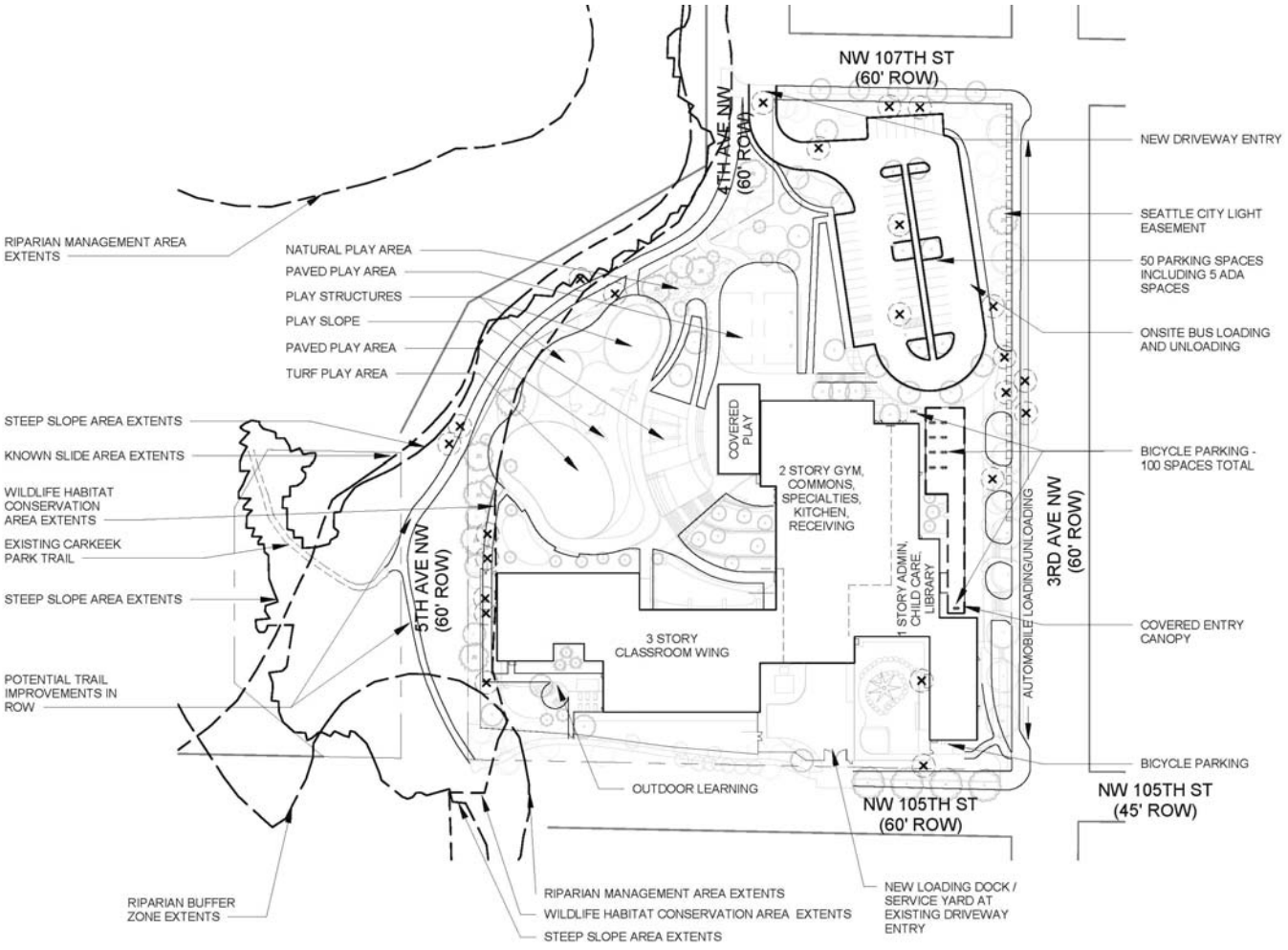
Viewlands Elementary School Replacement

Figure 1

Site Location and Vicinity

heffron transportation inc

12.03.2020



Source: Mahlum Architects, December 2, 2020

Viewlands Elementary School Replacement

Figure 2

Proposed Site Plan

heffron transportation inc

12.03.2020

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 / 3rd 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. Sharrows[7] 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.

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 Place 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 lane) is 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 4rd 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.

---

8 City of Seattle, online access April 2020. https://www.seattle.gov/city-budget-office/capital-improvement-program-archives
9 City of Seattle June 2017.
10 City of Seattle, December 2019.
11. City of Seattle, April 2014.
12 SDOT, June 13, 2019.
13 https://www.seattle.gov/transportation/projects-and-programs/programs/greenways-program, April 2020.
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

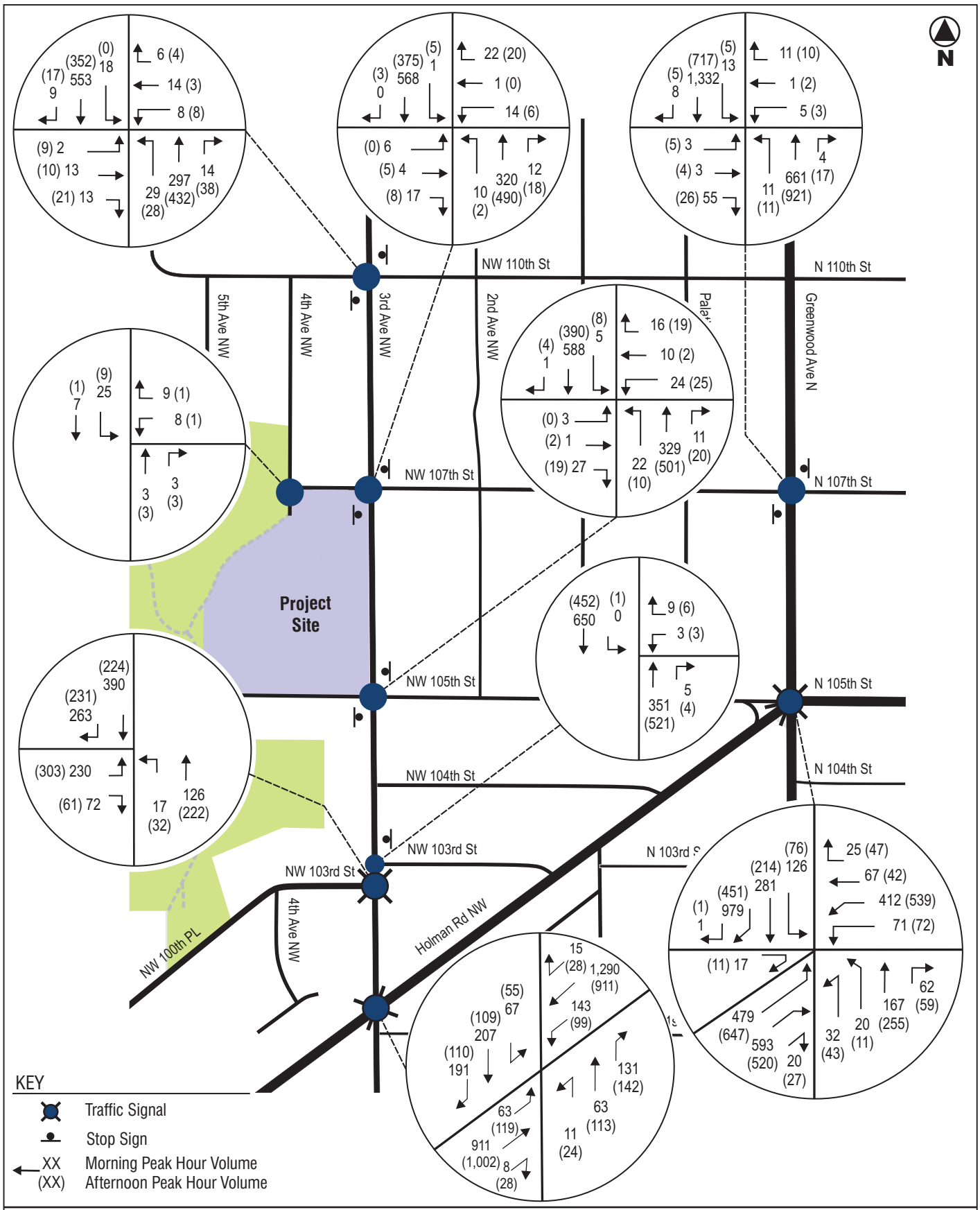
At the time of this analysis, the school day at Viewlands Elementary School started at 7:55 A.M. and ended at 2:25 P.M. To capture the existing traffic conditions during the current arrival and dismissal peak periods, traffic counts were performed from 7:00 to 9:00 A.M. and from 1:30 to 3:30 P.M. on 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[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.

[16] William Popp Associates, *10540 Greenwood Ave N Apartments (SDCI #3022986), Multi-Family Residential SEDU Development,* April 24, 2017.

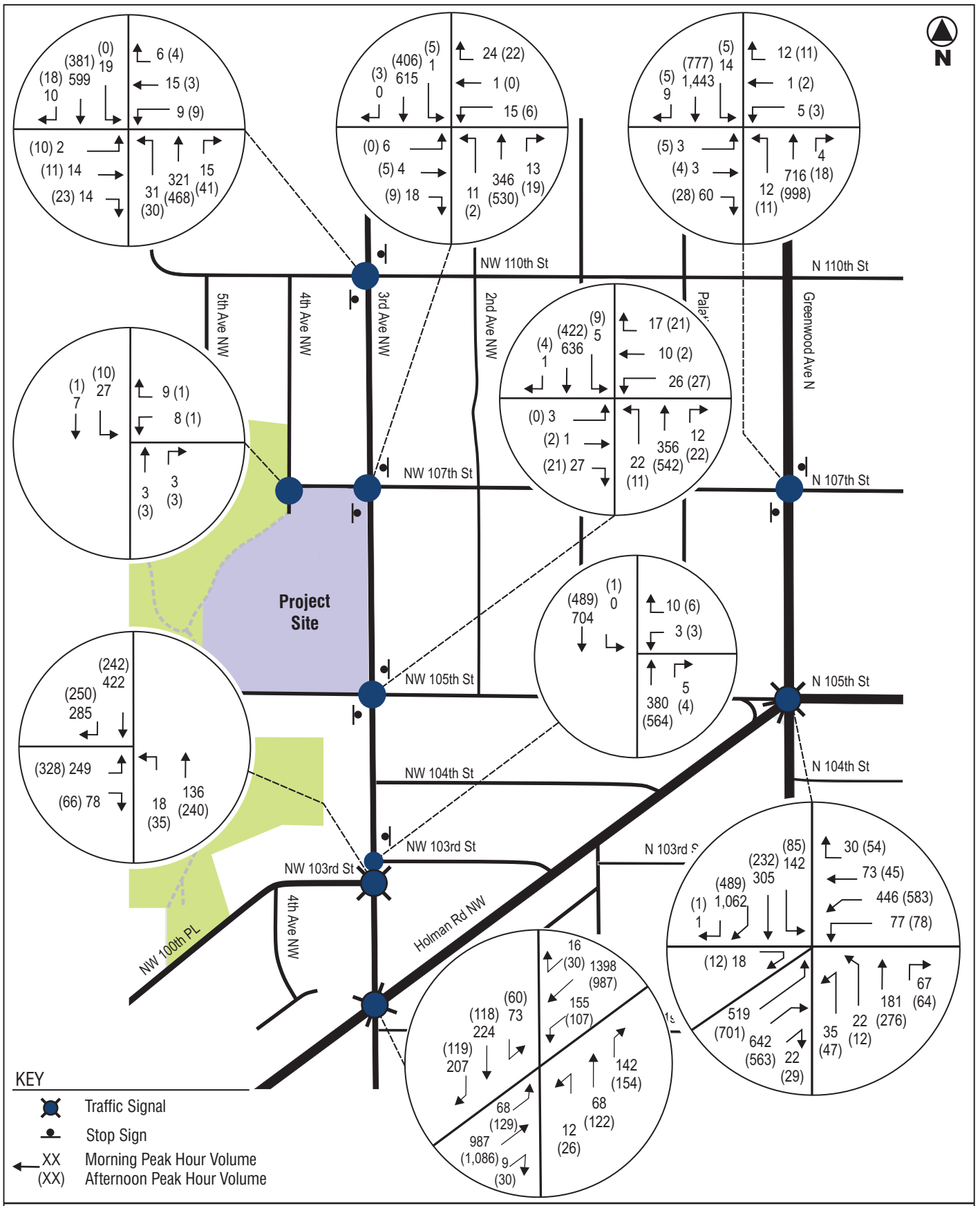


Viewlands Elementary School Replacement

Figure 3
Existing Traffic Volumes
Morning and Afternoon Peak Hours

heffron transportation inc

04.09.2020



Viewlands Elementary School Replacement

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

heffron transportation inc

04.09.2020

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.*[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

Intersections	Morning Peak Hour				Afternoon Peak Hour			
	Existing		W/O Project		Existing		W/O Project	
Signalized Intersections	LOS [1]	Delay [2]	LOS	Delay	LOS	Delay	LOS	Delay
NW 103rd St (west leg) / 3rd Ave NW	B	19.4	C	21.9	B	17.9	B	17.9
Holman Rd NW / 3rd Ave NW	C	21.4	C	26.6	C	21.6	C	20.3
N 105th St / Greenwood Ave N / Holman Rd NW	D	47.5	D	53.0	E	62.8	E	74.2
One- or Two-Way Stop Controlled	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
NW 110th St / 3rd Ave NW	A	2.7	A	3.2	A	1.7	A	2.0
Northbound Left-Turns	A	9.0	A	9.2	A	8.2	A	8.3
Southbound Left Turns	A	8.2	A	3.3	A	0.0	A	0.0
Eastbound Movements	C	22.6	D	25.9	C	18.1	C	20.4
Westbound Movements	D	30.9	E	39.1	C	22.8	D	26.5
NW 107th St / 4th Ave NW / Driveway	A	1.9	A	1.8	A	7.6	A	6.4
Westbound Left Turns	-		-		-		-	
Southbound Left Turns	A	0.0	A	0.0	A	0.0	A	0.0
Northbound Movements	A	0.0	A	0.0	A	7.9	A	7.9
NW 107th St / 3rd Ave NW	A	3.1	A	3.5	A	1.2	A	1.3
Northbound Left Turns	A	8.9	A	9.1	A	8.3	A	8.4
Southbound Left Turns	A	8.1	A	8.2	A	8.8	A	9.0
Eastbound Movements	C	24.5	D	27.7	C	20.6	C	22.1
Westbound Movements	C	24.5	D	29.3	C	18.3	C	19.7
NW 105th St / 3rd Ave NW	A	4.0	A	4.9	A	2.3	A	2.7
Northbound Left Turns	A	9.3	A	9.5	A	8.6	A	8.8
Southbound Left Turns	A	8.4	A	8.6	A	9.2	A	9.4
Eastbound Movements	C	19.9	C	22.1	B	14.2	B	14.9
Westbound Movements	E	44.3	F	59.5	D	34.3	E	43.0
NW 103rd St (east leg) / 3rd Ave NW	A	0.4	A	0.4	A	0.2	A	0.2
Northbound Left Turns	A	0.0	A	0.0	A	9.2	A	9.4
Eastbound Movements	B	13.0	B	13.5	C	17.7	C	19.3
N 107th St / Greenwood Ave N	A	1.9	A	2.6	A	1.6	A	1.9
Northbound Left Turns	B	12.8	B	13.7	A	9.3	A	9.5
Southbound Left Turns	A	8.6	A	8.8	B	11.1	B	11.6
Eastbound Movements	D	34.1	E	49.9	D	29.3	E	36.1
Westbound Movements	E	36.5	F	52.3	D	33.5	E	40.0

Source: Heffron Transportation, Inc., March 2020.

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.[18] 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.

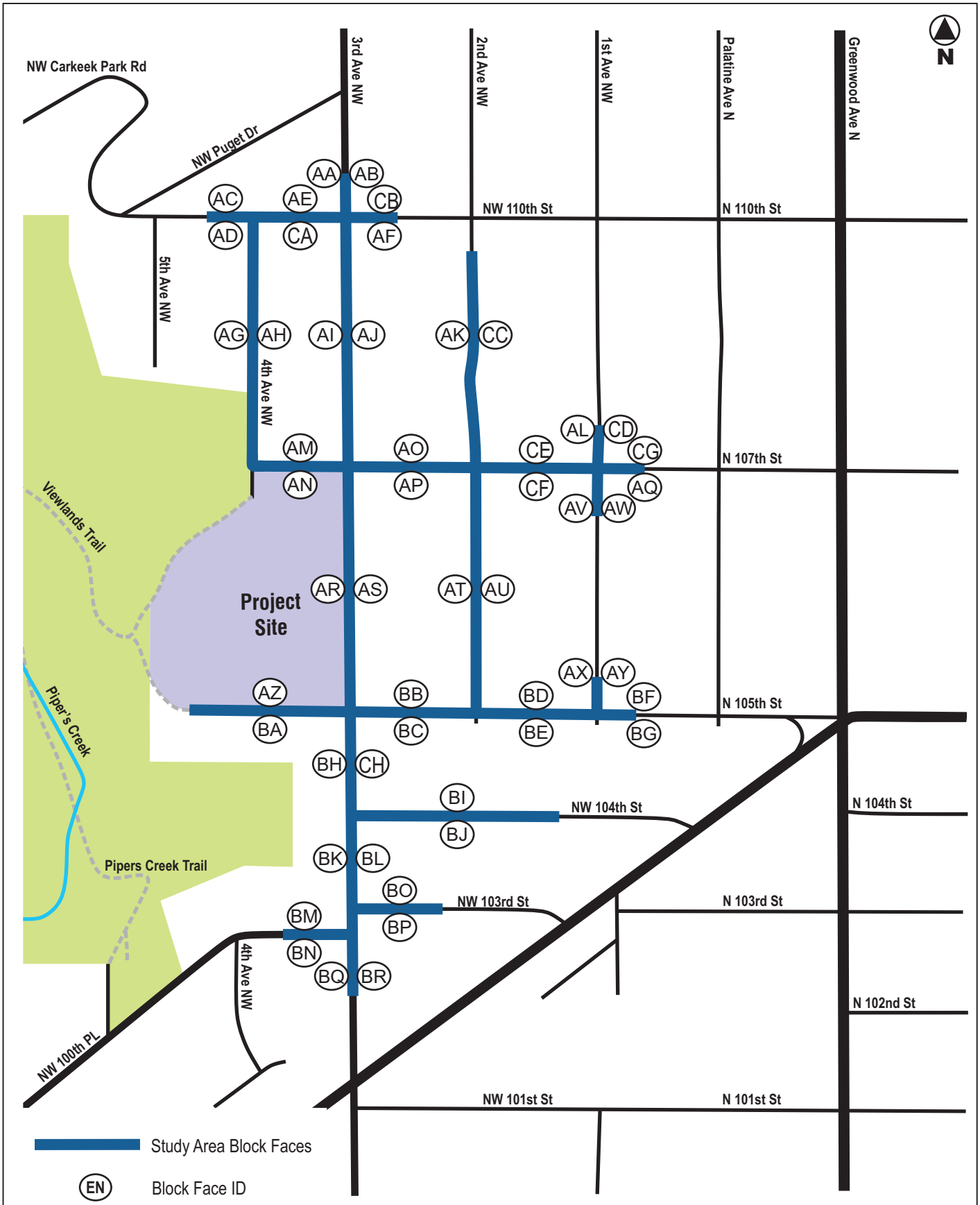
Existing On-Street Parking Supply

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.



Viewlands Elementary School Replacement

Figure 5
Study Area for On-Street Parking Utilization Surveys

heffron transportation inc

12.03.2020

Existing On-Street Parking Occupancy

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, 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

Time Period Surveyed	Parking Supply	Total Vehicles Parked	% Utilization
Weekday Early Morning (7:00 to 7:45 A.M.) [a]			
Thursday, October 10, 2019	280	101	36%
Tuesday, October 22, 2019	280	101	36%
Average	280	101	36%
Weekdays Mid-Morning (10:30 to 11:15 A.M.) [b]			
Thursday, October 10, 2019	284	87	31%
Tuesday, October 22, 2019	284	90	32%
Average	284	*89*	*31%*
Weekday Evenings (7:30 to 8:15 P.M.)			
Tuesday, October 22, 2019	302	88	29%
Thursday, October 24, 2019	302	70	23%
Average	*302*	*79*	*26%*
Weekday Event (6:30 to 7:15 P.M.)			
Thursday October 10, 2019	302	208	69%

Source: Heffron Transportation, Inc., April 2020

a. 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.

b. 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	0.0
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	0.0
NW 105th St / 3rd Ave NW	0	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	0.0
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	0.0

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,*[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 107th 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 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.

In January 2017, King County Metro adopted 'Metro Connects,'[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 replacement 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.[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 107th Street / 3rd Avenue NW: *crosswalk on west and south legs, south leg crosswalk has a pedestrian-actuated Rectangular Rapid Flashing Beacon (RRFB)*
- NW 105th Street / 3rd Avenue NW: *crosswalk on north (with RRFB) and west legs*
- NW 103rd St / 3rd Avenue NW (signalized intersection): *crosswalk on west and south legs*
- Holman Road NW / 3rd Avenue NW (signalized intersection): *crosswalk on all legs*
- N 105th 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 105th Street / 3rd Avenue NW and nearly 125 at the NW 107th Street / 3rd Avenue NW intersection. Pedestrian

19 SDOT, received April 2019.
20 King County Metro, adopted January 2017.
21 Email communication, Seattle Public Schools Transportation, E. Reyes, November 2019.

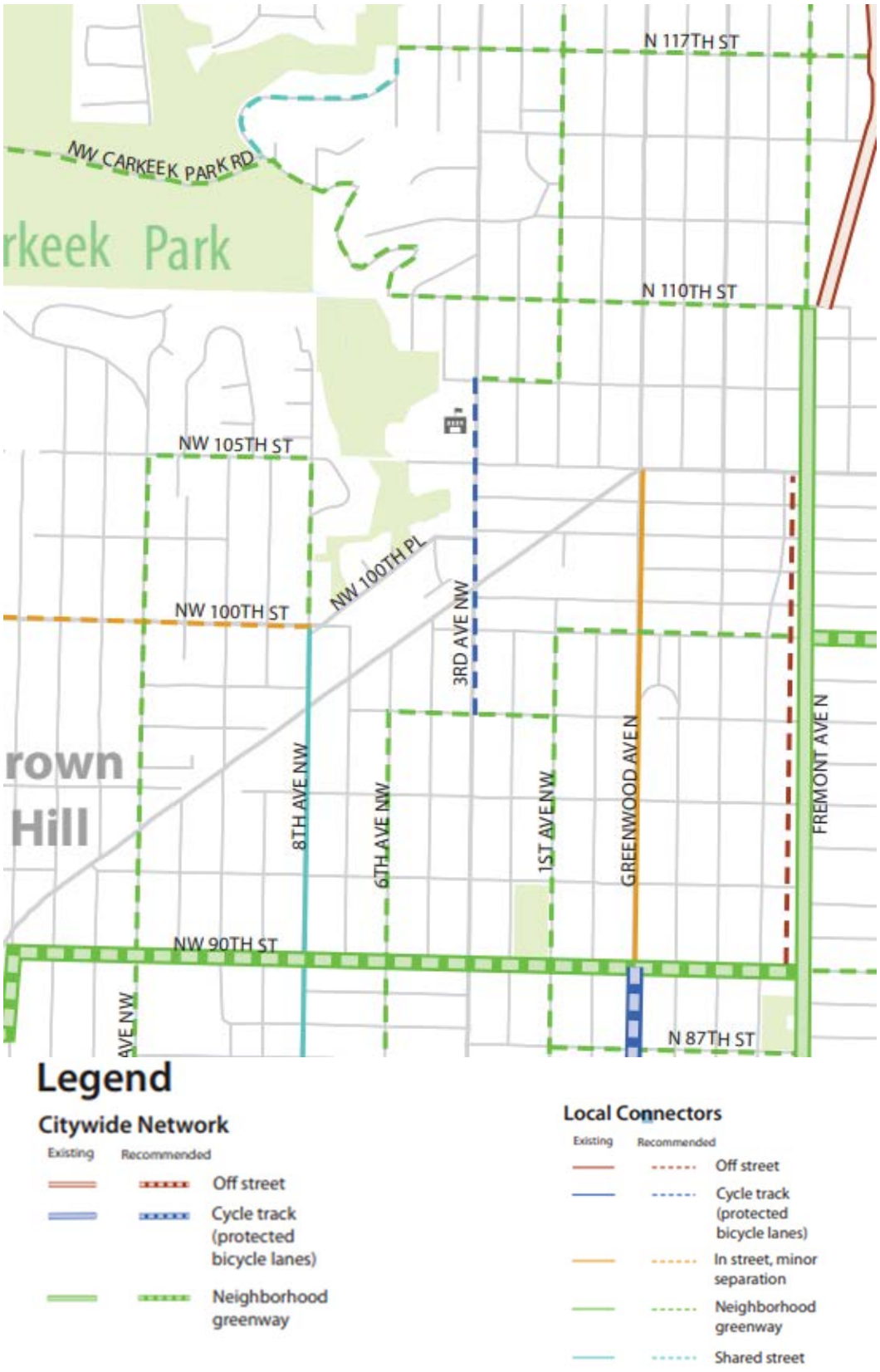
volumes in the afternoon were slightly lower. The count data indicated low bicycle volume, with six or fewer bikes recorded through the nearest two intersections during the analysis hours. It is noted that the counts were conducted in October when weather on the count day was dry and temperatures were 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*[22] 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*[23] 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.*[24] 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.[25] 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.

22 Seattle Department of Transportation; *Safe Streets, Healthy Schools and Communities*; Fall 2015.
23 SDOT, June 2017.
24 SDOT, December 2019.
25 SDOT meeting, S. Zora & J. Marek, February 5, 2020.

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 replacement 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 / 5th 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. A hammerhead turn-around area, reviewed and approved by the Seattle Fire Department (SFD), would be provided on this dead-end residential street. Modifications to signage and restrictions on the north side of NW 105th Street would be made as required by SDOT as part of the Street Improvement Permits (SIP) process approvals. No changes to signage or restrictions are anticipated on the south side of 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*[26] 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-

[26] ITE, 10th Edition, September 2017.

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 4. Viewlands Elementary School Project – Trip Generation Estimates

Site Condition	Enrollment	Morning Peak Hour			Afternoon Peak Hour		
		In	Out	Total	In	Out	Total
Proposed Viewlands ES Replacement	650 students [a]	233	190	423	150	156	306
Existing Viewlands ES	385 students [b]	138	112	250	89	92	181
Net Change	265 students	95	78	173	61	64	125

Source: Heffron Transportation, Inc., April 2020.

a. Proposed future capacity of the school.

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

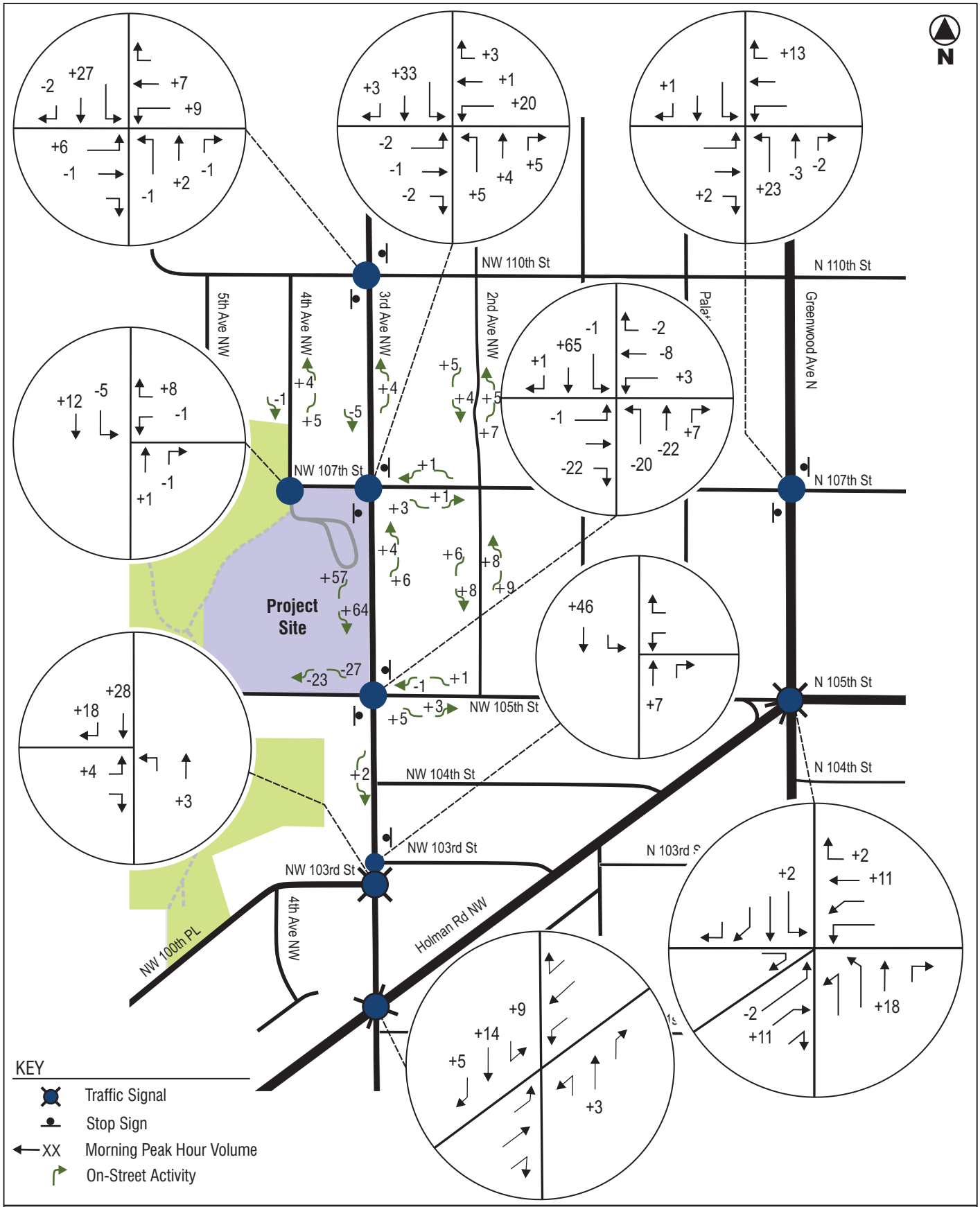
[27] Email communication, via Mahlum Architects, as per Seattle Public Schools, March 2020.

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. Based on guidance from SDOT, SPS will direct school bus drivers to depart the site using northbound 4th Avenue NW. 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.

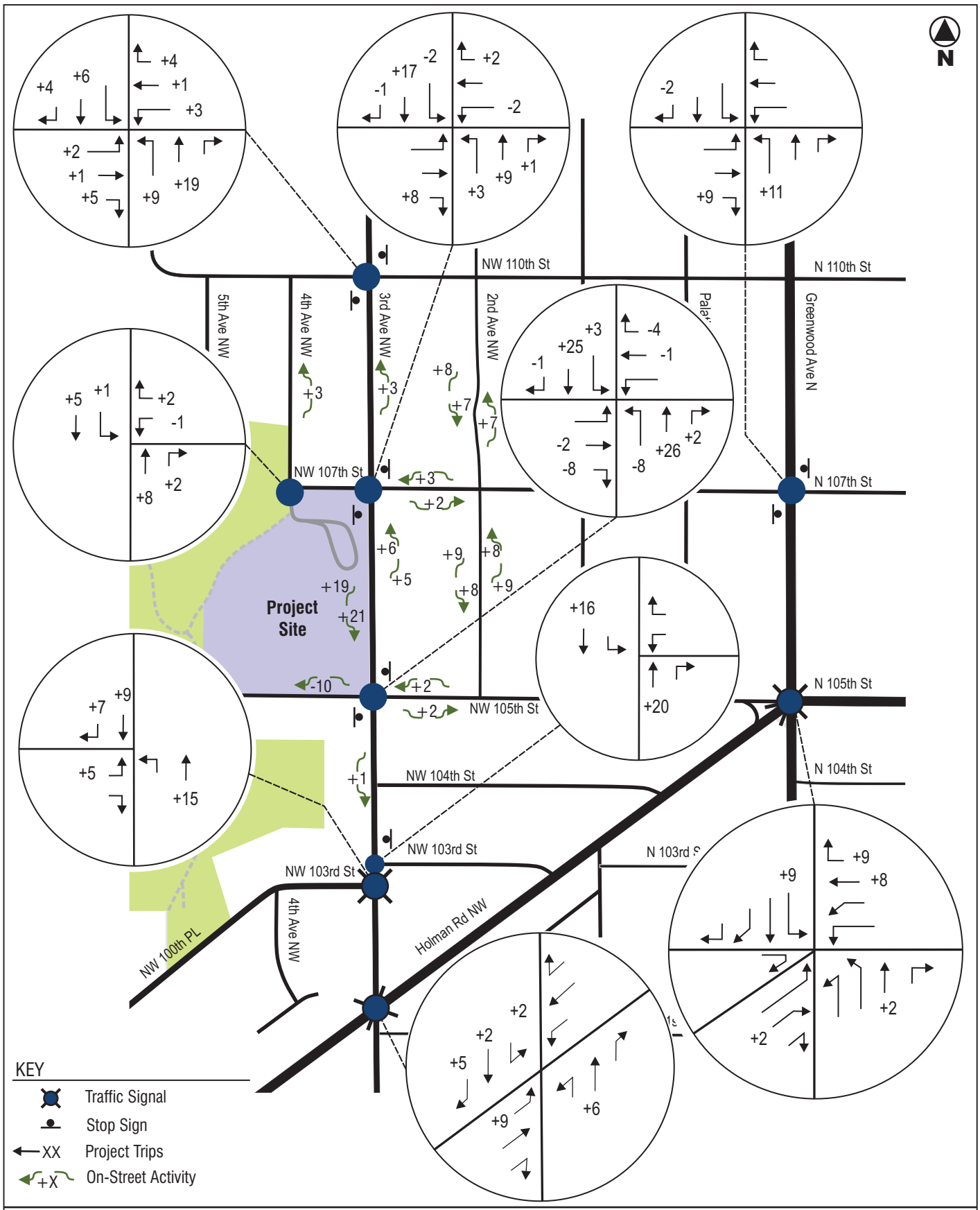


Viewlands Elementary School Replacement

Figure 7
Net Project Trips
Morning Peak Hour

heffron transportation inc

06.23.2020

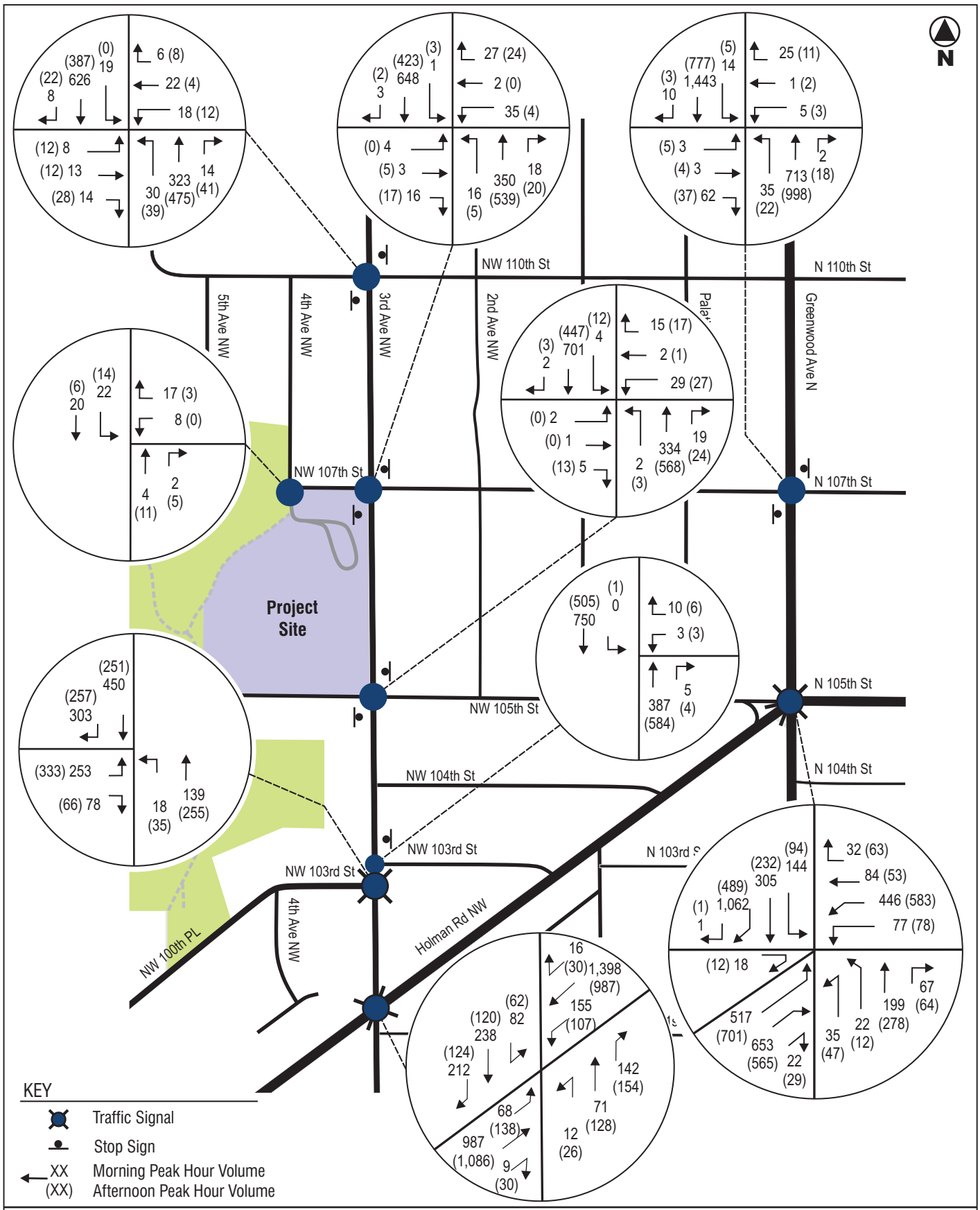


Viewlands Elementary School Replacement

Figure 8
Net Project Trips
Afternoon Peak Hour

heffron transportation inc

06.23.2020



Viewlands Elementary School Replacement

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

heffron transportation inc

06.23.2020

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. 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.

All of the unsignalized intersections would continue to operate at LOS A overall during both analysis periods. However, 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. Based on review of the analyses in this report, SDOT indicated these levels of delay would be tolerated for the relatively low volumes during morning and afternoon peak periods. 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. In some cases, it may be desirable to implement peak-period turn restrictions to reduce those delays. However, SDOT has determined that, after review of the analysis and results, mitigation would not be required for any of the side-street approaches that are forecast to operate at LOS F.

Table 5. Level of Service Summary – Forecast 2023 Without- and With-Project Conditions

Intersections	Morning Peak Hour				Afternoon Peak Hour			
	W/O Project		With- Project		W/O Project		With-Project	
Signalized Intersections	LOS [1]	Delay [2]	LOS	Delay	LOS	Delay	LOS	Delay
NW 103rd St (west leg) / 3rd Ave NW	C	21.9	C	23.6	B	17.9	B	18.0
Holman Rd NW / 3rd Ave NW	C	26.6	C	27.6	C	20.3	C	20.8
N 105th St / Greenwood Ave N / Holman Rd NW	D	53.0	D	53.6	E	74.2	E	74.6
One- or Two-Way Stop Controlled	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
NW 110th St / 3rd Ave NW	A	3.2	A	6.2	A	2.0	A	2.6
Northbound Left-Turns	A	9.2	A	9.4	A	8.3	A	8.3
Southbound Left Turns	A	3.3	A	8.3	A	0.0	A	0.0
Eastbound Movements	D	25.9	D	34.4	C	20.4	C	222.3
Westbound Movements	E	39.1	F	64.4	D	26.5	D	28.6
NW 107th St / 4th Ave NW / Driveway	A	1.8	A	2.2	A	6.4	A	4.0
Westbound Left Turns	-		A	8.4	-		A	0.0
Southbound Left Turns	A	0.0	-	-	A	0.0	-	-
Northbound Movements	A	0.0	B	10.3	A	7.9	A	9.9
NW 107th St / 3rd Ave NW	A	3.5	A	8.7	A	1.3	A	1.6
Northbound Left Turns	A	9.1	A	9.3	A	8.4	A	8.5
Southbound Left Turns	A	8.2	A	8.2	A	9.0	A	9.0
Eastbound Movements	D	27.7	D	27.3	C	22.1	C	21.5
Westbound Movements	D	29.3	F	81.6	C	19.7	C	18.8
NW 105th St / 3rd Ave NW	A	4.9	A	2.8	A	2.7	A	2.2
Northbound Left Turns	A	9.5	A	9.7	A	8.8	A	8.9
Southbound Left Turns	A	8.6	A	8.5	A	9.4	A	9.6
Eastbound Movements	C	22.1	D	27.0	B	14.9	B	12.9
Westbound Movements	F	59.5	E	44.7	E	43.0	E	45.5
NW 103rd St (east leg) / 3rd Ave NW	A	0.4	A	0.4	A	0.2	A	0.2
Northbound Left Turns	A	0.0	A	0.0	A	9.4	A	9.5
Eastbound Movements	B	13.5	B	13.8	C	19.3	C	20.0
N 107th St / Greenwood Ave N	A	2.6	A	3.7	A	1.9	A	2.3
Northbound Left Turns	B	13.7	B	14.4	A	9.5	A	9.6
Southbound Left Turns	A	8.8	A	8.8	B	11.6	B	11.6
Eastbound Movements	E	49.9	F	62.7	E	36.1	E	35.8
Westbound Movements	F	52.3	E	48.5	E	40.0	E	42.9

Source: Heffron Transportation, Inc., June 2020.

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/visitor parking lot with 50 spaces. The site would continue to have less off-street parking than required by Seattle land use code, which is based on assembly spaces and childcare. Therefore, it would necessitate code-departure approval. As part of the building permit review 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 /5th Avenue NW and a new school access driveway. The 4th / 5th 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.[28] 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*[29] 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.
29 ITE, 5th Edition, January 2019.

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 wider non-motorized facility that exists along the west side of 3rd Avenue NW is intended as a shared biking/pedestrian route. Bicyclists destined to and from the school are expected to continue using this facility and enter the site from 3rd Avenue NW to the bike parking near the main entry. Long term bike parking would be located on the east side of the school north of the main entry below the canopy. Some of the long-term bike parking would be covered and secured and the remaining would be covered. Short-term bike parking would be provided adjacent to the main entry adjacent to the bus loop and adjacent to the childcare entry.

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 /5th 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. Based on its review of the project, SDOT supports the SPS proposal to provide an easement for the existing connection between the NW 105th Street ROW and the Carkeek Park trail system within unopened 5th Avenue NW ROW. Improvements on the NW 107th Street frontage would include curb and landscape amenities. The extension of 4th /5th 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/visitor 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 / 5th 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. Based on review of the analyses in this report, SDOT indicated these levels of delay would be tolerated for the relatively low volumes during morning and afternoon peak periods and mitigation would not be required.
- 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 include information about bicycling to and from school and bicycle facilities. It should also instruct staff and parents not to block or partially block any residential driveways with parked or stopped vehicles. The plan would include direction for school-bus drivers to depart the site using northbound 4th Avenue NW.

C. **Continue Coordination with Seattle School Traffic 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.

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

Level of Service	Average Control Delay Per Vehicle
A	≤ 10 seconds
B	> 10 – 20 seconds
C	> 20 – 35 seconds
D	> 35 – 55 seconds
E	> 55 – 80 seconds
F	> 80 seconds

Source: Transportation Research Board, Highway Capacity Manual, Exhibit 19.8, 2016.

Unsignalized Intersections

For unsignalized intersections, level of service is based on the average delay per vehicle for each turning movement. The level of service for all-way stop or roundabout-controlled intersections is based upon the average delay for all vehicles that travel through the intersection. The level of service for a one- or two-way, stop-controlled intersection, delay is related to the availability of gaps in the main street's traffic flow, and the ability of a driver to enter or pass through those gaps. Table A-2 shows the level of service criteria for unsignalized intersections from the *Highway Capacity Manual, Sixth Edition*.

Table A-2. Level of Service Criteria for Unsignalized Intersections

Level of Service	Average Control Delay per Vehicle
A	0 – 10 seconds
B	> 10 – 15 seconds
C	> 15 – 25 seconds
D	> 25 – 35 seconds
E	> 35 – 50 seconds
F	> 50 seconds

Source: Transportation Research Board, Highway Capacity Manual, Exhibit 20.2, 2016.

APPENDIX B
Parking Utilization Study Data

Project **Viewlands ES School Replacement**

				Parking Supply							
Block Face ID	Street Name	Street Segment	Side of Street	Unrestricted Parallel Parking	No Parking on School Days 8a-4p	5 min School Load Only 7-10a, 3-6p	5 min School Load Only 7-10a, 1-4p	School Bus Only 7-10a, 1 4p exc Sat, Sun, & Hol	**Total Parking Spaces Between 7:00a-7:45a**	**Total Parking Spaces Between 10:30a-11:15p**	**Total Parking Spaces After 6:30p**
AA	3RD AVE NW	NW 110TH ST AND NW PUGET DR	W	0	0	0	0	0	**0**	**0**	**0**
AB	3RD AVE NW	NW 110TH ST AND NW PUGET DR	E	0	0	0	0	0	**0**	**0**	**0**
AC	NW 110TH ST	4TH AVE NW AND 5TH AVE NW	N	2	0	0	0	0	**2**	**2**	**2**
AD	NW 110TH ST	4TH AVE NW AND 5TH AVE NW	S	2	0	0	0	0	**2**	**2**	**2**
AE	NW 110TH ST	3RD AVE NW AND 4TH AVE NW	N	2	0	0	0	0	**2**	**2**	**2**
AF	NW 110TH ST	2ND AVE NW AND 3RD AVE NW	S	3	0	0	0	0	**3**	**3**	**3**
AG	4TH AVE NW	NW 107TH ST AND NW 110TH ST	W	20	0	0	0	0	**20**	**20**	**20**
AH	4TH AVE NW	NW 107TH ST AND NW 110TH ST	E	18	0	0	0	0	**18**	**18**	**18**
AI	3RD AVE NW	NW 107TH ST AND NW 110TH ST	W	14	0	0	0	0	**14**	**14**	**14**
AJ	3RD AVE NW	NW 107TH ST AND NW 110TH ST	E	14	0	0	0	0	**14**	**14**	**14**
AK	2ND AVE NW	NW 107TH ST AND NW 110TH ST	W	18	0	0	0	0	**18**	**18**	**18**
AL	1ST AVE NW	NW 107TH ST AND NW 110TH ST	W	3	0	0	0	0	**3**	**3**	**3**
AM	NW 107TH ST	3RD AVE NW AND 4TH AVE NW	N	7	0	0	0	0	**7**	**7**	**7**
AN	NW 107TH ST	3RD AVE NW AND 4TH AVE NW	S	0	0	0	0	6	**0**	**6**	**6**
AO	NW 107TH ST	2ND AVE NW AND 3RD AVE NW	N	1	0	0	0	0	**1**	**1**	**1**
AP	NW 107TH ST	2ND AVE NW AND 3RD AVE NW	S	10	0	0	0	0	**10**	**10**	**10**
AQ	N 107TH ST	1ST AVE NW AND PALATINE AVE N	S	1	0	0	0	0	**1**	**1**	**1**
AR	3RD AVE NW	NW 105TH ST AND NW 107TH ST	W	10	0	0	12	0	**10**	**22**	**22**
AS	3RD AVE NW	NW 105TH ST AND NW 107TH ST	E	8	0	0	0	0	**8**	**8**	**8**
AT	2ND AVE NW	NW 105TH ST AND NW 107TH ST	W	23	0	0	0	0	**23**	**23**	**23**
AU	2ND AVE NW	NW 105TH ST AND NW 107TH ST	E	13	0	0	0	0	**13**	**13**	**13**
AV	1ST AVE NW	800' AND NW 107TH ST	W	2	0	0	0	0	**2**	**2**	**2**
AW	1ST AVE NW	800' AND NW 107TH ST	E	5	0	0	0	0	**5**	**5**	**5**
AX	1ST AVE NW	NW 105TH ST AND 800'	W	1	0	0	0	0	**1**	**1**	**1**
AY	1ST AVE NW	NW 105TH ST AND 800'	E	4	0	0	0	0	**4**	**4**	**4**
AZ	NW 105TH ST	3RD AVE NW AND DEAD END 1	N	2	9	4	0	0	**11**	**6**	**15**

Project **Viewlands ES School Replacement**

				Parking Supply							
Block Face ID	Street Name	Street Segment	Side of Street	Unrestricted Parallel Parking	No Parking on School Days 8a-4p	5 min School Load Only 7-10a, 3-6p	5 min School Load Only 7-10a, 1-4p	School Bus Only 7-10a, 1 4p exc Sat, Sun, & Hol	**Total Parking Spaces Between 7:00a-7:45a**	**Total Parking Spaces Between 10:30a-11:15p**	**Total Parking Spaces After 6:30p**
BA	NW 105TH ST	3RD AVE NW AND DEAD END 1	S	0	9	0	0	0	**9**	**0**	**9**
BB	NW 105TH ST	2ND AVE NW AND 3RD AVE NW	N	8	0	0	0	0	**8**	**8**	**8**
BC	NW 105TH ST	2ND AVE NW AND 3RD AVE NW	S	3	0	0	0	0	**3**	**3**	**3**
BD	NW 105TH ST	1ST AVE NW AND 2ND AVE NW	N	10	0	0	0	0	**10**	**10**	**10**
BE	NW 105TH ST	1ST AVE NW AND 2ND AVE NW	S	5	0	0	0	0	**5**	**5**	**5**
BF	N 105TH ST	1ST AVE NW AND PALATINE AVE N	N	4	0	0	0	0	**4**	**4**	**4**
BG	N 105TH ST	1ST AVE NW AND PALATINE AVE N	S	0	0	0	0	0	**0**	**0**	**0**
BH	3RD AVE NW	NW 104TH ST AND NW 105TH ST	W	7	0	0	0	0	**7**	**7**	**7**
BI	NW 104TH ST	N 104TH ST AND 3RD AVE NW	N	4	0	0	0	0	**4**	**4**	**4**
BJ	NW 104TH ST	N 104TH ST AND 3RD AVE NW	S	17	0	0	0	0	**17**	**17**	**17**
BK	3RD AVE NW	NW 103RD N ST AND NW 104TH ST	W	2	0	0	0	0	**2**	**2**	**2**
BL	3RD AVE NW	NW 103RD N ST AND NW 104TH ST	E	4	0	0	0	0	**4**	**4**	**4**
BM	NW 103RD ST	3RD S AVE NW AND 4TH AVE NW	N	1	0	0	0	0	**1**	**1**	**1**
BN	NW 103RD ST	3RD S AVE NW AND 4TH AVE NW	S	4	0	0	0	0	**4**	**4**	**4**
BO	NW 103RD ST	HOLMAN RD NW AND 3RD N AVE NW	N	5	0	0	0	0	**5**	**5**	**5**
BP	NW 103RD ST	HOLMAN RD NW AND 3RD N AVE NW	S	3	0	0	0	0	**3**	**3**	**3**
BQ	3RD AVE NW	HOLMAN RD NW AND NW 103RD S ST	W	1	0	0	0	0	**1**	**1**	**1**
BR	3RD AVE NW	HOLMAN RD NW AND NW 103RD S ST	E	1	0	0	0	0	**1**	**1**	**1**
CA	NW 110TH ST	3RD AVE NW AND 4TH AVE NW	S	0	0	0	0	0	**0**	**0**	**0**
CB	NW 110TH ST	2ND AVE NW AND 3RD AVE NW	N	0	0	0	0	0	**0**	**0**	**0**
CC	1ST AVE NW	N 107TH ST AND N 110TH ST	E	0	0	0	0	0	**0**	**0**	**0**
CD	1ST AVE NW	NW 107TH ST AND NW 110TH ST	E	0	0	0	0	0	**0**	**0**	**0**
CE	N 107TH ST	1ST AVE NW AND 2ND AVE NW	N	0	0	0	0	0	**0**	**0**	**0**
CF	N 107TH ST	1ST AVE NW AND 2ND AVE NW	S	0	0	0	0	0	**0**	**0**	**0**
CG	N 107TH ST	1ST AVE NW AND PALATINE AVE N	N	0	0	0	0	0	**0**	**0**	**0**
CH	3RD AVE NW	NW 104TH ST AND NW 105TH ST	E	0	0	0	0	0	**0**	**0**	**0**
			TOTAL	**262**	**18**	**4**	**12**	**6**	**280**	**284**	**302**

Project **Viewlands ES School Replacement**

				Parking Supply			Parking Occupancy										
							Morning			Midday			Evening			Event	
							7:00 A.M. to 7:45 A.M			10:30 A.M. to 11:15 A.M.			7:00 P.M to 7:45 P.M.			6:30 P.M to 7:15 P.M	
Block Face ID	Street Name	Street Segment	Side of Street	Total Parking Spaces Between 7:00a-7:45a	Total Parking Spaces Between 10:30a-11:15p	Total Parking Spaces After 6:30p	Thurs 10/10/19	Tues 10/22/19	Average	Thurs 10/10/19	Tues 10/22/19	Average	Tues 10/22/19	Thurs 10/24/19	Average	Thurs 10/10/19	
AA	3RD AVE NW	NW 110TH ST AND NW PUGET DR	W	**0**	**0**	**0**	0	0	0	0	0	0	0	0	0	0	
AB	3RD AVE NW	NW 110TH ST AND NW PUGET DR	E	**0**	**0**	**0**	0	0	0	0	0	0	0	0	0	0	
AC	NW 110TH ST	4TH AVE NW AND 5TH AVE NW	N	**2**	**2**	**2**	0	0	0	0	0	0	0	0	0	0	
AD	NW 110TH ST	4TH AVE NW AND 5TH AVE NW	S	**2**	**2**	**2**	0	0	0	0	0	0	0	0	0	0	
AE	NW 110TH ST	3RD AVE NW AND 4TH AVE NW	N	**2**	**2**	**2**	0	0	0	0	0	0	2	2	2	3	
AF	NW 110TH ST	2ND AVE NW AND 3RD AVE NW	S	**3**	**3**	**3**	0	0	0	0	0	0	0	0	0	0	
AG	4TH AVE NW	NW 107TH ST AND NW 110TH ST	W	**20**	**20**	**20**	5	5	5	5	8	7	6	4	5	12	
AH	4TH AVE NW	NW 107TH ST AND NW 110TH ST	E	**18**	**18**	**18**	7	6	7	4	6	5	7	6	7	9	
AI	3RD AVE NW	NW 107TH ST AND NW 110TH ST	W	**14**	**14**	**14**	3	4	4	4	3	4	3	1	2	8	
AJ	3RD AVE NW	NW 107TH ST AND NW 110TH ST	E	**14**	**14**	**14**	1	4	3	3	3	3	4	4	4	9	
AK	2ND AVE NW	NW 107TH ST AND NW 110TH ST	W	**18**	**18**	**18**	5	5	5	3	5	4	5	3	4	11	
AL	1ST AVE NW	NW 107TH ST AND NW 110TH ST	W	**3**	**3**	**3**	2	2	2	0	1	1	2	2	2	2	
AM	NW 107TH ST	3RD AVE NW AND 4TH AVE NW	N	**7**	**7**	**7**	6	6	6	8	7	8	0	0	0	8	
AN	NW 107TH ST	3RD AVE NW AND 4TH AVE NW	S	**0**	**6**	**6**	0	0	0	0	0	0	0	0	0	6	
AO	NW 107TH ST	2ND AVE NW AND 3RD AVE NW	N	**1**	**1**	**1**	0	0	0	0	0	0	0	0	0	1	
AP	NW 107TH ST	2ND AVE NW AND 3RD AVE NW	S	**10**	**10**	**10**	0	2	1	1	0	1	1	1	1	7	
AQ	N 107TH ST	1ST AVE NW AND PALATINE AVE N	S	**1**	**1**	**1**	0	0	0	0	0	0	0	0	0	0	
AR	3RD AVE NW	NW 105TH ST AND NW 107TH ST	W	**10**	**22**	**22**	11	12	12	12	11	12	3	0	2	22	
AS	3RD AVE NW	NW 105TH ST AND NW 107TH ST	E	**8**	**8**	**8**	6	5	6	5	5	5	3	0	2	11	
AT	2ND AVE NW	NW 105TH ST AND NW 107TH ST	W	**23**	**23**	**23**	10	10	10	10	9	10	8	8	8	13	
AU	2ND AVE NW	NW 105TH ST AND NW 107TH ST	E	**13**	**13**	**13**	9	7	8	3	4	4	8	5	7	10	
AV	1ST AVE NW	800' AND NW 107TH ST	W	**2**	**2**	**2**	3	0	2	2	2	2	2	2	2	2	
AW	1ST AVE NW	800' AND NW 107TH ST	E	**5**	**5**	**5**	1	0	1	1	0	1	1	1	1	1	
AX	1ST AVE NW	NW 105TH ST AND 800'	W	**1**	**1**	**1**	1	0	1	0	0	0	2	1	2	0	
AY	1ST AVE NW	NW 105TH ST AND 800'	E	**4**	**4**	**4**	1	0	1	0	0	0	1	2	2	1	
AZ	NW 105TH ST	3RD AVE NW AND DEAD END 1	N	**11**	**6**	**15**	3	5	4	6	6	6	1	2	2	14	
BA	NW 105TH ST	3RD AVE NW AND DEAD END 1	S	**9**	**0**	**9**	0	2	1	1	0	1	1	0	1	6	
BB	NW 105TH ST	2ND AVE NW AND 3RD AVE NW	N	**8**	**8**	**8**	0	0	0	0	0	0	0	0	0	8	
BC	NW 105TH ST	2ND AVE NW AND 3RD AVE NW	S	**3**	**3**	**3**	0	0	0	0	0	0	1	0	1	3	
BD	NW 105TH ST	1ST AVE NW AND 2ND AVE NW	N	**10**	**10**	**10**	1	0	1	1	0	1	1	0	1	8	

Project **Viewlands ES School Replacement**

				Parking Supply			Parking Occupancy										
							Morning			Midday			Evening			Event	
							7:00 A.M. to 7:45 A.M			10:30 A.M. to 11:15 A.M.			7:00 P.M to 7:45 P.M.			6:30 P.M to 7:15 P.M	
Block Face ID	Street Name	Street Segment	Side of Street	**Total Parking Spaces Between 7:00a-7:45a**	**Total Parking Spaces Between 10:30a-11:15p**	**Total Parking Spaces After 6:30p**	Thurs 10/10/19	Tues 10/22/19	Average	Thurs 10/10/19	Tues 10/22/19	Average	Tues 10/22/19	Thurs 10/24/19	Average	Thurs 10/10/19	
BE	NW 105TH ST	1ST AVE NW AND 2ND AVE NW	S	**5**	**5**	**5**	1	1	1	0	0	0	0	1	1	1	
BF	N 105TH ST	1ST AVE NW AND PALATINE AVE N	N	**4**	**4**	**4**	0	0	0	0	0	0	0	0	0	0	
BG	N 105TH ST	1ST AVE NW AND PALATINE AVE N	S	**0**	**0**	**0**	0	0	0	0	0	0	0	0	0	0	
BH	3RD AVE NW	NW 104TH ST AND NW 105TH ST	W	**7**	**7**	**7**	1	0	1	1	1	1	0	1	1	3	
BI	NW 104TH ST	N 104TH ST AND 3RD AVE NW	N	**4**	**4**	**4**	1	1	1	1	1	1	1	1	1	0	
BJ	NW 104TH ST	N 104TH ST AND 3RD AVE NW	S	**17**	**17**	**17**	9	10	10	8	9	9	9	7	8	7	
BK	3RD AVE NW	NW 103RD N ST AND NW 104TH ST	W	**2**	**2**	**2**	1	1	1	1	1	1	3	2	3	3	
BL	3RD AVE NW	NW 103RD N ST AND NW 104TH ST	E	**4**	**4**	**4**	3	3	3	2	1	2	2	3	3	3	
BM	NW 103RD ST	3RD S AVE NW AND 4TH AVE NW	N	**1**	**1**	**1**	1	1	1	1	1	1	1	1	1	1	
BN	NW 103RD ST	3RD S AVE NW AND 4TH AVE NW	S	**4**	**4**	**4**	4	4	4	3	3	3	4	5	5	4	
BO	NW 103RD ST	HOLMAN RD NW AND 3RD N AVE NW	N	**5**	**5**	**5**	3	2	3	0	1	1	3	3	3	4	
BP	NW 103RD ST	HOLMAN RD NW AND 3RD N AVE NW	S	**3**	**3**	**3**	1	0	1	0	0	0	3	0	2	4	
BQ	3RD AVE NW	HOLMAN RD NW AND NW 103RD S ST	W	**1**	**1**	**1**	0	1	1	0	1	1	0	1	1	1	
BR	3RD AVE NW	HOLMAN RD NW AND NW 103RD S ST	E	**1**	**1**	**1**	1	2	2	1	1	1	0	1	1	2	
CA	NW 110TH ST	3RD AVE NW AND 4TH AVE NW	S	**0**	**0**	**0**	0	0	0	0	0	0	0	0	0	0	
CB	NW 110TH ST	2ND AVE NW AND 3RD AVE NW	N	**0**	**0**	**0**	0	0	0	0	0	0	0	0	0	0	
CC	1ST AVE NW	N 107TH ST AND N 110TH ST	E	**0**	**0**	**0**	0	0	0	0	0	0	0	0	0	0	
CD	1ST AVE NW	NW 107TH ST AND NW 110TH ST	E	**0**	**0**	**0**	0	0	0	0	0	0	0	0	0	0	
CE	N 107TH ST	1ST AVE NW AND 2ND AVE NW	N	**0**	**0**	**0**	0	0	0	0	0	0	0	0	0	0	
CF	N 107TH ST	1ST AVE NW AND 2ND AVE NW	S	**0**	**0**	**0**	0	0	0	0	0	0	0	0	0	0	
CG	N 107TH ST	1ST AVE NW AND PALATINE AVE N	N	**0**	**0**	**0**	0	0	0	0	0	0	0	0	0	0	
CH	3RD AVE NW	NW 104TH ST AND NW 105TH ST	E	**0**	**0**	**0**	0	0	0	0	0	0	0	0	0	0	
			TOTAL	**280**	**284**	**302**	**101**	**101**	**101**	**87**	**90**	**89**	**88**	**70**	**79**	**208**	

Project **Viewlands ES School Replacement**

				Parking Supply			Parking Utilization										
							Morning			Midday			Evening			Event	
							7:00 A.M. to 7:45 A.M			10:30 A.M. to 11:15 A.M.			7:00 P.M to 7:45 P.M.			6:30 P.M to 7:15 P.M	
Block Face ID	Street Name	Street Segment	Side of Street	Total Parking Spaces Between 7:00a-7:45a	Total Parking Spaces Between 10:30a-11:15p	Total Parking Spaces After 6:30p	Thurs 10/10/19	Tues 10/22/19	Average	Thurs 10/10/19	Tues 10/22/19	Average	Tues 10/22/19	Thurs 10/24/19	Average	Thurs 10/10/19	
AA	3RD AVE NW	NW 110TH ST AND NW PUGET DR	W	**0**	**0**	**0**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
AB	3RD AVE NW	NW 110TH ST AND NW PUGET DR	E	**0**	**0**	**0**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
AC	NW 110TH ST	4TH AVE NW AND 5TH AVE NW	N	**2**	**2**	**2**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
AD	NW 110TH ST	4TH AVE NW AND 5TH AVE NW	S	**2**	**2**	**2**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
AE	NW 110TH ST	3RD AVE NW AND 4TH AVE NW	N	**2**	**2**	**2**	0%	0%	0%	0%	0%	0%	100%	100%	100%	150%	
AF	NW 110TH ST	2ND AVE NW AND 3RD AVE NW	S	**3**	**3**	**3**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
AG	4TH AVE NW	NW 107TH ST AND NW 110TH ST	W	**20**	**20**	**20**	25%	25%	25%	25%	40%	33%	30%	20%	25%	60%	
AH	4TH AVE NW	NW 107TH ST AND NW 110TH ST	E	**18**	**18**	**18**	39%	33%	36%	22%	33%	28%	39%	33%	36%	50%	
AI	3RD AVE NW	NW 107TH ST AND NW 110TH ST	W	**14**	**14**	**14**	21%	29%	25%	29%	21%	25%	21%	7%	14%	57%	
AJ	3RD AVE NW	NW 107TH ST AND NW 110TH ST	E	**14**	**14**	**14**	7%	29%	18%	21%	21%	21%	29%	29%	29%	64%	
AK	2ND AVE NW	NW 107TH ST AND NW 110TH ST	W	**18**	**18**	**18**	28%	28%	28%	17%	28%	22%	28%	17%	22%	61%	
AL	1ST AVE NW	NW 107TH ST AND NW 110TH ST	W	**3**	**3**	**3**	67%	67%	67%	0%	33%	17%	67%	67%	67%	67%	
AM	NW 107TH ST	3RD AVE NW AND 4TH AVE NW	N	**7**	**7**	**7**	86%	86%	86%	114%	100%	107%	0%	0%	0%	114%	
AN	NW 107TH ST	3RD AVE NW AND 4TH AVE NW	S	**0**	**6**	**6**	NS	NS	NS	0%	0%	0%	0%	0%	0%	100%	
AO	NW 107TH ST	2ND AVE NW AND 3RD AVE NW	N	**1**	**1**	**1**	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	
AP	NW 107TH ST	2ND AVE NW AND 3RD AVE NW	S	**10**	**10**	**10**	0%	20%	10%	10%	0%	5%	10%	10%	10%	70%	
AQ	N 107TH ST	1ST AVE NW AND PALATINE AVE N	S	**1**	**1**	**1**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
AR	3RD AVE NW	NW 105TH ST AND NW 107TH ST	W	**10**	**22**	**22**	110%	120%	115%	55%	50%	52%	14%	0%	7%	100%	
AS	3RD AVE NW	NW 105TH ST AND NW 107TH ST	E	**8**	**8**	**8**	75%	63%	69%	63%	63%	63%	38%	0%	19%	138%	
AT	2ND AVE NW	NW 105TH ST AND NW 107TH ST	W	**23**	**23**	**23**	43%	43%	43%	43%	39%	41%	35%	35%	35%	57%	
AU	2ND AVE NW	NW 105TH ST AND NW 107TH ST	E	**13**	**13**	**13**	69%	54%	62%	23%	31%	27%	62%	38%	50%	77%	
AV	1ST AVE NW	800' AND NW 107TH ST	W	**2**	**2**	**2**	150%	0%	75%	100%	100%	100%	100%	100%	100%	100%	
AW	1ST AVE NW	800' AND NW 107TH ST	E	**5**	**5**	**5**	20%	0%	10%	20%	0%	10%	20%	20%	20%	20%	
AX	1ST AVE NW	NW 105TH ST AND 800'	W	**1**	**1**	**1**	100%	0%	50%	0%	0%	0%	200%	100%	150%	0%	
AY	1ST AVE NW	NW 105TH ST AND 800'	E	**4**	**4**	**4**	25%	0%	13%	0%	0%	0%	25%	50%	38%	25%	
AZ	NW 105TH ST	3RD AVE NW AND DEAD END 1	N	**11**	**6**	**15**	27%	45%	36%	100%	100%	100%	7%	13%	10%	93%	
BA	NW 105TH ST	3RD AVE NW AND DEAD END 1	S	**9**	**0**	**9**	0%	22%	11%	NS	NS	NS	11%	0%	6%	67%	
BB	NW 105TH ST	2ND AVE NW AND 3RD AVE NW	N	**8**	**8**	**8**	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	
BC	NW 105TH ST	2ND AVE NW AND 3RD AVE NW	S	**3**	**3**	**3**	0%	0%	0%	0%	0%	0%	33%	0%	17%	100%	
BD	NW 105TH ST	1ST AVE NW AND 2ND AVE NW	N	**10**	**10**	**10**	10%	0%	5%	10%	0%	5%	10%	0%	5%	80%	

Project **Viewlands ES School Replacement**

				Parking Supply			Parking Utilization										
							Morning			Midday			Evening			Event	
							7:00 A.M. to 7:45 A.M			10:30 A.M. to 11:15 A.M.			7:00 P.M to 7:45 P.M.			6:30 P.M to 7:15 P.M	
Block Face ID	Street Name	Street Segment	Side of Street	Total Parking Spaces Between 7:00a-7:45a	Total Parking Spaces Between 10:30a-11:15p	Total Parking Spaces After 6:30p	Thurs 10/10/19	Tues 10/22/19	Average	Thurs 10/10/19	Tues 10/22/19	Average	Tues 10/22/19	Thurs 10/24/19	Average	Thurs 10/10/19	
BE	NW 105TH ST	1ST AVE NW AND 2ND AVE NW	S	**5**	**5**	**5**	20%	20%	20%	0%	0%	0%	0%	20%	10%	20%	
BF	N 105TH ST	1ST AVE NW AND PALATINE AVE N	N	**4**	**4**	**4**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
BG	N 105TH ST	1ST AVE NW AND PALATINE AVE N	S	**0**	**0**	**0**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
BH	3RD AVE NW	NW 104TH ST AND NW 105TH ST	W	**7**	**7**	**7**	14%	0%	7%	14%	14%	14%	0%	14%	7%	43%	
BI	NW 104TH ST	N 104TH ST AND 3RD AVE NW	N	**4**	**4**	**4**	25%	25%	25%	25%	25%	25%	25%	25%	25%	0%	
BJ	NW 104TH ST	N 104TH ST AND 3RD AVE NW	S	**17**	**17**	**17**	53%	59%	56%	47%	53%	50%	53%	41%	47%	41%	
BK	3RD AVE NW	NW 103RD N ST AND NW 104TH ST	W	**2**	**2**	**2**	50%	50%	50%	50%	50%	50%	150%	100%	125%	150%	
BL	3RD AVE NW	NW 103RD N ST AND NW 104TH ST	E	**4**	**4**	**4**	75%	75%	75%	50%	25%	38%	50%	75%	63%	75%	
BM	NW 103RD ST	3RD S AVE NW AND 4TH AVE NW	N	**1**	**1**	**1**	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
BN	NW 103RD ST	3RD S AVE NW AND 4TH AVE NW	S	**4**	**4**	**4**	100%	100%	100%	75%	75%	75%	100%	125%	113%	100%	
BO	NW 103RD ST	HOLMAN RD NW AND 3RD N AVE NW	N	**5**	**5**	**5**	60%	40%	50%	0%	20%	10%	60%	60%	60%	80%	
BP	NW 103RD ST	HOLMAN RD NW AND 3RD N AVE NW	S	**3**	**3**	**3**	33%	0%	17%	0%	0%	0%	100%	0%	50%	133%	
BQ	3RD AVE NW	HOLMAN RD NW AND NW 103RD S ST	W	**1**	**1**	**1**	0%	100%	50%	0%	100%	50%	0%	100%	50%	100%	
BR	3RD AVE NW	HOLMAN RD NW AND NW 103RD S ST	E	**1**	**1**	**1**	100%	200%	150%	100%	100%	100%	0%	100%	50%	200%	
CA	NW 110TH ST	3RD AVE NW AND 4TH AVE NW	S	**0**	**0**	**0**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
CB	NW 110TH ST	2ND AVE NW AND 3RD AVE NW	N	**0**	**0**	**0**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
CC	1ST AVE NW	N 107TH ST AND N 110TH ST	E	**0**	**0**	**0**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
CD	1ST AVE NW	NW 107TH ST AND NW 110TH ST	E	**0**	**0**	**0**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
CE	N 107TH ST	1ST AVE NW AND 2ND AVE NW	N	**0**	**0**	**0**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
CF	N 107TH ST	1ST AVE NW AND 2ND AVE NW	S	**0**	**0**	**0**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
CG	N 107TH ST	1ST AVE NW AND PALATINE AVE N	N	**0**	**0**	**0**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
CH	3RD AVE NW	NW 104TH ST AND NW 105TH ST	E	**0**	**0**	**0**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
			TOTAL	**280**	**284**	**302**	**36%**	**36%**	**36%**	**31%**	**32%**	**31%**	**29%**	**23%**	**26%**	**69%**	

Appendix B: Arborist Report

Tree Solutions Inc
Consulting Arborists

Project No. TS - 6943

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 16-2008[1]. 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

[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

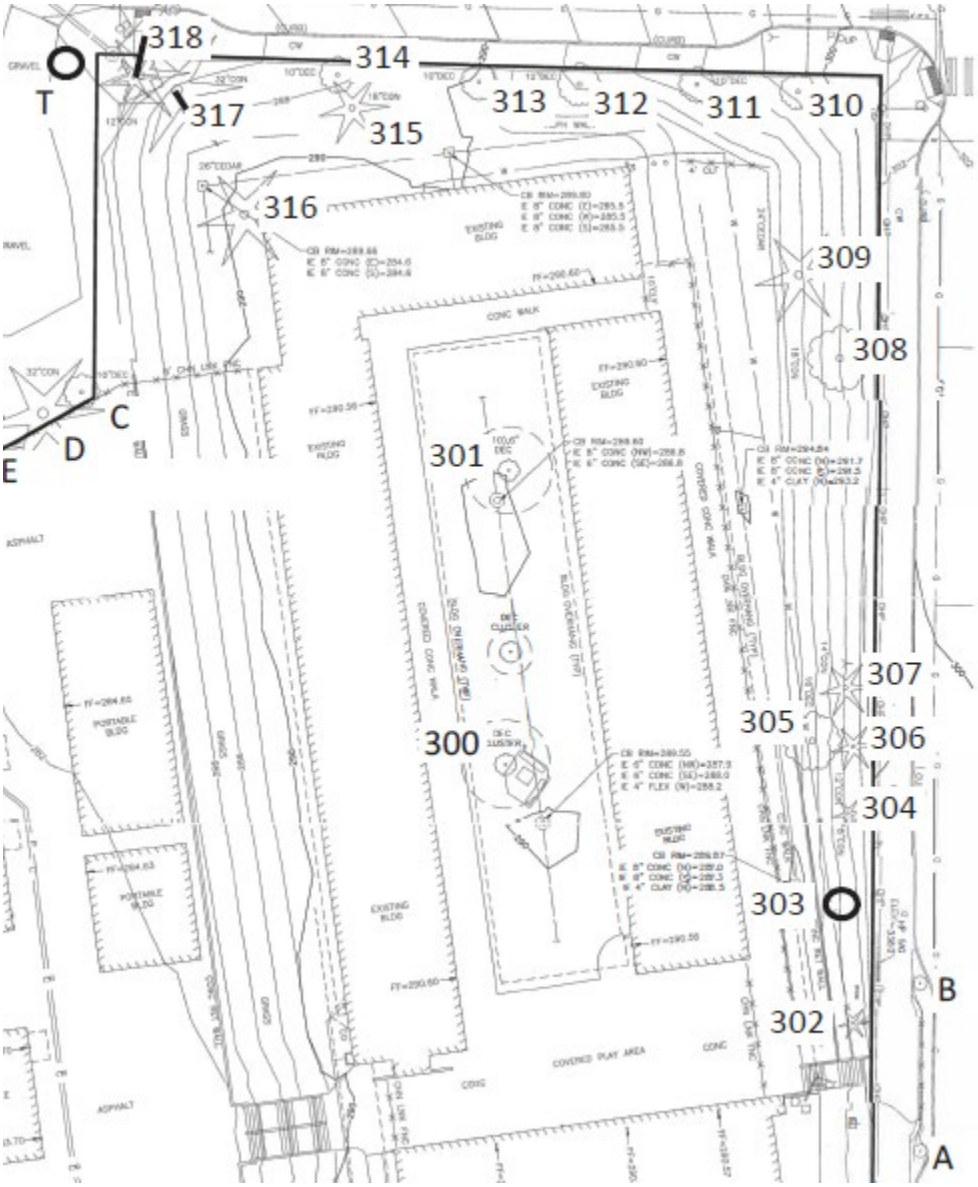


Figure 1. Site map, northeast quadrant.

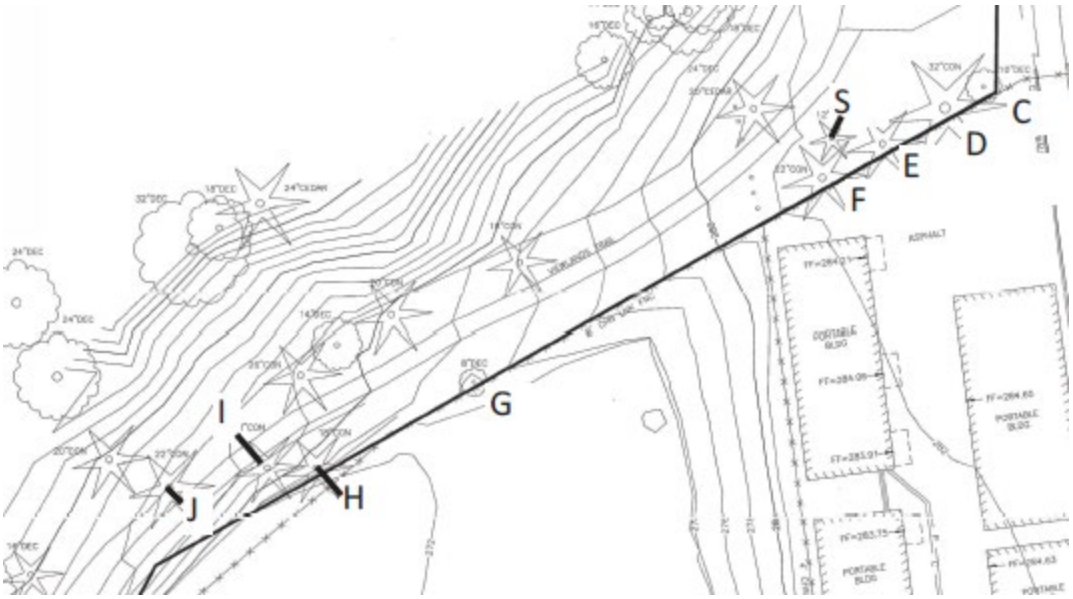


Figure 2. Site map, northwest quadrant.

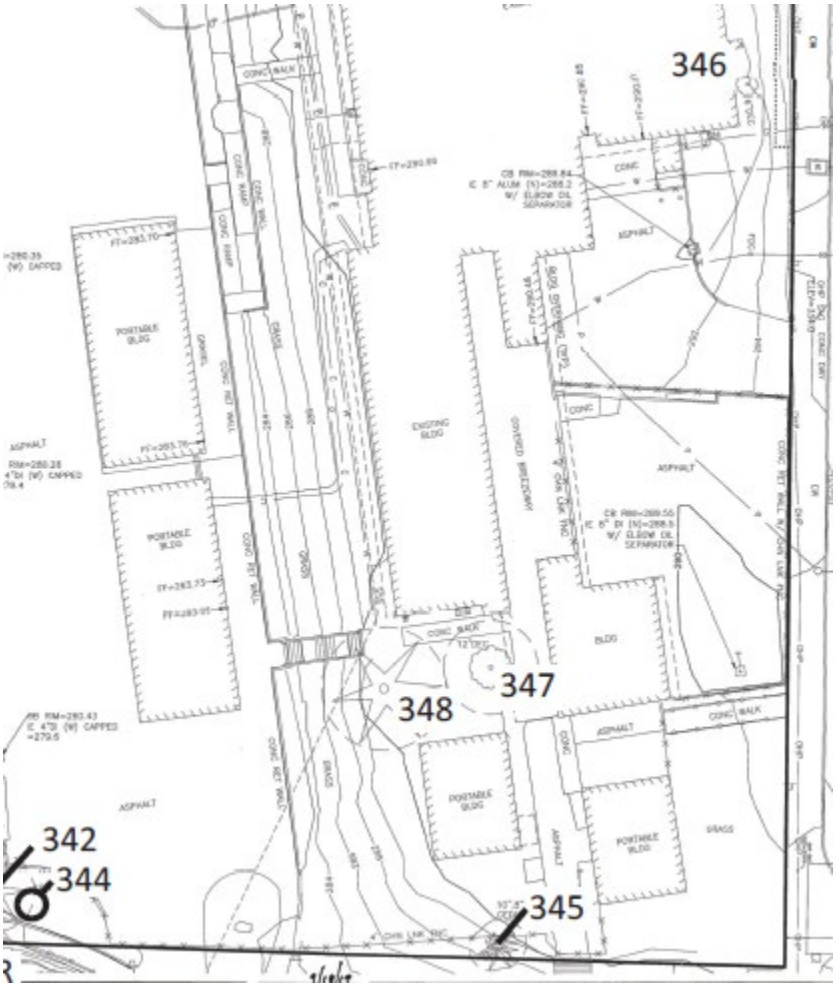


Figure 3. Site map, southeast quadrant

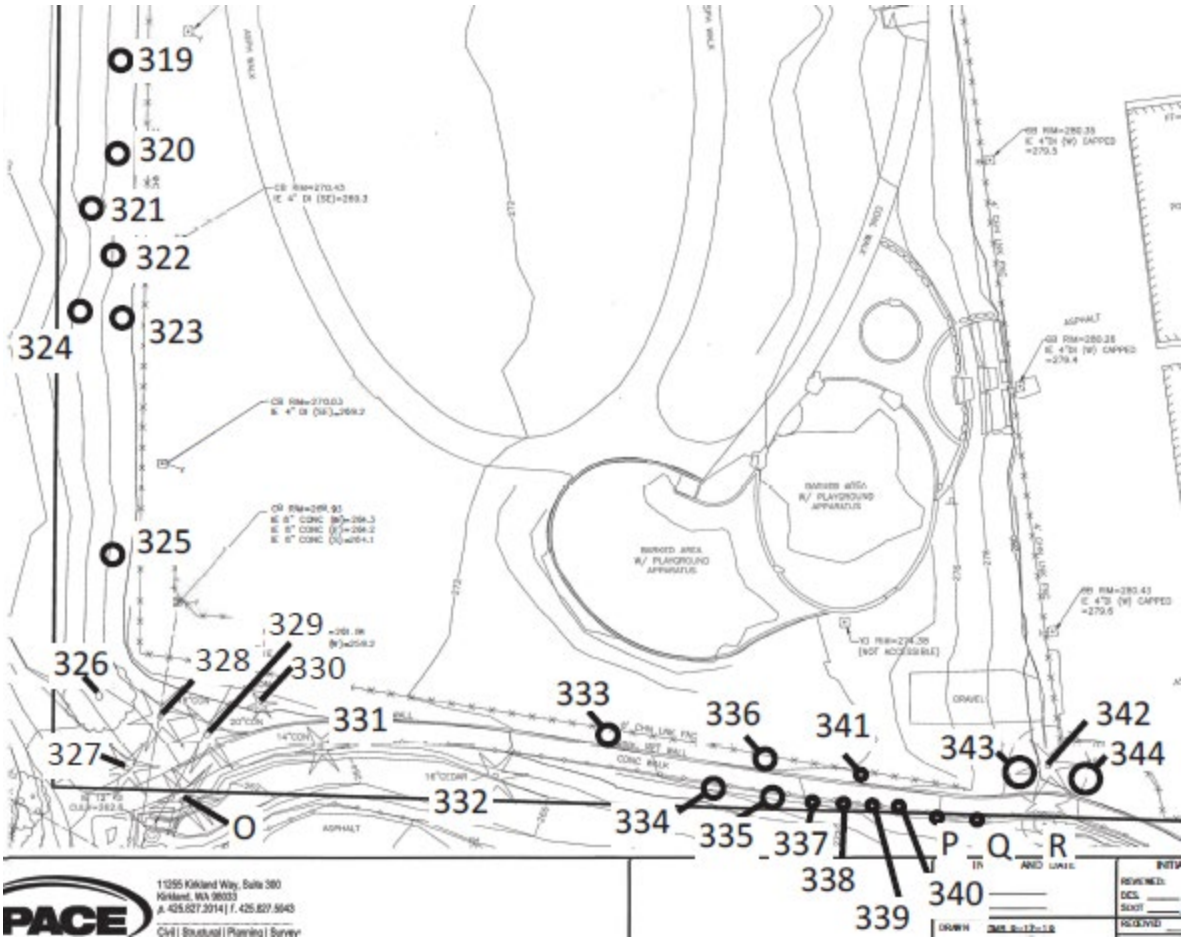


Figure 4. Site map, southwest quadrant

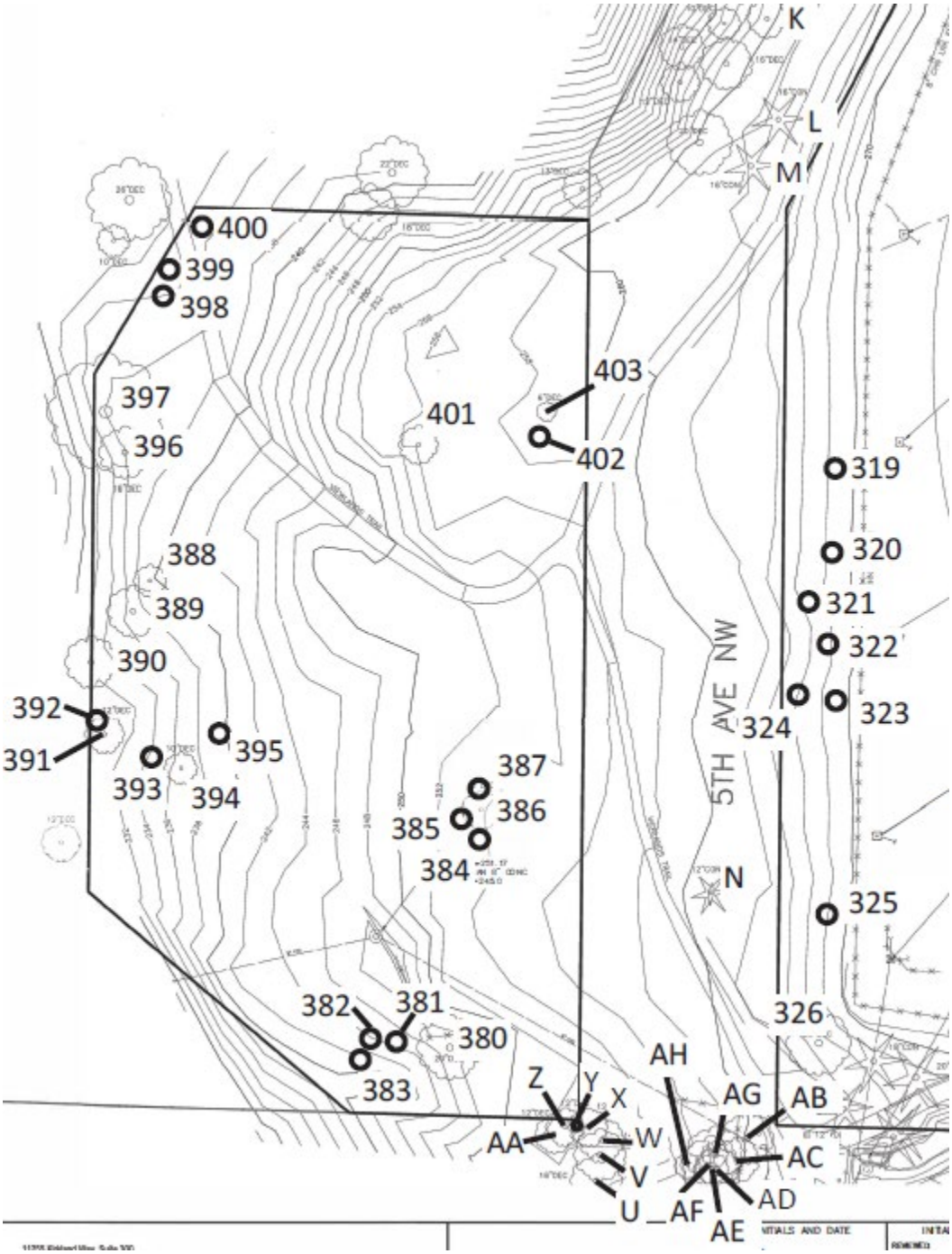


Figure 5. SPS parcel west of Viewlands campus

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.

Tree Solutions Inc
Consulting Arborists

Table of Trees

Viewlands Elementary
Seattle, WA

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.

							Dripline Radius (feet)						
Tree ID	**Scientific Name**	**Common Name**	**DSH** (inches)	**DSH Multistem**	**Health Condition**	**Structural Condition**	**N**	**E**	**S**	**W**	**Exceptional Threshold**	**Exceptional by Size**	**Notes**
300	*Prunus cerasifera*	Cherry plum	6.3	2.5,3,3,4	Good	Fair	9.8	9.3	12.3	9.8	*21.0*	-	
301	*Arbutus unedo*	Strawberry tree	11.7	4,2,3,3,2.5,3.5,3.5,2,3.8,2.8,3.3,2.5,2.5,2,2,2.5,2.5	Good	Good	13.5	12.5	11.5	12.5	*10.2*	Exceptional	
302	*Pinus strobus*	Eastern white pine	7.7		Good	Good	13.3	11.8	12.3	12.3	*30.0*	-	
303	*Betula pendula*	European white birch	11.1		Good	Good	12.5	14.5	13.5	12.5	*24.0*	-	
304	*Pinus sylvestris*	Scots pine	8.2		Good	Good	10.3	9.3	11.3	10.3	*24.0*	-	
305	*Betula pendula*	European white birch	15.8		Good	Good	14.7	10.7	16.7	16.7	*24.0*	-	
306	*Cedrus deodara*	Deodar cedar	12.0		Good	Good	11.5	14.5	13.5	6.5	*30.0*	-	
307	*Cedrus deodara*	Deodar cedar	13.0		Good	Good	15.5	13.5	12.5	14.5	*30.0*	-	
308	*Pinus sylvestris*	Scots pine	27.0		Good	Good	15.1	22.1	27.1	29.1	*24.0*	Exceptional	past prunung for wires
309	*Thuja plicata*	Western redcedar	34.8		Good	Good	18.5	21.5	19.5	20.5	*30.0*	Exceptional	
310	*Acer platanoides*	Norway maple	9.0		Good	Good	12.4	15.4	15.4	14.4	*30.0*	-	
311	*Acer platanoides*	Norway maple	9.0		Good	Good	13.4	12.4	13.4	14.4	*30.0*	-	
312	*Acer platanoides*	Norway maple	11.9		Good	Good	17.5	16.5	16.5	16.5	*30.0*	-	
313	*Acer platanoides*	Norway maple	11.7		Good	Good	18.5	15.5	15.5	16.5	*30.0*	-	girdling roots
314	*Acer platanoides*	Norway maple	9.3		Good	Good	15.4	19.4	10.4	16.4	*30.0*	-	
315	*Cedrus deodara*	Deodar cedar	19.6		Good	Good	11.8	18.8	20.8	19.8	*30.0*	-	
316	*Thuja plicata*	Western redcedar	28.9		Fair	Fair	16.2	13.2	17.2	16.2	*30.0*	-	2 ft from foundation, low vigor
317	*Pseudotsuga menziesii*	Douglas-fir	29.3		Good	Good	20.2	23.2	23.2	17.2	*30.0*	-	
318	*Pseudotsuga menziesii*	Douglas-fir	27.3	23.8,13.3	Good	Good	18.1	9.1	23.1	25.1	*30.0*	-	
319	*Pinus contorta var. contorta*	Shore pine	9.0		Fair	Fair	9.4	9.4	9.4	8.4	*12.0*	-	not accessible, sequoia pitch moth
320	*Pinus contorta var. contorta*	Shore pine	10.0		Fair	Fair	14.4	15.4	9.4	10.4	*12.0*	-	not accessible, sequoia pitch moth
321	*Pinus contorta var. contorta*	Shore pine	8.0		Fair	Poor	8.3	15.3	8.3	10.3	*12.0*	-	not accessible, sequoia pitch moth

Table of Trees

Viewlands Elementary
Seattle, WA

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

Tree ID	Scientific Name	Common Name	DSH (inches)	DSH Multistem	Health Condition	Structural Condition	N	E	S	W	Exceptional Threshold	Exceptional by Size	Notes
322	*Pinus contorta var. contorta*	Shore pine	9.0		Fair	Fair	8.4	13.4	9.4	10.4	*12.0*	-	not accessible, sequoia pitch moth
323	*Pinus contorta var. contorta*	Shore pine	8.0		Fair	Fair	9.3	10.3	9.3	8.3	*12.0*	-	not accessible, sequoia pitch moth
324	*Pinus contorta var. contorta*	Shore pine	10.0	6,8	Fair	Fair	9.4	9.4	11.4	9.4	*12.0*	-	not accessible, sequoia pitch moth
325	*Pseudotsuga menziesii*	Douglas-fir	9.0		Good	Good	13.4	13.4	13.4	13.4	*30.0*	-	not accessible
326	*Pinus monticola*	Western white pine	23.4		Good	Good	22.0	16.0	15.0	23.0	*24.0*	-	inactive freeze thaw crack on s side
327	*Pseudotsuga menziesii*	Douglas-fir	19.9		Good	Good	13.8	14.8	19.8	19.8	*30.0*	-	
328	*Pseudotsuga menziesii*	Douglas-fir	22.2		Good	Good	15.9	11.9	16.9	14.9	*30.0*	-	
329	*Pseudotsuga menziesii*	Douglas-fir	24.4		Good	Good	22.0	27.0	15.0	17.0	*30.0*	-	
330	*Abies grandis*	Grand fir	6.6		Good	Good	11.3	7.3	9.3	7.3	*24.0*	-	
331	*Pseudotsuga menziesii*	Douglas-fir	11.0		Good	Good	10.5	12.5	12.5	11.5	*30.0*	-	
332	*Thuja plicata*	Western redcedar	16.9		Good	Good	12.7	12.7	13.7	12.7	*30.0*	-	
333	*Arbutus menziesii*	Pacific madrone	9.0		Good	Good	8.4	10.4	8.4	9.4	*6.0*	Exceptional	growing up against the fence
334	*Populus tremuloides*	Quaking aspen	6.2		Fair	Fair	7.3	7.3	7.3	7.3	*12.0*	-	no leaf seasonal
335	*Populus tremuloides*	Quaking aspen	7.0	4.9,5	Fair	Fair	9.3	9.3	7.3	7.3	*12.0*	-	no leaf seasonal
336	*Corylus cornuta*	Beaked hazelnut	12.6	3.2,2.2,4.2,3.4,2.5,1.6, 4.7,4,2.8	Good	Good	9.5	12.5	11.5	12.5	*0.0*	Exceptional	adj to fence
337	*Populus tremuloides*	Quaking aspen	7.6	6,4.7	Good	Good	8.3	10.3	11.3	7.3	*12.0*	-	
338	*Populus tremuloides*	Quaking aspen	6.1	4.7,3.9	Good	Good	8.3	8.3	8.3	8.3	*12.0*	-	
339	*Populus tremuloides*	Quaking aspen	6.1		Good	Good	8.3	8.3	8.3	8.3	*12.0*	-	
340	*Populus tremuloides*	Quaking aspen	6.1		Good	Good	8.3	8.3	8.3	8.3	*12.0*	-	
341	*Corylus cornuta*	Beaked hazelnut	9.0	2.7,2.4,3,3.3,2.8,3.5,3, 2.6,3.5	Good	Good	12.4	12.4	12.4	12.4	*0.0*	Exceptional	
342	*Pseudotsuga menziesii*	Douglas-fir	15.0		Good	Good	13.6	12.6	11.6	12.6	*30.0*	-	
343	*Corylus cornuta*	Beaked hazelnut	8.0	2,2.7,2.4,3.3,3.5,3.5,3. 3	Good	Good	10.3	12.3	12.3	12.3	*0.0*	Exceptional	
344	*Corylus cornuta*	Beaked hazelnut	7.6	2.8,2.6,3,2.7,3.5,3,2.5,	Good	Good	10.3	12.3	12.3	12.3	*0.0*	Exceptional	
345	*Chamaecyparis pisifera*	Sawara cypress	16.7	10.7,8.5,7.1,6.5	Good	Good	10.7	9.7	9.7	9.7	*26.9*	-	Filifera'
346	*Acer palmatum*	Japanese maple	8.4		Good	Good	12.4	10.4	12.4	11.4	*12.0*	-	
347	*Prunus cerasifera*	Cherry plum	13.1	3,6.6,2.2,4.7,9.6	Good	Fair	12.5	2.5	14.5	11.5	*21.0*	-	
348	*Picea pungens*	Colorado spruce	37.6	27,26.2	Good	Good	13.6	13.6	17.6	14.6	*23.1*	Exceptional	seam w good response growth

Table of Trees

Viewlands Elementary
Seattle, WA

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

Tree ID	Scientific Name	Common Name	DSH (inches)	DSH Multistem	Health Condition	Structural Condition	N	E	S	W	Exceptional Threshold	Exceptional by Size	Notes
380	*Acer macrophyllum*	Bigleaf maple	32.3		Fair	Fair	29.3	26.3	28.3	16.3	*30.0*	Exceptional	Kretzschmaria; old tear out on west side. On inside of fence. Recommend advanced testing if development is planned nearby.
381	*Acer macrophyllum*	Bigleaf maple	9.2		Fair	Poor	13.4	14.4	10.4	13.4	*30.0*	-	Dead top; recovering. Grows into fence
382	*Acer macrophyllum*	Bigleaf maple	10.7		Fair	Fair	21.4	8.4	4.4	10.4	*30.0*	-	Grows into fence.
383	*Acer macrophyllum*	Bigleaf maple	6.3		Fair	Fair	4.3	4.3	4.3	4.3	*30.0*	-	
384	*Alnus rubra*	Red alder	9.3		Fair	Fair	7.4	14.4	18.4	6.4	*Not Exceptional unless in grove*	-	Bleeding lesions on bark. Likely phytopthora canker. Minor deadwood in canopy.
385	*Alnus rubra*	Red alder	10.2		Fair	Fair	14.4	7.4	20.4	21.4	*Not Exceptional unless in grove*	-	Bleeding lesions on bark. Likely phytopthora canker. Minor deadwood in canopy.
386	*Alnus rubra*	Red alder	9.7		Fair	Fair	15.4	15.4	8.4	17.4	*Not Exceptional unless in grove*	-	Bleeding lesions on bark. Likely phytopthora canker. Minor deadwood in canopy.
387	*Alnus rubra*	Red alder	8.5		Fair	Fair	20.4	14.4	4.4	16.4	*Not Exceptional unless in grove*	-	Bleeding lesions on bark. Likely phytopthora canker. Minor deadwood in canopy.
388	*Acer macrophyllum*	Bigleaf maple	13.2		Fair	Good	19.6	18.6	13.6	14.6	*30.0*	-	Area used for camping. Many needles on ground. Trees hacked at 3 ft.
389	*Acer macrophyllum*	Bigleaf maple	18.7		Good	Good	12.8	23.8	15.8	13.8	*30.0*	-	Grows uphill with adventitious rooting into the slope.
390	*Acer macrophyllum*	Bigleaf maple	28.0		Good	Good	13.2	15.2	18.2	16.2	*30.0*	-	Estimated DSH.
391	*Prunus emarginata var. mollis*	Bitter cherry	15.0	14.4,4.1	Good	Good	13.6	8.6	12.6	12.6	*Not Exceptional except in grove*	-	

Table of Trees

Viewlands Elementary
Seattle, WA

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

Tree ID	Scientific Name	Common Name	DSH (inches)	DSH Multistem	Health Condition	Structural Condition	N	E	S	W	Exceptional Threshold	Exceptional by Size	Notes
392	*Prunus emarginata var. mollis*	Bitter cherry	8.7		Good	Good	8.4	8.4	8.4	8.4	*Not Exceptional except in grove*	-	
393	*Prunus emarginata var. mollis*	Bitter cherry	12.0		Good	Good	10.5	10.5	10.5	10.5	*Not Exceptional except in grove*	-	Not tagged. Estimated DSH due to access.
394	*Prunus emarginata var. mollis*	Bitter cherry	12.0		Good	Good	10.5	10.5	15.5	10.5	*Not Exceptional except in grove*	-	Not tagged. Estimated DSH due to access.
395	*Prunus emarginata var. mollis*	Bitter cherry	13.0		Fair	Fair	15.5	15.5	10.5	10.5	*Not Exceptional except in grove*	-	Not tagged. Estimated DSH due to access.
396	*Acer macrophyllum*	Bigleaf maple	19.0		Good	Poor	11.8	21.8	18.8	19.8	*30.0*	-	Extensive decay from tear-out on west side.
397	*Acer macrophyllum*	Bigleaf maple	33.0		Good	Fair	27.4	28.4	17.4	15.4	*30.0*	Exceptional	Tear-outs and associated decay present.
398	*Prunus emarginata var. mollis*	Bitter cherry	15.3	9,12.4	Fair	Fair	13.6	19.6	9.6	7.6	*Not Exceptional except in grove*	-	
399	*Pseudotsuga menziesii*	Douglas-fir	9.3		Good	Good	8.4	10.4	9.4	8.4	*30.0*	-	
400	*Prunus emarginata var. mollis*	Bitter cherry	7.9		Fair	Fair	5.3	8.3	5.3	5.3	*Not Exceptional except in grove*	-	
401	*Robinia pseudoacacia*	Black locust	29.4	19.5,17,14	Good	Good	25.2	27.2	35.2	31.2	*30.0*	-	Minor dead wood in canopy.
402	*Robinia pseudoacacia*	Black locust	16.8	10.3,9.7,9.1	Good	Good	10.7	17.7	24.7	18.7	*30.0*	-	
403	*Robinia pseudoacacia*	Black locust	12.6		Good	Good	20.5	20.5	5.5	19.5	*30.0*	-	
A	*Acer platanoides*	Norway maple	3.5		Good	Good	--	--	--	6.1	*30.0*	-	
B	*Acer platanoides*	Norway maple	4.0		Good	Good	--	--	--	6.2	*30.0*	-	
C	*Acer circinatum*	Vine maple	10.1	7,5.8,4.5,	Good	Fair	--	--	8.4	--	*8.0*	Exceptional	
D	*Pseudotsuga menziesii*	Douglas-fir	28.0		Good	Good	--	--	19.2	--	*30.0*	-	

Table of Trees

Viewlands Elementary
Seattle, WA

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

Tree ID	Scientific Name	Common Name	DSH (inches)	DSH Multistem	Health Condition	Structural Condition	N	E	S	W	Exceptional Threshold	Exceptional by Size	Notes
E	*Pseudotsuga menziesii*	Douglas-fir	24.6		Good	Good	--	--	17.0	--	*30.0*	-	
F	*Pseudotsuga menziesii*	Douglas-fir	21.0		Good	Good	--	--	19.9	--	*30.0*	-	
G	*Acer macrophyllum*	Bigleaf maple	15.6	8.8,9.7,8.5	Fair	Poor	--	--	16.7	--	*30.0*	-	low risk; growing into fence, dieback and some dead wood; seam at base; split would occur parallel to fence
H	*Pseudotsuga menziesii*	Douglas-fir	23.5		Good	Good	--	--	19.0	--	*30.0*	-	
I	*Pseudotsuga menziesii*	Douglas-fir	20.3		Good	Good	--	--	17.8	--	*30.0*	-	
J	*Crataegus monogyna*	Common hawthorn	9.8	8,4,4	Good	Fair	--	10.4	--	--	*16.2*	-	unsure of location
K	*Acer macrophyllum*	Bigleaf maple	27.3	13.3,8.7,11.6,7.4,17.4	Good	Fair	--	34.1	--	--	*30.0*	-	
L	*Pseudotsuga menziesii*	Douglas-fir	16.9		Good	Good	--	19.7	--	--	*30.0*	-	
M	*Pseudotsuga menziesii*	Douglas-fir	18.6		Good	Good	--	18.8	--	--	*30.0*	-	
N	*Pseudotsuga menziesii*	Douglas-fir	16.0		Good	Good	--	18.7	--	--	*30.0*	-	
O	*Pseudotsuga menziesii*	Douglas-fir	31.2	21.8,22.3	Good	Fair	13.3	--	--	--	*30.0*	Exceptional	
P	*Populus tremuloides*	Aspen	6.0		Good	Good	6.3	--	--	--	*12.0*	-	
Q	*Populus tremuloides*	Aspen	6.0		Good	Good	6.3	--	--	--	*12.0*	-	
R	*Populus tremuloides*	Aspen	6.0		Good	Good	6.3	--	--	--	*12.0*	-	
S	*Thuja plicata*	Western redcedar	12.8		Good	Good	12.5	11.5	6.5	13.5	*30.0*	-	
T	*Pseudotsuga menziesii*	Douglas-fir	16.4		Good	Good	10.7	9.7	11.7	12.7	*30.0*	-	
U	*Acer macrophyllum*	Bigleaf maple	10.0		Fair	Fair	25.4	--	--	--	*30.0*	-	
V	*Acer macrophyllum*	Bigleaf maple	20.0		Fair	Fair	25.8	--	--	--	*30.0*	-	
W	*Acer macrophyllum*	Bigleaf maple	14.0		Fair	Fair	25.6	--	--	--	*30.0*	-	
X	*Acer macrophyllum*	Bigleaf maple	10.0		Fair	Fair	25.4	--	--	--	*30.0*	-	
Y	*Acer macrophyllum*	Bigleaf maple	15.4	9,12.5	Fair	Fair	25.6	--	--	--	*30.0*	-	
Z	*Acer macrophyllum*	Bigleaf maple	26.9	25,10	Fair	Fair	26.1	--	--	--	*30.0*	-	
AA	*Acer macrophyllum*	Bigleaf maple	22.0		Fair	Fair	25.9	--	--	--	*30.0*	-	
AB	*Acer macrophyllum*	Bigleaf maple	19.2		Fair	Fair	28.8	28.8	--	--	*30.0*	-	
AC	*Acer macrophyllum*	Bigleaf maple	14.0		Fair	Fair	28.6	28.6	--	--	*30.0*	-	
AD	*Acer macrophyllum*	Bigleaf maple	19.0		Fair	Fair	28.8	28.8	--	--	*30.0*	-	
AE	*Acer macrophyllum*	Bigleaf maple	11.0		Fair	Fair	28.5	28.5	--	--	*30.0*	-	
AF	*Acer macrophyllum*	Bigleaf maple	21.0		Fair	Fair	28.9	28.9	--	--	*30.0*	-	
AG	*Acer macrophyllum*	Bigleaf maple	24.0		Fair	Fair	29.0	29.0	--	--	*30.0*	-	
AH	*Acer macrophyllum*	Bigleaf maple	7.7		Fair	Fair	28.3	28.3	--	--	*30.0*	-	

REGION NO.	STATE	FEDERAL AID PROJECT NO.	SHEET NO.
10	WA	####	2

LEGEND

GAS VALVE		WATER VALVE	
GAS METER	GM	WATER GATE VALVE CHAMBER	
SEWER MANHOLE	SMH	FIRE HYDRANT	
CLEANOUT	CO	WATER METER	WM
STORM DRAIN MANHOLE	SDMH	WATER MANHOLE	WMH
CATCH BASIN		HOSE BIB	HB
PRIVATE CATCH BASIN		IRRIGATION VALVE	IRRV
SAND BOX		ELECTRIC MANHOLE	EMH
STORM DRAINAGE INLET		ELECTRIC HANDHOLE	EHH
ROOF DRAIN	RD	ELECTRIC JUNCTION BOX	
TELEPHONE MANHOLE	TMH	POWER POLE	PP
TELEPHONE POLE	TP	GUY ANCHOR	
BOLLARD		GUY POLE	GP
SIGN		POWER WITH LIGHT	PP LP
MAILBOX		LIGHT POLE	
DECIDUDUS TREE		AREA LIGHT	
CONIFER TREE		CONCRETE RET WALL	CRW

CENTER LINES
RIGHT-OF-WAY LINES
PROPERTY LINES
PLATTED LOT LINES
VACATED LOT LINES
UNDERGROUND GAS LINES
UNDERGROUND WATER LINES
UNDERGROUND STORM DRAINAGE LINES (PSD)
UNDERGROUND SANITARY SEWER LINES (PSS)
COMBINED SANITARY & STORM LINES (PS)
SANITARY SEWER SERVICE LINES (SSS)
STORM DRAINAGE SERVICE LINES (PSD)
OVERHEAD POWER LINES (OHP)
OVERHEAD COMMUNICATIONS LINES (OHC)
BUILDING LINES
BUILDING OVERHANG LINES
ROCKERY
CHAIN-LINK FENCE LINES
WOOD FENCE LINES

Tree present. No tree symbol on survey.

N

20 10 0 20 40
SCALE IN FEET

Arborist Tree Inventory
10/21/2019

Tree Solutions Inc.
206-528-4670

NATURE REVISIONS	DATE	MADE BY	CHKD

VAULT SERIAL # ####

2/10

C:\Users\deons\appdata\local\temp\AcPublish_10768\V19463-TOPO.dwg
deons Sep-18-19 2:28pm

SEE SHEET 3

PACE
An Engineering Services Company
11255 Kirkland Way, Suite 300
Kirkland, WA 98033
p. 425.827.2014 | f. 425.827.5043
Civil | Structural | Planning | Survey
www.paceengrs.com

INITIALS AND DATE	INITIALS AND DATE
DESIGNED	REVIEWED:
CHECKED	DES. CONST.
DRAWN DMB 9-17-19	SDOT PROJ. MGR.
CHECKED ABB 9-17-19	RECEIVED
	REVISED AS BUILT

ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE CITY OF SEATTLE STANDARD PLANS AND SPECIFICATIONS AND OTHER DOCUMENTS CALLED FOR IN SECTION 0-02.3 OF THE PROJECT MANUAL.

AARON B. BLAISDELL STATE OF WASHINGTON 41276 REGISTERED PROFESSIONAL LAND SURVEYOR 9/19/19

SEATTLE PUBLIC SCHOOLS

SCALE: 1" = 20'

VIEWLANDS ELEMENTARY SCHOOL

SITE

PC
CO
VPI #

SHEET 1 OF 3

REGION NO.	STATE	FEDERAL AID PROJECT NO.	SHEET NO.
10	WA	####	3

SEE SHEET 2

SEE SHEET 4

LEGEND

GAS VALVE		WATER VALVE	
GAS METER	GM	WATER GATE VALVE CHAMBER	
SEWER MANHOLE	SMH	FIRE HYDRANT	
CLEANOUT	CO	WATER METER	WM
STORM DRAIN MANHOLE	SDMH	WATER MANHOLE	WMH
CATCH BASIN		HOSE BIB	H.B.
PRIVATE CATCH BASIN		IRRIGATION VALVE	IRRV
SAND BOX		ELECTRIC MANHOLE	EMH
STORM DRAINAGE INLET		ELECTRIC HANDHOLE	EHH
ROOF DRAIN	RD	ELECTRIC JUNCTION BOX	
TELEPHONE MANHOLE	TMH	POWER POLE	PP
TELEPHONE POLE	TPO	GUY ANCHOR	
BOLLARD		GUY POLE	GP
SIGN		POWER WITH LIGHT	PP
MAILBOX		LIGHT POLE	LP
CONIFEROUS TREE		AREA LIGHT	
DECIDUOUS TREE		CONCRETE RET WALL	CRW

CENTER LINES
RIGHT-OF-WAY LINES
PROPERTY LINES
PLATTED LOT LINES
VACATED LOT LINES
UNDERGROUND GAS LINES
UNDERGROUND WATER LINES
PSD UNDERGROUND STORM DRAINAGE LINES
PSS UNDERGROUND SANITARY SEWER LINES
PS COMBINED SANITARY & STORM LINES
SSS SANITARY SEWER SERVICE LINES
PSD STORM DRAINAGE SERVICE LINES
OHP OVERHEAD POWER LINES
OHC OVERHEAD COMMUNICATIONS LINES
BUILDING LINES
BUILDING OVERHANG LINES
ROCKERY
CHAIN-LINK FENCE LINES
WOOD FENCE LINES

N

20 10 0 20 40
SCALE IN FEET

Arborist Tree Inventory
10/21/2019

Tree Solutions Inc.
206-528-4670

VAULT SERIAL #	DATE	MARK	NATURE REVISIONS	MADE	CHK'D	REV'D
###						

C:\Users\deana\appdata\local\temp\AcPublish_1076B\V19463-T0P0.dwg
deana Sep-18-19 2:28pm

3/10

PACE
An Engineering Services Company
11255 Kirkland Way, Suite 300
Kirkland, WA 98033
p. 425.827.2014 | f. 425.827.5043
Civil | Structural | Planning | Survey
www.paceengrs.com

INITIALS AND DATE	
DRAWN	DMB 9-17-19
CHECKED	ABB 9-17-19

INITIALS AND DATE	
REVIEWED:	
DES. _____	CONST. _____
SDOT _____	PROJ. MGR. ___
RECEIVED _____	
REVISED AS BUILT _____	

ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE CITY OF SEATTLE STANDARD PLANS AND SPECIFICATIONS AND OTHER DOCUMENTS CALLED FOR IN SECTION 0-02.3 OF THE PROJECT MANUAL.

AARON B. BLAISDELL — STATE OF WASHINGTON — 41276 — REGISTERED PROFESSIONAL LAND SURVEYOR

SEATTLE PUBLIC SCHOOLS

SCALE: 1" = 20'

VIEWLANDS ELEMENTARY SCHOOL

JOB	PC ____ CO ____
	VPI # ____
	SHEET 2 OF 3

REGION NO.	STATE	FEDERAL AID PROJECT NO.	SHEET NO.
10	WA	####	4

SEE SHEET 3

SEE SHEET 3

LEGEND

GAS VALVE		WATER VALVE	
GAS METER	GM	WATER GATE VALVE CHAMBER	
SEWER MANHOLE	SMH	FIRE HYDRANT	
CLEANOUT	CO	WATER METER	WM
STORM DRAIN MANHOLE	SDMH	WATER MANHOLE	WMH
CATCH BASIN		HOSE BIB	HB
PRIVATE CATCH BASIN		IRRIGATION VALVE	IRRV
SAND BOX		ELECTRIC MANHOLE	EMH
STORM DRAINAGE INLET		ELECTRIC HANDHOLE	EHH
ROOF DRAIN	RD	ELECTRIC JUNCTION BOX	
TELEPHONE MANHOLE	TMH	POWER POLE	PP
TELEPHONE POLE	TPO	GUY ANCHOR	
BOLLARD		GUY POLE	GP
SIGN		POWER WITH LIGHT	PP
MAILBOX		LIGHT POLE	LP
CONIFEROUS TREE		AREA LIGHT	
DECIDUOUS TREE		CONCRETE RET WALL	CRW

- CENTER LINES
- RIGHT-OF-WAY LINES
- PROPERTY LINES
- PLATTED LOT LINES
- VACATED LOT LINES
- UNDERGROUND GAS LINES
- UNDERGROUND WATER LINES
- PSD — UNDERGROUND STORM DRAINAGE LINES
- PSS — UNDERGROUND SANITARY SEWER LINES
- PS — COMBINED SANITARY & STORM LINES
- SSS — SANITARY SEWER SERVICE LINES
- PSD — STORM DRAINAGE SERVICE LINES
- OHP — OVERHEAD POWER LINES
- OHC — OVERHEAD COMMUNICATIONS LINES
- BUILDING LINES
- BUILDING OVERHANG LINES
- ROCKERY
- CHAIN-LINK FENCE LINES
- WOOD FENCE LINES

N

20 10 0 20 40
SCALE IN FEET

Arborist Tree Inventory
10/21/2019

Tree Solutions Inc.
206-528-4670

VAULT SERIAL #	DATE	MARK	NATURE REVISIONS	MADE BY	CHK'D	REV'D
###						

C:\Users\deana\appdata\local\temp\AcPublish_10768\V19463-TOPO.dwg
deana Sep-18-19 2:28pm

4/10

PACE
An Engineering Services Company
11255 Kirkland Way, Suite 300
Kirkland, WA 98033
p. 425.827.2014 | f. 425.827.5043
Civil | Structural | Planning | Survey
www.paceengrs.com

INITIALS AND DATE	
DESIGNED	
CHECKED	
DRAWN	DMB 9-17-19
CHECKED	ABB 9-17-19

INITIALS AND DATE	
REVIEWED:	
DES.	CONST.
SDOT	PROJ. MGR.
RECEIVED	
REVISED AS BUILT	

ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE CITY OF SEATTLE STANDARD PLANS AND SPECIFICATIONS AND OTHER DOCUMENTS CALLED FOR IN SECTION 0-02.3 OF THE PROJECT MANUAL.

AARON D. BLASDELL — STATE OF WASHINGTON — 41278 — REGISTERED PROFESSIONAL LAND SURVEYOR — 9/9/19

SEATTLE PUBLIC SCHOOLS

SCALE: 1" = 20'

VIEWLANDS ELEMENTARY SCHOOL

JOB	PC
	CO
VPI #	
SHEET	3 OF 3

Tree Solutions Inc
Consulting Arborists

Project No. TS - 6943

Addendum to Arborist Report

TO:	Brian Fabella, Seattle Public Schools
SITE:	Viewlands Elementary School, 10525 3rd Ave NW, Seattle, WA 98177
RE:	Tree Removals – SEPA checklist
DATE:	November 12, 2020
PROJECT ARBORIST:	Holly Iosso, Registered Consulting Arborist #567 ISA Certified Arborist PN- 6298A ISA Qualified Tree Risk Assessor
ATTACHED:	Table of Trees (Revised November 12, 2020) SEPA Site Plan (Mahlum, November 12, 2020)
REFERENCED DOCS:	Original Arborist Report dated November 7, 2019

This addendum is in addition to the initial arborist report dated November 7, 2019.

Current proposed plans only address the parcel where Viewlands Elementary School is located, and do not include the portion of the parcel to the west of 5th Ave NW. Site plans propose demolition of the existing school and propose replacing it with a new building, parking lot and play area. Plans also include trail improvements along the unimproved right of way (4th and 5th Ave NW) which was requested by Seattle Department of Transportation (SDOT).

I have reviewed conceptual plans (SEPA Site Plan, Mahlum November 12, 2020) and discussed tree retention with the design team (Site Workshop and Mahlum). Current plans require 16 tree removals on site and up to 7 tree removals in the right of way. Proposed actions for each tree are noted in the attached 'Table of Trees' which I revised November 11, 2020. All other trees are proposed for retention and protection, including 8 exceptional trees.

Exceptional Tree Removal
One of the proposed tree removals is exceptional tree #301 which is a multi-stem strawberry tree (*Arbutus unedo*). This tree currently grows in the school courtyard near classrooms.

Two staff members specifically mentioned to me during my initial site visit that the heavy fruit crop from the tree during the winter was a nuisance difficult for them to manage. They remarked that children would throw the fruit at each other and track the fruit into the classrooms on their shoes.

Relocation of this tree would require hand-digging around a large root ball, establishing and bracing the root ball, and using heavy equipment (crane, flat-bed truck) to move it. This is an expensive endeavor, and is not always successful. The tree has a wide and low canopy (see photos 1, 2) which does not allow

for use of a more efficient tree spade (equipment which is intended for younger single-stem trees). Relocating mature trees is difficult and trees often die during or after the process, regardless of the extent of care taken during tree relocation. This can be due to the tree's lack of ability to adapt to its new environmental conditions, loss of roots during root ball digging, drying out of the root ball during staging or movement, or infection from a secondary pathogen that is able to infect the tree when it is under increased stress.

In my opinion, I do not believe this specimen warrants the effort of moving it. It is a common landscape tree seen in Seattle, and this specimen is not particularly noteworthy. For this situation, I believe a better long-term approach to canopy management is to replace the tree with several younger trees. Younger trees will more quickly establish and thrive in their new environments, providing a healthier canopy for decades in the future.

Error Correction
The original arborist report mistakenly reported that there are 4 exceptional beaked hazelnut (*Corylus cornuta*) trees on the south end of the property. These trees are present and are proposed for retention, but they are not large enough to be considered exceptional by the Director's Rule 16-2008. These designations have been revised in the attached table of trees.

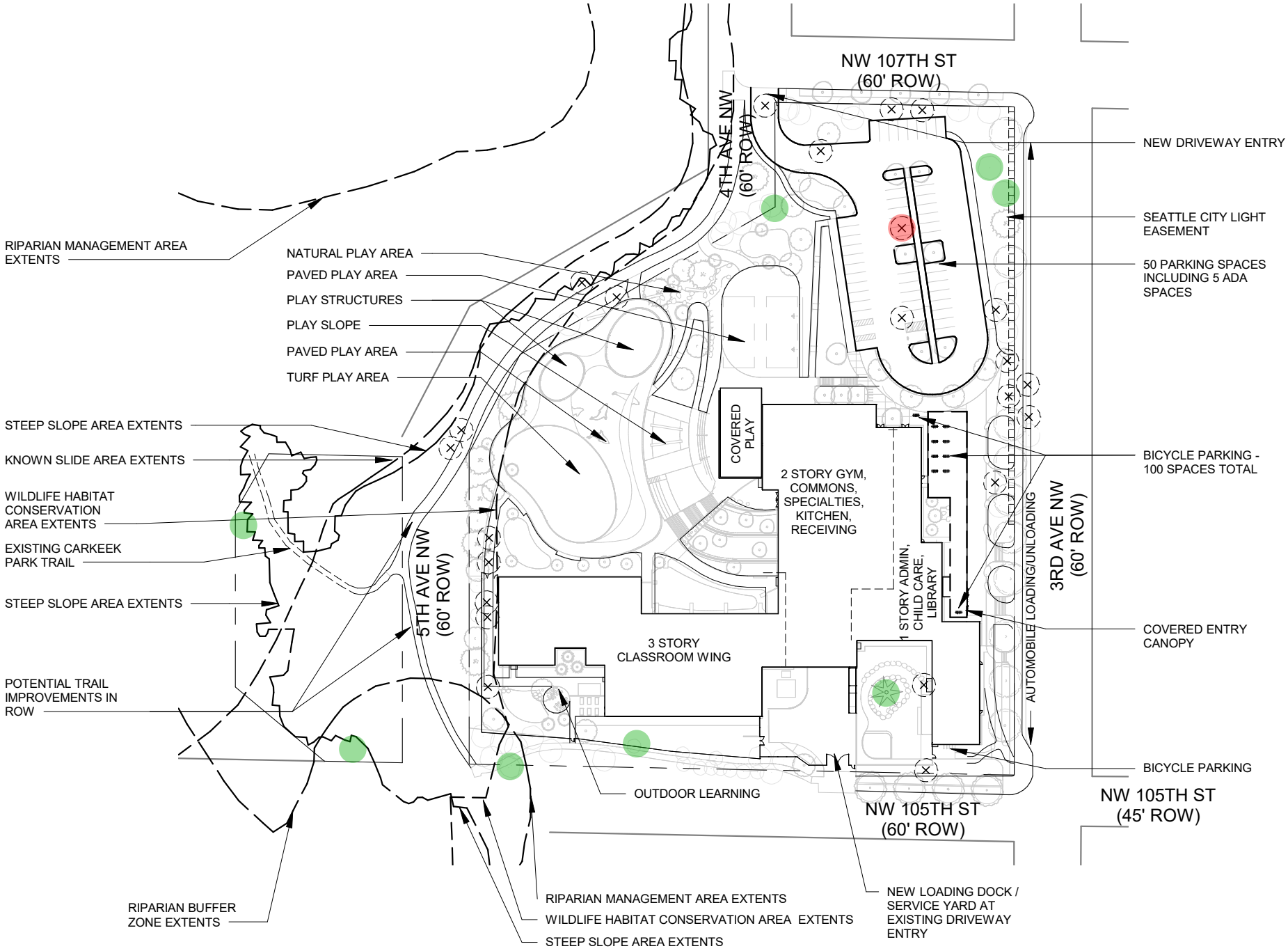
Respectfully submitted,

Holly Iosso,
Sr. Arborist

Photographs

Photo 1. Tree 301 (exceptional) is proposed for removal

Photo 2. Tree 301 (exceptional) is proposed for removal.



mahlum

SEPA SITE PLAN
VIEWLANDS ELEMENTARY SCHOOL
SEATTLE PUBLIC SCHOOLS

Exceptional Tree (Retained)

Exceptional Tree (Removed)

Tree Solutions Inc
Consulting Arborists

Table of Trees

Viewlands Elementary
Seattle, WA

Arborist: H. Iosso / T. Bunton
Date of Inventory: 10.1.2019 AND 10.21.2019
Table REVISED 11.11.2020

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.

							Dripline Radius (feet)								
Tree ID	**Scientific Name**	**Common Name**	**DSH** (inches)	**DSH Multistem**	**Health Condition**	**Structural Condition**	**N**	**E**	**S**	**W**	**Exceptional Threshold**	**Exceptional by Size**	**Proposed Action**	**Construction Impacts**	**Notes**
300	*Prunus cerasifera*	Cherry plum	6.3	2.5,3,3,4	Good	Fair	9.8	9.3	12.3	9.8	*21.0*	-	Remove	Parking lot (Proposed)	
301	*Arbutus unedo*	Strawberry tree	11.7	4,2,3,3,2.5,3.5,3.5,2,3.8,2.8,3.3,2.5,2.5,2,2,2.5,2.5	Good	Good	13.5	12.5	11.5	12.5	*10.2*	Exceptional	Remove	Parking lot (Proposed)	
302	*Pinus strobus*	Eastern white pine	7.7		Good	Good	13.3	11.8	12.3	12.3	*30.0*	-	Remove	grading	
303	*Betula pendula*	European white birch	11.1		Good	Good	12.5	14.5	13.5	12.5	*24.0*	-	Remove	grading	
304	*Pinus sylvestris*	Scots pine	8.2		Good	Good	10.3	9.3	11.3	10.3	*24.0*	-			
305	*Betula pendula*	European white birch	15.8		Good	Good	14.7	10.7	16.7	16.7	*24.0*	-	Remove	grading	
306	*Cedrus deodara*	Deodar cedar	12.0		Good	Good	11.5	14.5	13.5	6.5	*30.0*	-			
307	*Cedrus deodara*	Deodar cedar	13.0		Good	Good	15.5	13.5	12.5	14.5	*30.0*	-			
308	*Pinus sylvestris*	Scots pine	27.0		Good	Good	15.1	22.1	27.1	29.1	*24.0*	Exceptional			past prunung for wires
309	*Thuja plicata*	Western redcedar	34.8		Good	Good	18.5	21.5	19.5	20.5	*30.0*	Exceptional			
310	*Acer platanoides*	Norway maple	9.0		Good	Good	12.4	15.4	15.4	14.4	*30.0*	-			
311	*Acer platanoides*	Norway maple	9.0		Good	Good	13.4	12.4	13.4	14.4	*30.0*	-			
312	*Acer platanoides*	Norway maple	11.9		Good	Good	17.5	16.5	16.5	16.5	*30.0*	-	Possible Removal	Parking lot curb (Proposed)	

Table of Trees

Viewlands Elementary
Seattle, WA

Arborist: H. Iosso / T. Bunton
Date of Inventory: 10.1.2019 AND 10.21.2019
Table REVISED 11.11.2020

Tree ID	Scientific Name	Common Name	DSH (inches)	DSH Multistem	Health Condition	Structural Condition	N	E	S	W	Exceptional Threshold	Exceptional by Size	Proposed Action	Construction Impacts	Notes
313	*Acer platanoides*	Norway maple	11.7		Good	Good	18.5	15.5	15.5	16.5	*30.0*	-	Possible Removal	Parking lot curb (Proposed)	girdling roots
314	*Acer platanoides*	Norway maple	9.3		Good	Good	15.4	19.4	10.4	16.4	*30.0*	-			
315	*Cedrus deodara*	Deodar cedar	19.6		Good	Good	11.8	18.8	20.8	19.8	*30.0*	-			
316	*Thuja plicata*	Western redcedar	28.9		Fair	Fair	16.2	13.2	17.2	16.2	*30.0*	-	Remove	Parking lot (Proposed)	2 ft from foundation, low vigor
317	*Pseudotsuga menziesii*	Douglas-fir	29.3		Good	Good	20.2	23.2	23.2	17.2	*30.0*	-			
318	*Pseudotsuga menziesii*	Douglas-fir	27.3	23.8,13.3	Good	Good	18.1	9.1	23.1	25.1	*30.0*	-			
319	*Pinus contorta var. contorta*	Shore pine	9.0		Fair	Fair	9.4	9.4	9.4	8.4	*12.0*	-	Remove	grading playground	not accessible, sequoia pitch moth
320	*Pinus contorta var. contorta*	Shore pine	10.0		Fair	Fair	14.4	15.4	9.4	10.4	*12.0*	-	Remove	grading playground	not accessible, sequoia pitch moth
321	*Pinus contorta var. contorta*	Shore pine	8.0		Fair	Poor	8.3	15.3	8.3	10.3	*12.0*	-			not accessible, sequoia pitch moth
322	*Pinus contorta var. contorta*	Shore pine	9.0		Fair	Fair	8.4	13.4	9.4	10.4	*12.0*	-	Remove	grading playground	not accessible, sequoia pitch moth
323	*Pinus contorta var. contorta*	Shore pine	8.0		Fair	Fair	9.3	10.3	9.3	8.3	*12.0*	-	Remove	grading playground	not accessible, sequoia pitch moth
324	*Pinus contorta var. contorta*	Shore pine	10.0	6,8	Fair	Fair	9.4	9.4	11.4	9.4	*12.0*	-			not accessible, sequoia pitch moth
325	*Pseudotsuga menziesii*	Douglas-fir	9.0		Good	Good	13.4	13.4	13.4	13.4	*30.0*	-	Remove	grading playground	not accessible
326	*Pinus monticola*	Western white pine	23.4		Good	Good	22.0	16.0	15.0	23.0	*24.0*	-			inactive freeze thaw crack on s side
327	*Pseudotsuga menziesii*	Douglas-fir	19.9		Good	Good	13.8	14.8	19.8	19.8	*30.0*	-			
328	*Pseudotsuga menziesii*	Douglas-fir	22.2		Good	Good	15.9	11.9	16.9	14.9	*30.0*	-			
329	*Pseudotsuga menziesii*	Douglas-fir	24.4		Good	Good	22.0	27.0	15.0	17.0	*30.0*	-			
330	*Abies grandis*	Grand fir	6.6		Good	Good	11.3	7.3	9.3	7.3	*24.0*	-			

Table of Trees

Viewlands Elementary
Seattle, WA

Arborist: H. Iosso / T. Bunton
Date of Inventory: 10.1.2019 AND 10.21.2019
Table REVISED 11.11.2020

Tree ID	Scientific Name	Common Name	DSH (inches)	DSH Multistem	Health Condition	Structural Condition	N	E	S	W	Exceptional Threshold	Exceptional by Size	Proposed Action	Construction Impacts	Notes
331	*Pseudotsuga menziesii*	Douglas-fir	11.0		Good	Good	10.5	12.5	12.5	11.5	*30.0*	-			
332	*Thuja plicata*	Western redcedar	16.9		Good	Good	12.7	12.7	13.7	12.7	*30.0*	-			
333	*Arbutus menziesii*	Pacific madrone	9.0		Good	Good	8.4	10.4	8.4	9.4	*6.0*	Exceptional			growing up against the fence
334	*Populus tremuloides*	Quaking aspen	6.2		Fair	Fair	7.3	7.3	7.3	7.3	*12.0*	-			no leaf seasonal
335	*Populus tremuloides*	Quaking aspen	7.0	4.9,5	Fair	Fair	9.3	9.3	7.3	7.3	*12.0*	-			no leaf seasonal
336	*Corylus cornuta*	Beaked hazelnut	12.6	3.2,2.2,4.2,3.4,2.5,1.6,4.7,4.2.8	Good	Good	9.5	12.5	11.5	12.5	*30.0*				adj to fence
337	*Populus tremuloides*	Quaking aspen	7.6	6,4.7	Good	Good	8.3	10.3	11.3	7.3	*12.0*	-			
338	*Populus tremuloides*	Quaking aspen	6.1	4.7,3.9	Good	Good	8.3	8.3	8.3	8.3	*12.0*	-			
339	*Populus tremuloides*	Quaking aspen	6.1		Good	Good	8.3	8.3	8.3	8.3	*12.0*	-			
340	*Populus tremuloides*	Quaking aspen	6.1		Good	Good	8.3	8.3	8.3	8.3	*12.0*	-			
341	*Corylus cornuta*	Beaked hazelnut	9.0	2.7,2.4,3,3.3,2.8,3.5,3,2.6,3.5	Good	Good	12.4	12.4	12.4	12.4	*30.0*				
342	*Pseudotsuga menziesii*	Douglas-fir	15.0		Good	Good	13.6	12.6	11.6	12.6	*30.0*	-			
343	*Corylus cornuta*	Beaked hazelnut	8.0	2,2.7,2.4,3.3,3.5,3.5,3.3	Good	Good	10.3	12.3	12.3	12.3	*30.0*				
344	*Corylus cornuta*	Beaked hazelnut	7.6	2.8,2.6,3,2.7,3.5,3,2.5,	Good	Good	10.3	12.3	12.3	12.3	*30.0*				
345	*Chamaecyparis pisifera*	Sawara cypress	16.7	10.7,8.5,7.1,6.5	Good	Good	10.7	9.7	9.7	9.7	*26.9*	-	Remove		Filifera'
346	*Acer palmatum*	Japanese maple	8.4		Good	Good	12.4	10.4	12.4	11.4	*12.0*	-	Remove	grading	
347	*Prunus cerasifera*	Cherry plum	13.1	3,6.6,2.2,4.7,9.6	Good	Fair	12.5	2.5	14.5	11.5	*21.0*	-	Remove	demo/new structure	

Tree ID	Scientific Name	Common Name	DSH (inches)	DSH Multistem	Health Condition	Structural Condition	N	E	S	W	Exceptional Threshold	Exceptional by Size	Proposed Action	Construction Impacts	Notes
348	*Picea pungens*	Colorado spruce	37.6	27,26.2	Good	Good	13.6	13.6	17.6	14.6	*23.1*	Exceptional			seam w good response growth
380	*Acer macrophyllum*	Bigleaf maple	32.3		Fair	Fair	29.3	26.3	28.3	16.3	*30.0*	Exceptional			Kretzschmaria; old tear out on west side. On inside of fence. Recommend advanced testing if development is planned nearby
381	*Acer macrophyllum*	Bigleaf maple	9.2		Fair	Poor	13.4	14.4	10.4	13.4	*30.0*	-			Dead top; recovering. Grows into fence
382	*Acer macrophyllum*	Bigleaf maple	10.7		Fair	Fair	21.4	8.4	4.4	10.4	*30.0*	-			Grows into fence.
383	*Acer macrophyllum*	Bigleaf maple	6.3		Fair	Fair	4.3	4.3	4.3	4.3	*30.0*	-			
384	*Alnus rubra*	Red alder	9.3		Fair	Fair	7.4	14.4	18.4	6.4	*Not Exceptional unless in grove*	-			Bleeding lesions on bark. Likely phytopthora canker. Minor deadwood in canopy.
385	*Alnus rubra*	Red alder	10.2		Fair	Fair	14.4	7.4	20.4	21.4	*Not Exceptional unless in grove*	-			Bleeding lesions on bark. Likely phytopthora canker. Minor deadwood in canopy.
386	*Alnus rubra*	Red alder	9.7		Fair	Fair	15.4	15.4	8.4	17.4	*Not Exceptional unless in grove*	-			Bleeding lesions on bark. Likely phytopthora canker. Minor deadwood in canopy.
387	*Alnus rubra*	Red alder	8.5		Fair	Fair	20.4	14.4	4.4	16.4	*Not Exceptional unless in grove*	-			Bleeding lesions on bark. Likely phytopthora canker. Minor deadwood in canopy.
388	*Acer macrophyllum*	Bigleaf maple	13.2		Fair	Good	19.6	18.6	13.6	14.6	*30.0*	-			Area used for camping. Many needles on ground. Trees hacked at 3 ft.
389	*Acer macrophyllum*	Bigleaf maple	18.7		Good	Good	12.8	23.8	15.8	13.8	*30.0*	-			Grows uphill with adventitious rooting into the slope.

Table of Trees

Viewlands Elementary
Seattle, WA

Arborist: H. Iosso / T. Bunton
Date of Inventory: 10.1.2019 AND 10.21.2019
Table REVISED 11.11.2020

Tree ID	Scientific Name	Common Name	DSH (inches)	DSH Multistem	Health Condition	Structural Condition	N	E	S	W	Exceptional Threshold	Exceptional by Size	Proposed Action	Construction Impacts	Notes
390	*Acer macrophyllum*	Bigleaf maple	28.0		Good	Good	13.2	15.2	18.2	16.2	*30.0*	-			Estimated DSH.
391	*Prunus emarginata var. mollis*	Bitter cherry	15.0	14.4,4.1	Good	Good	13.6	8.6	12.6	12.6	*Not Exceptional except in grove*	-			
392	*Prunus emarginata var. mollis*	Bitter cherry	8.7		Good	Good	8.4	8.4	8.4	8.4	*Not Exceptional except in grove*	-			
393	*Prunus emarginata var. mollis*	Bitter cherry	12.0		Good	Good	10.5	10.5	10.5	10.5	*Not Exceptional except in grove*	-			Not tagged. Estimated DSH due to access.
394	*Prunus emarginata var. mollis*	Bitter cherry	12.0		Good	Good	10.5	10.5	15.5	10.5	*Not Exceptional except in grove*	-			Not tagged. Estimated DSH due to access.
395	*Prunus emarginata var. mollis*	Bitter cherry	13.0		Fair	Fair	15.5	15.5	10.5	10.5	*Not Exceptional except in grove*	-			Not tagged. Estimated DSH due to access.
396	*Acer macrophyllum*	Bigleaf maple	19.0		Good	Poor	11.8	21.8	18.8	19.8	*30.0*	-			Extensive decay from tear-out on west side.
397	*Acer macrophyllum*	Bigleaf maple	33.0		Good	Fair	27.4	28.4	17.4	15.4	*30.0*	Exceptional			Tear-outs and associated decay present.
398	*Prunus emarginata var. mollis*	Bitter cherry	15.3	9,12.4	Fair	Fair	13.6	19.6	9.6	7.6	*Not Exceptional except in grove*	-			
399	*Pseudotsuga menziesii*	Douglas-fir	9.3		Good	Good	8.4	10.4	9.4	8.4	*30.0*	-			
400	*Prunus emarginata var. mollis*	Bitter cherry	7.9		Fair	Fair	5.3	8.3	5.3	5.3	*Not Exceptional except in grove*	-			

Tree ID	Scientific Name	Common Name	DSH (inches)	DSH Multistem	Health Condition	Structural Condition	N	E	S	W	Exceptional Threshold	Exceptional by Size	Proposed Action	Construction Impacts	Notes
401	*Robinia pseudoacacia*	Black locust	29.4	19.5,17,14	Good	Good	25.2	27.2	35.2	31.2	*30.0*	-			Minor dead wood in canopy.
402	*Robinia pseudoacacia*	Black locust	16.8	10.3,9.7,9.1	Good	Good	10.7	17.7	24.7	18.7	*30.0*	-			
403	*Robinia pseudoacacia*	Black locust	12.6		Good	Good	20.5	20.5	5.5	19.5	*30.0*	-			
A	*Acer platanoides*	Norway maple	3.5		Good	Good	--	--	--	6.1	*30.0*	-	Remove - SDOT	Removal of mid-block curb bulb	
B	*Acer platanoides*	Norway maple	4.0		Good	Good	--	--	--	6.2	*30.0*	-	Remove - SDOT	Removal of mid-block curb bulb	
C	*Acer circinatum*	Vine maple	10.1	7,5.8,4.5,	Good	Fair	--	--	8.4	--	*8.0*	Exceptional			
D	*Pseudotsuga menziesii*	Douglas-fir	28.0		Good	Good	--	--	19.2	--	*30.0*	-			
E	*Pseudotsuga menziesii*	Douglas-fir	24.6		Good	Good	--	--	17.0	--	*30.0*	-			
F	*Pseudotsuga menziesii*	Douglas-fir	21.0		Good	Good	--	--	19.9	--	*30.0*	-			
G	*Acer macrophyllum*	Bigleaf maple	15.6	8.8,9.7,8.5	Fair	Poor	--	--	16.7	--	*30.0*	-	Remove - SDOT	condition / fence	low risk; growing into fence, dieback and some dead wood; seam at base; split would occur parallel to fence
H	*Pseudotsuga menziesii*	Douglas-fir	23.5		Good	Good	--	--	19.0	--	*30.0*	-			
I	*Pseudotsuga menziesii*	Douglas-fir	20.3		Good	Good	--	--	17.8	--	*30.0*	-			
J	*Crataegus monogyna*	Common hawthorn	9.8	8,4,4	Good	Fair	--	10.4	--	--	*16.2*	-			unsure of location
K	*Acer macrophyllum*	Bigleaf maple	27.3	13.3,8.7,11.6, 7.4,17.4	Good	Fair	--	34.1	--	--	*30.0*	-			
L	*Pseudotsuga menziesii*	Douglas-fir	16.9		Good	Good	--	19.7	--	--	*30.0*	-	Possible Removal- SDOT	Path improvements	

Table of Trees

Viewlands Elementary
Seattle, WA

Arborist: H. Iosso / T. Bunton
Date of Inventory: 10.1.2019 AND 10.21.2019
Table REVISED 11.11.2020

Tree ID	Scientific Name	Common Name	DSH (inches)	DSH Multistem	Health Condition	Structural Condition	N	E	S	W	Exceptional Threshold	Exceptional by Size	Proposed Action	Construction Impacts	Notes
M	*Pseudotsuga menziesii*	Douglas-fir	18.6		Good	Good	--	18.8	--	--	*30.0*	-	Possible Removal-SDOT	Path improvements	
N	*Pseudotsuga menziesii*	Douglas-fir	16.0		Good	Good	--	18.7	--	--	*30.0*	-			
O	*Pseudotsuga menziesii*	Douglas-fir	31.2	21.8,22.3	Good	Fair	13.3	--	--	--	*30.0*	Exceptional			
P	*Populus tremuloides*	Aspen	6.0		Good	Good	6.3	--	--	--	*12.0*	-			
Q	*Populus tremuloides*	Aspen	6.0		Good	Good	6.3	--	--	--	*12.0*	-			
R	*Populus tremuloides*	Aspen	6.0		Good	Good	6.3	--	--	--	*12.0*	-			
S	*Thuja plicata*	Western redcedar	12.8		Good	Good	12.5	11.5	6.5	13.5	*30.0*	-			
T	*Pseudotsuga menziesii*	Douglas-fir	16.4		Good	Good	10.7	9.7	11.7	12.7	*30.0*	-	Remove - SDOT	Driveway entrance 4th Ave NW / NW 107th st	
U	*Acer macrophyllum*	Bigleaf maple	10.0		Fair	Fair	25.4	--	--	--	*30.0*	-			
V	*Acer macrophyllum*	Bigleaf maple	20.0		Fair	Fair	25.8	--	--	--	*30.0*	-			
W	*Acer macrophyllum*	Bigleaf maple	14.0		Fair	Fair	25.6	--	--	--	*30.0*	-			
X	*Acer macrophyllum*	Bigleaf maple	10.0		Fair	Fair	25.4	--	--	--	*30.0*	-			
Y	*Acer macrophyllum*	Bigleaf maple	15.4	9,12.5	Fair	Fair	25.6	--	--	--	*30.0*	-			
Z	*Acer macrophyllum*	Bigleaf maple	26.9	25,10	Fair	Fair	26.1	--	--	--	*30.0*	-			
AA	*Acer macrophyllum*	Bigleaf maple	22.0		Fair	Fair	25.9	--	--	--	*30.0*	-			
AB	*Acer macrophyllum*	Bigleaf maple	19.2		Fair	Fair	28.8	28.8	--	--	*30.0*	-			

Table of Trees

Viewlands Elementary
Seattle, WA

Arborist: H. Iosso / T. Bunton
Date of Inventory: 10.1.2019 AND 10.21.2019
Table REVISED 11.11.2020

Tree ID	Scientific Name	Common Name	DSH (inches)	DSH Multistem	Health Condition	Structural Condition	N	E	S	W	Exceptional Threshold	Exceptional by Size	Proposed Action	Construction Impacts	Notes
AC	*Acer macrophyllum*	Bigleaf maple	14.0		Fair	Fair	28.6	28.6	--	--	*30.0*	-			
AD	*Acer macrophyllum*	Bigleaf maple	19.0		Fair	Fair	28.8	28.8	--	--	*30.0*	-			
AE	*Acer macrophyllum*	Bigleaf maple	11.0		Fair	Fair	28.5	28.5	--	--	*30.0*	-			
AF	*Acer macrophyllum*	Bigleaf maple	21.0		Fair	Fair	28.9	28.9	--	--	*30.0*	-			
AG	*Acer macrophyllum*	Bigleaf maple	24.0		Fair	Fair	29.0	29.0	--	--	*30.0*	-			
AH	*Acer macrophyllum*	Bigleaf maple	7.7		Fair	Fair	28.3	28.3	--	--	*30.0*	-			
SA1	*Sorbus aucuparia*	Mountain ash											Remove - SDOT	Per SDOT request - invasive species / path improvements	Not assessed by arborist - out of scope

Appendix C: Environmentally Critical Areas Assesment

ESA

5309 Shilshole Avenue NW
Suite 200
Seattle, WA 98107
206.789.9658 phone
206.789.9684 fax

www.esassoc.com

memorandum

date October 10, 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);

- King County iMap (King County, 2020);
- U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) Mapper (USFWS, 2020);
- National Resource Conservation Service (NRCS), U.S. Department of Agriculture (USDA) Web Soil Survey (WSS) (NRCS and USDA, 2020);
- Washington Department of Fish and Wildlife (WDFW) Priority Habitats and Species (PHS) on the Web (WDFW, 2020a);
- WDFW SalmonScape Mapping Application (WDFW, 2020b);
- Washington Department of Natural Resources (WDNR) Wetlands of High Conservation Value mapping (2020);
- Seattle Public Utilities (SPU) Broadview Green Grid – Piper's Creek Watershed NDS Projects Vicinity Map (2003a);
- SPU Broadview Green Grid Project Construction Plans (SPU, 2003b);
- *Broadview Green Grid Natural Drainage System Performance Monitoring* (University of Washington (UW), 2009); and
- *Hydrologic Monitoring of the Seattle Ultra-Urban Stormwater Management Projects* (UW, 2001).

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 GAYNOR, Inc., the Viewlands Cascade Natural Drainage System (referred to in this memo as Viewlands Swale) was proposed by Peggy Gaynor and designed by GAYNOR. Inc. in collaboration with Seattle

Public Utilities (SPU) and Viewlands school administrators to simulate a natural gravel-bed stream reach. Construction completed in 2000 (Gaynor, 2020). All native planting was done by Viewlands School students, SPU and school staff and community volunteers. Viewlands Cascade (Viewlands Swale) became the first prototype for SPU's cascade-style SeaStreets. Prior to 2000, the swale was an asphalt-lined ditch with high velocity flows that would over-shoot the outfall slant drain and cause severe steep slope erosion and property damage in Carkeek Park. 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 spectablis*), 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 staging is the main activity proposed within the mapped biodiversity area and corridor, there is not expected to be any timing restrictions or other requirements imposed by WDFW for the proposed project (Rohloff, personal communication, June 19, 2020). SPS will continue to work with WDFW and the City of Seattle to ensure that any project impacts resulting from the proposed trail improvements and the sewer and stormwater pipeline connections in the southwest corner of the project area to the existing lines will meet the requirements outlined in the City of Seattle environmentally critical areas ordinance (SMC 25.09), including any mitigation and monitoring requirements imposed during project permitting. Disturbance in this area will be minimized to the greatest extent possible and limited to the pipeline and trail improvements. No trees will be removed as a result of these efforts.

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. Additionally, the project will not impact these swales and no water from the school will be directed to these swales.

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

City of Seattle. 2020a. Department of Construction & Inspections (SDCI) GIS mapping. Available at: http://seattlecitygis.maps.arcgis.com/apps/webappviewer/index.html?id=f822b2c6498c4163b0cf908e2241e9c2. Accessed January 2020.

City of Seattle. 2020b. Development Service Office (DSO) Water & Sewer GIS Mapping. Available at: http://gisrevprxy.seattle.gov/wab_ext/DSOResearch_Ext/. Accessed January 2020.

Corps (U.S. Army Corps of Engineers). 2010. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region.* Version 2. Wetlands Regulatory Assistance Program. May 2010. ERDC/EL TR-10-3. http://www.usace.army.mil/CECW/Documents/cecwo/reg/west_mt_finalsupp.pdf.

Gaynor, P. 2020. Personal communication. Viewlands Elementary School Project Comments from Peggy Gaynor. August 28, 2020.

Hruby, T. 2014. Washington State Wetland Rating System for Western Washington: 2014 Update. Washington Department of Ecology (Publication #14-06-029). Olympia, WA.

King County. 2020. King County iMap. Available at: https://gismaps.kingcounty.gov/iMap/ . Accessed February 2020.

Rohloff, Ezekiel. 2020. *Email communications re: PHS mapped biodiversity area and corridor development restrictions for proposed Viewlands Elementary project*. June 19, 2020.

Seattle Public Utilities (SPU). 2003a. Broadview Green Grid – Piper's Creek Watershed NDS Projects Vicinity Map. Available at: https://www.seattle.gov/Documents/Departments/SPU/EnvironmentConservation/MapofPipersCreek.pdf. Accessed: February 2020

SPU. 2003b. Broadview Green Grid 4th Ave NW to Phinney Ave N Project Construction Plans. Available at: https://www.seattle.gov/Documents/Departments/SPU/EnvironmentConservation/BroadviewConstructionPlans.pdf. Accessed: February 2020.

USDA (U.S. Department of Agriculture), NRCS (Natural Resources Conservation Service). 2020. *Web Soil Survey*. Available at: http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx. Accessed: January 2020.

USFWS (U.S. Fish and Wildlife Service). 2020. *National Wetlands Inventory, Wetlands Mapper.* Available at: http://www.fws.gov/wetlands/Data/Mapper.html. Accessed: January 2020.

University of Washington (UW). 2001. *Hydrologic Monitoring of the Seattle Ultra-Urban Stormwater Management Projects Water Resources Series Technical Report No. 166*. Department of Civil Engineering. April 2001.

UW. 2009. *Broadview Green Grid Natural Drainage System Performance Monitoring*. Prepared for Seattle Public Utilities. Department of Civil and Environmental Engineering. May 2009.

Washington Department of Fish and Wildlife (WDFW). 2020. Priority Habitat and Species on the Web. Available at: http://wdfw.wa.gov/mapping/phs/. Accessed: January 2020.

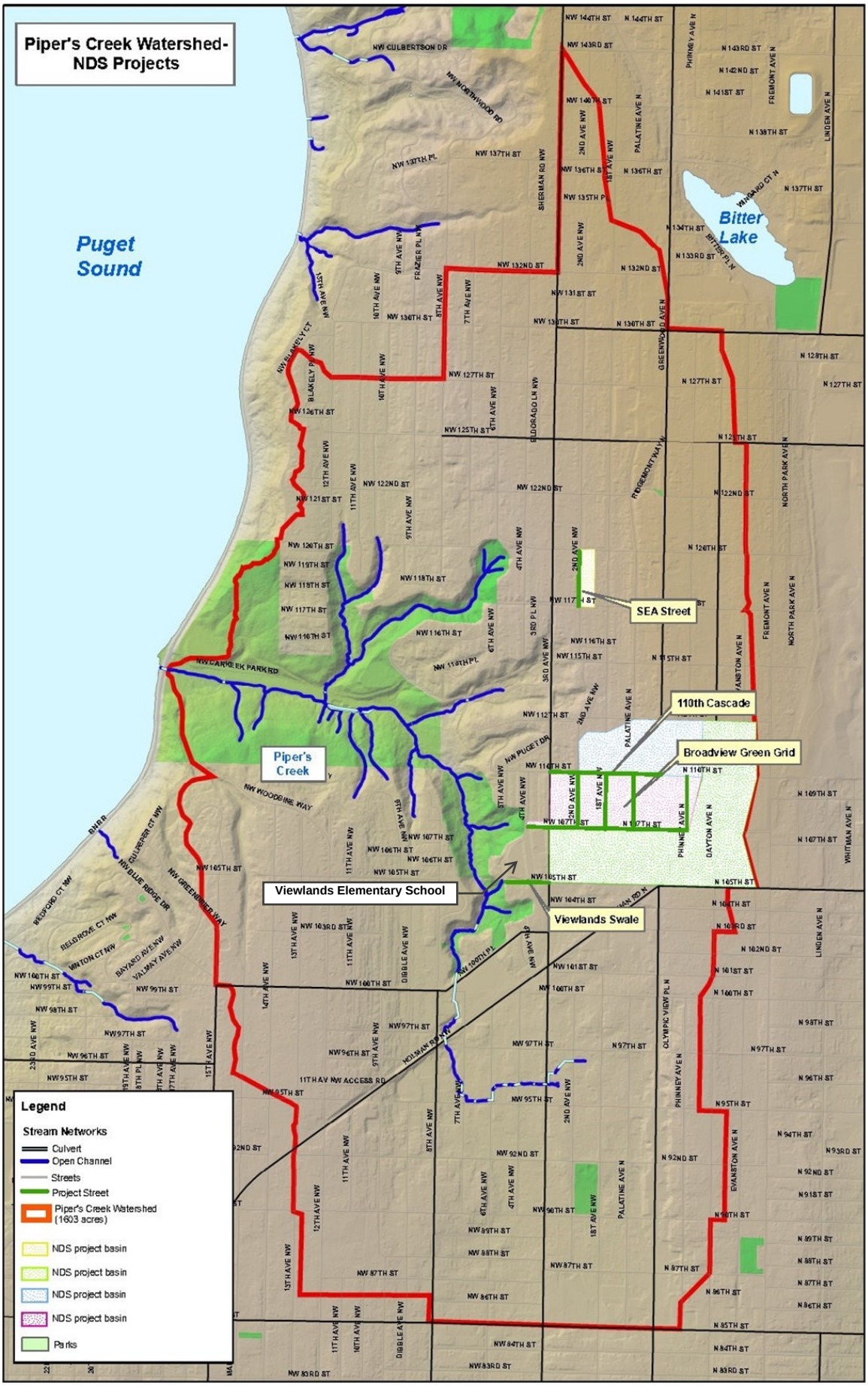
WDFW. 2020b. SalmonScape Mapping Application. Available at: https://apps.wdfw.wa.gov/salmonscape/map.html. Accessed February 2020.

SOURCE: ESRI, 2020; ESA, 2020

D190416 SPS Viewlands Elementary

Figure 1
Vicinity Map
Seattle, Washington

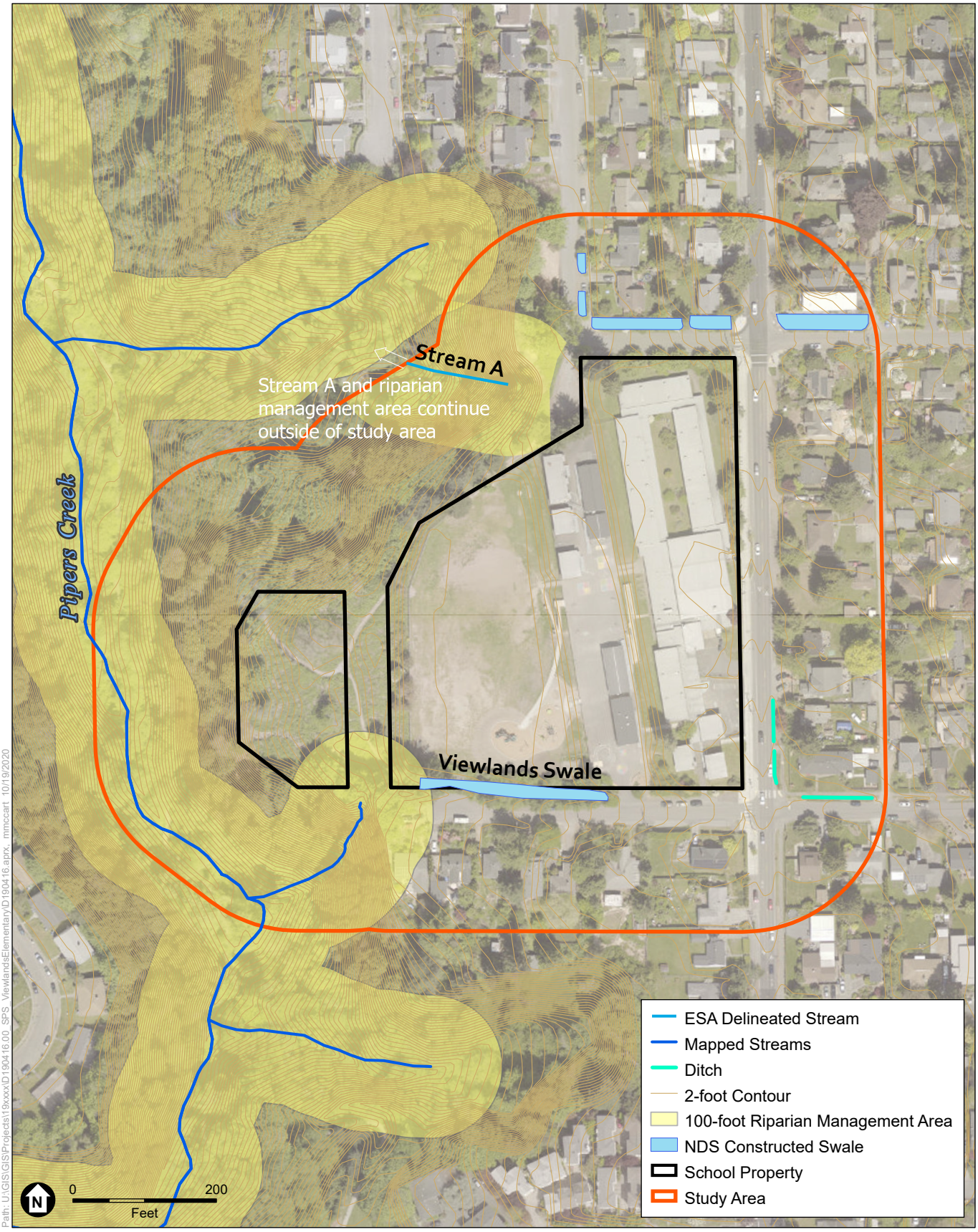
ESA



SOURCE: SPU, 2003

Figure 2

SPU Broadview Green Grid – Piper's Creek Watershed Natural Drainage System (NDS) Vicinity Map
Seattle, Washington



SOURCE: King County, 2019; ESA, 2020

D190416 SPS Viewlands Elementary

Figure 3
Study Area Streams, Riparian Management Areas, and Stormwater Features
Seattle, Washington

ESA

SOURCE: ESA, 2020 D190416 SPS Viewlands Elementary

Photo 1
Looking at Stream A.

SOURCE: ESA, 2020 D190416 SPS Viewlands Elementary

Photo 2
Looking west across Stream A outside of study area.

SOURCE: ESA, 2020 D190416 SPS Viewlands Elementary

Photo 3
Looking at the east end of Viewlands Swale.

SOURCE: ESA, 2020 D190416 SPS Viewlands Elementary

Photo 4
Looking at west end of Viewlands Swale.

SOURCE: ESA, 2020 D190416 SPS Viewlands Elementary

Photo 5
Looking north across swales located adjacent to 4th Avenue NW.

SOURCE: ESA, 2020 D190416 SPS Viewlands Elementary

Photo 6
Looking across west end of swale adjacent to NW 107th Street.

SOURCE: ESA, 2020 D190416 SPS Viewlands Elementary

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

SOURCE: ESA, 2020 D190416 SPS Viewlands Elementary

Photo 8
Looking across southwest portion of study area.

SOURCE: ESA, 2020 D190416 SPS Viewlands Elementary

Photo 9
Looking across central study area.

SOURCE: ESA, 2020 D190416 SPS Viewlands Elementary

Photo 10
Looking across northwestern study area.

SOURCE: ESA, 2020

D190416 SPS Viewlands Elementary

Photo 11
Looking across the northern study area.

SOURCE: ESA, 2020

D190416 SPS Viewlands Elementary

Photo 12
Looking across the eastern study area.

SOURCE: ESA, 2020 D190416 SPS Viewlands Elementary

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

Appendix D: Greenhouse Gas Emissions Worksheet

Section I: Buildings

Type (Residential) or Principal Activity (Commercial)	# Units	Square Feet (in thousands of square feet)	Emissions Per Unit or Per Thousand Square Feet (MTCO2e)			**Lifespan Emissions (MTCO2e)**
			Embodied	Energy	Transportation	
Single-Family Home	0	0	98	672	792	**0**
Multi-Family Unit in Large Building	0	0	33	357	766	**0**
Multi-Family Unit in Small Building	0	0	54	681	766	**0**
Mobile Home	0	0	41	475	709	**0**
Education	0	103.8	39	646	361	**108521**
Food Sales	0	0.0	39	1,541	282	**0**
Food Service	0	3.0	39	1,994	561	**7781**
Health Care Inpatient	0	0.0	39	1,938	582	**0**
Health Care Outpatient	0	0.0	39	737	571	**0**
Lodging	0	0.0	39	777	117	**0**
Retail (Other Than Mall)	0	0.0	39	577	247	**0**
Office	0	0.0	39	723	588	**0**
Public Assembly	0	0.0	39	733	150	**0**
Public Order and Safety	0	0.0	39	899	374	**0**
Religious Worship	0	0.0	39	339	129	**0**
Service	0	0.0	39	599	266	**0**
Warehouse and Storage	0	0.0	39	352	181	**0**
Other	0	0.0	39	1,278	257	**0**
Vacant		0.0	39	162	47	**0**

Section II: Pavement

Pavement		96.30				**4815**

Total Project Emissions: **121117**

Definition of Building Types

Type (Residential) or Principal Activity (Commercial)	Description
Single-Family Home	Unless otherwise specified, this includes both attached and detached buildings
Multi-Family Unit in Large Building	Apartments in buildings with more than 5 units
Multi-Family Unit in Small Building	Apartments in building with 2-4 units
Mobile Home	
Education	Buildings used for academic or technical classroom instruction, such as elementary, middle, or high schools, and classroom buildings on college or university campuses. Buildings on education campuses for which the main use is not classroom are included in the category relating to their use. For example, administration buildings are part of "Office," dormitories are "Lodging," and libraries are "Public Assembly."
Food Sales	Buildings used for retail or wholesale of food.
Food Service	Buildings used for preparation and sale of food and beverages for consumption.
Health Care Inpatient	Buildings used as diagnostic and treatment facilities for inpatient care.
Health Care Outpatient	Buildings used as diagnostic and treatment facilities for outpatient care. Doctor's or dentist's office are included here if they use any type of diagnostic medical equipment (if they do not, they are categorized as an office building).
Lodging	Buildings used to offer multiple accommodations for short-term or long-term residents, including skilled nursing and other residential care buildings.
Retail (Other Than Mall)	Buildings used for the sale and display of goods other than food.
Office	Buildings used for general office space, professional office, or administrative offices. Doctor's or dentist's office are included here if they do not use any type of diagnostic medical equipment (if they do, they are categorized as an outpatient health care building).
Public Assembly	Buildings in which people gather for social or recreational activities, whether in private or non-private meeting halls.
Public Order and Safety	Buildings used for the preservation of law and order or public safety.
Religious Worship	Buildings in which people gather for religious activities, (such as chapels, churches, mosques, synagogues, and temples).
Service	Buildings in which some type of service is provided, other than food service or retail sales of goods
Warehouse and Storage	Buildings used to store goods, manufactured products, merchandise, raw materials, or personal belongings (such as self-storage).
Other	Buildings that are industrial or agricultural with some retail space; buildings having several different commercial activities that, together, comprise 50 percent or more of the floorspace, but whose largest single activity is agricultural, industrial/ manufacturing, or residential; and all other miscellaneous buildings that do not fit into any other category.
Vacant	Buildings in which more floorspace was vacant than was used for any single commercial activity at the time of interview. Therefore, a vacant building may have some occupied floorspace.

Sources: .....

Residential 2001 Residential Energy Consumption Survey
Square footage measurements and comparisons
http://www.eia.doe.gov/emeu/recs/sqft-measure.html

Commercial Commercial Buildings Energy Consumption Survey (CBECS),
Description of CBECS Building Types
http://www.eia.doe.gov/emeu/cbecs/pba99/bldgtypes.html

Embodied Emissions Worksheet

Section I: Buildings

Type (Residential) or Principal Activity (Commercial)	# thousand sq feet/ unit or building	Life span related embodied GHG missions (MTCO2e/ unit)	Life span related embodied GHG missions (MTCO2e/ thousand square feet) - See calculations in table below
Single-Family Home	2.53	98	39
Multi-Family Unit in Large Building	0.85	33	39
Multi-Family Unit in Small Building	1.39	54	39
Mobile Home	1.06	41	39
Education	25.6	991	39
Food Sales	5.6	217	39
Food Service	5.6	217	39
Health Care Inpatient	241.4	9,346	39
Health Care Outpatient	10.4	403	39
Lodging	35.8	1,386	39
Retail (Other Than Mall)	9.7	376	39
Office	14.8	573	39
Public Assembly	14.2	550	39
Public Order and Safety	15.5	600	39
Religious Worship	10.1	391	39
Service	6.5	252	39
Warehouse and Storage	16.9	654	39
Other	21.9	848	39
Vacant	14.1	546	39

Section II: Pavement

All Types of Pavement			50

	Columns and Beams	Intermediate Floors	Exterior Walls	Windows	Interior Walls	Roofs		
Average GWP (lbs CO2e/sq ft): Vancouver, Low Rise Building	5.3	7.8	19.1	51.2	5.7	21.3		
Average Materials in a 2,272-square foot single family home	0.0	2269.0	3206.0	285.0	6050.0	3103.0	Total Embodied Emissions (MTCO2e)	Total Embodied Emissions (MTCO2e/ thousand sq feet)
MTCO2e	0.0	8.0	27.8	6.6	15.6	30.0	88.0	38.7

Sources

All data in black text — King County, DNRP. Contact: Matt Kuharic, matt.kuharic@kingcounty.gov

Residential floorspace per unit
2001 Residential Energy Consumption Survey (National Average, 2001)
Square footage measurements and comparisons
http://www.eia.doe.gov/emeu/recs/sqft-measure.html

Floorspace per building
EIA, 2003 Commercial Buildings Energy Consumption Survey (National Average, 2003)
Table C3. Consumption and Gross Energy Intensity for Sum of Major Fuels for Non-Mall Buildings, 2003
http://www.eia.doe.gov/emeu/cbecs/cbecs2003/detailed_tables_2003/2003set9/2003excel/c3.xls

Average GWP (lbs CO2e/sq ft): Vancouver, Low Rise Building
Athena EcoCalculator
Athena Assembly Evaluation Tool v2.3- Vancouver Low Rise Building
Assembly Average GWP (kg) per square meter
http://www.athenasmi.ca/tools/ecoCalculator/index.html
Lbs per kg 2.20
Square feet per square meter 10.76

Average Materials in a 2,272-square foot single family home
Buildings Energy Data Book: 7.3 Typical/Average Household
Materials Used in the Construction of a 2,272-Square-Foot Single-Family Home, 2000
http://buildingsdatabook.eren.doe.gov/?id=view_book_table&TableID=2036&t=xls
See also: NAHB, 2004 Housing Facts, Figures and Trends, Feb. 2004, p. 7.

Average window size
Energy Information Administration/Housing Characteristics 1993
Appendix B, Quality of the Data. Pg. 5.
ftp://ftp.eia.doe.gov/pub/consumption/residential/rx93hcf.pdf

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

50 (see below)

Embodied GHG Emissions…….Worksheet Background Information

Buildings
Embodied GHG emissions are emissions that are created through the extraction, processing, transportation, construction and disposal of building materials as well as emissions created through landscape disturbance (by both soil disturbance and changes in above ground biomass).

Estimating embodied GHG emissions is new field of analysis; the estimates are rapidly improving and becoming more inclusive of all elements of construction and development.

The estimate included in this worksheet is calculated using average values for the main construction materials that are used to create a typical family home. In 2004, the National Association of Home Builders calculated the average materials that are used in a typical 2,272 square foot single-family household. The quantity of materials used is then multiplied by the average GHG emissions associated with the life-cycle GHG emissions for each material.

This estimate is a rough and conservative estimate; the actual embodied emissions for a project are likely to be higher. For example, at this stage, due to a lack of comprehensive data, the estimate does not include important factors such as landscape disturbance or the emissions associated with the interior components of a building (such as furniture).

King County realizes that the calculations for embodied emissions in this worksheet are rough. For example, the emissions associated with building 1,000 square feet of a residential building will not be the same as 1,000 square feet of a commercial building. However, discussions with the construction community indicate that while there are significant differences between the different types of structures, this method of estimation is reasonable; it will be improved as more data become available.

Additionally, if more specific information about the project is known, King County recommends two online embodied emissions calculators that can be used to obtain a more tailored estimate for embodied emissions: www.buildcarbonneutral.org and www.athenasmi.ca/tools/ecoCalculator/.

Pavement
Four recent life cycle assessments of the environmental impacts of roads form the basis for the per unit embodied emissions of pavement. Each study is constructed in slightly different ways; however, the aggregate results of the reports represent a reasonable estimate of the GHG emissions that are created from the manufacture of paving materials, construction related emissions, and maintenance of the pavement over its expected life cycle. For specifics, see the worksheet.

Special Section: Estimating the Embodied Emissions for Pavement

Four recent life cycle assessments of the environmental impacts of roads form the basis for the per unit embodied emissions of pavement. Each study is constructed in slightly different ways; however, the aggregate results of the reports represent a reasonable estimate of the GHG emissions that are created from the manufacture of paving materials, construction related emissions, and maintenance of the pavement over its expected life cycle.

The results of the studies are presented in different units and measures; considerable effort was undertaken to be able to compare the results of the studies in a reasonable way. For more details about the below methodology, contact matt.kuharic@kingcounty.gov.

The four studies, Meil (2001), Park (2003), Stripple (2001) and Treolar (2001) produced total GHG emissions of 4-34 MTCO2e per thousand square feet of finished paving (for similar asphalt and concrete based pavements). This estimate does not including downstream maintenance and repair of the highway. The average (for all concrete and asphalt pavements in the studies, assuming each study gets one data point) is ~17 MTCO2e/thousand square feet.

Three of the studies attempted to thoroughly account for the emissions associated with long term maintenance (40 years) of the roads. Stripple (2001), Park et al. (2003) and Treolar (2001) report 17, 81, and 68 MTCO2e/thousand square feet, respectively, after accounting for maintenance of the roads.

Based on the above discussion, King County makes the conservative estimate that 50 MTCO2e/thousand square feet of pavement (over the development's life cycle) will be used as the embodied emission factor for pavement until better estimates can be obtained. This is roughly equivalent to 3,500 MTCO2e per lane mile of road (assuming the lane is 13 feet wide).

It is important to note that these studies estimate the embodied emissions for roads. Paving that does not need to stand up to the rigors of heavy use (such as parking lots or driveways) would likely use less materials and hence have lower embodied emissions.

Sources:

Meil, J. A Life Cycle Perspective on Concrete and Asphalt Roadways: Embodied Primary Energy and Global Warming Potential. 2006. Available: http://www.cement.ca/cement.nsf/eee9ec7bbd630126852566c40052107b/6ec79dc8ae03a782852572b90061b914/$FILE/ATTK0WE3/athena%20report%20Feb.%202%202007.pdf

Park, K, Hwang, Y., Seo, S., M.ASCE, and Seo, H. , "Quantitative Assessment of Environmental Impacts on Life Cycle of Highways," Journal of Construction Engineering and Management , Vol 129, January/February 2003, pp 25-31, (DOI: 10.1061/(ASCE)0733-9364(2003)129:1(25)).

Stripple, H. Life Cycle Assessment of Road. A Pilot Study for Inventory Analysis. Second Revised Edition. IVL Swedish Environmental Research Institute Ltd. 2001. Available: http://www.ivl.se/rapporter/pdf/B1210E.pdf

Treloar, G., Love, P.E.D., and Crawford, R.H. Hybrid Life-Cycle Inventory for Road Construction and Use. Journal of Construction Engineering and Management. P. 43-49. January/February 2004.

Energy Emissions Worksheet

Type (Residential) or Principal Activity (Commercial)	Energy consumption per building per year (million Btu)	Carbon Coefficient for Buildings	MTCO2e per building per year	Floorspace per Building (thousand square feet)	MTCE per thousand square feet per year	MTCO2e per thousand square feet per year	Average Building Life Span	Lifespan Energy Related MTCO2e emissions per unit	Lifespan Energy Related MTCO2e emissions per thousand square feet
Single-Family Home	107.3	0.108	11.61	2.53	4.6	16.8	57.9	672	266
Multi-Family Unit in Large Building	41.0	0.108	4.44	0.85	5.2	19.2	80.5	357	422
Multi-Family Unit in Small Building	78.1	0.108	8.45	1.39	6.1	22.2	80.5	681	489
Mobile Home	75.9	0.108	8.21	1.06	7.7	28.4	57.9	475	448
Education	2,125.0	0.124	264.2	25.6	10.3	37.8	62.5	16,526	646
Food Sales	1,110.0	0.124	138.0	5.6	24.6	90.4	62.5	8,632	1,541
Food Service	1,436.0	0.124	178.5	5.6	31.9	116.9	62.5	11,168	1,994
Health Care Inpatient	60,152.0	0.124	7,479.1	241.4	31.0	113.6	62.5	467,794	1,938
Health Care Outpatient	985.0	0.124	122.5	10.4	11.8	43.2	62.5	7,660	737
Lodging	3,578.0	0.124	444.9	35.8	12.4	45.6	62.5	27,826	777
Retail (Other Than Mall)	720.0	0.124	89.5	9.7	9.2	33.8	62.5	5,599	577
Office	1,376.0	0.124	171.1	14.8	11.6	42.4	62.5	10,701	723
Public Assembly	1,338.0	0.124	166.4	14.2	11.7	43.0	62.5	10,405	733
Public Order and Safety	1,791.0	0.124	222.7	15.5	14.4	52.7	62.5	13,928	899
Religious Worship	440.0	0.124	54.7	10.1	5.4	19.9	62.5	3,422	339
Service	501.0	0.124	62.3	6.5	9.6	35.1	62.5	3,896	599
Warehouse and Storage	764.0	0.124	95.0	16.9	5.6	20.6	62.5	5,942	352
Other	3,600.0	0.124	447.6	21.9	20.4	74.9	62.5	27,997	1,278
Vacant	294.0	0.124	36.6	14.1	2.6	9.5	62.5	2,286	162

Sources

All data in black text — King County, DNRP. Contact: Matt Kuharic, matt.kuharic@kingcounty.gov

Energy consumption for residential buildings
- 2007 Buildings Energy Data Book: 6.1 Quad Definitions and Comparisons (National Average, 2001)
- Table 6.1.4: Average Annual Carbon Dioxide Emissions for Various Functions
- http://buildingsdatabook.eren.doe.gov/
- Data also at: http://www.eia.doe.gov/emeu/recs/recs2001_ce/ce1-4c_housingunits2001.html

Energy consumption for commercial buildings and Floorspace per building
- EIA, 2003 Commercial Buildings Energy Consumption Survey (National Average, 2003)
- Table C3. Consumption and Gross Energy Intensity for Sum of Major Fuels for Non-Mall Buildings, 2003
- http://www.eia.doe.gov/emeu/cbecs/cbecs2003/detailed_tables_2003/2003set9/2003excel/c3.xls

Note: Data in plum color is found in both of the above sources (buildings energy data book and commercial buildings energy consumption survey).

Carbon Coefficient for Buildings
- Buildings Energy Data Book (National average, 2005)
- Table 3.1.7. 2005 Carbon Dioxide Emission Coefficients for Buildings (MMTCE per Quadrillion Btu)
- http://buildingsdatabook.eere.energy.gov/?id=view_book_table&TableID=2057
- Note: Carbon coefficient in the Energy Data book is in MTCE per Quadrillion Btu.
- To convert to MTCO2e per million Btu, this factor was divided by 1000 and multiplied by 44/12.

Residential floorspace per unit
- 2001 Residential Energy Consumption Survey (National Average, 2001)
- Square footage measurements and comparisons
- http://www.eia.doe.gov/emeu/recs/sqft-measure.html

average lief span of buildings,
estimated by replacement time method

	Single Family Homes	Multi-Family Units in Large and Small Buildings	All Residential Buildings	
New Housing Construction, 2001	1,273,000	329,000	1,602,000	
Existing Housing Stock, 2001	73,700,000	26,500,000	100,200,000	
Replacement time:	57.9	80.5	62.5	(national average, 2001)

Note: Single family homes calculation is used for mobile homes as a best estimate life span.
Note: At this time, KC staff could find no reliable data for the average life span of commercial buildings.
Therefore, the average life span of residential buildings is being used until a better approximation can be ascertained.

Sources:

New Housing Construction, 2001

Quarterly Starts and Completions by Purpose and Design - US and Regions (Excel)
http://www.census.gov/const/quarterly_starts_completions_cust.xls
See also: http://www.census.gov/const/www/newresconstindex.html

Existing Housing Stock, 2001

Residential Energy Consumption Survey (RECS) 2001
Tables HC1:Housing Unit Characteristics, Million U.S. Households 2001
Table HC1-4a. Housing Unit Characteristics by Type of Housing Unit, Million U.S. Households, 2001
Million U.S. Households, 2001
http://www.eia.doe.gov/emeu/recs/recs2001/hc_pdf/housunits/hc1-4a_housingunits2001.pdf

Transportation Emissions Worksheet

Type (Residential) or Principal Activity (Commercial)	# people/ unit or building	# thousand sq feet/ unit or building	# people or employees/ thousand square feet	vehicle related GHG emissions (metric tonnes CO2e per person per year)	MTCO2e/ year/ unit	MTCO2e/ year/ thousand square feet	Average Building Life Span	Life span transportation related GHG emissions (MTCO2e/ per unit)	Life span transportation related GHG emissions (MTCO2e/ thousand sq feet)
Single-Family Home	2.8	2.53	1.1	4.9	13.7	5.4	57.9	792	313
Multi-Family Unit in Large Building	1.9	0.85	2.3	4.9	9.5	11.2	80.5	766	904
Multi-Family Unit in Small Building	1.9	1.39	1.4	4.9	9.5	6.8	80.5	766	550
Mobile Home	2.5	1.06	2.3	4.9	12.2	11.5	57.9	709	668
Education	30.0	25.6	1.2	4.9	147.8	5.8	62.5	9247	361
Food Sales	5.1	5.6	0.9	4.9	25.2	4.5	62.5	1579	282
Food Service	10.2	5.6	1.8	4.9	50.2	9.0	62.5	3141	561
Health Care Inpatient	455.5	241.4	1.9	4.9	2246.4	9.3	62.5	140506	582
Health Care Outpatient	19.3	10.4	1.9	4.9	95.0	9.1	62.5	5941	571
Lodging	13.6	35.8	0.4	4.9	67.1	1.9	62.5	4194	117
Retail (Other Than Mall)	7.8	9.7	0.8	4.9	38.3	3.9	62.5	2394	247
Office	28.2	14.8	1.9	4.9	139.0	9.4	62.5	8696	588
Public Assembly	6.9	14.2	0.5	4.9	34.2	2.4	62.5	2137	150
Public Order and Safety	18.8	15.5	1.2	4.9	92.7	6.0	62.5	5796	374
Religious Worship	4.2	10.1	0.4	4.9	20.8	2.1	62.5	1298	129
Service	5.6	6.5	0.9	4.9	27.6	4.3	62.5	1729	266
Warehouse and Storage	9.9	16.9	0.6	4.9	49.0	2.9	62.5	3067	181
Other	18.3	21.9	0.8	4.9	90.0	4.1	62.5	5630	257
Vacant	2.1	14.1	0.2	4.9	10.5	0.7	62.5	657	47

Sources

All data in black text — King County, DNRP. Contact: Matt Kuharic, matt.kuharic@kingcounty.gov

people/ unit

Estimating Household Size for Use in Population Estimates (WA state, 2000 average)
Washington State Office of Financial Management
Kimpel, T. and Lowe, T. Research Brief No. 47. August 2007
http://www.ofm.wa.gov/researchbriefs/brief047.pdf
Note: This analysis combines Multi Unit Structures in both large and small units into one category;
the average is used in this case although there is likely a difference

Residential floorspace per unit

2001 Residential Energy Consumption Survey (National Average, 2001)
Square footage measurements and comparisons
http://www.eia.doe.gov/emeu/recs/sqft-measure.html

employees/thousand square feet

Commercial Buildings Energy Consumption Survey commercial energy uses and costs (National Median, 2003)
Table B2 Totals and Medians of Floorspace, Number of Workers, and Hours of Operation for Non-Mall Buildings, 2003
http://www.eia.doe.gov/emeu/cbecs/cbecs2003/detailed_tables_2003/2003set1/2003excel/b2.xls

Note: Data for # employees/thousand square feet is presented by CBECS as square feet/employee.
In this analysis employees/thousand square feet is calculated by taking the inverse of the CBECS number and multiplying by 1000.

vehicle related GHG emissions

Estimate calculated as follows (Washington state, 2006)_

56,531,930,000	2006 Annual WA State Vehicle Miles Traveled Data was daily VMT. Annual VMT was 365*daily VMT. http://www.wsdot.wa.gov/mapsdata/tdo/annualmileage.htm
6,395,798	2006 WA state population http://quickfacts.census.gov/qfd/states/53000.html
8839	vehicle miles per person per year
0.0506	gallon gasoline/mile This is the weighted national average fuel efficiency for all cars and 2 axle, 4 wheel light trucks in 2005. This includes pickup trucks, vans and SUVs. The 0.051 gallons/mile used here is the inverse of the more commonly known term “miles/per gallon” (which is 19.75 for these cars and light trucks). Transportation Energy Data Book. 26th Edition. 2006. Chapter 4: Light Vehicles and Characteristics. Calculations based on weighted average MPG efficiency of cars and light trucks. http://cta.ornl.gov/data/tedb26/Edition26_Chapter04.pdf Note: This report states that in 2005, 92.3% of all highway VMT were driven by the above described vehicles. http://cta.ornl.gov/data/tedb26/Spreadsheets/Table3_04.xls
24.3	lbs CO2e/gallon gasoline The CO2 emissions estimates for gasoline and diesel include the extraction, transport, and refinement of petroleum as well as their combustion. Life-Cycle CO2 Emissions for Various New Vehicles. RENew Northfield. Available: http://renewnorthfield.org/wpcontent/uploads/2006/04/CO2%20emissions.pdf Note: This is a conservative estimate of emissions by fuel consumption because diesel fuel,
2205	with a emissions factor of 26.55 lbs CO2e/gallon was not estimated.
4.93	lbs/metric tonne
	vehicle related GHG emissions (metric tonnes CO2e per person per year)

average lief span of buildings, estimated by replacement time method — See Energy Emissions Worksheet for Calculations

Commercial floorspace per unit — EIA, 2003 Commercial Buildings Energy Consumption Survey (National Average, 2003)
Table C3. Consumption and Gross Energy Intensity for Sum of Major Fuels for Non-Mall Buildings, 2003
http://www.eia.doe.gov/emeu/cbecs/cbecs2003/detailed_tables_2003/2003set9/2003excel/c3.xls

Appendix E: Landmarks Preservation Board Correspondence

The City of Seattle

Landmarks Preservation Board

Mailing Address: PO Box 94649, Seattle WA 98124-4649
Street Address: 600 4th Avenue, 4th Floor

LPB 291/20

Ms. Rebecca Acensio
Seattle Public Schools
Mail Stop: 22-336
P.O. Box 34165
Seattle, WA 98124-1165

Re: Denial of Nomination of Viewlands Elementary School – 10505-10525 3rd Avenue NW

Dear Ms. Acensio:

At the August 5, 2020, meeting of the City's Landmarks Preservation Board, a motion was made to deny the nomination of Viewlands Elementary School at 10505-10525 3rd Avenue NW in Seattle. The vote to deny was 8 in favor and 0 opposed. Therefore, the nomination was denied.

Termination of Proceedings

SMC 25.12.850A states:
"In any case where a site, improvement or object is nominated for designation as a landmark site or landmark and thereafter the Board fails to approve such nomination or to adopt a report approving designation of such site, improvement or object, such proceeding shall terminate and no new proceeding under this ordinance may be commenced with respect to such site, improvement or object within five (5) years from the date of such termination without the written agreement of the owner, except that when the site or improvement nominated is Seattle School District property and is in use as a public school facility, no new proceeding may be commenced within ten (10) years from the date of such termination."

This provision is applicable to these nomination proceedings.

Issued: August 6, 2020

Erin Doherty
Landmarks Preservation Board Coordinator

cc: Tingyu Wang, Seattle Public Schools
Ellen Mirro, Studio TJP
Nathan Torgelson, SDCI
Katrina Nygaard, SDCI
Jordan Kiel, Chair, LPB