



Building Excellence V Program

Draft

SEPA Programmatic Environmental Impact Statement

April 2018

April 3, 2018



To: Recipients of BEX V Draft Programmatic Environmental Impact Statement

Dear Reader:

This Draft Programmatic Environmental Impact Statement (Programmatic EIS) discusses the potential environmental impacts that could result from implementation of projects proposed for the Building Excellence V (BEX V) Program. The BEX V Program is a continuation of the levy program begun in 1995 to care for Seattle Public Schools' (SPS) building inventory and to respond to the community's changing needs.

This Draft Programmatic EIS evaluates the impacts of four alternatives— (1) a no action alternative; (2) an alternative that would meet capacity and condition needs by replacing, modernizing, or constructing additions at existing schools and constructing a new downtown elementary school and a new downtown high school with a stadium; (3) an alternative that would increase capacity by constructing new schools at new sites throughout the District; and (4) an alternative that would provide additional capacity by modernizing and constructing additions at existing buildings. All action alternatives would include athletic field improvements and lighting projects, school safety equipment and supplies, technology upgrades, and systems repair and replacement projects. The impacts are evaluated in this document at a non-project or programmatic level. Specific projects proposed under the BEX V Program will undergo additional project-level SEPA review in the form of a SEPA Checklist, SEPA EIS, or addendum to this Programmatic EIS, as appropriate.

We invite you to comment on our alternatives, the impacts discussed in this document, or potential ways that those impacts could be lessened or eliminated. The 30-day comment period begins April 3, 2018 and ends on May 4, 2018. SPS will hold a combined public meeting and public hearing from 6:00 to 7:00 p.m. on April 16, 2018 in Room 2700 of the John Stanford Center for Educational Excellence.

Following the public comment period, SPS will prepare and issue a Final Programmatic Environmental Impact Statement that will incorporate or respond to comments submitted during the comment period.

Your comments should include the name and address of the author and should be addressed to me at:

Pegi McEvoy, SEPA Responsible Official
Seattle Public Schools
P.O. Box 34165, MS 22-183
Seattle, WA 98124

Comments may also be sent via email to SEPAComments@seattleschools.org.

Thank you for your participation in this important effort, and for your interest in the education of Seattle's children.

Pegi McEvoy
District SEPA Official

Pegi McEvoy, Assistant Superintendent, Operations, District SEPA Official
PO Box 34165, MS 22-183, Seattle WA 98124 * (206) 252-0102

SEPA Fact Sheet

Project Title

Building Excellence V Program

Project Description

Seattle Public Schools (SPS) is planning to implement Phase V of its Building Excellence Program (BEX) Capital Levy. The BEX V Program includes renovation of existing facilities, additions to existing facilities, and new construction to address condition needs and school safety needs and to allow for increased capacity to meet projected enrollment increases, building systems repairs and replacements, and athletic field upgrades and lighting. The BEX V Program Capital Levy will be placed on the February 2019 special election ballot for approval by Seattle voters. Because details of the capacity, conditions, and lighting projects are not yet known, SPS has prepared a programmatic or non-project level Environmental Impact Statement (EIS) at this time. Appropriate supplemental environmental review of the individual capacity, condition, and athletic field projects will be conducted when sufficient details are available.

This Programmatic EIS evaluates four alternatives for the BEX V Program: the No Action Alternative and three action alternatives. The three action alternatives differ in how SPS would address capacity and condition needs. Under Alternative 2, the preferred BEX V program, SPS would increase capacity and improve conditions by replacing existing schools and by modernizing and constructing additions on existing schools. SPS would also construct a new elementary school and a new downtown high school with a stadium. Alternatives 3 and 4 look at alternate ways to meet SPS's needs. Alternative 3 would meet enrollment capacity demands by constructing new schools at new sites in the City, including a new downtown high school and stadium. Under Alternative 4, capacity and condition needs would be met by modernizing and constructing additions on schools and SPS would not construct new schools. All three action alternatives include building systems repair and replacement projects and upgrading and installing lights on athletic fields.

Alternative 1 – No Action Alternative. The No Action Alternative assumes that no capacity projects, field lighting projects, facility improvements, school safety projects, or technology upgrades would be completed. Under this alternative, buildings would be retained in their current configurations and conditions. Condition needs at SPS schools would not be addressed, including deteriorating buildings and safety concerns. SPS would continue to have capacity shortfalls. Some schools would continue to use portable buildings to meet capacity needs and more portables may be required if District enrollment continues to increase and funding allows. If there is no funding for installing portables, some schools could experience overcrowding. No upgrades would be made to existing athletic fields and no new athletic field lighting would be installed. The shortage of athletic fields in the City would continue.

Alternative 2 – Additional Capacity and Improved Conditions with Replacement Schools and Additions. Under Alternative 2, the preferred BEX V Program, SPS would implement the BEX V Program being developed through its planning process. Additional capacity would be provided through replacing,

modernizing, or constructing additions at existing schools and constructing a new downtown high school with a stadium. Alternative 2 includes the following types of projects:

1. Elementary and middle school replacement (eight to 12 elementary schools and four middle schools)
2. School additions and modernization (12 to 16 schools)
3. A new downtown high school and stadium at the Memorial Stadium site and a new downtown elementary school
4. Athletic field upgrades and lighting
5. Systems repair and replacement projects, which include school safety equipment and supplies and technology system upgrades

Although specific school projects have not been selected at this time, the District and the School Board are working from a list of potential projects. The final list of projects for BEX V will be selected by the Seattle School Board. SPS might select other schools for BEX V that are not on this list. Because a project not on the list would also be a project to increase capacity and improve conditions, its potential range of impacts is expected to be similar to those described in this Programmatic EIS. If not included in the list, any newly added project would undergo appropriate project-level environmental review prior to implementation.

Alternative 3 – Additional Capacity with New Schools at New Sites. Under Alternative 3, SPS would construct three to four new elementary or K-8 schools at locations throughout the District to meet capacity needs. The new schools would have a capacity of 550 or 650 students and would be located in the attendance areas with the highest capacity needs. No sites have been selected for these schools, although one would be downtown as described for Alternative 2. SPS would acquire private property or locate schools on other publicly owned property. SPS could potentially reacquire leased or sold properties to open as new schools. Similar to Alternative 2, Alternative 3 includes construction of a new downtown high school and stadium at the Memorial Stadium site, athletic field improvements and lighting, systems repair and replacement projects, school safety equipment and supplies, and technology system upgrades.

Alternative 4 – Additional Capacity and Improved Conditions with Additions and Modernizations. Under Alternative 4, SPS would meet capacity needs by modernizing existing buildings and constructing additions. Modernizations and additions would be located at 12 to 17 elementary schools and three to five high schools to improve conditions and increase capacity. Modernizations would occur at three middle schools and one to three high schools to improve conditions. No replacement schools would be constructed and no new schools would be constructed at new sites. Alternative 4 includes athletic field improvements and lighting projects, systems repair and replacement projects, school safety equipment and supplies, and technology system upgrades similar to Alternative 2.

Project Location

Seattle Public Schools covers the entire City of Seattle. The proposed BEX V Program projects would be located at schools throughout the District.

Lead Agency

Seattle School District No. 1
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Seattle WA 98134
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Permits and Licenses Required or Potentially Required

To implement any individual projects under the BEX V Program, SPS would apply for required permits and comply with permit conditions. Likely permits to be required include:

1. Master Use Permit, City of Seattle
2. Clearing and Grading Permit, City of Seattle
3. Demolition Permit, City of Seattle
4. Building/Mechanical Permit, City of Seattle
5. Electrical Permit, City of Seattle
6. Environmentally Critical Areas Review, City of Seattle

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Date of Issue of Draft Programmatic EIS

April 3, 2018

Public Comment Period

The Draft Programmatic EIS will be available for a 30-day public comment period. Comments must be received or postmarked by May 4, 2018, and may be submitted orally, in writing via regular mail, or email to:

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Public Meeting/Hearing

SPS will conduct a combined public meeting and hearing to receive comments on the Draft Programmatic EIS. The meeting will be held from 6:00 to 7:00 p.m. on April 16, 2018 at the following location:

John Stanford Center for Educational Excellence
2445 3rd Avenue South
Seattle, WA 98134

Additional Environmental Review

SPS will issue the Final Programmatic EIS on the BEX V Program in June or July 2018. Specific projects proposed under the BEX V Program will undergo additional project-level SEPA review in the form of a SEPA Checklist, SEPA EIS, or addendum to this Programmatic EIS, as appropriate. SPS will acquire all applicable permits and comply with mitigation requirements for the proposed projects.

Location of Background Documents

Seattle Public Schools
2445 Third Avenue South
Seattle, WA 98124-1165

Additional Copies

A copy of the Draft Programmatic EIS is available on the District's web page at <http://www.seattleschools.org/sepa>. Copies are also available for review at Seattle Public Schools, located at 2445 Third Avenue South in Seattle. A limited number of copies of this document have been printed and made available for distribution. Additional copies may be purchased for \$15.

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List of Acronyms

Agreement	Joint Use Agreement
BEX	Building Excellence
BMP	Bicycle Master Plan
BMPs	Best Management Practices
BTB	Building, Technology, and Academics/Athletics
CIP	Capital Improvements Plan
CMP	Construction Management Plan
DAHP	Department of Archaeology and Historic Preservation
dB	decibels
DS	Determination of Significance
ECA	Environmentally Critical Area
Ecology	Washington State Department of Ecology
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
FTN	Frequent Transit Network
FWHCAs	Fish and Wildlife Habitat Conservation Areas
HABS/HAER	Historic American Buildings Survey/Historic American Engineering Records
HVAC	heating, ventilation, and air conditioning
IPD	Inadvertent Discovery Plan
ITE	Institute of Transportation Engineers
JAFDP	Joint Athletic Facilities Development Program
K	kindergarten
LED	light emitting diode
LEED	Leadership in Energy and Environmental Design

Leq	equivalent sound level
LOS	Level of Service
LR	low-rise
Metro	King County Metro Transit
MUP	Master Use Permit
NAAQS	National Ambient Air Quality Standards
OSPI	Office of the Superintendent of Public Instruction
Parks	Seattle Department of Parks and Recreation
Partnership Agreement	Public Process Partnership Agreement: School District Facilities, Fort Lawton, Memorial Stadium, and Seattle Center, 2017
PMP	Pedestrian Master Plan
Programmatic EIS	Programmatic Environmental Impact Statement
PSCAA	Puget Sound Clean Air Agency
RCW	Revised Code of Washington
RPZ	Restricted Parking Zone
SDCI	Seattle Department of Construction and Inspections
SDOT	Seattle Department of Transportation
SEPA	State Environmental Policy Act
SF	single family
SMC	Seattle Municipal Code
SOV	single occupant vehicle
SPS	Seattle Public Schools
TBD	to be determined
WAC	Washington Administrative Code
WDFW	Washington Department of Fish and Wildlife

Chapter 1 Introduction and Background

1.1 Introduction

This Programmatic Environmental Impact Statement (Programmatic EIS) evaluates potential impacts associated with projects included in the Building Excellence Program V (BEX V) Capital Levy. The BEX V Program includes new construction, the renovation and modernization of existing school buildings throughout Seattle to allow for increased capacity, building systems repairs and replacements, and installation of exterior lighting at athletic fields. The BEX V Program Capital Levy will be placed on the February 12, 2019 special election ballot for approval by Seattle voters.

1.2 Background

In February 2012, the Seattle School Board (Board) adopted the District's latest Facilities Master Plan (SPS, 2013). The Facilities Master Plan provides planning information and guides the future direction of facilities improvements up to school year 2021. The Facilities Master Plan, reviewed and updated every 3 years, provides the basis to seek funding through strategic capital construction programs. Seattle Public Schools (SPS) has two major funding sources for implementing capital construction programs—the Building Excellence (BEX) capital levy and the Buildings, Technology and Academics/Athletics (BTA) levy.

1.2.1 Building Excellence Program

The Building Excellence (BEX) Program is Seattle Public Schools' capital program that includes construction of new school buildings and additions and major renovations to existing buildings. The BEX Program was begun in 1995 to care for SPS's building inventory and to respond to the community's changing needs. The BEX Program is funded by a six-year levy to replace, renovate and modernize District buildings and address enrollment growth, earthquake and safety issues, infrastructure upgrades, major preventative maintenance and technology system improvements throughout the District.

1.2.1.1 Building Excellence I, II, and III

Seattle voters approved BEX I in 1995, BEX II in 2001, BEX III in 2007, and BEX IV in 2013. Capital improvements completed under the BEX I Program included the construction of five new or replacement schools and renovation, expansion, and/or improvements to 18 others. The BEX II program included redevelopment, or additions to 17 school facilities. The program included construction of new facilities, demolition and new construction on existing sites, major redevelopment, historical renovations, minor renovations such as adding cafeterias, and programmatic improvements at high schools. The BEX III building projects included the renovation or replacement of seven school facilities. It also included infrastructure improvements, health and safety upgrades such as replacement or repair of plumbing to ensure drinking water quality, interior upgrades to improve indoor air quality, replacement and renovation of athletic fields, and technology improvements.

1.2.1.2 Building Excellence IV

Under the current BEX IV program, SPS is implementing 17 major building projects, including the opening of new schools, new replacement schools and renovated and modernized schools. The 17 major building projects meet current seismic codes and additional earthquake safety work is being done at another 37 schools. Other maintenance and upgrade projects include lunchroom additions, new science labs, roofing work, field and track upgrades, and technology upgrades. Additional information about projects included in the BEX IV program can be found at <https://bex.seattleschools.org/bex-iv/>. Funding for the BEX IV program expires in 2019, though some projects will still be under construction through 2020.

1.2.1.3 Building Excellence V

SPS proposes to continue its capital improvement program with the BEX V Program. The BEX V Program will continue to provide improved facilities in order to meet SPS's educational program objectives.

SPS began planning for the BEX V program in 2016. The School Board is providing guidance to SPS staff on the general framework of the program and staff is developing and refining the program with community input (see Section 2.2 for additional information). The projects included in the program support SPS's Strategic Plan to ensure equitable access, close opportunity gaps, and provide excellence in education for every student. Projects in the proposed program include:

1. Projects to provide for additional student capacity
2. Modernization or replacement of existing school facilities to address conditions and to provide better alignment with current Educational Specifications
3. Building systems repair and replacement at existing schools
4. Safety and security improvements
5. Technology projects
6. Academics and athletics projects.

1.2.2 Other SPS Levy Programs

1.2.2.1 Buildings, Technology, and Academics/Athletics (BTA) Program

The BTA program is funded by a six-year levy to improve buildings, technology, academics and athletic fields at SPS schools. The first BTA levy passed in 1998 and SPS is currently operating under BTA IV which passed in 2016 and expires in 2022. Under the current BTA IV Program, SPS is reopening three elementary schools and constructing an addition at one high school. SPS is also implementing building systems and replacements projects and technology projects. The BTA IV program also includes academic and athletic projects, including installing athletic field lighting at five schools and field improvements and field lighting at one school.

1.2.2.2 Operations Levies

Operations levies provide funding for day-to-day education programs and support educational programs not fully funded by the state. Renewal of the operations levy was included on the February 9, 2016 ballot and approved by voters. It will provide \$758.3 million for operations. The operations levy represents about 25 percent of SPS's annual general fund operating budget.

The Operations Levy has traditionally funded:

1. Teachers and instructional assistants
2. Bilingual and special education services
3. Textbook and classroom supplies
4. Security and transportation
5. Professional development and training
6. Student activities such as athletics, drama, arts, music, and extra-curricular and co-curricular activities.

1.2.3 SPS and City of Seattle Public Process Partnership Agreement

In November 2017, SPS and the City of Seattle agreed to a collaborative partnership for developing SPS facilities, the Public Process Partnership Agreement: School District Facilities, Fort Lawton, Memorial Stadium, and Seattle Center (Partnership Agreement) (SPS and City of Seattle, 2017). The Partnership Agreement relates to the inclusion of SPS in the Fort Lawton Redevelopment Plan, shared planning for the Memorial Stadium site, and collaboration to explore alternative sites for future SPS schools. The Agreement states that the design for Memorial Stadium "should integrate with the vision for the Seattle Center campus." The Agreement also states that the City will "assist SPS with acquisition of other properties... [including] a downtown elementary school."

The Agreement lists the following agreements for Siting, Visioning, and Design Considerations for Developing Preferred Alternatives for the Stadium and School Facility(s):

1. The Parties will jointly refine and document a preliminary analysis of facility siting and include the considerations, advantages, and challenges identified for each site.
2. The Parties will form technical teams to refine the options for further consideration.
3. The planning efforts will encompass the items listed in the *Interests of the Parties* table
4. Visioning, siting, and design efforts will embody values for access, equity, and inclusion (SPS and City of Seattle, 2017).

1.3 Building Excellence V Purpose and Objectives

1.3.1 Purpose of the Building Excellence V Program

The purpose of the BEX V Program is to continue SPS's program of construction to provide capacity to meet projected student enrollment and to address building condition and infrastructure requirements throughout the District.

The three primary purposes of the BEX V Program are to address the following needs.

1. Capacity—projects to address capacity shortages related to:
 - a. Increased enrollment. Enrollment at the District is expected to continue to grow by 1 to 2 percent per year over the next 10 years, which will continue the need to create additional capacity throughout the District.
 - b. Changing demographics. Seattle's increased population includes more school-aged children.
2. Reduced class sizes—projects to increase building capacity to reduce overcrowding in grades K-3.
3. Condition—projects to replace or renovate schools to address poor condition of schools based on:
 - a. Analysis of School Condition, 2014 (Meng Analysis)
 - b. Educational Adequacy Assessment, 2014 (Meng Analysis)
 - c. Backlog of maintenance and repair needs
 - d. Interviews with maintenance staff

Funding from the BEX V Program will implement infrastructure improvements identified in the 2015 update to the Revised 2012 Facility Master Plan (SPS, 2013). The BEX V program was developed following the planning principles adopted by the School Board to guide the capital levy planning process. These principles reaffirm the District's "commitment to prudent planning for investments of capital funds to assure a quality educational program for all students" (Seattle School District, 2012). The principles for capital levy planning include:

1. Capital projects shall be planned to match the District's educational needs in the short, intermediate and long term, and shall be based on enrollment projections, program requirements, building capacity, building condition surveys, and the functional adequacy of current buildings to meet educational program needs.
2. Investments shall be made to maintain and improve the physical condition and systems of buildings and annual budgets should establish a regular, consistent budgeting mechanism to fund capital maintenance activities.
3. Building and system designs shall be flexible to meet the changing needs of educational programs, be responsive to the urban context of schools, include advances in technology, and not be tailored to the specific needs of any one program to the detriment of future flexibility.

1.3.2 Purpose of this Programmatic EIS

The purpose of this Programmatic EIS is to evaluate potential impacts associated with implementing the BEX V Program. Because details of the proposed projects are not yet known, SPS has prepared a programmatic or non-project level EIS at this time. SPS will conduct appropriate supplemental environmental review of the projects proposed under BEX V when sufficient details are available. Future project-specific review may include State Environmental Policy Act (SEPA) Checklists, supplemental Environmental Impact Statements, or addenda to this Programmatic EIS, depending on the type of project proposed.

This Programmatic EIS is an informational document, developed to ensure that the public, agencies, decision makers, and other interested parties are informed about the potential range of environmental impacts associated with implementing the BEX V program. This programmatic document evaluates the long-term direct, indirect, and cumulative impacts that could result from the proposed alternatives. This Programmatic EIS has been prepared in compliance with the State Environmental Policy Act (SEPA) (Chapter 43.21C of the Revised Code of Washington (RCW)), the state SEPA rules (Chapter 197-11 of the Washington Administrative Code), and the School Board's Policy on State Environmental Policy Act Compliance (Policy No. 6890).

1.4 Next Steps and Permitting Requirements

As SPS implements individual projects proposed under the BEX V Program, it will comply with SEPA and applicable City of Seattle permit requirements for those projects. SPS is its own SEPA lead agency for its capital projects and will conduct supplemental SEPA environmental review of proposed projects as appropriate.

Most of the capacity projects will require a Master Use Permit (MUP) from the City of Seattle. Some projects will also require departures from the development standards in residential zones (see Section 3.4 for additional information). As part of the MUP process the Seattle Department of Construction and Inspections (SDCI) will review the SEPA documents prepared by SPS along with the MUP application and could place additional conditions on building projects.

School construction will also likely require the following permits from SDCI:

1. Demolition
2. Grading
3. Building/Mechanical
4. Stormwater Control
5. Electrical

1.5 EIS Scoping Process

1.5.1 Determination of Significance

SPS published a Determination of Significance (DS) for the BEX V program on January 12, 2018. The DS identified the elements of the environment likely to be impacted by the BEX V Program as transportation, land use, historic and cultural preservation, recreation, aesthetics, light and glare, noise, plants (including trees), habitat areas and water resources, and construction. It also identified alternatives to the proposed BEX V Program.

Agencies, affected tribes, and members of the public were invited to comment on the scope of the EIS, including potential project alternatives, probable significant adverse impacts, and mitigation measures. Notice of the scoping period was posted on the SPS web site and published in the *Daily Journal of Commerce* on January 12, 2018. The scoping period ended on February 12, 2018.

1.5.2 Scoping Comments

SPS received six scoping comment letters. Table 1-1 summarizes the comments that are relevant to the SEPA process and indicates where the issues are addressed in the Programmatic EIS. A number of concerns were raised in the scoping comments that are not SEPA issues or were not related to the BEX V Program. These are summarized in Section 1.5.3. The text explains why these concerns are not addressed in the BEX V Program Programmatic EIS.

The DS identified the areas proposed for discussion in the EIS as transportation, land use, historic and cultural preservation, recreation, aesthetics, light and glare, noise, plants (including trees), habitat areas and water resources, and construction. In response to the scoping comments, SPS has added air quality and energy and natural resources as elements of the environment that are evaluated in this Programmatic EIS. SPS also determined that plants, habitat areas, and water resources should be evaluated together in a section titled Plants and Environmentally Critical Areas. A section related to Next Steps and Permitting Requirements (Section 1.4) has also been added to explain the sequence of SEPA evaluation and City of Seattle permitting that BEX V projects would undergo.

1.5.3 Scoping Comments Not Related to SEPA or the BEX V Program

A number of the comments submitted as part of scoping did not relate to the scope of the Programmatic EIS and are not evaluated in this document. Many of these comments were focused on concerns with past or on-going SPS projects and are not related to the BEX V Program evaluated in this Programmatic EIS. Table 1-2 summarizes these comments and provides a brief explanation why they are not included.

Table 1-1. Summary of Scoping Comments

Scoping Comment	Where it is evaluated in the Programmatic EIS
SPS should evaluate alternatives of repurchasing school properties that were sold in the past—Queen Anne High School, Crown Hill, Allen, University Heights, Harrison, and Fauntleroy.	As described in Section 2.5.1, potentially reacquiring sold properties to open as new schools is part of Alternative 3.
SPS should explain why a Determination of Significance was issued and which projects would have significant adverse impacts.	Section 1.3.2, Purpose of this Programmatic EIS
SEPA process should be complete before projects can apply for permits.	Section 1.4, Next Steps and Permitting Requirements
SPS should evaluate and publish the background documents related to the dedication of Memorial Stadium and its history.	Sections 3.5 and Section 4.5.1.3, Historic and Cultural Resources
BEX V proposal should do a better job of avoiding the removal of trees. Habitat and tree reduction need to be considered.	Sections 3.4 and Section 4.4, Plants and Environmentally Critical Areas
EIS should evaluate impacts on energy and resources from demolition of buildings and include costs of demolition.	Sections 3.10 and .10, Energy and Natural Resources Costs of alternatives are included in Section 5.3.2, Other Considerations
SPS should not construct athletic and recreational facilities primarily for use by the public. EIS should evaluate the use of athletic facilities by schools and Parks Department that reduces use of fields by neighbors.	Sections 3.6 and Section 4.6.2.5, Recreation
EIS should evaluate the impacts on recreation associated with construction on or adjacent to Seattle parks. SPS should coordinate early with Parks regarding the impacts and opportunities of any new or remodeled school facility.	Section 4.6, Recreation
Initiative 42 (Ordinance No. 118477) discourages the conversion of park lands within the City of Seattle to non-park usage.	Sections 3.6 and 4.6.2.3, Recreation
EIS should evaluate the impacts of variance on height (blocking sunlight, removing views) and compatibility with surrounding neighborhood (lawns and shared green space with neighbors).	Section 4.7.2, Aesthetics, Light and Glare
Evaluate constructing underground parking garages to accommodate school parking and reduce impacts on neighbors.	Section 4.2.2.1, Transportation
Evaluate impacts of school bus idling on air quality.	Section 4.9, Air Quality
Impacts of student use of Metro buses should be evaluated and coordinated with Metro.	Section 4.2.2.1, Transportation
Construction hours and noise impacts	Section 4.8.1, Noise
EIS should consider the planning documents that have been developed in planning and evaluating the impacts of a new high school and stadium at Memorial Stadium and other new downtown schools.	Sections 3.3.4 and 4.2.3.3, Land Use

Table 1-2. Scoping Comments Not Related to SEPA or the BEX V Program

Comment	Why it is not evaluated in the Programmatic EIS
SPS should post all the appendices of the Programmatic EIS, including the cultural and historic resources report, to its website and provide ready access for non-sighted and sight-impaired persons.	Similar to other Programmatic EISs prepared by SPS (BEX IV and BTA IV), this Programmatic EIS has no appendices or cultural resources reports. For future project level analyses, SPS will follow its guidelines for ADA accessibility under the 2015 Consent Decree in posting documents to its website and the requirements of RCW 42.56.300 regarding cultural resources reports.
SPS bias against the value of historic and cultural resources, past instances of demolishing schools, and request for exemption from Seattle Landmarks Preservation Board regulations.	These concerns relate to past projects or to a separate issue of Landmarks review. The Programmatic EIS includes a section on historic and cultural resources.
Priority should be given to reopening the African American Academy and Indian Heritage High School.	Academic program decisions are made by the School Board and are not part of the BEX V Capital Program.
EIS should evaluate the racial imbalance with respect to school enrollment.	This is an enrollment issue decided separately by the School Board and not a BEX V Capital Program issue.
SPS should improve ADA accessibility of buildings.	This is not a SEPA issue, but a building design issue that will be incorporated into individual projects.
City of Seattle should provide improved open space and recreational facilities and not rely on SPS recreational facilities for public use.	This is not a BEX V Capital Program issue.
Influence of an anonymous donor of an athletic program grant may be influencing the BEX V Program.	This is not a SEPA issue.
Closure of public school sites requires a formal school closure process.	This is not a SEPA issue and is not part of the BEX V Capital Program. No school sites are proposed for closure under the BEX V Program.
EIS should consider the social and psychological needs of a community and how schools fit into a neighborhood.	Social and psychological needs are not a SEPA issue. The Programmatic EIS evaluates how buildings meet the SEPA issues for locating buildings on a site in the Land Use and Aesthetics, Light and Glare sections and parking and traffic impacts in the Transportation section.
Concerns about academic standards and student behavior.	These are not SEPA issues.
Concerns about readerboards.	Readerboards are not included in the BEX V Program. Installation of readerboards would be evaluated at a project level for individual schools.
Concerns about violation of mitigation measures at Ingraham High School.	This concern is specific to an individual project and is not part of the BEX V Program.

Chapter 2 Project Alternatives

2.1 Introduction

This chapter describes the alternatives being evaluated in this Programmatic EIS. The EIS evaluates four alternatives for implementing the BEX V program—a No Action Alternative and three action alternatives. The three action alternatives differ in how SPS would provide the additional capacity to meet projected enrollment increases. Under Alternative 2, the proposed BEX V program, SPS would increase capacity by replacing existing schools and by modernizing and constructing additions on existing schools. SPS would also construct a new elementary school and a new downtown high school with a stadium. Alternatives 3 and 4 look at alternate ways to meet capacity needs. Alternative 3 would address enrollment capacity demands by constructing new schools at new sites in the City, including a new downtown high school and stadium. Under Alternative 4, additional capacity would be provided by modernizing and constructing additions on schools and SPS would not construct new schools. All three action alternatives include building systems repair and replacement projects and upgrading and installing lights on athletic fields.

2.2 Alternative Development

SPS developed the project list for the BEX V Program through a detailed planning and public involvement process following Policy No. 6901 (Capital Levy Planning). Policy No. 6901 establishes the following priorities for the selection of projects, listed in rough descending order of importance:

1. All projects should align with the district's mission and vision.
2. The health, safety and security of students, staff, and public are important and must be protected.
3. Capacity Management needs must be met to assure that short, intermediate and long-term enrollment are matched with available space, taking into account costs and educational adequacy of facilities.
4. Building condition scores for building systems, such as exterior, HVAC, plumbing, structural shall be considered.
5. Educational adequacy of buildings shall be considered, focusing on raising student achievement.
6. Planning will take into account past capital projects and future levy plans.

2.2.1 BEX V Planning Process

SPS developed the BEX V Program through a multi-step planning process. The process involved the Superintendent; Associate Superintendent for Capital, Facilities and Enrollment Planning; and the Department of Capital Projects and Planning. SPS contracted with Bassetti Architects to prepare a BEX V Master Planning Report that evaluates the potential for modernization or replacement of 19 schools

within the District (Bassetti, 2017). The schools were assessed for their ability to meet safety concerns, student growth capacity, site and building conditions, and alignment with Education Specifications and SPS Technical Building Standards.

In 2014, SPS contracted with Meng Analysis, an architectural and planning consulting firm, to create a comprehensive analysis of facilities conditions which served as a guide for prioritizing projects (Meng, 2014). The information from the facility condition assessment was used to prepare the required Office of the Superintendent of Public Instruction (OSPI) Study and Survey in 2015. The OSPI Study and Survey process is comprehensive and includes an analysis of the district's facilities condition and educational adequacy, and the need for new construction, modernization or replacement of facilities within the District.

SPS used the collected information from the Meng Analysis and the Backlog of Maintenance and Repairs Report to develop criteria for comparing schools and support facilities so that it could develop a prioritized Facilities Master Plan. SPS also used input from the Facilities and Maintenance Department Senior Management personnel to rate the facilities. The resulting ratings created the Prioritized Facilities Master Plan (SPS, 2015).

SPS used the information from their capacity analysis and the Prioritized Facilities Master Plan to identify potential projects for inclusion in the BEX V Program.

2.2.2 Public Input and Feedback

As part of the process of developing the BEX V Capital Levy Program, SPS may accept capital project nominations from the public and SPS staff. SPS will also conduct a number of community meetings in April, May and/or June, and September 2018 at locations throughout the school district to share information and receive input and feedback from the public. Input and feedback from the meetings will be collected, recorded and provided to the School Board directors for their consideration in determining which projects will be included as official capital projects to be submitted to Seattle voters for the February 2019 Seattle Public Schools Capital Levy Special Election.

2.2.3 BEX V Capital Program Projects List

SPS is working to refine the BEX V Program project list to meet the Board's direction regarding capacity, class size, and condition priorities. The initial potential project list was presented to the School Board on December 13, 2017 and SPS staff will continue to solicit Board input and feedback on the BEX V Capital Levy projects. It is anticipated that the final Board vote on the BEX V Program will be in fall 2018.

2.3 Alternative 1 – No Action

The No Action Alternative represents the most likely future in the absence of implementing the BEX V Program. The No Action Alternative forms the baseline for comparing potential impacts of the proposed program. The No Action Alternative assumes that there would be no BEX V Program and no capacity projects, field lighting projects, or facility improvements would be completed. Under this alternative, buildings would be retained in their current configurations. Condition needs at SPS schools would not be addressed, including deteriorating buildings and safety concerns. SPS would continue to have

capacity shortfalls. Some schools would continue to use portable buildings to meet capacity needs and more portables may be required if District enrollment continues to increase and funding allows. A number of schools are currently nearing lot coverage thresholds, requiring that SPS comply with the City of Seattle's zoning departures process for the addition of more portables. If there is no funding for installing portables, some schools could experience overcrowding.

No upgrades would be made to existing athletic fields and no new athletic field lighting would be installed. The condition of fields would deteriorate through normal wear and tear, and fields could potentially be taken out of service. The shortage of athletic fields in the City would continue. No systems repair and replacement, safety equipment and supplies, or technology upgrade projects would be undertaken.

2.4 Alternative 2 – Additional Capacity and Improved Conditions with Replacement Schools and Additions (Preferred Alternative)

Under Alternative 2, the preferred BEX V Program, SPS would implement the BEX V Program being developed through its planning process. Because it is being developed through SPS's standard process in consideration of a variety of needs and constraints, Alternative 2 is the preferred alternative. SPS's current enrollment projections indicate the need for added capacity at 15 elementary schools, two middle schools, and one high school in different areas of the City. Additional capacity would be provided through replacing, modernizing, or constructing additions at existing schools and constructing a new downtown elementary school and a new downtown high school with a stadium. In addition, school replacement projects designed to address conditions needs would also increase capacity in anticipation of future enrollment increases. Alternative 2 includes the following types of projects:

1. Elementary and middle school replacement
2. School additions and modernization
3. A new downtown high school and stadium and a new downtown elementary school
4. Athletic field upgrades and lighting
5. Systems repair and replacement

Although specific school projects have not been selected at this time, the District and the School Board are working from a list of potential projects which are included throughout this section. The final list of projects for BEX V will be selected by the Seattle School Board. SPS might select other schools for BEX V that are not on this list. Because a project not on the list would also be a project to increase capacity and improve conditions, its potential range of impacts is expected to be similar to those described in this Programmatic EIS. If not included in the list, any newly added project would undergo appropriate project-level environmental review prior to implementation.

2.4.1 Elementary and Middle School Replacement

SPS would demolish and replace eight to 12 existing elementary schools and four middle schools to meet capacity or improve building conditions throughout the District. SPS has evaluated these schools

and determined that their existing condition does not allow for modernization or additions to cost-effectively and efficiently meet the educational and capacity needs of the District. Schools that are being considered for replacement include:

1. Alki Elementary School
2. Kimball Elementary School
3. Lafayette Elementary School
4. North Beach Elementary School
5. Northgate Elementary School
6. Rogers Elementary School
7. Roxhill Elementary School
8. Sacajawea Elementary School
9. Viewlands Elementary School
10. Wedgwood Elementary School
11. Mercer Middle School
12. Old Van Asselt School (currently used as an interim school; would be replaced and opened as a permanent middle school)
13. Washington Middle School
14. Whitman Middle School

2.4.2 School Additions and Modernization

SPS would increase capacity at schools by modernizing and constructing additions. The schools identified for modernization and additions have been determined to be in adequate condition for renovations that do not require replacement or are landmarked buildings that cannot be replaced. Schools being considered for additions and/or modernizations include:

1. McGilvra Elementary School
2. Monroe (Salmon Bay K-8) School
3. Montlake Elementary School
4. Muir Elementary School
5. Olympic View Elementary School
6. West Seattle Elementary School
7. John Hay Elementary School
8. Frantz Coe Elementary School
9. West Woodland Elementary School

10. Madison Middle School

Schools being considered for non-capacity additions and modernizations include:

1. Lincoln High School
2. Rainier Beach High School
3. One additional high school that has not yet been identified
4. Two middle schools that have not yet been identified

2.4.3 New Downtown Elementary School and New Downtown High School with Stadium

SPS would construct a new elementary school in the downtown area. No site has been selected for the school. SPS is considering acquisition of private property or cooperative use of public property such as City of Seattle property or buildings. The elementary school would have a capacity of up to 650 students.

To meet high school capacity needs, SPS would construct a new high school at the Memorial Stadium site at Seattle Center. Construction of the new school would include a stadium to replace the existing Memorial Stadium. The stadium site, including the parking lot to the east, is owned by SPS. Memorial Stadium is used for large high school sporting events and other large school events such as high school graduations. It is also leased out for other events, including use by the Seattle Reign women's soccer team. SPS is working in cooperation with the City of Seattle to design the school to fit within the context of Seattle Center. Construction of the new school, stadium, and parking may require use of additional Seattle Center property.

2.4.4 Athletic Field Improvements and Lighting

Athletic field improvements in the BEX V Program include the addition of athletic field lighting at up to five schools. SPS and Seattle Parks and Recreation (Parks) are working to identify athletic fields suitable for lighting. Lighting would be installed to make more fields available for school and community use. Other athletic improvements may include installation or replacement of artificial turf, resurfacing tracks, and other upgrades to athletic facilities.

2.4.5 Systems Repair and Replacement Projects

The BEX V Program includes systems repair and replacement projects to renovate and modernize educational facilities throughout the District and to address the backlog of maintenance and repair needs. Projects would include site improvements; upgrades to exterior cladding, doors, windows, roofs, plumbing, fire suppression and safety systems, heating, ventilation, and air conditioning (HVAC) systems, electrical systems, and fire alarms; seismic improvements; intercom replacements; security improvements; and upgrades to playground equipment.

Systems repair and replacement projects would have no operational impacts on transportation, land use, historic and cultural resources, recreation, trees, or Environmentally Critical Areas. The projects also would not have any noise or light and glare impacts after construction is complete. Because these projects would not have significant adverse environmental impacts, SPS will conduct no additional environmental review of these projects.

Projects would also include school safety equipment and supplies and technology system upgrade projects.

2.5 Alternative 3 – Additional Capacity with New Schools at New Sites

Under Alternative 3, SPS would provide additional capacity by constructing new schools at new sites. Under this alternative, SPS would not modernize or construct additions at existing schools. Constructing new schools would require property acquisition at locations throughout the District. Alternative 3 includes:

1. New elementary and K-8 schools
2. A new downtown high school and stadium and a new downtown elementary school
3. Athletic field upgrades and lighting
4. Systems repair and replacement

2.5.1 New Elementary and K-8 Schools

To meet capacity needs, SPS would construct three to four new elementary or K-8 schools at locations throughout the District. The new schools would have a capacity of approximately 500 or 650 students for an elementary school or approximately 680 students for a K-8 school and would be located in the attendance areas with the highest capacity needs. No sites have been selected for these schools, though one would be downtown as described for Alternative 2 in Section 2.4.1. SPS would acquire private property or locate schools on other publicly owned property. SPS could potentially reacquire leased or sold properties to open as new schools.

2.5.2 New Downtown High School and Stadium

Alternative 3 includes the same new high school and stadium at the Memorial Stadium site included in Alternative 2 as described in Section 2.4.3.

2.5.3 Athletic Field Improvements and Lighting

Alternative 3 includes the same athletic field improvements and lighting included in Alternative 2 as described in Section 2.4.4.

2.5.4 Systems Repair and Replacement

Alternative 3 includes the same systems repair and replacement projects as Alternative 2 and described in Section 4.2.5.

2.6 Alternative 4 – Additional Capacity and Improved Conditions with Additions and Modernizations

Under Alternative 4, SPS would meet capacity needs by modernizing existing buildings and constructing additions. No replacement schools would be constructed and no new schools would be constructed at new sites.

2.6.1 School Modernizations and Additions

The school modernizations and additions would include:

1. 12 to 17 elementary school modernization and addition projects to improve conditions and increase capacity
2. three middle school modernization projects to improve conditions
3. three to five high school addition projects to increase capacity
4. one to three high school modernization projects to improve conditions

High schools that would be considered for addition projects to increase capacity are Ballard, Garfield, Ingraham, Nathan Hale, and Roosevelt High Schools.

2.6.2 Athletic Field Improvements and Lighting

Alternative 4 includes the same athletic field improvements and lighting projects included in Alternative 2 as described in Section 2.4.4.

2.6.3 Systems Repair and Replacement Projects

Alternative 4 includes the same systems repair and replacement projects as Alternative 2 and described in Section 2.4.5.

Chapter 3 Affected Environment

3.1 Introduction

This chapter describes the affected environment for environmental resources most likely to be affected by the proposed projects included in the BEX V Program. Elements of the environment evaluated include transportation; land use; trees and Environmentally Critical Areas (ECA); historic and cultural resources; recreation; aesthetics, light, and glare; noise; air quality; and energy and natural resources. Impacts of the BEX V Program are considered in Chapters 4 and 5. Construction impacts are not discussed as an element of the environment, but are discussed for each element in Chapter 4.

3.2 Transportation

This section describes existing characteristics of the overall transportation system in Seattle and includes the roadways and other transportation facilities serving the schools and/or sites that could be affected by the BEX V program.

3.2.1 Roadways

All roadways in Seattle have designated functional classifications, which depend on the types of trips they serve and the relative levels of traffic volumes they carry. Arterial streets within Seattle have been designated with one of the following classifications (City of Seattle, 2016a).

1. **Principal Arterial** – serves as a primary route for moving traffic through the city, connecting urban centers and urban villages to one another or to the regional transportation network. Urban centers are the areas in Seattle with highest population and employment densities and urban villages are growth centers within the City with mixes of uses. Areas with these designations have a high degree of urban infrastructure.
2. **Minor Arterial** – distributes traffic from principal arterials to collector arterials and local access streets.
3. **Collector Arterial** – collects and distributes traffic from principal and minor arterials to local access streets, and/or provides direct access to destinations.

Streets that do not have arterial designations are **local access streets**, which provide access between residential, commercial, and industrial land uses and the street network, and also serve localized traffic circulation. **Alleys** typically provide access to the rear or sides of residences and businesses and are not intended for the movement of through-trips. Where a continuous alley network exists, it is the preferred corridor for utilities.

These functional classifications represent varying levels of emphasis on mobility and access. Principal and Minor Arterials provide a higher degree of mobility and typically have more limited access to adjacent land uses, accommodating higher traffic volumes at higher speeds. Local access streets provide

a high degree of access to adjacent land and are not intended to serve through traffic, carrying lower traffic volumes at lower speeds. Collectors generally provide a more balanced emphasis on traffic mobility and access to land uses.

Seattle's public schools are located on a variety of types of streets throughout the City and may be adjacent to or have access from streets that include arterials and/or local access streets.

In addition to functional classifications, the City has designated streets in Seattle's freight network. Streets in the freight network have been designated with one of four following classifications—Limited Access Facility, Major Truck Street, Minor Truck Street, and First/Last Mile Connector. (Seattle Department of Transportation [SDOT], 2016)

Streets with these designations may accommodate significant freight movement through the city and connect to major freight traffic generators. If a school is located on or near a Major or Minor Truck Street, roadway characteristics and potential issues would be similar to those of any other arterial roadway, but there would likely be a higher proportion of truck traffic traveling past the school site. (No sites currently identified for this programmatic review are located on or near a Limited Access Facility or First/Last Mile Connector).

Table 3.2-1 summarizes the functional classifications of the roadways nearest the potential BEX V school sites. Other schools not listed in the table could be selected for BEX V projects; in this case, key roadways located in the site's transportation study area would be identified as part of project-level analysis.

Table 3.2-1. Primary Roadways Serving Potential BEX V Project Sites

Potential Project Site ¹	Adjacent Street(s) ²		Other Nearby Major Street(s) ³	
	Street Name	Classification	Street Name	Classification
Elementary Schools				
Alki	59 th Avenue SW 58 th Avenue SW SW Stevens Street	Local Access Local Access Local Access	SW Admiral Way Alki Avenue SE	Minor Arterial Minor Arterial
Frantz Coe	7 th Avenue W 6 th Avenue W W Smith Street W Wheeler Street	Collector Arterial Local Access Local Access Local Access	W McGraw Street 6 th Ave W (south of W McGraw St) W Raye Street	Collector Arterial Collector Arterial Minor Arterial
John Hay	2 nd Avenue N 3 rd Avenue N Nob Hill Avenue N Garfield Street Galer Street	Local Access Local Access Local Access Local Access Local Access	Queen Anne Avenue N	Minor Arterial
John Muir	S Horton Street/ S Walden Street 34 th Avenue S S Hinds Street	Local Access Local Access Local Access	Rainier Avenue S	Principal Arterial/ Minor Truck Street
John Rogers	N 109 th Street 40 th Avenue NE 41 st Place NE	Local Access Local Access Local Access	NE 110 th Street Sand Point Way NE	Collector Arterial Minor Arterial/ Minor Truck Street

Table 3.2-1. Primary Roadways Serving Potential BEX V Project Sites (continued)

Potential Project Site ¹	Adjacent Street(s) ²		Other Nearby Major Street(s) ³	
	Street Name	Classification	Street Name	Classification
Elementary Schools (cont.)				
Kimball	23 rd Avenue S 24 th Avenue S S Hanford Street S Horton Street S Hinds Street	Minor Arterial Local Access Local Access Local Access Local Access	Beacon Avenue S S Spokane Street	Minor Arterial Minor Arterial
Lafayette	California Ave SW 44 th Avenue SW 45 th Avenue SW SW Admiral Way SW Lander Street	Minor Arterial/ Minor Truck Street Local Access Local Access Minor Arterial Local Access	SW Admiral Way (East of California Avenue SW)	Principal Arterial/ Minor Truck Street
McGilvra	38 th Avenue E E Blaine Street E Garfield Street	Local Access Local Access Local Access	E Madison Street	Minor Arterial/ Minor Truck Street
Monroe/Salmon Bay K-8	NW 65 th Street NW 67 th Street 18 th Avenue NW 19 th Avenue NW	Minor Arterial Local Access Local Access Local Access	15 th Avenue NW	Principal Arterial/ Major Truck Street
Montlake	20 th Avenue E 20 th Avenue E E Calhoun Street E McGraw Street	Local Access Local Access Local Access Local Access	19 th Avenue E 24 th Avenue E	Minor Arterial Principal Arterial/ Minor Truck Street
North Beach	24 th Avenue NW NW 90 th Street NW 91 st Street	Collector Arterial Local Access Local Access	Holman Road NW NW 85 th Street 15 th Avenue NW	Principal Arterial/ Major Truck Street Minor Arterial/ Minor Truck Street Collector Arterial
Northgate	1 st Avenue NE N 117 th Street N 120 th Street	Collector Arterial Local Access Local Access	Meridian Ave N NE 117 th Street N 122 nd Street	Collector Arterial Collector Arterial Collector Arterial
Olympic View	5 th Avenue NE NE 95 th Street 8 th Avenue NE NE 96 th Place	Minor Arterial Local Access Local Access Local Access	Roosevelt Way NE	Principal Arterial
Roxhill	30 th Avenue SW SW Roxbury Drive SW Cambridge St	Local Access Principal Arterial Local Access	35 th Avenue SW SW Barton Street	Principal Arterial Minor Arterial
Sacajawea	20 th Avenue NE NE 96 th Street	Local Access Local Access	15 th Avenue NE Lake City Way NE	Minor Arterial Principal Arterial/ Major Freight

Table 3.2-1. Primary Roadways Serving Potential BEX V Project Sites (continued)

Potential Project Site ¹	Adjacent Street(s) ²		Other Nearby Major Street(s) ³	
	Street Name	Classification	Street Name	Classification
Elementary Schools (cont.)				
Viewlands	3 rd Avenue NW 4 th Avenue NW NW 105 th Street NW 107 th Street	Minor Arterial Local Access Local Access Local Access	Holman Road NW Greenwood Ave N NW 100 th Place	Principal Arterial/ Major Truck Street Principal Arterial/ Minor Truck Street Collector Arterial
Wedgwood	NE 85 th Street 29 th Avenue NE NE 86 th Street 30 th Avenue NE	Local Access Local Access Local Access Local Access	Ravenna Ave NE 35 th Avenue NE	Principal Arterial/ Minor Truck Street Minor Arterial
West Seattle	31 st Avenue SW 34 th Avenue SW	Local Access Local Access	SW Holly Street 35 th Avenue SW Sylvan Way SW	Local Access Principal Arterial Principal Arterial/ Minor Truck Street
West Woodland	NW 56 th Street NW 58 th Street 4 th Avenue NW	Local Access Local Access Local Access	NW Market Street 3 rd Avenue NW 8 th Avenue NW	Principal Arterial/ Major Truck Street Collector Arterial Minor Arterial
Middle Schools				
Madison	45 th Avenue SW SW Hinds Street 47 th Avenue SW SW Spokane Street	Local Access Local Access Local Access Local Access	49 th Avenue SW SW Charlestown St	Collector Arterial Collector Arterial
Mercer	S Columbian Way 16 th Avenue S	Principal Arterial/ Minor Truck Street Local Access	15 th Avenue S Beacon Avenue S	Principal Arterial/ Minor Truck Street Minor Arterial
Washington	S Jackson Street S Jackson Place S King Street S Weller Street 20 th Avenue S 20 th Place S	Minor Arterial/ Minor Truck Street Local Access Local Access Local Access Collector Arterial Local Access	23 rd Avenue E Rainier Avenue S	Principal Arterial Principal Arterial/ Major Truck Street
Whitman	15 th Avenue NW 17 th Avenue NW NW 92 nd Street NW 95 th Street	Collector Arterial Local Access Local Access Local Access	Holman Road NW	Principal Arterial/ Major Truck Street
High Schools				
Ballard	15 th Avenue NW NW 65 th Street NW 67 th Street	Principal Arterial Major Truck Street Minor Arterial Local Access	14 th Avenue NW	Collector Arterial

Table 3.2-1. Primary Roadways Serving Potential BEX V Project Sites (continued)

Potential Project Site ¹	Adjacent Street(s) ²		Other Nearby Major Street(s) ³	
	Street Name	Classification	Street Name	Classification
High Schools (cont.)				
Garfield	23 rd Avenue 25 th Avenue E Alder Street	Principal Arterial Local Access Local Access	E Cherry Street E Jefferson Street	Minor Arterial Collector Arterial
Ingraham	N 130 th Street Meridian Ave N N 135 th Street Ashworth Ave N	Principal Arterial Collector Arterial Local Access Local Access	Aurora Avenue N Roosevelt Way N	Principal Arterial/ Major Truck Street Collector Arterial
Lincoln	Interlake Avenue N Woodlawn Ave N Woodlawn Place N N 43 rd Street N 44 th Street N Allen Place	Local Access Local Access Local Access Local Access Local Access Local Access	Stone Way N N 40 th Street N 45 th Street	Principal Arterial/ Major Truck Street Minor Arterial Minor Arterial/ Minor Truck Street
Nathan Hale	NE 110 th Street 35 th Avenue NE 30 th Avenue NE	Collector Arterial Minor Arterial Collector Arterial	---	---
Rainier Beach	Seward Park Ave S S Henderson Street Hamlet Avenue S 53 rd Avenue S	Minor Arterial Minor Arterial Local Access Local Access	Rainier Avenue S	Principal Arterial/ Minor Truck Street
Roosevelt	12 th Avenue NE 15 th Avenue NE NE 68 th Street NE 66 th Street	Principal Arterial/ Minor Truck Street Minor Arterial Local Access Local Access	NE 65 th Street Roosevelt Way NE	Minor Arterial Principal Arterial/ Minor Truck Street
Other Sites				
Memorial Stadium	4 th Avenue N 5 th Avenue N Republican Street Harrison Street	Local Access Principal Arterial/ Minor Truck Street Local Access Local Access	Mercer Street Denny Way Broad Street	Principal Arterial/ Major Truck Street Principal Arterial/ Major Truck Street Principal Arterial/ Minor Truck Street
Old Van Asselt (interim site)	Beacon Avenue S S Rose Street	Collector Arterial Local Access	---	---

Source: SDOT, 2018a; SDOT 2016.

1. Adjacent roadway(s) that provide either vehicle access or primary pedestrian access to the school site.
2. Nearest roadway(s) with principal arterial, minor arterial, or collector arterial functional classification that are not directly adjacent to the school site.

3.2.2 Traffic Volumes

School-related traffic is typically highest during the morning arrival and afternoon dismissal periods. Depending on school start time, traffic generated during morning arrival can occur within the background AM peak period (typically between 7:00 and 9:00 a.m.). Most schools are dismissed in the early afternoon (before 4 p.m.) and the dismissal traffic generally does not occur within the commuter PM peak period (typically between 4:30 and 6:00 p.m.).

Traffic associated with schools is dependent on a number of factors, including number and grade of students, school location, typical travel modes (Metro bus, yellow school bus, student drivers, family-vehicle drop-off/pick-up, walk, bicycle, etc.) and availability of parking.

Traffic generation for development projects, including schools, can be estimated from rates and equations published in the latest edition of the Institute of Transportation Engineers' (ITE) *Trip Generation Manual* (ITE, 2017). For schools, ITE has included surveys of vehicle trip generation for existing sites throughout the United States, and has developed rates and equations based on variables such as number of students and school-building sizes. This manual is widely used and reflects a standard practice for estimating traffic expected to result from planned development, especially when local site-specific data cannot be collected.

It is important to note that the ITE trip generation rates were developed based on data collected from schools throughout the nation. Many of these likely included suburban school sites with substantial on-site parking and little public transit use. As a result, they may not apply to many Seattle area schools. Although these average rates may be appropriate for some locations or some school types, each school is typically evaluated on a case-by-case basis. For past analyses of modernizations, replacements, or redevelopments of Seattle schools, site-specific traffic generation rates have been developed based on traffic counts conducted at the existing school sites and compared to the published ITE rates. For example, counts and analyses performed for eight elementary schools from 2014 to 2018 for recent modernizations and/or replacement projects found trip rates that ranged from 0.52 to 0.88 AM peak hour trips per student, and 0.34 to 0.66 afternoon peak hour trips per student (Heffron Transportation, Inc., 2013, 2014a, 2014b, 2014c, 2015a, 2017a, 2017b, 2018), which are higher than ITE average rates, but within the range of published ITE data. However, counts performed in September 2007 at Chief Sealth High School were identical to the published national rates for the AM peak hour and slightly lower than published rates for the afternoon time periods (Heffron Transportation, Inc., 2008). Counts performed in 2002 at Roosevelt High School indicated that its trip generation rates were about 50 percent of the published ITE rates, likely due to the limited availability of parking and higher use of bus, transit, and walk/bike modes compared to suburban high schools (Heffron Transportation, Inc., 2002). Recent counts performed at Ingraham High School found rates that are slightly lower (0.49 trips per students during AM peak) or nearly the same (0.34 trips per student during afternoon peak) as ITE rates (Heffron Transportation, Inc., 2017c). Trip generation for high schools during the afternoon is typically spread over several hours as students often stay at the site after the school day for extracurricular activities and as staff have variable end-of-day schedules. As a result, the afternoon peak hour volume is usually less than the morning peak hourly volume.

For existing school sites where traffic counts at driveways can be used to develop site-specific trip generation rates. Those rates are typically applied for analyses of impacts to site access and nearby intersections. However, for some school sites (such as those that rely only on on-street loading/unloading areas and/or are located near other schools or traffic generators), it may not be possible to isolate school-related traffic to determine site-specific trip generation rates. For these cases, trip generation estimates are developed from rates derived for a similar school where data are available or using the most current published rates available from ITE.

Table 3.2-2 summarizes the ranges of trip rates that have been derived from field studies at Seattle schools, based on student population. These rates reflect all traffic generated at the schools by staff, family-vehicles, student-vehicles, and school buses. The published ITE rates are also shown for comparison.

Table 3.2-2. Observed Trip Generation Rates for Seattle Schools

School Type	Average Vehicle Trip Rates Per Student			
	Weekday	School AM Peak Hour ¹	School (Afternoon) PM Peak Hour	Commute PM Peak Hour
Observed Rates for Seattle Schools²				
Elementary School	N/A ³	0.52 – 0.88	0.36 – 0.66	N/A ³
Junior High/Middle School	N/A ³	0.51	0.22	0.10
High School	N/A ³	0.41 – 0.49	0.17 – 0.34	0.13
ITE Average Trip Rates⁴				
School Type (ITE Land Use Code)				
Elementary School (LU 520)	1.89	0.65	0.34	0.17
Junior High/Middle School (LU 522)	2.13	0.70	0.35	0.17
High School (LU 530)	2.03	0.55	0.33	0.14

1. Depending on the start-time for the school, the School AM Peak Hour may or may not directly align with the Commute AM Peak Hour.

2. Source: Heffron Transportation, Inc., 2002 – 2018.

3. N/A = Not Available, trip generation data not collected and rates not available; ITE rates, or adjusted ITE rates, would typically be applied.

4. Source: Institute of Transportation Engineers, 2017. LU = ITE Land Use Code

SPS and Seattle Parks and Recreation (Parks) have historically maintained a Joint Use Agreement for shared use of athletic facilities. At school sites, SPS typically allows non-scholastic activities to be scheduled by Parks or other groups during times when they are not used for scholastic activities. Similarly, SPS is provided priority use of Parks' facilities. As a result, sites owned by either entity that contain athletic facilities may be used for practices or games associated with interscholastic athletics and for community uses such as youth and adult recreational sports and activities. At locations where field lights are present, the availability and frequency of use is typically higher, depending on the field surface. For example, lighted synthetic athletic fields often experience regular use year-round until

9:30 or 10:30 p.m. Fields that are not lighted are typically not used as frequently over winter months due to natural lighting conditions.

Athletic-field-related traffic generation for the majority of interscholastic and community youth or adult recreational athletics (soccer, ultimate, lacrosse, softball, and baseball), depends on participation levels and attendance. It also fluctuates based on the sport, level of competition, and day of week. In Spring 2015, Heffron Transportation performed observations of participants and spectators for several high school games/matches for another field lighting project (Heffron Transportation, Inc., 2015b). The study found most activities had between 30 and 60 participants (athletes, coaches, trainers, and support staff) with between 35 and 135 spectators. These results are consistent with findings from past studies of high school field improvement projects performed for Seattle Public Schools in 2000 (Heffron Transportation, Inc., 2000a, 2000b). Observations conducted for those studies at 11 high school baseball, softball, and soccer games¹ found attendance ranges of 10 to 47 attendees with an average of 26 attendees. Observations after games indicated that the athletic events generated trips at rates ranging from about 0.30 to 0.58 trips per participant/spectator. For a typical soccer, lacrosse, or ultimate event, this relates to between 25 and 55 trips leaving the site during the hour after a game. Due to the start and finish times of some games or practices, some or all of this traffic could occur during the commuter PM peak hour.

It is noted that these trip generation estimates reflect rates derived from locations where little or no transit access is provided and field users and spectators did not generally commute by transit. However, for sites located near extensive transit service—including light rail and bus routes—students, family members, and school staff are more likely to use these transit options for trips to and from the school. Therefore, adjustments to reduce those estimates may be appropriate in locations that are well-served by transit.

3.2.3 Traffic Operations

The following describes typical traffic operational conditions around Seattle area elementary, middle, and high schools:

1. **Elementary Schools.** Students typically arrive by yellow school bus, family-vehicle drop-off, walking, or bicycling. Morning drop-off operations tend to be relatively efficient. Family vehicles and buses drop off students and leave the site area without substantial impacts to traffic operations or parking. Afternoon pick-up often results in short-term busy and/or congested conditions for traffic and parking in the school vicinity, since family drivers typically park and wait for children to be dismissed. These conditions can be exacerbated where buses queue or mix with family-vehicles.
2. **Middle Schools.** Middle schools draw from larger geographic areas than elementary schools and may accommodate a larger portion of the student population by bus. Field counts and

¹ Observations involved Seattle high schools (Ingraham, Cleveland, Roosevelt, Rainier Beach, Ballard, Chief Sealth, and West Seattle) and other public and private high schools (Redmond, Blanchet, Holy Names, Seattle Prep, and Lakeside).

observations conducted at Seattle middle schools have found lower trip rates than at Seattle elementary schools. This may occur as the levels of family-vehicle pick-up and drop-off of students decline and older students are more likely to walk, bike, use a school bus, or take transit. Vehicle queuing requirements may also be less (proportionally based on student population) than those for elementary schools. Separation of bus loading zones, vehicle pick-up/drop-off zones, and pedestrian routes from parking is important when it can be provided. Operations around middle schools are similar to those described for elementary schools. A larger volume of buses loading or queuing adjacent to school sites along neighborhood streets is more common.

3. **High Schools.** High school traffic and parking patterns differ from elementary and middle schools as student pick-up and drop-off levels are lower and some students may drive vehicles. In addition, King County Metro Transit is the primary provider of student transportation for high schools. School-related parking is typically higher than it is for elementary or middle schools. Student parking demand can be influenced by the availability of on-site or on-street parking, transit convenience and location, types of before- and after-school activities, and levels of car-ownership/car-access by students. High schools host activities and evening events regularly throughout the school year. The types, sizes, and frequency of events will depend on the curriculum and programs of each school. However, based on activity and event schedules at existing Seattle high schools, many of these events and activities consist of meetings, club activities, or indoor sports practices (in gymnasiums). These types of activities may occur daily and consist of between 15 and 50 participants or spectators. They may include monthly booster meetings, organization meetings and programs, student presentations, evening club activities and movies, and specialized activities (e.g., robotics). It is possible that there could be two or more activities in various locations on the site simultaneously. Seattle high schools also typically have three or four larger events each month that may draw higher levels of participation and/or spectators.

Operating conditions for roadways and intersections is measured by level of service (LOS), which is a qualitative measure used to characterize traffic operating conditions of roadways and intersection. Six letter designations, LOS "A" through "F," are used to define level of service. LOS A is the best and represents good traffic operations with little or no delay to motorists. LOS F is the worst and indicates poor traffic operations with long delays (TRB, 2016). Roadway operations surrounding school sites vary, depending on the types of roadways (arterials versus local access streets), levels of traffic, types of traffic control (signalized, traffic circle, stop-sign control, or uncontrolled), and local area land use and commuting patterns.

Morning peak hour traffic from some schools can overlap with the AM peak hour of the surrounding roadway system. In those cases, signalized arterial intersections may operate at LOS C or D (though some high-volume intersections near schools could also operate at LOS E or F) and unsignalized intersections (such as local access streets or site driveways) may operate at LOS E or F. Since schools typically dismiss students in the early afternoon, school traffic does not typically overlap with peak commuter traffic. The City of Seattle does not have adopted intersection level of service standards;

however, project-related intersection delay that causes a signalized intersection to operate at LOS E or F, or increases in delay (usually of more than 5 seconds of average delay) at a signalized intersection that is projected to operate at LOS E or F without the project, may be considered for review of potential mitigation and/or identified as 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. The City may also tolerate LOS E or F conditions at signalized locations where physical improvements are not feasible or desirable (e.g., due to right-of-way constraints) or due to operational policy or roadway channelization decisions by SDOT (e.g., designation of bus-only lanes, bicycle lanes, and/or signal timings to favor transit or non-motorized travel).

3.2.4 Parking

Parking supply and demand in Seattle varies greatly from neighborhood to neighborhood. Public on-street parking occurs throughout the City. Where parking is allowed, it may be restricted or metered (pay for parking) during certain times of day, located in a Restricted Parking Zone (RPZ) that limits the length of time non-permit holders may park, or unrestricted. Parking is typically metered in higher density neighborhoods and commercial areas, with maximum time limits that vary between 2 and 10 hours (or 3 to 30 minutes in loading zones), and costs that vary between \$1.00 and \$5.00 per hour. In other neighborhoods where parking demand can typically be accommodated with the available supply, on-street parking may be provided with no cost or time restriction. The City continuously monitors neighborhood parking conditions, and implements changes to cost and time restrictions as needed to maintain balance between parking supply and demand. Curb space is part of the public street system, and as such it is a public good that is available for all people to use. SDOT regulates the use of curb space to address competing needs, to assist in moving people and goods more efficiently, to support the vitality of business districts, and to create livable neighborhoods. SDOT conducts regular surveys of parking throughout Seattle. For its surveys of paid parking locations, it has set a target occupancy (utilization) range of 70 percent to 85 percent. For the purposes of evaluating the potential on-street parking impacts (for SEPA and permitting reviews) associated with new development, the City has historically considered and still considers utilization rates of 85 percent or higher to be effectively full. Similarly, SDOT has historically referred to occupancy rates of 85 percent or higher as considered full (SDOT, 2000).

Private parking for residential, commercial, industrial, and institutional development may be provided via surface spaces, surface lots, or on-site garages. In higher density neighborhoods and commercial areas, there is typically a charge to park in a parking garage or surface lot. Some businesses provide parking at no charge for employees and customers. Parking may be available in private or public garages or lots at a daily or monthly charge within or near commercial areas. However, the locations and availability of private parking can change over time as redevelopment occurs.

Seattle public schools are located in a variety of neighborhoods that also vary widely in their parking characteristics. Many schools have surface parking lots on-site, but the capacities of the lots differ from school to school and some schools have no on-site parking. Some schools are able to accommodate peak school-day parking demand on-site, while others may rely in part or entirely on additional publicly available on-street parking in the surrounding neighborhood. For a typical school day with no special

events, some schools have established procedures and locations for school bus and family-vehicle drop-off/pick-up activities. At some schools these activities may occur on-site within parking lots or designated loading/unloading areas, while at other schools on-street spaces along frontages or within a few blocks of the school may be used. Table 3.2-3 summarizes the parking characteristics of the potential BEX V school sites. Other schools not listed in the table could be selected for BEX V projects; in this case, parking characteristics in the site's transportation study area would be evaluated as part of project-level analysis.

Table 3.2-3. Existing Parking Characteristics at Potential BEX V Project Sites

Potential Project Site	On-Site Parking	On-Street Parking
Elementary Schools		
Alki	Two surface lots in the northwest and south east corners of the school accessed from 59 th Avenue SW. Accessible spaces in the northeast corner accessed from SW Stevens Street and a small parking area on SW Stevens Street reserved for school staff.	On-street parking in the vicinity is generally unrestricted, with some localized restrictions. On the east side of 39 th Avenue SW adjacent to school, parking is prohibited except for school buses during arrival and dismissal periods.
Frantz Coe	Surface lot located at the northeast corner of the site accessed from 6 th Avenue W.	On-street parking in the vicinity is generally unrestricted, with some localized time-restricted locations near commercial development.
John Hay	Two surface lots: one located at the northeast corner of the site accessed from Nob Hill Avenue N and the other located on the west side of the site accessed from 2 nd Avenue N.	On-street parking in the vicinity is generally unrestricted, with some localized time-restricted locations on Queen Anne Avenue N. Parking is only permitted on one side of the street in several nearby segments.
John Muir	Surface lot located at the northwest corner of the site is accessed from S Walden Street.	On-street parking in the vicinity is generally unrestricted. Adjacent to the school, parking is either prohibited to restricted to school load only, during arrival and dismissal periods.
John Rogers	Surface parking lots on the north portion of the site accessed from NE 109 th Street.	On-street parking in the vicinity is generally unrestricted.
Kimball	Surface lot located at the northeast corner of the site accessed from S Hanford Street.	On-street parking in the vicinity is generally unrestricted, with some streets located in an RPZ to the northeast of the site. Parking is prohibited on both sides of 23 rd Avenue S near the site.
Lafayette	Surface lot located in the northeast portion of the site accessed via alleys from California Avenue SW and SW Admiral Way.	On-street parking in the vicinity is generally unrestricted, with some localized time-restricted locations near commercial development.
McGilvra	No on-site parking.	On-street parking in the vicinity is generally unrestricted.

Table 3.2-3. Existing Parking Characteristics at Potential BEX V Project Sites (continued)

Potential Project Site	On-Site Parking	On-Street Parking
Elementary Schools (cont.)		
Monroe/Salmon Bay K-8	No on-site parking.	On-street parking in the vicinity is generally unrestricted, with some localized time-restricted locations. 15 th Avenue NW has a mix of restrictions, including peak-direction restrictions during weekday peak hours.
Montlake	Small surface parking area located on the north side of the site accessed from E Calhoun Street.	All of the on-street parking in the vicinity is located within an RPZ, which requires a permit to park for longer than 2 hours on weekdays.
North Beach	Surface parking lot located in the southwest corner of the site accessed from 24 th Avenue NW.	On-street parking in the vicinity is generally unrestricted.
Northgate	Two surface parking areas on the east side of the site accessed from 1 st Avenue N.	On-street parking in the vicinity includes a mix of time-restricted parking, primarily on and near arterials, and unrestricted parking.
Olympic View	Surface lot located on the east side of the site accessed from 8 th Avenue NE or NE 96 th Place. An off-street loading area is provided parallel to NE 95 th Street on the south side of the site.	On-street parking in the vicinity is generally unrestricted, with some localized time-restricted locations near commercial development.
Olympic View	Surface lot located on the east side of the site accessed from 8 th Avenue NE or NE 96 th Place. An off-street loading area is provided parallel to NE 95 th Street on the south side of the site.	On-street parking in the vicinity is generally unrestricted, with some localized time-restricted locations near commercial development.
Roxhill	Surface parking lot in the southeast corner of the site accessed from SW Roxbury Street.	On-street parking in the vicinity is generally unrestricted, with some localized time-restricted segments.
Sacajawea	Surface parking lot in the southeast corner of the site accessed from 20 th Avenue NE.	On-street parking in the vicinity is generally unrestricted, with some localized time-restricted segments.
Viewlands	A surface parking lot on the east side of the site is accessed from 3 rd Avenue NW and a surface parking lot on the north side of the street is accessed from NW 107 th Street.	On-street parking in the vicinity is generally unrestricted, with some localized time-restricted segments.
Wedgwood	Surface lot on the northeast corner of the site, accessed from 29 th Avenue NE.	On-street parking in the vicinity is generally unrestricted.
West Seattle	Surface lot on the west side of the site, accessed from a private access road between 31 st Avenue SW and 34 th Avenue SW. Bus loading accommodated on site along the private road.	On-street parking in the vicinity is generally unrestricted, with some localized time-restricted locations near commercial development.

Table 3.2-3. Existing Parking Characteristics at Potential BEX V Project Sites (continued)

Potential Project Site	On-Site Parking	On-Street Parking
Elementary Schools (cont.)		
West Woodland	A surface lot on the north side of the site is accessed from NW 58 th Street, and a surface lot on the south side of the site is accessed from NW 56 th Street.	On-street parking in the vicinity is generally unrestricted, with some localized time-restricted segments. Parking is prohibited on the west side of 4 th Avenue NW adjacent to the site during school hours to accommodate school buses.
Middle Schools		
Madison	Surface lot on the southeast corner of the site, accessed from SW Spokane Street.	On-street parking in the vicinity is generally unrestricted with some localized time-restricted segments.
Mercer	Two surface parking lots accessed from S Columbian Way, one lot on the south side of the site and a smaller lot in the northeast corner of the site.	On-street parking in the vicinity is generally unrestricted with some localized time-restricted segments.
Washington	Surface lot in the southwest corner of the site accessed from 20 th Place S/S Weller Street.	Mixed on-street parking conditions in the vicinity. Parking is prohibited on some arterials, there are some localized time-restricted segments, and some segments with unrestricted parking.
Whitman	A total of three surface lots: two accessed from 15 th Avenue NW and one accessed from 17 th Avenue NW.	On-street parking in the vicinity is generally unrestricted with some localized time-restricted segments.
High Schools		
Ballard	Surface lot accessed from 15 th Avenue NW and NW 67 th Street. Additional small surface lot accessed from NW 67 th Street. Loop driveway accessed from NW 65 th St has small amount of on-site parking.	Mixed on-street parking conditions in the vicinity. Parking is time-restricted on 15 th Avenue NW adjacent to the school and along pockets of commercial development in the vicinity. Parking is generally unrestricted in residential neighborhoods in the vicinity.
Garfield	Two surface lots accessed from 23 rd Avenue and 25 th Avenue. School bus loading accommodated on site.	On-street parking is prohibited on 23 rd Avenue S but permitted along the local access streets adjacent to the school. Residential neighborhoods to the west and south of the school are included in RPZ 2. On-street parking in the residential neighborhoods beyond the RPZ is generally unrestricted.

Table 3.2-3. Existing Parking Characteristics at Potential BEX V Project Sites (continued)

Potential Project Site	On-Site Parking	On-Street Parking
High Schools (cont.)		
Ingraham	Surface lots accessed from Ashworth Avenue N and N 135 th Street.	Mixed on-street parking conditions in the vicinity. Parking is prohibited at all times on N 130 th Street and the east side of Ashworth Avenue N. Parking is prohibited during school hours on the west side of Ashworth Avenue N. On N 135 th Street adjacent to the school, parking is prohibited during peak student loading periods to accommodate school buses.
Lincoln	Primary surface lot on the north side of the site accessed from both Interlake Avenue N and Woodlawn Avenue N. A small surface lot on the south side of the lot accessed from N 43 rd Street.	Mixed on-street parking conditions in the vicinity. Parking is time-restricted in the retail corridors, Restricted Parking Zones govern parking to the west of the site, and the areas to the south and east of the site are unrestricted.
Nathan Hale	Two surface lots accessed from 30 th Avenue NE.	On-street parking in the vicinity is generally unrestricted. Parking is prohibited on the south side of NE 110 th Street during peak student loading periods to accommodate school buses.
Rainier Beach	There are two surface parking areas, one accessed from S Henderson Street and the other accessed from Seward Park Ave S. Vehicles also park in unmarked paved areas around the buildings.	On-street parking in the vicinity is generally unrestricted with some localized time-restricted segments. Adjacent to the site, there is little parking available on the south side of S Henderson Street.
Roosevelt	Surface lot accessed from 12 th Ave NE.	Mixed on-street parking conditions in the vicinity, including peak direction restrictions on 15 th Avenue NE and NE 65 th Street, parking metered with pay station on Roosevelt Avenue NE and NE 65 th Street, time restrictions on some arterial streets, and pockets of unrestricted parking. Areas to the east and south of the school are included in RPZ 19. Parking is prohibited on the west side of 15 th Avenue NE adjacent to the school during peak student loading periods to accommodate school buses.
Other Sites		
Memorial Stadium	Surface lot accessed from 5 th Avenue N	On-street parking in the vicinity is generally all paid-parking with varying time maximums.
Old Van Asselt (interim site)	A surface lot on the north side of the site and a surface lot on the east side of the site are each accessed from S Rose Street.	On-street parking in the vicinity is generally unrestricted.

Source: SDOT, 2018b.

Similar to trip generation, parking demand for development projects can be estimated using rates and equations in ITE's *Parking Generation* (ITE, 2010). Parking demand for Seattle schools can vary based on a number of factors. The ITE has included surveys of parking demand for existing sites throughout the United States and developed rates based on number of students or in some cases based on other variables such as employees. The rates for high schools include information about schools in both suburban and urban locations. The *Parking Generation* reference is a widely used standard practice for estimating parking demand expected from planned development, especially when local site-specific data cannot be collected. Table 3.2-4 summarizes the ITE parking demand rates based on student population.

Table 3.2-4. Published School Parking Generation Rates

School Facility (ITE Land Use Code)	Peak Parking Demand Rates Per Student		
	Average Weekday Peak	Range of Observations	85 th Percentile Peak
Elementary School (LU 520)	0.17	0.11 to 0.24	0.21
Middle School/Junior High (LU 522)	0.09	0.07 to 0.11	0.10
High School (LU 530) Suburban/Urban	0.23/0.09	0.14 to 0.31/ 0.03 to 0.15	0.25/0.13

Source: *Institute of Transportation Engineers, 2010.*

Although ITE rates may be appropriate for some locations or some school types, each school is typically evaluated on a case-by-case basis. For example, counts performed at and around Garfield High School found a peak school-day parking demand rate of 0.14 vehicles per student (Heffron Transportation, Inc., 2004); counts conducted at Ingraham High School found a school-day parking demand rate of 0.20 vehicles per student (Heffron Transportation, Inc., 2017c). Both of these rates are in the range of observations published by ITE for urban high schools.

For elementary, middle, and K-8 schools, staffing levels may provide a more reliable basis than student enrollment for estimating school-day parking demand. For past analyses of modernizations, replacements, or redevelopments of Seattle schools, site-specific parking demand rates based on staffing levels have also been developed using counts conducted at and around existing school sites. Counts performed at and around four elementary schools from 2013 through 2017 for modernizations and/or replacement projects found peak school-day parking demand rates that ranged from 0.52 to 1.23 vehicles per employee (Heffron Transportation, Inc., 2013, 2014c, 2017a, 2017b).

Athletic-field-related parking demand generated by the majority of interscholastic and community youth or adult recreational athletics (soccer, ultimate, lacrosse, softball, and baseball), like trip generation, is influenced by participation levels and attendance. Parking demand observations for athletic fields and for field lighting projects indicate that these types of activities generate parking demand of between 30 and 95 vehicles each, depending on the on the sport, level of competition, and day of week. This range of parking demand reflects parked vehicles of spectators as well as participants (e.g., coaches, players that driver, referees/umpires, trainers, support staff, etc.). Parking demand at athletic fields with

consecutively-scheduled activities typically peaks during the periods between games. This is the time when participants and spectators from one game may be finishing or leaving the site and those from the next game are arriving. The combined peak parking that would occur for a short time between consecutive activities is estimated to range from 45 to 140 vehicles (Heffron Transportation, Inc., 2017d). Sites with multiple fields can experience concurrent overlapping peaks if schedules are not staggered.

It is noted that the parking estimates reflect rates derived from locations where little or no transit access is provided and field users and spectators did not generally commute by transit. However, for sites located near extensive transit service—including light rail and transit bus routes—students, family members, and school staff are more likely to use these transit options for trips to and from the school. Therefore, adjustments to reduce those estimates may be appropriate in locations that are well-served by transit.

3.2.5 Transit

Transit service in Seattle is primarily provided by King County Metro Transit (Metro) and Sound Transit. Snohomish County's Community Transit and Pierce County's Pierce Transit also provide limited bus service to and from Seattle, typically during the weekday commute periods. Every Metro bus is equipped to accommodate wheelchairs and is also equipped with bicycle racks.

Fixed bus routes are classified as local routes or commuter routes. The local routes typically provide two-way service between destinations within Seattle and surrounding areas, from morning through evening, five to seven days per week. Commuter bus service provides service to major employment destinations, operating only during the weekday morning and evening peak commute periods. Commuter routes typically provide service to major employment centers in the morning and away from employment centers in the evening, with a more limited number of stops along the way. Table 3.2-5 summarizes existing transit service at the potential BEX V sites. Other schools not listed in the table could be selected for BEX V projects. The table identifies streets near the BEX V school sites that are currently or recommended to be included in Seattle's Frequent Transit Network (FTN), consisting of transit corridors that connect the city's urban centers and villages with frequent, reliable transit service within a short walk for most residents. The FTN corridors are identified in the City's *Transit Master Plan* (SDOT, 2016b), further described in Section 3.2.8 of this Draft Programmatic EIS. Other schools not listed in the table could be selected for BEX V projects; in this case, public transit characteristics in the site's transportation study area would be evaluated as part of project-level analysis.

Table 3.2-5. Public Transit Service within One-Quarter Mile of Potential BEX V Project Sites

Potential Project Site	Transit Route	Destinations Served	Typical Weekday Frequency (minutes)
Elementary Schools			
Alki	Local 50	Alki, SODO, Columbia City, and Othello	30
	Commuter 37	Alaska Junction, Alki, SODO, Downtown	30
	56	Alki, Admiral District, SODO, Downtown <i>The Transit Master Plan recommends that SW Admiral Way be included in the Frequent Transit Network.</i>	15-30
Frantz Coe	Local 1	Queen Anne, Seattle Center, Downtown	20
	2	Seattle Pacific, Queen Anne, Seattle Center, Downtown, First Hill, Seattle University, Central District, Madrona	20
	Commuter 29	Ballard, Seattle Pacific, Queen Anne, Seattle Center, Downtown	15-30
John Hay	Local 2 (& 13)	Seattle Pacific, Queen Anne, Seattle Center, Downtown, First Hill, Seattle University, Central District, Madrona	5-15
	Commuter 29	Ballard, Seattle Pacific, Queen Anne, Seattle Center, Downtown <i>Queen Anne Avenue N is included in the Frequent Transit Network in the Transit Master Plan.</i>	15-30
John Muir	Local 7	Downtown, Columbia City, Rainier Beach <i>Rainier Avenue S is included in the Frequent Transit Network in the Transit Master Plan.</i>	8-15
John Rogers	None	---	---
Kimball	Local 36	Othello, Beacon Hill, International District, Downtown	8-10
	Light Rail Mt. Baker Station	Angle Lake, Sea-Tac Airport, Tukwila, South Seattle, SODO, Downtown, Capitol Hill, University of Washington; will extend to University District, Roosevelt and Northgate in 2021	6-15

Table 3.2-5. Public Transit Service within One-Quarter Mile of Potential BEX V Project Sites (continued)

Potential Project Site	Transit Route	Destinations Served	Typical Weekday Frequency (minutes)
Elementary Schools (cont.)			
Lafayette	Local 50	Alki, Admiral District, Alaska Junction, SODO, Beacon Hill, Seward Park, Othello	20-30
	128	Admiral District, Alaska Junction, Delridge, White Center, Tukwila, South Center	30
	Commuter 55	Admiral District, Alaska Junction, SODO, Downtown	10-15
	56	Alki, Admiral District, SODO, Downtown	25-35
	57	Alaska Junction, Alki, Admiral District, SODO, Downtown	25-35
	DART 775	Seacrest Park, Admiral District, Alki (loop) <i>California Avenue SW and Admiral Way S are included in the Frequent Transit Network in the Transit Master Plan.</i>	25-35
McGilvra	Local 11	Madison Park, Capitol Hill, Downtown	15
Monroe/Salmon Bay K-8	RapidRide D Line	Crown Hill, Ballard, Interbay, Uptown, Downtown	6-12
	Commuter 15	Blue Ridge, Crown Hill, Ballard, Interbay, Uptown, Downtown <i>15th Avenue NW is included in the Frequent Transit Network in the Transit Master Plan.</i>	10-15
Montlake	Local 48	University of Washington, Montlake, Capitol Hill, Central District, Mount Baker	8-10
	Commuter 43	University of Washington, Montlake, Capitol Hill, Downtown (two directional) <i>24th Avenue E is included in the Frequent Transit Network in the Transit Master Plan.</i>	20-35
North Beach	Local 45	Loyal Heights, Crown Hill, Greenwood, Green Lake, Ravenna, University of Washington	8-15
	Commuter 18	North Beach, Ballard, Interbay, Uptown, Downtown <i>NW 85th Street is included in the Frequent Transit Network in the Transit Master Plan.</i>	15-30

Table 3.2-5. Public Transit Service within One-Quarter Mile of Potential BEX V Project Sites (continued)

Potential Project Site	Transit Route	Destinations Served	Typical Weekday Frequency (minutes)
Elementary Schools (cont.)			
Northgate	Local 345	Shoreline Community College, Haller Lake, North Seattle College, Northgate, Downtown	30
	346	Aurora Village Transit Center, Shoreline, Haller Lake, Northgate, Downtown	30
	Commuter 316	Meridian Park, Haller Lake, Northgate, Green Lake, Ravenna, Downtown	15-35
		<i>Meridian Avenue N is included in the Frequent Transit Network in the Transit Master Plan.</i>	
Olympic View	Local 67	Northgate, Roosevelt, University District	8-10
	Commuter 63	Northgate, Maple Leaf, Green Lake, South Lake Union, First Hill	7-10
	347	Montlake Terrace, Ridgecrest, Northgate	30
	348	Richmond Beach, Shoreline, Northgate	30
		<i>5th Avenue NE and Roosevelt Way NE are included in the Frequent Transit Network in the Transit Master Plan.</i>	
Roxhill	Local 21	Arbor Heights, Roxhill, Alaska Junction, SODO, Downtown	60
	22	Arbor Heights, Gatewood, Alaska Junction	60
	RapidRide Line C	Fauntleroy, Alaska Junction, Downtown, South Lake Union	5-15
		<i>SW Roxbury Street, 35th Avenue SW, and SW Barton Street are included in the Frequent Transit Network in the Transit Master Plan.</i>	
Sacajawea	Local 73 (& 373)	Jackson Park, Maple Leaf, University District	9-60
	372	Bothell, Lake Forest Park, Lake City, Ravenna, University of Washington	4-30
	Commuter 77	North City, Jackson Park, Maple Leaf, Downtown	15-30
	309	Kenmore, Lake City, Maple Leaf, South Lake Union, Downtown	30-45
	312	Bothell, Lake City, Maple Leaf, Downtown	4-10
		<i>Lake City Way NE is included in the Frequent Transit Network in the Transit Master Plan.</i>	

Table 3.2-5. Public Transit Service within One-Quarter Mile of Potential BEX V Project Sites (continued)

Potential Project Site	Transit Route	Destinations Served	Typical Weekday Frequency (minutes)
Elementary Schools (cont.)			
Viewlands	Local 5	Shoreline Community College, Greenwood, Phinney, Fremont, Queen Anne, Downtown	9-20
	28	Broadview, Greenwood, Crown Hill, Ballard, Fremont, Queen Anne, Downtown	5-30
	40	Northgate, Loyal Heights, Ballard, Fremont, Queen Anne, Downtown	8-15
		<i>Holman Road NW and NW 100th Place are included in the Frequent Transit Network in the Transit Master Plan.</i>	
Wedgwood	None	---	---
West Seattle	Local 21	Arbor Heights, Roxhill, Alaska Junction, SODO, Downtown	60
	128	West Seattle, White Center, Tukwila, South Center	20-30
West Woodland	Local 28	Broadview, Greenwood, Crown Hill, Ballard, Downtown	5-30
	44	Magnolia, Ballard, Wallingford, University of Washington	8-10
		<i>NW Market Street is included in the Frequent Transit Network in the Transit Master Plan.</i>	
Middle Schools			
Madison	Local 50	Alki, Admiral District, Alaska Junction, SODO, Beacon Hill, Seward Park, Othello	20-30
	128	Admiral District, Alaska Junction, Delridge, White Center, Tukwila, South Center	30
	Commuter 55	Admiral District, Alaska Junction, SODO, Downtown	10-15
	57	Alaska Junction, Alki, Admiral District, SODO, Downtown	25-35

Table 3.2-5. Public Transit Service within One-Quarter Mile of Potential BEX V Project Sites (continued)

Potential Project Site	Transit Route	Destinations Served	Typical Weekday Frequency (minutes)
Middle Schools (cont.)			
Mercer	Local 50	Alki, Admiral District, Alaska Junction, SODO, Beacon Hill, Seward Park, Othello	20-30
	60	Capitol Hill, Downtown, Beacon Hill, Intl. District, Georgetown, White Center	15-30
	107	Beacon Hill, Georgetown, Rainier Beach, Rainier View, Lakeridge, Renton <i>15th Avenue E is included in the Frequent Transit Network in the Transit Master Plan.</i>	15-30
Washington	Local 14	Mount Baker, Central District, Intl. District, Downtown	15-20
	4	Queen Anne, Uptown, Downtown, First Hill, Central District, Judkins Park	15-30
	48	University of Washington, Montlake, Capitol Hill, Central District, Mount Baker <i>S Jackson Street and 23rd Avenue S are included in the Frequent Transit Network in the Transit Master Plan.</i>	8-10
Whitman	Local 40	Northgate, Loyal Heights, Ballard, Fremont, Queen Anne, Downtown	8-15
	RapidRide D Line	Crown Hill, Ballard, Interbay, Uptown, Downtown	6-12
	Commuter 15	Blue Ridge, Crown Hill, Ballard, Interbay, Uptown, Downtown <i>Holman Road NW is included in the Frequent Transit Network in the Transit Master Plan.</i>	10-15
High Schools			
Ballard	RapidRide D Line	Crown Hill, Ballard, Interbay, Uptown, Downtown	6-12
	Commuter 15	Blue Ridge, Crown Hill, Ballard, Interbay, Uptown, Downtown <i>15th Avenue NW is included in the Frequent Transit Network in the Transit Master Plan.</i>	10-15

Table 3.2-5. Public Transit Service within One-Quarter Mile of Potential BEX V Project Sites (continued)

Potential Project Site	Transit Route	Destinations Served	Typical Weekday Frequency (minutes)
High Schools (cont.)			
Garfield	Local 3	Queen Anne, Uptown, Downtown, First Hill, Central District, Madrona	15-30
	4	Queen Anne, Uptown, Downtown, First Hill, Central District, Judkins Park	15-30
	8	Queen Anne, Capitol Hill, Madison Valley, Central District, Mount Baker	10-30
	48	University District, Capitol Hill, Central District, Mount Baker <i>23rd Avenue E and E Jefferson Street/E Cherry Street are included in the Frequent Transit Network in the Transit Master Plan.</i>	10-20
Ingraham	Local 345	Northgate, Haller Lake, Shoreline	20-30
	346	Aurora Village TC, Haller Lake, Northgate	30
	Commuter 316	Meridian Park, Haller Lake, Green Lake, Downtown <i>N 130th Street is included in the Frequent Transit Network in the Transit Master Plan.</i>	15-25
Lincoln	Local 26	Northgate, North Seattle College, Green Lake, Wallingford, Queen Anne, Downtown	10-30
	44	UW Station, University District, Wallingford, Ballard	8-10
	62	View Ridge, Ravenna, Green lake, Wallingford, Fremont, Queen Anne, Downtown <i>N 45th Street and Stone Way N are included in the Frequent Transit Network in the Transit Master Plan.</i>	6-15
Nathan Hale	Local 65	Jackson Park, Lake City, Wedgwood, University District	8-15
	372	Bothell, Kenmore, Lake Forest Park, Ravenna, University District	5-15
	Commuter 64	Jackson Park, Lake City, Wedgwood, Ravenna, University District, Downtown, First Hill	20-45
	309	Kenmore, Lake Forest Park, Lake City, Downtown	20-45

Table 3.2-5. Public Transit Service within One-Quarter Mile of Potential BEX V Project Sites (continued)

Potential Project Site	Transit Route	Destinations Served	Typical Weekday Frequency (minutes)
High Schools (cont.)			
Nathan Hale (cont.)	312	Bothell, Kenmore, Lake City, Downtown <i>35th Avenue NE is included in the Frequent Transit Network in the Transit Master Plan.</i>	15-45
Rainier Beach	Local 7	Rainier Beach, Columbia City, Mount Baker, Intl. District, Downtown	5-15
	106	Renton, Bryn Mawr, Rainier Beach, Columbia City, Mount Baker, Intl. District – provides direct connection to and from the Rainier Beach Link light rail station, located about three-quarter mile west of the school.	15
	107	Beacon Hill, Georgetown, Rainier Beach, Rainier View, Lakeridge, Renton	15-30
	Commuter 9	Rainier Beach, Columbia City, Mt. Baker, Chinatown/ID, First Hill, Capitol Hill (two directional) <i>S Henderson Street and Rainier Avenue S are included in the Frequent Transit Network in the Transit Master Plan.</i>	15-30
Roosevelt	Local 45	Loyal Heights, Crown Hill, Greenwood, Green Lake, University District, UW Station	8-15
	62	Sandpoint, Ravenna, Green Lake, Wallingford, Queen Anne, Downtown	5-15
	67	Northgate, Roosevelt, University District	8-10
	73	Jackson Park, Maple Leaf, University District	20-30
	Commuter 64	Jackson Park, Lake City, Wedgwood, Ravenna, University District, Downtown, First Hill	20-30
	76	Wedgwood, Roosevelt, Downtown	10-30
	373	Jackson Park, Ravenna, University District <i>Roosevelt Station of Link Light Rail is planned for opening in 2021. Roosevelt Way NE and 12th Avenue NE are included in the Frequent Transit Network in the Transit Master Plan.</i>	30

Table 3.2-5. Public Transit Service within One-Quarter Mile of Potential BEX V Project Sites (continued)

Potential Project Site	Transit Route	Destinations Served	Typical Weekday Frequency (minutes)
Other Sites			
Memorial Stadium	Local 3	Queen Anne, Uptown, Downtown, First Hill, Central District, Madrona	8-30
	4	Queen Anne, Uptown, Downtown, First Hill, Central District, Judkins Park	10-15
	8	Uptown, Denny Triangle, Capitol Hill, Madison Valley, Central District, Mt. Baker	10-15
	Monorail	Seattle Center and Westlake <i>5th Avenue N and Denny Way are included in the Frequent Transit Network in the Transit Master Plan.</i>	10
Old Van Asselt (interim site)	Local 107	Beacon Hill, Georgetown, Rainier Beach, Rainier View, Lakeridge, Renton	15-30

Sources: King County Metro, 2017; SDOT, 2016b; SDOT 2018a.

The SPS Transportation Department provides yellow bus, door-to-door, Metro, and cab service to a variety of students attending Seattle public schools and Head Start. Eligibility for SPS-provided transportation depends on several factors including grade level and proximity to assigned schools. The following describes the basic eligibility considerations outlined in SPS's *Transportation Service Standards 2017-2018* (SPS, 2017). Note that exceptions are defined for individuals based on health requirements, educational program needs, or based on certain geographical considerations.

1. **High School** students who live within the boundaries of the District and who live more than 2.0 miles from their assigned school are eligible for an Orca card for use on regular Metro bus route or Link light rail. Currently, all high schools utilize Metro for their primary regular program transportation. Some geographic areas with limited Metro service require supplemental school bus transportation.
2. **Middle School** students who live within the boundaries of the District and who live more than 2.0 miles from their assigned school are eligible for transportation. SPS-provided transportation is available for those students attending a middle school in their service area or linked service area. Orca cards may be provided for students enrolled in a school outside of their service area.
3. **Elementary** and **K-8** students who live within the attendance area or linked attendance area boundaries and outside the designated walk boundaries are eligible for arranged transportation. SPS-arranged transportation is not provided for students who by family or student choice have enrolled in a school other than their assigned school. Orca cards may be provided for attendance area K-8 school 6th through 8th grade students enrolled in a school outside of their attendance area if they live more than 2.0 miles from the school.

3.2.6 Non-Motorized Facilities

Seattle public schools are generators of non-motorized travel, which includes pedestrian trips and bicycle trips. Pedestrian trips include those in which the entire trip is made by walking, or trips walking to and from transit stops, or off-site parking or load/unload areas.

Many areas throughout Seattle have pedestrian facilities including completed sidewalk networks and/or paved pedestrian pathways, but some do not, particularly in areas that are beyond the original city limits. Signalized intersections typically include marked crosswalks with pedestrian signals. Marked crosswalks are provided at some stop-controlled intersections and mid-block locations. All intersections that do not have marked crosswalks are still considered to have unmarked crosswalks under City code, unless signed otherwise.

In addition to sidewalks, non-motorized facilities in Seattle include pathways and trails that are separated from roadways, protected two-way bicycle lanes (typically separated from adjacent vehicle traffic by a barrier), in-street bicycle lanes with minor separation (typically painted lines), and roadway lanes that are marked with “sharrows” indicating that motorists should share the lane with cyclists. “Neighborhood greenways” are designated residential streets with low motorized traffic volumes and speeds that are designed to accommodate safe and pleasant travel for pedestrians and bicyclists.

Table 3.2-6 summarizes existing non-motorized characteristics near the potential BEX V school sites. Other schools not listed in the table could be selected for BEX V projects; in this case, non-motorized characteristics in the site’s transportation study area would be evaluated as part of project-level analysis.

Table 3.2-6. Non-Motorized Characteristics at Potential BEX V Project Sites

Facility Name	Non-Motorized Characteristics
Elementary Schools	
Alki	<p>The area has a mostly-complete sidewalk system, although there are no sidewalks on either side of SW Stevens Street between 58th Avenue SW between 57th Avenue SW. SW Admiral Way has in-street bicycle lanes. Marked crosswalks are provided at several unsignalized intersections near the school site.</p> <p><i>Recommended future projects in the Bicycle Master Plan in the site vicinity include provision of in-street bicycle lanes on SW Admiral Way, and a neighborhood greenway on 59th Avenue SW.</i></p>
Frantz Coe	<p>The area has a complete sidewalk system. Marked crosswalks are provided at several unsignalized intersections adjacent to the school site.</p> <p><i>Recommended future projects in the Bicycle Master Plan in the site vicinity include provision of in-street bicycle lanes on W McGraw Street and 7th Avenue W, and a neighborhood greenway on W Smith Street.</i></p>
John Hay	<p>The area has a complete sidewalk system. Marked crosswalks are provided at several unsignalized intersections adjacent to the school site. Marked crosswalks and pedestrian signals are provided at the nearby signalized intersection.</p> <p><i>Recommended future projects in the Bicycle Master Plan in the site vicinity include provision of neighborhood greenways on 2nd Avenue N and Galer Street near the school site.</i></p>

Table 3.2-6. Non-Motorized Characteristics at Potential BEX V Project Sites (continued)

Facility Name	Non-Motorized Characteristics
Elementary Schools (cont.)	
John Muir	<p>The area has a complete sidewalk system. Marked crosswalks are provided at unsignalized intersections adjacent to the school site at S Horton Street/S Walden Street.</p> <p><i>Recommended future projects in the Bicycle Master Plan in the site vicinity include provision of neighborhood greenways on S Horton Street/S Walden Street and 34th Avenue S.</i></p>
John Rogers	<p>The area has an incomplete sidewalk system, with most streets near the school missing sidewalks. Marked crosswalks are provided at several unsignalized intersections adjacent to the school site.</p> <p><i>Recommended future projects in the Bicycle Master Plan in the site vicinity include provision of in-street bicycle lanes on NE 110th Street and a neighborhood greenway on Alton Avenue NE.</i></p>
Kimball	<p>The area has a mostly-complete sidewalk system, although some of the local access streets near the school lack sidewalks on one or both sides. 23rd Avenue E has a bicycle lane on the west side of the roadway and sharrows on the east side. S Spokane Street has a bicycle lane on the north side of the street and sharrows on the south side of the street. The intersection between S Hanford Street and 23rd Avenue S is the only intersection with marked crosswalks.</p> <p><i>Recommended future projects in the Bicycle Master Plan in the site vicinity include provision of neighborhood greenways on 21st Avenue S and S Hinds Street.</i></p>
Lafayette	<p>The area has a complete sidewalk system. California Avenue SW has sharrows and SW Admiral Way has in-street bicycle lanes. Marked crosswalks and pedestrian signals are provided at nearby signalized intersections. Marked crosswalks are provided at a few of the unsignalized intersections adjacent to the school site.</p> <p><i>Recommended future projects in the Bicycle Master Plan in the site vicinity include provision of protected bicycle lanes on SW Admiral Way east of 45th Avenue SW and in-street bicycle lanes west of 45th Avenue SW. The plan also calls for the addition of a neighborhood greenway on 45th Avenue SW.</i></p>
McGilvra	<p>The area has a complete sidewalk system. Marked crosswalks are provided at several unsignalized intersections adjacent to the school site. Marked crosswalks and pedestrian signals are provided at the one nearby signalized intersection.</p> <p><i>Recommended future projects in the Bicycle Master Plan in the site vicinity include provision of in-street bicycle lanes on E Madison Street, and a neighborhood greenway on 40th Avenue E.</i></p>
Monroe/Salmon Bay K-8	<p>The area has a complete sidewalk system. NW 65th Street has sharrows and 20th Avenue NW has in-street bicycle lanes south of NW 65th Street. Marked crosswalks are provided at several unsignalized intersections adjacent to the school site. Marked crosswalks and pedestrian signals are provided at the one nearby signalized intersection.</p> <p><i>Recommended future projects in the Bicycle Master Plan in the site vicinity include provision of neighborhood greenways on 17th Avenue NW and NW 64th Street.</i></p>

Table 3.2-6. Non-Motorized Characteristics at Potential BEX V Project Sites (continued)

Facility Name	Non-Motorized Characteristics
Elementary Schools (cont.)	
Montlake	<p>The area has a complete sidewalk system. Marked crosswalks are provided at the unsignalized intersection at the southeast corner of the school site. Marked crosswalks and pedestrian signals are provided at the one nearby signalized intersection.</p> <p><i>Recommended future projects in the Bicycle Master Plan in the site vicinity include provision of off-street bicycle lanes on 19th Avenue E and neighborhood greenways on 22nd Avenue E and E Calhoun Street.</i></p>
North Beach	<p>Most of the school frontages have sidewalks, but they are intermittent in the surrounding area. Marked crosswalks are provided at several unsignalized intersections adjacent to the school site.</p> <p><i>Recommended future projects in the Bicycle Master Plan in the site vicinity include provision of neighborhood greenways on NW 90th Street and 23rd Avenue NW.</i></p>
Northgate	<p>The area has an incomplete sidewalk system. 1st Avenue N is the only street adjacent to the site that features sidewalks on both sides. 1st Avenue N has sharrows. Marked crosswalks are provided at several unsignalized intersections near the school site.</p> <p><i>Recommended future projects in the Bicycle Master Plan in the site vicinity include provision of in-street bicycle lanes on Meridian Avenue N, a neighborhood greenway on N 117th Street, and protected bicycle lanes on NE 117th Street.</i></p>
Olympic View	<p>The school frontages have sidewalks, but they are intermittent in the surrounding area. Marked crosswalks are provided at unsignalized intersections along NE 95th Street. 5th Avenue NE has a marked bike lane in the southbound direction and sharrows in the northbound direction. Roosevelt Way NE has sharrows in both directions.</p> <p><i>Recommended future projects in the Bicycle Master Plan in the site vicinity include provision of protected bicycle lanes on Roosevelt Way NE and neighborhood greenways on 8th Avenue NE and NE 98th Street.</i></p>
Roxhill	<p>The streets adjacent to the site feature sidewalks, but some of the local streets near the school are missing sidewalks. Marked crosswalks are provided at several unsignalized intersections adjacent to the school site. Marked crosswalks and pedestrian signals are provided at the nearby signalized intersection.</p> <p><i>Recommended future projects in the Bicycle Master Plan in the site vicinity include provision of protected bicycle lanes on SW Roxbury Street and 35th Avenue SW, in-street bicycle lanes on SW Barton Street, and neighborhood greenways on 34th Avenue SW and 25th Avenue SW.</i></p>
Sacajawea	<p>Most of the school frontages have sidewalks, but they are intermittent in the surrounding area. Marked crosswalks and pedestrian signals are provided at the nearby signalized intersection on Lake City Way NE.</p> <p><i>Recommended future projects in the Bicycle Master Plan in the site vicinity include provision of neighborhood greenways on NE 98th Street and 20th Avenue NE.</i></p>

Table 3.2-6. Non-Motorized Characteristics at Potential BEX V Project Sites (continued)

Facility Name	Non-Motorized Characteristics
Elementary Schools (cont.)	
Viewlands	<p>All school frontages have sidewalks, but they are intermittent in the surrounding area. Marked crosswalks are provided at the unsignalized intersection at the southeast corner of the school site. Marked crosswalks and pedestrian signals are provided at the one nearby signalized intersection.</p> <p><i>Recommended future projects in the Bicycle Master Plan in the site vicinity include provision of protected bicycle lanes on 3rd Avenue NW and a neighborhood greenway on N 110th Street and 1st Avenue NW (only north of N 110th Street).</i></p>
Wedgwood	<p>All school frontages have sidewalks, but they are intermittent in the surrounding area. Marked crosswalks are provided at the unsignalized intersection adjacent to the school site. Ravenna Avenue NE has a marked bike lane in the southbound direction and sharrows in the northbound direction.</p> <p><i>Recommended future project in the Bicycle Master Plan in the site vicinity includes provision of a neighborhood greenway on 31st Avenue NE / NE 85th Street / 32nd Avenue NE.</i></p>
West Seattle	<p>The area has a complete sidewalk system. Marked crosswalks are provided across unsignalized intersections along SW Holly Street near the school site.</p> <p><i>Recommended future projects in the Bicycle Master Plan in the site vicinity include provision of protected bike lanes on 35th Avenue SW and Sylvan Way SW, and neighborhood greenways on SW Holly Street, 31st Avenue SW, and 34th Avenue SW.</i></p>
West Woodland	<p>The area has a complete sidewalk system. Marked crosswalks are provided across one or two legs of the unsignalized intersections at the northeast, southwest, and southeast corners of the school site. NW 58th Street is a neighborhood greenway and has sharrows.</p> <p><i>Recommended future projects in the Bicycle Master Plan in the site vicinity include provision of neighborhood greenways on 6th Avenue NW and NW 56th Street.</i></p>
Middle Schools	
Madison	<p>The area has a complete sidewalk system. Marked crosswalks are provided across unsignalized intersection of SW Spokane Street/45th Avenue SW.</p> <p><i>Recommended future projects in the Bicycle Master Plan in the site vicinity include provision of marked bike lanes on SW Charlestown Street, and neighborhood greenways on 45th Avenue SW and SW Hinds Street.</i></p>
Mercer	<p>All school frontages have sidewalks and most of the streets in the surrounding area have sidewalks. 15th Avenue S has both bicycle lanes and sharrows, while S Columbian Way has sharrows. Marked crosswalks and pedestrian signals are provided at nearby signalized intersections.</p> <p><i>Recommended future projects in the Bicycle Master Plan in the site vicinity include provision of protected bicycle lanes on S Columbine Way, additional bicycle lanes on 15th Avenue S, and a neighborhood greenway on S Snoqualmie Street.</i></p>

Table 3.2-6. Non-Motorized Characteristics at Potential BEX V Project Sites (continued)

Facility Name	Non-Motorized Characteristics
Middle Schools (cont.)	
Washington	<p>The area has a complete sidewalk system. There are in-street bicycle lanes on S Jackson Street. Marked crosswalks and pedestrian signals are provided at nearby signalized intersections.</p> <p><i>Recommended future projects in the Bicycle Master Plan in the site vicinity include provision of protected bicycle lanes on S Jackson Street; an off-street path on 20th Place S south of S Weller Street; and neighborhood greenways on 22nd Avenue S, 20th Avenue S (north of S Jackson Street), and 20th Place S (between S Jackson Street and S Weller Street).</i></p>
Whitman	<p>All school frontages have sidewalks, but they are intermittent in the surrounding area. Marked crosswalks and pedestrian signals are provided at nearby signalized intersections.</p> <p><i>Recommended future projects in the Bicycle Master Plan in the site vicinity include provision of in-street bicycle lanes on 15th Avenue NW and a neighborhood greenway on NW 90th Street.</i></p>
High Schools	
Ballard	<p>The area has a complete sidewalk system. Marked crosswalks are provided at the signalized intersections along 15th Avenue NW, and at unsignalized intersections along NW 65th Street adjacent to the school. NW 65th Street has sharrows, and 8th Avenue NW has painted bicycle lanes.</p> <p>Recommended future projects in the <i>Bicycle Master Plan</i> in the site vicinity include neighborhood greenways along NW 64th Street, NW 70th Street, 12th Avenue NW, and 17th Avenue NW, and provision of a local connector cycle track along 14th Avenue NW between NW 58th Street and NW 65th Street.</p>
Garfield	<p>The area has a complete sidewalk system. Crosswalks are provided at signalized intersections along 23rd Avenue S. There is a neighborhood greenway along the 22nd Avenue E/E Columbia Street/25th Avenue corridor. Bike lanes are provided on E Cherry Street.</p> <p>Recommended future projects in the <i>Bicycle Master Plan</i> in the site vicinity include neighborhood greenways on E Columbia Street, 22nd Avenue, E Alder Street, and 27th Avenue, and protected bike lanes on Martin Luther King Jr Way S.</p>
Lincoln	<p>The area has a complete sidewalk system. Marked crosswalks and pedestrian signals are provided at nearby signalized intersections. Stone Way N has in-street bicycle lanes in the northbound directions and sharrows in the southbound direction. N 43rd Street is a neighborhood greenway and has sharrows.</p> <p><i>Recommended future projects in the Bicycle Master Plan in the site vicinity include provision of in-street bicycle lanes on Wallingford Avenue N and N 40th Street, and neighborhood greenways on Interlake Avenue N and N 46th Street.</i></p>

Table 3.2-6. Non-Motorized Characteristics at Potential BEX V Project Sites (continued)

Facility Name	Non-Motorized Characteristics
High Schools (cont.)	
Ingraham	<p>All school frontages have sidewalks and most of the streets in the surrounding area have sidewalks. Meridian Avenue N has sharrows. Marked crosswalks and pedestrian signals are provided at nearby signalized intersections.</p> <p>Recommended future projects in the <i>Bicycle Master Plan</i> in the site vicinity include provision of protected bicycle lanes on N 130th Street, and neighborhood greenways on N 135th Street, Ashworth Avenue N, and N 131st Street.</p>
Nathan Hale	<p>All school frontages have sidewalks, but they are intermittent in the surrounding area. Marked crosswalks are provided at two unsignalized intersections along NE 110th Street, and the intersection of NE 110th Street/30th Avenue NE is all-way stop-controlled but without crosswalks.</p> <p>Recommended future projects in the <i>Bicycle Master Plan</i> in the site vicinity include bike lanes on NE 110th Street and 30th Avenue NE, a cycle track on 35th Avenue NE, and neighborhood greenways along NE 105th Street and 32nd Avenue NE.</p>
Rainier Beach	<p>All school frontages have sidewalks and most of the streets in the surrounding area have sidewalks. S Henderson Street has in-street bicycle lanes. Marked crosswalks are provided at several unsignalized intersections adjacent to the school site. Marked crosswalks and pedestrian signals are provided at nearby signalized intersections.</p> <p><i>Recommended future projects in the Bicycle Master Plan in the site vicinity include provision of in-street bicycle lanes on Seward Park Avenue S, and protected bicycle lanes on S Henderson Street (between M L King Jr Way S and Rainier Avenue S) and on Rainier Avenue S (south of S Henderson Street).</i></p>
Roosevelt	<p>The area has a complete sidewalk system. Crosswalks are provided at signalized intersections in the area, and at unsignalized intersections adjacent to the school. Bicycle lanes are provided along 12th Avenue NE and Roosevelt Way NE.</p> <p>Recommended future projects in the <i>Bicycle Master Plan</i> in the site vicinity include bike lanes on 15th Avenue NE, and neighborhood greenways on NE 66th Street and Brooklyn Avenue NE to the south of the school.</p>
Other Sites	
Memorial Stadium	<p>The area has a complete sidewalk system. Marked crosswalks and pedestrian signals are provided at nearby signalized intersections. Mercer Street has protected bicycle lanes north of 5th Avenue.</p> <p><i>Recommended future projects in the Bicycle Master Plan in the site vicinity include provision of protected bicycle lanes on 5th Avenue and a neighborhood greenway on Thomas Street.</i></p>
Old Van Asselt (interim site)	<p>Beacon Avenue S has sidewalks, but they are intermittent in the surrounding area. Marked crosswalks are provided at the northeast and southeast corners of the school site.</p> <p><i>Recommended future project in the Bicycle Master Plan in the site vicinity includes provision of an off-street trail along the Beacon Avenue S corridor.</i></p>

Source: SDOT 2014.

3.2.7 Future Transportation Improvements

Each year, the City of Seattle adopts a Capital Improvement Program (CIP) that defines planned City expenditures for infrastructure, programs, and services over the following six-year period.

Transportation infrastructure includes roadways and non-motorized facilities, and expenditures include construction of new facilities as well as maintenance of existing facilities. The current version—the *2018-2023 Transportation Capital Improvement Program* includes planned spending of more than \$1.7 billion over the six-year period and lists large capital projects such as the Elliott Bay Seawall Replacement, the Central Waterfront project, and several corridor improvement projects throughout Seattle (City of Seattle, 2017c). It also includes plans for transportation maintenance and rehabilitation, neighborhood programs, and systems improvements.

The City's CIP includes funding for *Move Seattle* projects, which was approved by voters in November 2015, and is a multimodal transportation package that integrates recommendations developed in the City's various modal plans (described in the following sections), and includes a list of high-priority projects that are intended to be implemented within the next 10 years. In addition to 24 major corridor, transit, and trail projects, *Move Seattle* identifies implementation of localized non-motorized improvements to improve pedestrian safety, including improvements along school walking routes and within school zones.

Sound Transit 3 (ST3) is a regional transit funding package that was approved by voters in November 2017. It will extend existing and planned light rail lines to additional cities, and also includes a new West Seattle-to-Ballard line within Seattle. The package also includes expansion of regional bus rapid transit and express bus service, as well as expansion of commuter rail service. Planning and design of ST3 projects is currently getting underway; construction of the full ST3 package is planned to occur over about a 25-year period. (Sound Transit, 2017)

3.2.8 Relationship to Plans and Policies

The following sections describe the City of Seattle plans and policies that relate to transportation and school facilities.

3.2.8.1 Seattle Comprehensive Plan

The *Seattle Comprehensive Plan* (City of Seattle, 2016a) identifies the City's land use strategy for accommodating future job and housing growth, and shows how transportation infrastructure, policies and programs will be developed to ensure that the transportation system can efficiently support that growth; this includes mode shift goals that promote a transition away from single occupant vehicles (SOV) toward walking, biking, transit and carpools. The City has developed a number of plans that focus on specific transportation modes, as described in the following sections. These more focused plans are all consistent with the Comprehensive Plan and build upon the policy framework it establishes.

In its discussion of the relationship to a vibrant economy, it states:

"In addition to goods movement, a well-designed transportation network supports a thriving economy by enhancing access to jobs, businesses, schools, and recreation."

The City has adopted many policies intended to encourage walking and bicycling as modes of transportation, including:

Policy T 3.1: Develop and maintain high-quality, affordable, and connected bicycle, pedestrian, and transit facilities.

Policy T 3.11: Develop and maintain bicycle and pedestrian facilities, including public stairways, that enhance the predictability and safety of all users of the street and that connect to a wide range of key destinations throughout the city.

Transportation safety is also a high priority, with policies that include:

Policy T 6.1: Reduce collisions for all modes of transportation and work toward a transportation system that produces zero fatalities and serious injuries by 2030 to attain the City's Vision Zero objectives.

Policy T 6.2: Enhance community safety and livability through measures such as reduced speed limits, lane re-channelization, and crossing improvements.

3.2.8.2 Seattle Transit Master Plan

The *Transit Master Plan* (SDOT, 2016b) defines the critical role that transit plays in meeting the City's goals related to sustainability, equity, economic productivity, and livability. Developed with feedback from King County Metro and Sound Transit, the Transit Master Plan identifies the types of transit facilities, services, programs, and system features that will be required to meet Seattle's transit needs through 2030, based upon market analysis, review of future growth patterns, and evaluation of transit needs.

The TMP identifies Seattle's Frequent Transit Network (FTN), which is a vision for a network of transit corridors that connect the city's urban centers and villages with frequent, reliable transit service within a short walk for most residents, and identifies the corridor as a high priority for transit investments. The FTN can be served by either bus or rail. Table 3.2-5 identifies streets near the potential BEX V school sites that are currently or recommended to be included in the FTN.

The plan acknowledges that youth are particularly reliant on transit, and establishes a goal that the City work to expand access to Orca cards for students through partnerships with school and transit providers. Additionally, it encourages route designs that serve student needs and passenger information systems that meet the expectations of tech-savvy youth. Two of the policies outlined in the TMP Summary Report specifically address schools.

Policy ToN1.2: Direct most development within urban villages, urban centers, and along the Frequent Transit Network – Use zoning and public investment to encourage development along FTN corridors. Strategies for directing development toward transit corridors may include: Building community centers, schools, courthouses, and other civic buildings along transit corridors.

Policy ToN3.3: Plan for density that responds to the character of existing development – Plan for buildings of a similar scale and character to existing structures to ensure successful

integration of land use intensification. Prioritize increased density near existing activity centers, such as schools, shopping centers, job centers, or medical facilities.

3.2.8.3 City of Seattle Pedestrian Master Plan

The City's *Pedestrian Master Plan* (PMP) defines the actions needed to improve walkability in Seattle. The Plan establishes objectives to complete and maintain the citywide pedestrian system, improve walkability and pedestrian safety on all streets, and to get more people walking for transportation, recreation, and health. (SDOT, 2017b) The PMP establishes priorities for pedestrian safety and access improvements by establishing a prioritization framework and policies, programs, and project opportunity areas to advance pedestrian safety and accessibility. It lays out the key strategies and actions that are intended to achieve the City's vision for pedestrian movement, and it establishes performance measures to gauge the success in implementing that vision. The PMP identifies a Priority Investments Network with a focus on safe access to schools and transit, where pedestrian improvements are prioritized. Components that relate to schools include: connecting gaps in the sidewalk system, improving buffers between pedestrians and vehicle traffic, improving pedestrian visibility and shortening the length of crossings, managing vehicle speeds, expanding automated speed enforcement in school zones, increasing participation in pedestrian safety, education, encouragement programs, and increasing the numbers of children walking or biking to or from school. Pedestrian improvements are planned and designed to accommodate people of all ages and abilities, especially children, seniors, and people with disabilities.

3.2.8.4 City of Seattle Bicycle Master Plan

The City's *Bicycle Master Plan* (BMP) sets forth a vision that riding a bicycle be a comfortable and integral part of daily life in Seattle for people of all ages and abilities, and provides a blueprint to make it easier to decide to ride a bike. (SDOT, 2014) A stated goal of the BMP is to support bicycle mobility in safe routes to school to encourage bicycle travel by students, as a means to help improve their health and mental development. The BMP identifies existing and recommended future trails, bicycle lanes, shared use facilities, and neighborhood greenways. The following lists key strategies and actions included in the BMP that specifically address schools.

Strategy 5.2 Develop a bicycle parking implementation program

Action 5.2.2—Prioritize the installation of bicycle racks and on-street bicycle corrals in high-demand locations. *High-demand locations include, but are not limited to, neighborhood business districts, community centers, libraries, universities and colleges, employment centers, parks, and schools. Determine when bicycle parking should be sheltered bicycle parking, such as at schools where students/staff will park their bicycles for extended periods of time.*

Strategy 6.1 Develop a bicycle safety program

Action 6.1.1 Provide bicycle education for primary school children. *Work with schools to continue and expand the Safe Routes to School program to teach children to safely walk and ride a bicycle to school.*

Action 6.1.2 Assess the feasibility and cost of including middle school and high school roadway safety education in Seattle schools.

Strategy 7.9 Build and expand upon public partnerships

Action 7.9.5 – Engage with the Seattle Public Schools to continue to partner with Safe Routes to School, on traffic safety education, and encouragement of walking and biking to school.

Strategy 7.17 Establish a broad-based funding approach

Action 7.17.8 Capitalize on the multiple benefits of bicycling to fund neighborhood initiatives out of a variety of fund sources, such as the Safe Routes to School program. The Neighborhood Street Fund, Family and Education Levy, and Neighborhood Park and Street Funds are potential funding opportunities for community-driven projects.

Each year, the City develops a *BMP Implementation Plan* that identifies the highest priority bicycle improvement projects for the following 5-year period. The current BMP implementation plan (SDOT, 2017) identifies projects planned through 2021, and including construction throughout Seattle of trail improvements, protected bike lanes, in-street bike lanes, shared-use facilities, and neighborhood greenways.

3.3 Land Use

In Seattle, most public schools are located in single- or multifamily residential zones. Under Seattle's Land Use Code, public school facilities are an allowed use in such zones, but are subject to required setbacks, height and bulk limits, and lot coverage guidelines.

3.3.1 Land Use at Potential Project Sites

Table 3.3-1 shows the existing zoning and land use around potential BEX V project sites. Other schools not listed in the table could be selected for BEX V projects. Zoning designations included in Table 3.3-1 include:

1. Single Family 5000 – Single family structures with a minimum lot area of 5,000 square feet
2. Single Family 7200 – Single family structures with a minimum lot area of 7,200 square feet
3. Lowrise 1 – A mix of housing types similar in scale to single family homes
4. Lowrise 2 – A mix of small scale to multifamily housing
5. Lowrise 3 – A mix of small to moderate scale multifamily housing
6. Neighborhood Commercial 2 – Moderately-sized pedestrian-oriented shopping area
7. Pedestrian 40 – Intensively pedestrian-oriented retail shopping district
8. Seattle Mixed Uptown 95 (M) – Diverse, mixed-use community with a strong pedestrian orientation

Table 3.3-1. Land Use at Potential BEX V Program Sites

School Facility	Zoning Designation	Adjacent Land Uses
Elementary Schools		
Alki	Lowrise 1	public park single-family residential multi-family residential
Frantz Coe	Single Family 5000	single-family residential
John Hay	Lowrise 1	public park single-family residential multi-family residential
John Muir	Single Family 5000	public park single-family residential
John Rogers	Single Family 7200	single-family residential religious services
Kimball	Single Family 5000	single-family residential
Lafayette	Neighborhood Commercial 2 Pedestrian 40 Single Family 5000	retail store multi-family residential single-family residential shopping center
McGilvra	Neighborhood Commercial 2 Pedestrian 40 SF 5000	retail store multi-family residential single-family residential shopping center
Monroe (Salmon Bay K-8)	Single Family 7200	single-family residential
Montlake	Single Family 7200	single-family residential religious services
North Beach	Single Family 7200	single-family residential
Northgate	Single Family 7200	single-family residential religious services
Olympic View	Single Family 7200	single-family residential
Roxhill	Single Family 5000	single-family residential retail gas and auto Service
Sacajawea	Single Family 5000	single-family residential
Viewlands	Single Family 7200	single-family residential religious services
Wedgwood	Single Family 5000	single-family residential
West Seattle	Lowrise 1	public park single-family residential
West Woodland	Single Family 5000	single-family residential multi-family residential

Table 3.3-1. Land Use at Potential BEX V Program Sites (continued)

School Facility	Zoning Designation	Adjacent Land Uses
Middle Schools		
Madison	Single Family 5000	single-family residential
Mercer	Single Family 5000	private school hospital golf course single-family residential multi-family residential religious services
Washington	Lowrise 3	public park religious services single family residential multi-family residential retail heavy industrial
Whitman	Single Family 7200	public park single-family residential multi-family residential service building
High Schools		
Ballard	Single Family 7200	Single-Family Residential Multi-Family Residential Neighborhood/Commercial
Garfield	Lowrise 2 & Single Family 5000	Multi-Family Residential Neighborhood/Commercial Single-Family Residential
Ingraham	Single Family 7200	Civic Single-Family Residential
Lincoln	Lowrise 2	Single-Family Residential Civic
Nathan Hale	Single Family 7200	City-Owned Open Space Civic Neighborhood/Commercial Single-Family Residential
Rainier Beach	Lowrise 2 & Lowrise 3	Civic Multi-Family Residential Neighborhood/Commercial Single-Family Residential
Roosevelt	Single Family 5000	Multi-Family Residential Neighborhood/Commercial Single-Family Residential

Table 3.3-1. Land Use at Potential BEX V Program Sites (continued)

School Facility	Zoning Designation	Adjacent Land Uses
Other Site		
Memorial Stadium	Seattle Mixed Uptown 95 (M)	Civic Parking Garage Office
Old Van Asselt (interim site)	Single Family 5000	single-family residential religious services public park

3.3.2 Seattle Comprehensive Plan

The City of Seattle's *Seattle 2035, Comprehensive Plan, Managing Growth to Become an Equitable and Sustainable City 2015-2035* was adopted in 2016. The plan defines the framework for managing future growth and is consistent with the Washington Growth Management Act. The focus of the plan is on managing future growth through the Urban Village Strategy. Urban Villages are growth centers within the City with mixes of uses and a high degree of urban infrastructure (City of Seattle, 2017a). The Land Use Element of the plan lists schools as a desirable public facility in Urban Villages and allows schools to "depart from development standards, if necessary to meet their particular functional requirements." The Capital Facilities Element, policy CF 5.3 includes a policy to "encourage the siting of new school facilities in or near urban centers and villages" (City of Seattle, 2017a).

3.3.3 Seattle Municipal Code

The Seattle Municipal Code (SMC) has requirements for setbacks for new public school construction on existing public school sites and lot coverage for structures or a portion of a structure with more than one story (SMC 23.44.017). The SMC also establishes requirements for building height and parking.

Typically, a school located in a residential zone is difficult to design in a way that meets single-family land use code requirements for height, bulk, parking, and other provisions while still meeting educational program needs. The Seattle Land Use Code (SMC Chapter 23.79) recognizes this issue and includes a procedure by which public school structures may depart from the required development standards of the code.

The departure process requires that SPS submit an application to the Director of the Seattle Department of Construction and Inspections (SDCI). A Development Standard Advisory Committee is established to gather public comments and to make recommendations on modifications to the development standards. This committee is comprised of community residents, business owners, neighborhood representatives, parent representatives associated with the school site, a representative from the Joint Advisory Commission on Education, and a non-voting representative of SDCI. The Land Use Code establishes specific responsibilities for the Committee, as well as procedures for notice of committee meetings and appeal processes. Five issues are identified for the Committee's consideration (SMC 23.79.008.C.1.a):

1. Appropriateness in relation to the character and scale of the surrounding area;

2. Presence of edges (significant setbacks, major arterials, topographical breaks, and similar features) which provide a transition in scales;
3. Location and design of structures to reduce the appearance of bulk;
4. Impacts on traffic, noise, circulation and parking in the area; and
5. Impacts on housing and open spaces.

More flexibility in the development standards may be allowed if the impacts on the surrounding community are anticipated to be negligible or are reduced by mitigation; whereas, a minimal amount or no departure from development standards may be allowed if anticipated impacts are significant and cannot be satisfactorily mitigated.

The advisory committee is directed to consider the project's relationship to the surrounding area and the need for the departure from the code (SMC 23.79.008.C.1.b).

3.3.4 Seattle SEPA Ordinance

Although SPS is the lead agency for SEPA compliance, the City of Seattle may use the substantive authority granted by SEPA to exempt, condition, or deny the request for proposal in order to mitigate environmental impacts in appropriate circumstances. The City follows its SEPA ordinance (SMC Chapter 25.05) when applying SEPA authority to condition a proposal by SPS. The SMC outlines adopted policies that the City may use to mitigate the environmental impacts of nonexempt public and private proposals (SMC 25.05.660). Environmental policies that are particularly applicable to implementation of the BEX V Program include construction impacts, height, bulk, and scale; historic preservation; housing; land use; parking; and traffic and transportation.

3.3.5 Plans and Policies for the Uptown Neighborhood and Seattle Center

The Memorial Stadium site, owned by SPS, is part of Seattle Center, an arts, cultural, and entertainment campus in the Uptown Neighborhood of Seattle. The Seattle Center Century 21 Master Plan was adopted in August 2008 and articulates a vision for the future of Seattle Center (Seattle Center, 2008). The Master Plan was developed by the City calls for the Memorial Stadium site to be redeveloped with the playing field realigned at the eastern end of the site so the International Fountain lawn can be expanded by four acres. The Master Plan also calls for a 1,300 space underground parking garage under the new expanded lawn (Seattle Center, 2008).

The Uptown Urban Design Framework, adopted by the City in 2016, is a planning document that defines a vision for the Uptown Neighborhood and identifies actions necessary to implement that vision. The Uptown Urban Design Framework is consistent with the Seattle Center Century 21 Master Plan in relation to Memorial Stadium, calling for redevelopment that would "replace memorial stadium [sic] with a new open stadium abutting 5th Avenue," with:

1. An additional 4 acres of publicly accessible open space adjacent to the great Lawn on the Seattle Center Campus

2. Creation of 1,300 subterranean parking spaces to replace the Mercer Garage, making that site a key redevelopment opportunity in the Mercer/Roy Corridor
3. Creation of an east/west bike facility along August Wilson Way that is compatible with the Center's heavy pedestrian traffic and festival use.
4. Improved neighborhood connection on the northeast corner (City of Seattle, 2016c).

In September 2016, the Seattle Center Foundation held a workshop titled *Seattle Center: What's Next* and documented the workshop in a report (Seattle Center Foundation, 2016). The report acknowledges the need for a new high school and stadium, discussing the Memorial Stadium property and the KCTS site as potential locations for the new high school. The report discusses the desire for "a publicly accessible stadium that was better integrated, visually and programmatically, into the Seattle Center campus" (Seattle Center Foundation, 2016). The report lists "Establish common ground between City and SPS" as a top priority action to "help propel Seattle Center forward" (Seattle Center Foundation, 2016).

The Uptown Neighborhood was rezoned in 2017, enacted in SMC Chapter 23.48. Features of the rezone include "new street-level development standards that promote pedestrian activity and additional height to encourage a mix of uses, including residential, to generate more activity in this area" (City of Seattle, 2017b).

3.4 Plants and Environmentally Critical Areas

All SPS schools are located in urban areas within the City of Seattle. However, natural resources can be located on or near school sites. These natural resources include trees and other vegetation and Environmentally Critical Areas (ECAs), such as steep slopes and wetlands.

3.4.1 Trees

Due to increased urbanization of Seattle over the past few decades, the City's tree canopy had declined to approximately 18 percent tree canopy cover in 2007 (City of Seattle, 2013). In an effort to preserve and increase tree canopy within the city, the City implements an Urban Forest Stewardship Plan and tree protection regulations and ordinances. The City's Urban Forest Stewardship Plan includes a goal to expand tree canopy cover to 30 percent by 2037, and includes priority actions such as preserving and maintaining existing trees and planting new trees (City of Seattle, 2013). Although the Plan includes actions for developing community service opportunities with schools for urban forest stewardship projects, there are no specific actions assigned to SPS in the Plan's Action Agenda (City of Seattle, 2013) or the 2016 Work Plan (City of Seattle, 2016b).

Trees in the City are legally protected under various regulations, including the Tree Protection Ordinance (SMC 25.11), and the ECA code (SMC 25.09).

Under the Tree Protection Ordinance, tree removal or topping is prohibited, unless it is approved under the building and grading permit, for trees 6 inches or greater in diameter (measured 4.5 feet above the ground) on undeveloped lots, exceptional trees on undeveloped lots, and exceptional trees on lots in Lowrise, Midrise and Commercial zones or on lots 5,000 square feet or greater in a Single-family or Residential Small Lot zone. Exceptional trees, defined as a tree or group of trees that constitutes an

important community resource because of its unique historical, ecological, or aesthetic value, are specifically protected.

Under the ECA code (SMC 25.09), trees and vegetation cannot be removed from landslide-prone critical areas; steep slope erosion hazard areas and their buffers; wetlands or wetland buffers; or fish and wildlife habitat conservation areas, such as riparian corridors, unless there is a Tree Removal and Vegetation Restoration approval or an issued building permit (SDCI, 2018a).

3.4.2 Environmentally Critical Areas

Environmentally Critical Areas (ECAs) are areas that provide critical environmental function or that represent particular challenges for development due to geologic or other natural conditions. ECAs include geologic hazard areas, flood-prone areas, wetlands, Fish and Wildlife Habitat Conservation Areas (FWHCAs), and abandoned landfills (SMC 25.09.012). The City of Seattle regulates ECAs through SMC Chapter 25.09. The City provides specific regulations for each ECA, which include protections for trees and vegetation (see Section 3.4.1), water quality, development setbacks around sensitive areas, and mandatory construction best management practices (BMPs) to prevent landslides and ensure building stability. The intent behind ECA regulations is to “promote safe, stable, and compatible development that avoids adverse environmental impacts and potential harm” on the adjacent properties, the surrounding neighborhood, the drainage basin, and the site itself (SMC 25.09). The City of Seattle regulates the following ECAs, which could be located on or adjacent to school properties:

Geologic Hazard Areas

Steep Slopes (40 percent average) – slopes with an incline of 40 percent or more within a vertical elevation change of at least 10 feet.

Liquefaction Prone Areas – sites with loose, saturated soil that lose the strength needed to support a building during earthquakes.

Peat Settlement Prone Areas – sites containing peat and organic soils that may settle when the area is developed or the water table is lowered.

Fish and Wildlife Habitat Conservation Areas

Wildlife Habitat – areas designated by Washington State Department of Fish and Wildlife (WDFW) as priority habitats and species areas, areas designated by the Seattle Department of Construction and Inspections (SDCI) Director as habitat for species of local importance, and corridors connecting priority habitats and species areas or habitat areas for species of local importance, when certain criteria are met.

Riparian Corridors – the riparian watercourse and the riparian management area. The riparian watercourse is a watercourse of Type F, Np, and Ns waters defined in WAC 222-16-030 and 222-16-031 that have fish or wildlife habitat. The riparian management area is the area within 100 feet of the riparian watercourse measured horizontally landward from the ordinary high water mark of the watercourse as surveyed in the field, or from the top of the bank if the ordinary high water mark cannot be determined.

Flood-Prone Areas – areas that would likely be covered with or carry water as a result of a 100-year flood event, or that would have a one percent or greater chance of being covered with or of carrying water in any given year based on current circumstances or maximum development permitted under existing zoning.

Wetlands – swamps, marshes, bogs, and similar areas; and those wetlands intentionally created from nonwetland or former wetland areas to mitigate conversion of wetlands.

Table 3-4.1 describes the ECAs at potential BEX V project sites. Potential BEX V project sites not listed in the table do not have mapped ECAs. Other schools not listed in the table could be selected for BEX V projects.

Table 3.4-1. Mapped ECAs at potential BEX V Project Sites

School Facility	Mapped ECA(s)
Elementary Schools	
Alki	Steep slopes (40% average) Liquefaction prone area
Frantz Coe	None
John Hay	None
John Muir	Steep slopes (40% average) Liquefaction prone area
John Rogers	Steep slopes (40% average) Liquefaction prone area Flood-prone area Riparian corridor Wetland
Kimball	Steep slopes (40% average)
Lafayette	None
McGilvra	None
Monroe (Salmon Bay K-8)	None
Montlake	Steep slopes (40% average)
North Beach	Steep slopes (40% average) Wildlife habitat (Great Blue Heron breeding area) – North Beach Elementary is within the Great Blue Heron Management Area, and a small portion of the southwest corner of the school is within the Great Blue Heron Management Core Zone.
Northgate	Steep slopes (40% average)
Olympic View	Steep slopes (40% average)
Roxhill	None
Sacajawea	Steep slopes (40% average) Wetland

Table 3.4-1. Mapped ECAs at potential BEX V Project Sites (continued)

School Facility	Mapped ECA(s)
Elementary Schools (cont.)	
Viewlands	None
Wedgwood	None
West Seattle	Steep slopes (40% average)
West Woodland	Steep slopes (40% average)
Middle Schools	
Madison	Steep slopes (40% average)
Mercer	None
Washington	None
Whitman	None
High Schools	
Ballard	Steep slopes (40% average)
Garfield	None
Ingraham	Steep slopes (40% average)
Lincoln	None
Nathan Hale	Riparian corridor Wetlands Liquefaction area Flood prone area
Rainier Beach	Steep slopes (40% average) Liquefaction prone area Riparian corridor Wetlands Peat settlement prone area
Roosevelt	Steep slopes (40% average)
Other Sites	
Memorial Stadium	Steep slopes (40% average)
Old Van Asselt (interim site)	Steep slopes (40% average)

3.5 Historic and Cultural Resources

Construction dates for buildings owned and maintained by SPS range from as early as 1891 (B.F. Day and Seward) to buildings currently under construction. Many of the District's pre-1932 buildings follow formulaic plans and architectural styles popular at the time of construction. Identified styles include American Renaissance, Art Deco, Brutalism, Colonial Revival, Colonial Revival (brick), Georgian, Gothic, International, Jacobean, Modern, Pavilion, Queen Anne, and Tudor (Erigero, 1989). Some of these styles are only represented today by one or two remaining buildings: Art Deco (Bagley Elementary School), Romanesque (West Seattle High School), and Gothic (Madison Middle School).

Little construction occurred during the 1930s as district finances were minimal (Erigero, 1989). Building resumed in the 1940s and then boomed from 1950 to 1970, during which time over 41 new buildings were constructed. New educational theories such as the "open-concept" plan also influenced school design during the 1950s through 1970s.

Former SPS architects include James Stephen (1903-1909), Edgar Blair (1909-1918), and Floyd A. Naramore (1918-1932). Architects employed by SPS after 1932 varied, resulting in diverse plans and architectural styles. Notable architects hired by the District during this time include Naramore, Bain, Brady, and Johanson (NBBJ) who designed Ingraham, Chief Sealth International, and Boren schools, and Paul Thiry whose work included Northgate and Cedar Park. Both Thiry and NBBJ are considered to have made important contributions to architecture (Woodbridge and Montgomery, 1980).

Table 3.5-1 describes the historic characteristics of potential BEX V project sites. Other schools not listed in the table could be selected for BEX V projects. The status of each school with regard to its potential listing in a local, state, or national historic register is included. Several of the schools are designated Seattle landmarks and one is listed on the National Register of Historic Places (NRHP).

Subsurface cultural (archaeological) resources may be present at the project sites proposed under the BEX V Program. Subsurface cultural resources, if present, are protected under local regulations and state law. An archaeological assessment may be required to identify the archaeological potential of a project location. Typical mitigation measures include relocation of the project to avoid the archaeological resource, providing interpretation of the resource, and archaeological investigation, or excavation and recovery of artifacts. See Chapter 4, Impacts for more information regarding potential mitigation measures. Archaeological resources are subject to state laws administered by the Department of Archaeology and Historic Preservation; excavation within the boundaries of archaeological sites protected under RCW 27.53 requires an Archaeological Excavation Permit (Table 3.5-1).

Table 3.5-1. Historic Information about Potential BEX V Project Sites

School Facility / Property	Date Built ¹	Address	Architect / Architectural Firm	Additions	Historic Register Status
Elementary Schools					
Alki	1954	3010 59 th Ave SW	Theo Damm	1967 (Theo Damm)	Unevaluated for NRHP or Seattle Landmark
Frantz Coe	2002	2433 6 th Ave W	Mahlum Architects	--	N/A (<25 years old)
John Hay	1989	201 Garfield St	Cardwell-Thomas & Associates	--	Unevaluated for NRHP or Seattle Landmark
John Muir	1971	3501 S Horton St	Leon Bridges & Edward Burke	1991 (Streeter/Dermanis & Associates)	Determined Not Eligible for NRHP, unevaluated for Seattle Landmark
John Rogers	1956	4030 NE 109 th St	Theo Damm	---	Unevaluated for NRHP or Seattle Landmark
Kimball	1971	3200 23 rd Ave S	Durham, Anderson & Freed	1998 (Kubota Kato)	Unevaluated for NRHP or Seattle Landmark
Lafayette	1950	2645 California Ave SW	John Graham & Co.	1953 (John Graham & Co.)	Unevaluated for NRHP or Seattle Landmark
McGillvra	1913	1617 38 th Ave E	Edgar Blair	1940 (Naramore & Brady), 1972 (Huggard & Assoc.); New addition currently under construction (Integrus Architecture)	Designated Seattle Landmark, Unevaluated for NRHP
Monroe (Salmon Bay K-8)	1930	1810 NW 65 th St	Floyd Naramore	--	Determined Eligible for NRHP, unevaluated for Seattle Landmark
Montlake	1924	2409 22 nd Ave E	Floyd Naramore	--	Designated Seattle Landmark, Unevaluated for NRHP
North Beach	1958	9018 24 th Ave NW	John Graham & Co.	--	Unevaluated for NRHP or Seattle Landmark

Table 3.5-1. Historic Information about Potential BEX V Project Sites (continued)

School Facility / Property	Date Built ¹	Address	Architect / Architectural Firm	Additions	Historic Register Status
Elementary Schools (cont.)					
Northgate	1956	11725 1 st Ave NE	Paul Thiry	--	Unevaluated for NRHP or Seattle Landmark
Olympic View	1989	504 NE 95 th Street	Meng Associates	-	Unevaluated for NRHP or Seattle Landmark
Roxhill	1958	9430 30 th Ave SW	John Graham & Co.	--	Unevaluated for NRHP or Seattle Landmark
Sacajawea	1959	9501 20 th Ave NE	Waldron & Dietz	--	Determined Not Eligible for NRHP, unevaluated for Seattle Landmark
Viewlands	1954	10525 3 rd Ave NW	Mallis & DeHart	--	Unevaluated for NRHP or Seattle Landmark
Wedgwood	1955	2720 NE 85 th St	John Graham & Co.	-	Unevaluated for NRHP or Seattle Landmark
West Seattle	1988	6760 34 th Ave SW	Northwest Architectural Co.	-	Unevaluated for NRHP or Seattle Landmark
West Woodland	1991	5601 4 th Ave NW	Olson Sundberg Architects	--	Unevaluated for Seattle Landmark; too recent for NRHP
Middle Schools					
Madison	1928	3429 45 th Ave SW	Floyd A. Naramore	1931 (Naramore), 1972 (Grant, Copeland, Chervenak & Assoc.)	Determined Eligible for NRHP; unevaluated for Seattle Landmark
Mercer	1957	1600 Columbian Way S	John W. Maloney	--	Determined Eligible for NRHP, unevaluated for Seattle Landmark
Washington	1963	2101 S Jackson St	John Graham & Co.	--	Unevaluated for NRHP or Seattle Landmark

Table 3.5-1. Historic Information about Potential BEX V Project Sites (continued)

School Facility / Property	Date Built¹	Address	Architect / Architectural Firm	Additions	Historic Register Status
Middle Schools (cont.)					
Whitman	1959	9201 15 th Ave NW	Mallis & DeHart	--	Unevaluated for NRHP or Seattle Landmark
High Schools					
Ballard	1999	1418 NW 65 th St	Mahlum & Nordfors	-	N/A (<25 years old)
Garfield	1923	400 23 rd Ave	Floyd Naramore	1929 (Naramore); 1962 (Bassetti & Morse); 2008 (BLRB Architects)	Designated Seattle Landmark, Determined Eligible for NRHP
Ingraham	1959	1819 N 135 th St	Naramore, Bain, Brady & Johanson	2004 (Rolluda Architects); 2012 (Integrus Architecture)	Designated Seattle Landmark, unevaluated for NRHP
Lincoln	1907	4400 Interlake Avenue N	James Stephens	1914 (Edgar Blair); 1930 (Floyd A. Naramore); 1959 (NBBJ)	Designated Seattle Landmark, listed on NRHP
Nathan Hale	1963	10750 30 th Ave NE	Mallis & DeHart	1972 (DeHart, Lands and Hall); 2012 (Mahlum Architects)	Nominated and Denied Landmark Status in 2008, unevaluated for NRHP
Rainier Beach	1960	8815 Seward Park Ave S	John W. Maloney	1998 (Streeter & Associates Architects)	Unevaluated for NRHP or Seattle Landmark
Roosevelt	1922	1410 NE 66 th St	Floyd Naramore	1928 (Naramore); 1960 (Ralph E. Decker); 1965 (Decker); 2006 (Bassetti Architects)	Designated Seattle Landmark, unevaluated for NRHP
Other Sites					
Memorial Stadium	1947	369 Republican St	George W. Stoddard	1965 office building (architect unknown)	Determined Eligible for NRHP; Unevaluated for Seattle Landmark
Old Van Asselt (interim site)	1950	7201 Beacon Ave S	Jones and Bindon	--	Unevaluated for NRHP or Seattle Landmark

¹ From Thompson and Marr, 2002 and King County Department of Assessments

3.5.1 Applicable Regulations

The BEX V Program would be subject to historic and cultural resources protections under local regulations and state law (Table 3.5-2). SPS follows the State Environmental Policy Act (SEPA) (Chapter 43.21C of the Revised Code of Washington (RCW)), the state SEPA rules (Chapter 197-11 of the Washington Administrative Code), and the School Board's Policy on State Environmental Policy Act Compliance (Policy No. 6890).

SPS projects requiring a Master Use Permit (MUP) are subject to the Seattle SEPA rules regarding Historic Preservation (SMC 25.05.675) and the Landmarks Preservation Ordinance (SMC 25.12). For projects that require a MUP and are proposing demolition or substantial modifications of a building over 50 years old, referral to the Landmarks Preservation Board is required (SMC 25.05.675H). For projects involving structures which appear to meet the criteria for designation, but have not yet been evaluated, any interested person may refer the structure to the Landmarks Preservation Board for consideration. If designated as a landmark, a Controls and Incentives Agreement would be negotiated between the property owner and the Landmarks Preservation Board. If a property is referred and denied for landmark designation, the project cannot be conditioned or denied on the basis of historic preservation. Proposals for new construction adjacent to designated landmarks are referred to the City's Historic Preservation Officer for an assessment of any adverse impacts and comments on possible mitigation measures (SMC 25.05.675).

Table 3.5-2. Applicable Historic and Cultural Resources Regulations and Laws

Jurisdiction Level	Name	Reference
Local	Seattle Public Schools SEPA Policy	Policy No. 6890
Local	Seattle SEPA rules -- Historic Preservation (if a MUP is needed)	SMC 25.05.675
Local	Seattle Landmarks Preservation Ordinance (may apply if a MUP is needed)	SMC 25.12
State	Archaeological Sites and Resources Act	RCW 27.53
State	Washington Heritage Register	RCW 7.34.200 & 25-12 WAC
State	Indian Graves and Records Act	RCW 27.44
State	Human Remains	RCW 68.50
State	Abandoned and Historic Cemeteries and Historic Graves	RCW 68.60

3.6 Recreation

SPS schools feature a variety of recreational features on site. Elementary schools typically have playground areas, hardscape play areas, and playfields, while middle and high schools can feature sports fields and, in some cases, running tracks. While these facilities are primarily used by the schools, many are available to the public outside of school hours. Many SPS schools are located near or directly adjacent to Seattle Parks and Recreation (Parks) properties or facilities. SPS use of Parks properties and Parks use of SPS properties are outlined in a Joint Use Agreement, described below in Section 3.6.1.

3.6.1 Recreation at Potential Project Sites

Table 3.6-1 lists potential BEX V project sites and adjacent parks that could be impacted by construction. Other schools not listed in the table could be selected for BEX V projects.

Table 3.6-1. Recreation Adjacent to Potential Project Sites

School Facility	Adjacent Park Facility	Joint Use Agreement
Elementary Schools		
Alki	Alki Playground and Whale Tail Park	Yes (Alki Playground)
Frantz Coe	Coe Play Park	Yes
John Hay	None	N/A
John Muir	York Playground	No
John Rogers	None	N/A
Kimball	None	N/A
Lafayette	Hiawatha	Yes
McGilvra	None	N/A
Monroe (Salmon Bay K-8)	None	N/A
Montlake	None	N/A
North Beach	None	N/A
Northgate	None	N/A
Olympic View	None	N/A
Roxhill	Roxhill Park	Yes
Sacajawea	Sacajawea Park	Yes
Viewlands	Carkeek	No
Wedgwood	None	N/A
West Seattle	Walt Hundley Playfield	No
West Woodland	None	N/A
Middle Schools		
Madison	None	N/A
Mercer	Jefferson	Yes
Old Van Asselt	Van Asselt Playground	Yes
Washington	Judkins Park and Playfield; Central Park Trail	Yes (Judkins Park)
Whitman	Soundview Playfield	Yes
High Schools		
Ballard	Ballard Pool Ballard Tennis Courts	Yes

Table 3.6-1. Recreation Adjacent to Potential Project Sites (continued)

School Facility	Adjacent Park Facility	Joint Use Agreement
High Schools (cont.)		
Garfield	Garfield Community Center	Yes
Ingraham	Helene Madison Pool	Yes
Lincoln	Wallingford Playfield	Yes
Nathan Hale	Meadowbrook Community Center, Playfield and Pool Nathan Hale Playfield	Yes (Meadowbrook)
Rainier Beach	Beer Sheva Park Rainier Beach Urban Farm and Wetland Rainier Beach Playfield	Yes (Rainier Beach Playfield)
Roosevelt	None	N/A
Other Site		
Memorial Stadium	None (note: Memorial Stadium is adjacent to Seattle Center, which is not operated by Seattle Parks and Recreation)	N/A

Source: SPS and Parks, 2016

3.6.2 Joint Use Agreement

Over one-third of SPS's schools adjoin Parks land or facilities. SPS and Parks have cooperated since the 1920s in planning and jointly using these separately owned facilities and grounds to benefit students and community members. SPS and Parks first entered into a Joint Use Agreement (Agreement) in May 1995. The Agreement sets forth guidelines for joint use of recreational facilities. Another stated purpose of the Agreement is to establish procedures for cooperation between the agencies and encouraging joint ventures. SPS and Parks currently operate under a three-year Joint Use Agreement adopted in 2016 and running through 2019 (SPS and Parks, 2016).

Section II of the Agreement establishes several goals for Parks and SPS, including the effective and efficient management of facilities and joint use of recreational facilities for the benefit of Seattle's youth and citizens. Under the Agreement, all SPS schools are available for scheduling, but SPS programs have first priority. Additionally, all Parks athletic fields are available for SPS scheduling (SPS and Parks, 2016).

3.6.3 Joint Athletic Facilities Development Program

Following creation of the Agreement, SPS and Parks formed a Joint Athletic Facilities Development Program (JAFDP) in 1997. The JAFDP identified and prioritized athletic facility projects that would "increase the amount of capacity and improve the quality of play on city fields for youth and adults" (JAFDP, 2002). The 2002 update aimed to increase scheduling capacity and conduct a holistic examination of the field system. Parks and SPS are partners in this effort jointly providing facilities and programming to meet the growing demand for field time and facilities. The 2002 JAFDP resolution

discusses the need to more strategically schedule field use and to consider the potential light impacts to residences and habitat areas neighboring fields.

3.6.4 Seattle Ordinance No. 118477

Seattle Ordinance No. 118477, passed on 1997, discourages conversion of park lands within the City of Seattle to non-park usage. The ordinance states, “All lands and facilities held now or in the future by The City of Seattle for park and recreation purposes... shall be designated for such use; and no such land or facility shall be sold, transferred, or changed from park use to another usage, unless the City shall first hold a public hearing regarding the necessity of such a transaction and then enact an ordinance finding that the transaction is necessary because there is no reasonable and practical alternative...”

3.7 Aesthetics, Light, and Glare

Most SPS schools are located in residential areas, with some adjacent to neighborhood commercial areas. The main source of light in residential neighborhoods is usually street lighting.

3.7.1 Scenic Views

Through the City of Seattle SEPA regulations, public views of Mount Rainier, the Cascade and Olympic mountain ranges, Puget Sound, Lake Washington, Lake Union, the Ship Canal, and the Downtown Skyline are protected (SMC 25.05.675.P). The following schools are identified in SMC 25.05.657, Attachment A as having protected views:

1. Ballard High School
2. Briarcliff Elementary School²
3. Broadview Elementary School²
4. Cleveland High School Playfield
5. Emerson Elementary School
6. Hughes Elementary School
7. Magnolia Elementary School Playground

No changes to the schools listed in Attachment A are currently proposed under any of the BEX V alternatives. The City also protects view corridors (SMC 23.49.024), scenic routes (Seattle ordinances #97025 and #114057), and views of landmarks (SMC 25.05.675.H). The Land Use Code provides for the preservation of specified view corridors through setback requirements. Impacts to views of landmarks are described in Section 4.5.

3.7.2 Height, Bulk, and Scale

The City of Seattle has adopted SEPA policies and regulations for height, bulk, and scale (SMC 25.05.675.G). Regulations related to height, bulk, and scale are also codified within the City’s Land Use

² Briarcliff Elementary School and Broadview Elementary School have been closed and sold.

Code (Chapter 23). The citywide design guidelines, and any Council-approved neighborhood design guidelines, are intended to mitigate the same adverse height, bulk, and scale impacts addressed in these policies (SMC 25.05.675(g)(c)). As stated in Section 3.3, Land Use, schools are typically located in residential zones and therefore often cannot meet code requirements for height, bulk, and other provisions. Chapter 23.51B provides development standards for public schools in single family and multifamily zones. This includes specifications for lot coverage, setbacks, and height for new schools, reconstructed schools, and additions. If those standards cannot be met, the Seattle Land Use Code (SMC Chapter 23.79) includes a procedure by which departures from the required development standards of the code can be granted for public school structures as described in Section 3.3.2.

3.7.3 Light and Glare

Schools in single-family and multi-family residential areas are subject to standards for light and glare under SMC 23.45.570.I. This includes the following:

1. Exterior lighting for institutions shall be shielded or directed away from principal structures on adjacent residential lots.
2. Poles for freestanding exterior lighting are permitted up to a maximum height of 30 feet. Light poles for illumination of athletic fields on new and existing public school sites will be allowed to exceed 30 feet pursuant to Chapter 23.51B, Public schools.

SMC 23.51B.002.D.6 states that poles for illumination of athletic fields on public school sites may be allowed to exceed the maximum permitted height, up to a height of 100 feet, if the Director determines that the additional height is necessary to ensure adequate illumination, and that impacts from light and glare are minimized to the greatest extent practicable. The applicant must demonstrate that the additional height contributes to a reduction in impacts from light and glare. Current City of Seattle guidelines recommend that athletic field spill light not exceed 1.1 foot-candles at residential property lines.

Light trespass is when spill light extends beyond the property line of the owner of a light source, and onto or above another owner's property. Glare is the sensation produced by luminance within the visual field that is sufficiently greater than the luminance to which the eyes are adapted, causing annoyance, discomfort, or loss in visual performance and visibility. All SPS schools are located in urbanized areas of Seattle and are primarily surrounded by residential and commercial land uses. Daytime glare is mostly associated with reflected sunlight from building doors and windows and vehicles. Current sources of nighttime light and glare include pole-mounted streetlights, lighting from vehicle headlights, illuminated buildings and residences, and exterior lighting associated with buildings and residences (parking lots, building signs, entryways for single-family homes, etc.). Ambient nighttime light and glare levels typically depend on surrounding land uses. Commercial areas and roadways usually have the most light and glare, while open spaces and parks often have the lowest levels. The main source of light in residential neighborhoods is usually street lighting.

3.8 Noise

Noise is often defined as an unwanted or disturbing sound. For sound to be considered noise, it must interfere with normal activities, such as sleeping or conversation, or disrupt a person's overall quality of life (EPA, 2016). Sound is created through the vibration of sound pressure waves in the air. These waves are measured to determine the intensity of the sound, which is described in a logarithmic unit called decibels (dB). Decibels measure the intensity of the sound against a standard reference level. Because decibels are logarithmic, an increase in 10 dB sounds twice as loud to the observer.

Whether a sound is considered noise often depends on the land use in which it occurs. Therefore, different standards are set for noise that occurs in residential areas versus noisier land uses such as industrial areas.

The City of Seattle regulates noise via the Seattle Noise Ordinance (SMC Chapter 25.08). The ordinance sets limits for exterior sound levels based on land use, establishes quiet hours, and prohibits construction and maintenance activities during certain hours of the day.

Table 3-8.1 lists the exterior sound level limits established by SMC 25.08.410 for different land uses within the City of Seattle. These limits are reduced by 10 dB(A) where the receiving property lies within a residential district between 10 p.m. and 7 a.m. on weekdays and 10 p.m. and 9 a.m. on weekends and legal holidays (SMC 25.08.420).

Table 3-8.1. City of Seattle Exterior Sound Limits (SMC 25.08.410)

District of Sound Source	District of Receiving Property		
	Residential (dB(A)) (Leq ¹)	Commercial (dB(A)) (Leq ¹)	Industrial (dB(A)) (Leq ¹)
Residential	55	57	60
Commercial	57	60	65
Industrial	60	65	70

¹ Leq = method of describing sound levels that vary over time. The single decibel value takes into account the total sound energy over a period of time.

Sounds from school activities typically include: drop-off and pick-up of students, recess and physical education activities outside, bells being rung throughout the day, and athletic activities after school. Noise levels near a school may also be affected by changes to traffic patterns. Noise levels associated with these activities are generally within the exterior sound limits or fall within the exemptions for daytime hours (e.g., bells not operating for more than 5 minutes in any one hour) (SMC 25.08.540).

The code further regulates noises considered "unreasonable" including "loud and raucous, and frequent repetitive or continuous sounds made by the amplified or unamplified human voice" between the hours of 10:00 p.m. and 7:00 a.m. During these hours, maximum allowable noise from one property to another within residential districts is reduced to 45 Leq (dBA). For noise sources that are not continuous, higher levels are allowed for short durations. The code specifies that shorter duration noises are subject to the following limits:

1. Up to 5 dBA above the continuous limit for up to 15 minutes per hour
2. Up to 10 dBA above the continuous limit for up to 5 minutes per hour
3. Up to 15 dBA above the continuous limit for up to 1.5 minutes per hour.

The level at which project noise creates an impact is dependent upon the existing noise environment and the type of land use that is affected. Future noise exposure is the combination of existing noise exposure and the additional noise exposure caused by a project. The majority of SPS schools are located within residential areas. Residential areas are considered a noise-sensitive land use, but experience various common noise sources such as residential traffic, children playing, lawn and power equipment, and barking dogs.

3.9 Air Quality

Air quality in the Puget Sound region is regulated and enforced by federal, state, and local agencies—the U.S. Environmental Protection Agency (U.S. EPA), Washington State Department of Ecology (Ecology), and the Puget Sound Clean Air Agency (PSCAA).

The 1970 Clean Air Act (last amended in 1990) requires that regional planning and air pollution control agencies prepare a regional air quality plan to outline the measures by which both stationary and mobile sources of pollutants will be controlled to achieve all standards by the deadlines specified in the Act. The Clean Air Act established National Ambient Air Quality Standards (NAAQS) to protect the public health and welfare from air pollution. Areas of the U.S. that do not meet the NAAQS for any pollutant are designated by the EPA as *nonattainment areas*. Areas that were once designated nonattainment but are now achieving the NAAQS are termed *maintenance areas*. Areas that have air pollution levels below the NAAQS are termed *attainment areas*. The Puget Sound region is currently classified as a maintenance area for carbon monoxide.

Ecology maintains an air quality program with a goal of safeguarding public health and the environment by preventing and reducing air pollution. Washington's main sources of air pollution are motor vehicles, outdoor burning, and wood smoke. Ecology strives to improve air quality throughout the state by overseeing the development of and conformity with the State Implementation Plan, which is the state's plan for meeting and maintaining NAAQS.

The PSCAA has local authority for setting regulations and permitting of stationary air pollutant sources and construction emissions. PSCAA also maintains and operates a network of ambient air quality monitoring stations throughout its jurisdiction.

Diesel fumes from idling buses are known to present a health hazard to students and nearby residents (EPA Region 8, 2017). Adopting anti-idling policies has been demonstrated to reduce those impacts (Ryan et al., 2013). SPS has an anti-idling policy for buses.

3.10 Energy and Natural Resources

In December 2011, the School Board adopted a policy for capital levy planning that states that the Board strives to reduce district operating costs and carbon emissions by using designs that create conservation opportunities and minimize negative impacts on the environment, while considering the life cycle costs of the projects.

Under Executive Order 05-01, public school construction projects receiving state assistance must be built to the Washington Sustainable Schools Protocol, or to LEED silver standards. The program requires a 10 percent reduction in energy use beyond what is required by the Washington State Energy Code (RCW 39.35D.040).

In 2006, the School Board adopted a Natural Resource Conservation Policy and Natural Resource Conservation Procedures. The goal of the Natural Resources Conservation Policy is to create and maintain sustainable, healthy school environments through a long-term resource management plan. Seattle Public Schools will model environmental stewardship by instituting a resource conservation management plan, to:

1. Reduce the use of energy, water and other natural resources and encourage recycling
2. Educate students, teachers and staff about the importance of conserving natural resources
3. Lessen environmental damage attributable to natural resources consumption.

Chapter 4 Projects: Impacts and Mitigation

4.1 Introduction

The alternatives discussed in Chapter 2 each include a package of different project types that would be implemented at sites around the District. These project types include replacement schools, modernizations, additions, new schools at new sites, addition of portables, systems repair and replacement projects, and athletic field lighting and improvements. This chapter analyzes the impacts that can result from each project type at a programmatic level and identifies potential mitigation measures. The impacts of the alternatives are identified in Chapter 5.

For all of the environmental resources in this chapter, information is provided at a planning level of detail consistent with a programmatic analysis of potential effects. The analysis identifies the types and range of impacts that could be expected from implementation of the BEX V program. SPS will conduct appropriate supplemental environmental review when sufficient project details are available.

4.2 Transportation

The following sections describe the types of transportation and parking impacts that would be expected for each of the types of project included in the BEX V program.

4.2.1 Construction

4.2.1.1 Replacement Schools

For school replacement projects, existing site features (such as portables, selected site structures, parking lots, athletic facilities) would be demolished and materials removed from the sites. There would also be excavation and grading activities (cut and fill) at the sites. Projects would require excavation and export of soil, or import of soil. These activities would generate truck trips to and from the sites, often on neighborhood streets accessing the school site. Typically, trucks can carry between 15 and 20 cubic yards of soil each; trucks hauling demolition debris can often carry more (40 to 100 cubic yards) depending on the type, weight, and volume of the materials. The number and frequency of truck trips would depend on amount of earthwork or demolition required and duration of the efforts.

Construction employees would also generate temporary traffic and parking demand at the sites. For projects that would replace existing buildings with new ones, SPS typically relocates students to an existing interim site during construction, so there would be no conflict between traffic and parking generated by construction and school activities.

For many construction efforts, site access changes, and site frontage improvements could require temporary closures of sidewalks, bike paths, on-street parking, and/or traffic lanes. In some instances, construction activities may require temporary or permanent relocations of Metro bus stops. In each case, SPS would work closely with SDOT and Metro to ensure that temporary closures are paired with alternative routes and that any permanent changes are acceptable to both agencies.

4.2.1.2 Modernizations and Additions

Construction of school additions and modernizations would have similar types of impacts as school replacement projects, but the level of transportation impact—including trucks generated by excavation and grading, trucks generated for hauling of materials and equipment, construction employee trips and parking—would likely be lower for these types of projects. However, unlike school replacement projects, it is possible that construction activities could occur while the existing school buildings are occupied and in session. In this case, site access and site frontage use may require temporary closures of sidewalks, bike paths, on-street parking, and/or traffic lanes. Circulation within and around the site may be affected and may require management measures. In addition, construction employee parking would need to be considered in conjunction with school-generated parking demand, and could require use of adjacent on-street parking, such as along site frontages, or other on- or off-site locations. Temporary portable classrooms could be required to house students during construction. The portables could be located on existing parking lots, temporarily reducing parking supply at those schools and increasing demand for nearby on-street parking. SPS works with SDOT to develop and implement construction transportation management plans to minimize or prevent construction-generated traffic from mixing with school-generated traffic.

4.2.1.3 New Schools

Construction of new schools would have similar types of impacts as school replacement projects (Section 4.2.1.1). The levels of transportation impacts—including trucks generated by excavation and grading, trucks generated for hauling of materials and equipment, construction employee trips and parking—would also be expected to be similar to those of replacement school projects, or potentially could be greater depending upon the size of the building.

4.2.1.4 Addition of Portables

Addition of portables would generate only the truck traffic needed to transport the portable to the site and to provide necessary utility connections. It otherwise would result in no construction impacts. Placement of portables typically occurs during summer months when students are not at the site.

4.2.1.5 Athletic Field Improvements and Lighting

Installation of exterior athletic field lighting typically results in minimal construction transportation impacts. Materials (poles and lighting fixtures) would be transported to the site, and a small amount of excavation would typically be needed to accommodate light pole foundations. Construction employees would also generate temporary traffic and parking demand at the sites. Temporary closures of adjacent walkways, bikeways, traffic lanes, and parking lanes could be needed adjacent to construction activities or to accommodate utility connections, but the construction site and impacts would be more localized and limited in duration compared to that for new building construction or a major building renovation. Installation of athletic field lighting typically occurs during summer months when students are not at the site.

4.2.1.6 System Repair and Replacement Projects

Construction impacts of system repair and replacement projects would be similar to the impacts of modernizations as described in Section 4.2.1.2.

4.2.2 Operation

4.2.2.1 Replacement Schools

Many of the replacement projects included in the BEX V Program would result in increased student enrollment capacity. This, in turn, could be expected to increase traffic and parking demand generated by each school.

Roadways

The school replacement projects are not generally expected to result in changes to the overall roadway network or intersections. However, some of the projects could include frontage improvements that would result in landscape and other enhancements, revisions to site access points on the adjacent streets, or installation of sidewalks or pedestrian walkways, where required by SDOT. These projects would be subject to individual project-level review of impacts to the transportation system at the time of design and permitting.

Traffic Volumes

Based on the range of published ITE rates presented previously in Table 3.2-2 (Section 3.2.2) and the observed rates from other Seattle Schools, for each capacity increase of 100 elementary school students, there is potential to result in traffic increases at each site by approximately 60 to 90 morning peak hour trips, 35 to 70 afternoon peak hour trips, and 10 to 20 commute PM peak hour trips. For each capacity increase of 100 middle school students, there is potential to result in traffic increases at each site by approximately 50 to 70 morning peak hour trips, 20 to 35 afternoon peak hour trips, and 10 to 20 commute PM peak hour trips. Note, these reflect the totals of both inbound and outbound school-generated trips. Since replacement projects would occur at existing school sites, the additional trips would reflect increases to traffic already being generated by the school.

For projects that would result in increases in student enrollment capacity, project-level review of site access and local area transportation impacts would be based either on the ITE rates, rates derived for similar schools, or rates derived specifically for those schools. Changes in school-generated traffic can also be influenced by changes to on-site parking, nearby on-street parking, or site access conditions. Detailed analysis of these changes would also be included in the project-level review for the projects that consist of such elements.

Traffic Operations

For school replacement projects that would result in increases in student enrollment capacity, project-level review of site access and local area traffic operations would be conducted. Changes to on-site parking, nearby on-street parking, or site access conditions can also influence traffic circulation, operations of site driveways and nearby intersections, and would also be included in project-level analysis when specific projects are selected.

Parking

Detailed parking assessments would be conducted as part of project-level design and permitting for individual projects that could impact parking due to increased enrollment capacity or changes to existing on-site or nearby on-street parking. Similar to the ITE trip generation rates, the parking demand rates presented in Table 3.2-4 (Section 3.2.4), derived from other similar Seattle schools, or derived specifically for the site being reviewed may be appropriate for estimating future demand at some locations or school types, but should be evaluated on a case-by-case basis.

The Seattle Land Use Code (SMC Chapter 23.79) includes a process by which SPS may depart from the zoning requirements for on-site parking at sites located in residentially zoned areas. This departure process is described in Section 3.3.3. Many existing school sites in Seattle were established many years ago and do not (or cannot) meet the current zoning requirements for on-site parking. Additionally, older school buildings along with their sites are often much smaller than those now being built or planned, due to modern educational specification standards, class-size requirements, and accessibility requirements. As a result, in many cases where a school is being renovated or expanded, it may not be possible to meet the underlying zoning requirements for parking or on-site school-bus load/unload without substantially and adversely impacting the educational program, community amenities of the site, or without acquiring additional surrounding property. In these cases, SPS would apply for a departure and comply with the results of the departure process as determined by SDCl.

SPS could consider a parking structure to support new schools or capacity-expansion projects. However, the cost of such structures is often prohibitive (\$12,000 to \$40,000 per stall depending on number of factors) and parking structures may also create personal security issues that would require additional resources (additional technology and/or staffing) to address.

Transit

The school replacement projects are not expected to adversely impact transit service or facilities. Changes in school capacity or enrollment could cause increases in some bus ridership, which can typically be accommodated by existing transit capacity. However, the projects planned for elementary and middle schools would be expected to rely more heavily on yellow school bus transportation. Therefore, changes to public transit ridership for these projects are expected to be very small and no adverse impacts to transit are expected to occur. In locations where existing transit stops are located adjacent to a project site, a minor relocation of bus stops may be required to accommodate operational needs along site frontages. If necessary, SPS would coordinate such changes with Metro and the City of Seattle. SMC Chapter 23.79 includes a process by which SPS may depart from the zoning requirements for on-site school bus load/unload at sites located in residentially zoned areas. This departure process is described in Section 3.3.3. If on-street bus loading is needed, SPS would apply for a departure and comply with the results of the departure process as determined by SDCl.

Non-Motorized Facilities

Changes in school capacity or enrollment could cause increases in pedestrian access trips at and around the school sites. In areas where complete walkways exist, these changes can typically be easily accommodated by existing facilities. However, in areas where the pedestrian network is incomplete,

additional project-level review may identify physical or operational improvements needed to accommodate the added pedestrian trips. Prior to school re-opening, SPS, in coordination with SDOT and other representatives on the Seattle Schools Traffic Safety Committee, would review access, walk routes, and crossing locations to determine if changes or improvements are needed, and then works with partners to implement those changes.

Maintenance, construction, and/or replacement of sidewalks or walkways could be included as part of some of the school replacement projects. These may be required by SDOT when the improvement would include substantial renovation or new construction. Improvements to sidewalks or walkways would be considered a project benefit, and therefore no adverse impacts to non-motorized facilities are expected to occur.

4.2.2.2 Modernizations and Additions

The modernization and addition projects included in the BEX V Program would result in increased student enrollment capacity. This would be expected to increase traffic and parking demand generated by each school. However, it is expected that the increases in capacity and resulting traffic generation would generally be less than what may occur with the replacement school projects.

Roadways

The modernization and addition projects are not generally expected to result in changes to the overall roadway network or intersections. However, similar to school replacement projects, some of the projects could include frontage improvements that would result in landscape and other enhancements, revisions to site access points on the adjacent streets, or installation of sidewalks or pedestrian walkways, where required by SDOT. These projects would be subject to individual project-level review of impacts to the transportation system at the time of design and permitting.

Traffic Volumes

The student enrollment capacity increases that would result from additions and modernizations would be expected to result in increased traffic volumes. For elementary schools, the trips generated per increase of 100 students would be similar to those described for the replacement projects (Section 4.2.2.1).

Traffic Operations

For addition and modernization projects that would result in increases in student enrollment capacity, project-level review of site access and local area traffic operations would be conducted. Changes to on-site parking, nearby on-street parking, or site access conditions can also influence traffic circulation, operations of site driveways and nearby intersections, and would also be included in project-level analysis when specific projects are selected.

Parking

Detailed parking assessments, and potentially departure requests, would be conducted as part of project-level design and permitting for individual projects that could impact parking due to increased

enrollment capacity or changes to existing on-site or nearby on-street parking, similar to that described for replacement schools.

Transit

The addition and modernization projects are not expected to adversely impact transit service or facilities. Changes in school capacity or enrollment could cause increases in some bus ridership, which can typically be accommodated by existing transit capacity. Similar to the replacement school projects, the addition and modernization projects planned for elementary or middle schools would be expected to rely more heavily on yellow school bus transportation. For addition and modernization projects at high schools, increases in public transit demand is likely to result from student enrollment increases because they do not utilize yellow buses for general education transportation. The capacity of public transit to accommodate increases in demand would be evaluated at the project-level as appropriate. SPS would work with King County Metro (Metro) to identify routes, periods, and facilities (e.g., bus stops) that could potentially be affected. Metro continuously monitors shifts in transit demand and makes adjustments to service and schedule to accommodate shifts, as resources allow. Updates to transit schedules and service are typically implemented twice per year, in March and September and are subject to public outreach and King County Council approval.

In locations where existing transit stops are located adjacent to a project site, a minor relocation of bus stops may be required to accommodate operational needs along site frontages. If necessary, SPS would coordinate such changes with Metro and the City of Seattle.

Non-Motorized Facilities

Similar to the replacement school projects, changes in school capacity or enrollment could cause increases in pedestrian access trips at and around the school sites (Section 4.2.2.1).

4.2.2.3 New Schools

The BEX V Program alternatives include up to four new elementary schools (one located in a downtown location that has not yet been identified and for Alternative 3, new schools at three additional sites that have not been identified) and one new high school in the Seattle Center area of downtown. These new schools would be expected to increase traffic and parking demand in the area around each school site.

Roadways

Construction of a new downtown high school is not generally expected to result in changes to the overall roadway network or intersections, other than frontage improvements or revisions required by SDOT. For the potential new elementary schools, since sites have not been identified it is not known whether they would result in changes to the roadway network. These would need to be determined in project-level analysis after the sites have been selected. It is expected that all new school projects would include frontage improvements that would result in landscape and other enhancements, revisions to site access points on the adjacent streets, or installation of sidewalks or pedestrian walkways, where required by SDOT. These projects would be subject to individual project-level review of impacts to the transportation system at the time of design and permitting.

Traffic Volumes

Trips generated by new schools would be at similar rates for elementary, middle, and high schools described for the replacement school projects (Section 4.2.2.1). Depending on the size of school constructed, it is expected that total trips would be of similar magnitude, or potentially greater than, totals generated by replacement schools. However, for new schools, trips generated could reflect new traffic on the roadways in the immediate vicinity, depending on whether they replace an existing traffic generating land use. Access by students and employees at new schools in downtown Seattle is likely to rely more heavily on transit and non-motorized modes, thus, vehicular traffic generation may be lower than at other Seattle school sites.

For new school projects, project-level review of site access and local area transportation impacts would be based either on the ITE rates or rates derived or adjusted from other schools with similar characteristics. Operational analysis of new school-generated traffic would account for student loading locations for family vehicles and school buses, location of on-site and off-site parking, and site access locations.

Parking

Detailed parking assessments, and potentially departure requests, would be conducted as part of project-level design and permitting for individual new school projects, similar to that described for replacement schools (Section 4.2.2.1). Space constraints at new sites could limit the amount of on-site parking that could be accommodated. According to SMC 23.54.016.B, in designated Urban Centers (including downtown) and Station Area Overlay Districts, the City of Seattle has no parking requirement for new schools. For projects in areas with these designations, no departures related to parking would be needed, regardless of the supply proposed. However, project-level analysis would still evaluate the impacts of potential parking overspill, and if needed, identify measures to manage school-generated parking demand. For new schools located outside of Urban Centers and Station Area Overlay Districts, project-level parking analysis would be similar, but a parking departure request would be needed if the school did not meet the underlying zoning requirements for parking. Depending on location, total parking demand for new schools could be similar to the total parking demand for replacement schools. Parking generated by new schools could be new demand, either on the school sites or on surrounding streets, depending on whether they replace an existing land use that generated parking demand.

Transit

New school projects are not expected to adversely impact transit service or facilities. New school capacity would cause increases in some bus ridership. However, new elementary schools would be expected to rely more heavily on yellow school bus transportation. For a new high school in the Downtown/Seattle Center area, increases in transit demand are likely to result from the new facility and are expected to be accommodated by public transit. As shown in Table 3.2-5 (Section 3.2.5), the site is well served by bus transit (including three frequent bus routes) and monorail.

In locations where existing transit stops are located adjacent to a project site, a minor relocation of bus stops may be required to accommodate operational needs along site frontages. If necessary, SPS would coordinate such changes with Metro and the City of Seattle.

Non-Motorized Facilities

New schools are likely to cause increases in pedestrian access trips at and around the school sites similar to those for replacement schools (Section 4.2.1.1).

4.2.2.4 Addition of Portables

Traffic Volumes and Traffic Operations

The addition of portables is typically implemented to temporarily accommodate increases in student population that exceed a school's capacity. This is typically a reactive measure to address overcrowding that would occur with or without use of the portables, and does not induce additional students in and of itself. Therefore, no impact related to traffic volumes or operations would result from the addition of portables.

Parking

There is potential that the addition of portables could reduce on-site parking supply if they are placed in school parking lots. Although the addition of portables does not typically require project-level impact analysis, it is possible that a school may need to identify additional measures to manage parking demand if its on-site parking supply is reduced.

Transit and Non-Motorized

Similar to the impact on traffic volumes and operations, the addition of portables is typically a reactive measure to address overcrowding and would not create additional transit or non-motorized demand. Therefore, no impact related to transit or non-motorized facilities would result from the addition of portables.

4.2.2.5 Athletic Field Improvements and Lighting

The addition of new field lighting would be expected to increase the frequency and times of field use. A project-level review of site access and local area traffic operations would be conducted prior to installing athletic field lighting. Changes to on-site and nearby on-street parking demand, site access conditions, and nearby intersections would be included in the project-level analysis, when specific project elements are selected and the improvements are defined.

Project-level review of site access and local area transportation impacts would be based on more detailed project information as well as data and studies of the site, and other athletic field projects in the Seattle area. Changes in athletic-field-generated traffic can influence utilization of on-site parking, nearby on-street parking, and site access conditions. Transportation analyses of previous field lighting projects (Heffron Transportation, Inc., 2000, 2014b, 2015) evaluated the planned uses of the athletic fields on school sites. These analyses found that fields are generally expected to be used for scholastic baseball, softball, soccer, football, lacrosse, ultimate, and track events. The fields are also expected to continue to be used for organized non-scholastic athletic activities such as little-league baseball, softball, soccer, football, ultimate, and lacrosse. At the BEX V school sites, additional field-lighting-related traffic generation could occur along the surrounding adjacent roadways where spectators or participants may park.

Athletic field lighting projects can result in increased PM peak hour traffic generation during the fall and winter months when natural light conditions would otherwise not permit use of fields. Although they extend the seasons and periods throughout which athletic field-related traffic and parking impacts can occur, they would not generate new impacts during these hours that do not already occur when natural light conditions allow. As described in Section 3.2.3 of this Programmatic EIS, observations at existing schools indicate between 25 and 55 trips leave a school site during the hour after a typical scholastic athletic event (e.g., baseball, softball, soccer, lacrosse or ultimate). Due to the start and finish times of some games or practices, some or all of this traffic could occur during the commuter PM peak hour. The extended activity periods can also result in increased traffic generation during later evening times (between 6:00 and 10:00 p.m.), depending on the spectator capacity, types of activities scheduled at the site, and hours of lighting.

4.2.2.6 System Repair and Replacement Projects

System repair and replacement projects would have no operational impacts on transportation or parking.

4.2.3 Mitigation

4.2.3.1 Construction

As mitigation for potential construction impacts, a Construction Management Plan (CMP) would be developed for each project as required by SPS and City of Seattle. CMPs are expected to identify site access measures, truck haul routes, construction and hauling schedules, and parking plans that minimize impacts to the surrounding neighborhood. They typically identify temporary lane closures, sidewalk closures, temporary restrictions on on-street parking, and bus-stop relocations, if any are required, and identify any needed detour routes for pedestrians, bicyclists, and/or vehicles.

Smaller projects would involve fewer transportation impacts and would not likely require a CMP. However, similar mitigation measures would be implemented to maintain access to school drop off/pick up areas and to minimize impacts to neighboring streets. For all projects, flaggers, barriers, flashing lights, and temporary walkways would be provided, as necessary.

SPS would identify site-specific mitigation measures necessary to minimize construction impacts during design and project-level environmental and permitting review for specific projects.

4.2.3.2 Operation

As described previously, if an individual project is anticipated to result in increases in vehicle trips or parking demand, it is expected that site-specific, project-level transportation analysis would be conducted prior to its implementation. If potential operational or safety impacts are identified through project-level analysis, mitigation measures would be identified to minimize or avoid those impacts. Types of transportation-related measures that could be considered for the BEX V projects would depend on the exact type, size, and nature of the proposed project, but could include the following:

1. Access and parking management measures;

2. Intersection channelization and/or traffic control changes and improvements;
3. Use and capacity agreements for assembly spaces such as gymnasiums, athletic fields, and performing arts facilities;
4. Coordination with Seattle Schools Traffic Safety Committee related to walk routes, crosswalk locations, signage, pavement markings, and school zone speed limits;
5. Speed enforcement;
6. Event calendar coordination and public notification;
7. Monitoring of on-street parking conditions and school-related impacts;
8. Frontage improvements such as curb, gutter, sidewalk, or walkway improvements;
9. Coordination with Metro regarding locations and operational requirements for bus stops along the site frontage; and
10. Establishment and/or relocation of school-bus and/or passenger vehicle loading areas.

Typically, measures identified as mitigation during project-specific review are incorporated into the proposal. In some cases, additional measures could be imposed by the City of Seattle as conditions of approval of a project and any associated code departures. The types of measures that have been considered for SPS projects include: establishment of parking duration restrictions for on-street parking near schools, modifications to existing parking restrictions, operational requirements (such as staggering concurrent events, or preparation and distribution of event schedules for events held in assembly spaces on school sites), relocations of Metro bus stops, measures to minimize traffic conflicts at locations with narrow travel ways, and occasional use of hard-surface play areas for evening event parking.

4.3 Land Use

This section describes potential impacts to land use resulting from various potential project types. Potential land use impacts described in this section include changes in land use, demolition, consistency with the SMC, and acquisition of property.

4.3.1 Construction

Land use impacts of replacement schools, modernizations and additions, new schools, portables, and athletic field improvements are considered operation impacts and are discussed in Section 4.3.2. Construction activities associated with the BEX V projects would not impact land use.

4.3.2 Operation

4.3.2.1 Replacement Schools

Replacement schools would not cause any change in land use; the sites are currently in use as schools and would continue to be in use as schools. Most replacement schools also would not require any property acquisition, as the projects would be located on existing school sites. In some cases, such as

where the school property surrounds residential properties on two or three sides, voluntary acquisition of adjacent properties could be incorporated into the project. Existing structures on the site of replacement school projects would be demolished. However, the structures would be replaced with new structures providing the same uses, so land use would not be negatively impacted.

As shown in Table 3.3-1 (Section 3.3.1), most of the potential sites for replacement schools are located in single-family residential zoning areas. It is likely that replacement school sites would not meet single-family land use code requirements while still meeting educational program needs. Code requirements that replacement schools may not meet include requirements related to building height, bus loading, electronic reader boards, parking, bulk and scale, and setbacks. As described in Section 3.3.2, public school structures may depart from the required development standards of the code through the departure process (SMC Chapter 23.79). Though land use would not change at a replacement site and the project would comply with the land use code (with departures), potential land use impacts, such as height, bulk and scale impacts could result. If necessary, SPS would apply for a departure and comply with the results of the departure process.

4.3.2.2 Modernizations and Additions

Modernization projects would involve improvements to existing facilities and would not have land use impacts. Additions would have similar impacts to replacement schools (as described in Section 4.1.2.1), including the potential to require departures. School additions would require less demolition as the existing schools would remain after project completion. Some smaller structures, such as boiler rooms, additions, and covered play areas could be demolished. Table 3.3-1 (Section 3.3.1) shows the existing zoning and land use around potential modernization and addition sites. In addition, the potential replacement schools listed in Table 3.3-1 could potentially be the site of modernization and addition projects under Alternative 4.

4.3.2.3 New Schools

Construction of new school buildings at sites not currently being used as a school would typically include site acquisition, demolition of existing buildings on the property, and construction of a new school building. To the extent possible, SPS would acquire property from willing sellers, as outlined in School Board Policy 6905 (February 15, 2012). An independent appraisal would determine fair market value of any properties to be purchased. The land use of the site would change from the current use to a school and any current land uses on the site would be displaced.

New school buildings would be designed and placed on the property so as to conform to all zoning requirements and design guidelines, such as setbacks and building heights, to the extent practicable. If any element of the project could not conform to these requirements, SPS would apply for a departure and comply with the results of the departure process.

If SPS reacquired leased or sold properties to reopen as new schools, the land use of the site would change from the current use back to a school and any current land uses on the site would be displaced. In some cases, SPS would be required to break a long-term lease. If the original school building is still located on the site, it could potentially be modernized and opened as a new school depending on the

building condition. In some cases, the building currently on the site would need to be demolished and a new school would be constructed.

Constructing a new high school at the Memorial Stadium site would change the use of the site from a stadium to a stadium and a school. The existing stadium and other structures on the site (such as the parking lot and ticket booth) would be demolished, though the Memorial Wall would be retained and potentially relocated. A new stadium would be constructed, so the current use would not be lost. Parking to replace the existing parking lot would be included in the new high school and stadium facilities. The current Memorial Stadium site (including the parking lot) is owned by SPS. The project is being developed in coordination with the City under the Partnership Agreement (Section 1.2.3). It could require cooperative use of other public property that is part of Seattle Center. In this case, the land use of that property would change from its current use to a school. Demolition of any existing structures on the other public property could be required. Depending on project design, development of a new high school with stadium at the Memorial Stadium site may not be consistent with the Seattle Center Century 21 Master Plan (Seattle Center, 20018) or the Uptown Urban Design Framework (City of Seattle, 2016c), but would be consistent with the more recent Seattle Center: What's Next workshop and report (Seattle Center Foundation, 2016). SPS would collaborate with the City of Seattle on siting, visioning, and design considerations for the new school as described in the Public Process Partnership Agreement (Section 1.2.3).

4.3.2.4 Addition of Portables

The addition of portables at an existing school site would not change the land use of the site and would not require property acquisition or demolition. A permit would be required for the addition of the portable, and adding portables may not meet certain code requirements. For example, if a portable was added to an area currently used for parking, the school site may no longer meet the code required number of parking spaces. Where a school is currently nearing lot coverage thresholds, SPS would be required to go through the departures process to add new portables. SPS would apply for all applicable permits for placement of portables and would locate portables in order to avoid impacting code requirements.

4.3.2.5 Athletic Field Improvements and Lighting

Athletic field improvements and lighting would not change the land use of the site and would not require property acquisition or demolition. As described in Section 4.7.2.5 (Aesthetics, Light, and Glare), SPS would ensure that the requirements of SMC 23.51B.002(D)(6) were met for any athletic field lighting projects.

4.3.2.6 System Repair and Replacement Projects

System repair and replacement projects would not change or otherwise impact land use.

4.3.3 Mitigation

4.3.3.1 Construction

No construction impacts to land use are anticipated; therefore, no mitigation measures are proposed.

4.3.3.2 Operation

Siting of projects would be consistent with Seattle Land Use Code requirements to the extent feasible. Individual projects not able to comply with the standards of the underlying land use zone would be eligible for the departure process for public schools as described above.

The relative intensity of bulk and mass changes proposed for particular buildings can often be mitigated with creative and innovative design. Mitigating measures that SPS can use to reduce the height, bulk, and scale impacts of a development proposal include: repositioning the development on the site; limiting the height; modifying the bulk; modifying setbacks; and modifying the façade or landscaping.

As described above, for new schools, SPS would acquire property from willing sellers, as outlined in School Board Policy 6905. Any use of additional properties at Seattle Center would be coordinated with the City of Seattle and the Seattle Center.

Specific mitigating measures necessary to reduce or eliminate impacts at individual sites would be identified during project-level design and environmental review. SPS would apply for a departure where necessary and would comply with the results of the departure process.

4.4 Trees and Environmentally Critical Areas

This section describes potential impacts to trees and Environmentally Critical Areas (ECAs) from the BEX V program. Specific impacts to geologic hazard areas, flood-prone areas, wetlands, and Fish and Wildlife Habitat Conservation Areas (FWHCAs) for each individual site will be further evaluated when SPS begins project-specific planning, design, and permitting, and prior to construction.

4.4.1 Construction Impacts

4.4.1.1 Replacement Schools

Tree removal could be required at school sites where replacement schools are constructed, particularly if the new school has a larger footprint or is located in a previously undeveloped portion of the site. A tree inventory and assessment would be conducted during the site-specific environmental review to identify if any potentially impacted trees would be Exceptional Trees. Prior to construction at any site, a survey for exceptional trees would be conducted by a licensed arborist per SMC 25.11. Exceptional Trees would be retained and protected during construction where possible. Exceptional Trees cannot be removed unless permission is granted by SDCI. If removal of Exceptional Trees is permitted by SDCI, SPS would be required to comply with the requirements under SMC 25.11.090 for tree replacement and site restoration.

Potential sites for replacement schools with documented ECAs include Alki, Kimball, North Beach, Northgate, Rogers, and Sacajawea elementary schools. Demolition of the existing schools and construction of replacement schools could occur in the vicinity of steep slopes, liquefaction prone areas, wetlands, or wildlife habitat (see Table 4.4-1). New construction could also occur within the associated buffers of wetlands and wildlife habitat. Additional critical areas and their associated buffers could exist at these and other SPS facilities and would be identified during site-specific environmental review. If

demolition of existing schools and construction of replacement schools occur within ECAs and their associated buffers, SPS would be required to comply with the requirements of SMC 25.09.

Construction in areas near steep slopes could require the construction of retaining walls. For projects that require demolition and removal of existing facilities, construction could affect wetlands and Fish and Wildlife Habitat Conservation Areas (FWHCAs), such as riparian corridors, and their associated buffers by increasing runoff and sedimentation to those areas and impacting fish and aquatic habitat. Site clearing and grading would expose soils, increasing the potential for soil erosion. SPS would develop a sediment and erosion control plan, and would be required to meet the City's stormwater requirements (SMC 22.800 - 22.808, SMC 22.170). Excavation for new construction could require dewatering if the project is located in an area with high groundwater levels.

North Beach Elementary is within a Great Blue Heron Management Area, and a small portion of the southwest corner of the school is within a Great Blue Heron Management Core Zone. Construction would occur in this wildlife habitat area and would need to comply with the Great Blue Heron Management Plan. This requires that any clearing, grading, or construction be done from September 1st through January 31st and all trees with a 6-inch diameter breast height or greater be retained. Within the Great Blue Heron Management Core Zone, development must be limited to baseline development conditions in the area for light and ambient noise and requires a maintenance, operation, and general activities plan (SDCI, 2017).

Site clearing and grading could also disturb wildlife habitat by removing existing vegetation. Construction noise and human activities associated with construction could disturb wildlife adjacent to project areas. Because the replacement projects would occur in areas that are already developed, the likelihood of encountering ECAs is limited to construction phase activities and is less than if the projects were located in undeveloped areas.

New construction would avoid ECAs to the extent practicable and any development that would occur would comply the City's ECA regulations (SMC 25.09). Table 3.4-1 lists mapped ECAs and potential impacts for potential sites for replacement schools.

Environmentally Critical Areas may be located on other school sites proposed for replacement projects. Any ECAs would be identified in project-level review and comply with the requirements of SMC 25.09.

4.4.1.2 Modernizations and Additions

It is unlikely that tree removal would be required for modernizations because most work would occur on the existing building interior or exterior. Tree removal may be required at school sites where additions are proposed. Potential impacts to trees would be similar to those described for replacement projects (Section 4.4.1.1), but would occur at a lesser scale due to the smaller scale of the project.

Potential sites for modernizations and/or additions with documented ECAs include Rainier Beach High School and Montlake Elementary School. Because only modernization is proposed at Rainier Beach High School, it is unlikely that impacts to steep slopes, liquefaction prone areas, peat settlement prone areas, riparian corridors, or wetlands would occur. However, construction activities related to additions at

Rainier Beach High School could impact the associated buffers of riparian corridors and/or wetlands. Impacts to buffers would be similar to those described under Section 4.4.1.1.

Additions to Montlake Elementary have the potential to occur in the vicinity of steep slopes. However, because the steep slope area is small (roughly 300 square feet) and located on the corner of the site, the likelihood of impacts is low. Potential impacts to the steep slope area would be similar to those described under the Replacements Alternative but would occur at a lesser scale due to the size and location of the steep slope area. Table 3.4-1 lists mapped ECAs and potential impacts for potential sites for modernizations and additions.

Environmentally Critical Areas may be located on other school sites proposed for modernization and addition projects. Any ECAs would be identified in project-level review and comply with the requirements of SMC 25.09.

4.4.1.3 New Schools

The BEX V Program could include construction of new schools at new sites. Potential sites for new elementary schools have not been identified. Sites for new schools could have trees, including Exceptional Trees, and could have ECAs. Building new schools could require removal of trees, which would have impacts similar to those described in Section 4.4.1.1. Environmentally Critical Areas at new school sites would be identified during project design as part of project-level SEPA review. If ECAs and their associated buffers occur at new school sites, impacts would be similar to those described in Section 4.4.1.1.

The BEX V Program could include a new downtown high school located at the Memorial Stadium site. Steep slopes are present at the Memorial Stadium site; however, steep slopes could be avoided through project design. Project design would avoid ECAs and their associated buffers to the extent practicable and any development that would occur would comply with the City's ECA regulations (SMC 25.09).

4.4.1.4 Addition of Portables

Portables would typically be installed on existing flat and cleared areas of a school site. Where space on the site is restrained, installation of portables could require tree removal. If tree removal were required, SPS would conduct a tree inventory and assessment to determine if any of the trees are Exceptional Trees and would comply with City regulations for tree removal and replacement. For most school sites, portables could be placed in areas where ECAs are not present. However, portables could be placed within the associated buffers of ECAs and would have similar impacts to those listed under Section 4.4.1.1. If impacts to ECAs were unavoidable, SPS would comply with the City's ECA regulations (SMC 25.09).

4.4.1.5 Athletic Field Improvements and Lighting

Athletic field improvements would occur at existing fields, and therefore the likelihood of impacts to trees and ECAs is low. However, athletic improvements could occur within ECA associated buffers. Poles for athletic field lighting would avoid ECAs and their associated buffers to the extent possible. For installation or replacement of artificial turf or other upgrades, construction could impact ECA associated

buffers by exposing soils, increasing the potential for soil erosion. Construction noise and human activities associated with construction could disturb wildlife adjacent to project areas. Because athletic field improvements would occur in existing fields in areas that are already developed, it is likely that wildlife in these area are accustomed to a certain level of noise. If a light pole had to be installed in an ECA and its associated buffer, SPS would comply with the City's ECA regulations (SMC 25.09).

4.4.1.6 System Repair and Maintenance Projects

Construction for system repair and maintenance projects would be unlikely to require removal of trees. In the event that tree removal was required, impacts would be similar to those described in Section 4.4.1.1. Construction for system repair and maintenance projects is not likely to occur within ECAs because most construction would occur on the existing building's interior or exterior.

4.4.2 Operations Impacts

4.4.2.1 Replacement Schools

Replacement schools could potentially cause an increase in impervious surfaces on the site. Increased impervious surface could potentially increase the amount of runoff to wetlands and riparian corridors, impacting fish and aquatic habitat and water quality. However, any increase in impervious surface would likely be a small percentage of the site.

Increased noise associated with increased school capacity could disturb wildlife in adjacent areas. However, species in these areas are likely accustomed to urban lighting and current noise levels from surrounding residences and the existing school.

4.4.2.2 Modernizations and Additions

Modernization projects would not impact trees or ECAs because the work would take place within the existing school footprint and enrollment capacity and associated noise would not increase. Potential impacts from addition projects would be the same as for replacement schools (Section 4.4.2.1).

4.4.2.3 New Schools

Impervious surfaces associated with new schools could potentially increase the amount of runoff to wetlands and riparian corridors, impacting fish and aquatic habitat and water quality. If a new school were constructed on a site that is not currently covered with impervious surface (such as a vacant or undeveloped lot), the increase would be greater than for a replacement school or an addition.

Depending on the current use of a new school site, the school could increase the noise and lighting on the site, which could disturb wildlife in adjacent areas. If the new school caused permanent vegetation removal, wildlife habitat could be lost. Any trees removed during construction of the new school would be replaced in accordance with City of Seattle regulations.

The existing Memorial Stadium site is largely covered by impervious surface, so building a new school at the site would be unlikely to cause a substantial increase in impervious surface. Any trees removed during construction of the new school at Memorial Stadium would be replaced in accordance with City of Seattle regulations.

4.4.2.4 Addition of Portables

The impacts of the addition of portables on trees and ECAs would be the same as for replacement schools (Section 4.4.2.1).

4.4.2.5 Athletic Field Improvements and Lighting

Athletic field lighting would be designed to minimize light and glare impacts and would produce minimal light spill onto adjacent critical areas. Wildlife in adjacent areas could be impacted by lighting and noise associated with fields, but species are likely accustomed to urban lighting and current noise levels from surrounding residences and existing schools.

4.4.2.6 System Repair and Replacement Projects

System repair and replacement projects would not impact trees or ECAs because the work would take place within the existing school footprint and enrollment capacity and associated noise would not increase.

4.4.3 Mitigation

4.4.3.1 Construction

Prior to construction at any site, a tree survey would be conducted would be conducted by a licensed arborist per SMC 25.11. The tree survey would identify any Exceptional Trees on the site. Exceptional Trees would be retained and protected to the extent possible. For any tree removal required, SPS would replace removed trees according to City requirements, and new landscaping would be planted on site after construction. If removal of Exceptional Trees is permitted by SDCI, SPS would comply with the requirements under SMC 25.11.090 for tree replacement and site restoration.

Environmentally Critical Areas would be identified on sites prior to construction and would be avoided to the extent possible. Construction would comply with applicable ECA regulations (SMC 25.09). During construction, best management practices (BMPs) would be employed to minimize clearing and grading impacts and runoff to ECAs and their buffers. All areas disturbed during construction would be restored to pre-construction conditions as soon as practicable. Additional mitigation measures necessary to reduce or eliminate impacts at project sites would be identified during design and project level environmental review for specific projects.

4.4.3.2 Operation

There would be no additional impacts to trees or ECAs once construction is complete.

4.5 Historic and Cultural Resources

The BEX V Program would include work at a number of existing schools around the District. Many schools in the District meet the age criteria for consideration to be included on a historic register, and a number of schools in the District are designated City of Seattle Landmarks. Table 3.5-1 lists historic information about potential BEX V project sites. The majority of the projects proposed would undergo individual project-level analysis of potential impacts to historic and cultural resources. Analysis would

include, but not be limited to, review of the Statewide Predictive Model maintained by the Department of Archaeology and Historic Preservation (DAHP) which classifies the risk for landforms to contain precontact-era cultural resources.

4.5.1 Construction Impacts

4.5.1.1 Replacement Schools

Replacing existing schools would require demolition resulting in direct impacts to historic resources if determined to be eligible for listing in a historic register. None of the buildings currently being considered for replacement projects are designated landmarks. All buildings meet the age criteria for consideration to be included on a historic register, and with the exception of Mercer, have not been evaluated. Mercer has been determined eligible for listing in the NRHP. Ground disturbance during construction could also impact below ground cultural resources, if present. Construction vibration could impact the structural integrity of adjacent buildings, especially those of unreinforced masonry construction. Impacts could include cracking of foundations or loss of brick cladding. These impacts would not be anticipated to be probable significant impacts because they could be mitigated through vibration monitoring, temporary stabilization, and/or repairs to building exteriors, as needed.

Replacement projects would require a high degree of ground disturbance and therefore have a high potential to disturb or destroy the context (location of artifacts and features in relation to each other) of cultural resources, if present. Once a cultural resource's context is destroyed, the resource loses its scientific value. Individual project-level analysis would be conducted and depending on the project, an Inadvertent Discovery Plan (IDP) would be prepared to address potential impacts to historic and cultural resources.

4.5.1.2 Modernizations and Additions

Two of the potential modernization and addition projects are located at designated landmarks: McGilvra Elementary (1913) and Montlake Elementary (1924). One potential project would be at Madison Middle School (1928), which has been determined eligible for listing in the NRHP. One potential project would be at Frantz Coe Elementary (2002) which was constructed less than 25 years ago and therefore does not meet the age criteria for a historic register. The remaining properties meet the age criteria for consideration to be included on a historic register, but have not been evaluated.

Modernization and additions to existing schools could have direct impacts to historic and cultural resources through ground disturbance and alterations to existing buildings and structures. For example, changes to a building or structure's siting, physical structure, or architectural features could be an impact if these features contribute to its historical significance. If the project would alter designated features of a designated landmark, this could be mitigated through obtaining a Certificate of Approval from the Landmarks Preservation Board as required by the impacted landmark's Controls and Incentives Agreement. Typically, SPS works with architects to ensure that new additions are designed to be architecturally sympathetic (similar in style or materials) with existing schools.

Additions to existing schools could cause vibrational impacts to adjacent buildings or structures similar to those described for replacement projects in Section 4.5.1.1. School additions would also require a

high degree of ground disturbance and therefore have a high potential for impacting the context of subsurface cultural resources if present as described in Section 4.5.1.1.

4.5.1.3 New Schools

Construction of new schools would require a high degree of ground disturbance similar to replacement projects (Section 4.5.1.1), and therefore also have high potential for impacting the context of subsurface cultural resources, if present. New schools could introduce indirect changes to the setting and feeling of the project location through increased massing or architectural styles that are not sympathetic with the architectural characteristics of the properties surrounding the project site.

New school projects could also have direct impacts through demolition of existing structures, if present. Locations for new school projects are likely to contain existing structures, which could meet the minimum age threshold for consideration of listing in a historic register, and could have historic significance. Construction of new schools could have vibrational impacts to adjacent buildings or structures during construction similar to those described in Section 4.5.1.1.

Construction of a new school at Memorial Stadium would require demolition of the existing Memorial Stadium. The Memorial Wall would be preserved and potentially relocated. The Memorial Stadium and Memorial Wall were evaluated together for their potential eligibility for listing in the NRHP. They were Determined Eligible by DAHP for listing in the National Register of Historic Places in 2003, under NRHP Criterion A due to their association with World War II, which is a broad pattern in history (ENTRIX, Inc., 2003). To date, they have not yet been referred to the Landmarks Preservation Board for consideration as potential Seattle Landmarks.

Memorial Stadium was designed by architect George W. Stoddard and engineer F.W. Huggard. It opened on September 26, 1947 and was built and named in honor of former students who lost their lives during World War II (ST, 1946a). A Memorial Wall was planned that same year, but was not completed until 1951; the Wall was dedicated on May 29, 1951 (Becker et al., 2011; ST, 1946b; ST, 1951). The Memorial Wall contains the names of 762 former students from the SPS district and other King County school districts who were killed during World War II (ST, 1951). Memorial Stadium and the Memorial Wall have been recognized by some members of the public as historically important because of their associations with World War II (Duncan, 1987; Stricherz, 1989).

Because of their associations with World War II, these properties may meet the criteria for designation as Seattle Landmarks. Demolition of the Stadium and possible relocation of the Wall would impact historic resources. SPS would preserve the Memorial Wall in place or potentially reinstall it in a new location. SPS would coordinate with the Landmarks Preservation Board, the City of Seattle, the Seattle Center, and DAHP regarding demolition of the Stadium and preservation or relocation of the Wall.

4.5.1.4 Addition of Portables

Installing portables at existing school sites would require a low degree of ground disturbance from grading and/or construction of walkways; therefore, this project type has a low potential for impacting the depositional integrity of subsurface cultural resources, if present.

This project type would not require alterations to existing buildings or structures; however, adding portables to the site of landmark-designated schools could indirectly impact their integrity of siting through visual change. For projects that would add portables at landmark-designated schools, SPS would consult with the Landmarks Preservation Board to determine if this would require a Certificate of Approval.

4.5.1.5 Athletic Field Improvements and Lighting

Installing poles and electrical conduits for athletic field lighting would require the least amount of ground disturbance among the project types and therefore has the least potential for impacting subsurface cultural resources, if present. Installing new light poles is not likely to impact the historic quality of associated structures or buildings, nor is it likely that it would interfere with views to any surrounding buildings or structures, which are protected for designated landmarks. Alterations to athletic fields themselves are not likely to impact the historic quality of associated buildings or structures, as the athletic fields likely would not contribute to the historical significance of associated buildings or structures.

4.5.1.6 System Repair and Replacement Projects

System replacement and repair projects would be unlikely to impact historic features of a school. If the project would alter designated features of a designated landmark, this could be minimized through obtaining a Certificate of Approval from the Landmarks Preservation Board as required by the impacted landmark's Controls and Incentives Agreement.

4.5.2 Operation Impacts

There would be no additional impacts to historic or cultural resources once construction is complete.

4.5.3 Mitigation

4.5.3.1 Construction

To minimize potential impacts to subsurface cultural resources, SPS would complete a cultural resources assessment at the project-level, as appropriate. This would analyze the cultural resources potential of the project site and include recommendations for mitigating potential impacts to historic and cultural resources if necessary. When appropriate, SPS would prepare a project-specific IDP prior to construction. The IDP would set forth the procedures and protocols to follow in the event of an archaeological resources discovery. The IDP would include pre-construction briefings and on-call response if required. SPS would provide tribal representatives, including those of the Duwamish Tribe, with one-week advance notification of the project schedule and invite them to observe construction. When appropriate, SPS would also conduct archaeological monitoring during construction.

For projects involving designated Landmarks, potential impacts to designated features could occur but could be mitigated through consultation with the Landmarks Preservation Board and/or complying with a Certificate of Approval from the Landmarks Preservation Board. For projects that are adjacent to a designated landmark, SPS would be required to consult with the Landmarks Preservation Board regarding potential impacts to the adjacent Landmark.

For projects requiring a Seattle Master Use Permit, proposed demolition of an existing building or structure that is over 50 years old would require SPS to refer the building or structure to the Landmarks Preservation Board for review as a potential landmark. If the building is designated as a Landmark, SPS and the Landmarks Preservation Board would negotiate the Controls and Incentives Agreement for the property and obtain a Certificate of Approval from the Landmarks Preservation Board as needed.

The following other general mitigation measures could be implemented:

1. If proposed work includes demolition of standing structures, SPS would:
 - a. Assess whether a portion of the building, particularly the oldest or most architecturally significant portion of the building(s), can or should be preserved and renovated.
 - b. Assess whether architectural elements of the old school(s) can or should be salvaged and incorporated into the design of the new school.
 - c. Work with interested stakeholders (i.e., historical societies, School District Archives) to consider retention of significant elements.
2. If proposed work includes demolition of standing structures, structures could be documented prior to demolition following DAHP standards for mitigation through documentation:
 - a. Depending on the status and significance of the structures, DAHP Level II or Level III Mitigation Documentation Requirements may be followed. At a minimum (Level III), structures over 50 years old would be recorded via completing, updating, or expanding upon a Historic Property Inventory Form for each structure. If warranted, Level II requirements would be followed which entail completing a Historical Report, as outlined in the standards.
 - b. If the structures are determined to have state and/or National significance, the structures would be documented following DAHP's Level I standards in accordance with the National Park Service's Historic American Buildings Survey/Historic American Engineering Records (HABS/HAER).
3. If proposed work includes renovation, consider avoidance of adverse effects to potentially significant design elements such as:
 - a. Exterior decorative elements including facades, fenestration, porticos.
 - b. Massing, roof configuration, structural shell.
 - c. Interior features, finishes, and special configurations.
 - d. Spatial relationship with surrounding environment (siting, scale, visual impact).

4.5.3.2 Operation

No operational impacts are anticipated to historic or cultural resources, so no mitigation is required.

4.6 Recreation

This section describes potential impacts of school projects on recreation, both recreational facilities on the school sites (such as playgrounds and fields) and adjacent recreation (such as Seattle Parks and Recreation parks).

4.6.1 Construction

4.6.1.1 Replacement Schools

Construction activities associated with replacement schools would impact on-site recreation. Any recreation facilities on the site (such as fields and recreation equipment) would be closed to the public during construction either because they would be removed (and replaced) or for safety reasons.

Construction could be visible and audible to users of nearby parks. Construction-related traffic could delay access to parks and displace parking.

4.6.1.2 Modernizations and Additions

Construction impacts associated with modernizations and additions would be similar to those for replacement schools (Section 4.6.1.1).

4.6.1.3 New Schools

Potential sites for new elementary schools have not been identified at this time. New school sites could potentially be located adjacent to a park or other recreational site. Construction traffic, parking, and noise would be noticeable and potentially disruptive to any adjacent recreational uses. New schools would not be located in park spaces; constructing a school in a park would be inconsistent with City of Seattle Ordinance No. 118477, which discourages the conversion of park lands within the City of Seattle to non-park usage.

During construction of the new high school and replacement stadium at the Memorial Stadium site, the Stadium would be unavailable for recreational events. Recreational events at Memorial Stadium that would be displaced include high school football and soccer games, Seattle Reign games, and occasional use for large Seattle Center events such as Bumbershoot. Other facilities within the greater Seattle area are available for relocation of these events during the 24- to 30-month construction period. High school football and soccer games would be relocated to other SPS facilities. Large events such as football games would be relocated to other SPS stadiums. The Seattle Reign (a team in the National Women's Soccer League) could relocate to other stadiums in the greater Seattle area, such as the Starfire Sports Stadium in Tukwila, where the team played prior to moving to Memorial Stadium. Other venues at Seattle Center could accommodate concerts associated with Bumbershoot and other large events.

Construction at the Memorial Stadium site would likely be visible and audible to users of other recreational facilities at Seattle Center. Construction-related traffic could delay access to the Center, and the parking lot currently located at Memorial Stadium would not be available to Center visitors during construction.

4.6.1.4 Addition of Portables

Installation of portables typically is a short-duration activity and could cause short-term disruption to recreation on or adjacent to the school site. Disruption could include visible and audible construction activities, traffic delays, and lack of access to parking.

4.6.1.5 Athletic Field Improvements and Lighting

Construction of athletic field improvements (artificial turf) would disrupt use of the athletic fields during the construction period, which would last a few weeks. For installation of athletic field lighting, light poles would be installed around the perimeter of athletic fields with limited disruption to use of the fields. Installation of field improvements and lighting would be scheduled during the off-season for school sports that would use the field for practice and games, such as football and soccer.

4.6.1.6 System Repair and Replacement Projects

System replacement and repair projects would require construction on the school site which could cause short-term disruption to recreation on or adjacent to the school site. Disruption could include visible and audible construction activities, traffic delays, and lack of access to parking.

4.6.2 Operation

4.6.2.1 Replacement Schools

The increased student capacity at a replacement school generally means that the school building would be larger than the existing building. Therefore, there would potentially be less recreational space on the site. However, the replacement project also presents an opportunity to add updated recreational equipment and to better incorporate recreational features into the school site. A replacement school project typically involves removal of all or most recreational equipment and facilities on a school site and replacement with new equipment and facilities. Increased school capacity could increase the use of adjacent parks by students, particularly in the period directly after school hours. While increased use of parks is not a negative impact, it may be noticeable to other park users.

4.6.2.2 Modernizations and Additions

The increased capacity associated with school modernizations and additions would cause similar recreational impacts to those for replacement schools. Compared to replacement projects, additions provide fewer opportunities to avoid loss of recreation space and fewer opportunities to better integrate recreation into the site. However, addition projects often provide schools with upgraded gymnasiums and other recreational facilities.

4.6.2.3 New Schools

If a new school were located adjacent to a park, the use of adjacent parks by students, particularly in the period directly after school hours, would likely be increased. While increased use of parks is not a negative impact, it may be noticeable to other park users. New schools would not be located in parks. Constructing a school in a park would be inconsistent with City of Seattle Ordinance No. 118477, which discourages the conversion of park lands within the City of Seattle to non-park usage. If a new school is

located on a property that did not formerly provide recreation, the school would provide new recreation to the extent that recreational areas (such as fields and play equipment) were open to the public outside of school hours. Constructing new schools as opposed to adding capacity through replacement schools or additions would avoid the reduction in recreation and open space at existing school sites.

The new high school project at Memorial Stadium would include a full replacement of the aging Stadium, which would improve conditions for recreation. Current SPS uses of the stadium would return to the stadium after construction. Other uses could return depending on contractual agreements and availability at that time. Adding a high school at Seattle Center could impact other recreational uses at Seattle Center by increasing traffic and parking demand in the area, which would be noticeable and potentially disruptive to other Seattle Center visitors (see Section 4.2.2.3 Transportation). Students of the high school could increase use of recreational areas at Seattle Center, particularly in the period directly after school hours. While increased use of Seattle Center is not a negative impact, it may be noticeable to other Center visitors. The new high school would include a gymnasium, which could be available for public use under the Joint Use Agreement.

4.6.2.4 Addition of Portables

The addition of portables would decrease open space at school sites as portables would be placed in areas currently used for parking, hardscape play areas, or fields. If portables were placed on hardscape play areas or fields, recreational space would be reduced.

4.6.2.5 Athletic Field Improvements and Lighting

Athletic field improvements and lighting would enhance recreational opportunities for schools and for community use. Installation of lights would allow SPS to schedule school events, including games and practices, later in the evening than is currently possible. This could reduce the need for SPS and parents to transport students to distant fields for practice and games. Lighting athletic fields helps meet the goals of the Joint Use Agreement. The athletic field improvements would not include expanded spectator facilities. SPS would continue to schedule large competitive events at Memorial Stadium or other SPS stadium facilities in accordance with its agreements with the Seattle Department of Construction and Inspections (SDCI). SPS would also coordinate with Parks to allow the scheduling of youth and adult athletic activities later in the evening on SPS fields. Lighting athletic fields would allow events to be scheduled after dark, which would displace informal recreational use of the fields, but use of the fields after dark is currently limited for safety reasons. The lights would increase safety for anyone wanting to use surrounding facilities, such as tracks after dark.

4.6.2.6 System Repair and Replacement Projects

System replacement and repair projects would not adversely impact recreation on or adjacent to school sites. Projects could include site improvements and upgrades to playground equipment, which would improve recreation.

4.6.3 Mitigation

4.6.3.1 Construction

SPS would comply with construction best management practices (BMPs) to minimize construction noise, dust, and transportation issues during construction to reduce potential disruptions to recreational users. Athletic field improvements, including replacement of existing athletic turf and installation of lights would be scheduled in the summer to avoid conflict with school uses. SPS would coordinate construction schedules with Parks to minimize disruptions to park use.

During construction at Memorial Stadium, SPS would schedule large SPS events such as football games at other SPS stadiums. SPS would coordinate with current users of Memorial Stadium, such as the Seattle Reign, to identify temporary locations during construction. The Memorial Stadium project is being developed in coordination with the City of Seattle. As part of that coordination, SPS would work with the City to minimize impacts to events at Seattle Center.

4.6.3.2 Operation

Replacement and addition projects would be designed to provide quality recreation at school sites. Lighting projects would comply with Parks guidelines. Any addition of a new school at a City of Seattle Park would be done in coordination with the City and with Parks.

4.7 Aesthetics, Light, and Glare

This section describes potential aesthetics, light and glare impacts from the BEX V Program. Specific impacts for individual sites will be further evaluated when SPS begins project specific planning, design, and permitting prior to construction.

4.7.1 Construction Impacts

Common construction-related impacts to aesthetics include clearing and grading or general construction activities (e.g., the presence of construction workers, vehicles, or equipment). Construction staging and material storage, temporary vegetation clearing, and the increased presence of construction vehicles, equipment, and materials would temporarily change the height, bulk, and scale of the site. The presence of construction staging and material storage could result in obstructed views from protected views, view corridors, and scenic routes. Although construction activities would alter the views from adjacent properties, the impacts would be temporary and are not expected to be significant. Areas cleared for temporary construction activities would be replanted post construction, and the presence of construction vehicles, equipment, materials, staging areas and personnel would end. Construction associated with replacement schools and new schools would have greater impacts because of the larger scale of construction, but the impacts would be temporary and are not expected to be significant.

4.7.2 Operation Impacts

4.7.2.1 Replacement Schools

Replacement schools would involve demolishing the existing school and constructing a new building. Replacing schools with new, larger buildings has the potential to result in bulk and scale impacts. Views of the school site would change as the building would potentially be larger, taller, and placed in a different location onsite. In addition, there would likely be changes to landscaping and the overall architectural style of the school. The existing schools already have different heights and footprints than neighboring residential areas; however, the visual contrast between the schools and the neighboring residences would likely increase as the schools would be larger (in either height, floor area, or both) than under existing conditions. Each new school would be designed and placed on the property in a manner that conforms to all zoning requirements and design guidelines, such as set-backs and building heights, to the extent practicable. SPS schools are designed to blend into the existing neighborhood to the extent possible while meeting the academic standards of the school. If necessary, SPS would apply for departures as described in Section 3.3. and would comply with the results of the departure process. Visual changes at replacement school sites would be noticeable to neighbors.

No school replacements are proposed at schools with a protected view (see Section 3.7.1); however, there is the potential for obstructed views from protected view corridors or scenic routes. The Land Use Code provides for the preservation of specified view corridors through setback requirements. Impacts to protected view corridors and scenic routes would be evaluated during site-specific environmental review.

School lighting that can result in light and glare impacts includes parking lot lighting, safety lighting along pathways, and safety lighting on school buildings. New lighting for parking lots and safety would be installed for all of the new replacement school projects. Upgrades to existing facilities could include upgrades to the lighting features in order to minimize spill light. Lighting features at new school facilities would be designed to comply with City code requirements.

4.7.2.2 Modernizations and Additions

Building modernizations would generally require interior construction, for example to upgrade electrical and plumbing systems and heating and air conditioning units. Limited exterior work, such as installing new windows, could be involved. These projects would not result in significant change to the aesthetics of the area, nor would they cause any of the structures to be out of compliance with zoning regulations or design guidelines.

Potential bulk and scale impacts could result from building additions similar to those described for replacement projects in Section 4.7.2.1. Building additions would likely have smaller bulk and height impacts than those of replacement projects. The additions would be designed to blend into the existing building and neighborhood to the extent possible while meeting academic standards. If any element of the project cannot conform to these requirements, SPS would apply for a departure as described in Section 3.3.3

None of the schools identified for modernizations and/or additions have a protected view (see Section 3.7.1); however, as with building replacement schools, there is the potential for obstructing views from protected view corridors or scenic routes (see Section 4.7.1).

Light and glare impacts from parking lot lighting, safety lighting along pathways, and safety lighting on school buildings would be similar to those described for replacement schools in Section 4.7.1.

4.7.2.3 New Schools

Construction of a new school building at a site not currently being used as a school would typically include site acquisition, demolition of existing buildings on the property, and construction of a new school building. Sites for new schools have not been determined, with the exception of the new downtown high school at the Memorial Stadium site. There would be height, bulk, and scale impacts resulting from changing the use of the property to a school use similar to those described for replacement schools (Section 4.7.2.1). It is not yet known whether the new schools would be placed in residential, commercial, or industrial areas. Height, bulk, and scale impacts would be greatest where schools would be placed in residential areas and less in commercial and industrial areas where existing larger scale buildings are more likely. As stated in Section 4.7.2.1, each new school would be designed and placed on the property in a manner that conforms to all zoning requirements and design guidelines, such as set-backs and building heights, to the extent practicable while meeting academic standards. If necessary, SPS would apply for a departure as described in Section 3.3.3.

It is possible that the new schools could cause adverse impacts to protected views, view corridors, and/or scenic routes as described in Section 4.7.1. The potential for impacts would be evaluated during site-specific environmental review.

New schools would have similar light and glare impacts to those described in Section 4.7.2.1. New light sources associated with parking lot and safety lighting would be installed for the new schools, and the degree of change would vary depending on the surrounding land uses, with impacts to commercial and industrial areas being less noticeable and impacts to residential units being more noticeable. Overall, the amount of light and glare created by the new schools is not anticipated to result in significant adverse impacts because they would conform to light and glare standards specified in Section 3.7.3.

For the new high school at the Memorial Stadium site, there would be a noticeable change in height, bulk, and scale as the stadium is redeveloped into a school. However, the Memorial Stadium site is located in an urbanized area and the new school is likely to fit the character of the surrounding neighborhood. SPS is working in cooperation with the City of Seattle to design the school to fit the site.

4.7.2.4 Addition of Portables

Potential bulk and scale impacts could result from the addition of portables. Schools that already host portables, or have limited space to put portables, have a higher likelihood of adverse impacts. Portables would likely not meet zoning requirements and design guidelines, and would further accentuate existing height, bulk, and scale differences between the schools where they are installed and surrounding residential buildings. Portables that are located closer to the street front would have a higher potential for adverse impacts because they would be more visible to surrounding neighbors.

It is possible that the installation of portables could result in adverse impacts to protected views, view corridors, and/or scenic routes as described in Section 4.7.2.1. The potential for these impacts would be evaluated during site-specific environmental review.

Exterior light fixtures would also be installed at the portables. These lighting features would be designed to comply with City code requirements.

4.7.2.5 Athletic Field Improvements and Lighting

Current City of Seattle guidelines recommend that athletic field spill light not exceed 1.1 foot-candles at residential property lines. Foot-candles are a measurement of the light intensity, the illuminance being a one-square foot surface from a uniform source of light. To comply with this requirement, the light poles would likely need to be higher than the allowed 30 feet in residential neighborhoods (SMC 23.76).

Recent SPS lighting projects have included poles that are between 70 and 90 feet high. Therefore, the lighting project would require an exemption to the height limit for the poles. For athletic field lighting, the steel poles, floodlights, and brackets would be designed to minimize size and bulk.

New lighting at athletic fields would produce direct glare, reflected glare, spill light (light trespass) and sky glow. Installation of the lights would result in increased glare from the lights themselves and glare produced by the light being reflected off of nearby surfaces. Direct glare would be visible from all directions overlooking the site, depending on the distance of the observer from the field, orientation of the floodlights, distribution of intervening buildings, terrain or vegetation that would block the glare. The direct glare visible at adjacent residences would likely result from light bouncing off the internal polished reflecting surface of the floodlights. Reflected glare would likely be evident to properties that have direct exposure to the field surfaces, adjacent grass\pavement surfaces, light poles, and floodlight assemblies. Most glare comes from the light reflected off the synthetic turf field surface. The reflected glare impact associated with the poles and floodlights is much less from more remote viewing points, as the impact is reduced at greater distances. The taller light poles proposed for recent SPS lighting projects allow the floodlights to have steeper aiming angles which improves the effectiveness of floodlight shields, reducing the portion of floodlight reflectors visible off site. The “full cutoff” style of LED floodlights proposed for athletic field lighting provide the most advanced light and glare control available for athletic lighting and the internal shielding of the LED diodes further reduces glare and nearly eliminates direct view of the LEDs from off site.

Spill light is light that does not strike the area intended for illumination. Light trespass is when spill light extends beyond the property line of the owner of a light source. The project would meet current City guidelines for light trespass of 1.1 foot-candles. With the advanced lighting technology proposed for recent lighting projects at SPS athletic fields, the predicted light trespass has been lower than the City guideline. For example, at Robert Eagle Staff Middle School, the light trespass at the property boundary is between 0.91 and 1.05 foot-candles. This compares to a typical light trespass from street lights of about 5.0 to 7.0 foot-candles.

Sky glow is the haze or glow of light emitted above the lighting installation and reduces the ability to view the darkened night sky. This is a combination of light emitted directly from the light source, light reflected upward from the illuminated surface, and light reflected from airborne particles between the

light source and the illuminated surface. The athletic field lighting system would generate a minimal amount of “sky glow” at locations in close proximity to the fields. Sky glow would be very minor during heavy low overcast skies and small amounts of sky glow would be evident during conditions of low to heavy fog.

The lighting systems would operate from dusk to the pre-set curfew time, likely 10 p.m. The lighting systems would be operated by a fully programmable control system with remote operation at SPS’s energy management system at the John Stanford Center that allows lights to be turned on and off at programmed times.

4.7.2.6 System Repair and Replacement Projects

System repair and maintenance projects would take place within the existing school buildings and footprints and would not result in significant change to the aesthetics of the area, nor would they cause any of the structures to be out of compliance with zoning regulations or design guidelines. No light and glare impacts would occur.

4.7.3 Mitigation

4.7.3.1 Construction

The following construction mitigation measures would be implemented to reduce construction-related impacts to aesthetics, light, and glare.

1. Restore staging areas following project completion, and
2. Replant vegetation removed for construction activities.

4.7.3.2 Operation

The relative intensity of bulk and mass changes proposed for particular buildings can often be mitigated with creative and innovative design. Mitigating measures that SPS can use to reduce the height, bulk, and scale impacts of a development proposal include: repositioning the development on the site; limiting the height; modifying the bulk; modifying setbacks; and modifying the façade or landscaping. Specific mitigating measures necessary to reduce or eliminate impacts at individual sites would be identified during project-level design and environmental review.

Lighting impacts from parking lots and security lighting can be minimized by proper design and screening. Specific mitigating measures necessary to reduce or eliminate impacts at individual sites would be identified during project level design and environmental review. Light and glare impacts associated with new lighted athletic fields would be minimized through the use of lighting systems that are designed to minimize light and glare impacts. The increased mounting height of 70 and 90 feet would reduce the maximum spill light at the residential property lines and meet recommended practice of a maximum of 1.1 foot-candles set by the City of Seattle.

4.8 Noise

This section describes potential noise impacts from construction and operation of projects proposed under the BEX V Program.

4.8.1 Construction Impacts

Construction activities would generate noise and possibly vibration. Construction equipment and vehicles would include jackhammers, track hoes, dump trucks, forklifts, and boom trucks. This equipment would be in use most during the early stages of construction, typically during the first three or four months of construction. For most of the construction period, exterior and interior work would generate noise levels much lower than those of the heavy construction phase of the project.

The Seattle Land Use Code allows construction equipment operations between the hours of 7 a.m. and 10 p.m. on weekdays and 9 a.m. and 10 p.m. on weekends and holidays. It is expected that construction would generally occur between 7 a.m. and 5 p.m. on weekdays. It is unlikely that construction would occur at night or on holidays. Weekend construction could occur in some cases.

4.8.2 Operation Impacts

4.8.2.1 Replacement Schools

Increasing student capacity by replacing existing schools would not change the types of noise or timing of noise at the schools. Residents of neighboring properties would likely notice a slight increase in noise at the beginning and end of the school day and during lunch and recess periods from the increased number of students. Additional car and bus trips for student drop-off and pickup would likely increase noise to neighboring residents. The increased noise would not violate noise standards and impacts are not expected to be significant.

4.8.2.2 Modernizations and Additions

Noise impacts from increasing student capacity at existing schools through modernizations and additions would be similar to those described for replacement schools in Section 4.8.2.1. The increased noise would not violate noise standards and noise impacts are not expected to be significant.

4.8.2.3 New Schools

Constructing new schools at new locations would change the noise environment of the surrounding neighborhood. The neighborhood would experience typical school activity sounds such as traffic for drop-off and pick-up of students, recess and physical education activities outside, bells ringing throughout the day, and after school activities. The level of impacts of the increased noise would depend on the type of neighborhood in which new schools are located. Noise from new schools in residential neighborhoods would be more noticeable to neighboring residents than it would be in commercial neighborhoods. The new noise in neighborhoods is not expected to violate noise standards and impacts are not expected to be significant.

New schools could also be affected by noise generated by surrounding land uses depending on where they are located. Schools located in commercial or industrial areas could experience noise from traffic,

equipment, and operations associated with commercial and industrial activities. The design of new schools includes features that would reduce noise, such as insulation. However, students would experience noise from surrounding areas when windows are open and during outside activities. SPS would consider potential noise impacts from surrounding land uses when selecting new school sites.

The addition of a high school at the Memorial Stadium site could increase noise in the area. However, the site is in a busy urban area and located near Mercer Street, a major arterial that generates substantial traffic noise. Noise at the new stadium would be similar to existing noise conditions during sports events. Therefore, the increase in noise would be unlikely to affect adjacent uses.

4.8.2.4 Addition of Portables

Increasing student capacity by adding portables to existing school sites would have similar noise impacts to those described for replacement schools in Section 4.8.2.1.

4.8.2.5 Athletic Field Improvements and Lighting

Installing athletic field lighting at schools would make the fields available for school and public use in the evenings. Fields would be lit from dusk until a pre-set curfew time, likely 10 p.m. Fields would be used for school athletic practice and events and for Seattle Parks community recreational events. SPS has not yet identified which fields would be lit with BEX V funding. Lights would likely be installed on high school and middle school athletic fields. Sports likely to occur on lighted fields include football, soccer, baseball, softball, lacrosse, flag football, ultimate Frisbee, and similar events. No spectator stands would be constructed at the fields.

Noise from evening use of the fields would likely be noticeable to neighbors of the school. Noise from the anticipated types of events include yelling and whistles from sports participants and cheering from spectators. SPS does not anticipate installing new spectator stands other than small portable bleachers, so spectator noise would be limited. Large spectator events such as varsity football games would continue to be scheduled at SPS stadiums. Environmental noise and shorter duration noises (whistles, loud yells) during athletic activities would likely be perceptible at adjacent properties. These noises would all be of short duration (generally no more than a few seconds for any given event). Lighted fields would also generate additional traffic at the schools for part of the year (October to March). Although normal traffic noise is not regulated under the City's code, noise generated from increased traffic and users entering or existing vehicles would contribute to the noise environment.

Noise levels associated with evening activities would be dependent on the types of activities and the existing noise levels in neighborhoods. Noise studies conducted for athletic field lighting recently installed under BTA IV funding indicate that while noise increases with athletic activities, noise levels typically do not violate noise standards unless the existing noise environment is already close to the noise standards. Noise studies would be conducted at the fields proposed for lighting as part of the permitting process for installing the lights.

Most SPS athletic fields are not equipped with public address speaker systems and none would be installed. SPS would prohibit the use of portable speakers during evening events.

SPS also proposes to improve athletic fields at some schools, including installing artificial turf. These improvements could extend the season of use of the fields even if no lighting is installed. Residences adjacent to these fields would likely experience increased noise from the increased use of the fields, but the noise would not exceed noise standards and impacts are not expected to be significant.

4.8.2.6 *System Repair and Replacement Projects*

System repair and replacement projects would not increase operational noise at school sites.

4.8.3 Mitigation

4.8.3.1 *Construction*

Construction activities would be restricted to hours designated by SMC 25.08.425. If construction activities exceed permitted noise levels, the District would instruct contractors to implement measures to reduce noise impacts to comply with the noise ordinance, which may include additional muffling of equipment.

4.8.3.2 *Operation*

No significant operational noise impacts are anticipated from increasing capacity at existing schools or building new schools, so no mitigation measures are proposed. For athletic field lighting projects, SPS would schedule events to end by 9:45 p.m. with lights off at 10:00 p.m. to reduce noise impacts on neighbors. SPS would restrict the use of PA systems and would prohibit the use of portable speakers at evening events. Lighting projects would undergo additional noise analysis during permitting and additional mitigation measures could be developed at that time if the analysis indicates noise impacts would be significant.

4.9 Air Quality

This section describes potential noise impacts from construction and operation of projects proposed under the BEX V Program.

4.9.1 Construction

Trucks and construction equipment would generate vehicle emissions during construction. Fugitive dust could arise from excavation, demolition, vehicle traffic, human activity, and wind erosion over exposed earth surfaces. Some construction activities could cause odors detectable to some people near the project site, especially during paving operations that use tar and asphalt. These odors would be localized and short-term in duration. Vehicle emissions and dust would primarily be generated by excavation and demolition during the early phases of construction. Construction vehicles would also temporarily generate increased greenhouse gas emissions, although not at a significant level in relation to regional totals.

4.9.2 Operation

4.9.2.1 Replacement Schools

Replacement schools would have higher enrollment capacity than the schools they replace. The increased enrollment would increase the number of parent drop-off and pick-up car trips to and from the school. This could result in a minor increase in vehicle emissions. Increased enrollment could also potentially cause an increase in the number of school buses trips. Diesel fumes from idling buses are known to present a health hazard to students and nearby residents (EPA Region 8, 2017). Adopting anti-idling policies has been demonstrated to reduce those impacts (Ryan et al., 2013). SPS has an anti-idling policy for buses. The increase in capacity at replacement schools would only increase the number of buses at locations where buses are already used. It is not anticipated that this small increase combined with increased enforcement of the anti-idling policy would result in major increases in emissions.

4.9.2.2 Modernizations and Additions

Air quality impacts of the operation of modernization and addition projects would be the same as for replacement schools (Section 4.9.2.1).

4.9.2.3 New Schools

New schools would have similar impacts to replacement schools (Section 4.9.2.1), but the increase in emissions would be greater because there are currently no bus or parent drop-off and pick-up activities occurring on the sites of new schools. For any new schools located downtown, including a new high school at the Memorial Stadium site, student and employee access is likely to be provided mostly by transit. Therefore, new downtown schools would not be anticipated to cause increased emissions from bus idling or parent drop-off and pick-up.

4.9.2.4 Addition of Portables

The addition of portables themselves would not generate operational air quality impacts, but increases in enrollment capacity could cause the same impacts as for replacement schools (Section 4.9.2.1).

4.9.2.5 Athletic Field Improvements and Lighting

Athletic field lighting would allow existing athletic fields to be used later in the evening year-round. Additional use of athletic fields would cause an increase in vehicle trips during fall and winter months. However, use of the fields and associated air quality impacts would be the same as in summer months. This would cause a minor increase in vehicle emissions. Buses could be used to transport SPS students to athletic fields for evening games, but the number of buses would be limited and would not cause increased emissions from bus idling.

4.9.2.6 System Repair and Replacement Projects

System repair and replacement projects would not affect air quality.

4.9.3 Mitigation

4.9.3.1 Construction

SPS would require contractors to implement measures to control dust and reduce vehicle emissions. Contractors would be required to comply with the Puget Sound Clean Air Agency's (PSCAA) Regulation I, Section 9.15 requiring reasonable precautions to avoid dust emissions and Regulation I, Section 9.11 requiring the best available measures to control emissions of odor-bearing contaminants. The contractor would be required to comply with recommendations in the Washington Associated General Contractors brochure "Guide to Handling Fugitive Dust from Construction Projects."

4.9.3.2 Operation

Anti-idling policies have been shown to reduce the impacts of idling buses. SPS will enforce its anti-idling policy and will work with school neighbors to ensure enforcement. Neighbors who notice buses idling on-site can contact SPS Transportation at 206-252-0900.

4.10 Energy and Natural Resources

This section describes potential impacts on energy and natural resources from construction and operation of projects proposed under the BEX V Program.

4.10.1 Construction

Construction activities associated with school projects would require use of energy in the form of electricity and fuel for construction vehicles. Projects requiring demolition of existing structures would increase the amount of materials sent to landfills. Projects would also require new materials for construction. All project types could include demolition of structures, but replacement school would require the most demolition. All materials from demolished structures would be properly disposed of at approved sites.

4.10.2 Operation

4.10.2.1 Replacement Schools

Replacement school buildings would require energy from electricity and potentially natural gas to operate. Replacement schools would be designed to Washington Sustainable Schools Protocol and the SPS Natural Resource Conservation Policy and would be substantially more energy efficient than the existing schools they would replace. With the exception of a 1998 addition to Kimball Elementary, the schools currently proposed for demolition for replacement school projects date from 1954 to 1970. Overall, the energy efficiency of the replacement schools is expected to reduce requirements for energy and natural resources.

4.10.2.2 Modernizations and Additions

Additions would require energy from electricity and potentially natural gas to operate and would be designed to Washington Sustainable Schools Protocol and SPS Natural Resource Conservation Policy.

Schools with additions would be less energy efficient than replacement schools because the existing school would remain in operation.

4.10.2.3 New Schools

Similar to replacement schools, new schools would require energy from electricity and potentially natural gas to operate and would be designed to Washington Sustainable Schools Protocol and the SPS Natural Resource Conservation Policy. New schools would constitute a new energy use, depending on the existing use on site they replaced.

4.10.2.4 Addition of Portables

Portables would require energy from electricity and potentially natural gas and would not be as energy efficient as replacement schools or additions.

4.10.2.5 Athletic Field Improvements and Lighting

Athletic field lighting would consist of LED floodlights which would require a minor amount of electricity to operate. Lights would be programmed to automatically shut off at night.

4.10.2.6 System Repair and Replacement Projects

System repair and replacement projects would not create new energy uses at existing schools, but in some cases may increase energy efficiency and reduce energy use.

4.10.3 Mitigation

4.10.3.1 Construction

Demolition materials would be disposed of at approved sites. Contractors would use construction vehicles in good operating condition to improve energy efficiency.

4.10.3.2 Operation

School projects would be built to the Washington Sustainable Schools Protocol, or to LEED silver standards and would comply with SPS's Natural Resource Conservation Policy. The program requires a 10 percent reduction in energy use beyond what is required by the Washington State Energy Code (RCW 39.35D.040). Specific energy conservation features used would vary by project.

Chapter 5 Alternatives: Impacts

5.1 Introduction

Chapter 4 discusses impacts and mitigation measures for the project types included in the BEX V Program alternatives. This chapter summarizes the impacts across the District for each alternative.

For each of the alternatives, this chapter also discusses educational and cost considerations. These are part of the additional issues that can be evaluated in an EIS under SPS Policy No. 6890 (State Environmental Policy Act Compliance). Although these issues are not part of the criteria for threshold determinations, the issues are important considerations for SPS's decisions about its capital projects. The policy states:

In the sole discretion of the district, an EIS may discuss any or all of the following issues, which shall not be part of the criteria for threshold determinations or be subject to any of the other requirements or purposes of this resolution, including administrative or judicial appeal:

1. Educational considerations;
2. Cost considerations;
3. Economic effects;
4. Other social or public policy analysis; or
5. Cost-benefit analysis.

5.2 Alternative 1 – No Action Alternative

The No Action Alternative assumes that there would be no BEX V Program and no capacity projects, field lighting projects, or facility improvements. Some schools would continue to use portable buildings to meet capacity needs and more portables may be required if District enrollment continues to increase and funding allows.

5.2.1 Environmental Impacts

Transportation. Alternative 1 is not expected to increase capacity at any of the BEX V school sites, and thus no additional increases in traffic volumes or parking demand related to capacity increases would occur at those locations. However, school enrollment would continue to increase, and some combination of portables placement, school boundary adjustments, and program relocation may be needed at schools to accommodate capacity demands. Increased enrollment would likely increase traffic volumes and parking demand at locations around the District. Measures to address overcrowding would be reactive, implemented to accommodate student populations that would occur with or without them, and would not induce new students in and of themselves. Therefore, no transportation or parking

impacts would result from these measures themselves. Depending on the location, placement of portables could result in reductions of on-site parking supply.

Because Alternative 1 would not include capital improvement projects, it would have no short-term construction impacts other than a small number of truck trips needed to install portables at school sites.

Land Use. Under Alternative 1, land use at SPS sites throughout the District would not change. SPS could likely address capacity needs by adding portables to schools throughout the District if funding allowed. Portables would not change land use and would not require property acquisition or demolition. However, adding portables may not meet certain code requirements (such as the code required number of parking spaces and building setbacks) at all sites.

Trees and Environmentally Critical Areas (ECAs). The addition of portables is unlikely to affect trees or ECAs, but portables could potentially require tree removal or could be located within or adjacent to ECAs. Portable siting plans would be designed to minimize these issues. If the placement of portables increases impervious surfaces on the site, the amount of runoff to wetlands and riparian corridors could potentially be increased by a small percentage.

Historic and Cultural Resources. Under Alternative 1, SPS school buildings would remain in their current configurations. Installing portables would require a low degree of ground disturbance and therefore would have low potential for impacting subsurface cultural resources. Adding portables to landmark-designated schools could indirectly impact their integrity of siting through visual change and in some cases could require a Certificate of Approval from the Landmarks Preservation Board. Needed maintenance for historic buildings would not be funded, potentially leading to degradation of the buildings.

Recreation. Addition of portables could cause short-term disruption to recreation on or adjacent to school sites and reduce the amount of recreational space on a school site. Aging on-site recreational facilities at schools around the District would not be replaced or upgraded. The condition of fields would deteriorate through normal wear and tear, and fields could potentially be taken out of service. If no additional athletic field lighting is installed, the shortage of space for evening recreational activities would continue for SPS and Parks.

Aesthetics, Light, and Glare. Major changes to structures at SPS project sites would not occur under Alternative 1. Portables would be visible and could accentuate height, bulk, and scale differences between the schools where they are installed and surrounding residential buildings.

Noise. Increasing student capacity could cause a slight increase in noise at the beginning and end of the school day and during lunch and recess periods. Additional car and bus trips could increase noise to neighboring residents. The increased noise would not violate noise standards and impacts are not expected to be significant.

Air Quality. The No Action Alternative would not cause construction-related air quality impacts. Increased enrollment at SPS schools could cause additional bus or parent vehicle trips which would increase emissions at SPS schools around the district.

Energy and Natural Resources. The No Action Alternative would not impact landfills as no demolition would occur. Existing schools would not be replaced or receive systems upgrades which would reduce energy use at those schools.

5.2.2 Additional Considerations

As described in Section 1.3.1, the purpose of the BEX V program is to address capacity shortages, accommodate state requirements for reduced class sizes, and replace or renovate schools to address poor building conditions. The No Action Alternative would not meet any of these needs. Under the No Action Alternative, SPS would rely on increasing class sizes and/or siting additional portables at existing schools in order to meet capacity needs if funding permits. Larger class sizes would not meet state requirements for class size reduction. Aging school buildings in poor condition would continue to deteriorate and would require more costly maintenance over time.

5.3 Alternative 2 – Additional Capacity and Improved Conditions with Replacement Schools and Additions (Preferred Alternative)

With Alternative 2, additional enrollment capacity would be provided through replacement of up to eight elementary and three middle schools, additions and modernizations at up to six elementary schools and one high school, construction of a new downtown high school with a stadium, and construction of a new downtown elementary school. Athletic field improvements would include the addition of athletic field lighting at up to five school sites. This alternative would also include systems repair and replacement projects to renovate and modernize educational facilities throughout the District and to address the backlog of maintenance and repair needs.

5.3.1 Environmental Impacts

Transportation. Transportation and parking impacts resulting from Alternative 2 could include traffic volume increases, operational impacts, and increases in parking demand, at up to 17 sites throughout the city where projects would increase student capacity at existing school sites. Of these, up to 11 replacement school projects could provide student capacity increases, which in turn could result in higher traffic and parking generation. Six addition and modernization projects may also result in student capacity increases, which could also generate increased traffic and parking demand. Traffic and parking demand increases resulting from both types of projects are likely to occur in patterns already occurring at each site. The two new schools that would be constructed with this alternative could generate total traffic and parking volumes that are similar to or greater than that generated by replacement school projects. Traffic and parking volumes could represent new demand at and near the site where the school is constructed, depending on whether they replace an existing demand generating land use. Installation of new field lighting at up to five schools can result in increased evening traffic generation during the fall and winter months when natural light conditions would otherwise not permit use of fields. Although they extend the seasons and periods throughout which athletic field-related traffic and parking impacts can occur, they would not generate new impacts that do not already occur when natural light conditions allow. Overall, Alternative 2 is expected to result in low to moderate levels of

traffic and parking impacts at existing school sites throughout the city, and potentially higher levels of impacts at two sites where new schools would be constructed.

The level of construction-related traffic and parking impacts would be determined as part of project-level analysis. Construction traffic and parking impacts are expected to be at low to moderate levels for the six addition and modernization projects, as well as the five field lighting projects. For the 11 replacement school projects, construction transportation impacts could be moderate, primarily depending on the amount of excavation or grading that would be needed. Construction impacts could be most noticeable for the two new schools, depending on the amount of demolition of existing uses and earthwork required. Construction impacts associated with the Alternative 2 projects would occur at sites distributed throughout the city.

Land Use. Under Alternative 2, SPS would primarily meet capacity needs through replacement schools and building additions, which would not change land use at the project sites but could require departures in order to meet zoning code requirements. Additions or new, larger schools could cause height, bulk, and scale impacts. Construction of a new downtown elementary school would require a change in land use and potentially property acquisition at the project site and could require departures in order to meet zoning code requirements. Construction of a new high school with stadium at the Memorial Stadium site would require a change in land use, potential use of additional Seattle Center property, and potential departures in order to meet zoning code requirements. The change in land use would be compatible with surrounding conditions and would meet the zoning code.

Trees and Environmentally Critical Areas. Construction of replacement schools and building additions around the District would likely require tree removal, potentially including Exceptional Trees. Projects would be designed to minimize the removal of trees, especially Exceptional Trees, where possible, and trees would be removed and replaced in accordance with City of Seattle code. Construction could also occur in or adjacent to ECAs and their buffers, though construction would avoid ECAs to the extent practicable and any development that would occur would comply with the City's ECA regulations. If a project increased impervious surfaces on the site, the amount of runoff to wetlands and riparian corridors could potentially be increased by a small percentage. Projects would be designed to meet the City of Seattle's stormwater regulations.

Historic and Cultural Resources. Replacement projects would include demolition of existing school buildings, resulting in direct impacts to historic resources if the schools are determined to be eligible for listing in a historic register. The potential schools for replacement projects are unevaluated for eligibility. Building additions could have direct impacts to a landmark-designated school if the project altered designated features. This could be mitigated through obtaining a Certificate of Approval from the Landmarks Preservation Board and by designing building additions to be architecturally sympathetic with the existing school. Construction would require ground disturbance which could impact subsurface cultural resources, if present. Individual project-level analysis would be conducted on each project and, depending on the project, an Inadvertent Discovery Plan (IDP) would be prepared to address potential impacts. Construction of a new downtown high school and stadium would require demolition of Memorial Stadium and would impact the Memorial Wall, which may meet the criteria for designation as

Seattle Landmarks. SPS would coordinate with the Landmarks Preservation Board, City of Seattle, Seattle Center, and DAHP regarding demolition of the Stadium and preservation or relocation of the Wall.

Recreation. On-site recreational facilities (such as fields and play equipment) would be closed to the public during construction of school projects. Construction could be visible and audible to users of nearby parks. Memorial Stadium would not be available for recreational events (such as sports and concerts) during construction of the new downtown high school with stadium. Larger school buildings to accommodate added capacity could reduce the amount of recreational space on the site. However, most projects would include upgrades of recreational equipment and spaces and would better incorporate recreational features into the site. The new stadium would improve conditions for recreation compared to the aging Memorial Stadium. Athletic field improvements and lighting would enhance recreational opportunities for schools and for community use.

Aesthetics, Light, and Glare. Larger school buildings would have the potential to result in height, bulk, and scale impacts, but would be designed to conform to zoning requirements and design guidelines. If necessary, SPS would apply for a departure. Lighting features at new school facilities would be designed to comply with City code requirements. Athletic field lights would likely require an exemption to the height limit for the light poles, as allowed in SMC 23.76. New lighting at athletic fields would produce direct glare, reflected glare, spill light (light trespass) and sky glow, but would be designed with advanced lighting technology and would meet the City guideline that light trespass not surpass 1.1 foot-candles. Athletic field lights would operate from dusk to the pre-set curfew time, likely 10 p.m.

Noise. Construction of school projects would generate noise and possibly vibration. Increasing student capacity could cause a slight increase in noise at the beginning and end of the school day and during lunch and recess periods. Additional car and bus trips could increase noise to neighboring residents. The increased noise would not violate noise standards and impacts are not expected to be significant. Installing athletic field lighting would lead to an increase in evening use of fields, which would expand the instances that noise from evening use of the fields that would likely be noticeable to neighbors of the school. Noise studies conducted for athletic field lighting installed under BTA IV funding indicate that while noise increases with athletic activities, noise levels typically do not violate noise standards unless the existing noise environment is already close to the noise standards. Noise studies would be conducted at the fields proposed for lighting as part of the permitting process for installing the lights and additional mitigation could be required.

Air Quality. Construction of school projects could generate vehicle emissions, fugitive dust, or odors. Increasing the enrollment capacity at existing schools would lead to an increase in the number of school buses and parent drop-off and pick-up trips. Diesel fumes from idling buses are known to present a health hazard to students and nearby residents, but SPS has an anti-idling policy for buses that would reduce any impacts.

Energy and Natural Resources. New and replacement schools and additions would require electricity and potentially natural gas to operate, but would include energy conservation features that would substantially reduce their energy use compared to existing schools. Demolition of existing schools for replacement schools would increase the amount of materials sent to landfills and would require new

materials for construction. Overall, the energy efficiency of the replacement schools and additions is expected to reduce requirements for energy and natural resources.

Mitigation. Mitigation measures for impacts described above are discussed throughout Chapter 4. Specific mitigation measures for impacts would be developed as part of project level environmental review.

5.3.2 Additional Considerations

Alternative 2 would meet the purposes of the BEX V Program (Section 1.3.1) in a cost effective way while meeting educational needs. Where possible, replacement schools best meet educational and program needs because they allow for a cohesive new and enlarged school design on an existing site to meet current educational standards. Replacement schools typically cost substantially less than a modernization and addition project because of the high costs of bringing an older building up to current code standards, including building codes and seismic and energy standards. Where replacement schools are not possible, Alternative 2 would meet educational and conditions needs by modernizing schools and building additions.

5.4 Alternative 3 – Additional Capacity with New Schools at New Sites

With Alternative 3, additional enrollment capacity would be provided through construction of up to four new elementary schools. The new schools would be located in the attendance areas with the highest capacity needs. No sites have been selected for these schools, although one is expected to be downtown as described for Alternative 2. This alternative also includes the same new downtown high school, addition of athletic field lighting at up to five schools, and systems repair and replacement projects included with Alternative 2.

5.4.1 Environmental Impacts

Transportation. Transportation and parking impacts resulting from Alternative 3 could include traffic volume increases, operational impacts, and increases in parking demand at up to four new elementary schools and one new high school. Because all needed new student capacity would be accommodated with these projects, the new schools would be expected to generate total local-area traffic and parking demand increases that would be greater than those generated by individual projects identified in the other alternatives. Traffic and parking demand generated by the new schools could represent new demand at and near the site where each school is constructed. Impacts associated with field lighting projects would be the same as Alternative 2. Overall, Alternative 3 is expected to result in more concentrated levels of traffic and parking demand increases, which could be new to the transportation systems immediately surrounding each of the five sites where new schools would be constructed.

The level of construction-related traffic and parking impacts would be determined as part of project-level analysis. Construction impacts could be more noticeable for new school construction, depending on the amount of demolition and earthwork on each site. These impacts would be concentrated at the five sites where construction would occur. Construction traffic and parking impacts are expected to be at low levels for the five field lighting projects, similar to Alternative 2.

Land Use. Alternative 3 would require the most property acquisition and the most changes in land use of all the alternatives because SPS would meet capacity needs with new schools at new sites. Under this alternative schools would be constructed in areas that currently have no schools, resulting in changes to the surrounding neighborhood. Similar to Alternative 2, projects could require departures in order to meet zoning code requirements.

Trees and Environmentally Critical Areas. Impacts to trees and ECAs would be the same as for Alternative 2, but would occur at fewer sites throughout the District. Alternative 3 has greater potential to impact trees and ECAs because the schools would be located on new sites, especially if the site is undeveloped.

Historic and Cultural Resources. Construction activities could impact subsurface cultural resources similar to Alternative 2 but would occur at fewer sites. New school sites could have existing structures that could have historic significance. Demolition of such structures could cause direct impacts to historic resources. Needed maintenance for historic school buildings would not be funded, potentially leading to degradation of the buildings. Impacts to Memorial Stadium and the Memorial Wall would be the same as for Alternative 2.

Recreation. If construction of new schools took place adjacent to a park or another site used for recreation, recreational use would be disrupted during construction. If the site of a new school did not formerly provide recreation, the school would provide new recreation to the extent that recreational areas were open to the public outside of school hours. Recreational impacts and benefits of the replacement of Memorial Stadium and of athletic field improvements and lighting would be the same as for Alternative 2. Recreational facilities at existing school sites would not be upgraded.

Aesthetics, Light, and Glare. Impacts would be similar to Alternative 2 but would occur at fewer sites. It is possible that new schools could result in adverse impacts to protected views, view corridors, and/or scenic routes depending on the site. Impacts of athletic field lighting would be the same as for Alternative 2.

Noise. Constructing new schools at new locations would change the noise environment of the surrounding neighborhood, which would experience typical school activity sounds such as traffic drop-off and pick-up of students, recess and physical education activities outside, bells ringing throughout the day, and after school activities. This would be most noticeable if a new school were constructed in a residential area. New noise is not expected to violate noise standards and impacts would not be significant. The noise impacts of athletic field lighting would be the same as for Alternative 2.

Air Quality. Constructing new schools and new locations could increase emissions at those sites from bus idling and parent drop-off and pick-up of students, uses which do not currently occur at those sites. Increases in emissions are expected to be minor and enforcement of SPS's anti-idling policy would reduce impacts from idling buses.

Energy and Natural Resources. Construction of new schools would create new energy uses, particularly if the school was constructed at a site which is currently vacant. Any demolition required to clear sites for new schools would increase the amount of materials sent to landfills and would require new

materials for construction. New schools would include energy conservation features that would substantially reduce their energy use.

Mitigation. Mitigation measures for impacts described above are discussed throughout Chapter 4. Specific mitigation measures for impacts would be developed as part of project level environmental review.

5.4.2 Additional Considerations

Alternative 3 would meet capacity needs and accommodate reduced class sizes but would not address poor conditions at existing schools. Constructing new schools at new sites would likely require substantial changes to attendance area boundaries. In order to construct the new schools included in Alternative 3, SPS would have to acquire property in multiple locations around the City, which could be cost prohibitive given the high cost of property in the City. It would be difficult for SPS to acquire new property while avoiding use of eminent domain. Reacquiring leased or sold former SPS properties would be impractical because the properties are in use by other entities which may not wish to sell at this time. It would be costly to bring the former SPS properties up to current code standards, including building codes and seismic and energy standards. SPS would need to construct fewer schools under Alternative 3 than under Alternatives 2 and 4. However, deferred maintenance at existing schools would remain unaddressed.

5.5 Alternative 4 – Additional Capacity and Improved Conditions with Additions and Modernizations

Under Alternative 4, additional enrollment capacity would be provided by modernizing existing buildings and constructing building additions. No replacement schools would be constructed and no new schools would be constructed at new sites. Building additions and modernizations would occur at up to 17 elementary schools, three middle schools, and six high schools. This alternative also includes the same addition of athletic field lighting at up to five schools, and systems repair and replacement projects included with Alternative 2.

5.5.1 Environmental Impacts

Transportation. Transportation and parking impacts resulting from Alternative 4 could include traffic volume increases, operational impacts, and increases in parking demand, at up to 26 sites throughout the city where projects would increase student capacity at existing school sites. All would consist of addition and modernization projects that would provide low to moderate capacity increases, which in turn would be expected to result in low to moderate traffic and parking generation increases. Traffic and parking demand increases resulting from these projects would be likely to occur in patterns already occurring at each site. Impacts associated with field lighting projects would be the same as Alternative 2. Overall, Alternative 4 would be expected to result in low to moderate levels of traffic and parking impacts at existing school sites throughout the city, but impacts would occur at the highest number of locations.

The level of construction-related traffic and parking impacts would be determined as part of project-level analysis. Construction traffic and parking impacts are expected to be at low to moderate levels for the 26 addition and modernization projects. Construction impacts associated with the Alternative 4 projects would occur at highest numbers of sites, distributed throughout the city.

Land Use. The land use impacts of Alternative 4 would be similar to Alternative 2, but less demolition would be required as SPS would meet capacity needs through building additions as opposed to a mix of replacement schools and building additions. Potential height, bulk, and scale impacts would occur at more high school sites around the District than under Alternative 2.

Trees and Environmentally Critical Areas. Impacts would be similar to Alternative 2. Construction would occur at more high school sites than under Alternative 2, which would have more potential impacts to trees and ECAs.

Historic and Cultural Resources. Impacts would be the same as Alternative 2, except no existing schools would be demolished. More existing high schools would potentially be impacted by building additions.

Recreation. Impacts would be similar to Alternative 2, but would occur at more high school sites around the District.

Aesthetics, Light, and Glare. Impacts would be similar to Alternative 2, but would occur at more high school sites around the District.

Noise. Impacts would be similar to Alternative 2, but would occur at more high school sites around the District.

Air Quality. Impacts would be similar to Alternative 2, but would occur at more high school sites around the District.

Energy and Natural Resources. New additions would require electricity and potentially natural gas to operate. Additions would be designed to be energy efficient, but the combination of the existing schools and additions would be less energy efficient than replacement schools.

Mitigation. Mitigation measures for impacts described above are discussed throughout Chapter 4. Specific mitigation measures for impacts would be developed as part of project level environmental review.

5.5.2 Additional Considerations

Alternative 4 would meet capacity and condition needs, similar to Alternative 2. Alternative 4 would rely on building additions to meet capacity needs and would not include replacement schools. As described above in Section 5.3.2, building additions do not meet educational and program needs as well as replacement schools. Modernization and addition projects are also more expensive than replacement projects. Therefore, Alternative 4 would be less cost effective than Alternative 2 and would not meet educational needs as well.

5.6 Cumulative Impacts

Cumulative impacts are the effects that may result from the incremental impact of an action when added to other past, present and reasonably foreseeable future actions. The BEX V Program is expected to have an overall beneficial effect on schools and neighborhoods in the City and would result in few adverse cumulative impacts. The capacity projects included in the BEX V Program are being implemented to address capacity limitations that would result from predicted increased enrollment that would occur with or without the proposed projects. The proposed projects would not cause increased enrollment.

Construction associated with the BEX V Program would result in cumulative construction impacts in the City. This would be especially true in areas where other major construction projects are occurring. Construction associated with the BEX V projects would add to the air quality, noise, and transportation impacts associated with major construction projects. Because the BEX V projects would be phased over several years and would be distributed across the City, cumulative construction impacts are expected to be limited.

Some projects in the BEX V Program could result in increased traffic in some neighborhoods, with accompanying parking congestion. However, the sites identified for capacity increases are not located within close proximity of one another and are not expected to result in cumulative impacts to overlapping transportation service areas. Site specific project-level traffic studies would evaluate potential cumulative impacts of these projects along with other planned or permitted developments near each site. If necessary, mitigation plans would be developed to reduce the potential cumulative transportation impacts.

Land use impacts associated with the BEX V Program would be limited because property acquisition and land use changes would be limited in scale, so no cumulative land use impacts are anticipated. Additions or new, larger schools could cause height, bulk, and scale impacts. SPS would comply with land use requirements and the results of any departure processes. Alteration of historic schools would contribute to the cumulative reduction in the number of historic buildings and schools in the City. SPS would work with the Landmarks Preservation Board to evaluate the historical significance of buildings and to design individual projects to minimize impacts to historic and cultural resources. The demolition of existing buildings and construction of new buildings would increase the demand for energy and natural resources. However, SPS would comply with its Natural Resource Conservation Policy and its guiding principles for the BEX V Program, which require reduced resource usage and increased conservation by using life cycle cost approaches. Compliance with these policies would result in an overall reduction of energy use, avoiding cumulative impacts. The BEX V projects could contribute to the cumulative decline of ECAs in the City, but the projects would be designed to avoid ECAs to the extent possible. Because the school projects would be located in areas that have been previously developed, impacts to ECAs are not expected to be significant and SPS would comply with ECA regulations and mitigation requirements. The BEX V projects would require the removal of some trees, but SPS would protect Exceptional Trees to the extent possible and would replace any trees removed in accordance with City of Seattle requirements.

The BEX V program is not expected to have adverse impacts to recreation or aesthetics and therefore would not cause negative cumulative impacts to those resources. Recreational facilities would be

improved at replacement schools and schools that are modernized, resulting in recreational improvements throughout the City. The athletic field improvements and athletic field lighting projects would increase recreational opportunities in the City.

Individual projects included in the BEX V Program would undergo applicable project-level review. That review would identify specific impacts and applicable mitigation measures. Therefore, no significant cumulative impacts are expected from the BEX V Program.

Chapter 6 References

Citation	Reference
Becker et al., 2011	Becker, Paula Alan J. Stein, and the HistoryLink Staff. 2011. The Future Remembered: The 1962 Seattle World's Fair and Its Legacy. Seattle Center Foundation, Seattle.
City of Seattle, 2013	City of Seattle. 2013. 2013 Urban Forest Stewardship Plan. September 2013.
City of Seattle, 2015	City of Seattle. 2015. 2016-2021 Proposed Capital Improvement Program.
City of Seattle, 2016a	City of Seattle. 2016. <i>Seattle 2035, Comprehensive Plan, Managing Growth to Become an Equitable and Sustainable City, 2015-2035</i> . November. Available at: http://www.seattle.gov/Documents/Departments/OPCD/OngoingInitiatives/SeattlesComprehensivePlan/SeattleComprehensivePlanCouncilAdopted2016.pdf
City of Seattle, 2016b	City of Seattle. 2016. Seattle Urban Forest Stewardship Plan 2016 Work Plan.
City of Seattle, 2016c	City of Seattle. 2016. Uptown Urban Design Framework.
City of Seattle, 2017a	City of Seattle. 2017. <i>Seattle 2035, Comprehensive Plan 2017 Amendments, Managing Growth to Become an Equitable and Sustainable City, 2015-2035</i> . October. Available at: http://www.seattle.gov/Documents/Departments/OPCD/OngoingInitiatives/SeattlesComprehensivePlan/CouncilAdopted2017_Amendments.pdf
City of Seattle, 2017b	City of Seattle. 2017. Uptown Rezone Recommendation Director's Report. City of Seattle Office of Planning and Community Development. July 2017.
City of Seattle, 2017c	City of Seattle. 2017. 2018-2023 Proposed Capital Improvement Program.
Duncan, 1987	Duncan, Don. "Remembrances – Memorial Stadium Could Use Restoration of Original Ideas." Seattle Times: 8 November.
Erigero, Patricia C., 1989	<i>Seattle Public Schools Historic Building Survey</i> . Prepared for Historic Seattle Preservation and Development Authority and Seattle Public Schools.
ENTRIX, Inc., 2003	Seattle High School-Memorial Stadium Historic Property Report. Prepared by ENTRIX, Inc. On file, Washington State Department of Archaeology and Historic Preservation, Olympia, WA.
Heffron Transportation, Inc., 2000a	Heffron Transportation, Inc. 2000. Athletic Facilities Renovation at Ingraham High School Transportation Impact Analyses, May 5.

Citation	Reference
Heffron Transportation, Inc., 2000b	Heffron Transportation, Inc. 2000. Athletic Facilities Renovation at Rainier Beach High School Transportation Impact Analyses, May 5.
Heffron Transportation, Inc., 2002	Heffron Transportation, Inc. 2002. Roosevelt High School Final EIS – Transportation Technical Report.
Heffron Transportation, Inc., 2004	Heffron Transportation, Inc. 2004. Transportation Technical Report for the Garfield High School Renovation & Redevelopment EIS.
Heffron Transportation, Inc., 2008	Heffron Transportation, Inc. 2008. Denny Middle School and Chief Sealth High School Redevelopment – Revised Transportation Impact Analysis.
Heffron Transportation, Inc., 2013	Heffron Transportation, Inc. 2013. Genesee Hill Elementary Replacement – Traffic Impact Analysis, September.
Heffron Transportation, Inc., 2014a	Heffron Transportation, Inc. 2014. New Thornton Creek Elementary School Transportation Technical Report, March.
Heffron Transportation, Inc., 2014b	Heffron Transportation, Inc. 2014. Transportation Impact Analysis for Arbor Heights Elementary School, February.
Heffron Transportation, Inc., 2014c	Heffron Transportation, Inc. 2014. Transportation Technical Report for Olympic Hills Elementary School Replacement, December.
Heffron Transportation, Inc., 2015a	Heffron Transportation, Inc. 2015. Transportation Technical Report for Loyal Heights Elementary School Expansion, May.
Heffron Transportation, Inc., 2015b	Heffron Transportation, Inc. 2015. John F. Kennedy Catholic High School – Athletic Field Improvement Project – Traffic and Parking Analysis.
Heffron Transportation, Inc., 2017a	Heffron Transportation, Inc. 2017. Updated Transportation Technical Report for Queen Anne Elementary School Addition, July.
Heffron Transportation, Inc., 2017b	Heffron Transportation, Inc. 2017. Transportation Technical Report for Wing Luke Elementary School Replacement, June.
Heffron Transportation, Inc., 2017c	Heffron Transportation, Inc. 2017. Transportation Technical Report for the Ingraham High School Classroom Addition, December
Heffron Transportation, Inc., 2018	Heffron Transportation, Inc. 2018. Transportation Technical Report for Daniel Bagley Elementary School Renovation & Addition, February
ITE, 2010	Institute of Transportation Engineers (ITE). 2010. Institute of Transportation Engineers, Parking Generation, 4th Edition, 2010.

Citation	Reference
ITE, 2017	Institute of Transportation Engineers (ITE). 2017. Institute of Transportation Engineers, Trip Generation, 10 th Edition, September.
JAFDP, 2002	Joint Athletic Facilities Development Program (JAFDP). 2002. The 2002 Joint Athletic Facilities Development Program. Available at http://clerk.seattle.gov/~cfpics/313786c.pdf . Accessed February 2, 2018.
Johnston, 1989	Johnston, Steve. "Outspoken Few use Vets' Service to Back Memorial." Seattle Times: 30 May.
King County, 2016	King County. 2016. <i>2012 King County Countywide Planning Policies</i> . Amended June 25, 2016. Available at: https://www.kingcounty.gov/~media/depts/executive/performance-strategy-budget/regional-planning/CPPs/2012-CPPsAmended062516withMaps.ashx?la=en
King County, 2017	King County Parcel Viewer. Accessed January 2018. Available at: http://gismaps.kingcounty.gov/parcelviewer2/
King County Metro, 2017	King County Metro, 2017. Route and schedule information. Updated September 23, 2017. Accessed January 2018. Available at metro.kingcounty.gov .
Municode Library, 2018	Title 23 and Title 25, Land Use Code. Seattle Municipal Code. January 31. Available at: https://library.municode.com/wa/seattle/codes/municipal_code
Puget Sound Regional Council, 2009	<i>Vision 2040. The Growth Management, Environmental, Economic, and Transportation Strategy, for the Central Puget Sound Region</i> . Adopted April 24, 2008 and amended May 28, 2009. Available at: https://www.psrc.org/sites/default/files/7293-v2040_0.pdf
SDCI, 2017	Seattle Department of Construction and Inspections (SDCI). 2017. Director's Rule 8-2017. Great Blue Heron Management Plan.
SDCI, 2018a	SDCI (Seattle Department of Construction and Inspections). 2018. Tree Protection Code. Accessed on 1/16/2018. Available at: http://www.seattle.gov/dpd/codesrules/codes/treeprotection/default.htm
SDCI, 2018b	SDCI (Seattle Department of Construction and Inspection). 2018. Seattle Department of Construction and Inspection GIS. Accessed 1/16/18. Available at: http://seattlecitygis.maps.arcgis.com/apps/webappviewer/index.html?id=f822b2c6498c4163b0cf908e2241e9c2
SDCI, 2018c	SDCI. 2018b. Property and Building Activity Map. Available at: http://www.seattle.gov/dpd/toolsresources/Map/default.htm

Citation	Reference
SDOT, 2000	Seattle Department of Transportation (SDOT). 2000. Comprehensive Parking Study.
SDOT, 2014	Seattle Department of Transportation (SDOT). 2014. Bicycle Master Plan, April.
SDOT, 2016a	Seattle Department of Transportation (SDOT). 2016. Freight Master Plan, September.
SDOT, 2016b	Seattle Department of Transportation (SDOT). 2016. Transit Master Plan, originally adopted in 2012, amended in 2016.
SDOT, 2017a	Seattle Department of Transportation (SDOT). 2017. Seattle Bicycle Master Plan: 2017-2021 Implementation Plan, April.
SDOT, 2017b	Seattle Department of Transportation (SDOT). 2017. Pedestrian Master Plan, June.
SDOT, 2018a	Seattle Department of Transportation (SDOT). 2018. Accessed January 2018. Streets Illustrated Map. Available at http://streetsillustrated.seattle.gov/
SDOT, 2018b	Seattle Department of Transportation (SDOT). 2018. Parking Map. Accessed January 2018. Available at web6.seattle.gov/sdot/seattleparkingmap/
Seattle Center, 2008	Seattle Center. 2008. Seattle Center Century 21 Master Plan. Adopted August 2008.
Seattle Center Foundation, 2016	Seattle Center Foundation. 2016. Seattle Center: What's Next. Report from the workshop held 13 September 2016.
Seattle Parks, 2001	Seattle Department of Parks and Recreation. 2001. Playfield Lighting Design Guidelines.
Seattle School District No.1 and Parks and Recreation, 2015	Seattle School District No.1 and Seattle Parks and Recreation. 2015. An Agreement for the Joint Use of Facilities (2010-2015).
SPS, 2013	Seattle Public Schools (SPS). 2013. Revised 2012 Facilities Master Plan.
SPS, 2015	Seattle Public Schools (SPS). 2015. Capital Projects and Planning. Available at http://bta.seattleschools.org/planning/ . Accessed February 1, 2016.
SPS, 2017	Seattle Public Schools, Transportation Service Standards 2017 – 2018, Effective September 1, 2017.

Citation	Reference
SPS and City of Seattle, 2017	Seattle Public Schools and City of Seattle. 2017. Public Process Partnership Agreement: School District Facilities, Fort Lawton, Memorial Stadium, and Seattle Center. November 20, 2017.
SPS and Parks, 2016	An Agreement for the Joint Use of Facilities between The Seattle School District No. 1 and Seattle Parks and Recreation. 2016-2019.
Sound Transit, 2017	Sound Transit. 2017. Sound Transit 3 Fact Sheets. Accessed January 2018. Available at soundtransit3.org/document-library .
Sound Transit, 2018	Sound Transit. 2018. Link light rail information. Accessed January 2018. Available at www.soundtransit.org
ST, 1946a	Seattle Times (ST). "New Stadium to be Memorial." 2 February.
ST, 1946b	Seattle Times (ST). "Group Plans Memorial To Replace Pylon." 26 July.
ST, 1951	Seattle Times (ST). "School War Dead Honored." 30 May.
Stricherz, 1989	Stricherz, Vince. "Veterans' Group Makes It Clear: Memorial Stadium Should Stay." Seattle Times: 18 May.
Thompson, Nile and Carolyn J. Marr, 2002	<i>Building for Learning: Seattle Public School Histories, 1862-2000</i> . School Histories Committee, Seattle School District.
TRB, 2016	Transportation Research Board (TRB). 2016. Highway Capacity Manual: A Guide for Multimodal Analysis.
WDFW, 2018	WDFW (Washington Department of Fish and Wildlife). 2018. PHS on the Web. Accessed on 1/16/18. Available at: http://apps.wdfw.wa.gov/phsontheweb/
Woodbridge, Sally B. and Roger Montgomery, 1980	<i>A Guide to Architecture in Washington State</i> . University of Washington Press. Seattle, Washington.

Chapter 7 Distribution List

7.1 City and State Officials

Maia Bellon, Washington State Department of Ecology (Director)

Jay Inslee, Office of the Governor

Chris Reykdal, Superintendent of Public Instruction

Dow Constantine, King County Executive

Jenny Durkan, Mayor, City of Seattle

Mike Fong, Senior Deputy Mayor, City of Seattle

Nathan Torgelson, Director of Department of Construction and Inspections, City of Seattle

Samuel Assefa, Director of Department of Planning and Development, City of Seattle

Kathy Nyland, Director of Department of Neighborhoods, City of Seattle

Holly Miller, Director of Department of Neighborhoods, Office for Education, City of Seattle

Catherine Lester, Director of Human Services Department, City of Seattle

Maureen Sheehan, Senior Planning, Department of Neighborhoods, Major Institutions/Schools, City of Seattle

Steve Walker, Director, Office of Housing, City of Seattle

Vanessa Murdock, Executive Director, Seattle Planning Commission, City of Seattle

Harold Scoggins, Chief of Seattle Fire Department, City of Seattle

Marcellus Turner, Director of Seattle Public Library, City of Seattle

Peter Holmes, City Attorney, Law Office, City of Seattle

Scott Kubly, Director, Department of Transportation, City of Seattle

Ben Noble, Director, Office of Budget, City of Seattle

Mami Hara, General Manager/CEO, Seattle Public Utilities, City of Seattle

Chris Gregorich, Director, Intergovernmental Relations Office, City of Seattle

Carmen Best, Interim Chief of Police, City of Seattle

Holly Godard, Land Use Reviewer, Department of Planning and Development, City of Seattle

David Graves, Strategic Advisor, Seattle Parks and Recreation

Max Jacobs, Seattle Parks and Recreation

Kathleen Connor, Seattle Parks and Recreation

Andrew Lofton, Executive Director of Seattle Housing Authority

Jim Baggs, Interim General Manager/CEO, Seattle City Light

City of Seattle Department of Neighborhoods Office for Education

Shirlee Tan, SEPA Coordinator, Public Health, Seattle and King County

Chris Reykdal, State Superintendent of Public Instruction, Washington State

Yvonne Kicken, SEPA NW Regional Office

Annie Szvetcz, SEPA, Department of Ecology

Allyson Brooks, State Historic Preservation Officer/Director, Department of Archaeology & Historic Preservation, Washington State

Jackie Kirn, Strategic Advisor, City of Seattle

Coordinator, Legislative Information Center

Executive Director, Washington State Board of Education

Executive Director, Puget Sound Regional Council

Executive Secretary, M.L. King County Labor Council

Executive Director, Seattle Housing Authority

Board Chair, Sound Transit Central Puget Sound Regional Transit Authority

Executive Director, Puget Sound Air Pollution Control Agency

7.2 State Legislators

Nicole Macri, State Representative, Washington State

Frank Chopp, State Representative, Washington State

Jamie Pedersen, State Senator, Washington State

Rebecca Saldana, State Senator, Washington State

Sharon Tomiko-Santos, State Representative, Washington State

Eric Pettigrew, State Representative, Washington State

Reuven Carlyle, State Senator, Washington State

Noel Frame, State Representative, Washington State

Gael Tarleton, State Representative, Washington State

Sharon Nelson, State Representative, Washington State

Eileen Cody, State Representative, Washington State

Joe Fitzgibbon, State Representative, Washington State
Steve Bergquist, State Representative, Washington State
Zack Hudgins, State Representative, Washington State
Bob Hasegawa, State Senator, Washington State

7.3 City Council Members

Bruce A. Harrell, Council President, City of Seattle
Sally Bagshaw, Councilmember, City of Seattle
M. Lorena Gonzalez, Councilmember, City of Seattle
Kirsten Harris-Talley, Councilmember, City of Seattle
Lisa Herbold, Councilmember, City of Seattle
Rob Johnson, Councilmember, City of Seattle
Debora Juarez, Councilmember, City of Seattle
Teresa Mosqueda, Councilmember, City of Seattle
Mike O'Brien, Councilmember, City of Seattle
Kshama Sawant, Councilmember, City of Seattle

7.4 County Council Members

Rod Dembowski, Councilmember, King County
Larry Gossett, Councilmember, King County
Kathy Lambert, Councilmember, King County
Jeanne Kohn-Wells, Councilmember, King County
Dave Upthegrove, Councilmember, King County
Claudia Balducci, Councilmember, King County
Pete von Reichbauer, Councilmember, King County
Joe McDermott, Councilmember, King County
Reagan Dunn, Councilmember, King County

7.5 Seattle Public Schools

Dr. Larry Nyland, Superintendent
Scott Pinkham, Board Member
Rick Burke, Board Member (Vice President)

Jill Geary, Board Member

Eden Mack, Board Member

Zachary DeWolf, Board Member

Leslie Harris, Board Member (President)

Betty Patu, Board Member

7.6 Neighborhood Groups

Yun Pitre, Community Engagement Coordinator, South and West Seattle

Karen Ko, Community Engagement Coordinator, Central Seattle

Thomas Whitemore, Community Engagement Coordinator, North Seattle

Laura Jenkins, Community Engagement Coordinator

7.7 Seattle Public Library Branches

Central Library

Ballard Branch

Beacon Hill Branch

Broadview Branch

Capitol Hill Branch

Columbia Branch

Delridge Branch

Douglass-Truth Branch

Fremont Branch

Green Lake Branch

Greenwood Branch

High Point Branch

International District / Chinatown Branch

Lake City Branch

Madrona-Sally Goldmark Branch

Magnolia Branch

Montlake Branch

New Holly Branch

Northeast Branch
Northgate Branch
Queen Anne Branch
Rainier Beach Branch
South Park Branch
Southwest Branch
University Branch
Wallingford Branch
West Seattle Branch
Mobile Library Services

7.8 Seattle Service Center Branches

Central Neighborhood Service Center
Southeast Neighborhood Service Center
Delridge Neighborhood Service Center
Ballard Neighborhood Service Center
Queen Anne Neighborhood Service Center
Greater Duwamish Neighborhood Service Center
University Neighborhood Service Center
Lake City Neighborhood Service Center
Fremont Neighborhood Service Center
Capitol Hill Neighborhood Service Center
Downtown Neighborhood Service Center

7.9 Community Recreation Center Branches

Ballard Community Recreation Center
Belltown Community Recreation Center
Langston Hughes Community Recreation Center
Laurelhurst Community Recreation Center
Loyal Heights Community Recreation Center
Magnolia Community Recreation Center

Magnuson Community Recreation Center
Meadowbrook Community Recreation Center
Miller Community Recreation Center
Mountlake Community Recreation Center
Northgate Community Recreation Center
Queen Anne Community Recreation Center
Van Asselt Community Recreation Center
Yesler Community Recreation Center
Ravenna/Eckstein Community Recreation Center
Jefferson Community Recreation Center
Rainier Community Recreation Center
Alki Community Recreation Center
Garfield Community Recreation Center
Greenlake Community Recreation Center
Delridge Community Recreation Center
Hiawatha Community Recreation Center
High Point Community Recreation Center
Int'l District/Chinatown Community Recreation Center
South Park Community Recreation Center
Southwest Complex Community Recreation Center
Bitterlake Community Recreation Center

7.10 Tribes

Cecile A. Hanson, Duwamish Tribe Chair
Melissa Calvert, Muckleshoot Indian Tribe
Steven M. Moses, Archaeology & Historic Preservation, Snoqualmie Tribe
Office of the Executive Director, Suquamish Tribe
Marie Zackuse, Chairwoman, Tulalip Tribes

7.11 Media

Publisher, Seattle Chinese Post

Publisher, Seattle Daily Journal of Commerce

Editor in Chief, The Seattle Times

Editor in Chief, The Daily

7.12 Individuals and Community Groups

Chris Jackins, Seattle Committee to Save Schools

President, NAACP

President, League of Women Voters of Seattle

Director, Minority Executive Directors Coalition of KC

President/CEO, Alliance for Education

Shelly Leonard

Victoria Prestrud

John Rogers Elementary PTA Board

Betsy Wilson, Head Librarian, University of Washington