Daniel Bagley Elementary School, Modernization and Addition Project

Final SEPA Checklist Addendum

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

Conrad Plyler
Project Manager
caplyler@seattleschools.org

While the Daniel Bagley Elementary School Modernization and Addition Project Final State Environmental Policy Act (SEPA) Checklist Addendum is accessible and ADA compliant, the attached figures and appendices, which support the checklist, contain complex material that are not accessible. The following is a description of what is contained in the figures and appendices:

- Figure 1, Daniel Bagley Elementary School Vicinity, Seattle, Washington
  Figure 1 is an aerial photograph of the Daniel Bagley Elementary School site and its surrounding neighborhood to within an approximately three-block radius.
- Figure 2, Project Area – Daniel Bagley Elementary School, Seattle, Washington
  Figure 2 is a close-up aerial view of the project site where the proposed project will occur. The site is outlined with a yellow line.

- Figure 3, Site Plan, Daniel Bagley Elementary School, Seattle, Washington
  Figure 3 is a site plan of the Modernization and Addition project at Daniel Bagley Elementary School, showing the Existing Buildings, New Gymnasium, New Classroom Addition, New Site Work and Existing Site Features.
- Figure 4, Proposed Design for Outdoor Play, Daniel Bagley Elementary School, Seattle, Washington
  Figure 4 is a site plan of the Outdoor Play project at Daniel Bagley Elementary School, with the work area outlined in red. This shows the elements of the new Outdoor Play project, including the removal and replacement of the existing play equipment, removal and replacement of the existing asphalt (except for the basketball and soccer courts which will remain), and removal of the grass field and replacement with a synthetic turf field.
- Appendix A: Traffic Impact Analysis
  Appendix A consists of a report titled, "Transportation Technical Report for Daniel Bagley Elementary School Renovation & Addition" prepared by Heffron Transportation, Inc. dated February 6, 2018. The report provides a project description; background conditions related to the transportation network, traffic volumes, level of services, parking, traffic safety, transit facilities and non-motorized facilities. The report addresses impacts of the proposed lighting project on the same and concludes with a summary and recommendations. Attached to the end of the report is Appendix A – Level of Service Definitions, and Appendix B – Parking Utilization Study Data. 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.
- Appendix B: Tree Inventory and Site Assessment
  Appendix B is an Arborist Report prepared by Tree Solutions, dated December 8, 2016. It is a discussion of the potential impact of the project on the trees that are in the vicinity of the proposed project. Attached at the end of the report is Appendix A- Limits of Assignment, Appendix B – Methods, and Appendix C – Assumptions & Limiting Conditions. 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.
- Appendix C: Advanced Exceptional Tree & Landscape Assessment
  Appendix C is a Memorandum regarding the Advanced Exception Tree & Landscape Assessment, prepared by Tree Solutions, dated February 2, 2017, and updated March 3, 2017. The report provides an assessment, pruning specifications, and recommendations for one of the exceptional trees on site. Attached at the end of the report is Appendix A – Assumptions & Limiting Conditions. There are figures and tables throughout this document, including in the appendix, which graphically depict and organizes data to support the findings in the report.

This concludes the SEPA checklist.

DATE: Jan. 20, 2022

TO: Recipients of the State Environmental Policy Act Determination of Non-Significance (SEPA DNS) for the Daniel Bagley Elementary School Modernization and Addition Project

FROM: Fred Podesta, SEPA Official

SEPA Environmental Review History:

Seattle Public Schools (SPS) issued a final SEPA environmental checklist dated April 2018 for the Daniel Bagley Elementary School Modernization and Addition Project.

The final SEPA checklist discusses the potential environmental impacts that could result from the proposed modernization and additions to Daniel Bagley Elementary. A draft of the checklist was released for public comment initially from Feb. 5 to March 5, 2018. 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 Public Comments and Seattle Public Schools Responses at the end of the SEPA checklist document starting on page 35.

SPS determined the final SEPA environmental checklist dated April 2018 met our environmental review needs for the proposal to repair and/or replace major systems that have outlived their useful lives, address current and projected elementary enrollment growth in the area, and upgrade the quality of student learning environments. 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 DNS.

Thank you for your participation in the Seattle Public Schools Building Excellence (BEX) IV Program and Buildings, Technology and Academics/Athletics (BTA) IV Program. Your involvement has helped to make the Daniel Bagley Elementary School Modernization and Addition Project a much better project.

SEPA Addendum:

The final SEPA environmental checklist was updated in January 2022 to analyze the addition of minor improvements to the outdoor play area at Daniel Bagley Elementary School, including replacing existing playground equipment, replacing the existing grass field with synthetic turf, and removing and replacing existing deteriorating asphalt west of the school, except for the existing basketball court. The SEPA checklist has been updated to incorporate the additional information. New or changed information is provided in underlined text. The SEPA addendum is informational in nature. There is no new comment or appeal period required for a SEPA addendum, per WAC 197-11-625.

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

WAC 197-11-970 Determination of Nonsignificance (DNS)
WAC 197-11-625 Addendum

ADDENDUM STATE ENVIRONMENTAL POLICY ACT
DETERMINATION OF NONSIGNIFICANCE (DNS)
DANIEL BAGLEY ELEMENTARY SCHOOL MODERNIZATION AND ADDITION PROJECT

Proponent. Seattle Public Schools

Location of proposal, including street address, if any. Daniel Bagley Elementary School, 7821 Stone Ave. N in Seattle, Washington (Snc 6, Twn 25N, Range 4E)

Description of Proposal. Seattle Public Schools (SPS) is proposing modernization and additions for the existing Daniel Bagley Elementary School, under the BTA IV Capital Levy, which was approved by voters in February 2016 and the BEX IV Capital Levy approved by voters in February 2013. The existing Daniel Bagley Elementary School would be substantially modernized, including major systems replacements and seismic upgrades. Up to 11 new classrooms would be provided (up to eight in a new classroom addition and three from alteration of the existing building). A second addition would be built to the west of and connected to the existing school and would include an approximately 6,000 square foot gymnasium with additional ancillary spaces. The total capacity of the school would thereby be increased to up to 600 students. The new buildings would total approximately 21,500 square feet in size. Because a portion of the gymnasium addition would be located in the existing parking lot, parking would be reduced from 58 spaces to 46 spaces.

Description of new information. There will be minor improvements to the outdoor play area, including replacing existing playground equipment, providing new curb layout, replacing the existing grass field with synthetic turf, and removing and replacing some of the existing deteriorating asphalt west of the school. Fencing and appurtenant structures would be removed or added as needed.

The lead agency for this proposal has determined that it does 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 Third Ave. S, Seattle (Attn: Conrad Plyler, Phone: 206-252-0877) and online at https://www.seattleschools.org/departments/sepa/

☐ There is no comment period for this DNS.

☐ This DNS is issued after using the optional DNS process in WAC 197-11-355. There is no further comment period on the DNS.

☒ This DNS is issued under WAC 197-11-340(2); the lead agency will not act on this proposal prior to May 1, 2018 (15 days from the date below). This Addendum is issued under WAC 197-11-625. There is no new comment or appeal period.

This DNS may be appealed by written notice setting forth specific factual objections received no later than May 1, 2018 (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, Assistant Superintendent of Operations, Seattle Public Schools

Position/title: Seattle Public Schools SEPA Official

Phone: 206- 252-0102

Address: MS 22-183, P.O. Box 34165, Seattle, WA 98124-1165

Date Jan. 20, 2022 **Signature** Fred Podesta

Daniel Bagley Elementary School Modernization and Addition Project

SEPA Checklist

Final

April 2018,
Updated January 2022

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 from the ***Daniel Bagley Elementary School Modernization and Addition Project*** and to identify measures to mitigate those impacts. The ***Daniel Bagley Elementary School Modernization and Addition Project*** would add approximately 21,500 square feet in size of new buildings. Up to 11 new classrooms would be provided (up to eight in a new classroom addition and three from alteration of the existing building). Eight portable classrooms on the site would be removed and replaced by a two-story classroom addition built to the southwest of, and connected to, the existing school. An existing play court would potentially be enclosed as part of the project. Some existing play equipment would be removed during construction. Following construction, suitable existing equipment would be reinstalled, and new equipment would be installed.

The State Environmental Policy Act (SEPA)[1] requires that all governmental agencies consider the environmental impacts of a proposal before the proposal is decided upon. A draft environmental checklist for the project was issued on February 5, 2018, with a public comment period through March 5, 2018. The final environmental checklist responds to comments on the draft environmental checklist and has been prepared in compliance with the State Environmental Policy Act; the SEPA Rules, effective April 4, 1984, as amended (Chapter 197-11, Washington Administrative Code); and the Seattle City Code (25.05), which implements SEPA. This updated final environmental checklist addendum provides additional information regarding minor improvements to the outdoor play area, including replacing existing playground equipment, replacing the existing grass field with synthetic turf, and removing and replacing some of the existing deteriorating asphalt west of the school that were not previously anticipated. Changes are noted in underlined text and are primarily located in Sections B.1, B.3, B.4, B.12, B.13, B.14 and B.16.

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

This environmental checklist is organized into three major sections. *Section A* of the checklist (starting on page 1) provides background information concerning the Proposed Action (e.g., purpose, proponent/contact person, project description, project location, etc.). *Section B* (beginning on page 4) contains the analysis of environmental impacts that could result from implementation of the proposed project, based on review of major environmental parameters. This section also identifies possible mitigation measures. *Section C* (page 32) contains the signature of the proponent, confirming the completeness of this environmental checklist.

Appendices to this environmental checklist include: the Transportation Technical Report (Heffron Transportation, Inc., 2018), the Tree Inventory and Site Assessment (Tree Solutions, Inc., 2016) and the Advanced Exceptional Tree & Landscape Assessment (Tree Solutions, Inc., 2018).

[1] Chapter 43.21C. RCW

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ENVIRONMENTAL CHECKLIST

A. BACKGROUND

1. Name of the proposed project, if applicable:

Daniel Bagley Elementary School Modernization and Addition Project

2. Name of Applicant:

Seattle Public Schools (SPS)

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

Modernization and Addition Project:

Eric Becker
Seattle Public Schools
2445 3rd Ave S
Seattle, WA 98134
206-252-0697

Outdoor Play Area Improvements:

Conrad Plyler
Seattle Public Schools
2445 3rd Ave S
Seattle, WA 98134
206-730-1527

4. Date checklist prepared:

April 2018, Updated January 2022

5. Agency requesting checklist:

Seattle Public Schools (SPS)

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

Construction would begin in the spring of 2019 and would be completed by the fall of 2020. The school would not remain open during construction; students and staff would attend John Marshall, in the Green Lake neighborhood, as the interim site for the 2019-2020 school year.

Outdoor Play Area Improvements:

Work on minor improvements to the outdoor play area is scheduled to begin in June 2022 and anticipated to be complete by August 2022.

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

SPS may consider additional work at Bagley Elementary School in the future if needed to increase the enrollment capacity. Before pursuing a project to increase the enrollment capacity, the School Board would need to determine that the project should be included in a potential future capital projects levy. The capital projects levy would be subject to approval by a public vote. Future projects to increase enrollment capacity at Bagley Elementary School would undergo separate SEPA review prior to implementation.

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

Advanced Exceptional Tree and Landscape Assessment, Tree Solutions Inc., March 2017

Building Excellence Phase IV Capital Improvement Program Revised Final Environmental Impact Statement, ESA, July 2012

Building, Technology, and Academics/Athletics IV Program Final SEPA Programmatic Environmental Impact Statement, ESA, July 2016

Cultural Resources Assessment, Seattle, King County, WA, ESA, June 2017

Draft Subsurface Exploration, Geologic Hazards, and Preliminary Geotechnical Engineering Report, Daniel Bagley Elementary School Addition, Associated Earth Sciences Incorporated, September 2016

Transportation Technical Report, Heffron Transportation, Inc., February 2018

Tree Inventory and Site Assessment, Tree Solutions Inc., December 2016

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 known to be pending for the subject property.

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

Permits and approvals that will be needed for the project include:

- Demolition
- Grading
- Building/Mechanical
- Stormwater Control
- Electrical
- Puget Sound Clean Air Agency (PSCAA) permit

- Certificate of Approval from the City of Seattle Landmarks Preservation Board

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) is proposing modernization and additions for the existing Daniel Bagley Elementary School. Modernization of the existing historic building is intended to repair and/or replace major systems that have outlived their useful lives; portions are funded by the BTA IV Capital Levy, which was approved by voters in February 2016, as well as the BEX IV Capital Levy approved by voters in February 2013. The additions are intended to address current and projected elementary enrollment growth in the area, as well as to upgrade the quality of student learning environments, and are funded by the BEX IV Capital Levy.

The existing Bagley Elementary School would be substantially modernized, including major systems replacements and seismic upgrades. Up to 11 new classrooms would be provided (up to eight in a new classroom addition and three from alteration of the existing building).

Eight portable classrooms on the site would be removed and replaced by a two-story classroom addition built to the southwest of and connected to the existing school. The classroom addition would include up to eight classrooms, add learning support spaces, and be organized to support better collaboration among grade-level teams than can be achieved among students and staff occupying individual disconnected portables.

A second addition would be built to the west of and connected to the existing school and would include an approximately 6,000 square foot gymnasium with additional ancillary spaces.

The relocation of physical education from the current gymnasium to the new gymnasium, as well as the potential enclosure of an existing playcourt, would create an additional three classrooms within the existing building. The total capacity of the school would thereby be increased to up to 600 students.

The new buildings would total approximately 21,500 square feet in size. Because a portion of the gymnasium addition would be located in the existing parking lot, parking would be reduced from 58 spaces to 46 spaces. The parent drop-off area would be located in the parking lot and would be accessible from N 80th Street. The bus drop-off area would remain in its existing location in front of the school on Stone Avenue North.

Outdoor Play Area Improvements:

There will be minor improvements to the outdoor play area, including replacing existing playground equipment, providing new curb layout, replacing the existing grass field with synthetic turf, and removing and replacing some of the existing deteriorating asphalt west of the school. Fencing and appurtenant structures would be removed or added as needed.

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 project site is located at 7821 Stone Avenue North in Seattle, Washington (Section 6, Township 25 North, Range 4 East) as shown on Figure 1. The project site is located northwest of Green Lake in the Green Lake neighborhood. The site is located on King County Parcel 0625049048. The legal description of the site is "W 660 FT OF N 395 FT OF GL 2 IN NE 1/4 OF STR 06-25-04 LESS W 165 FT THOF LESS PORTIONS FOR STREETS; TGW NORTH 10 INCHES OF S 102.51 FT OF N 500.01 FT OF E 29 FT OF W 200 FT OF SD GL 2."

Figure 1 shows the project vicinity. Figure 2 shows the project area. Figure 3 shows the site plan.

B. ENVIRONMENTAL ELEMENTS

1. Earth

A geotechnical investigation was performed at the project site by Associated Earth Sciences, Inc. in September 2016 (Associated Earth Sciences, Inc., 2016). The work included reviewing existing geologic literature for the property, conducting 15 soil borings on the project site, installing a groundwater observation well, and performing geologic studies to assess subsurface sediments and shallow groundwater 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 site is characterized by generally very gentle sloping to flat topography, and was graded to its current configuration during previous

site development. The topography within the vicinity of the proposed addition is generally flat to very gently sloping down to the south.

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

The steepest slopes (approximately 8 percent) are on the southern portion of the site. No slopes on the site meet applicable definitions as Steep Slope areas in accordance with Seattle Municipal Code (SMC) Section 25.09.020.

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.

Soil conditions in the site vicinity are characterized by 12 feet of variable density, generally granular fill underlain by glacial sediments consisting of medium dense Vashon recessional outwash and medium stiff to stiff Vashon recessional lacustrine deposits, very dense Vashon lodgment till, and very dense Vashon advance outwash (Associated Earth Sciences, Inc., 2016).

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

There are no potential slides, known slides, or liquefaction areas mapped by the City of Seattle on or near the project site.

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 5,000 cubic yards would be excavated. Approximately 2,000 cubic yards of clean fill would be required and would be obtained from a source approved by the City of Seattle.

Outdoor Play Area Improvements:

Grading of approximately 440 cubic yards would be required for the outdoor play area improvements. The estimated amount is expected to be within the range of the total 5,000 cubic yards expected for the overall project.

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

Construction activities could cause temporary erosion on the site. Erosion potential would be reduced through an erosion control plan consistent with City of Seattle standards (SMC 22.800) and implementation of best management practices (BMPs). BMPs could include installation of a rock construction entrance, catch basin filters, interceptor swales, hay bales, sediment traps, and other appropriate cover measures.

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

Approximately 69 percent of the site is currently covered with impervious surfaces. Small amounts of landscaping would be replaced with new impervious surface, but in other areas existing impervious surface would be removed and replaced with landscaping. After completion of the project, impervious surface coverage of the site would remain at 69 percent.

Outdoor Play Area Improvements:

The project will add 10,000 sq ft of impervious surface from replacing the existing grass field with synthetic turf.

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

Temporary erosion and sedimentation control BMPs and construction water quality treatment measures would be installed to minimize erosion and to treat stormwater runoff during construction. BMPs specific to the site and project would be specified by SPS in the construction contract documents that the construction contractor would be required to implement.

Outdoor Play Area Improvements:

The conversion of grass to synthetic turf over 10,000 sq ft of the site would not result in significant adverse impacts because the field already sees heavy use. The synthetic turf will reduce the need for watering and may result in a reduction of overall water use on the site. The synthetic turf may also accommodate heavy use with less potential for erosion. BMPs for water quality during construction would be followed.

2. Air

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

During construction, there would be a small increase in exhaust emissions from construction vehicles and equipment and a temporary increase in fugitive dust due to earthwork for the project. The most noticeable increase in emissions and fugitive dust would occur during demolition and earthwork. Construction employee and equipment traffic to and from the site would also generate minor increases in exhaust emissions.

Diesel fumes from idling buses are known to present a health hazard to students and nearby residents. Adopting anti-idling policies has been demonstrated to reduce those impacts. SPS has an anti-idling policy for buses.

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.

The contractor chosen for the proposed project would be required to comply with applicable Puget Sound Clean Air Agency (PSCAA) regulations. Regulations that apply to the proposed project include Regulation I, Section 9.11 prohibiting the emission of air contaminants that would or could be injurious to human health, plant or animal life, or property; and Regulation I, Section 9.15 prohibiting the emission of fugitive dust, unless reasonable precautions are employed to minimize the emissions.

To reduce fugitive dust emissions from construction vehicles leaving the site, the contractor may be required to establish dust control measures as appropriate. Streets would be regularly swept to remove dust and debris from construction vehicles.

To reduce the impacts of idling buses, SPS will implement its anti-idling policy. Neighbors who notice buses idling on-site can contact SPS Transportation at 206-252-0900.

3. Water

a. Surface Water:

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

There are no surface water bodies on or in the immediate vicinity of the site. Green Lake is 1,000 feet southeast of Bagley Elementary at its closest point. Several blocks of developed parcels are located between Bagley Elementary and Green Lake. The proposed project would have no impact on the lake.

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 over, in, or adjacent to any surface water bodies.

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.

The proposed project would not require any work in or near surface water, and it would not place any amount of fill or dredge material in surface waters or associated 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.

The proposal 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 project would not involve the discharge of waste materials to any surface waters. All waste materials from the project, including grading spoils and demolition debris, would be transported off-site to appropriate disposal facilities.

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.

No groundwater would be withdrawn as part of the project and no water would be discharged to groundwater. The geotechnical subsurface exploration found perched groundwater 8 to 20 feet below the ground surface within the lodgement till and advance outwash at various locations throughout the site (Associated Earth Sciences, Inc., 2016). This groundwater could be encountered during construction; however, extensive dewatering is not anticipated.

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.

No waste material would be discharged into the ground. The project site would not utilize septic tanks.

c. Water Runoff (including stormwater)

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

The existing site runoff is collected in an underground storm drain system and conveyed to the City's combined sewer overflow (CSO) system. The stormwater requirements for discharging to the combined sewer include flow control and on-site stormwater management. The project would include onsite stormwater management facilities such as bioretention and pervious pavement as well as underground stormwater detention facilities to provide flow control to the Peak Control Standard per City of Seattle requirements.

Outdoor Play Area Improvements:

The existing irrigation system for the grass field will be replaced with a new drainage system when the new turf is installed. Runoff will also be conveyed to the City's CSO system.

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

During construction, contamination could enter surface waters. Generally, this is limited to sedimentation loading from surface erosion. Measures to control contamination entering surface waters are discussed below in Section 3.d.

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

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

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

During construction, BMPs would be implemented to ensure that sediment originating from disturbed soils would be retained within the limits of disturbance. BMPs may include installation of a rock construction entrance, catch basin filters, interceptor swales, hay bales, sediment traps, and other appropriate cover measures. BMPs specific to the site and project would be specified by SPS in the construction contract documents that the construction contractor would be required to implement.

Outdoor Play Area Improvements:

Construction BMPs would be followed. No additional measures are required.

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

Vegetation on the site is limited to trees and to grass and landscaping associated with the school and its field. Tree Solutions, Inc. has prepared a tree inventory and assessment (Appendix B) and an advanced Exceptional Tree and landscape assessment (Appendix C). The tree inventory and assessment found 37 trees on the school property (Tree Solutions Inc., 2016). The site has a wide range of species represented, including several native and non-native, non-invasive species. Native species include vine maple (*Acer circinatum*), western red cedar (*Thuja plicata*), Pacific dogwood (*Cornus nuttallii*), and shore pine (*Pinus contorta var. contorta*). Non-native species include eastern flowering dogwood (*C. florida*), Cornelian cherry dogwood (*C. mas*), incense cedar (*Calocedrus decurrens*), Norway maple (*A. platanoides*), European beeches (*Fagus sylvatica*), and English oak (*Quercus robur*) (Tree Solutions, 2016).

Eleven trees on site meet the City of Seattle's definition of an Exceptional Tree based on size thresholds (Tree Solutions, 2016). According to the Department of Construction and Inspection Director's Rule 16-2008, an Exceptional Tree is a tree that "1) is designated as a heritage tree by the City of Seattle or 2) is rare or exceptional by virtue of its size, species, condition, cultural/historic importance, age, and/or contribution as part of a grove of trees." All of the Exceptional Trees would be retained and protected during construction.

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

Seven trees would be removed. Four Norway maples (*Acer platanoides*) to the west of the existing school would be removed because they are located within the footprint of the gymnasium addition. Two European beeches (*Fagus sylvatica*) located on either side of the entrance to the existing school would be removed because of the need to modify the school entry to provide ADA access. A small ornamental conifer would also be removed. None of the trees that would be removed are Exceptional Trees.

The project footprint has been designed to retain two incense cedar trees located to the west of the existing school building that are considered Exceptional Trees. However, due to their proximity to construction, tree preservation measures would be required. The garden and landscaped areas adjacent to the trees would be retained to protect the roots of the trees (Tree Solutions, 2017).

Outdoor Play Area Improvements:

The existing grass field will be replaced with synthetic turf.

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.

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

Existing trees on the site that would be retained would be protected to the extent possible using tree protection measures including, but not limited to, use of tree protection fences. SPS would replace removed trees according to City requirements.

Landscaping for the project would include planting of new street trees, restoration of lawn areas, restoration of a native plant garden, retention of the school garden, and new plantings at selected locations around the new additions.

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

No noxious weeds or invasive species are known to be on or near the site. The closest known noxious weed is Giant Hogweed (*Heracleum mantegazzianum*), which is located 0.6-mile to the northeast (King County, 2017). The project would not affect this noxious weed.

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 typical urban animals and birds.

Fish: not applicable

Amphibians: none known

Reptiles: none known

Birds: species adapted to urban areas such as gulls, American crow, rock pigeon, chickadee, robin, Steller's jay.

Mammals: species adapted to urban areas such as Norway rat, raccoon, opossum

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

The Washington State Department of Fish and Wildlife (WDFW) Priority Habitats and Species (PHS) database lists all known occurrences of threatened or endangered species and critical habitat. The database shows there are no threatened or endangered species or critical habitat in the project area (WDFW, 2017).

Two bald eagle nesting areas are located approximately 1 mile south of the project area (within Woodland Park and Woodland Park Zoo). The project would not affect the bald eagle nesting area.

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

The project site is located within the Pacific Flyway, which is a flight corridor for migrating waterfowl and other avian fauna. The Pacific Flyway extends from Alaska south 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 project is not expected to have any negative impacts on animals within or near the project site; therefore, no mitigation is required. Some birds and animals may be disturbed during construction, but would likely return following construction because they are adapted to urban areas.

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

Invasive animal species likely to be in the area include rats and opossums, typical of an urban area. SPS would comply with its policy and hire a contractor to implement pest control measures prior to any demolition.

6. Energy and Natural Resources

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

Electricity and natural gas would be required to operate the school's new classrooms and gymnasium.

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

The classrooms and gymnasium would not block the use of solar energy by adjacent properties. No other aspect of the project would interfere with solar energy use by others.

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:

Energy conservation features would include those required to meet or exceed the requirements of the Washington Sustainable Schools Protocol, which is equivalent to LEED Silver or better, and the Seattle Energy Code. Energy conservation features would include high efficiency boilers, dedicated outdoor air system (DOAS) ventilation, heat recovery on DOAS system, high efficiency direct drive electronically controlled motor (ECM) fans, displacement ventilation, decoupled low temperature finned tube convectors, ceiling fans (to eliminate mechanical cooling), daylighting, light emitting diode (LED) lighting and plug load controls.

7. Environmental Health

a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur 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, no known contaminated sites are located on the Bagley Elementary site (Ecology, 2017).

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.

Hazardous materials, such as asbestos-containing material, lead-containing paint/components, PCB light ballasts, and mercury-containing light tubes are potentially present on-site.

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.

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

4. Describe special emergency services that might be required.

No special emergency services would be required.

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

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

Where hazardous materials, such as asbestos-containing materials, lead-containing paint/components, PCB light ballasts, and mercury-containing light tubes, are present, construction would comply with applicable regulations for removal and disposal.

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. Bagley Elementary is located near Aurora Avenue North (Highway 99), a major arterial that generates substantial traffic noise.

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.

Vehicle and equipment operation during construction could cause noise impacts to nearby residents. Construction hours and noise levels would comply with the City of Seattle noise standards.

Maximum permissible sound levels in residential communities are not to exceed 55 A-weighted decibels (dB(A)s). However, construction activities are permitted to exceed the established maximum level by 25 dB(A) by the Seattle Noise Control Ordinance (SMC 25.08.425). Maximum permissible sound levels established in SMC 25.08.425 may be exceeded by construction activities between 7:00 a.m. and 10:00 p.m. on weekdays, and between the hours of 9:00 a.m. and 10:00 p.m. on weekends.

Expanded capacity at Bagley Elementary would cause a minor increase in sound from human voices and from cars in the immediate vicinity during daytime hours. If more evening events are held at the school, they would generate some additional noise as people arrive and depart the building. This increased noise is expected to be minor and no events would be scheduled to end past 10:00 p.m. Increases in noise would be short-term and would not violate noise regulations.

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

Construction activities would be restricted to hours and levels designated by SMC 25.08.425. If construction activities exceed permitted noise levels, SPS would instruct the contractor to implement measures to reduce noise impacts to comply with the Noise Control Ordinance, which could include additional muffling of equipment. 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.

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 Bagley Elementary site has been used as a school since 1906. The site currently holds one two-story school building built in 1930 (Bagley Elementary), a grass field, a basketball court, two wood-chip play areas, two gardens, eight portable classrooms (six portables), and a parking lot.

The school is located in a predominantly single-family residential neighborhood that is primarily comprised of low-rise housing to the north, east, and south of the school, with the exception of the Bethany Community Church, which is located immediately to the north of the school.

Properties immediately to the west of the school abut Aurora Avenue North and are commercial businesses. Uses include a paint store, an auto shop, a discount store, and a dollar store. The project would not affect current land uses. The site has been used as a school and would continue to be used as a school.

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

The site is not currently and has not been previously used for working farmlands or working forest lands. No agricultural or forest land would be converted to other uses.

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

No working farm or forest lands are located near the proposed project, so the project would not affect or be affected by farm or forest land operations.

c. Describe any structures on the site.

Structures on the project site include a brick building, eight portable classrooms (six portables), and play equipment. The site also includes a parking lot on the north side of the site.

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

Two of the existing one-classroom portables, located directly south of the existing building, would be demolished on site. The remaining portables would be relocated off site. Some interior partitions in the existing building would also be demolished.

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

The current zoning classification of the school site is Single Family Residential, 5,000 square-foot lots (SF 5000) (City of Seattle, 2017b). Public schools are permitted uses in this zone.

The Seattle Municipal Code contains development standards for public schools in residential zones in 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 Department of Construction and Inspections (DCI) for departures. The project would require a departure for parking.

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

The current comprehensive plan designation for the site is Single Family Residential (City of Seattle, 2016).

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 City of Seattle DCI GIS mapping database for environmental critical areas indicated that there are no critical areas on the site.

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

No people would reside in the completed project. The completed school would house up to 600 students with a staff of 41 full time and five part time. This represents an increase of approximately 175 students and four staff.

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:

No displacement would occur; therefore, no mitigation measures are needed.

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

The project is consistent with existing land use regulations and plans. The project would require a departure for parking (SMC 23.79). SPS would comply with the requirements of the Master Use Permit (MUP) and results of the departure 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 housing units would be provided as part of the project.

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

No housing units would be eliminated.

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

The project would not cause housing impacts; therefore, mitigation measures to control housing impacts would not be required.

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 highest point of the existing school building is the parapet at the entry, which is 44 feet and 11 inches tall. The highest point of the new construction would be 34 feet at the parapets on the classroom addition and the new gymnasium. The new buildings would be two stories tall.

The existing building includes brick masonry, cast stone ornamentation, concrete, and painted wood windows. Exterior building materials for the addition would include brick masonry, concrete, metal panel siding and extruded aluminum storefront glazing assemblies.

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

The new additions would be visible from N. 80th Street. Views of Mount Rainier from private residents on N. 80th Street could be blocked by the addition. Views from private residences are not protected under the City of Seattle's Public View Protection policy (SMC 25.05.675.P). Residences on the south side of the project site would have views changed from seeing portables to the new two-story classroom addition. The classroom addition would be taller than the portables but not as tall as the existing school building. The classroom addition would be designed to be

compatible with the architecture of the existing building. The building would comply with setback regulations for construction in residential zones; the minimum setback allowed is 5 feet, but the new classroom addition is set back a minimum of 10 feet from the property line.

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

The project would not cause aesthetic impacts; therefore, mitigation measures to control aesthetic impacts would not be required. The new buildings would comply with zoning requirements for schools in residential zones.

11. Light and Glare

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

Lighting on the site would remain similar to present conditions. There would be an increase in light when the addition is being used during school hours. However, this would occur predominately during daylight hours and would not be visible from surrounding buildings. New exterior site lighting would consist of warm-colored LED lights on full cut-off fixtures and would be located away from the property line, so new lighting would not impact adjacent properties.

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?

No off-site sources of light or glare would affect this proposal. The site is located near Aurora Avenue (Highway 99), a major arterial that generates ambient lighting in the area.

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

It is anticipated that both exterior and interior lighting would be scheduled by a Building Automation system so that the site would be mostly dark at night. 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?

Recreational opportunities on the project site currently include a grass field, a basketball court, and two wood-chip play areas. The nearest City of Seattle Park, Green Lake Park, is located approximately 1,055 feet (0.2 miles) southwest of Bagley Elementary School.

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

An existing playcourt would potentially be enclosed as part of the project. Some existing play equipment would be removed during construction. Following construction, suitable existing equipment would be reinstalled and new equipment would be installed.

The amount of open space on the site would be reduced, but the improvements to recreational facilities would provide more usable, accessible recreation facilities. The new gymnasium would be available for community-scheduled adult or youth recreational activities under the Joint Use Agreement with Seattle Parks, similar to the current gymnasium.

Outdoor Play Area Improvements:

> The existing 10,000 sq ft grass playfield would be removed and replaced with synthetic turf. Existing playground equipment may be removed and replaced with new playground equipment. Additional new equipment may be installed as appropriate.

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

The project would include upgraded recreational facilities, including a new approximately 6,000 square foot gymnasium and a new approximately 2,000 square foot covered play area with new equipment. Some play equipment would be replaced on site, but equipment that is outmoded may not be replaced.

Outdoor Play Area Improvements:

> The conversion of a grass field to synthetic turf may allow for increased outdoor play times. The grass playfield is scheduled to be removed during summer 2022 when school is not in session to reduce impacts to students. During construction informal recreation opportunities in the outdoor play area would be unavailable. Construction impacts on recreation would be temporary and minor.

Neither of these proposals would result in a significant adverse impact during construction or operation.

13. Historic and Cultural Preservation

A Cultural Resources Review for the Bagley Elementary site was developed by ESA (ESA, 2017); research was updated in 2021. Cultural resources reports are exempt from public disclosure under RCW 42.56.300, but a redacted version can be acquired from the Department of Archaeology and Historic Preservation. 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.

Bagley Elementary School was constructed in 1930 and is a designated Seattle Landmark. It is listed in the National Register of Historic Places (NRHP) and the Washington Heritage Register (WHR). In addition to Bagley Elementary, six commercial buildings, 18 residential buildings, and one church building were constructed over 25 years ago and are located adjacent to the school. Those properties would not be impacted by the project.

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 recorded ethnographic places within the project area, and the nearest is located 0.50 miles away. Although the project area is classified as "High Risk" for containing subsurface archaeological deposits in the Washington Department of Archaeology and Historic Preservation's (DAHP's) Statewide Predictive Model (DAHP, 2010), geological records indicate significant land modification on the subject property. ESA archaeologists monitored the drilling of 15, truck-mounted, two-inch split-spoon boreholes conducted by Associated Earth Sciences, Inc. Monitoring showed an absence of an A- or B-horizon over the majority of the property. These soil horizons represent surfaces that may have been occupied during the historic or precontact periods. The lack of these soil horizons suggests that they have been stripped away during leveling in preparation for the original school/playground construction. Fill was then overlaid on the remaining C-horizon (glacial till), which would have extremely low likelihood for containing cultural resources. A review of LiDAR data and observations made during the pedestrian survey also support that the property was leveled. Therefore, ESA considers the

project area to have low potential for intact, buried cultural resources (ESA, 2017).

Outdoor Play Area Improvements:

The conversion of a grass field to synthetic turf will result in replacing the existing irrigation system with a new drainage system. This work will have minimal ground disturbance that does not exceed the depth of the existing irrigation system. This proposal would not result in a significant adverse impact during construction or operation.

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 and pedestrian survey of the project area as well as monitoring geotechnical investigations. The literature review study area examined for this review included the parcel containing the school and those immediately adjacent. Information reviewed included any previous archaeological survey reports, ethnographic studies, historic maps, government landowner records, aerial photographs, regional histories, geologic maps, soils surveys, and environmental reports. These records were reviewed in order to determine the presence of any potentially significant cultural resources, including Traditional Cultural Properties (TCPs), within the project area. Relevant documents were examined at DAHP, the University of Washington Libraries, online, and within ESA's research library (ESA, 2017); research was updated in December 2021.

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). The IDP will set forth procedures and protocols to follow in the event of an archaeological resources discovery, including discovery of human remains. The IDP stipulates pre-construction briefings and on-call response if required. SPS would provide tribal representatives, including those of the Duwamish Tribe, Snoqualmie Indian Tribe, Suquamish Tribe, Muckleshoot Indian Tribe, and Tulalip Tribes, with one-week advance notification of the project schedule and invite them to observe construction. Based on the results of the cultural resources technical report, no on-site archaeological monitoring is recommended during project construction.

14. Transportation

A *Transportation Technical Report* for the project was developed by Heffron Transportation, Inc. (Heffron, 2018; Appendix A). Information from the technical report is summarized in this section.

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 school site is bounded by N 80th Street to the north, Stone Avenue N to the east, private residences to the south, and commercial properties to the west.

Access to the on-site parking would remain at its existing location on N 80th Street. The school-bus load/unload zone would remain in its existing location in front of the school on Stone Avenue N; Special Education (SPED) bus load/unload that currently occurs within the parking lot would be relocated to the school-bus load zone on Stone Avenue N.

No physical changes to site access are proposed; however, as described later, measures are proposed to limit turns from the driveway to right only during peak morning arrival and peak afternoon dismissal periods.

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

King County Metro Transit (Metro) provides bus service in the site vicinity. The closest bus stops are located about 250 feet west of the site on Aurora Avenue N (SR 99). The northbound stop is located just north of the intersection with N 80th Street and the southbound stop is located just south of the intersection.

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

The existing parking lot would be modified and the number of spaces would be reduced from 58 spaces to approximately 46 spaces (a loss of approximately 12 spaces).

Based on parking demand estimates, the new school could have a midday peak parking demand of about 53 vehicles. The proposed project would provide a total of 46 parking spaces on site, which could accommodate all but seven vehicles during the midday peak demand period. It is expected that some staff or visitors would continue to park on street even if space is available in the parking lot. On-street parking within the site vicinity averaged 61 percent utilized midday when school is in session (ranging

from 58 to 64 percent). When the supply located along and west of Aurora Avenue N is excluded from the utilization analyses, rates on school days ranged from 58 to 69 percent (average of 65 percent). For the purposes of evaluating the potential on-street parking impacts associated with new development, the City considers utilization rates of 85 percent or higher to be effectively full. Thus, the existing on-street supply could accommodate the excess midday demand generated by the additional staff and volunteers that may be added due to the school renovation and added enrollment.

The project would add a new gymnasium and would retain commons spaces that could be used for events at the school. The school is expected to continue hosting evening events periodically throughout the school year that could use these spaces. Evening events typically occur about once per month or once every other month with attendance that can range from 100 to over 300 people. With the project, the larger events (those other than Curriculum Night and drawing 140 to 425 attendees) could generate parking demand between 45 and 120 vehicles. At the lower end of the event range, most or all demand could be accommodated within the on-site parking lot with 46 spaces). At the higher end of the range, about 74 vehicles would require off-site parking and would be expected to use on-street parking. Based on the on-street parking utilization analysis, there were over 200 on-street spaces available on a non-event night, which could accommodate those events. The parking overflow would be noticeable and would likely be full and congested along the roadways closest to the school. Due to the relative infrequency of those events (one per month or every other month), the increase in demand associated with the addition would not represent a significant adverse impact.

For the largest event—Curriculum Night— parking is already full (utilization on Curriculum Night was 89 percent; 98 percent on roadways east of Aurora Avenue N) and increases in demand associated with the larger school could cause demand to exceed supply (greater than 100 percent) or to extend beyond the 800-foot study area. To mitigate this potential impact, the school could identify additional parking supply (such as parking on play areas or in shared lots) and/or modify the event to reduce total peak demand (such as by separating it into two sessions or into two nights based on grade levels).

The Seattle School District has a shared parking agreement with Bethany Community Church (BCC) that allows church members to park in the Bagley Elementary lot. Observed Sunday use of the lot found 63 to 68 vehicles parked (there are 58 striped spaces); on-street parking on Sundays averaged 85 percent utilized (range from 81 to 88 percent). With the project, the school's lot would have 12 fewer spaces (reduced to a supply of 46 spaces), which could result in 17 to 22 vehicles being displaced from

the school lot. On-street parking on Sundays was found to average 85 percent utilized. While some of the displaced demand could occur on-street, it was recommended that additional parking supply measures be coordinated with BCC to mitigate for the loss of available shared supply on Sundays. BCC already contracts with North Seattle College for use of its southeast lot located at N 92nd Street / Corliss Avenue and provides shuttles continuously for the 9:30 and 11:00 a.m. services. SPS would coordinate with BCC to establish a shared-use agreement for a portion of the parking located at the Robert Eagle Staff Middle School or Cascadia Elementary School site (located on N 90th Street west of Wallingford Avenue N) for Sunday services. The shuttles that already operate near that site to serve North Seattle College could add a stop for parking at those schools. With this added shared parking option, the impacts of displaced Sunday parking demand could be mitigated.

Outdoor Play Area Improvements:

Construction staging is expected to be on the playfield site during summer when schools is not in session. No impacts to parking capacity are anticipated.

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 not require any new or improvements to existing roads, streets, pedestrian, bicycle or state transportation facilities.

However, northbound and southbound movements at the N 80th Street/Stone Avenue N intersection are forecast to degrade from LOS D to LOS F during the morning peak hour with the project. The poor operations during the morning peak hour would affect a relatively small number of through- and left-turning vehicles (9 northbound and 34 southbound). Due to the low volumes, the intersection would likely not meet minimum volume warrants for signalization outlined in the Manual on Uniform Traffic Control Devices (MUTCD). However, a mitigation measure that would restrict movements from Stone Avenue N to right-turns only at N 80th Street could address the poor operations.

Analysis of the site access driveway indicates that the overall level of service would degrade from LOS A to LOS B during the morning peak hour and the northbound movements would degrade from LOS D to LOS F due to added school trips. During the afternoon peak hour, the access would continue to operate at LOS A overall; northbound movements would continue to operate at LOS C with a small increase in delay. To address the poor operations and potential high delays within the site and to

improve operations within the lot during morning drop-off and afternoon pick-up, it is recommended that turns from the driveway be limited to right only during these periods.

With these right-turn-only restrictions at the school access driveway and the N 80th Street/Stone Avenue N intersection, both locations would operate at LOS A overall during the morning and afternoon peak hours. Movements from Stone Avenue N to N 80th Street would be improved to LOS C or better. Access at the site driveway would also be improved to LOS C or better and the lot would be able to accommodate drop-off and pick-up trips with less delay. The effects of these restrictions on other study-area intersections (accounting for drivers using the alternate routes) would be minor. Therefore, it is recommended that, if approved by the Seattle Department of Transportation (SDOT), SPS work with the City to install signage on Stone Avenue N restricting movements at N 80th Street to right turn only.

Since the poor operations exiting the school parking lot would only occur for short periods during morning drop-off and afternoon pick-up periods, and would involve families at the school, it is recommended that the turn restriction at the driveway be enacted using driver guidelines that are distributed with information materials throughout the school year. The driveway could continue to operate without limits during other times.

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 renovation and addition that would increase enrollment capacity up to 600 students, an increase of 175 students compared to the existing school enrollment. Based on daily trip generation rates published for elementary schools by the Institute of Transportation Engineers and adjusted to reflect higher peak period rates observed at the site, the renovated and expanded Bagley Elementary School project is expected to generate net increases of about 250 trips per day (125 in, 125 out), 122 trips during the morning peak hour, and 59 trips during the

afternoon peak hour. The peak traffic volumes occur in the morning just before classes begin (between 7:00 and 8:00 a.m.) and in the afternoon around dismissal (between 1:45 and 2:45 p.m.).

The estimates described above include school-bus and delivery trips to the and from the site. With the added enrollment capacity, the school could generate up to 16 additional school-bus trips each day (4 in and 4 out in the morning and 4 in and 4 out in the afternoon). Other commercial vehicle trips include occasional food and supply deliveries as well as trash and recycling pick-up that already occur at the site.

For more information about the anticipated school traffic generation, refer to Appendix A – Transportation Technical Report (Heffron Transportation, Inc., 2018).

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.

There are no agricultural or forest product uses in the immediate site vicinity and the project would not interfere with, affect or be affected by the movement of agricultural or forest products.

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

Project construction would include earthwork that would consist of over-excavation for the footings and slabs on grade, basement, and stormwater detention that would remove about 5,000 cubic yards (cy) of material from the site and fill of about 2,000 cy for a net export of about 3,000 cy. Assuming an average of 20-cy per truck (truck/trailer combination), the excavation and fill would generate about 150 truckloads (150 trucks in and 150 trucks out). The bulk of the earthwork activities are likely to occur over six to eight weeks (30 to 40 days). This would correspond to an average of 7 to 10 truck trips per day and an average of about one truck trip per hour on a typical 8-hour construction work day. This volume of truck traffic may be noticeable to residents living near the site, but is not expected to 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. with workers arriving between 6:30 and 6:45 a.m. The number of workers at the project site at any one time would vary depending upon the construction element being implemented. Some parking for construction

personnel may be provided within the site, but some construction workers would park on-street along the site frontage.

The following measures are included as part of the proposal to reduce the traffic and parking impacts associated with the Daniel Bagley Elementary School Renovation and Addition project.

A. **Construction Transportation Management Plan (CTMP):** SPS would require the selected contractor to develop a Construction Transportation Management Plan (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; to the extent possible, construction employee parking would be contained on-site.

B. **Restrict Movements from Stone Avenue N at N 80th Street to Right-Turns Only:** If approved by SDOT, SPS would coordinate with the City to implement restrictions for Stone Avenue N at N 80th Street.

C. **Transportation Management Plan (TMP):** Prior to the school re-opening, SPS and the school principal would establish a Transportation Management Plan (TMP) to educate families about the access load/unload procedures for the site layout. The TMP would encourage school bus ridership, carpooling, and supervised walking (such as walking school buses). The plan would 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 (including restricting parking lot egress to right turn only). It would also instruct staff and parents not to block or partially block any residential driveways with parked or stopped vehicles.

D. **Engage Seattle School Safety Committee:** SPS would engage the Seattle School Safety Committee (of which SDOT is a member) to review walk routes and determine if any changes should be made to crosswalk locations, signage, or pavement markings. It should also ensure that school zone speed limits are established and enforced and that crossing guard locations—particularly at crossings of N 80th Street at Stone Avenue N—are determined.

Options for crosswalk enhancement at the Stone Avenue N crossing of N 80th Street, such as a pedestrian actuated rapid flashing beacon, could be considered.

E. **Develop Neighborhood Communication Plan for School Events.** SPS and the school administration would develop a neighborhood communication plan to inform nearby neighbors of 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 attendance. The communication would be intended to allow neighbors to plan for the occasional increase in on-street parking demand that would occur with large events.

F. **Event Management.** For the largest evening event held at the school—typically Curriculum Night—the school would work to identify additional parking supply (such as parking on play areas) and/or work to reduce total peak demand. Reductions in demand could be accomplished by separating the event into two sessions or into two nights based on grade levels. Upon completion of the project, SPS proposes splitting Curriculum Night into two nights for school years in which enrollment exceeds the current level of 437 students, as measured by the official count in October of each school year.

G. **Agreement for Shared Remote Parking:** SPS would coordinate with BCC to establish a new shared use agreement for parking. This could involve a shared use agreement for a portion of the parking located at the Robert Eagle Staff Middle School or Cascadia Elementary School site (located on N 90th Street west of Wallingford Avenue N) for Sunday services. The shuttles that already operate near that site to serve North Seattle College could add a stop for parking at those schools.

15. Public Services

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

The proposed project would add attendance to the facility, but is not anticipated to require additional public services above those already needed for operation.

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

An increased need for public services is not anticipated; therefore, mitigation to reduce impacts to public services is not proposed.

16. Utilities

a. Underline utilities currently available at the site:

Electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other

In addition to those utilities indicated above, cable and internet services are also available at the site.

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

Electricity, telephone, and natural gas would continue to be provided to the school. SPS would work with Seattle City Light, Puget Sound Energy, and its telephone provider to coordinate the extension of utilities to the additions, if needed.

The contractor would coordinate with utility purveyors to locate all existing utilities prior to proceeding with construction activity. Any active underground pipes encountered would be protected. Should undocumented piping or other utilities be encountered, the utility purveyor would be immediately contacted prior to resuming construction activity near the utility. Storm drains would be maintained and protected as catch basins.

Outdoor Play Area Improvements:

The existing irrigation system for the grass field will be replaced with a new drainage system when the new turf is installed. Runoff will also be conveyed to the City's CSO system.

C. SIGNATURES

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

Signature: _____

Name of signee: Eric Becker

Position and Agency/Organization: Sr. PM SPS/Capital Projects

Date Submitted: 4/10/2018

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: Conrad Plyler

Name of signee: Conrad Plyler

Position and Agency/Organization: Project Manager, Capital Projects, Seattle Public Schools

Date Submitted: January 13, 2022

REFERENCES

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PUBLIC COMMENTS AND SEATTLE PUBLIC SCHOOLS RESPONSES

Bagley Elementary School Addition Project
SEPA Public Comments and Seattle Public Schools Responses

SEPA regulations recommend that public comments on draft Checklists be considered and responded to, but provide flexibility in how the comments are presented. For efficiency, the comments have been summarized and similar comments have been grouped together and responded to in the following table. Any person interested in reading the individual comments may contact SPS for access to them.

The comment period on the Draft SEPA Checklist was from February 5 to March 5, 2018. Twelve individual comment letters or postcards were received.

1. **<u>Reproduce Public Comments.</u> The Final Checklist should include copies of public comments received. Copies of comments should be posted on the SPS website.**

   As stated above, SPS has summarized the comments for efficiency. Access to the individual public comments can be obtained by contacting SPS.

2. **<u>ADA Accessibility and Access to Appendices</u>. Appendices should be converted to an ADA-accessible format and should be accessible to all members of the public.**

   SPS is implementing a new policy to comply with a 2015 Consent Decree that requires SPS to make all documents posted to its website accessible to persons with visual impairments. The technical appendices prepared for this SEPA Checklist contain figures and other materials that are difficult to format to meet ADA accessibility requirements. As part of its policy, the SPS SEPA website provides contact information for obtaining the appendices in hard copy or electronic format.

3. **<u>Determination of Significance.</u> SPS should issue a Determination of Significance (DS) for the project and provide further detailed environmental review through an Environmental Impact Statement (EIS).**

   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 Bagley Elementary School Addition project.

4. **<u>Alternatives</u>. Due to issues with loss of outdoor playground space, loss of on-site parking, and traffic, Bagley Elementary is the wrong place to expand capacity. An EIS should examine alternatives. An EIS should discuss and evaluate why an expanded Bagley Elementary is being proposed so shortly after Cascadia Elementary opened ½-mile away. SPS should consider alternatives to the project, such as using current unused school buildings or repurchasing previously sold schools.**

   As noted in the response to comment #3, the SEPA Responsible Official will make a determination of the significance of impacts. A project without significant impacts does not require an EIS. The project was analyzed in the BEX IV

Programmatic EIS (July 2012), which considered a range of alternatives. A SEPA Checklist does not require an analysis of alternatives.

5. **Project Description. SPS should consider acquiring the lots on Aurora behind the school.**

   Acquiring additional property is not part of the proposed project, and a SEPA Checklist does not require an analysis of alternatives.

6. **Property Values and Livability. The project would affect overall livability in the area and property values.**

   The Checklist discloses impacts that could be experienced as effects to livability, such as land use (Section B.8), noise (Section B.7.b), and transportation (Section B.14). Property values are not a SEPA issue.

7. **Project Description. Section A.10 of the Checklist refers to demolition, but the details of demolition plans and impacts are not discussed.**

   The details of demolition plans are discussed in Section B.8.d of the Checklist.

8. **Enrollment. SPS should double-check enrollment projections. Enrollment projections for Wing Luke Elementary recently dropped.**

   Enrollment trends vary throughout the city and Daniel Bagley Elementary is in an area of the city that is experiencing growth. Enrollment projections only extend five years beyond the current timeframe, so over time, they can change as demographic information changes.

9. **Enrollment. The Checklist states that the school would have an increase of 175 students and four staff. It seems like more than four staff might be added when adding 175 students (about 43 students per staff member added)?**

   SPS has determined that the increased enrollment can be served by four additional full-time staff. A substantial number of the current staff are part time and SPS anticipates that the existing staff, including part time staff, combined with the four additional full-time staff, would meet the educational needs of the school.

10. **Enrollment. An elementary school with 500 to 600 students is too impersonal and will have a higher tension level.**

    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.

11. **Location. The Checklist references the school as being located on "Stone Way North," which should read "Stone Avenue North."**

    The project location has been corrected.

12. Trees. The removal of four trees for the new gymnasium is unnecessary.

The new gymnasium has been sited to provide the optimum balance between:

1. -proximity to the existing building and new classrooms so that the time lost by students transitioning between classes is minimized;
2. distance from the existing landmarked building and its historic features that might be obscured by an addition made directly adjacent to the building;
3. retaining access to daylight for spaces within the existing building and the new classroom addition which might be blocked by an addition made directly adjacent to either;
4. -retaining a sizable open play area with direct sightlines for supervision;
5. -retaining existing play structures and features to the extent possible;
6. -proximity to parking for potential community use.

The removed trees would be replaced according to City requirements and SPS would install additional trees around the site.

13. Trees. The Table of Trees in Appendix B has all-blank entries for its "Proposed Action" column. Exceptional tree #828 is missing from the numbers on the tree map in Appendix B.

Appendix B was developed before the project footprint was finalized, so proposed actions were not known. Proposed actions related to trees are discussed in Section B.4 of the Checklist. Tree #828 was mislabeled in the figure in Appendix B of the Draft Checklist; the figure has been corrected.

14. Trees. The new classroom addition would block sunshine from tree #828.

Tree #828 is more than twice the height of the existing building as well as the proposed classroom addition, so the upper part of the canopy would not be shaded; further, sunlight will still be available in the latter half of the day as the sun moves toward the west.

15. Energy. Opportunities for installing new solar-electric panels on the roof of the expanded building should be analyzed.

The opportunity for installing solar panels on the roof has been analyzed. The funding authorized by the voters in the BEX IV Capital Levy does not provide for solar panels at this time, however, conduit is being installed to provide a pathway from the roof to the electrical room for potential future installation.

Section B.6.c describes energy conservation features, which would meet or exceed the requirements of the Washington Sustainable Schools Protocol (equivalent to LEED Silver).

16. Housing. An EIS should examine how the expanded school would generate new residential developments in the area and the impacts of those developments.

The capacity of the school is being increased to accommodate enrollment projections based on existing and anticipated population increases. The expanded school would not generate new residential development in the area.

17. Land Use. The School District should be a strong voice in neighborhood upzoning decisions. The City Council must be required to include funding for school construction and land acquisition with upzoning.

Decisions of the School Board and actions of the Seattle City Council are outside the scope of this SEPA Checklist.

18. Land Use. Land Use Goal 3 in the City of Seattle Comprehensive plan guides public facilities changes and should be considered.

The Bagley Elementary School Addition project is consistent with City of Seattle zoning regulations.

19. Aesthetics. The classroom addition will loom over adjacent residential properties and make them darker. Windows in the classrooms will look into backyards and the windows of houses.

Section B.10.b of the Checklist has been revised to clarify that the new addition would be taller than the existing portables. The addition complies with building height and setback requirements for new buildings in residential zones.

20. Aesthetics. The gym addition would block views of Mount Rainier from residences on the north side of 80th Street.

The Checklist has been revised to acknowledge this impact in Section B.10.b.

21. Recreation. The Checklist does not discuss the impacts from use of the new gym under the Joint Use Agreement with the City Parks Department. Adult recreational use of the gym would impact parking, traffic, noise, and light.

While the new gymnasium, much like the current one, would be available for community-scheduled adult or youth recreational activities, no bleachers are being provided, nor is there space for seating around the basketball court. The participation and attendance levels for potential community-scheduled recreational uses in the gymnasium are expected to be similar to those after-hours community activities that are already possible within other spaces at the school (e.g., within the library, cafeteria, or classrooms). Occasional community use of the gymnasium is not expected to generate significant parking, traffic, noise, or light impacts.

All SPS gymnasiums are subject to the Parks Department Joint Use Agreement, and open to the public for scheduling until 10:00pm on weekdays and between 7:00am to 10:00pm on the weekends.

22. Recreation. The project would cause a loss of playground area. The Checklist does not state the size of the current outdoor playground area versus the proposed size. The project should plan for more, not less, play area.

Section B.12 has been revised to acknowledge the reduction in playground area. The amount of open space on the site would be reduced, but improvements to recreational facilities would provide more usable, accessible recreation facilities.

23. Views of Historic Resources. Views of the landmarked building, which are protected, would be blocked by the additions. Views of the incense-cedar tree would also be blocked. The tree may be eligible to be a City Landmark.

The additions would not block views of the front façade of Bagley Elementary School. The additions are being designed to be sympathetic with the existing landmarked building. SPS would obtain a Certificate of Approval from the City of Seattle Landmarks Preservation Board for the project. The project has been designed to protect the incense-cedar tree, which has not been designated a Landmark.

24. Historic Resources. Bagley Elementary school is a historic landmark. The proposed expansion may run afoul of historic-preservation laws and may not be permitted.

SPS would obtain a Certificate of Approval from the City of Seattle Landmarks Preservation Board for the project.

25. Historic and Cultural Resources. A redacted version of the Cultural Resources Report should be included as an appendix to the Checklist.

Cultural resources reports are exempt from public disclosure under RCW 42.56.300, but a redacted version can be acquired from the Department of Archaeology and Historic Preservation.

26. Historic and Cultural Resources. The School Board has requested that the State exempt the Seattle School District from City Landmarks regulations, putting historic features at risk. At the request of the Seattle School District, state legislators have submitted a bill which would allow the Seattle School Board to exempt school sites from Seattle Landmarks Preservation Board regulations.

SPS's request that it be exempt from City Landmarks regulations is unrelated to this project. SPS is working in cooperation with the Landmarks Preservation Board to address historic preservation issues associated with the project.

27. Cultural Resources. The Checklist states that there is low potential for intact, buried cultural resources. Even broken cultural artifacts can be valuable to Indian Tribes.

As described in Section B.13.b, the removal of A- and B-horizon soils from the site suggests that there is low probability of encountering intact cultural resources, as these are the soil horizons with archaeological potential. The word intact is referring to cultural deposits, rather than individual artifacts. Broken cultural artifacts within intact deposits would be protected under state law. The Inadvertent Discovery Plan (IDP) developed for Bagley Elementary School will

outline protocols to be followed if suspected cultural artifacts are identified during construction.

28. <u>Cultural Resources</u>. The District should conduct on-site archaeological monitoring during project construction.

As described in Section B.13.b, archaeologists monitored the drilling of boreholes conducted by Associated Earth Science, Inc. Observations during that monitoring indicated that no further archaeological monitoring was required. SPS will develop an IDP to follow in the event of archaeological resources discovery.

29. <u>Construction Traffic</u>. An EIS should identify the noise and traffic impacts of construction truck trips, particularly on North 80th Street, using a traffic operations study.

As stated in the *Transportation Technical Report*, the school would be closed during construction; students would be temporarily accommodated in the John Marshall School building located at 520 NE Ravenna Boulevard east of Green Lake. The construction effort would include earthwork estimated to remove about 5,000 cubic yards (cy) of material from the site and fill of about 2,000 cy for a net export of about 3,000 cy. This effort is estimated to generate an average of 7 to 10 truck trips per day and an average of about one truck trip per hour on a typical eight-hour construction work day. Even when combined with trips by construction employees and other deliveries of materials to the site, the volume of construction related traffic would be far lower than the volume currently generated daily by school-related trips. As a result, traffic operations around the site, including along N 80th Street, are expected to be better during the construction period than existing conditions.

30. <u>Bus Loading</u>. SMC 23.51B.002.I.3 prohibits a departure for bus loading unless the departure would contribute to reduced demolition of residential structures. SMC 23.51B.002.I.4 says an existing bus loading area can continue at an expanded if school capacity does not grow more than 25 percent. This project would increase capacity more than 40 percent.

SPS is not requesting a departure for on-street school-bus load/unload for this project. Historic enrollment at Bagley Elementary has been over 800 students. The proposed classroom and gym addition would not increase the capacity beyond the historic maximum of over 800 students, so no departure is necessary.

31. <u>Bus Loading</u>. How would the addition of 4 more school buses affect bus loading on Stone Avenue N?

There are currently two segments of curb-side school-bus load/unload signed along the west side of Stone Avenue N adjacent to the school site. The north segment is about 135 feet long and the south segment is about 120 feet long. The site is currently served by two full-size (typically 40-feet long) buses and five smaller (typically 25-feet long) special education (SPED) buses that load and unload within the parking lot. With the building modifications that allow for ADA access from Stone Avenue N, the SPED buses are planned to be relocated to

Stone Avenue N. The curb space currently allocated is expected to accommodate the relocated buses. As with any school site, adjustments to the length and time restrictions of approved on-street school-bus load/unload zones may be coordinated with the Seattle Department of Transportation (SDOT) as needed to accommodate more or fewer buses.

32. Parking. Parking is a concern in the neighborhood and the project would make parking worse. On-street parking is already full for part of the week, so expanding the school could paralyze the neighborhood. Parking overflow for large events would be a significant adverse impact.

As stated in the *Transportation Technical Report*, on-street parking within the site vicinity was studied and found to average 61 percent utilized (65 percent east of Aurora Avenue N) midday when school is in session (about 191 spaces are unused within 800 feet of the site). Of these 191 unused spaces, at least 127 do not have use or time restrictions and about 100 are located east of Aurora Avenue N. The analyses found that the existing unused on-street supply can accommodate the excess midday demand generated by the additional staff and volunteers that may be added due to the school renovation and the resulting additional enrollment capacity.

The analyses addressed conditions during evenings when occasional school events may occur. The larger school events (those other than Curriculum Night and drawing 140 to 425 attendees) could generate parking demand between 45 and 120 vehicles. At the lower end of the event attendance range, most or all demand could be accommodated within the on-site parking lot (with 46 spaces). At the higher end of the range, about 74 vehicles would require off-site parking and would be expected to use on-street parking. Based on the on-street parking utilization analysis presented previously, there were over 200 on-street spaces that could accommodate those events. The analysis noted that event parking overflow would be noticeable and would likely be full and congested along the roadways closest to the school, as it is under existing conditions. Due to the relative infrequency of those events (one per month or every other month), the increase in demand associated with the addition would not represent a significant adverse impact. For the largest event—Curriculum Night—parking is already full (utilization on Curriculum Night was 89 percent; 98 percent on roadways east of Aurora Avenue N) and increases in demand associated with the larger school could cause demand to exceed supply (greater than 100 percent) or to extend beyond the 800-foot study area. To mitigate this potential impact, the school could identify additional parking supply (such as parking on play areas or in shared lots) and/or modify the event to reduce total peak demand (such as by separating it into two sessions or into two nights based on grade levels).

33. Parking. The Checklist suggests that, for Curriculum Night, play areas could be used for parking and that the event could be split into two nights. This indicates that the planned school is too big for the site.

Curriculum night occurs once per year. Several SPS schools use hard surface play areas for parking during occasional large events and some schools modify events,

such as curriculum night to reduce total on-site attendance. These measures can be effective means to reduce peak parking demand and overflow to on-street parking during these infrequent events.

34. Parking. Parking in the neighborhood is already heavily used by attendees of Bethany Community Church.

The Transportation Technical Report also addressed parking conditions for Sundays. Seattle School District has a shared parking agreement with Bethany Community Church (BCC) that allows church members to park in the Bagley Elementary lot. Observed Sunday use of the lot found 63 to 68 vehicles parked (there are 58 striped spaces). With the project, the school's lot would have 12 fewer spaces (reduced to a supply of 46 spaces), which could result in 17 to 22 vehicles being displaced from the school lot. On-street parking on Sundays was found to average 85 percent utilized. While some of the displaced demand could occur on-street, it was recommended that additional parking supply measures be coordinated with BCC to mitigate for the loss of available shared supply on Sundays. BCC already contracts with North Seattle College for use of its southeast lot located at N 92nd Street / Corliss Avenue and provides shuttles continuously for the 9:30 and 11:00 a.m. services. SPS should coordinate with BCC to establish a shared-use agreement for a portion of the parking located at the Robert Eagle Staff Middle School or Cascadia Elementary School site (located on N 90th Street west of Wallingford Avenue N) for Sunday services. The shuttles that already operate near that site to serve North Seattle College could add a stop for parking at those schools. With this added shared parking option, the impacts of displaced Sunday parking demand could be mitigated.

35. Parking. The loss of onsite parking would affect impacts from Bethany Community Church (BCC) use of school parking on Sundays, when on-street parking is already full (85 percent). The Checklist suggests that the District could offer the church parking at Robert Eagle Staff Middle School or Cascadia Elementary on N 90th Street with shuttles running to the church. However, section B.14.h does not adopt this suggestion, so these impacts remain unmitigated in the proposal. There is also no evaluation of impacts in the neighborhood of Robert Eagle Staff Middle School or Cascadia Elementary from this recommendation.

As noted in the Transportation Technical Report, the BCC shuttle is already operating in the area between North Seattle College and the BCC site on Sundays. As stated in the Final Checklist (Section B.14.h.G), SPS would coordinate with BCC to establish a shared use agreement for a portion of the parking located at the Robert Eagle Staff or Cascadia Elementary School site. This agreement has not yet been confirmed. This potential agreement would allow use of about 12 parking spaces on Sundays at either Cascadia Elementary School or Robert Eagle Staff Middle School (a combined site that has over 240 off-street parking spaces in several lots) is not expected to result in adverse impacts at or around those schools. This recommendation has been added to Section B.14.h.

36. <u>Parking</u>. The Checklist states that the District "would work to identify additional parking supply" and "could" split Curriculum night into two nights. This is theoretical, not concrete planned mitigation.

Curriculum Night is typically the event with the largest parking demand. Upon completion of the project, SPS proposes splitting Curriculum Night into two nights for school years in which enrollment exceeds the current level of 437 students, as measured by the official count in October of each school year.

37. <u>Parking</u>. The analysis should consider the new Mosaic Church proposed for the building on the southwest corner of 78th and Aurora.

Although the school does not generate parking demand or cause impacts on Sundays, the *Transportation Technical Report* evaluated Sunday conditions because the proposed project would reduce the off-street supply that is available to Bethany Community Church (BCC) on Sundays through its shared-use agreement with SPS. That analysis found that parking conditions around the site on Sundays are effectively full and recommended mitigation in the form of additional shared parking at either Cascadia Elementary School or Robert Eagle Staff Middle School to replace the lost supply at the Bagley site cause by this project. Based on publicly available information about the proposed change of use to accommodate the Mosaic Church in the building at 7612 Aurora Avenue N, the applicant has recorded shared-parking covenants at two locations to accommodate the church parking demand. The District is not obligated to further evaluate or mitigate the potential Sunday impacts of a future development or use in the area.

38. <u>Parking Departure</u>. Because of major on-street parking issues, a parking departure from the city code should be detailed and examined in an EIS.

The need for a departure from parking requirements associated with the added gymnasium is noted in Section B.8.e of the SEPA Checklist. Departures are a separate process from SEPA. As noted in Section B.8.e of the SEPA Checklist, SPS would comply with the results of the departure process as determined by the Director of the Seattle Department of Construction and Inspections (SDCI).

39. <u>Traffic</u>. The traffic study should not use figures for existing traffic flow. It should use traffic flow figures projected at least two years into the future. Traffic flow on surrounding streets is increasing every month.

As described in the *Transportation Technical Report*, future traffic volume forecasts for 2020 conditions without the project were developed using a combination of a compound annual growth rate and traffic estimates for development projects that could generate traffic at one or more study-area intersections. A 1.0 percent compound annual growth rate was selected to account for potential new growth that may occur in the area. Project trips from the five potential development projects (referred to as pipeline projects), summarized in Table 1 of the report, were added. All pipeline projects added trips through the three study area intersections along Aurora Avenue N. There were also trips from pipeline projects through the study area intersections on N 80th Street and at the Green Lake Drive/W Green Lake Drive intersection. The growth rate and

approach are consistent with those used for traffic analyses of other schools and developments in the vicinity and throughout Seattle. The future 2020 traffic volume forecasts without the project were shown on Figure 4 of the *Transportation Technical Report.*

Trip generation estimates for Bagley Elementary School were derived from video traffic counts performed at the site driveway, surrounding intersections, and along the roadways adjacent to the school. The derived rates were applied to the proposed new enrollment capacity at Bagley Elementary (600 students) and the estimated increases in peak hour traffic were added to the forecast 2020 without-project traffic volumes to represent future conditions with the renovated school. Traffic operations analyses were then performed for the forecast 2020 with-project morning and afternoon peak hour traffic volumes, which were shown on Figure 7 of the report.

40. Traffic. The Checklist states that SPS would explore removing parking on the north side of N 80th to allow a load/unload zone adjacent to the school on the south side of N 80th for school arrival and dismissal, with unrestricted parking at other times of the day. How does this affect current uses of the N 80th parking?

As stated in the *Transportation Technical Report*, this potential measure was suggested by some community members during an earlier public meeting; However, it is not part of the proposal and additional discussions with community members, including residents that live along the subject segment of N 80th Street, at the most recent public meeting (February 15, 2018) and preliminary discussions with SDOT staff have indicated this change is not preferred. No further action on this measure is planned by SPS, and the mitigation measure has been deleted from the Checklist.

41. Traffic. The school parking lot entrance is narrow. The curb cut should be widened.

The determination of the site access driveway widths is not part of the SEPA review process, but rather, governed by SDOT. The project design team will examine the site access driveway and make adjustments to the extent allowed by SDOT and City design standards.

42. Traffic. The Checklist says the project will not require improvements to city transportation facilities in the area, but also suggests that right-turn-only measures be used at North 80th Street to deal with added traffic. Recent developments in the neighborhood, including a new apartment building three blocks to the north, will likely bring more traffic. Drivers will have fewer turning options crossing 80th between Aurora Avenue and Green Lake Drive. The checklist predicts the project will generate 250 new vehicle trips per day. It is not clear that mere right-turn restrictions will be enough, given the recent growth in commute-hour traffic on 80th. An EIS should be done to examine these effects and suggest further mitigation measures. This should be done to respect the city's policy "to minimize or prevent adverse traffic impacts, which

would undermine the safety, and/or character of a neighborhood, or surrounding areas" (Seattle Municipal Code, 25.05.675R).

See the response to Comment #36 related to how future traffic forecasts were developed for analysis presented in the *Transportation Technical Report*. The analysis, including review of the recommended turn restrictions at the N 80th Street / Stone Avenue N intersection were evaluated for future conditions with the estimated increases in traffic from assumed general background growth and from specific planned development projects. With the recommended right-turn-only restrictions at the N 80th Street/Stone Avenue N intersection, it would operate at LOS A overall during the morning and afternoon peak hours. Movements from Stone Avenue N to N 80th Street would be improved to LOS C or better. The effects of these restrictions on other study-area intersections (accounting for drivers using the alternate routes) would be minor. The redirected trips would add between 0 and 0.8 seconds of delay to affected stop-controlled intersections and less than 2.0 seconds of delay at the signalized intersections. The restrictions are also expected to enhance general operational and safety conditions in the area as queues and turns made through inadequate gaps would be reduced.

43. Traffic. More congestion from additional traffic and added parking demand will have a negative impact on the neighborhood which has not been properly assessed.

It is recognized most of the City of Seattle, including the area surrounding Bagley Elementary School, is experiencing growth and the associated changes required to accommodate that growth. SPS is obligated to accommodate new students within its boundaries and the proposal to add capacity at Bagley Elementary is a reaction to City-wide growth and projected student increases. The transportation analyses prepared for the project and documented in the *Transportation Technical Report* found that the existing network and parking supply can accommodate the added traffic and parking that may occur as a result of the increased enrollment, when paired with the recommended mitigation measures, and the project would not cause significant adverse impacts.

44. Traffic. This is one of the highest volume traffic areas of the city and it's not getting better. The east-west streets of 85th, 80th, Winona and 50th are at high volumes during school transportation hours, with Highway 99 at max also. The county has rated E-line bus at 100 percent rider capacity right now. At the same time SDOT is looking at a major change to street uses on N. 80th St and Green Lake Way N.

See the response to Comment 40 regarding increased congestion. It is noted that SDOT has identified plans for paving and safety projects in the Green Lake Area on Green Lake Drive N (reconfiguring to accommodate bike facilities) and N 80th Street (re-paving). The publicly available project update from March 2018, included some details about the changes to Green Lake Drive N, but does not include details about N 80th Street (other than it would be re-paved) or other changes to study-area intersections evaluated for the Bagley Elementary School project. SDOT materials indicated the project is still in design and those details are not available.

45. <u>Transportation Management Plan</u>. An EIS should explore further steps to mitigate the impacts of the new transportation management plan, including steps to actively enforce laws against blockage of residential driveways.

Implementation of a Transportation Management Plan (TMP) is recommended as a mitigation measure for the project (see Recommendation C in the *Transportation Technical Report*) and included a component that it "*should also instruct staff and parents not to block or partially block any residential driveways with parked or stopped vehicles.*" In addition, Recommendation D consists of measures involving the Seattle School Safety Committee with elements of enforcement. Both can incorporate elements to request enforcement of parking regulations. If vehicles block your driveway, you have the right to have the vehicles towed. It is also permissible to paint the curb within 5-feet of your driveway with yellow highway paint (per Seattle Municipal Code 11.72.120) to highlight the driveway and no parking area.

46. <u>Transportation</u>. An EIS should evaluate the option of hosting large events off-site at Robert Eagle Staff Middle School, where more off-street parking is available.

The event that typically generates the largest parking demand is Curriculum Night. For that event, families meet with students' teachers in their classrooms. Relocating that event to an off-site location would substantially detract from the purpose and meaning of the event. Therefore, it is proposed that, upon project completion and when enrollment grows beyond the current level of 437 students, the event would be split into two nights, which would mitigate the parking-related impacts of this large event with the higher enrollment capacity.

Parking demand generated by other evening events currently held at the school are typically substantially less than those for Curriculum Night. If the school were considering hosting an event with expected parking demand similar to or higher than Curriculum Night, the school could consider alternate sites if the existing facilities could not accommodate the event and if a suitable alternative venue is available.

47. <u>Transportation</u>. 80th Street North is a hazard due to drivers driving through occupied crosswalks and driveway access. Parking on the north side of the street is restricted from 4 to 6 pm which encourages its use as a travel lane. Planting strips on the north side have been damaged by vehicles that go over the curb. Planting trees along the south side of 80th could present a sightline hazard.

As listed in the *Transportation Technical Report*, Recommendation D stated that "*The District should engage the Seattle School Safety Committee (of which SDOT is a member) to review walk routes and determine if any changes should be made to crosswalk locations, signage, or pavement markings. It should also ensure that school zone speed limits are established and enforced and that crossing guard locations—particularly at crossings of N 80th Street at Stone Avenue N—are determined. Options for crosswalk enhancement at the Stone Avenue N crossing of N 80th Street, such as a pedestrian actuated rapid flashing beacon, could be considered.*"

The parking restriction on the north side was implemented by SDOT to allow use of that curb lane to alleviate capacity limits at the N 80th Street intersection with Aurora Avenue N to the west.

SDOT requires street trees for planting strips as part of its design standards. Sight triangles must also be maintained and the standards for tree location, spacing, species, and maintenance are determined by SDOT.

48. <u>Emergency Exits</u>. The plans for the expanded building show no exit on the southeast corner of the building. In case of an emergency, students would have to exit on the west side of the building onto the school playground. What if the emergency is on the west side? Has the fire department seen these plans? Students and teachers need alternative emergency only exits.

Although this is not a SEPA issue, the ground floor of the expanded school will have eight exit points, including the main entrance on the east side of the building and an existing door at the southeast corner of the building. The gym addition, a separate structure, will have three exit points. Plans for the new school have been developed with input and review from the Seattle Public Schools safety and risk management team. The plans will be reviewed by the City of Seattle Department of Construction and Inspections for conformance with the Life Safety provisions of the Seattle (International) Building Code. The plans will be reviewed by the City of Seattle Fire Marshal's office as part of the permitting process.

49. <u>Document Formatting</u>. Section B.1.g accidentally got merged with Section B.1.f.

The formatting of Sections B.1.f and B.1.g has been corrected.

FIGURES

SOURCE: OpenStreetMap, 2016; ESA, 2017

SPS Daniel Bagley

Figure 1
Project Vicinity

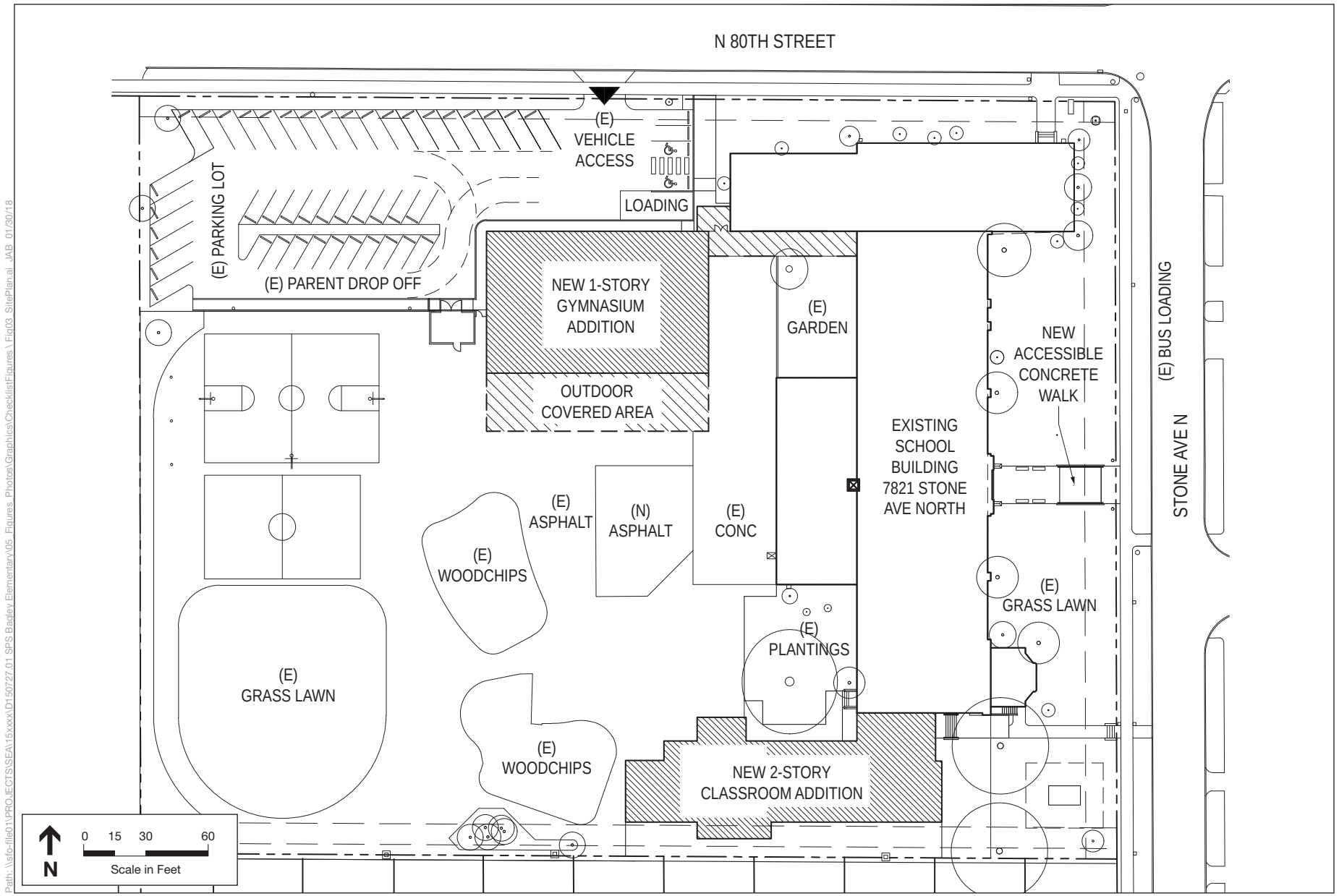
ESA

SOURCE: NAIP, 2015; ESA, 2017

SPS Daniel Bagley

Figure 2
Project Area

ESA



SOURCE: Miller Hayashi Architects, 2018

SPS Daniel Bagley

Figure 3

Site Plan

ESA

SOURCE: Google, 2021; ESA, 2022

SPS Daniel Bagley

Figure 4

Daniel Bagley Elementary School Proposed Design for Outdoor Play Area

ESA

APPENDIX A:
TRANSPORTATION TECHNICAL REPORT

TRANSPORTATION TECHNICAL REPORT

for

Daniel Bagley Elementary School
Renovation & Addition

PREPARED FOR:

Seattle Public Schools

PREPARED BY:

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February 6, 2018

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1. INTRODUCTION

This report presents the transportation impact analyses for the Seattle Public Schools' proposed renovation and addition to Daniel Bagley 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, and based on comments and questions raised and submitted by community members.[1] These analyses were prepared to support the SEPA Checklist for this project. 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.

1.1. Project Description

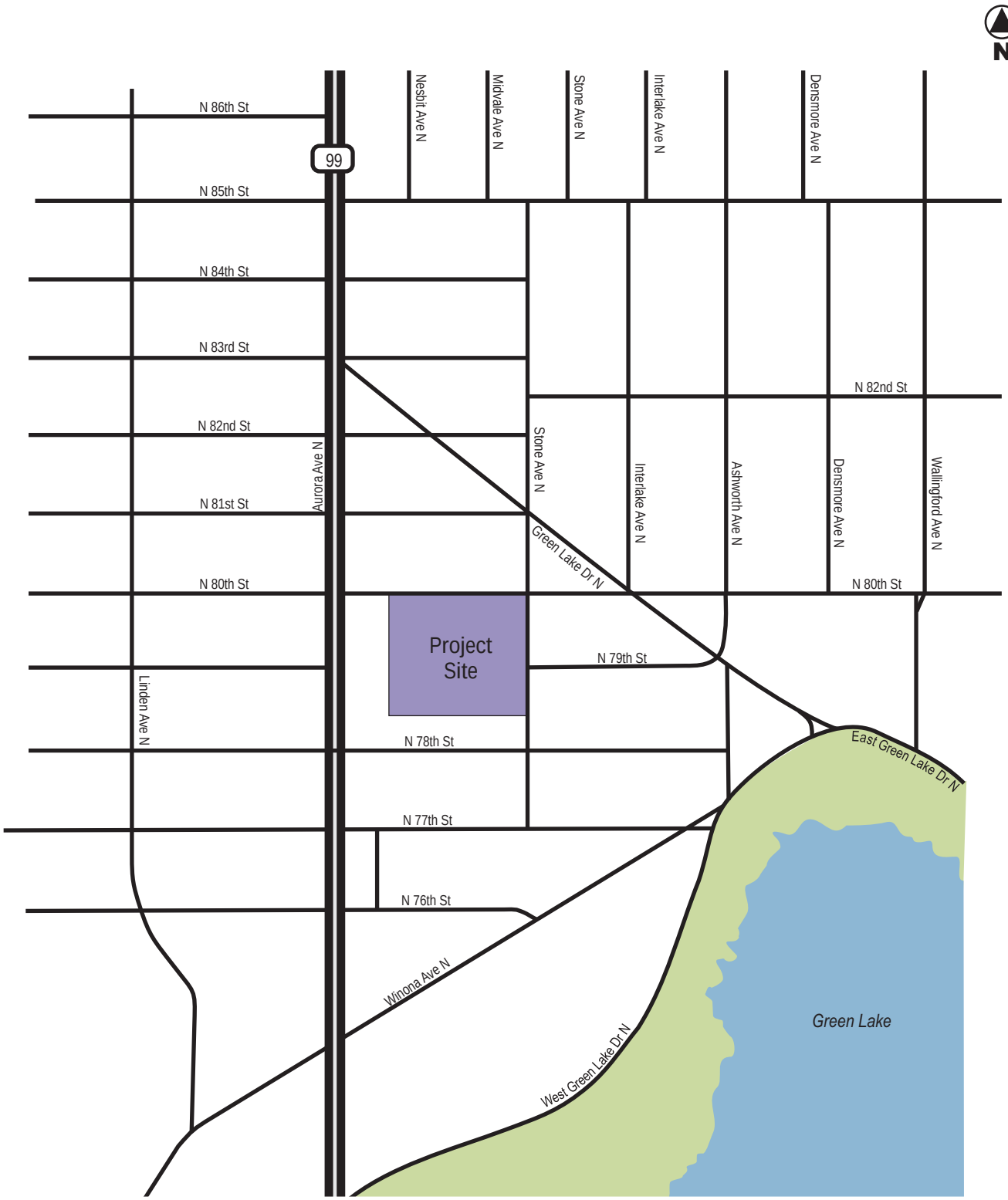
Seattle Public Schools plans to renovate and expand Daniel Bagley Elementary School, which is located at 7821 Stone Avenue N in the Green Lake neighborhood of Seattle. The following sections describe the existing school site and the proposed project.

1.1.1. Existing School Site

The school site is bounded by N 80th Street to the north, Stone Avenue N to the east, private residences to the south, and commercial properties to the west. The existing school building is located on the east side of the site and there is a cluster of portables in the southeast corner of the property. A surface parking lot and a mixed hard- and soft-surface play area occupy the west side of the site. The existing building has about 40,745 square feet (sf) of floor area;[2] there are also eight portable classrooms on the site. There is an existing driveway on N 80th Street located about 270 feet west of Stone Avenue N. 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*,[3] the current Daniel Bagley Elementary school building opened in 1930. Over the following decades, portions of the school site (western area near Aurora Avenue) were sold and portables were added to accommodate increased enrollment, which peaked in the 1950s with more than 800 enrolled students. Enrollment declined in the 1960s and most portables were removed. In fall 2016 at the time traffic data were collected for this analysis, enrollment was about 425 students in grades Kindergarten through 5th;[4] with 37 full time employees and 5 part-time employees.[5]

1 Community informational meeting held at Bagley Elementary, June 6, 2017.
2 Miller-Hayashi Architects, June 1, 2017.
3 Nile Thompson and Carolyn J. Marr; *Building for Learning, Seattle Public Schools Histories, 1862-2000;* 2002.
4 Seattle Public Schools, P223 Enrollment Data for Basic Enrollment report, September and October 2016.
5 Email communication, ESA Associates & SOJ, 2017.



BAGLEY ELEMENTARY
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Figure 1

Site Location and Vicinity

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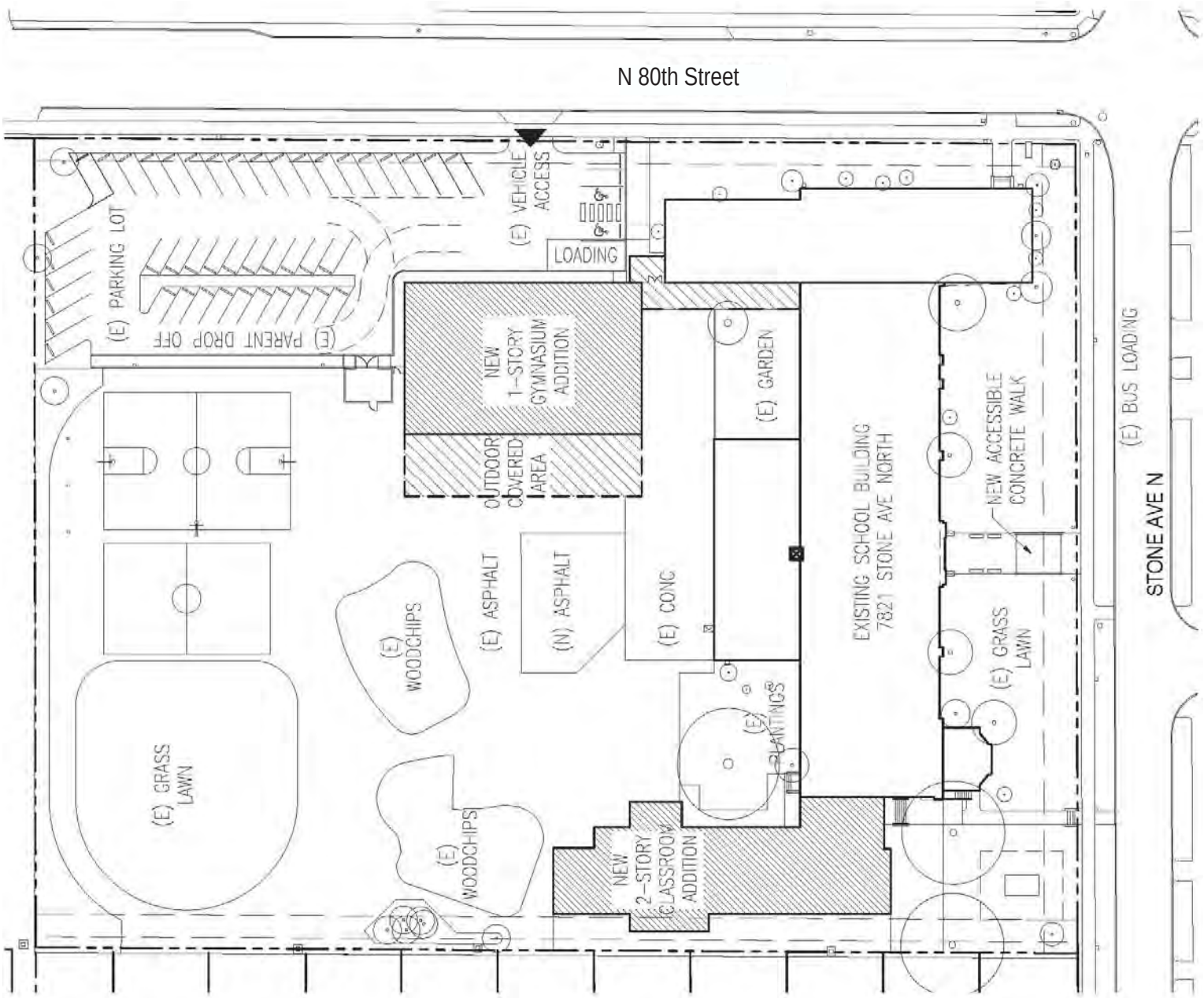
1.1.2. Proposed Site Changes

The proposed project would construct additions to and modernize the existing Daniel Bagley Elementary School. The additions would be funded by the BEX IV Capital Improvement Program, which was approved by voters in February 2013. Modernization of the existing school would be funded by the BTA IV Program, which was approved by voters in February 2016. The purpose of the addition project is to address current and projected elementary growth in the area, as well as to modernize existing facilities to better accommodate current educational practices and to better meet energy and building codes.

The existing school building would be extensively modernized, including systems replacement and seismic upgrades, and be brought up to current safety and energy codes. A two-story classroom addition with up to eight classrooms would be built to the southwest of and connected to the existing school. A new gymnasium addition would be constructed northwest of and connected to the existing school. The new buildings would total about 21,500 sf of floor area. The total capacity of the school would be increased to 600 students (a net increase of about 175 students compared to current enrollment) and the number of employees is expected to increase to 46 (41 full-time and 5 part-time).

Eight portable classrooms on the site would be removed. Because a portion of the gym addition would be located in the existing parking lot, parking would be reduced from 58 spaces to 46 spaces (a loss of 12 spaces). The family-vehicle load/unload would remain within the parking lot as currently exists. Access to the on-site parking would remain at its existing location on N 80th Street. The school-bus load/unload zone would remain in its existing location in front of the school on Stone Avenue N; Special Education (SPED) bus load/unload that currently occurs within the parking lot would be relocated to the school-bus load zone on Stone Avenue N. The proposed site plan is shown in Figure 2.

Construction is planned to begin in June 2019 with occupancy in fall 2020. During construction, the students would be temporarily accommodated in the John Marshall School building located at 520 NE Ravenna Boulevard near Green Lake. Future analyses (without and with the project) in this report reflect year 2020 conditions.



Source: Miller Hayashi Architects, October 25, 2017.

BAGLEY ELEMENTARY
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Figure 2

Proposed Site Plan

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2. BACKGROUND CONDITIONS

This section of the report presents the existing and future conditions without the proposed project. The impacts of the proposed project were evaluated against these base conditions. The future horizon year for this analysis is 2020, because this is the year the new school is scheduled to be re-opened and the site could be occupied with up to 600 students. For comparison, and to provide an analysis of potential new traffic and parking impacts, year 2020 without-project conditions assume the existing Daniel Bagley Elementary School continues operating in the existing facilities 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.

Several intersections were selected for study based on the travel routes used by parents, buses, and staff to access and egress the site area. The following nine study area intersections were identified for analysis for both the morning and afternoon peak hours.

Signalized Intersections
- Aurora Avenue N (SR 99) / N 80th Street
- Green Lake Drive N / N 80th Street
- Aurora Avenue N (SR 99) / N 77th Street

Unsignalized (Stop Controlled) Intersections
- Stone Avenue N / N 80th Street
- Aurora Avenue N (SR 99) / N 78th Street
- Green Lake Drive N / W Green Lake Drive

Uncontrolled Intersections
- Stone Avenue N / N 79th Street
- Stone Avenue N / N 78th Street

Site Access
- N 80th Street / Site Access

2.1. Roadway Network

The following describes key roadways in the site vicinity. Roadway classifications are based on the City's Street Classification Map.[6] In September 2016, the Seattle City Council approved an ordinance[7] to change Seattle's default arterial speed limit from 30 to 25 miles per hour (mph), unless otherwise posted, and the default non-arterial speed limit from 25 to 20 mph. The change to the default speed limit initially affects arterials in and around downtown and took effect in November 2016. In 2017, the City will extend the lower speed limit to several "neighborhood arterials" beyond downtown, and some signs have already been installed at key access points (e.g., off-ramps from Interstate 5). It is anticipated that the lower speed limits will be in effect by 2020.

Aurora Avenue N (SR 99) is a Principal Arterial that provides north-south access from Everett to Downtown Seattle. Near the site, there are two general purpose lanes and a dedicated Business Access Transit (BAT) lane in each direction with left-turn pockets at major intersections. The BAT lanes permit general traffic to make right turns at intersections, and also allow parking outside of peak hours. There is a raised center median and C-curb separating northbound and southbound directions of travel. There are curbs, gutters, and sidewalks on both sides of the street near the school site. The posted speed limit near the site is 30 mph.

N 80th Street is an east-west Minor Arterial that provides access between Lake City Way NE (SR 522) to the east and Golden Gardens Park to the west. Near the site, there is one travel lane in each direction and dedicated left-turn lanes at major intersections. There are curbs, gutters, and sidewalks on both sides of the roadway; parallel parking is permitted on the north side near the site with peak-period restrictions.

6 Seattle Department of Transportation (SDOT), Street Classification Maps, accessed November 2016.
7 City of Seattle, Office of the City Clerk, Ordinance #125169 passed September 26, 2016.

Green Lake Drive N is a southeast-northwest Minor Arterial that connects Aurora Avenue N (SR 99) on the west with Green Lake on the east. There is one lane in each direction with a two-way left-turn lane or median in the center of the roadway. Parallel parking is permitted on both sides of the roadway and there are curbs, gutter, and sidewalks on both sides. There are bicycle lanes on both sides of the roadway separated from the vehicular traffic by striping.

Stone Avenue N is a north-south local access roadway that connects between N 85th Street and N 77th Street. There are curbs, gutters, and sidewalks on both sides of the street. Parking is permitted on both sides of the roadway.

N 79th Street is an east-west local access roadway that provides access between Stone Avenue N to the west and Green Lake Drive N to the east. There are curbs, gutters, sidewalks, and parallel parking is permitted on the south side of the street.

N 78th Street is a two-lane, east-west local access roadway that provides access between Aurora Avenue N (SR 522) to the west and Ashworth Avenue N to the east. There are curbs, gutters, sidewalks, and parallel parking is permitted on both sides of the street.

N 77th Street is a two-lane, east-west local access roadway that provides access between Winona Avenue N to the east and 8th Avenue NW to the west. There are curbs, gutters, sidewalks, and parallel parking is permitted on the south side of the street near the site.

Several planning documents were reviewed to determine if any transportation improvements could affect the roadways and intersections near Daniel Bagley Elementary School by 2020 when the school addition would be completed. These documents are listed below. Plan details are described in greater detail in their respective report sections.

City of Seattle's Adopted 2017-2022 Capital Improvement Program (CIP)[8] – No improvements identified in the site vicinity to the roadway network.

Adopted Seattle Bicycle Master Plan (BMP)[9] – The plan proposes future improvements along three roadways within the study area. Neighborhood greenways are recommended along N 77th Street and Stone Avenue N and a cycle track (protected bike lane) is recommended along Green Lake Drive N south of N 83rd Street. The *Seattle Bicycle Master Plan – Implementation Plan 2016 – 2020*[10], which defines the priorities of the projects, indicates that the proposed cycle track along Green Lake Drive N is a priority project in 2019.

Neighborhood Greenway Work Plan[11] – This plan, covering the years from 2015 to 2020, does not identify any additional greenways, beyond those identified in the *BMP*, planned in the site vicinity.

Move Seattle – 10-Year Strategic Vision for Transportation[12] – This document prioritizes projects through 2024 that improve the transportation system for all modes of travel. There are no projects defined in the site vicinity. However, improvements along Aurora Avenue N are highlighted as future long-term priority projects (projects that are to be implemented beyond 2024).

None of the projects listed above are expected to affect the roadway network operations or intersection capacity within the study area by 2020. Therefore, the existing roadway and intersection channelization and operating conditions were assumed to remain unchanged in year 2020 for this analysis.

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8 City of Seattle, 2017.
9. City of Seattle, March 2015.
10 SDOT, March 2016.
11 http://www.seattle.gov/transportation/greenwaysworkplan.htm, June 2017.
12 SDOT, Spring 2015.

2.2. Traffic Volumes

2.2.1. Existing Conditions

At the time of this analysis, the school day at Daniel Bagley Elementary School started at 7:55 A.M. and ended at 2:05 P.M. The school-day length and start and dismissal times will be adjusted for the 2017-2018 school year. The District has received funding from the City of Seattle to change from a three-tier schedule to a two-tier schedule for one year. Therefore, for the 2017-2018 school year, Daniel Bagley Elementary will begin at 7:55 A.M. and will be dismissed at 2:25 P.M. If ongoing funding for the two-tier schedule is not provided, school hours could return to the three-tier schedule, which could have Daniel Bagley Elementary starting at 7:45 A.M. and dismissing at 2:15 P.M. To capture the existing traffic conditions during the range of current and potential future arrival and dismissal peak periods, traffic counts were performed at study area intersection from 7:00 to 9:00 A.M. and from 1:30 to 3:30 P.M. on Wednesday, September 21, 2016. The morning and afternoon peak hours for school traffic occurred from 7:00 to 8:00 A.M. and from 1:45 to 2:45 P.M.; the existing traffic volumes for the school peak hours are shown on Figure 3.

2.2.2. Future Without-Project Conditions

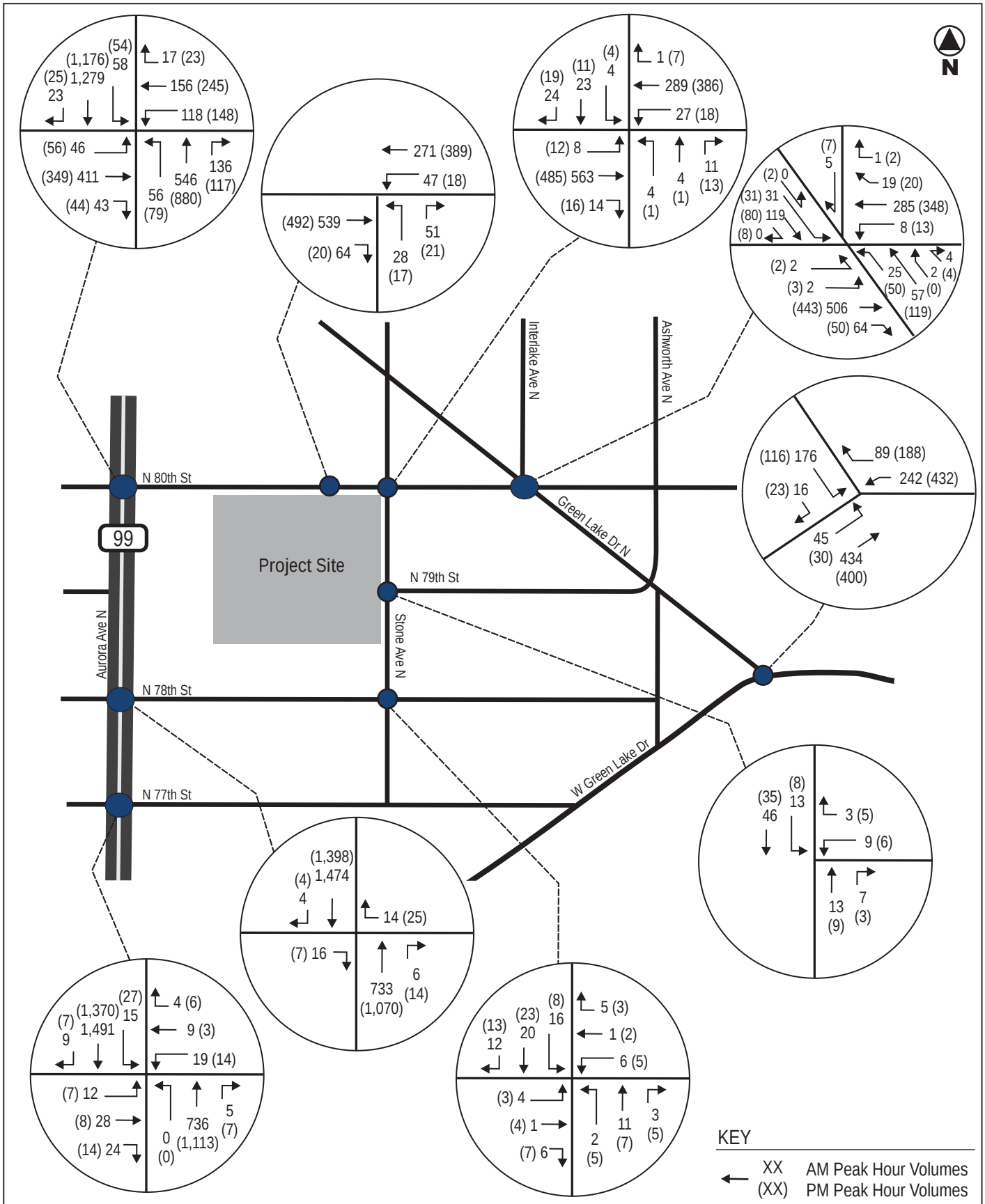
Future traffic volume forecasts for 2020 conditions without the project were developed using a combination of a compound annual growth rate and traffic estimates for development projects that could generate traffic at one or more study-area intersections. A 1.0% compound annual growth rate was selected to account for potential new growth that may occur in the area. Additionally, project trips from the five potential development projects (referred to as pipeline projects) summarized in Table 1 were added. All pipeline projects added trips through the three study area intersections along Aurora Avenue N. There were also trips from pipeline projects through the study area intersections on N 80th Street and at the Green Lake Drive/W Green Lake Drive intersection. The growth rate and approach are consistent with those used for traffic analyses of other schools and developments in the vicinity and throughout Seattle. The 2020-without-project morning and afternoon peak hour traffic volumes are shown on Figure 3.

Table 1. Pipeline Development Projects Included in Traffic Forecasts

Permit #	Project Address	Program	AM Trips	PM Trips	Trip Estimate Source
3017776 [1]	1147 N 81st St	Day Care at Bethany Church	29	29	Heffron Transp.[2]
3016093	7612 Aurora Ave	34 apts, 3,308 sf retail	5	5	Gibson [3]
3024527	949 N 80th St	24 SEDU [4]	7	9	William Popp [5]
3019553	8558 Nesbit Ave N	39 apts, 36 SEDU	22	29	Gibson. [6]
3019810	8228 Green Lk Dr N	66 apts, 4 live-work units	15	22	Gibson [7]

Source: Heffron Transportation, Inc., June 2017.

1. This project was completed by June 2017. Pipeline trips were added because they were not included in September 2016 traffic counts.
2. Bethany Community Church – Christian Education Center, *Heffron Transportation, Inc., December 2, 2014*
3. Aurora 77 Development, *Gibson Traffic Consultants, April 2014.*
4. SEDU = Small Efficiency Dwelling Unit
5. 949 N 80th St, *William Popp, January 18, 2017.*
6. Nesbit Apartments, *Gibson Traffic Consultants, April 2016.*
7. 8228 Green Lake Dr N, *Gibson Traffic Consultants, November 2015.*



BAGLEY ELEMENTARY
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Figure 3
Existing (2016) Traffic Volumes
Morning and Afternoon Peak Hours

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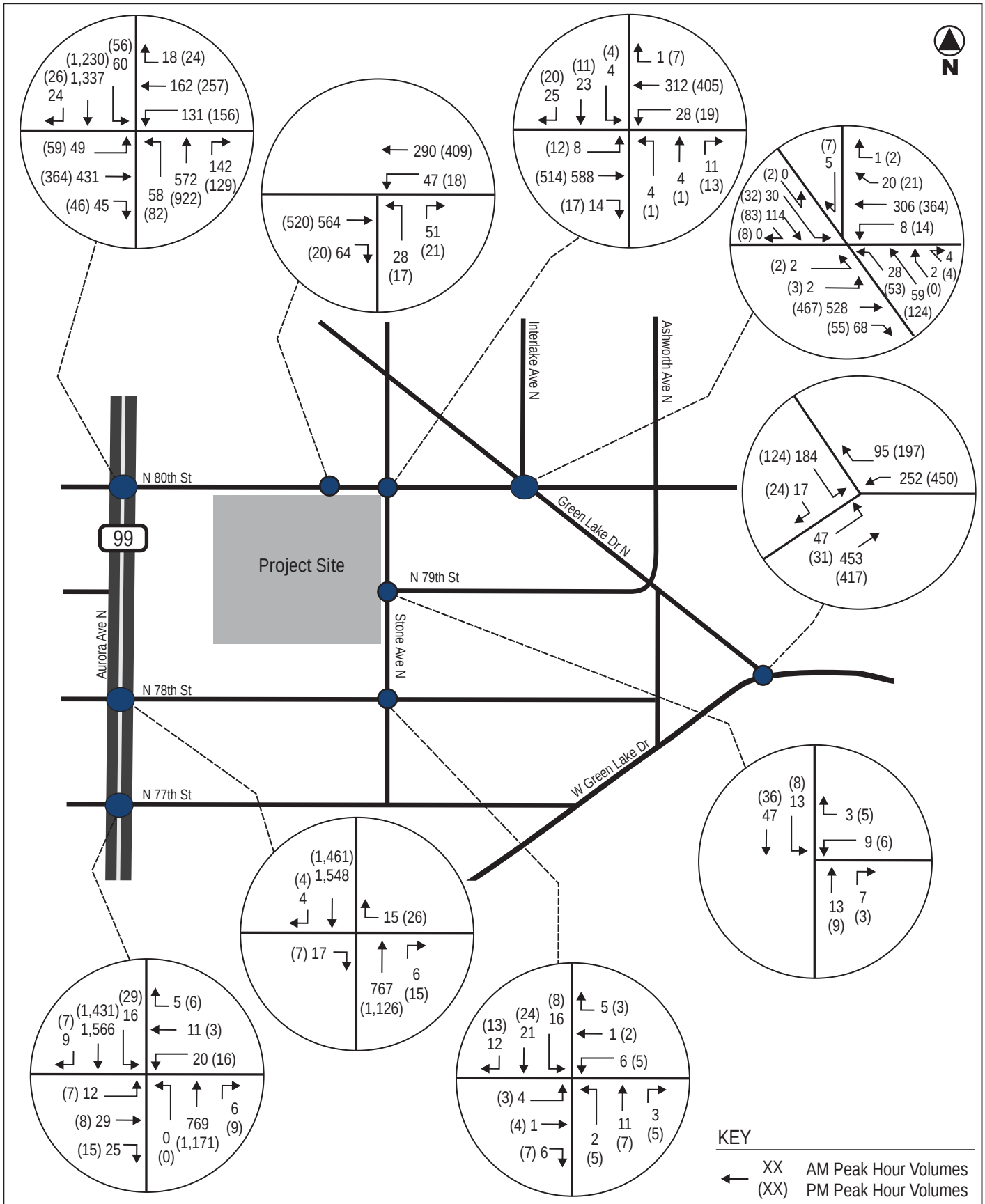

BAGLEY ELEMENTARY
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Figure 4
Forecast 2020 WIthout-Project Traffic Volumes
Morning and Afternoon Peak Hours

heffron transportation inc

2.3. Traffic Operations

2.3.1. Off-Site Study Area Intersections

Traffic operations analyses were performed for the eight off-site study-area intersections. Traffic operations are evaluated using level of service (LOS) with six letter designations, "A" through "F." 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 level of service definitions and thresholds are provided in Appendix A. The City has no adopted level of service standards for individual intersections; 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. The City may tolerate delays in the LOS E or F range for minor movements at unsignalized intersections where traffic control measures (such as conversion to all-way-stop-control or signalization) are not applicable or desirable.

Levels of service were determined using procedures in the *Highway Capacity Manual 2010*.[13] Delay calculations rely on complex equations that consider a number of variables. For example, delay at signalized intersections is determined based on a complex combination of variables including: traffic volume by intersection movement, lane configuration, signal phasing and timing, and number of pedestrian crossings. Delay at unsignalized intersections is determined for vehicles that must stop or yield for oncoming traffic. That 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. All level-of-service calculations were performed using the *Synchro 9.1* traffic operations analysis software. The software models reflect current intersection geometries and levels of service were reported using the *Synchro* module for signalized intersections and the *HCM 2010* module for unsignalized intersections. Intersection geometric characteristics, signal timing, and signal phasing were collected during field observations. These characteristics were assumed to remain unchanged for future 2020 conditions.

Two of the five unsignalized study-area intersections are uncontrolled. At the Stone Avenue N intersections with N 79th Street and N 78th Street, field observations indicated that the majority of drivers treat the east and west approaches as stop-controlled. At the Aurora Avenue N/N 78th Street intersection, the east-west movements are restricted to right turns only (e.g., left turns are prohibited from both Aurora Avenue N and N 78th Street).

Table 2 summarizes existing and forecast 2020 levels of service without the proposed project for both the morning and afternoon peak hour conditions. As shown, the signalized intersections currently operate at LOS D or better during both peak hours and are expected to remain at those levels in 2020 without the project. The unsignalized study-area intersections operate at LOS A overall and all movements currently operate at LOS D or better during the morning and afternoon peak hours. The assumed increases in background traffic is projected to add some delay (less than 4.0 seconds per vehicle) to the study-area intersections by 2020 without the project.

It should be noted that, based on observations performed at the existing school during morning arrival and afternoon dismissal, passenger vehicles arrive from all directions and short-term parking for load/unload activities occurs primarily along the east side of Stone Avenue N in front of the school and along both sides of Stone Avenue N between Green Lake Drive N and N 80th Street. Load/unload activities also occur along the south side of N 79th Street east of Stone Avenue N, and along both sides of N 78th Street primarily west of Stone Avenue N. During these times, on-street parking and

[13] HCM 2010, Transportation Research Board, 2010.

maneuvering into and out of the parking spaces slows travel around the school, particularly along Stone Avenue N. These activities resulted in somewhat congested conditions for about 15 minutes in the morning (7:35 to 7:50 A.M.) and about 20 minutes in the afternoon (2:00 to 2:20 P.M.)

Table 2. Level of Service Summary – Existing (2016) and 2020-Without-Project Conditions

Intersections	Morning Peak Hour				Afternoon Peak Hour			
	Existing		Without Project		Existing		Without Project	
Signalized	LOS [1]	Delay [2]	LOS	Delay	LOS	Delay	LOS	Delay
N 80th Street / Aurora Ave N	D	35.2	D	37.7	D	41.9	D	44.8
N 80th Street / Green Lake Dr N	B	17.2	B	17.5	B	12.4	B	12.7
N 77th Street / Aurora Ave N	A	4.7	A	5.0	A	3.0	A	3.2
Two-Way Stop Controlled	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
N 80th Street / Stone Ave N (overall)	A	4.2	A	4.4	A	1.9	A	1.9
Northbound Movements	D	30.7	D	34.3	C	16.5	C	17.4
Eastbound Left Turns	A	9.0	A	9.2	A	9.0	A	9.0
Westbound Left Turns	A	9.0	A	9.1	A	8.9	A	9.0
Southbound Movements	D	31.0	D	34.5	C	22.8	C	24.2
N 78th Street / Aurora Ave N (overall)	A	0.4	A	0.4	A	0.3	A	0.3
Eastbound Right Turns	C	17.6	C	18.5	C	16.1	C	16.7
Westbound Right Turns	B	11.2	B	11.5	B	14.3	B	14.8
W Green Lake Dr / Green Lake Dr N (overall)	A	6.7	A	7.6	A	2.9	A	3.1
Eastbound Left Turns	A	8.1	A	8.2	A	8.5	A	8.6
Southbound Left Turn	D	28.5	D	32.4	C	19.5	C	20.8
Southbound Right Turn	B	10.6	B	10.7	B	12.1	B	12.3
N 79th Street / Stone Ave N (overall) [3]	A	1.9	A	1.9	A	2.8	A	2.8
Westbound Movements	A	9.6	A	9.7	A	9.2	A	9.2
Southbound Left Turns	A	7.4	A	7.4	A	7.4	A	7.4
N 78th Street / Stone Ave N (overall) [3]	A	3.9	A	3.8	A	4.6	A	4.6
Northbound Left Turns	A	7.6	A	7.6	A	7.5	A	7.5
Eastbound Movements	B	10.8	B	10.9	B	10.4	B	10.4
Westbound Movements	A	9.9	A	9.9	A	9.6	A	9.6
Southbound Movements	A	7.4	A	7.4	A	7.3	A	7.3

Source: Heffron Transportation, Inc., May 2017.

1. *LOS = Level of service.*
2. *Delay = Average seconds of delay per vehicle.*
3. *Intersections are uncontrolled. Based on field observations, analysis assumes east-west direction treated as stop.*

2.3.2. Site Access

Access to the school's on-site parking lot is located on N 80th Street approximately 270 feet west of the N 80th Street/Stone Avenue N intersection. This lot currently serves as a load/unload area for passenger vehicles and the smaller SPED buses. The full-size school buses load and unload on-street adjacent to the site on the west side of Stone Avenue N. Operational analyses of the site access driveway indicate it operates at LOS A overall during the morning and afternoon peak hours; however, the northbound movement (from the on-site lot to N 80th Street) operates at LOS D during the morning peak hour and LOS C during the afternoon peak hour. All other movements operate at LOS A.

2.4. Parking

On-site and on-street parking surrounding the site was surveyed to determine the existing parking supply, parking demand, and parking utilization. The data and analyses are used to evaluate how parking demand and utilization could be affected by the proposed renovation of Bagley Elementary School. Seattle Public Schools has a shared-use parking agreement that permits Sunday use of the on-site lot by Bethany Community Church (BCC), which is located directly north of the school site. On Sundays, people attending the church are permitted to use the on-site parking lot at Bagley Elementary. Existing parking conditions in the study area are described below. The potential impacts of the proposed project, including the impact of potential changes to the school on-site parking supply on the church parking during Sunday Services are evaluated later in Section 3.4 .

2.4.1. On-Street Parking

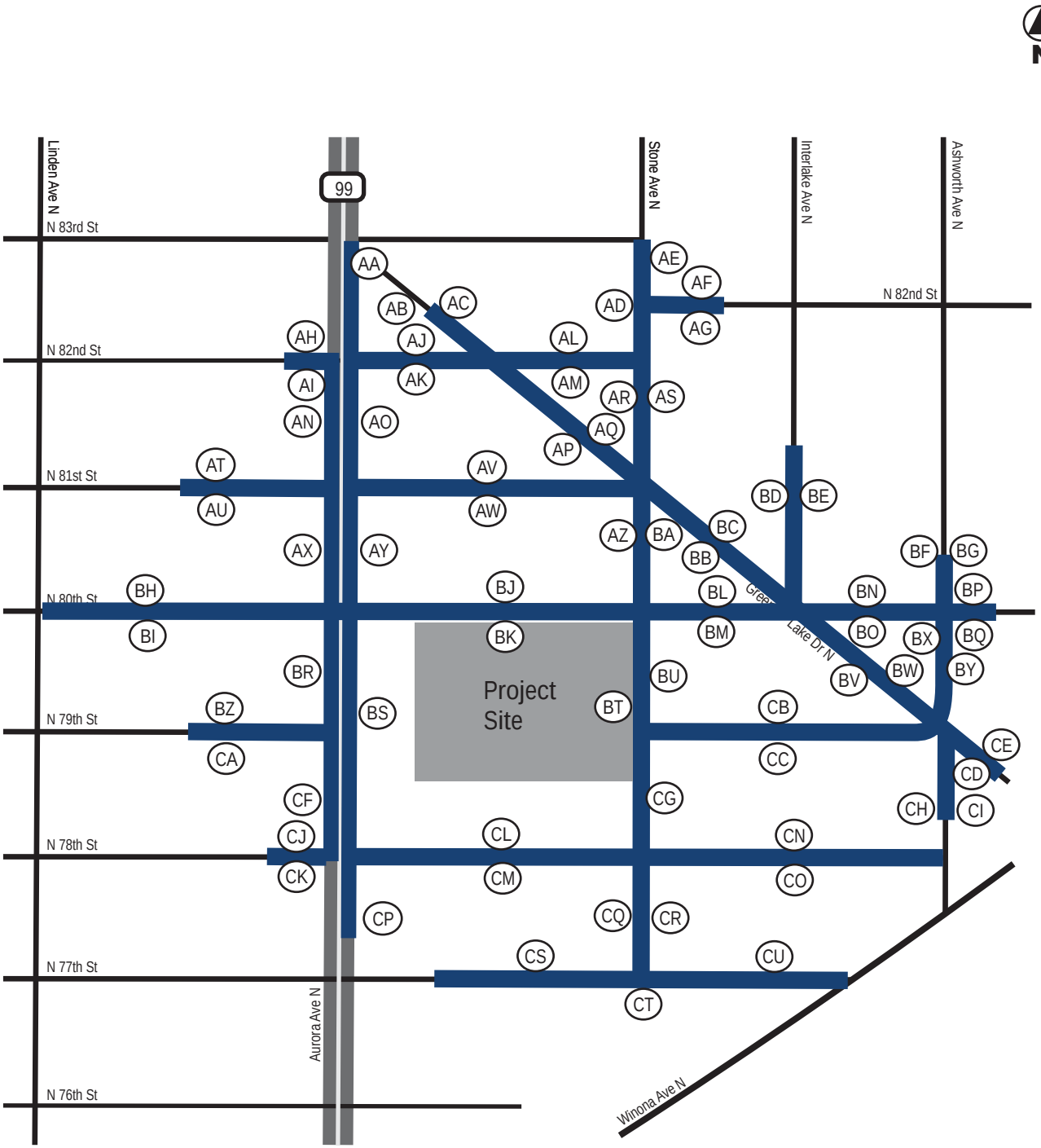
On-street parking occurs along a number of roadways within the study area. A detailed on-street parking utilization study was performed and supply was documented according to the methodology outlined in the City of Seattle's TIP #117.[14] The City recommends use of this methodology to document the number and type of on-street parking spaces that may exist within a defined study area. This analysis was completed to document the existing supply and how it is currently utilized.

The study area for the on-street parking utilization analysis included all roadways within an 800-foot *walking* distance from the school site corners, which is the study area typically required by the City of Seattle for analyses of this type. The 800-foot walking distance results in a study area that extends north to N 83rd Street, south to N 77th Street, west to Linden Avenue N, and east to Ashworth Avenue N. The land uses within the study area consist of primarily single- and multi-family residences to the north, south and east of the project site. To the west of the site, along both sides of Aurora Avenue N, and along the north side of Green Lake Drive N, land uses are primarily commercial. It is recognized that Aurora Avenue N could be a barrier that many are unwilling to cross for the purpose of parking. Therefore, analysis has been performed for the full area as well as the subarea east of Aurora Avenue N.

Existing On-Street Parking Supply

Within the study area, the local access roads are typically 25-feet wide with curb and gutter on both sides. Along these streets, parking supply was considered to exist on both sides (unless otherwise signed). Parking supply along the three arterials in the study area was documented consistent with parking signage. 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 west side of Stone Avenue N between N 78th Street and N 80th Street is one block face (identified as block face 'BT'). The study area and the designated block faces are shown on Figure 5.

[14] The City recommends using information in TIP #117 to assist with parking utilization studies. Although created for another purpose, TIP #117 contains guidance for measuring on-street supply; other details and analysis requirements, such as parking demand count periods, are typically based on the type of project being proposed and evaluated.



Key:

Study Area Block Faces

XX Block Face ID

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Figure 5
Study Area for On-Street Parking
Utilization Surveys

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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 of street between street features were converted to legal on-street parking spaces using values in the City's TIP #117.

The parking supply survey determined that there is a total of 495 on-street parking spaces within the defined study area. The majority of these spaces (423) are parallel parking with no time restrictions that would affect school demand. Along Aurora Avenue N, 28 spaces are signed for no parking during the peak commute hours of 6:00 to 9:00 A.M. and 3:00 to 7:00 P.M. Between the hours of 9:00 A.M. and 3:00 P.M., 26 of these spaces are restricted to 1-hour parking and two of these spaces are 30-minute load only. There are 12 spaces along N 80th Street between Aurora Avenue N and Stone Avenue N where parking is prohibited between 4:00 and 6:00 P.M. Near commercial development along N 80th Street, N 81st Street, N 82nd Street, and Green Lake Drive N, there are a total of 16 spaces with either 1- or 2-hour time restrictions. Along the Bagley Elementary site frontage on the west side of Stone Avenue N, there are 13 spaces signed for "School Bus Only" with restriction periods of 7:00 to 9:00 or 7:00 to 10:00 A.M. and 1:00 to 4:00 P.M. Within the study area, there is one 30-minute load/unload space restricted between the hours of 7:00 A.M. to 6:00 P.M. (except for Sundays and Holidays) and two disabled parking spaces. The study area within 800 feet of the site includes some block faces located along and west of Aurora Avenue N (total of 93 spaces), which are not likely used to serve Daniel Bagley Elementary or BCC.

Existing On-Street Parking Demand

Existing parking demand counts within the study area were performed on weekdays in July, August, September, and December 2016. Counts were performed mornings (at about 8:00 A.M. and between 10:00 and 11:00 A.M.) to reflect conditions when school-related parking demand is usually highest. Counts were also performed during evenings (between 7:00 and 8:00 P.M.) to reflect conditions when occasional school events occur. To determine the impact of school activity on parking, counts were conducted on days when school was in-session and not in-session. Summer break mid-morning counts were performed on Wednesday, July 20, and Thursday, August 4, 2016. Morning counts with school in session were performed on Thursday, September 22, Tuesday, September 27, and Thursday, December 1, 2016. The evening counts were performed on two Thursdays, September 15 (a non-event evening) and September 29, 2016 (during Curriculum Night). Curriculum Night is typically one of the most highly attended evening events of the school year. To address the impact of parking related to BCC, Sunday counts were performed on April 30, and May 7, 2017 between 11:30 A.M. to 12:15 P.M. This time period corresponds to the 11:00 A.M. church service which has traditionally been the most highly attended service.[15]

The results of the parking demand surveys are summarized in Table 3. Detailed summaries of the on-street parking demand for each block face for all counts are included in Appendix B. On-street parking utilization was calculated as 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 also summarized in Table 3. As shown, utilization rates ranged from about 59% to 64% on days when school was in session (an average demand of about 304 spaces and 61% utilization) and from 51% to 54% during Summer Break. The counts indicate that some on-street parking may be utilized by staff,

[15] *Transportation Impact Analysis for Bethany Community Church,* Heffron Transportation, Inc., March 21, 2005, and updated information for Christian Education Center, December 2014.

volunteers, or visitors. The higher school-day demand could also be related to BCC or hide-and-ride demand generated by drivers that park in the area and walk to transit stops on Aurora Avenue N at N 80th Street. The increased demand during school days mainly occurred along Stone Avenue N between Green Lake Drive N and N 78th Street, and along N 80th Street between Aurora Avenue N and Green Lake Drive N. There was also limited increased demand along N 79th Street. On the Thursday evening when there were no school events, the parking was observed to be 59% utilized; utilization during Curriculum Night increased to 89%. On the Sundays during services at BCC, utilization averaged 85% and ranged from 81% to 88%. For the purposes of evaluating the potential on-street parking impacts associated with new development, the City considers utilization rates of 85% or higher to be effectively full.

When the supply located along and west of Aurora Avenue N is excluded from the utilization analyses, rates on school days ranged from 58% to 69% (midday average of 65%); 62% on the evening without an event; 98% during Curriculum Night; and from 91% to 97% on the two Sundays (average of 93%).

Table 3. Parking Demand Survey Results

Time Period Surveyed	Parking Supply	Total Vehicles Parked	% Utilization
Summer Break Mid-Morning (10:00 to11:00 A.M.)			
Wednesday, July 20, 2016	495	*267*	*54%*
Thursday, August 4, 2016	495	*250*	*51%*
Average Summer Break Mid-Morning	*495*	*259*	*52%*
Weekday Morning (8:00 to 8:45 A.M.)			
Thursday, December 1, 2016	*449*	*263*	*59%*
Weekdays Mid-Morning (10:00 to 11:00 A.M.)			
Thursday, September 22, 2016	495	318	64%
Tuesday, September 27, 2016	495	289	58%
Average Mid- Morning	*495*	*304*	*61%*
Evening No Event (7:00 to 7:45 P.M.)			
Thursday, September 15, 2016	*495*	*291*	*59%*
Evening Event (7:00 to 7:45 P.M.)			
Thursday, September 29, 2016	*495*	*443*	*89%*
Sundays (11:30 A.M.to 12:15 P.M.)			
April 30, 2017	495	435	88%
May 7, 2017	495	403	81%
Average Sunday	*495*	*419*	*85%*

Source: Heffron Transportation, Inc., June 2017.

2.4.2. On-Site Parking

There is one off-street parking lot on the school site located west of the existing school building. The lot has 58 striped spaces. Parking demand counts were performed in this lot on the same days and at the same times as described for the on-street parking. The highest midday demand observed was 36 vehicles; on average, there were 25 unused on-site spaces midday on school days. On-site demand on Curriculum Night was 64 vehicles and exceeded the striped supply.

Counts performed in the lot on Sundays during BCC services found 68 vehicles on April 30 and 63 vehicles on May 7. During those times, some vehicles were observed parked in the school's loading zone (which is not used on Sunday) and on grass areas in the lot.

2.5. Traffic Safety

Collision data for the study area intersections and roadway segments were obtained from SDOT. These data, reflecting the period between January 1, 2014 and June 1, 2017 (3.4 years), were examined to determine if there are any unusual traffic safety conditions that could impact or be impacted by the proposed project. The collision data are summarized in Table 4.

Historically, unsignalized intersections with five or more collisions per year and signalized intersections with 10 or more collision per year have been considered high collision locations (HCLs) 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. SDOT staff conducts an annual analysis of high collision locations to define which locations should be reviewed. The *Draft 2017 Candidate Locations for HCL Reviews*,[16] which lists locations based on the previous three years (2014 through 2016) of recorded collisions, was reviewed for this analysis. None of the study area intersections are included in the list or meet the definition of an HCL. None of the collisions involved fatalities. It should be noted that there is one location just beyond the study area that is identified on the HCL review list. The intersection of N 80th Street/Ashworth Avenue N is listed as a candidate location for HCL review due to the five collisions experienced in 2016 at this location (there were four collisions in 2014 and three in 2015).

Table 4. Collision Summary (January 1, 2014 through June 1, 2017)

Intersection	Rear-End	Side-Swipe	Right Turn	Left Turn	Right Angle	Ped / Cycle	Other	Total for 3.4 Years	Average/ Year
N 80th St / Aurora Ave N	3	4	1	3	0	0	0	11	3.2
N 78th St / Aurora Ave N	0	0	1	0	0	0	0	1	0.3
N 77th St / Aurora Ave N	0	1	0	0	0	0	0	1	0.3
N 80th St / Stone Ave N	0	0	0	0	1	0	0	1	0.3
N 79th St / Stone Ave N	0	0	0	0	0	0	0	0	0.0
N 78th St / Stone Ave N	0	0	0	0	0	0	0	0	0.0
N 80th St / Green Lake Dr N	0	0	0	0	0	0	0	0	0.0
W Green Lake Dr / Green Lake Dr N	0	0	0	0	0	0	1	1	0.3
Roadway Segments	**Rear-End**	**Side-Swipe**	**Right Turn**	**Left Turn**	**Right Angle**	**Ped / Cycle**	**Other**	**Total for 3.4 Years**	**Average/ Year**
N 80th St between Aurora Ave N and Stone Ave N	1	2	0	0	2	0	0	5	1.5
Stone Ave N between N 80th St and N 78th St	0	0	0	0	0	0	0	0	0.0

Source: City of Seattle Department of Transportation, June 2017.

[16] SDOT, received March 2017.

2.6. Transit Facilities and Service

King County Metro Transit (Metro) provides bus service in the site vicinity. The closest bus stops are located on Aurora Avenue N (SR 99) with the northbound stop just north of the intersection with N 80th Street and the southbound stop just south of the intersection. These stops are served by the RapidRide E Line. The E Line provides all-day service seven days per week between Aurora Village in Shoreline and Downtown Seattle. On weekdays, the route operates from about 4:50 A.M. to 2:40 A.M. with headways (time between consecutive buses) of 5 to 60 minutes.

King County Metro recently adopted 'Metro Connects,'[17] the 25-year vision plan that will serve as the guiding policy framework for future improvements to the transit network. The plan identifies new routes serving the study area. By 2025, the plan proposes a frequent route (5- to 15-minute headways) between the Loyal Heights neighborhood and the University District with service along Green Lake Drive. By 2040, the plan proposes that this route would be upgraded to RapidRide service (headways of 5 minutes) and that a new frequent route would be added between the Loyal Heights Neighborhood and the Northgate Transit Center with service along N 80th Street.

School bus transportation is made available to Bagley Elementary School students who qualify for transportation. Students whose transportation service addresses are within the attendance area boundaries and outside the designated walk boundaries are eligible for district arranged transportation. The existing school is served by two full-size school buses and five smaller SPED buses.[18]

2.7. Non-Motorized Transportation Facilities

As described in the *Roadway Network* section, all roadways in the study area have sidewalks on both sides and intersections with marked crosswalks are below.

- N 80th Street / Aurora Avenue N: *crossing all legs.*
- N 80th Street / Stone Avenue N: *crossing west leg.*
- N 80th Street / Green Lake Drive N: *crossing all legs.*
- N 79th Street / Stone Avenue N: *crossing north leg.*
- N 78th Street / Stone Avenue N: *crossing west leg.*
- N 77th Street / Aurora Avenue N: *crossing all legs.*
- Green Lake Drive N / E Green Lake Drive: *crossing all legs.*

No specific planned non-motorized facility improvements are listed for the study area roadways or intersections in the City of Seattle's currently adopted CIP or the *Safe Routes to School 5-Year Action Plan For Seattle*.[19] The adopted *2017-2022 CIP* includes funding over the next five years for capital improvements dedicated to school zones for signing, crosswalk maintenance, curb bulb and curb ramp replacement and maintenance, sidewalk maintenance, and changes to traffic circulation around schools. The funding aligns with the programs outlined in *Safe Routes to School 5 Year Action Plan for Seattle.* The SDOT action plan identifies the priority of improvements for Seattle schools; Daniel Bagley Elementary School is ranked 77th for sidewalk improvements and 45th for crosswalk improvements.

As previously mentioned, the separated bike lanes on Green Lake Drive N are the only existing bicycle facilities near the site. Within the study area, the *BMP* identifies planned bicycle infrastructure

17 King County Metro, adopted January 2017.
18 Email communication, SOJ, 2017.
19 Seattle Department of Transportation; *Safe Streets, Healthy Schools and Communities*; Fall 2015.

improvements that would connect to the citywide bicycle network. The *BMP* recommends a cycle track along Green Lake Drive N-E Green Lake Way that would extend from the Aurora Avenue N/NW 83rd Street intersection and connect to the existing cycle track at NE Ravenna Boulevard. A cycle track is a "*protected bicycle lane that is physically separated from motor vehicle traffic and distinct from the sidewalk; they may be one-way or two-way, and may be at street level or raised several inches above.*" The *BMP* also recommends neighborhood greenways along N 77th Street and Stone Avenue N. Neighborhood greenways are generally non-arterial streets where signage, protected arterial crossings, and traffic calming measures are used to discourage vehicle through trips and to create a comfortable environment for bicycles and pedestrians to mix with local access traffic travelling at low speeds.

According to the City's *2016-2020 BMP Implementation Plan*, the cycle track is to be constructed in 2019. The time frame for implementation of the greenway improvements is not included in the City's *2016-2020 BMP Implementation Plan* or in the *Neighborhood Greenways Multi-Year Workplan*.

3. PROJECT IMPACTS

This section of the report describes the conditions that would exist with the Bagley Elementary School renovation at its planned enrollment capacity of 600 students. Vehicle trip estimates associated with the school were added to the 2020-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. The following sections describe the methodology used to determine the proposed project's impacts.

3.1. Roadway Network

No changes to the surrounding roadway network, site frontages or site access are proposed.

3.2. Traffic Volumes

The proposed project would generate new vehicular, pedestrian, and bicycle activity on the surrounding transportation network. The re-opened school is expected to have an enrollment capacity of 600 students. The school is expected to generate an increase in daily and peak hour traffic compared to existing conditions. The following describes the assumptions used to estimate project generated traffic.

3.2.1. School Trip Generation

Trip generation estimates for school projects can be developed using one of two methods. For new schools, rates published in the Institute of Transportation Engineers' *Trip Generation Manual*[20] are typically applied. For modernizations and/or expansions of existing schools, it is preferred to use counts of traffic at the existing school. This method works best for schools located in areas where school-related traffic can easily be isolated and identified, and traffic counts can be used to develop rates specifically for that school. There is limited on-site load/unload capacity at Bagley Elementary and many drivers choose to park on-street for student drop-off/pick-up. Trip generation estimates were derived from the video traffic counts performed at the driveway, surrounding intersections, and along the roadways adjacent to the school. The resulting estimates were compared to published trip generation rates.

Based on the data collected, the school currently generates an estimated 0.70 trips per student in the morning peak hour and 0.34 trips per student in the afternoon peak hour. These rates are higher than the average rates published for Elementary Schools (Land Use 520) in the *Trip Generation Manual* (0.45 trips per student in the morning peak hour and 0.28 trips per student in the afternoon peak hour); however, they are within the range of results reported by ITE. Since these rates were derived specifically for the existing school, they are most appropriate for use in evaluating future conditions with the replacement project and added enrollment capacity.

The derived rates were applied to the proposed new enrollment capacity at Bagley Elementary (600 students). Table 5 presents the resulting trip estimates for the renovated Bagley Elementary School. These estimates include school bus trips, employee trips, and parent-vehicle trips. With the renovation and additional enrollment, Bagley Elementary School could be served by up to 4 full-size and up to 7 smaller buses (SPED).[21]

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20 ITE, 9th Edition, 2012.
21 Email communication, SOJ, 2017.

Table 5. Bagley Elementary School Project – Trip Generation Estimates

Site Condition	Enrollment	Morning Peak Hour			Afternoon Peak Hour		
		In	Out	Total	In	Out	Total
Proposed Daniel Bagley Elementary	600 students [a]	237	183	420	98	106	204
Existing Daniel Bagley Elementary	425 students [b]	168	130	298	70	75	145
Net Change	175 Students	69	53	122	28	31	59

Source: Heffron Transportation, Inc., June 2017.

a. Proposed future capacity of the school.

b. Enrollment of the existing school at the time of analysis (October 2016).

3.2.2. Trip Distribution & Assignment

The expanded Bagley 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 existing patterns observed surrounding the school. These distribution patterns reflect the existing and expected future travel characteristics of the local roadway network including the location of the site access driveway, parking supply, and student drop-off/pick-up areas. Most of the morning and afternoon peak hour trips are expected to consist of passenger vehicles (for student drop off and pick up) and school buses. Some trips also would likely be generated by teachers or staff.

School buses are expected to approach the site from west and east of the site on N 80th Street. The load/unload zone for buses is planned to remain on the west (southbound) side of Stone Avenue N; load/unload of SPED buses is planned to be relocated from the on-site lot to Stone Avenue N. After loading or unloading, the buses would depart to the south. The school is located toward the southwestern portion of its attendance area. Passenger-vehicle load/unload for students is expected to continue within the parking lot; on-street load/unload is also expected to continue along Stone Avenue N, N 79th Street, and N 78th Street near the school site.

The project traffic distribution patterns and assignments of new trips for both the morning and afternoon peak hour are shown on Figure 6. The net new peak hour school trips were added to the forecast 2020 without-project traffic volumes to represent future conditions with the renovated school. The forecast 2020 with-project morning and afternoon peak hour traffic volumes are shown on Figure 7.

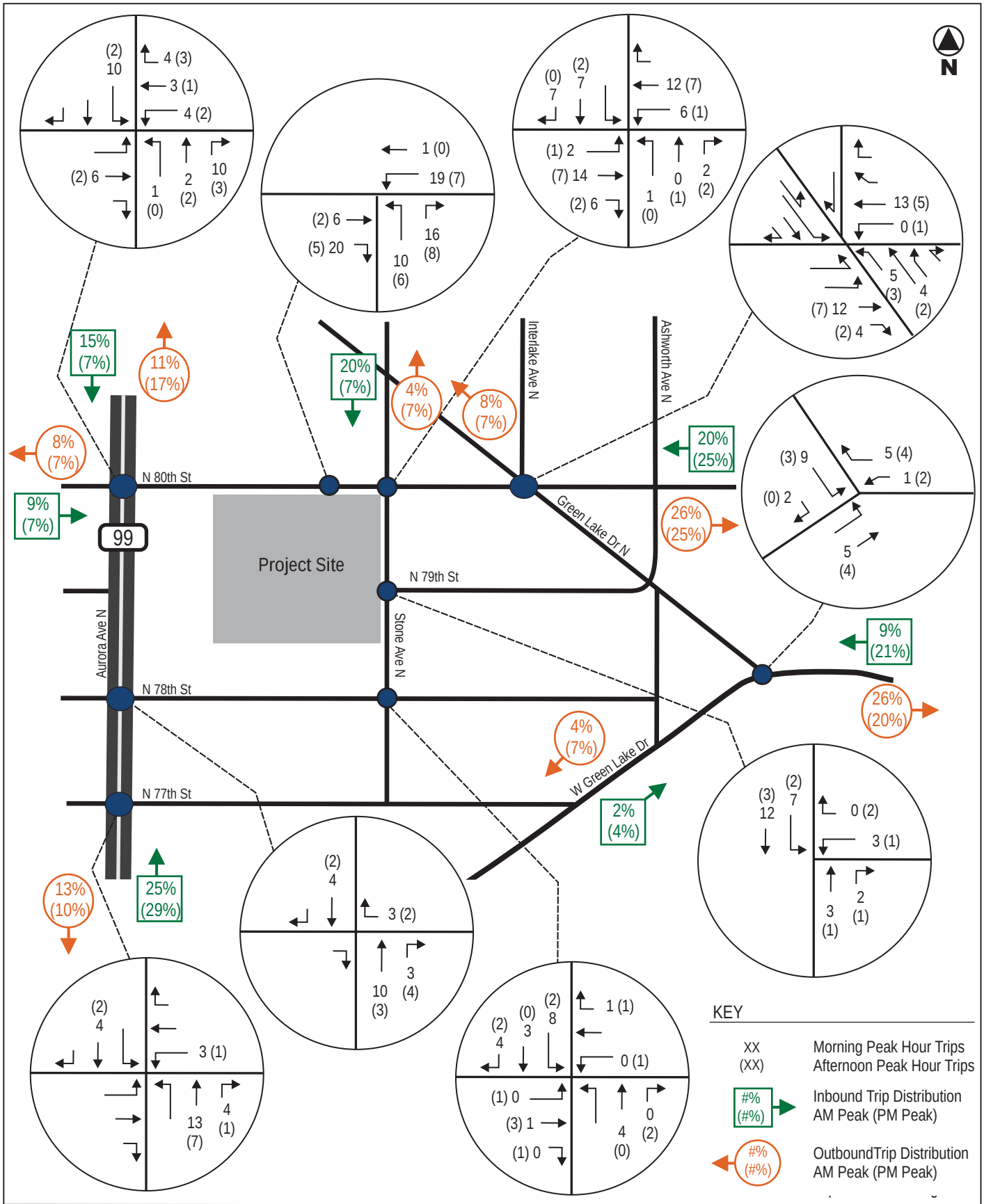

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Figure 6
Project Trip Distribution and Assignment
Morning and Afternoon Peak Hours

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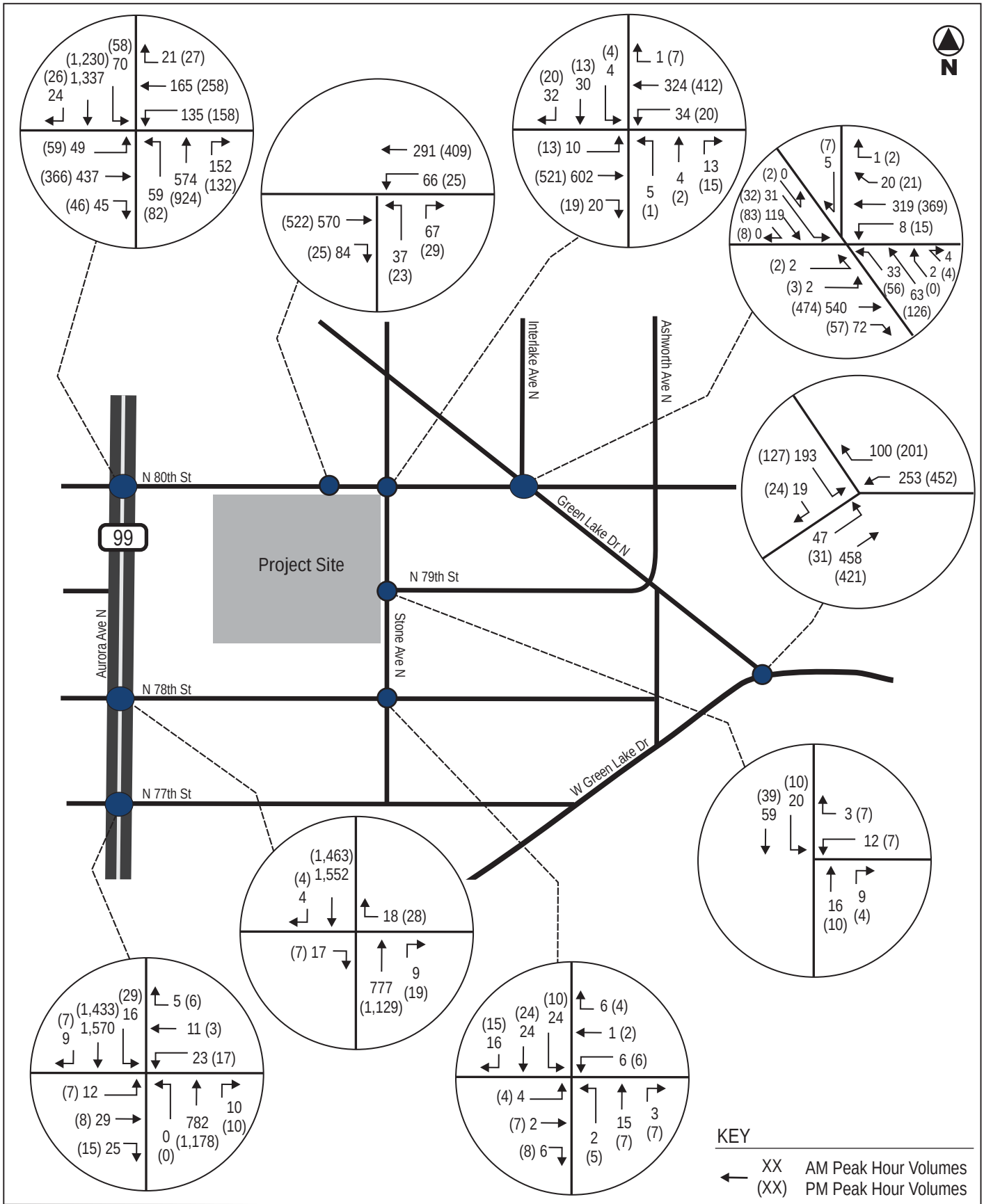

BAGLEY ELEMENTARY
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Figure 7
Forecast 2020 With-Project Traffic Volumes
Morning and Afternoon Peak Hours

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3.3. Traffic Operations

Intersection levels of service for future with-project conditions were determined using the same methodology described previously. The school is expected to generate new pedestrian trips and could increase the number of pedestrian crossings at the nearby study intersections. The potential increases in pedestrian crossing activity as well as the added school bus trips and the peaking characteristics of school traffic (school drop-off and pick-up primarily occurs during about 20 minutes in the peak hour) have all been accounted for in the operations analyses.

3.3.1. Off-Site Study Area Intersections

Levels of service for the off-site study area intersections were calculated using the 2020-with-project traffic volumes. Table 6 shows the results of the analysis with levels of service for the 2020-without-project conditions included for comparison. As shown, the additional traffic and pedestrian activity generated by the proposed increase in enrollment capacity is expected to add some delay to several of the study area intersections and turning movements during both the morning and afternoon peak hours. However, the study area intersections would continue to operate at the same overall levels of service as without-project conditions. All three signalized intersections are forecast to operate at LOS D or better. At the W Green Lake Drive/Green Lake Drive N intersection during the morning peak hour, the southbound left turn would degrade from LOS D to LOS E (project-related delay increase of less than three seconds). With the exception of one other intersection, the movements at the unsignalized intersections would operate at the same levels as without-project conditions.

Northbound and southbound movements at the N 80th Street/Stone Avenue N intersection are forecast to degrade to LOS F during the morning peak hour with the project. The poor operations during the morning peak hour would affect a relatively small number of through- and left-turning vehicles (9 northbound and 34 southbound). Due to the low volumes, the intersection would likely not meet minimum volume warrants for signalization outlined in the *Manual on Uniform Traffic Control Devices (MUTCD).*[22] However, a mitigation measure that would restrict movements from Stone Avenue N to right-turns only at N 80th Street could address the poor operations. The impacts and benefits of this measure are presented later in Section 3.3.3.

[22] US Department of Transportation, Federal Highway Administration, 2009.

Table 6. Level of Service Summary – Forecast 2020 Without- and With-Project Conditions

Intersections	Morning Peak Hour				Afternoon Peak Hour			
	Without Project		With Project		Without Project		With Project	
Signalized	LOS [1]	Delay [2]	LOS	Delay	LOS	Delay	LOS	Delay
N 80th Street / Aurora Ave N	D	37.7	D	38.7	D	44.9	D	45.2
N 80th Street / Green Lake Dr N	B	17.5	B	17.8	B	12.4	B	12.5
N 77th Street / Aurora Ave N	A	4.9	A	5.0	A	3.2	A	3.2
Two-Way-Stop & Uncontrolled	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
N 80th Street / Stone Ave N (overall)	A	4.4	A	9.9	A	1.9	A	2.4
Northbound Movements	D	34.3	F	76.6	C	17.4	C	20.0
Eastbound Left Turns	A	9.2	A	9.8	A	9.0	A	9.5
Westbound Left Turns	A	9.1	A	9.3	A	9.0	A	9.1
Southbound Movements	D	34.5	F	65.5	C	24.2	D	29.7
N 78th Street / Aurora Ave N (overall)	A	0.4	A	0.4	A	0.3	A	0.3
Eastbound Right Turns	C	18.5	C	18.6	C	16.7	C	16.8
Westbound Right Turns	B	11.5	B	11.6	B	14.8	B	15.0
W Green Lake Dr / Green Lake Dr N (overall)	A	7.6	A	8.5	A	3.1	A	3.2
Eastbound Left Turns	A	8.2	A	8.2	A	8.6	A	8.6
Southbound Left Turn	D	32.4	E	35.3	C	20.8	C	21.1
Southbound Right Turn	B	10.7	B	10.7	B	12.3	B	12.3
N 79th Street / Stone Ave N (overall) [3]	A	1.9	A	2.2	A	2.8	A	3.1
Westbound Movements	A	9.7	A	10.4	A	9.2	A	9.5
Southbound Left Turns	A	7.4	A	7.5	A	7.4	A	7.5
N 78th Street / Stone Ave N (overall) [3]	A	3.8	A	4.0	A	4.6	A	5.2
Northbound Left Turns	A	7.6	A	7.8	A	7.5	A	7.7
Eastbound Movements	B	10.9	B	12.7	B	10.4	B	11.5
Westbound Movements	A	9.9	B	10.5	A	9.6	A	9.9
Southbound Movements	A	7.4	A	7.5	A	7.3	A	7.4

Source: Heffron Transportation, Inc., June 2017.

1. *LOS = Level of service.*
2. *Delay = Average seconds of delay per vehicle.*
3. *Intersections are uncontrolled. Based on field observations, analysis assumes east-west direction treated as stop.*

3.3.2. Site Access

Analysis of the site access driveway indicate that the overall level of service would degrade from LOS A to LOS B during the morning peak hour and the northbound movements would degrade from LOS D to LOS F due to added school trips. During the afternoon peak hour, the access would continue to operate at LOS A overall; northbound movements would continue to operate at LOS C with a small increase in delay. To address the poor operations and potential high delays within the site and to improve operations within the lot during morning drop-off and afternoon pick-up, it is recommended that turns from the driveway be limited to right only during these periods. The impacts and benefits of this measure are presented in the following section.

3.3.3. Recommended Mitigation Measures

To mitigate the project-related operational degradation and added delay at the N 80th Street/Stone Avenue N intersection and at the school access driveway, turn restrictions are recommended at both intersections. At the N 80th Street/Stone Avenue N intersection, restrictions that would limit movements to right-turns only for northbound and southbound approaches would affect a relatively small number of drivers (estimated at 43 in the morning peak hour and 20 in the afternoon peak hour). These drivers would be required to use alternate routes. In addition, it is recommended that turns from the site access driveway on N 80th Street be limited to right only during morning drop-off and afternoon pick-up periods. An access management plan should be prepared to communicate implementation of the turn restrictions and to direct drivers to preferred routes to access Aurora Avenue N to the west. The parking lot access restriction is estimated to affect about 37 drivers in the morning and 23 drivers in the afternoon.

With these right-turn-only restrictions at the school access driveway and the N 80th Street/Stone Avenue N intersection, both locations would operate at LOS A overall during the morning and afternoon peak hours. Movements from Stone Avenue N to N 80th Street would be improved to LOS C or better. Access at the site driveway would also be improved to LOS C or better and the lot would be able to accommodate drop-off and pick-up trips with less delay.

The effects of these restrictions on other study-area intersections (accounting for drivers using the alternate routes) would be minor. The redirected trips would add between 0 and 0.8 seconds of delay to affected stop-controlled intersections and less than 2.0 seconds of delay at the signalized intersections.

It is recommended that, if approved by SDOT, the District work with the City to install signage on Stone Avenue N restricting movements at N 80th Street to right turn only. Since the poor operations exiting the school parking lot would only occur for short periods during morning drop-off and afternoon pick-up periods, and would involve families at the school, it is recommended that the turn restriction at the driveway be enacted using driver guidelines that are distributed with information materials throughout the school year. The driveway could continue to operate without limits during other times.

With the project, some continued congestion is expected during morning arrival and afternoon dismissal, especially along Stone Avenue N and N 80th Street. However, these conditions would be limited to about 15 or 20 minutes before and after school, as they currently exist. With the recommended turn restrictions at both the site access driveway and the N 80th Street/Stone Avenue intersection, the project would not result in significant adverse impacts to traffic operations in the study area.

While not part of Seattle School's current proposal, some community members have suggested that the travel lane on N 80th Street be shifted to the north, and on-street parking that now occurs on the north (westbound) side be relocated to the south (eastbound) side of the street adjacent to the school. This could allow for the establishment of a short-term passenger vehicle load/unload zone adjacent to the school in order to better accommodate morning arrival and afternoon dismissal volumes. The parking could be unrestricted during other times of the day. Such a change would have little to no impact on street operations. Seattle Schools should continue to work with the community and SDOT to determine the preferred configuration of N 80th Street.

3.4. Parking Demand and Supply

3.4.1. School Day Parking

For past analyses of modernizations, replacements, or redevelopments of Seattle elementary schools, site-specific parking demand rates based on staffing levels have been developed using counts conducted at the existing school sites. Counts performed at several elementary schools in 2013 and 2014 for recent

modernizations and/or replacement projects found peak school-day parking demand rates that ranged from 1.06 to 1.23 vehicles per employee and an average midday parking demand rate of 1.15 vehicles per employee has been applied to other school projects. This rate accounts for employees and family volunteers or other visitors that may be on-site midday. Based on the total number of existing employees (42), this rate suggests an estimated existing parking demand of 48 vehicles. Since the largest observed midday on-site parking demand was 36 vehicles with unused spaces, this demand rate is reasonable and suggests that some staff or volunteers may still park on street (estimated at about 12) near the school even when on-site spaces are available.

Parking demand estimates for the renovated and expanded Bagley Elementary School were developed based on the projected staffing levels of 41 full-time and 5 part-time employees with the school at full capacity. Using the parking rate described above, the new school could have a midday peak parking demand of about 53 vehicles. The proposed project would provide a total of 46 parking spaces on site, which could accommodate all but 7 vehicles during the midday peak demand period. It is expected that some staff or visitors would continue to park on street even if space is available in the parking lot.

As detailed previously, on-street parking within the site vicinity averages 61% utilized (65% east of Aurora Avenue N) midday when school is in session (about 191 spaces are unused within 800 feet of the site). Of these 191 unused spaces, at least 127 do not have use or time restrictions and about 100 are located east of Aurora Avenue N. Thus, the unused spaces could be used for staff or volunteer parking and the existing on-street supply can accommodate the excess midday demand generated by the additional staff and volunteers that may be added due to the school renovation.

3.4.2. Evening Event Parking

The Bagley Elementary School renovation and addition would add a new gymnasium and would retain commons spaces that could be used for events at the school. The school is expected to continue hosting evening events periodically throughout the school year that could use these spaces. In general, evening events are held between about 5:30 or 6:00 P.M. and 8:00 P.M. Evening events typically occur about once per month or once every other month with attendance that can range from 100 to over 300 people. The types of events typically held at the school are listed below along with estimated attendance as provided by the District.

- **Large School Events** – Curriculum Night (Open House) is held once per year in the fall and can have the highest attendance. Family Ruler Night (Social & Emotional Learning) is held on one evening each year and draws 100 to 300 attendees; and the Fall Hootenanny, held at the end of October, draws 100 to 200 attendees. Other occasional events could consist of concerts, Literacy Night, Math Night, Art Walk, and Movie Night that each may draw about 100 attendees. Some of the larger events have staggered arrivals and not all attendees are on site at once, while others have fixed start and end times and all attendees are on site simultaneously.
- **PTA Meetings** – PTA meetings are held once per quarter and draw about 50 attendees.
- **Community Use** – The Boys and Girls Club provides after-school care for 80-90 Bagley Elementary students every day until 6:30 P.M. Seattle Parks & Recreation provides after-school enrichment activities for about 60 Bagley Elementary students until 3:50 P.M. every day. Other after-school enrichment programs for Bagley students include the Illuminations (Music) program, YMCA program, and Karate Club. With the addition of the proposed gymnasium, the site may be scheduled for use by community groups (e.g. Cub Scouts, Boy Scouts, Brownies, etc.) or recreational sports that may occur in classrooms, the lunchroom, gymnasium, or other areas of the school. These typically have relatively small attendance of 10 to 50, but may occur more frequently.

For larger events, there are usually between 3.0 and 3.5 persons attending for each parked vehicle (the higher rate is more common for larger events). This rate accounts for higher levels of carpooling (parents and children in a single vehicle) as well as drop-off activity that does not generate parked vehicles. At these rates, the larger events (those other than Curriculum Night and drawing 140 to 425 attendees) could generate parking demand between 45 and 120 vehicles. At the lower end of the event attendance range, most or all demand could be accommodated within the on-site parking lot (with 46 spaces). At the higher end of the range, about 74 vehicles would require off-site parking and would be expected to use on-street parking. Based on the on-street parking utilization analysis presented previously, there were over 200 on-street spaces available on a non-event night, which could accommodate those events. The parking overflow would be noticeable and would likely be full and congested along the roadways closest to the school. Due to the relative infrequency of those events (one per month or every other month), the increase in demand associated with the addition would not represent a significant adverse impact.

For the largest event—Curriculum Night—parking is already full (utilization on Curriculum Night was 89%; 98% on roadways east of Aurora Avenue N) and increases in demand associated with the larger school could cause demand to exceed supply (greater than 100%) or to extend beyond the 800-foot study area. To mitigate this potential impact, the school could identify additional parking supply (such as parking on play areas or in shared lots) and/or modify the event to reduce total peak demand (such as by separating it into two sessions or into two nights based on grade levels).

3.4.3. Sunday Parking for Bethany Community Church

The Seattle School District has a shared parking agreement with Bethany Community Church that allows church members to park in the Bagley Elementary lot. Observed Sunday use of the lot found 63 to 68 vehicles parked (there are 58 striped spaces). With the project, the school's lot would have 12 fewer spaces (reduced to a supply of 46 spaces), which could result in 17 to 22 vehicles being displaced from the school lot. On-street parking on Sundays was found to average 85% utilized. While some of the displaced demand could occur on-street, it is recommended that additional parking supply measures be coordinated with BCC to mitigate for the loss of available shared supply on Sundays. BCC already contracts with North Seattle College for use of its southeast lot located at N 92nd Street / Corliss Avenue and provides shuttles continuously for the 9:30 and 11:00 A.M. services.[23] The District should coordinate with BCC to establish a shared-use agreement for a portion of the parking located at the Robert Eagle Staff Middle School or Cascadia Elementary School site (located on N 90th Street west of Wallingford Avenue N) for Sunday services. The shuttles that already operate near that site to serve North Seattle College could add a stop for parking at those schools. With this added shared parking option, the impacts of displaced Sunday parking demand could be mitigated.

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. However, the existing measures implemented around the school, including school-zone speed limits and crossing guards, are expected to continue. These measures enhance safety during peak arrival and dismissal periods and the project is not expected to result in any adverse safety impacts.

[23] BCC website (https://churchbcc.org/greenlake/worship/sunday-services#location), accessed June 2017.

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 Aurora Avenue N at N 80th Street about 250 feet to the west of the school site. The project is not expected to result in adverse impacts to transit facilities or service.

3.7. Non-Motorized Transportation Facilities

The renovated Bagley 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 Stone Avenue N and N 80th Street near the school. There may also be increases in bicycle trips within the site vicinity due to the proposed project. The frontage of the site already has sidewalks, and there are numerous marked crosswalks along primary school walking routes. No significant adverse impacts to non-motorized access or facilities is expected, and no further improvements to facilities would be needed for the project.

3.8. Short-term Impacts from Construction

The school would be closed during construction, which is planned to start in June 2019, and end before fall 2020 when the school is planned to be ready for occupancy. During construction, students would be temporarily accommodated in the John Marshall School building located at 520 NE Ravenna Boulevard east of Green Lake.

The construction effort would include earthwork that would consist of over-excavation for the footings and slabs on grade, basement, and stormwater detention that would remove about 5,000 cubic yards (cy) of material from the site and fill of about 2,000 cy for a net export of about 3,000 cy. Assuming an average of 20-cubic yards per truck (truck/trailer combination), the excavation and fill would generate about 150 truckloads (150 trucks in and 150 trucks out). The bulk of the earthwork activities are likely to occur over six to eight weeks (30 to 40 days). This would correspond to an average of 7 to 10 truck trips per day and an average of about one truck trip per hour on a typical eight-hour construction work day. This volume of truck traffic may be noticeable to residents living near the site, but is not expected to 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., with workers arriving between 6:30 and 6:45 A.M. The number of workers at the project site at any one time would vary depending upon the construction element being implemented. Some parking for construction personnel may be provided within the site, but some construction workers would park on-street along the site frontage.

4. FINDINGS AND RECOMMENDATIONS

The following summarizes the findings of the analysis:

- The renovated and expanded Bagley Elementary School is expected to accommodate a student capacity of 600 (up from its current enrollment of 425).

- At the proposed capacity and compared to the site's current enrollment, the expanded school is projected to generate a net increase of 122 trips during the morning peak hour (from 7:00 to 8:00 A.M.) and 59 trips during the afternoon peak hour (from 1:45 to 2:45 P.M.).

- Similar to existing conditions, some traffic congestion is expected during morning arrival and afternoon dismissal periods along the roadways that surround the site, especially along N 80th Street and Stone Avenue N.

- Additional traffic and pedestrian activity generated by the proposed classroom addition is expected to add some delay to several of the study area intersections and turning movements during morning and afternoon peak hours; however, with the exception of one intersection, the study area intersections would operate at the same levels overall as without project conditions.

- The intersection of N 80th Street/Stone Avenue N would continue to operate at LOS A overall during the both peak periods with the project, but the northbound and southbound movements are forecast to degrade to LOS F as a result of the project. Restricting the movements to right-turn-only from Stone Avenue N is recommended and would improve operations to LOS C or better during both peak hours. The few number of vehicles diverted to other streets by this turn restriction (estimated at 43 in the morning peak hour and 20 in the afternoon peak hour) would not adversely affect other intersections in the vicinity.

- The parking lot's site access driveway would degrade from LOS A to LOS B overall during the morning peak hour and the northbound movements would degrade from LOS D to LOS F due to added school trips. During the afternoon peak hour, the access would continue to operate at LOS A overall; northbound movements would continue to operate at LOS C with a small increase in delay. Restricting the peak exiting traffic to right-turn only is recommended, and would improve operations for egress traffic to LOS C or better.

- The new gym would be located on a portion of the existing parking lot, reducing on-site parking from 58 spaces to 46 spaces. The expanded school is expected to generate a peak midday parking demand of about 53 vehicles. Some staff and visitors already parking along area streets even though capacity is available in the existing lot, and that is expected to continue with the expansion. The existing on-street supply can accommodate the excess midday demand generated by the additional staff and volunteers.

- During the evenings when large events are held at the school (expected to be once per month or once every other month), on-street parking demand surrounding the school is expected to be well utilized. For most events, the additional demand could be accommodated by on-street spaces. However, for the largest event—Curriculum Night—parking would be full and measures to increase event supply and/or reduce demand are recommended.

Based on the above findings, the following measures are recommended to reduce the traffic and parking impacts associated with the Daniel Bagley Elementary School renovation and addition 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; to the extent possible, construction employee parking would be contained on-site.

B. **Restrict Movements from Stone Avenue N at N 80th Street to Right-Turns Only:** If approved by SDOT, coordinate with City to implement restrictions for Stone Avenue N at N 80th Street.

C. **Transportation Management Plan (TMP):** Prior to the school opening, the District and school principal should establish a Transportation Management Plan (TMP) to educate families about the access 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 (including restricting parking lot egress to right turn only). It should also instruct staff and parents not to block or partially block any residential driveways with parked or stopped vehicles.

D. **Engage Seattle School Safety Committee:** The District should engage the Seattle School Safety Committee (of which SDOT is a member) to review walk routes and determine if any changes should be made to crosswalk locations, signage, or pavement markings. It should also ensure that school zone speed limits are established and enforced and that crossing guard locations—particularly at crossings of N 80th Street at Stone Avenue N—are determined. Options for crosswalk enhancement at the Stone Avenue N crossing of N 80th Street, such as a pedestrian actuated rapid flashing beacon, could be considered.

E. **Develop Neighborhood Communication Plan for School Events**. The District and school administration should develop a neighborhood communication plan to inform nearby neighbors of events each year. The plan should be updated annually (or as events are scheduled) and should provide information about the dates, times, and rough magnitude of attendance. The communication would be intended to allow neighbors to plan for the occasional increase in on-street parking demand that would occur with large events.

F. **Event Management**. For the largest evening event held at the school—typically Curriculum Night—the school should work to identify additional parking supply (such as parking on play areas) and/or work to reduce total peak demand. Reductions in demand could be accomplished by separating the event into two sessions or into two nights based on grade levels.

G. **Agreement for Shared Remote Parking:** The District should coordinate with BCC to establish a shared-use agreement for a portion of the parking located at the Robert Eagle Staff Middle School or Cascadia Elementary School site (located on N 90th Street west of Wallingford Avenue N) for Sunday services. The shuttles that already operate near that site to serve North Seattle College could add a stop for parking at those schools.

H. **Coordinate with SDOT and Safety Committee:** Explore with SDOT the option to shift the travel lane on N 80th Street to the north and move the on-street parking that now occurs on the north (westbound) side to the south (eastbound) side of the street adjacent to the school. If approved by SDOT, this could allow for the establishment of a short-term passenger vehicle load/unload zone adjacent to the school in order to better accommodate morning arrival and afternoon dismissal volumes. The parking could be unrestricted during other times of the day.

APPENDIX A
Level of Service Definitions

Levels of service (LOS) are qualitative descriptions of traffic operating conditions. These levels of service are designated with letters ranging from LOS A, which is indicative of good operating conditions with little or no delay, to LOS F, which is indicative of stop-and-go conditions with frequent and lengthy delays. Levels of service for this analysis were developed using procedures presented in the *Highway Capacity Manual* (Transportation Research Board, 2010).

Level of service for signalized intersections is defined in terms of delay. 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: the quality of progression, cycle length, green ratio, and a volume-to-capacity ratio for the lane group or approach in question. Table A-1 shows the level of service criteria for signalized intersections from the *Highway Capacity Manual 2010*.

Table A-1. Level of Service for Signalized Intersections

Level of Service	Average Delay Per Vehicle	General Description
A	Less than 10.0 Seconds	Free flow
B	10.1 to 20.0 seconds	Stable flow (slight delays)
C	20.1 to 35.0 seconds	Stable flow (acceptable delays)
D	35.1 to 55.0 seconds	Approaching unstable flow (tolerable delay—occasionally wait through more than one signal cycle before proceeding.
E	55.1 to 80.0 seconds	Unstable flow (approaching capacity)
F	Greater than 80.0 seconds	Forced flow (jammed)

Source: Transportation Research Board, Highway Capacity Manual, 2010.

For unsignalized intersections, level of service is based on the average delay per vehicle for each turning movement. The level of service for a two-way, stop-controlled intersection is determined by the computed or measured control delay and is defined for each minor movement. 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 2010*.

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

Level of Service	Average Delay (seconds per vehicle)
A	Less than 10.0
B	10.1 to 15.0
C	15.1 to 25.0
D	25.1 to 35.0
E	35.1 to 50.0
F	Greater than 50.0

Source: Transportation Research Board, Highway Capacity Manual, 2010

APPENDIX B
Parking Utilization Study Data

Project **Bagley Elementary Expansion**

Supply

				Parking Supply										
Block Face ID	Street Name	Street Segment	Side of Street	Unrestricted Parallel Parking	2 hr Pkng 7a-6p Exc sun & hol	1 hr Pkng 7a-6p Exc sun & hol	No Pkng 4-6pm Exc sat, sun, & hol	School Bus Only 7-10a and 1-4p	No P 6-9 A & 3-7 P Exc Sat, Sun, & Hol, 1 hr 9a-3p Exc. Sun, & Hol	No P 6-9 A & 3-7 P Exc Sat, Sun, & Hol, 30 min load 9a-3p Exc. Sun & Hol	30 min load/unload 7a-6p Exc sun & hol	Disabled	**Early Morning Parking**	**Total Parking Spaces (Mid-morning , Evening Sunday)**
AA	Aurora Avenue N	N 83rd St and N 82nd St	E	0	0	0	0	0	0	0	0	0	**0**	**0**
AB	Green Lake Drive N	End point (800') and N 82nd St	SW	0	0	0	0	0	0	0	0	0	**0**	**0**
AC	Green Lake Drive N	End point (800') and N 82nd St	NE	3	0	0	0	0	0	0	0	0	**3**	**3**
AD	Stone Avenue N	N 83rd St and N 82nd St	W	9	0	0	0	0	0	0	0	0	**9**	**9**
AE	Stone Avenue N	N 83rd St and N 82nd St	E	3	0	0	0	0	0	0	0	0	**3**	**3**
AF	N 82nd Street	Stone Ave N and end point (800')	N	3	0	0	0	0	0	0	0	0	**3**	**3**
AG	N 82nd Street	Stone Ave N and end point (800')	S	4	0	0	0	0	0	0	0	0	**4**	**4**
AH	N 82nd Street	End point (800') and Aurora Ave N	N	2	0	0	0	0	0	0	0	0	**2**	**2**
AI	N 82nd Street	End point (800') and Aurora Ave N	S	1	0	0	0	0	0	0	0	0	**1**	**1**
AJ	N 82nd Street	Aurora Ave N and Green Lake Dr	N	2	0	0	0	0	0	0	0	0	**2**	**2**
AK	N 82nd Street	Aurora Ave N and Green Lake Dr	S	7	0	0	0	0	0	0	0	0	**7**	**7**
AL	N 82nd Street	Green Lake Dr and Stone Ave N	N	7	0	0	0	0	0	0	0	0	**7**	**7**
AM	N 82nd Street	Green Lake Dr and Stone Ave N	S	6	2	0	0	0	0	0	0	0	**8**	**8**
AN	Aurora Avenue N	N 82nd St and N 81st ST	W	0	0	0	0	0	0	0	0	0	**0**	**0**
AO	Aurora Avenue N	N 82nd St and N 81st ST	E	0	0	0	0	0	0	0	0	0	**0**	**0**
AP	Green Lake Drive N	N 82nd St and N 81st ST	SW	11	0	0	0	0	0	0	0	0	**11**	**11**
AQ	Green Lake Drive N	N 82nd St and N 81st ST	NE	2	6	0	0	0	0	0	1	0	**8**	**9**
AR	Stone Avenue N	N 82nd St and N 81st ST	W	7	0	0	0	0	0	0	0	0	**7**	**7**
AS	Stone Avenue N	N 82nd St and N 81st St	E	11	0	0	0	0	0	0	0	0	**11**	**11**
AT	N 81st Street	End point (800') and Aurora Ave N	N	7	0	0	0	0	0	0	0	0	**7**	**7**
AU	N 81st Street	End point (800') and Aurora Ave N	S	7	0	0	0	0	0	0	0	0	**7**	**7**
AV	N 81st Street	Aurora Ave N & Green Lake Dr N	N	17	0	0	0	0	0	0	0	0	**17**	**17**
AW	N 81st Street	Aurora Ave N & Green Lake Dr N	S	13	0	3	0	0	0	0	0	0	**16**	**16**
AX	Aurora Avenue N	N 81st St and N 80th St	W	0	0	0	0	0	0	0	0	0	**0**	**0**
AY	Aurora Avenue N	N 81st St and N 80th St	E	0	0	0	0	0	0	0	0	0	**0**	**0**

Project **Bagley Elementary Expansion**

Supply

				Parking Supply										
Block Face ID	Street Name	Street Segment	Side of Street	Unrestricted Parallel Parking	2 hr Pkng 7a-6p Exc sun & hol	1 hr Pkng 7a-6p Exc sun & hol	No Pkng 4-6pm Exc sat, sun, & hol	School Bus Only 7-10a and 1-4p	No P 6-9 A & 3-7 P Exc Sat, Sun, & Hol, 1 hr 9a-3p Exc. Sun, & Hol	No P 6-9 A & 3-7 P Exc Sat, Sun, & Hol, 30 min load 9a-3p Exc. Sun & Hol	30 min load/unload 7a-6p Exc sun & hol	Disabled	**Early Morning Parking**	**Total Parking Spaces (Mid-morning , Evening Sunday)**
AZ	Stone Avenue N	Green Lake Dr N and N 80th St	W	5	0	0	0	0	0	0	0	1	**6**	**6**
BA	Stone Avenue N	Green Lake Dr N and N 80th St	E	5	0	0	0	0	0	0	0	1	**6**	**6**
BB	Green Lake Drive N	Stone Ave N & Interlake Ave N	SW	12	0	0	0	0	0	0	0	0	**12**	**12**
BC	Green Lake Drive N	Stone Ave N & Interlake Ave N	NE	13	0	0	0	0	0	0	0	0	**13**	**13**
BD	Interlake Ave N	End point (800') and Green Lake Dr N	W	9	0	0	0	0	0	0	0	0	**9**	**9**
BE	Interlake Ave N	End point (800') and Green Lake Dr N	E	10	0	0	0	0	0	0	0	0	**10**	**10**
BF	Ashworth Avenue N	End point (800') and N 80th St	W	2	0	0	0	0	0	0	0	0	**2**	**2**
BG	Ashworth Avenue N	End point (800') and N 80th St	E	0	0	0	0	0	0	0	0	0	**0**	**0**
BH	N 80th Street	Linden Ave N and Aurora Ave N	N	10	0	0	0	0	0	0	0	0	**10**	**10**
BI	N 80th Street	Linden Ave N and Aurora Ave N	S	0	0	0	0	0	0	0	0	0	**0**	**0**
BJ	N 80th Street	Aurora Ave N and Stone Ave N	N	0	0	0	12	0	0	0	0	0	**12**	**12**
BK	N 80th Street	Aurora Ave N and Stone Ave N	S	0	0	0	0	0	0	0	0	0	**0**	**0**
BL	N 80th Street	Stone Ave N and Green Lake Dr	N	7	0	0	0	0	0	0	0	0	**7**	**7**
BM	N 80th Street	Stone Ave N and Green Lake Dr	S	0	0	0	0	0	0	0	0	0	**0**	**0**
BN	N 80th Street	Green Lake Dr and Ashworth Ave N	N	3	5	0	0	0	0	0	0	0	**8**	**8**
BO	N 80th Street	Green Lake Dr and Ashworth Ave N	S	0	0	0	0	0	0	0	0	0	**0**	**0**
BP	N 80th Street	Ashworth Ave N and end point (800 ')	N	1	0	0	0	0	0	0	0	0	**1**	**1**
BQ	N 80th Street	Ashworth Ave N and end point (800 ')	S	0	0	0	0	0	0	0	0	0	**0**	**0**
BR	Aurora Avenue N	N 80th St and N 79th St	W	0	0	0	0	0	4	0	0	0	**0**	**4**
BS	Aurora Avenue N	N 80th St and N 78th St	E	0	0	0	0	0	16	0	0	0	**0**	**16**
BT	Stone Avenue N	N 80th St and N 78th St	W	4	0	0	0	13	0	0	0	0	**4**	**17**
BU	Stone Avenue N	N 80th St and N 79th ST	E	5	0	0	0	0	0	0	0	0	**5**	**5**
BV	Green Lake Drive N	N 80th St and Ashworth Ave N	SW	12	0	0	0	0	0	0	0	0	**12**	**12**
BW	Green Lake Drive N	N 80th St and Ashworth Ave N	NE	6	0	0	0	0	0	0	0	0	**6**	**6**
BX	Ashworth Avenue N	N 80th St and Green Lake Drive N	W	2	0	0	0	0	0	0	0	0	**2**	**2**

Project **Bagley Elementary Expansion**

Supply

Block Face ID	Street Name	Street Segment	Side of Street	Parking Supply: Unrestricted Parallel Parking	2 hr Pkng 7a-6p Exc sun & hol	1 hr Pkng 7a-6p Exc sun & hol	No Pkng 4-6pm Exc sat, sun, & hol	School Bus Only 7-10a and 1-4p	No P 6-9 A & 3-7 P Exc Sat, Sun, & Hol, 1 hr 9a-3p Exc. Sun, & Hol	No P 6-9 A & 3-7 P Exc Sat, Sun, & Hol, 30 min load 9a-3p Exc. Sun & Hol	30 min load/unload 7a-6p Exc sun & hol	Disabled	**Early Morning Parking**	**Total Parking Spaces (Mid-morning , Evening Sunday)**
BY	Ashworth Avenue N	N 80th St and Green Lake Drive N	E	6	0	0	0	0	0	0	0	0	**6**	**6**
BZ	N 79th Street	End point (800 ') and Aurora Ave N	N	15	0	0	0	0	0	0	0	0	**15**	**15**
CA	N 79th Street	End point (800 ') and Aurora Ave N	S	16	0	0	0	0	0	0	0	0	**16**	**16**
CB	N 79th Street	Stone Ave N and Ashworth Ave N	N	0	0	0	0	0	0	0	0	0	**0**	**0**
CC	N 79th Street	Stone Ave N and Ashworth Ave N	S	20	0	0	0	0	0	0	0	0	**20**	**20**
CD	Green Lake Drive N	Ashworth Ave N and End Point (800 ')	SW	2	0	0	0	0	0	0	0	0	**2**	**2**
CE	Green Lake Drive N	Ashworth Ave N and End Point (800 ')	NE	3	0	0	0	0	0	0	0	0	**3**	**3**
CF	Aurora Avenue N	N 79th St and N 78th St	W	0	0	0	0	0	6	0	0	0	**0**	**6**
CG	Stone Avenue N	N 79th St and N 78th St	E	7	0	0	0	0	0	0	0	0	**7**	**7**
CH	Ashworth Avenue N	N 79th St and End Point (800')	W	4	0	0	0	0	0	0	0	0	**4**	**4**
CI	Ashworth Avenue N	N 79th St and End Point (800')	E	2	0	0	0	0	0	0	0	0	**2**	**2**
CJ	N 78th Street	End point (800') and Aurora Ave N	N	1	0	0	0	0	0	0	0	0	**1**	**1**
CK	N 78th Street	End point (800') and Aurora Ave N	S	2	0	0	0	0	0	0	0	0	**2**	**2**
CL	N 78th Street	Aurora Ave N and Stone Ave N	N	12	0	0	0	0	0	0	0	0	**12**	**12**
CM	N 78th Street	Aurora Ave N and Stone Ave N	S	13	0	0	0	0	0	0	0	0	**13**	**13**
CN	N 78th Street	Stone Ave N and Ashworth Ave N	N	24	0	0	0	0	0	0	0	0	**24**	**24**
CO	N 78th Street	Stone Ave N and Ashworth Ave N	S	19	0	0	0	0	0	0	0	0	**19**	**19**
CP	Aurora Avenue N	N 78th St and end point (800 ')	E	0	0	0	0	0	4	2	0	0	**0**	**6**
CQ	Stone Avenue N	N 78th St and N 77th St	W	6	0	0	0	0	0	0	0	0	**6**	**6**
CR	Stone Avenue N	N 78th St and N 77th St	E	8	0	0	0	0	0	0	0	0	**8**	**8**
CS	N 77th Street	End point (800 ') and Stone Ave N	N	0	0	0	0	0	0	0	0	0	**0**	**0**
CT	N 77th Street	End point (800 ') and Winona Ave N	S	31	0	0	0	0	0	0	0	0	**31**	**31**
CU	N 77th Street	Stone Ave N and Winona Ave N	N	0	0	0	0	0	0	0	0	0	**0**	**0**
			TOTAL	**419**	**13**	**3**	**12**	**13**	**30**	**2**	**1**	**2**	**449**	**495**

Project **Bagley Elementary Expansion**

Demand

				Parking Supply		Parking Demand												
						Mid-Morning			Early Morning	Mid-Morning			Evening		Sunday			
						No Classes			Classes in session				No Event	Event	11:30 am to 12:15 pm			
Block Face ID	Street Name	Street Segment	Side of Street	Early Morning Parking	Total Parking Spaces (Mid-morning , Evening	Wed 7/20/16 10:00-10:45 AM	Thur 8/4/16 10:15-11:00 AM	Avg	Thur 12/01/16 8:00 - 8:45 AM	Thur 9/22/16 10:00-10:45 AM	Tues 9/27/16 10:00-10:45 AM	Avg (Mid-Morn)	Thur 9/15/16 7:00 - 7:30 PM	Thur 9/29/16 6:50 - 7:40 PM	4/30/17	5/7/17	Avg
AA	Aurora Avenue N	N 83rd St and N 82nd St	E	0	**0**	0	0	0	0	0	0	0	0	0	0	0	0
AB	Green Lake Drive N	End point (800') and N 82nd St	SW	0	**0**	0	0	0	0	0	0	0	0	0	0	0	0
AC	Green Lake Drive N	End point (800') and N 82nd St	NE	3	**3**	2	1	2	2	1	1	1	0	0	2	1	2
AD	Stone Avenue N	N 83rd St and N 82nd St	W	9	**9**	4	3	4	2	6	6	6	1	8	9	8	9
AE	Stone Avenue N	N 83rd St and N 82nd St	E	3	**3**	0	1	1	0	0	2	1	0	2	4	2	3
AF	N 82nd Street	Stone Ave N and end point (800')	N	3	**3**	0	0	0	1	1	2	2	1	2	2	3	3
AG	N 82nd Street	Stone Ave N and end point (800')	S	4	**4**	1	1	1	3	2	0	1	1	1	4	3	4
AH	N 82nd Street	End point (800') and Aurora Ave N	N	2	**2**	1	1	1	2	1	1	1	0	2	1	2	2
AI	N 82nd Street	End point (800') and Aurora Ave N	S	1	**1**	1	1	1	1	0	0	0	1	1	1	1	1
AJ	N 82nd Street	Aurora Ave N and Green Lake Dr	N	2	**2**	0	1	1	1	1	3	2	1	2	1	4	3
AK	N 82nd Street	Aurora Ave N and Green Lake Dr	S	7	**7**	5	5	5	3	1	5	3	3	4	4	4	4
AL	N 82nd Street	Green Lake Dr and Stone Ave N	N	7	**7**	6	5	6	4	6	4	5	1	5	4	4	4
AM	N 82nd Street	Green Lake Dr and Stone Ave N	S	8	**8**	6	6	6	3	7	7	7	1	6	7	7	7
AN	Aurora Avenue N	N 82nd St and N 81st ST	W	0	**0**	0	0	0	0	0	0	0	0	0	0	0	0
AO	Aurora Avenue N	N 82nd St and N 81st ST	E	0	**0**	0	0	0	0	0	0	0	0	0	0	0	0
AP	Green Lake Drive N	N 82nd St and N 81st ST	SW	11	**11**	12	11	12	9	10	11	11	3	12	12	14	13
AQ	Green Lake Drive N	N 82nd St and N 81st ST	NE	8	**9**	5	4	5	4	8	8	8	2	9	10	8	9
AR	Stone Avenue N	N 82nd St and N 81st ST	W	7	**7**	1	1	1	1	4	1	3	2	5	5	5	5
AS	Stone Avenue N	N 82nd St and N 81st St	E	11	**11**	8	6	7	8	11	10	11	6	8	15	12	14
AT	N 81st Street	End point (800') and Aurora Ave N	N	7	**7**	8	3	6	7	3	5	4	8	5	8	4	6
AU	N 81st Street	End point (800') and Aurora Ave N	S	7	**7**	7	6	7	5	5	7	6	7	9	6	5	6
AV	N 81st Street	Aurora Ave N & Green Lake Dr N	N	17	**17**	9	7	8	11	10	7	9	8	13	16	14	15
AW	N 81st Street	Aurora Ave N & Green Lake Dr N	S	16	**16**	8	6	7	13	9	9	9	2	16	18	15	17
AX	Aurora Avenue N	N 81st St and N 80th St	W	0	**0**	0	0	0	0	0	0	0	0	0	0	0	0
AY	Aurora Avenue N	N 81st St and N 80th St	E	0	**0**	0	0	0	0	0	0	0	0	0	0	0	0

Project **Bagley Elementary Expansion**

Demand

				Parking Supply		Parking Demand												
						Mid-Morning			Early Morning	Mid-Morning			Evening		Sunday			
						No Classes			Classes in session				No Event	Event	11:30 am to 12:15 pm			
Block Face ID	Street Name	Street Segment	Side of Street	Early Morning Parking	Total Parking Spaces (Mid-morning , Evening	Wed 7/20/16 10:00-10:45 AM	Thur 8/4/16 10:15-11:00 AM	Avg	Thur 12/01/16 8:00 - 8:45 AM	Thur 9/22/16 10:00-10:45 AM	Tues 9/27/16 10:00-10:45 AM	Avg (Mid-Morn)	Thur 9/15/16 7:00 - 7:30 PM	Thur 9/29/16 6:50 - 7:40 PM	4/30/17	5/7/17	Avg
AZ	Stone Avenue N	Green Lake Dr N and N 80th St	W	6	**6**	0	4	2	6	8	4	6	3	9	3	2	3
BA	Stone Avenue N	Green Lake Dr N and N 80th St	E	6	**6**	2	5	4	1	6	3	5	4	7	1	1	1
BB	Green Lake Drive N	Stone Ave N & Interlake Ave N	SW	12	**12**	5	4	5	10	11	10	11	5	13	11	10	11
BC	Green Lake Drive N	Stone Ave N & Interlake Ave N	NE	13	**13**	8	5	7	11	12	7	10	6	15	14	14	14
BD	Interlake Ave N	End point (800') and Green Lake Dr N	W	9	**9**	6	4	5	5	7	5	6	8	8	8	9	9
BE	Interlake Ave N	End point (800') and Green Lake Dr N	E	10	**10**	6	5	6	3	6	5	6	10	5	13	11	12
BF	Ashworth Avenue N	End point (800') and N 80th St	W	2	**2**	0	1	1	3	0	0	0	1	1	1	0	1
BG	Ashworth Avenue N	End point (800') and N 80th St	E	0	**0**	0	0	0	0	0	0	0	0	0	0	0	0
BH	N 80th Street	Linden Ave N and Aurora Ave N	N	10	**10**	2	1	2	2	3	1	2	1	2	1	1	1
BI	N 80th Street	Linden Ave N and Aurora Ave N	S	0	**0**	0	0	0	0	0	0	0	0	0	0	0	0
BJ	N 80th Street	Aurora Ave N and Stone Ave N	N	12	**12**	0	0	0	0	6	0	3	0	11	11	6	9
BK	N 80th Street	Aurora Ave N and Stone Ave N	S	0	**0**	0	0	0	0	0	0	0	0	0	0	0	0
BL	N 80th Street	Stone Ave N and Green Lake Dr	N	7	**7**	2	1	2	0	6	6	6	2	9	7	7	7
BM	N 80th Street	Stone Ave N and Green Lake Dr	S	0	**0**	0	0	0	0	0	0	0	0	0	0	0	0
BN	N 80th Street	Green Lake Dr and Ashworth Ave N	N	8	**8**	7	5	6	2	8	7	8	6	8	8	8	8
BO	N 80th Street	Green Lake Dr and Ashworth Ave N	S	0	**0**	0	0	0	0	0	0	0	0	0	0	0	0
BP	N 80th Street	Ashworth Ave N and end point (800 ')	N	1	**1**	1	1	1	0	0	1	1	2	2	2	2	2
BQ	N 80th Street	Ashworth Ave N and end point (800 ')	S	0	**0**	0	0	0	0	0	0	0	0	0	0	0	0
BR	Aurora Avenue N	N 80th St and N 79th St	W	0	**4**	0	0	0	0	2	1	2	0	0	1	0	1
BS	Aurora Avenue N	N 80th St and N 78th St	E	0	**16**	3	2	3	0	3	1	2	6	5	2	2	2
BT	Stone Avenue N	N 80th St and N 78th St	W	4	**17**	5	4	5	2	6	6	6	2	16	14	10	12
BU	Stone Avenue N	N 80th St and N 79th ST	E	5	**5**	1	0	1	4	5	5	5	3	6	6	5	6
BV	Green Lake Drive N	N 80th St and Ashworth Ave N	SW	12	**12**	3	6	5	7	8	7	8	10	14	13	12	13
BW	Green Lake Drive N	N 80th St and Ashworth Ave N	NE	6	**6**	5	4	5	6	2	3	3	7	8	9	7	8
BX	Ashworth Avenue N	N 80th St and Green Lake Drive N	W	2	**2**	4	1	3	1	1	1	1	5	3	5	4	5

Project **Bagley Elementary Expansion**

Demand

				Parking Supply		Parking Demand												
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						No Classes			Classes in session				No Event	Event	11:30 am to 12:15 pm			
Block Face ID	Street Name	Street Segment	Side of Street	Early Morning Parking	Total Parking Spaces (Mid-morning , Evening	Wed 7/20/16 10:00-10:45 AM	Thur 8/4/16 10:15-11:00 AM	Avg	Thur 12/01/16 8:00 - 8:45 AM	Thur 9/22/16 10:00-10:45 AM	Tues 9/27/16 10:00-10:45 AM	Avg (Mid-Morn)	Thur 9/15/16 7:00 - 7:30 PM	Thur 9/29/16 6:50 - 7:40 PM	4/30/17	5/7/17	Avg
BY	Ashworth Avenue N	N 80th St and Green Lake Drive N	E	6	**6**	5	6	6	5	6	7	7	9	0	9	8	9
BZ	N 79th Street	End point (800 ') and Aurora Ave N	N	15	**15**	9	9	9	8	11	8	10	9	10	10	10	10
CA	N 79th Street	End point (800 ') and Aurora Ave N	S	16	**16**	7	9	8	12	9	8	9	7	10	9	10	10
CB	N 79th Street	Stone Ave N and Ashworth Ave N	N	0	**0**	0	0	0	0	0	0	0	0	0	0	0	0
CC	N 79th Street	Stone Ave N and Ashworth Ave N	S	20	**20**	14	16	15	15	17	16	17	22	20	22	25	24
CD	Green Lake Drive N	Ashworth Ave N and End Point (800 ')	SW	2	**2**	3	2	3	0	1	1	1	3	2	4	3	4
CE	Green Lake Drive N	Ashworth Ave N and End Point (800 ')	NE	3	**3**	4	3	4	2	3	3	3	5	3	5	5	5
CF	Aurora Avenue N	N 79th St and N 78th St	W	0	**6**	0	0	0	0	0	0	0	2	1	0	1	1
CG	Stone Avenue N	N 79th St and N 78th St	E	7	**7**	5	3	4	7	7	8	8	4	7	6	6	6
CH	Ashworth Avenue N	N 79th St and End Point (800')	W	4	**4**	4	5	5	2	2	4	3	5	3	2	4	3
CI	Ashworth Avenue N	N 79th St and End Point (800')	E	2	**2**	2	0	1	0	2	2	2	1	2	2	2	2
CJ	N 78th Street	End point (800') and Aurora Ave N	N	1	**1**	1	1	1	0	2	1	2	1	1	1	0	1
CK	N 78th Street	End point (800') and Aurora Ave N	S	2	**2**	1	1	1	1	1	2	2	0	2	2	0	1
CL	N 78th Street	Aurora Ave N and Stone Ave N	N	12	**12**	8	10	9	7	10	9	10	8	15	8	10	9
CM	N 78th Street	Aurora Ave N and Stone Ave N	S	13	**13**	8	11	10	9	10	8	9	9	20	12	13	13
CN	N 78th Street	Stone Ave N and Ashworth Ave N	N	24	**24**	20	17	19	12	14	16	15	19	25	23	19	21
CO	N 78th Street	Stone Ave N and Ashworth Ave N	S	19	**19**	11	10	11	11	12	15	14	19	21	20	18	19
CP	Aurora Avenue N	N 78th St and end point (800 ')	E	0	**6**	1	0	1	0	0	2	1	1	2	3	3	3
CQ	Stone Avenue N	N 78th St and N 77th St	W	6	**6**	2	2	2	1	4	4	4	5	7	6	5	6
CR	Stone Avenue N	N 78th St and N 77th St	E	8	**8**	2	2	2	7	4	1	3	6	11	7	6	7
CS	N 77th Street	End point (800 ') and Stone Ave N	N	0	**0**	0	0	0	0	0	0	0	0	0	0	0	0
CT	N 77th Street	End point (800 ') and Winona Ave N	S	31	**31**	16	21	19	21	17	12	15	27	0	25	27	26
CU	N 77th Street	Stone Ave N and Winona Ave N	N	0	**0**	0	0	0	0	0	0	0	0	29	0	1	1
			TOTAL	**449**	**495**	**267**	**250**	**259**	**263**	**318**	**289**	**304**	**291**	**443**	**435**	**403**	**419**

Project **Bagley Elementary Expansion**

Utilization

				Parking Supply		Parking Utilization											
						Mid-Morning			Early Morning	Mid-Morning			Evening		Sunday		
						No Classes			Classes in session				No Event	Event	11:30 am to 12:15 pm		
Block Face ID	Street Name	Street Segment	Side of Street	Early Morning Parking	Total Parking Spaces (Mid-morning , Evening Sunday)	Wed 7/20/16 10:00-10:45 AM	Thur 8/4/16 10:15-11:00 AM	Avg	Thur 12/01/16 8:00 - 8:45 AM	Thur 9/22/16 10:00-10:45 AM	Tues 9/27/16 10:00-10:45 AM	Avg (Mid-Morn)	Thur 9/15/16 7:00 - 7:30 PM	Thur 9/29/16 6:50 - 7:40 PM	4/30/17	5/7/17	Avg
AA	Aurora Avenue N	N 83rd St and N 82nd St	E	0	0	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
AB	Green Lake Drive N	End point (800') and N 82nd St	SW	0	0	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
AC	Green Lake Drive N	End point (800') and N 82nd St	NE	3	3	67%	33%	67%	67%	33%	33%	33%	0%	0%	67%	33%	67%
AD	Stone Avenue N	N 83rd St and N 82nd St	W	9	9	44%	33%	44%	22%	67%	67%	67%	11%	89%	100%	89%	100%
AE	Stone Avenue N	N 83rd St and N 82nd St	E	3	3	0%	33%	33%	0%	0%	67%	33%	0%	67%	133%	67%	100%
AF	N 82nd Street	Stone Ave N and end point (800')	N	3	3	0%	0%	0%	33%	33%	67%	67%	33%	67%	67%	100%	100%
AG	N 82nd Street	Stone Ave N and end point (800')	S	4	4	25%	25%	25%	75%	50%	0%	25%	25%	25%	100%	75%	100%
AH	N 82nd Street	End point (800') and Aurora Ave N	N	2	2	50%	50%	50%	100%	50%	50%	50%	0%	100%	50%	100%	100%
AI	N 82nd Street	End point (800') and Aurora Ave N	S	1	1	100%	100%	100%	100%	0%	0%	0%	100%	100%	100%	100%	100%
AJ	N 82nd Street	Aurora Ave N and Green Lake Dr	N	2	2	0%	50%	50%	50%	50%	150%	100%	50%	100%	50%	200%	150%
AK	N 82nd Street	Aurora Ave N and Green Lake Dr	S	7	7	71%	71%	71%	43%	14%	71%	43%	43%	57%	57%	57%	57%
AL	N 82nd Street	Green Lake Dr and Stone Ave N	N	7	7	86%	71%	86%	57%	86%	57%	71%	14%	71%	57%	57%	57%
AM	N 82nd Street	Green Lake Dr and Stone Ave N	S	8	8	75%	75%	75%	38%	88%	88%	88%	13%	75%	88%	88%	88%
AN	Aurora Avenue N	N 82nd St and N 81st ST	W	0	0	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
AO	Aurora Avenue N	N 82nd St and N 81st ST	E	0	0	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
AP	Green Lake Drive N	N 82nd St and N 81st ST	SW	11	11	109%	100%	109%	82%	91%	100%	100%	27%	109%	109%	127%	118%
AQ	Green Lake Drive N	N 82nd St and N 81st ST	NE	8	9	56%	44%	56%	50%	89%	89%	89%	22%	100%	111%	89%	100%
AR	Stone Avenue N	N 82nd St and N 81st ST	W	7	7	14%	14%	14%	14%	57%	14%	43%	29%	71%	71%	71%	71%
AS	Stone Avenue N	N 82nd St and N 81st St	E	11	11	73%	55%	64%	73%	100%	91%	100%	55%	73%	136%	109%	127%
AT	N 81st Street	End point (800') and Aurora Ave N	N	7	7	114%	43%	86%	100%	43%	71%	57%	114%	71%	114%	57%	86%
AU	N 81st Street	End point (800') and Aurora Ave N	S	7	7	100%	86%	100%	71%	71%	100%	86%	100%	129%	86%	71%	86%
AV	N 81st Street	Aurora Ave N & Green Lake Dr N	N	17	17	53%	41%	47%	65%	59%	41%	53%	47%	76%	94%	82%	88%
AW	N 81st Street	Aurora Ave N & Green Lake Dr N	S	16	16	50%	38%	44%	81%	56%	56%	56%	13%	100%	113%	94%	106%
AX	Aurora Avenue N	N 81st St and N 80th St	W	0	0	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
AY	Aurora Avenue N	N 81st St and N 80th St	E	0	0	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

Project **Bagley Elementary Expansion**

Utilization

				Parking Supply		Parking Utilization											
						Mid-Morning			Early Morning	Mid-Morning			Evening		Sunday		
						No Classes			Classes in session				No Event	Event	11:30 am to 12:15 pm		
Block Face ID	Street Name	Street Segment	Side of Street	Early Morning Parking	Total Parking Spaces (Mid-morning , Evening Sunday)	Wed 7/20/16 10:00-10:45 AM	Thur 8/4/16 10:15-11:00 AM	Avg	Thur 12/01/16 8:00 - 8:45 AM	Thur 9/22/16 10:00-10:45 AM	Tues 9/27/16 10:00-10:45 AM	Avg (Mid-Morn)	Thur 9/15/16 7:00 - 7:30 PM	Thur 9/29/16 6:50 - 7:40 PM	4/30/17	5/7/17	Avg
AZ	Stone Avenue N	Green Lake Dr N and N 80th St	W	6	6	0%	67%	33%	100%	133%	67%	100%	50%	150%	50%	33%	50%
BA	Stone Avenue N	Green Lake Dr N and N 80th St	E	6	6	33%	83%	67%	17%	100%	50%	83%	67%	117%	17%	17%	17%
BB	Green Lake Drive N	Stone Ave N & Interlake Ave N	SW	12	12	42%	33%	42%	83%	92%	83%	92%	42%	108%	92%	83%	92%
BC	Green Lake Drive N	Stone Ave N & Interlake Ave N	NE	13	13	62%	38%	54%	85%	92%	54%	77%	46%	115%	108%	108%	108%
BD	Interlake Ave N	End point (800') and Green Lake Dr N	W	9	9	67%	44%	56%	56%	78%	56%	67%	89%	89%	89%	100%	100%
BE	Interlake Ave N	End point (800') and Green Lake Dr N	E	10	10	60%	50%	60%	30%	60%	50%	60%	100%	50%	130%	110%	120%
BF	Ashworth Avenue N	End point (800') and N 80th St	W	2	2	0%	50%	50%	150%	0%	0%	0%	50%	50%	50%	0%	50%
BG	Ashworth Avenue N	End point (800') and N 80th St	E	0	0	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
BH	N 80th Street	Linden Ave N and Aurora Ave N	N	10	10	20%	10%	20%	20%	30%	10%	20%	10%	20%	10%	10%	10%
BI	N 80th Street	Linden Ave N and Aurora Ave N	S	0	0	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
BJ	N 80th Street	Aurora Ave N and Stone Ave N	N	12	12	0%	0%	0%	0%	50%	0%	25%	0%	92%	92%	50%	75%
BK	N 80th Street	Aurora Ave N and Stone Ave N	S	0	0	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
BL	N 80th Street	Stone Ave N and Green Lake Dr	N	7	7	29%	14%	29%	0%	86%	86%	86%	29%	129%	100%	100%	100%
BM	N 80th Street	Stone Ave N and Green Lake Dr	S	0	0	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
BN	N 80th Street	Green Lake Dr and Ashworth Ave N	N	8	8	88%	63%	75%	25%	100%	88%	100%	75%	100%	100%	100%	100%
BO	N 80th Street	Green Lake Dr and Ashworth Ave N	S	0	0	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
BP	N 80th Street	Ashworth Ave N and end point (800 ')	N	1	1	100%	100%	100%	0%	0%	100%	100%	200%	200%	200%	200%	200%
BQ	N 80th Street	Ashworth Ave N and end point (800 ')	S	0	0	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
BR	Aurora Avenue N	N 80th St and N 79th St	W	0	4	0%	0%	0%	NS	50%	25%	50%	0%	0%	25%	0%	25%
BS	Aurora Avenue N	N 80th St and N 78th St	E	0	16	19%	13%	19%	NS	19%	6%	13%	38%	31%	13%	13%	13%
BT	Stone Avenue N	N 80th St and N 78th St	W	4	17	29%	24%	29%	50%	35%	35%	35%	12%	94%	82%	59%	71%
BU	Stone Avenue N	N 80th St and N 79th ST	E	5	5	20%	0%	20%	80%	100%	100%	100%	60%	120%	120%	100%	120%
BV	Green Lake Drive N	N 80th St and Ashworth Ave N	SW	12	12	25%	50%	42%	58%	67%	58%	67%	83%	117%	108%	100%	108%
BW	Green Lake Drive N	N 80th St and Ashworth Ave N	NE	6	6	83%	67%	83%	100%	33%	50%	50%	117%	133%	150%	117%	133%
BX	Ashworth Avenue N	N 80th St and Green Lake Drive N	W	2	2	200%	50%	150%	50%	50%	50%	50%	250%	150%	250%	200%	250%

Project **Bagley Elementary Expansion**

Utilization

				Parking Supply		Parking Utilization											
						Mid-Morning			Early Morning	Mid-Morning			Evening		Sunday		
						No Classes			Classes in session				No Event	Event	11:30 am to 12:15 pm		
Block Face ID	Street Name	Street Segment	Side of Street	Early Morning Parking	Total Parking Spaces (Mid-morning , Evening Sunday)	Wed 7/20/16 10:00-10:45 AM	Thur 8/4/16 10:15-11:00 AM	Avg	Thur 12/01/16 8:00 - 8:45 AM	Thur 9/22/16 10:00-10:45 AM	Tues 9/27/16 10:00-10:45 AM	Avg (Mid-Morn)	Thur 9/15/16 7:00 - 7:30 PM	Thur 9/29/16 6:50 - 7:40 PM	4/30/17	5/7/17	Avg
BY	Ashworth Avenue N	N 80th St and Green Lake Drive N	E	6	6	83%	100%	100%	83%	100%	117%	117%	150%	0%	150%	133%	150%
BZ	N 79th Street	End point (800 ') and Aurora Ave N	N	15	15	60%	60%	60%	53%	73%	53%	67%	60%	67%	67%	67%	67%
CA	N 79th Street	End point (800 ') and Aurora Ave N	S	16	16	44%	56%	50%	75%	56%	50%	56%	44%	63%	56%	63%	63%
CB	N 79th Street	Stone Ave N and Ashworth Ave N	N	0	0	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
CC	N 79th Street	Stone Ave N and Ashworth Ave N	S	20	20	70%	80%	75%	75%	85%	80%	85%	110%	100%	110%	125%	120%
CD	Green Lake Drive N	Ashworth Ave N and End Point (800 ')	SW	2	2	150%	100%	150%	0%	50%	50%	50%	150%	100%	200%	150%	200%
CE	Green Lake Drive N	Ashworth Ave N and End Point (800 ')	NE	3	3	133%	100%	133%	67%	100%	100%	100%	167%	100%	167%	167%	167%
CF	Aurora Avenue N	N 79th St and N 78th St	W	0	6	0%	0%	0%	NS	0%	0%	0%	33%	17%	0%	17%	17%
CG	Stone Avenue N	N 79th St and N 78th St	E	7	7	71%	43%	57%	100%	100%	114%	114%	57%	100%	86%	86%	86%
CH	Ashworth Avenue N	N 79th St and End Point (800')	W	4	4	100%	125%	125%	50%	50%	100%	75%	125%	75%	50%	100%	75%
CI	Ashworth Avenue N	N 79th St and End Point (800')	E	2	2	100%	0%	50%	0%	100%	100%	100%	50%	100%	100%	100%	100%
CJ	N 78th Street	End point (800') and Aurora Ave N	N	1	1	100%	100%	100%	0%	200%	100%	200%	100%	100%	100%	0%	100%
CK	N 78th Street	End point (800') and Aurora Ave N	S	2	2	50%	50%	50%	50%	50%	100%	100%	0%	100%	100%	0%	50%
CL	N 78th Street	Aurora Ave N and Stone Ave N	N	12	12	67%	83%	75%	58%	83%	75%	83%	67%	125%	67%	83%	75%
CM	N 78th Street	Aurora Ave N and Stone Ave N	S	13	13	62%	85%	77%	69%	77%	62%	69%	69%	154%	92%	100%	100%
CN	N 78th Street	Stone Ave N and Ashworth Ave N	N	24	24	83%	71%	79%	50%	58%	67%	63%	79%	104%	96%	79%	88%
CO	N 78th Street	Stone Ave N and Ashworth Ave N	S	19	19	58%	53%	58%	58%	63%	79%	74%	100%	111%	105%	95%	100%
CP	Aurora Avenue N	N 78th St and end point (800 ')	E	0	6	17%	0%	17%	NS	0%	33%	17%	17%	33%	50%	50%	50%
CQ	Stone Avenue N	N 78th St and N 77th St	W	6	6	33%	33%	33%	17%	67%	67%	67%	83%	117%	100%	83%	100%
CR	Stone Avenue N	N 78th St and N 77th St	E	8	8	25%	25%	25%	88%	50%	13%	38%	75%	138%	88%	75%	88%
CS	N 77th Street	End point (800 ') and Stone Ave N	N	0	0	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
CT	N 77th Street	End point (800 ') and Winona Ave N	S	31	31	52%	68%	61%	68%	55%	39%	48%	87%	0%	81%	87%	84%
CU	N 77th Street	Stone Ave N and Winona Ave N	N	0	0	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
			TOTAL	**449**	**495**	**54%**	**51%**	**52%**	**59%**	**64%**	**58%**	**61%**	**59%**	**89%**	**88%**	**81%**	**85%**

APPENDIX B:
TREE INVENTORY AND SITE ASSESSMENT

Tree Solutions Inc
Consulting Arborists

Project No. TS - 5551

Arborist Report

TO:	Cheri Hendricks, Seattle Public Schools
SITE:	Bagley Elementary School, 7821 Stone Ave N Seattle, WA 98103
RE:	Tree Inventory and Site Assessment
DATE:	December 8, 2016
PROJECT ARBORIST:	J. Casey Clapp ISA Certified Arborist #PN-7475A ISA Qualified Tree Risk Assessor
REVIEWED BY:	Katherine Taylor ISA Certified Arborist #PN-8022A ISA Qualified Tree Risk Assessor
	Scott D. Baker, Registered Consulting Arborist #414 ISA Certified Master Arborist #PN-0670B ISA Qualified Risk Assessment Instructor

Summary
Thirty-seven (37) trees were tagged and assessed at the above-addressed property, eleven (11) of which are Exceptional. All of the trees along the northern, eastern, and southern perimeter of the building don't appear to be affected by the proposed construction, and are appropriate for retention. Due to its prominence, tree 828 could be considered for retention if further testing indicates that it does not pose undue risk. Advanced testing and an aerial assessment to provide more thorough recommendations on management should be considered if retention is desired.

Assignment & Scope of Report
This report outlines the site inspection by Casey Clapp and Jake Dancer, of Tree Solutions Inc., on August 26, 2016. Included are observations and data collected at the site located at 7821 Stone Ave N. Cheri Hendricks, of Seattle Public Schools, requested these services to acquire information for project planning.

We were asked to evaluate the significant trees on site, and to produce an Arborist Report including our findings and recommendations.

The tree size, species, health and structural condition, and related notes and recommendations for each tree can be found in the attached Tree Inventory. Photographs, Glossary, and References follow the report body. Limits of assignment can be found in Appendix A. Methods can be found in Appendix B. Additional assumptions and limiting conditions can be found in Appendix C.

Observations

Site

The 171,624 square foot site fronts 78th Ave N in the Greenlake neighborhood of Seattle. One permanent structure and several portable structures currently exist on site. The site is flat and is not listed as having any environmentally critical areas (ECAs).

A large section of the site is a blacktop play area for the students and a paved parking lot. Most of the trees on site are located around the perimeter of the existing permanent structure, or around the perimeter of the paved areas.

Trees

Thirty-seven significant trees currently exist on site, eleven of which are Exceptional. Five additional offsite trees were found to have canopies that overhang the subject property. One offsite tree is likely Exceptional by size (tree E). Tree D is not considered Exceptional due to its poor structural condition.

This site has a wide range of species represented, including several native and non-native, non-invasive species. Native species include vine maple (*Acer circinatum*), western redcedar (*Thuja plicata*), Pacific dogwood (*Cornus nuttallii*), and shore pine (*Pinus contorta* var. *contorta*). Non-native species include eastern flowering dogwood (*C. florida*), Cornelian cherry dogwood (*C. mas*), incense cedar (*Calocedrus decurrens*), Norway maple (*A. platanoides*), and English oak (*Quercus robur*).

Most of the trees on site are in fair to good health and structural condition. None of the trees appear to pose a high risk to surrounding targets.

Several trees are in fair or poor health condition due to drought stress. Both eastern flowering dogwoods (trees 805 and 833), as well as the native Pacific dogwood (tree 813), are showing drought stress symptoms and were located in dry planting beds.

Trees 816 through 819 were planted in an area that is used frequently by students playing at recess. This planting area has playground woodchips spread throughout, but the soil is still very compacted. All of these trees had thinning crowns and slow growth due to compacted and dry soils.

Tree 828 is an incense cedar that has a diameter at standard height (DSH) of 51.6 inches. This tree is considered Exceptional due to its size. This tree is clearly prominent on the site as the largest tree at the corner of planting area. There is some minor pavement damage where roots have grown beneath surrounding pavement. This tree has a moderately sized limb (approximately 6 inches in diameter) on the southern side with a lateral crack. This tree also lost its top at some point and has several reiterations.

Discussion

The trees on the property are overall in good health and structural condition. According to draft preferred site plans currently available to me, trees 813, 815 through 819, and 827 through 829 may be affected by proposed construction. Trees 813, 815, and 828 are Exceptional. These plans also call for a redesign of the entrance on the east side for accessibility but do not show how they would affect trees directly to the north or south of the entrance, notably trees 801 and 837, neither of which are Exceptional.

Any work done along the façade of the building or the foundation will affect the trees planted along the perimeter of the building. Trees planted along the building perimeter include trees 801 through 813, 829, 830, and 833 through 837. Trees 803, 806, 807, 809, 810, 812, 813, and 830 are Exceptional and planted around the building perimeter. Most of these trees are in good health and structural condition, and would be good candidates for retention.

Trees 816 through 819 are in fair health condition due to compacted soils, and they all have crowded co-dominant unions that may become structural defects in the future. Additionally, these trees are Norway maples, which are very commonly planted trees in our area, and can become locally naturalized. Due to their health condition and species, these trees would be reasonable candidates for removal to accommodate the proposed building.

Due to their maturity and species, the dogwood trees on site would be good candidates for retention.

Trees 815 and 828 are Exceptional incense cedars that would be affected by proposed building plans according to the draft preferred site plans. Both of these trees are in good health and in fair to good structural condition, and both would be good candidates for retention.

Tree 828 has had its canopy managed due to limb loss, and currently has a limb with an approximate diameter of 6 inches with a lateral crack present. This tree also has lost its top at some point, and now has several new leaders. During our initial assessment, we found this tree to be in good health and fair structural condition due to its co-dominant leaders and cracked limb. Current draft preferred site plans show tree 828 as within the footprint of proposed classroom space. If the tree is retained, advanced decay testing and an aerial assessment should be conducted to determine risk and provide thorough management recommendations.

Trees 820 through 826 compose a small planting of western redcedar and Alaska yellow-cedar (*Callitropsis nootkatensis*) trees. None of these trees are Exceptional, and they are in fair to good health and structural condition. Currently, these trees are good candidates for retention, but they are planted too close together. If retained, selective thinning of the least vigorous trees should be done within the next five to ten years in order to select for the dominant trees.

Trees 830 and 831 are western redcedars that are located south of the existing permanent structure. These trees are in good health and structural condition, and are good candidates for retention. Western redcedar trees do not tolerate soil and root disturbance well, so protection for these trees will need to encompass their entire drip line areas together. In addition, these trees have surface roots that would be damaged easily by site work.

Tree E, a Japanese maple (*Acer palmatum*) located on adjacent property to the south, grows very near trees 830 and 831. This tree is likely Exceptional by size. Protection around trees 830 and 831 should also encompass the drip line of this tree.

Trees 805, 829, and 833 are all in poor health or structural condition. These trees appear to be suffering from drought stress. As a future management practice, and especially during construction if they are retained, the smaller landscape trees should be watered during the later summer drought period (approximately late July through early September), and their planting areas should be covered with a two to three inch layer of arborist woodchip mulch. This will help alleviate compaction from kids playing in their rooting areas, and will help retain moisture in the soil.

Recommendations

- Finalize site plans taking into consideration Exceptional trees and protection requirements for any trees that are proposed for retention.
- Obtain the necessary permits prior to completing any site work.

Photographs

Photo 1: A view of a dogwood tree with drought stress.

Photo 2: A view of the Cornelian cherry and kousa dogwood trees; both of these trees are Exceptional.

Photo 3: A view of the existing trees near the entrance of the school along the eastern side.

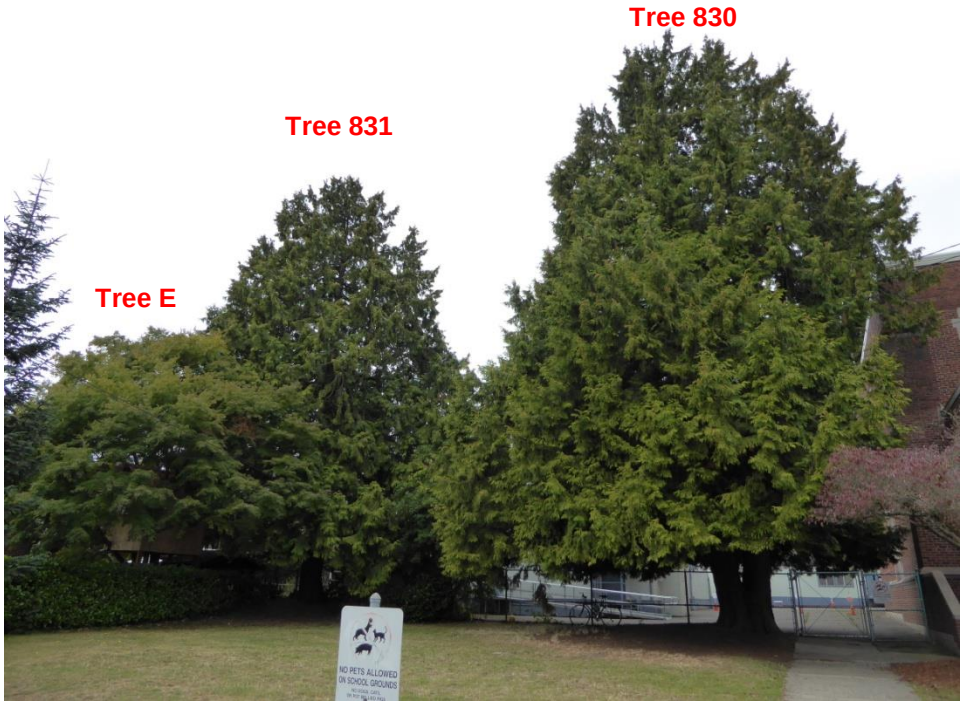


Photo 4: A view of trees 830 and 831, as well as tree E. All of these trees are Exceptional.

Photo 5: Tree 828. This tree is Exceptional and is prominent in its location.

Photo 6: Tree 815, and Exceptional incense cedar.

Glossary

co-dominant stems: stems or branches of nearly equal diameter, often weakly attached (Matheny *et al.* 1998)
crown/canopy: the aboveground portions of a tree (Lilly 2001)
DSH: diameter at standard height; the diameter of the trunk measured 54 inches (4.5 feet) above grade (Matheny *et al.* 1998)
ISA: International Society of Arboriculture
included bark: bark that becomes embedded in a crotch between branch and trunk or between codominant stems and causes a weak structure (Lilly 2001)
significant size: a tree measuring 6" DSH or greater
structural defects: flaws, decay, or other faults in the trunk, branches, or root collar of a tree, which may lead to failure (Lilly 2001)

References

ANSI A300 (Part 1) – 2008 American National Standards Institute. American National Standard for Tree Care Operations: Tree, Shrub, and Other Woody Plant Maintenance: Standard Practices (Pruning). New York: Tree Care Industry Association, 2008.

Sugimura, D.W. "DPD Director's Rule 16-2008". Seattle, WA, 2009.

Dunster & Associates Environmental Consultants Ltd. Assessing Trees in Urban Areas and the Urban-Rural Interface, US Release 1.0. Silverton: Pacific Northwest Chapter ISA, 2006

Lilly, Sharon. Arborists' Certification Study Guide. Champaign, IL: The International Society of Arboriculture, 2001.

Matheny, Nelda and James R. Clark. Trees and Development: A Technical Guide to Preservation of Trees During Land Development. Champaign, IL: International Society of Arboriculture, 1998.

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

Appendix A - Limits of Assignment

Unless stated otherwise: 1) information contained in this report covers only those trees that were examined and reflects the condition of those trees at the time of inspection; and 2) the inspection is limited to visual examination of the subject trees without dissection, excavation, probing, climbing, or coring unless explicitly specified. There is no warranty or guarantee, expressed or implied, that problems or deficiencies of the subject trees may not arise in the future.

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.

Appendix B - Methods

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.

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.

Tree health considers crown indicators including foliar density, size, color, stem shoot extensions, decay, and damage. We have adapted our ratings based on the Purdue University Extension Formula Values for health condition. These values are a general representation used to assist in 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.

Tree health condition ratings have been adapted from the Purdue University Extension bulletin FNR-473-W - Tree Appraisal.

Appendix C - Assumptions & Limiting Conditions

1. Consultant assumes that any legal description provided to Consultant is correct and that title to property is good and marketable. Consultant assumes no responsibility for legal matters. Consultant assumes all property appraised or evaluated is free and clear, and is under responsible ownership and competent management.

2. Consultant assumes that the property and its use do not violate applicable codes, ordinances, statutes or regulations.

3. Although Consultant has taken care to obtain all information from reliable sources and to verify the data insofar as possible, Consultant does not guarantee and is not responsible for the accuracy of information provided by others.

4. Client may not require Consultant to testify or attend court by reason of any report unless mutually satisfactory contractual arrangements are made, including payment of an additional fee for such Services as described in the Consulting Arborist Agreement.

5. Unless otherwise required by law, possession of this report does not imply right of publication or use for any purpose by any person other than the person to whom it is addressed, without the prior express written consent of the Consultant.

6. Unless otherwise required by law, no part of this report shall be conveyed by any person, including the Client, the public through advertising, public relations, news, sales or other media without the Consultant's prior express written consent.

7. This report and any values expressed herein 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.

8. All photographs included in this report were taken by Tree Solutions Inc. during the documented site visit, unless otherwise noted.

9. Sketches, drawings and photographs in this report, being intended as visual aids, are not necessarily to scale and should not be construed as engineering or 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 Consultant as to the sufficiency or accuracy of the information.

10. Unless otherwise agreed, (1) information contained in this report covers only the items examined and reflects the condition of the 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. Consultant makes no warranty or guarantee, express or implied, that the problems or deficiencies of the plans or property in question may not arise in the future.

11. Loss or alteration of any part of this Agreement invalidates the entire report.

Tree Solutions Inc
Consulting Arborists

Table of Trees

Bagley Elementary School
7821 Stone Ave N Seattle
Seattle, WA 98103

Date of Inventory: 08.26.2016
Table Prepared: 09.16.2016

							Drip line Radius (feet)							
Tree ID	**Code**	**Scientific Name**	**Common Name**	**DSH** (inches)	**Health Condition**	**Structural Condition**	**North**	**East**	**South**	**West**	**Exceptional Threshold**	**Exceptional (y/n)**	**Proposed Action**	**Notes**
801	FASY	*Fagus sylvatica*	European beech	15.8	Good	Good	11	13	11	9	*30*	No		Upright cultivar
802	QURO	*Quercus robur*	English oak	25.2	Good	Good	26	35	24	11	*30*	No		Surface roots, phototropic to east
803	ACCI	*Acer circinatum*	Vine maple	9.8	Good	Fair	22	23	12	5	*8*	Yes		Co-dominant from base: 6.1, 5.1, 5.8; split branch with good response growth; minor prunning recommended if retained
804	CEDE	*Cedrus deodara*	Deodar cedar	28.9	Good	Good	20	28	29	21	*30*	No		Broken branch
805	COFL	*Cornus florida*	Eastern flowering dogwood	7.9	Poor	Good	5	16	16	9	*12*	No		Extreme drought stress
806	THOC	*Thuja occidentalis*	Arborvitae	14.0	Fair	Good	11	11	11	11	*12*	Yes		Large pruning wound, thin crown
807	JUCO	*Juniperus occidentalis*	Western juniper	12.3	Good	Good	10	13	10	3	*6*	Yes		
808	CRJA	*Cryptomeria japonica*	Japanese cryptomeria	10.1	Good	Good	11	11	11	11	*28*	No		Powerlines present through canopy
809	COKO	*Cornus kousa*	Kousa dogwood	13.7	Good	Good	19	15	5	12	*12*	Yes		Co-dominant: 5.1, 4.2, 7.3, 6.6, 6.8; surface roots
810	COMA	*Cornus mas*	Cornelian cherry dogwood	10.5	Good	Good	20	14	5	14	*10*	Yes		Co-dominant from base: 8.3, 6.5; diameters of two main leads measured, phototropic growth to the north
811	STJA	*Styrax japonicus*	Japanese snowbell	9.2	Good	Good	12	14	5	10	*12*	No		
812	ACCI	*Acer circinatum*	Vine maple	9.8	Good	Good	10	16	7	11	*8*	Yes		Measurement taken at the narrowest point below the union
813	CONU	*Cornus nuttallii*	Pacific dogwood	8.4	Fair	Good	11	6	12	15	*6*	Yes		Co-dominant: 6.4, 4.2, 3.5; drought stress, basal wounds
814	SEGI	*Sequoiadendron giganteum*	Giant sequoia	8.7	Good	Good	7	7	7	7	*30*	No		
815	CADE	*Calocedrus decurrens*	Incense cedar	35.2	Good	Good	10	10	10	10	*30*	Yes		
816	ACPL	*Acer platanoides*	Norway maple	8.8	Fair	Fair	11	11	11	11	*30*	No		Crowded co-dominant union
817	ACPL	*Acer platanoides*	Norway maple	9.6	Fair	Good	10	10	10	10	*30*	No		Crown in decline, crowded union

Tree Solutions Inc
Consulting Arborists

Table of Trees

Bagley Elementary School
7821 Stone Ave N Seattle
Seattle, WA 98103

Date of Inventory: 08.26.2016
Table Prepared: 09.16.2016

Tree ID	Code	Scientific Name	Common Name	DSH (inches)	Health Condition	Structural Condition	North	East	South	West	Exceptional Threshold	Exceptional (y/n)	Proposed Action	Notes
818	ACPL	*Acer platanoides*	Norway maple	9.6	Fair	Good	11	11	11	11	*30*	No		Compacted soil, crowded co-dominant union, crown decline
819	ACPL	*Acer platanoides*	Norway maple	11.0	Fair	Fair	11	11	11	11	*30*	No		Exposed roots, compacted soil, crowded union, crown decline
820	CANO	*Callitropsis nootkatensis*	Alaskan yellow-cedar	7.5	Good	Good	8	8	8	8	*13*	No		
821	THPL	*Thuja plicata*	Western redcedar	6.3	Good	Good	8	8	8	8	*30*	No		
822	CANO	*Callitropsis nootkatensis*	Alaskan yellow-cedar	7.4	Good	Good	7	7	7	7	*13*	No		
823	THPL	*Thuja plicata*	Western redcedar	7.9	Good	Good	10	10	10	10	*30*	No		
824	THPL	*Thuja plicata*	Western redcedar	9.6	Good	Good	9	9	9	9	*30*	No		Large wound on south side
825	THPL	*Thuja plicata*	Western redcedar	7.4	Good	Good	9	9	9	9	*30*	No		
826	CADE	*Calocedrus decurrens*	Incense cedar	9.5	Good	Fair	8	8	8	8	*30*	No		Co-dominant: 7.7, 5.7; included bark, if retained recommend subordination of smaller leader
827	PICOc	*Pinus contorta var. contorta*	Shore pine	7.2	Good	Good	7	6	9	10	*12*	No		
828	CADE	*Calocedrus decurrens*	Incense cedar	51.6	Good	Fair	26	24	28	23	*30*	Yes		Branch with lateral crack in canopy, potential for cabling of large NW limb; phototropic to south; if retained, recommend aerial inspection
829	CHOB	*Chamacyparis obtusa*	Hinoki cypress	15.0	Poor	Fair	7	4	10	11	*16*	No		Topped, crown in decline
830	THPL	*Thuja plicata*	Western redcedar	45.3	Good	Good	20	29	25	21	*30*	Yes		Co-dominant from base: 31.8, 32.3; exposed roots
831	THPL	*Thuja plicata*	Western redcedar	32.8	Good	Good	18	20	20	20	*30*	Yes		Surface roots to east
832	ABPR	*Abies procera*	Noble fir	10.9	Good	Good	7	7	7	7	*20*	No		
833	COFL	*Cornus florida*	Eastern flowering dogwood	10.5	Poor	good	12	12	12	12	*12*	No		Co-dominant: 4.9, 5.9, 4.5, 5.5; extreme drought stress
834	CEDE	*Cedrus deodara*	Deodar cedar	20.8	Good	Good	20	21	16	10	*30*	No		
835	CEAT	*Cedrus atlantica*	Atlas cedar	14.1	Good	Good	10	10	10	10	*30*	No		
836	QURO	*Quercus robur*	English oak	26.0	Good	Good	13	19	15	14	*30*	No		
837	FASY	*Fagus sylvatica*	European beech	20.2	Good	Good	15	19	15	14	*30*	No		
Trees on adjacent property with Canopies that overhang the subject site														
A	ACRU	*Acer rubrum*	Red maple	3.5	Good	Good	7	7	7	7	*25*	No		In ROW of N 80th Street

Tree Solutions Inc
Consulting Arborists

Table of Trees

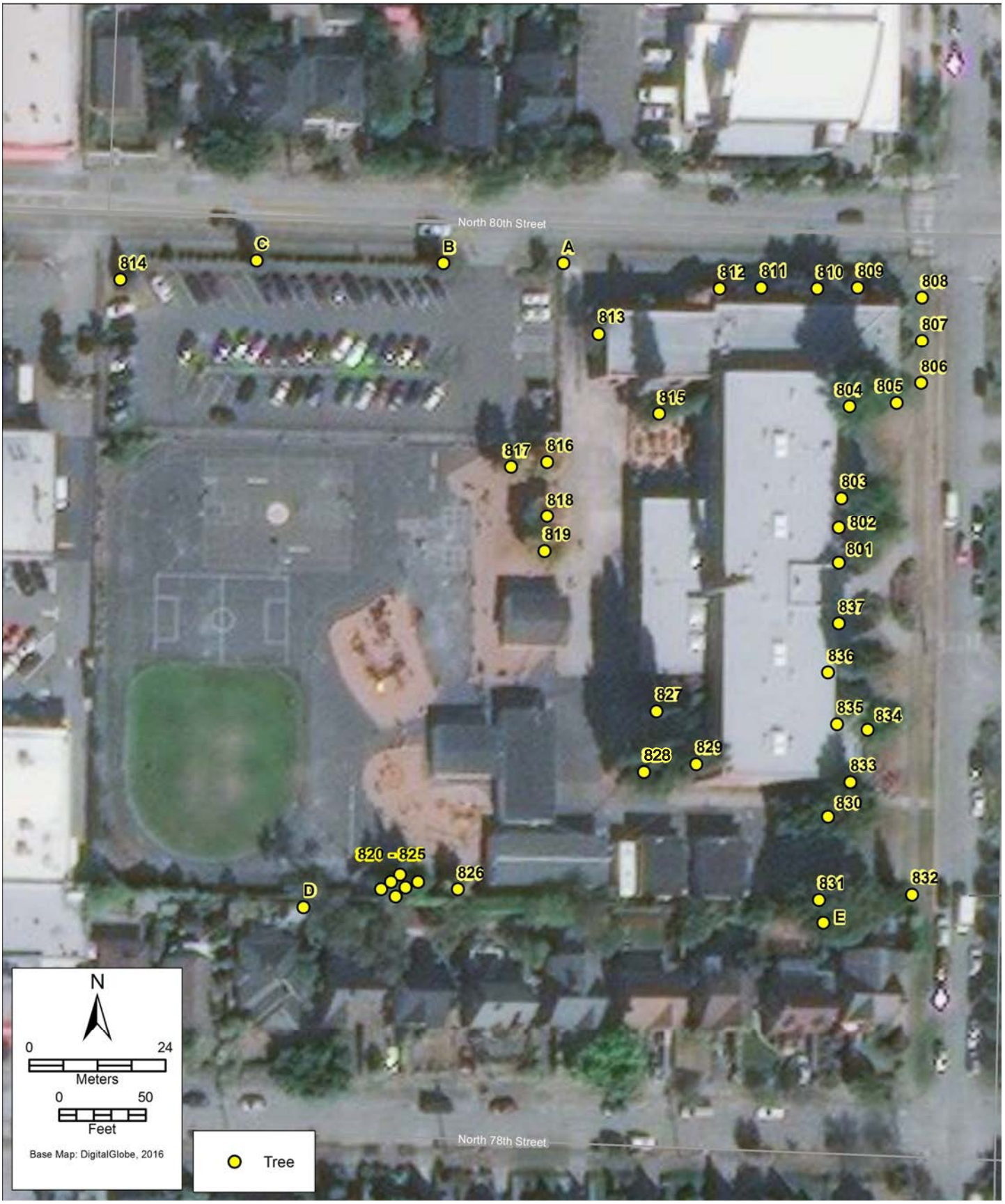
Bagley Elementary School
7821 Stone Ave N Seattle
Seattle, WA 98103

Date of Inventory: 08.26.2016
Table Prepared: 09.16.2016

Tree ID	Code	Scientific Name	Common Name	DSH (inches)	Health Condition	Structural Condition	North	East	South	West	Exceptional Threshold	Exceptional (y/n)	Proposed Action	Notes
B	ACRU	*Acer rubrum*	Red maple	6.0	Good	Good	10	10	10	10	*25*	No		In ROW of N 80th Street
C	ACRU	*Acer rubrum*	Red maple	4.7	Good	Good	8	8	8	8	*25*	No		In ROW of N 80th Street
D	PRAV	*Prunus avium*	Wild cherry	34.5	Fair	Poor	10	13		31	*29*	No - condition		Several dead stems, topped, only two live branches left
E	ACPA	*Acer palmatum*	Japanese maple	20.1	Good	Good	24	24		24	*12*	Yes		Co-dominant: estimated DSH of 12.0, 9.0

Additional notes:

DSH (Diameter at Standard Height) is measured 4.5 feet above grade.
Multi-stem trees are noted, and a single stem equivalent is calculated using the method defined in the Director's Rule 16-2008.
Drip line is measured from the center of the tree to the outermost extent of the canopy


North 80th Street
North 78th Street
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831
832
833
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836
837
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24
Meters
0
50
Feet
Base Map: DigitalGlobe, 2016
Tree

APPENDIX C:
ADVANCED EXCEPTIONAL TREE AND LANDSCAPE ASSESSMENT

Tree Solutions Inc
Consulting Arborists

Project No. TS - 5551

Memorandum

TO:	Cheri Hendricks, Project Manager
SITE:	Bagley Elementary School
RE:	Advanced Exceptional Tree & Landscape Assessment
DATE:	February 2, 2017; updated March 3, 2017
PROJECT ARBORISTS:	Scott Baker, ASCA Registered Consulting Arborist #414 ISA Board Certified Master Arborist PN-0670B ISA Qualified Tree Risk Assessor
	Katherine Taylor, ISA Certified Arborist PN-8228 ISA Qualified Tree Risk Assessor
REVIEWED BY:	J. Casey Clapp ISA Certified Arborist PN-7475A ISA Qualified Tree Risk Assessor

At your request we conducted an advanced evaluation of the mature trees and vegetation on site. Our assessment included review of historical photos and an aerial inspection of tree 828, an Exceptional incense-cedar (*Calocedrus deccurens*). Our original visual assessment indicated that an aerial assessment was needed as the tree is quite large and has a complex canopy structure with areas of concern. The tree is Exceptional per Seattle Municipal Code and is noted in Arthur Lee Jacobsen's book *Trees of Seattle* as one of the largest known trees of this species in the City.

Incense-cedar is a long-lived tree that is native to western North America. The species is decay resistant. In Seattle's climate, incense-cedar can grow quite fast. We noted that this tree was likely planted with the completion of the current school building in 1929-30. Based on review of historical photographs from 1940 and 1960, provided by Seattle Public Schools, the tree was mature when the photos were taken. This makes the tree about 86+ years old, and it is adding trunk growth increments of 1/4 to 1/3 inch per year.

Tree 828 Assessment

The location where the tree currently grows has blacktop and concrete pavement under about half of the drip line. There is likely to be significant amounts of roots beneath the pavement. On the existing building side of the tree there is a planting bed that has mostly native plant species present. This area has been mulched with wood chips and is providing a good area for fine root production.

The tree has shed branches in the past, and school staff report that failure of one large part occurred with school in session. The tree has been pruned in the past and we noted some recent large pruning cuts made for unknown reasons. All of these cuts were made in the lower parts of the tree.

Our concern was that there may be structural defects in the upper canopy or other parts of the tree that would elevate the risk level of the tree. Our goal was to identify potential defects in the crown and provide possible mitigation options.

We noted that the tree, growing with no competition, has a wide canopy of 50-60 feet in diameter. The tree now has many branches that have assumed an excurrent or upright form; these are also referred to by arborists as "reiterations". We could see a cracked branch from the ground and observed other branches that showed signs of growth response to heavy loads (see photo 1). We also noted that the vigorous growth of reaction wood is present in many areas of the tree.

The aerial inspection revealed that there are no obvious severe defects present. We did note signs that the tree is producing a lot of reaction growth to support the large scaffold branches that are present. We noted no signs of decay that would merit invasive testing with a micro-resistance drill, and relied on visual assessment and the use of a steel probe to inspect for decay.

We used the ISA Basic Tree Risk Assessment method to rate the risk from the tree to people beneath the tree and to people in the building adjacent. The risk posed by the tree is moderate for people beneath the tree and low for the building. If the tree was managed to mitigate risk the overall risk can be reduced to low.

If the tree were to be retained, it should be pruned and have several dynamic cables installed to reduce risk. Steel cable could be used in combination with dynamic cable. The tree would require ongoing pruning and cable maintenance every 3-5 years depending on how it responds.

Pruning Specification:
Goal: Reduce risk of a large part failure using reduction pruning and installation of dynamic cables.
Area of work: Canopy periphery. Cables will be installed in several areas.
Type of pruning cuts: Reduction cuts to 4 inches diameter.
Cables: Ring cable at main union high in the tree. 4 Ton rating.

Landscape & Exceptional Tree Assessment
Historical photographs from 1940 and 1960 show that there are four mature trees (#815, 828, 830, and 831) that are original to the building and were likely planted at or before the school was constructed in 1929 to 1930 (see photos 6 and 7). All of these trees meet the size threshold to qualify as Exceptional trees per Seattle Director's Rule 16-2008.

Based on historical photographs, the existing plantings along the front of the building are not original to the school. The species and locations of trees shown in photo 8 taken in 1940 differ from the existing plants along the front of the building. Based on our observations, the existing trees and vegetation was likely planted sometime after 1960.

Tree Protection Recommendations

In order to preserve the two Exceptional trees located along the back of the existing building (#815 and #828) tree protection measures will need to be established. There is a currently a garden and landscape area located adjacent to both trees. The garden and landscaped areas are planned to be preserved to protect both the fine and structural roots of the trees. This is important to the long-term survival of the trees.

To existing path to the north of tree 815 is currently slated to be updated with a covered walkway. There are likely significant structural roots from this tree beneath the existing pavement. To preserve these roots, the existing pavement should be left in place and a raised walkway constructed over the top.

We recommend preserving an additional 10-15 radial feet beyond the drip line area for both tree 815 and 828. If it is necessary to remove pavement within the tree protection area, it should be left in place until the last minute so that roots and soil are protected from compaction when equipment is operated in these areas. Once the pavement is removed, soil and coarse mulch should be installed throughout to prevent roots from drying out.

Photographs

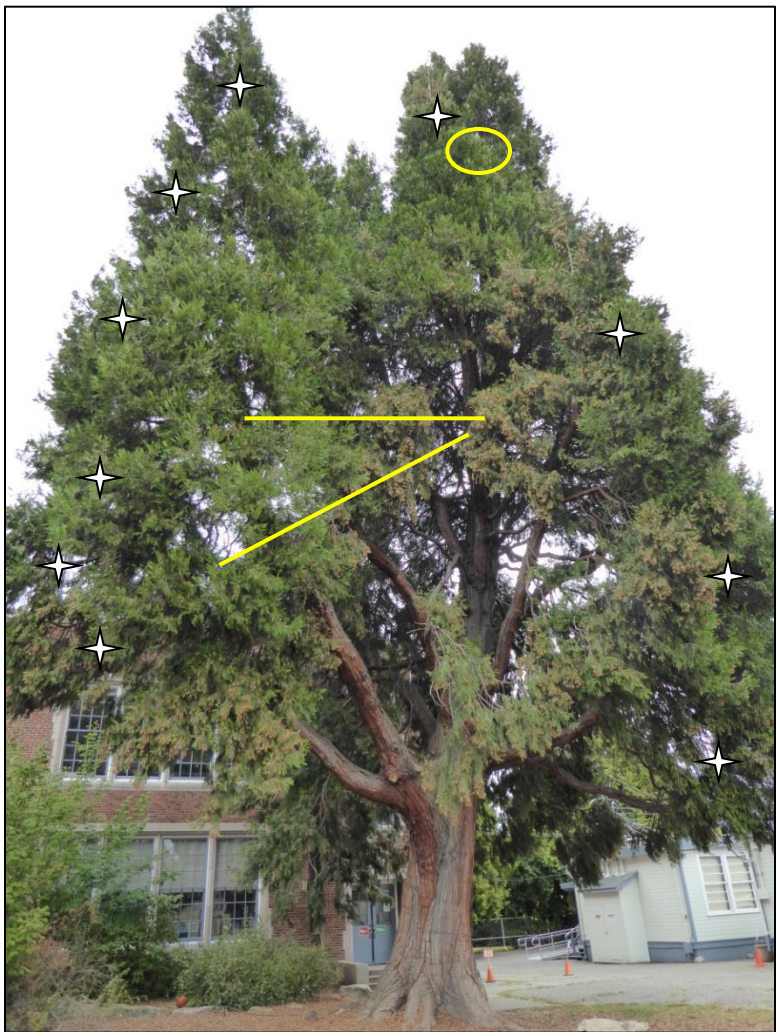

Photo 1: The tree looking east towards the school building. Yellow lines indicate approximate location of some of the recommended cables. White stars indicate areas for crown reduction pruning (photo credit: Tree Solutions, Inc.)

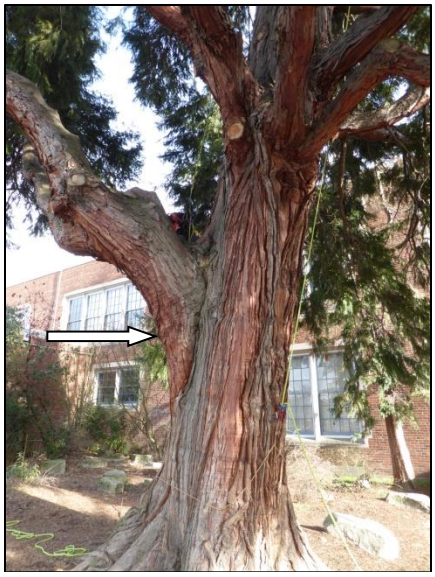

Photo 2: Shows the tree and the strong response growth on the side branch which supports two reiterative trunks (photo credit: Tree Solutions, Inc.)

Photo 3: The upper sections of the tree (photo credit: Tree Solutions, Inc.)

Photo 4: A cracked branch that is still viable but needs risk mitigation work; end weight pruning and a cable. Or remove entire branch (photo credit: Tree Solutions, Inc.)

Photo 5: The union at the top of the tree where it diverges into six trunks. No significant decay is present. Some damage from raccoons hanging out in the union is present (photo credit: Tree Solutions, Inc.)

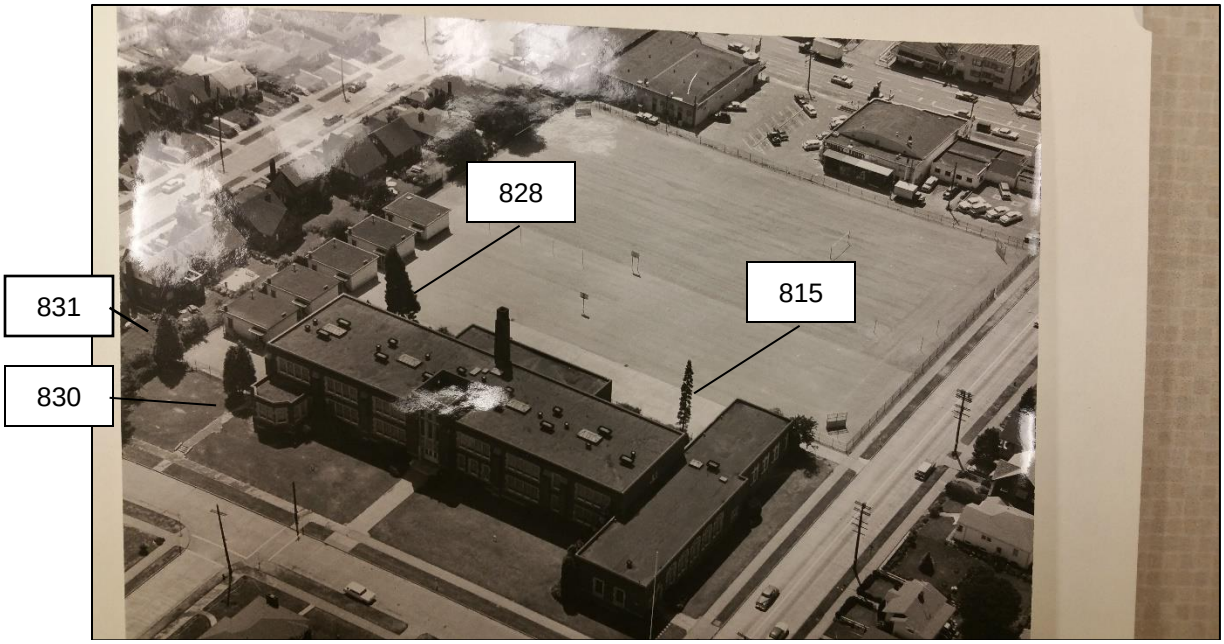

Photo 6: Historical aerial photograph of the site taken in 1960. Based on this, four mature trees existed that remain on site today, trees 815, 828, 830, and 831 (source: Seattle Public Schools)

Photo 7: Historical photo taken in 1940 of the back of the school showing the two exceptional cedar trees that still remain, trees 815 and 828 (source: Seattle Public Schools)

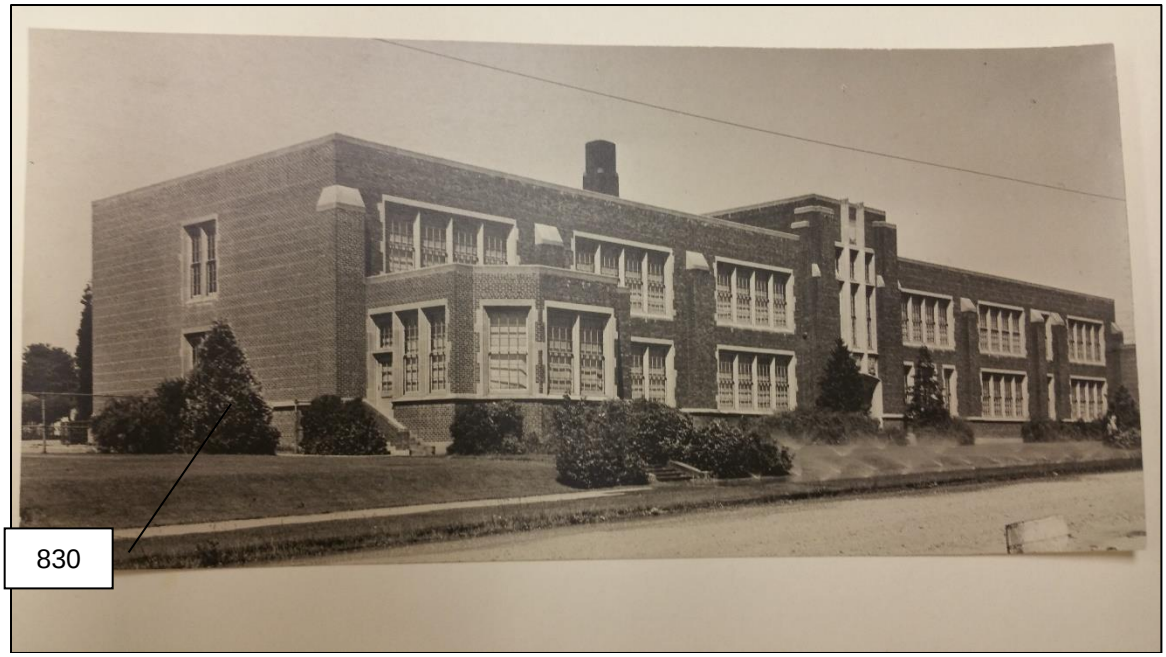

Photo 8: Historical photo of the front of building taken in 1940. None of the vegetation shown in the photo appears to remain with the exception of tree #830 (source: Seattle Public Schools)

Appendix A - Assumptions & Limiting Conditions

1. Consultant assumes that any legal description provided to Consultant is correct and that title to property is good and marketable. Consultant assumes no responsibility for legal matters. Consultant assumes all property appraised or evaluated is free and clear, and is under responsible ownership and competent management.

2. Consultant assumes that the property and its use do not violate applicable codes, ordinances, statutes or regulations.

3. Although Consultant has taken care to obtain all information from reliable sources and to verify the data insofar as possible, Consultant does not guarantee and is not responsible for the accuracy of information provided by others.

4. Client may not require Consultant to testify or attend court by reason of any report unless mutually satisfactory contractual arrangements are made, including payment of an additional fee for such Services as described in the Consulting Arborist Agreement.

5. Unless otherwise required by law, possession of this report does not imply right of publication or use for any purpose by any person other than the person to whom it is addressed, without the prior express written consent of the Consultant.

6. Unless otherwise required by law, no part of this report shall be conveyed by any person, including the Client, the public through advertising, public relations, news, sales or other media without the Consultant's prior express written consent.

7. This report and any values expressed herein 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.

8. All photographs included in this report were taken by Tree Solutions Inc. during the documented site visit, unless otherwise noted.

9. Sketches, drawings and photographs in this report, being intended as visual aids, are not necessarily to scale and should not be construed as engineering or 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 Consultant as to the sufficiency or accuracy of the information.

10. Unless otherwise agreed, (1) information contained in this report covers only the items examined and reflects the condition of the 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. Consultant makes no warranty or guarantee, express or implied, that the problems or deficiencies of the plans or property in question may not arise in the future.

11. Loss or alteration of any part of this Agreement invalidates the entire report.