Jane Addams Middle School, Athletic Field Lighting Project

Draft SEPA Checklist

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

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While the Jane Addams Middle School Athletic Field Lighting Project Draft State Environmental Policy Act (SEPA) Checklist is accessible and ADA compliant, the attached figures and appendices, which support the checklist, contain complex material that are not accessible. The following is a description of what is contained in the figures and appendices:

- Figure 1, Jane Addams Middle School Vicinity, Seattle, Washington
  Figure 1 is an aerial photograph of the Jane Addams Middle School site and its surrounding neighborhood to within an approximately three-block radius. The athletic field for which the lighting is proposed is outlined in red.

- Figure 2, Location of Proposed Lighting Poles – Jane Addams Middle School, Seattle, Washington
  Figure 2 is a close-up aerial view of the athletic field showing where the proposed light poles will be located around the perimeter of the athletic field proposed to be lit. The field is outlined with a red line. The pole locations are indicated with blue dots and have corresponding yellow arrows to indicate the orientation of the lighting toward the field. There are three along the north, one on the east, and three along the south perimeters of the field for a total of seven light poles.

- Appendix A: Traffic Impact Analysis
  Appendix A consists of a report titled, "Transportation Technical Report for Athletic Field Improvements at Jane Addams Middle School" prepared by Heffron Transportation, Inc. dated March 16, 2020. The report provides a project description; background conditions related to the transportation network, traffic volumes, level of services, parking, traffic safety, transit facilities and non-motorized facilities. The report addresses impacts of the proposed lighting project on the same and concludes with a summary and recommendations. Attached to the end of the report is Appendix A – Level of Service Definitions, and Appendix B – Parking Utilization Study Data. There are figures and tables throughout this document, including in the appendices, which graphically depict and organizes data to support the findings in the report.

- Appendix B: Noise Memorandum
  Appendix B is a Noise Memorandum prepared by Environmental Science Associates (ESA). It is a discussion of the potential impact of the proposed lighting project on the noise aspect of the environment. It includes the methodology used to gather information, a description of the existing noise environment, anticipated noise and potential effects, and concludes with the results of the noise assessment. The report includes tables that organize noise measurement data, which illustrate the report's findings.

- Appendix C: Light and Glare Report
  Appendix C is the Light and Glare Report, prepared by Stantec dated April 1, 2020. The report provides a description of existing conditions, existing light and glare sources in and around the Jane Addams Middle School area, the lighting equipment proposed for this project, a discussion of glare, spill light and skyglow and their impacts to the environment, ending with how the proposed lighting will be controlled. The report includes photographs to illustrate and support discussions in the text portion of the report. The report also includes two drawings titled "Spill Light Calcs." The drawings have identical backgrounds showing an aerial photograph of the field proposed to be lit overlaid with an evenly spaced grid of numbers representing spill light calculations at various points across the field. The first drawing shows calculations based on the proposed light pole heights of 70 feet and 80 feet. For comparison purposes, the second drawing shows spill light calculations based on the light pole height of 29 feet.

- Appendix D: View Assessment Photo Pages
  This appendix contains four photographs and corresponding captions, each taken from the four corners of the athletic field looking across to the opposite corner. Two of the photographs include existing light poles around the adjacent southeast athletic field at Jane Addams Middle School which are similar in height and style to the lighting in this proposal.

  This concludes the SEPA checklist.

Jane Addams Middle School, Athletic Field Lighting Project

Draft SEPA Checklist

April 2020

PREPARED FOR:

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ENVIRONMENTAL CHECKLIST

A. BACKGROUND

1. Name of the proposed project, if applicable:

Jane Addams Middle School Athletic Field Lighting

2. Name of Applicant:

Seattle Public Schools (SPS)

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

Conrad Plyler
Seattle Public Schools
2445 3rd Ave S
Seattle, WA 98134
206.252.0662

4. Date checklist prepared:

April 2020

5. Agency requesting checklist:

Seattle Public Schools (SPS)

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

The project is scheduled for construction in the summer/early fall of 2020 is expected to be limited to pavement repair and restoration. It is expected that the work involving the site improvements will be performed during summer 2021. New field lighting at the currently unlighted southwest field would be installed and existing synthetic turf would be replaced with new synthetic turf. The work each construction phase is expected to take approximately four weeks.

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

Plans for many of the approved Seattle Public School capital levy projects were included in two prior environmental review documents listed below.

- Building Excellence (BEX) V Draft Environmental Impact Statement (DEIS)

https://www.seattleschools.org/UserFiles/Servers/Server_543/File/District/Departments/Capital%20Projects%20and%20Planning/BEX%20V/BEX%20V%20Draft%20PEIS_ADA.pdf

BEX V Final Environmental Impact Statement (FEIS)

https://www.seattleschools.org/UserFiles/Servers/Server_543/File/District/Departments/Capital%20Projects%20and%20Planning/SEPA/BEX%20V%20Final%20PEIS_ADA.PDF

SPS may consider development at Jane Addams Middle School at some point in the future. Before pursuing a project at Jane Addams, the School Board would need to determine that the project should be included in a potential future capital projects levy. The capital projects levy would be subject to approval by a public vote, and development at the school would be subject to SEPA review as appropriate.

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

- *Change in School Start Times Final SEPA Programmatic Environmental Impact Statement*, ESA, November 2015
- *Draft Jane Addams Middle School Athletic Fields Renovation, Light and Glare Report*, DA Hogan and Stantec, April 1, 2020
- *Transportation Technical Report*, Heffron Transportation, Inc., January 31, 2020
- *Jane Addams Middle School Athletic Field Lighting Project Cultural Resources Assessment, Short Report*, ESA, January 2, 2020
- *Noise Technical Memorandum*, ESA, February 18, 2020
- *Programmatic Environmental Impact Statement for BTA IV Program*, ESA, July 2016
- *View Assessment Photo Pages*, ESA, February 17, 2020

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

SPS and Seattle Department of Parks and Recreation (Parks) have entered into a Joint Use Agreement for Parks' use of school fields.

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

Master Use Permit	City of Seattle
Building Permit	City of Seattle
Electrical Permit	City of Seattle

11. Give brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page.

Project Background

Seattle Public Schools (SPS) is proposing to install athletic field lighting at multiple school locations, including Jane Addams Middle School, in the Seattle School District, under the Buildings, Technology and Academics/Athletics IV Program (BTA IV) and Building Excellence V (BEX V) funding.

SPS and the Seattle Department of Parks and Recreation (Parks) have been working together to develop plans for installing lights at athletic fields around the City.

Lighting is being installed as mitigation for the impacts of SPS's change in school start times. In fall 2016, SPS changed start times so that high school students start at 8:50 a.m. and are dismissed at 3:20 p.m., approximately 1 hour later than the previous schedule. The later dismissal time for high schools means that school athletic fields are used for school practice and games later in the day, reducing the time that unlighted fields are available for community use under the Joint Use Agreement with Parks. This was identified as a significant adverse impact in the Change in School Start Times Programmatic Environmental Impact Statement (EIS) (SPS, 2015).

Lighting of the southwest field at Jane Addams Middle School would allow SPS and Parks to schedule events later in the evening than currently possible, extending the use of the fields during certain times of the year. The fields would assist in relieving the demand for all-season, multi-use, lighted fields in the City. The sports fields at Jane Addams Middle School were renovated and expanded in September 2000. SPS now proposes to light the athletic field at Jane Addams Middle School to allow for both SPS use and community use. The following activities currently use the fields and are anticipated to continue using the fields:

- Jane Addams Middle School after-school soccer and track practice
- Parks community recreational events including youth soccer, ultimate Frisbee, baseball, and softball. The soccer field is smaller than standard for adult games and adult soccer probably would not be scheduled.

SPS and Parks propose to schedule events at the lighted fields from dusk until 9:45 p.m. The proposal would not change the school enrollment or any other facilities on the site, but would allow increased use of the athletic fields for scholastic and non-scholastic recreational activities schedules to end by 9:45 p.m., with lights automatically turned off at 10 p.m. In setting the cutoff time for lights, SPS considered the following:

Parks has adopted Policy # 060-P 7.1.1, Use and Scheduling of Outdoor Athletic Facilities, which became effective on July 1, 2002. For lighted fields, Parks' policy is to schedule play until 10:45 p.m., except on fields where residences adjoin the length of the field on two or more sides (unless arterials, significant topography, and/or other buffers are found between the field and adjacent residences on one or both sides). Fields that meet these criteria are scheduled until 10 p.m. Unless security lighting is available, lights at all fields will be turned off 15 minutes after the end of scheduled play to allow players to leave the site safely (Policy # 060-P 7.7.1, Section 4.3.3). Because residences adjoin the Jane Addams fields on two sides, events at those fields would be scheduled until 9:45 p.m.

Other lighting considerations include:

- There is potential for the field to be used before school starts in the morning
- The lights will not be turned on when no one is using the field.

Project Description

Jane Addams Middle School is located in a predominantly single-family residential community along NE 110th Street between 34th Avenue NE and 31st Avenue NE. The site is used as a school and is comprised of a large 2-story school building and adjacent building. There are portable classrooms to the west, a parking lot, a baseball/softball field and an athletic field with surrounding track. There are also athletic fields and a greenhouse located to the north of the school buildings. There are two athletic fields located on the south side of the school site. The southeast athletic field is already lighted. The southwest field is the site proposed for lighting. The school site is adjacent to single-family and low-rise residential homes across 31st Avenue NE. Nathan Hale High School borders the school site to the south across NE 110th Street.

The Jane Addams Middle School field accommodates football, soccer, baseball, and softball activities. A small track surrounds the football/soccer field. The proposed project would install new athletic field lighting and replace the existing synthetic turf field with new synthetic turf at the southwest field. Elements of the project are described in more detail below.

Lighting - The proposed athletic field lighting system for the southwest field would consist of seven galvanized steel poles with LED shielded floodlights. Two of the poles would be 70' tall (baseball infield) and five of the poles would be 80' tall (soccer field\baseball outfield). The proposed lighting for the baseball infield consists of 11 - 600 watt shielded LED floodlights. The floodlights would be mounted on the two 70' poles located at the baseball infield. Each of these two poles would have one additional 575 watt shielded LED floodlight mounted at a height of 15'above grade and aimed above the field. One additional low wattage "full cutoff" area light would be mounted at a height of 30' above grade on each pole.

The proposed lighting for the soccer field\baseball outfield consists of 26 - 900 watt shielded LED floodlights. The floodlights would be mounted on the five 80' poles located on the north and south sides of the field. Each of these two poles would have one additional 575 watt shielded LED floodlight mounted at a height of 15' above grade and aimed above the field. One additional low wattage "full cutoff" area light would be mounted at a height of 30' above grade on each pole. The lighting is described in more detail in Section B.11 of this Checklist and in Appendix C.

Synthetic Turf Replacement - The existing synthetic turf at the southwest field is proposed to be removed and replaced with new synthetic turf in the same location.

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

maps or detailed plans submitted with any permit applications related to this checklist.

The school site is located at 11051 34th Ave. NE, Seattle, WA 98125. The school site is bounded by NE 115th St. and single-family homes to the north, 31st Ave. NE and single-family homes to the west, 34th Ave. NE and single-family homes to the east, and NE 110th Street to the south. Nathan Hale High School is located on the south side of NE 110th Street (Figure 1). The site is located in the southeast quarter of Section 28, Township 26, Range 04. The site is made up of one parcel (Parcel 075200-0170) with the following legal description:

BENTONS 2ND ADD TO CHELSEA ALL BLKS 2-3-4 TGW POR VAC STS & ALLEYS ADJ TGW ALL BLK 2 YATES ADD TGW VAC ST ADJ

Figure 1 shows the project location. Figure 2 shows the athletic field and the proposed layout for the lighting poles.

B. ENVIRONMENTAL ELEMENTS

1. Earth

a. General description of the site (underline): Flat, rolling, hilly, steep slopes, mountainous, other.

The project site maintains an even elevation relative to the surrounding area due to mechanical leveling. LiDAR data demonstrates that relative to the site as a whole, some leveling has been performed on the school property, likely during various school construction projects (King County LiDAR 2019).

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

The City of Seattle designates slopes greater than 40% with a rise of at least 10 feet as critical areas (Seattle Municipal Code [SMC] 25.09.012). There are no steep slopes located on the project site (City of Seattle, 2020).

c. What general types of soils are found on the site (for example clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any agricultural land of long-term commercial significance and whether the proposal results in removing any of these soils.

The Natural Resources Conservation Service (NRCS) describes the soil of this site as Urban Land and part of the Alderwood complex (NRCS 2019). The Alderwood series consists of gravelly sandy loam soil that forms on glacial drift plains within glacial drift and outwash over dense glaciomarine parent material (NRCS 2018).

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

There are no surface indications or a history of unstable soils in the immediate vicinity.

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

No filling or grading is proposed for the project other than what is needed for shallow excavations for the light poles and settlement of the synthetic turf.

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

Because of the flat topography around the fields, and the minimal amount of ground disturbance associated with the pole construction, the potential for erosion is low.

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

The proposed project would not construct any buildings or add new impervious surfaces to the project site. The existing artificial turf on the athletic fields was replaced as part of a prior project.

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

No significant erosion is anticipated from installation of the lighting standards or replacement of the synthetic turf. Standard erosion control measures will be taken to minimize erosion potential.

2. Air

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

During lighting installation, there may be a small increase in exhaust emissions from construction vehicles and equipment and a temporary increase in fugitive dust. When the project is complete, the vehicular traffic accessing the athletic fields for events may cause a small increase in exhaust emissions.

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

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

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

Contractors will use best management practices to minimize construction-related emissions. These emissions are expected to be minimal.

3. Water

a. Surface Water:

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

Thornton Creek is located approximately 0.25 miles northeast of the project site. Thornton Creek flows into Lake Washington.

2. Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans.

The project would not require any work over, in, or adjacent to any surface water bodies.

3. Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.

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

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

The project would not require surface water withdrawals or diversions.

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

According to the Federal Emergency Management Agency (FEMA), Flood Insurance Maps, the site is not located within a 100-year floodplain. There is a floodplain on the Nathan Hale High School site located site of the project site across NE 110th Street.

6. Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.

The project would not involve the discharge of waste materials to any surface waters.

b. Ground Water:

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

The proposed project does not involve withdrawal of groundwater or discharge of water to groundwater. The installment of poles would not affect groundwater because excavation would be shallow.

2. Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals … ; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.

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

c. Water Runoff (including stormwater)

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

The new turf is replacing existing turf, so there is no increase in impervious surface from that replacement. The new lighting poles and associated equipment would not generate additional runoff.

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

There is a minor amount of grading required to install the lights. It is unlikely that sediment generated during lighting installation could leave the site. Once the light poles are installed, the surrounding area would be restored.

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

The proposed project would not alter drainage patterns.

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

No impacts to surface or groundwater are expected. Therefore, no measures are proposed to reduce impacts.

4. Plants

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

__x_ deciduous tree: alder, maple, aspen, other
__x_ evergreen tree: fir, cedar, pine, other
____ shrubs
__x_ grass
____ pasture
____ crop or grain
____ Orchards, vineyards or other permanent crops.
____ wet soil plants: cattail, buttercup, bullrush, skunk cabbage, other
____ water plants: water lily, eelgrass, milfoil, other
____ other types of vegetation

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

There is very little existing landscaping adjacent to the location for the proposed new light poles. The lighting pole locations at the south of the field have grassy areas that may be disturbed. The lighting pole locations at north of the field are adjacent to paved sidewalks and some grass. The grass will be returned to original conditions after the light installation is complete. and artificial turf will be removed or altered as necessary to install the light standards and replace the artificial turf.

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

No threatened or endangered plant species or critical habitat are known to be on or near the site (WDFW, 2020).

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

No additional landscaping is proposed as part of the lighting project other than the replacement of the vegetation that is disturbed during construction.

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

Himalayan blackberry was observed near the athletic field. The project would not disturb this area.

5. Animals

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

Animals observed on the site are restricted to birds and animals typically found in urban areas.
Fish: not applicable
Amphibians: none observed
Reptiles: none observed
Birds: species adapted to urban areas such as gulls, American crow, rock pigeon, chickadee, robin, Steller's jay, northern flicker, and Bewick's wren.
Mammals: species adapted to urban areas such as Norway rat and other rodents, raccoon, opossum.

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

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

However, threatened Chinook salmon are found in Thornton Creek located approximately 500 feet east of the project site.

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

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

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

The proposed project is not expected to result in any impacts to wildlife or wildlife habitat. The athletic field area does not provide quality habitat for wildlife: shrub and forested areas of the site are isolated habitat patches within a larger matrix of residential buildings, pavement, and cleared areas at the existing school and surrounding residential neighborhoods. These small vegetated areas do not provide a contiguous connection to other habitat areas and do not function as a wildlife corridor. Wildlife using the site and surrounding areas are accustomed to ambient urban lighting from the surrounding residences, street lights, and the existing school. Wildlife using the site and surrounding area are also accustomed to current noise levels from surrounding residence and the existing school, making it unlikely that noise from the proposed athletic field and events would present an issue. Wildlife could

temporarily avoid the area during athletic events, but would likely return after athletic events have ended.

There is evidence that migrating birds become disoriented by lighted towers and collide with the towers, or the guy wires supporting the towers. The literature does not report bird fatalities at lighted towers less than 200 feet tall, and the U.S. Fish and Wildlife Service guidelines for siting towers do not address those less than 200 feet tall. The proposed athletic field light towers would be less than 100 feet tall, and would not use guy wires. Therefore, it is unlikely that the proposed athletic field light towers would present problems for migrating birds, since the average migration elevation is 1,000 to 2,000 feet.

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

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

6. Energy and Natural Resources

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

The proposed athletic field lights would be powered by electricity.

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

The new lighting poles and associated equipment would not block the use of solar energy by adjacent properties. No other aspect of the project would interfere with solar energy use by others.

c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any:

To conserve energy, the athletic field lights would use high efficiency light emitting diode (LED) floodlights. The LED floodlights would reduce the electrical energy load used for lighting by approximately 33 percent compared to floodlights that use metal halide lamps.

A fully programmable control system with remote operation would allow the fields to be lighted independently and to automatically turn off after play is completed. This feature would ensure that lights would be on only during the hours that events are scheduled on each field. If necessary, the lights could also be operated manually through separate switches that would be installed.

The control system would be connected to the Seattle Public Schools energy management system. The lighting controls would be operated and programmed by SPS staff only. Automated control of the lighting system would be located at

the central office. Manual controls would be located inside a locked electrical cabinet on site with keyed access by SPS staff only. Public use of the lighting system would be scheduled through the Seattle Parks Department, which would put in a request to SPS to program the lights to turn on.

Additionally, the new athletic field lighting would be in compliance with the Washington State Energy Code and the City of Seattle Energy Code.

7. Environmental Health

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

Accidental spills of hazardous materials from equipment and vehicles could occur during construction. Installation of the light poles would require limited excavation and few vehicles, so the potential for spills would be minimal. The contractor would develop a spill prevention and control plan to prevent the accidental release of contaminants into the environment.

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

According to the Department of Ecology Facility/Site(s) database, the Jane Addams Middle School site is not known to be contaminated. However, there are several contaminated sites located within one mile of the project site (Ecology, 2019).

2. Describe existing hazardous chemicals/conditions that might affect project development and design. This includes underground hazardous liquid and gas transmission pipelines located within the project area and in the vicinity.

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

3. Describe any toxic or hazardous chemicals that might be stored, used, or produced during the project's development or construction, or at any time during the operating life of the project.

Chemicals stored and used during construction would be limited to gasoline and other petroleum based products required for maintenance and operation of construction equipment and vehicles.

4. Describe special emergency services that might be required.

The project would not require any special emergency services.

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

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

b. Noise

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

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

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

Minor, short-term noise impacts could result from construction vehicles and equipment during daylight hours when the light poles are installed.

The City of Seattle Noise Ordinance (SMC Chapter 25.08) regulates noise in the City. Noise is typically defined as an unwanted sound that can disrupt quality of life (EPA, 2016). Noise is typically measured in units called decibels (dB). For the purposes of environmental analysis noise is commonly quantified as “A weighted” decibels (dBA), which corresponds to the frequencies that are audible to the human ear. Use of the dBA frequency is consistent with SMC 25.08.090. Leq or the “equivalent sound level” is used to describe noise over a specified period of time in terms of a single numerical value. The Leq of a time-varying signal and that of a steady signal are the same if they deliver the same acoustic energy over a given time. The Leq may also be referred to as the average sound level.

The City sets exterior sound level limits according to the land use of both the property generating the noise (the source) and the property receiving the noise (SMC 25.08.410). From one property to another when both properties within a residential district, the maximum allowable noise during daytime and evening hours (7 a.m. to 10 p.m.) is limited to 55 Leq (dBA). The code allows for short duration increases of up to 15 dBA over the 55 dBA limit, as long as the hourly Leq exterior sound level limit is not exceeded (SMC 25.08.410.B).

The code further regulates noises considered “unreasonable” including "loud and raucous, and frequent repetitive or continuous sounds made by the amplified or unamplified human voice" between the hours of

10 p.m. and 7 a.m. During these hours, maximum allowable noise from one property to another within residential districts is reduced to 45 Leq (dBA). Jane Addams Middle School, including the athletic field, and surrounding residences are all located within residential districts per City of Seattle Zoning and would adhere to the Seattle Noise Ordinance.

Long-term noise impacts would result from increased traffic associated with the athletic events at the fields. Increased noise from field use, including cheering, whistles, and voices of the sports participants, would also occur during the extended hours of field use allowed by the lighting. Hours of increased noise would be from dusk to 10 p.m. every day during the darker wintertime afternoon/evenings of the year to accommodate both SPS and Parks activities.

While the increase in environmental noise and the character of noise is anticipated to be noticeable for residences to the west of the field, late evening athletic activities occurring before 10 p.m. are anticipated to be consistent with environmental noise limits of the Seattle Noise Ordinance (SMC 25.08), since the events alone are not expected to exceed the environmental noise limit. For residences to the north and east of the athletic field, further separated from the athletic field by Jane Addams Middle School buildings and the existing eastern lighted field, changes in the noise environment resulting from the project are not anticipated to be perceptible. Additionally, if organized sports activities occurred simultaneously on both the Jane Addams fields and the Nathan Hale High School field to the south, no cumulative impacts on surrounding residences are anticipated.

Additional information about existing evening noise conditions at Jane Addams Middle School and results of noise monitoring and technical analysis of environmental noise impacts that may result from implementation of the athletic field lighting project are included in the Noise Memorandum found in Appendix B of this Checklist.

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

SPS and Parks would schedule evening games to end by 9:45 p.m. to minimize noise impacts on the neighborhood. Security lighting would be provided for an additional 15 minutes (until 10 p.m.) to allow players to safely leave the field.

No public address system would be used at the athletic fields, and SPS will prohibit the use of portable speakers on the athletic fields.

8. Land and Shoreline Use

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

Jane Addams Middle School is located in a predominantly single-family residential community along NE 110th Street between 34th Avenue NE and 31st Avenue NE. The site is used as a school and is comprised of a large 2-story school building and adjacent building. There are portable classrooms to the west, a parking lot, a baseball/softball field and an athletic field with surrounding track. There are also athletic fields and a greenhouse located to the north of the school buildings.

There are two athletic fields located on the south side of the school site. The southeast athletic field is already lighted. The southwest field is the site proposed for lighting. The school site is adjacent to single-family and low-rise residential homes across 31st Avenue NE. Nathan Hale High School borders the school site to the south across NE 110th Street. The field is at a similar elevation to the adjacent properties surrounding the proposed field. There is a gradual increase in elevation for the properties extending north of the school site. There is a row of deciduous trees along the south side of the field and additional deciduous trees the west and east. The main school buildings are on the north side of the existing fields.

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

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

The site is not currently used for working farmland or working forest lands. The site is on the site of a prior farm located across from the Meadowbrook Golf Course. Scrub trees grew on the hill at the back of the property near NE 115th. The site bordered the old Pacific Highway, which ran from Ravenna north to NE 110th, turning at 34th Avenue NE to continue north past what became the front entrance of the school.

No agricultural or forest land would be converted to other uses. The site has been developed as a school since 1949.

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

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

c. Describe any structures on the site.

Structures on the school site include a 2-story school building, an adjacent building, approximately 4 free-standing portable buildings; athletic fields, paved basketball courts, appurtenant structures, and a greenhouse.

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

No structures would be demolished as a part of the athletic field lighting project.

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

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

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

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

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

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

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

Review of the City of Seattle DCI GIS mapping database (February 2020) for environmental critical areas indicated Liquefaction Prone Area (ECA5) at the far southeast corner of the school property within the southeast field site. There are no critical areas on the southwest athletic field where the project is proposed.

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

No people would reside or work in the completed project. The proposed field lighting would allow for increased use of the fields during the late fall, winter, and spring months between 5:30 p.m. and 10 p.m. Average attendance/participation is expected to range from 118 to 135 persons per scholastic athletic event and 50 to 60 for non-scholastic athletic activities. The

combined peak number of added attendees and participants on site that would occur for a short time between consecutive activities is estimated to range from 168 to 195 persons. (Heffron Transportation, 2020).

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

The completed project would not displace any people.

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

No displacement would occur. Therefore, no mitigation measures are needed.

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

The proposed height of the light poles is taller than permitted by Seattle Municipal Code in a single-family residential area. The height limit for light poles in residential areas is 30 feet and the proposed poles would be 70 to 80 feet (SMC 23.76). SMC 23.51B.002(D)(6) permits light poles at public school athletic fields to exceed the maximum permitted height up to a maximum of 100 feet if the Director of the Department of Construction and Inspection (DCI) determines that the additional height is necessary to ensure adequate illumination and that light and glare are minimized to the extent practicable.

A special exception to the height limit will be requested to comply with existing codes. This special exception will ensure adequate illumination and reduce the amount of impacts from light and glare into the neighborhood.

Section B.11 of this Checklist describes how the taller poles will reduce light and glare impacts.

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

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

9. Housing

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

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

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

No housing units would be eliminated.

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

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

10. Aesthetics

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

The athletic field lighting system will consist of seven galvanized steel poles with LED shielded floodlights. Two of the poles will be 70’ tall (baseball infield) and five of the poles will be 80’ tall (soccer field\baseball outfield).

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

There are no protected views in the vicinity. Views across the athletic fields would be altered by the new light poles. The light poles would be visible, but would not obstruct any views. Appendix D contains a view assessment of potential views that may be obscured. The photos also provide examples of the height and style of the field lighting already installed at the southeast field. The photos demonstrate that there are currently no SEPA protected views that would be altered or obstructed.

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

The steel poles are designed to minimize size and bulk. The floodlights and brackets are designed to minimize quantity, size and bulk.

11. Light and Glare

The following responses are based on the “Jane Addams Middle School Athletic Fields Renovation, Light and Glare Report” by DA Hogan and Stantec dated April 1, 2020. See Appendix C for the full report.

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

The athletic field lighting system will consist of seven galvanized steel poles with LED shielded floodlights. Two of the poles will be 70’ tall (baseball infield) and five of the poles will be 80’ tall (soccer field\baseball outfield).

The proposed lighting for the baseball infield consists of 11 - 600 watt shielded LED floodlights. The floodlights will be mounted on the two 70’ poles located at the baseball infield. Each of these two poles will have one additional 575 watt shielded LED floodlight mounted at a height of 15’above grade and aimed above the field. One additional low wattage “full cutoff” area light will be mounted at a height of 30’ above grade on each pole.

The proposed lighting for the soccer field\baseball outfield consists of 26 - 900 watt shielded LED floodlights. The floodlights will be mounted on the five 80' poles located on the north and south sides of the field. Each of these two poles will have one additional 575 watt shielded LED floodlight mounted at a height of 15'above grade and aimed above the field. One additional low wattage "full cutoff" area light will be mounted at a height of 30' above grade on each pole (Appendix C).

These lighting design levels meet current practices for both the City of Seattle and Seattle School District for the lighting of athletic fields. The proposed lighting levels will be consistent with recently lighted fields at Robert Eagle Staff Middle School, Roosevelt High School and Ballard High School.

Current City of Seattle guidelines recommend that athletic field spill light not exceed 1.0 foot-candles at residential property lines when lights are initially turned on, which is the period when the lights are the brightest. To comply with this requirement, an exemption to the height limit is required as further described below. This exemption will ensure adequate illumination for safe play and reduce the amount of impacts from light and glare into the neighborhood.

The lighting systems would operate from dusk to the pre-set curfew time. The lighting systems would be operated by a fully programmable control system with remote operation. The lights for the baseball/softball field and the football/soccer field would be operated separately so that they could be turned off when not in use. The area lights would be on a separate zone and would remain on for a short time after each event to provide ample light for egress from the site following the completion of scheduled field use each evening.

The new lighting system would increase the overall light and glare in the area during evening hours. The proposal would produce direct glare, reflected glare, spill light (light trespass) and sky glow. Commonly used lighting terms as defined by the Illuminating Engineering Society are described as follows:

glare is the sensation produced by luminance within the visual field that is sufficiently greater than the luminance to which the eyes are adapted to, causing annoyance, discomfort, or loss in visual performance and visibility.

direct glare describes when an observer can see directly into a luminaire's light source, where the lamp or the reflector are visible.

foot candles a measurement of the light intensity, the illuminance being a 1-square-foot surface from a uniform source of light.

luminance refers to direct glare and reflected glare.

reflected glare describes when light reflected from a surface causes disability glare. It is assumed that the surface is not intentionally a light source. Surfaces attributable to reflected glare would have a higher luminance than adjacent or nearby surfaces.

spill light is light from a source, which does not strike the area intended for illumination. Spill light can be characterized by foot-candles (fc) calculated or measured in a horizontal or vertical plane.

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.

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.

Glare. To reduce the amount of glare that is visible off-site the floodlights will need to be mounted higher than 30 feet. At a height of 30 feet the visibility of the high wattage LED's and reflectors from the adjacent residences is excessive. With the increased mounting heights floodlights will have steeper aiming angles resulting in more effective use of the floodlight shields. A smaller portion of the floodlight reflectors and lamps will be visible off site with the increased height.

Spill Light. The increase in pole height from 30 feet to 70/80 feet tall will dramatically reduce the amount of spill light generated by the lighting system. The higher pole heights allow the floodlights to be aimed down to the athletic field and away from the adjacent properties. This height also provides for greater effectiveness of the internal/external shielding on the floodlights to control the emitted light and prevent light escaping beyond the site.

The increased mounting heights increase the angle of aiming below the horizontal level of the floodlights. At a mounting height of 30 feet this project would require aiming angles of 13.0 degrees (worst case) and 19.2 degrees (best case) below the horizontal plane of the floodlight. The increased mounting height to 70/80 feet will provide for aiming angles of 31.6 degrees (worst case) and 42.9 degrees (best case) below the horizontal plane of the floodlight.

The use of steeper aiming angles allows for less direct light to be delivered beyond the boundaries of the playing surface. The external shielding blocks more direct light and more light is delivered to the field with the use of increased mounting heights. The proposed taller mounting heights are typical for this application and similar to many existing installations throughout the City. The use of shorter mounting heights is typical to the lighting of driving ranges which requires that light is delivered over hundreds of feet down range to light the back of a golf ball to distances over 300 feet.

Depending on the viewpoint location, direct glare (and reflecting glare) would be visible from all directions overlooking the athletic fields. Off-site exposure of low to moderate levels of direct glare is primarily to the three residences directly west of the proposed field across NE 31st Street. These properties are close to the fields with direct exposure to the light poles and floodlight assemblies. The direct glare visible at these residences is primarily due to a

small portion of direct light from four floodlights aimed in that direction on two of the proposed light poles. Other residential properties adjacent to the fields will have low to minimal exposure to direct glare.

Residential properties that are located farther away from the field will have minimal to no direct glare impacts.

The spill light impacts would occur at the residential properties located at three residential properties directly west of the proposed field across NE 34th Street. The maximum amount of spill light at this location is 0.70 foot-candles. Spill light would be below 0.70 foot-candle at the west property line and would be 0.0 foot-candle on the east property line. Spill light levels are well below the City of Seattle maximum recommended allowable spill light level of 1.0 foot-candles.

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 more prevalent during conditions of low to heavy fog.

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

The illumination system would not pose a safety hazard or interfere with views from off-site locations when the lights are operating at night.

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

The existing light sources near the southwest field site consist of the adjacent lighted southeast soccer field, site lighting, building perimeter lighting, and portable building lighting on the west side of the main school building. The primary components of the lighting are the high wattage soccer field lights on eight 80' poles surrounding the southeast field. Other lighting components are wall pack lights and floodlights mounted to the school building, wall pack lights on the portable buildings and pole mounted floodlights located in the parking lot. None of these sources of light or glare would affect this proposal. Also, the contribution of the light from the existing soccer field lighting system will be negligible for spill light and minor for glare for the proposed project.

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

The height of the poles has been proposed in order to minimize light spillage outside the athletic complex. The lights would comply with the guidelines established by Parks (Parks, 2002).

The sports field lighting would be designed to a Class IV lighting level, which is the lowest lighting level as prescribed by the Illuminating Engineering Society of North America (IESNA) standard Recommended Practice for Sports Lighting (RP)-8. The soccer field is designed to an average maintained lighting level of 29

foot candles.[1] The baseball field is designed to an average maintained lighting level of 48 foot-candles for the infield and 29 foot-candles for the outfield. The lighting system is designed using a .95 design factor to achieve the initial lighting levels.

SPS has proposed to use an athletic field lighting system designed to mitigate the negative impacts of light and glare. The proposed system consists of the latest technology available on the market for shielded LED floodlights designed for the lighting of athletic fields.

The use of high efficiency LED arrays provide more precise control of light to be delivered to the field. The reflector and shielding design further reduce the amount of light transmitted off site and into the atmosphere. The floodlights utilize an additional external visor mounted to the floodlight that extends in front of the floodlight. The floodlight design is similar to "full cutoff" style lights as they dramatically limit the amount of light that is emitted above the plane of the floodlight. The proposed lighting system is similar to recently lighted fields at Robert Eagle Staff Middle School, Roosevelt High School and Ballard High School.

A fully programmable automatic lighting controller will be provided. The controller will be able to be operated remotely to be able to turn lights off when the fields are not in use.

12. Recreation

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

Recreational opportunities on the Jane Addams Middle School site include a baseball/softball field and a football/soccer field surrounded by a track.

Parks and recreation opportunities in the vicinity of Jane Addams Middle School include:

- Meadowbrook Park and Community Center, located approximately .5 miles south of the project site, featuring a playground baseball field, tennis court, a community garden, restroom facilities and community center.
- John Rogers Play Field Park, located approximately .75 miles to the south east of the project, featuring a playfield and baseball/softball field.

[1] A foot-candle is a standard unit of measurement for lighting levels and is equivalent to the illumination produced by one candle at a distance of one foot.

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

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

Recreational opportunities for the school and community use would be enhanced with installation of field lighting. Installation of lights would allow SPS and Parks to schedule events later in the evening than currently possible and help meet the demand for athletic field use in the City.

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

This project would increase the number of available hours for use of Jane Addams's athletic fields. The proposed lighting project is intended to mitigate for the impacts of reduced Parks use of SPS athletic fields caused by the later start times of high schools (see Section A.11). No additional mitigation measures are required.

13. Historic and Cultural Preservation

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

a. Are there any buildings, structures, or sites, located on or near the site that are over 45 years old listed in or eligible for listing in national, state, or local preservation registers located on or near the site? If so, specifically describe.

Jane Addams Middle School includes a building constructed in 1949 and another in 1950. These buildings have not been recorded on historic property inventory forms, nor have they been evaluated for listing in the National Register of Historic Places or for designation as a City of Seattle Landmark.

The Study Area does not contain any other aboveground buildings, structures, or objects that are listed in or have been recommended or determined eligible for listing in a historic register.

There are 20 buildings on adjacent parcels that are over 25 years in age. Being over 25 years of age, these buildings meet the age threshold for consideration of their potential eligibility as Seattle landmarks. None of the buildings have been inventoried on DAHP's historic property inventory forms. The buildings are primarily single-family dwellings that were constructed in either the 1920s or 1960s. Immediately south of the project site is the Nathan Hale High School campus which includes two 1962 buildings.

b. Are there any landmarks, features, or other evidence of Indian or historic use or occupation? This may include human burials or old cemeteries. Are there any material evidence, artifacts, or areas of cultural importance on or near the site? Please list any professional studies conducted at the site to identify such resources.

No recorded archaeological sites, cemeteries, or traditional cultural properties are located within the Study Area for the cultural resources assessment. Two prior cultural resources assessments have been conducted within the Study Area. These were prepared in association with the Thornton Creek Confluence Improvement Project and overlapped the southeast corner of the Study Area (Schultze and Little 2005; Shantry 2011). One cultural resource was identified during these assessments: a 1929-1954 historic debris scatter that was determined not eligible for listing in the National Register of Historic Places (Schultze and Little 2005). This site is located outside of the project area.

c. Describe the methods used to assess the potential impacts to cultural and historic resources on or near the project site. Examples include consultation with tribes and the department of archeology and historic preservation, archaeological surveys, historic maps, GIS data, etc.

ESA conducted a literature review of the project site and reviewed geotechnical data. Information reviewed included any previous archaeological survey reports, ethnographic studies, historic maps, government landowner records, aerial photographs, regional histories, geological maps, soils surveys, and environmental reports. These records were reviewed in order to determine the presence of any potentially significant cultural resources, including Traditional Cultural Properties (TCPs), within the project area. Relevant documents were examined at DAHP, the University of Washington Libraries, online, and within ESA's research library.

d. Proposed measures to avoid, minimize, or compensate for loss, changes to, and disturbance to resources. Please include plans for the above and any permits that may be required.

The project would involve shallow ground-disturbing excavations. An Inadvertent Discovery Plan (IDP) has been prepared for the contractor to use during construction, if required.

14. Transportation

A Draft *Transportation Technical Report* (Heffron Transportation, Inc., January 31, 2020) has been prepared for the proposed project and the results of the report are summarized in this section. For further details on the Transportation Technical Report, please refer to Appendix A of this Checklist.

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

The Jane Addams Middle School site is bounded on the east by 34th Avenue NE, on the south by NE 110th Street, on the west by 31st Avenue NE, and on the north by NE 115th Street. The school building and the surface parking lot primarily occupy the central third of the site; athletic fields are located on the northern and southern portions of the site. The school's existing outdoor athletic fields consist of a natural-turf baseball/softball field overlaid with a soccer field on the north portion of the site and two synthetic-turf fields on the southern portion of the site—a soccer field overlaid with baseball/softball at the southwest corner and a lighted soccer field at the southeast corner. The school site has one primary parking lot with access on 31st Avenue NE, opposite NE 113th Street; a second access on 34th Avenue NE is kept gated, but may be occasionally opened for events. Nathan Hale High School, which has a lighted football/soccer field and track, is located directly across NE 110th Street to the south of Jane Addams Middle School. The project would not change access to the school site.

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

King County Metro Transit (Metro) provides bus service in the vicinity of Jane Addams Middle School. There are Metro bus stops located less than 500 feet east of the site serving northbound and southbound buses on 35th Avenue NE at the NE 110th Street intersection. Both stops have shelters and are served by Metro's Routes 64 and 65. Route 64 provides weekday express (peak-period, peak-direction) service between Jackson Park, Lake City, Wedgwood, University District, and Downtown Seattle. It operates with 7 trips to Downtown Seattle in the morning between about 5:30 and 8:15 a.m., and 9 trips from Downtown Seattle in the afternoon between about 3:30 and 8 p.m. During these periods, the headways (time between consecutive buses) are between 20 and 40 minutes. Route 65 provides service between Jackson Park and the University of Washington with all-day service seven-days per week. It operates with headways of 10 to 15 minutes for most of the day, and 30 to 60 minutes after midnight. There are also stops located about 1,500 feet to the west of the site on Lake City Way NE at NE 110th Street, served by Metro Routes 309, 312, and 372.

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

The project would not add or eliminate any parking spaces.

d. Will the proposal require any new or improvements to existing roads, streets, pedestrian, bicycle or state transportation facilities, not including driveways? If so, generally describe (indicate whether public or private).

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

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

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

f. How many vehicular trips per day would be generated by the completed project or proposal? If known, indicate when peak volumes would occur and what percentage of the volume would be trucks (such as commercial and nonpassenger vehicles). What data or transportation models were used to make these estimates?

The field lighting project could generate between 240 to 300 additional trips per day for part of the year—primarily from about October until early March. Peak volumes (estimated at about 85 trips per hour associated with scholastic athletics) added due to the field lights could occur in PM peak hour as a high school athletic practice or game ends (up to 55 outbound trips) and the spectators and participants of a recreational game arrive (estimated at 25 trips in and 5 trips out). During the remainder of the year, natural lighting conditions allow for field use during these times without the need for field lights.

Based on observations of traffic at other athletic fields, none of the new trips are expected to be trucks (commercial or non-passenger vehicles). However, participants and/or spectators of some scholastic athletics could be transported to and from the site in buses (e.g. school buses).

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

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

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

The proposed project would not result in significant adverse impacts to traffic or parking within the study area. Based on the analyses presented in the referenced *Transportation Technical Report*, the project would not result in significant adverse impacts to traffic or parking within the study area. It is recommended that the District, Jane Addams Middle School, and Nathan Hale High School ensure that the off-street parking lots are open and available for

users during all times that the field is scheduled for use. No other mitigation would be required to accommodate the project.

15. Public Services

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

Lighting the fields would add activities and people to the facility during evening hours. Scheduling of night games could require additional police protection.

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

According to the Joint Use Agreement with Parks, SPS would provide and schedule all necessary staff for all SPS owned fields including field attendants, supervision, and security for the fields. This includes, but is not limited to, unlocking gates, bathrooms, storage rooms and security support.

16. Utilities

a. Underline utilities currently available at the site:

Existing utilities currently at the site include electricity, natural gas, water, refuse service, telephone, storm drain, and sanitary sewer.

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

Electricity, telephone, restrooms and natural gas would continue to be provided to the school. The new lights require additional electricity which will be provided by an existing electrical panel at the school. All existing utilities in the vicinity of the light pole locations would be relocated. Installation of the light poles and connecting power to them would require limited excavation. No new impacts to utilities are anticipated.

C. SIGNATURE

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

Signature: _____

Name of signee: _____

Position and Agency/Organization: _____

Date Submitted: _____

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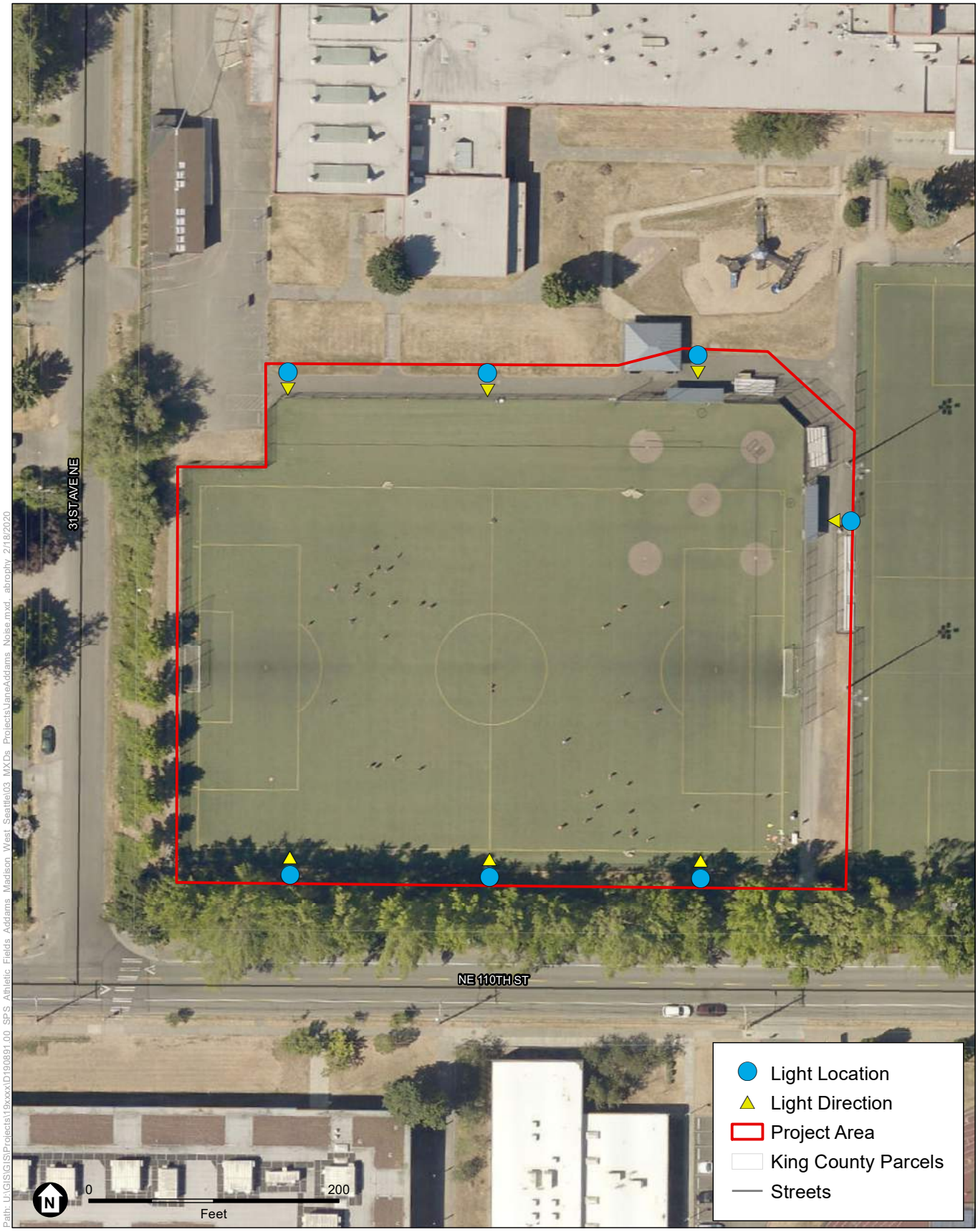
Figures

SOURCE: King County, 2017; ESA, 2020

SPS Jane Addams Field Improvements

Figure 1
Jane Addams Middle School Vicinity
Seattle, Washington

ESA



SOURCE: King County, 2017; D.A. Hogan, 2020; ESA, 2020; Stantec, 2020

SPS Jane Addams Field Improvements

Figure 2
Location of Proposed Lighting Poles - Jane Addams Middle School
Seattle, Washington

ESA

Appendix A: Traffic Impact Analysis

TRANSPORTATION TECHNICAL REPORT

for

Athletic Field Improvements at Jane Addams Middle School

PREPARED FOR:

Seattle Public Schools

PREPARED BY:

heffron transportation inc

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1. INTRODUCTION

This report presents the transportation impact analysis for the Seattle Public Schools' (SPS) proposed athletic field lighting project at Jane Addams Middle School (JAMS). The scope of analysis and approach were based on extensive past experience performing transportation impact analyses for numerous Seattle Public Schools projects in Seattle and athletic facility improvement projects throughout Western Washington. This report was prepared to support the SEPA Checklist for the project and documents the existing transportation conditions in the site vicinity, presents estimates of project-related traffic, and evaluates the anticipated impacts to the surrounding transportation system.

1.1. Project Description

Seattle Public Schools plans to replace the synthetic turf and install lights at Jane Addams Middle School's southwestern athletic field. The school is located at 11051–34th Avenue NE in the Meadowbrook neighborhood of Seattle. The following sections describe the existing school site and the proposal.

1.1.1. Existing Site

The Jane Addams Middle School site is bounded on the east by 34th Avenue NE, on the south by NE 110th Street, on the west by 31st Avenue NE, and on the north by NE 115th Street. The school building and the surface parking lot primarily occupy the central third of the site; athletic fields are located on the northern and southern portions of the site. The school's existing outdoor athletic fields consist of a natural-turf baseball/softball field overlaid with a soccer field on the north portion of the site and two synthetic-turf fields on the southern portion of the site—a soccer field overlaid with baseball/softball at the southwest corner and a lighted soccer field at the southeast corner. The school site has one primary parking lot with access on 31st Avenue NE, opposite NE 113th Street; a second access on 34th Avenue NE is kept gated, but may be occasionally opened for events. Nathan Hale High School, which has a lighted football/soccer field and track, is located directly across NE 110th Street to the south of Jane Addams Middle School.

1.1.2. Proposed Site Changes

In 2017, the Friends of Jane Addams Middle School (FJAMS), a group of volunteer parents, students, staff, neighbors and community members, in cooperation with SPS developed a *Landscape Master Plan*[1] (LMP) for the Jane Addams Middle School site. The plan was funded by a Community Partnership Grant from the City of Seattle Department of Neighborhoods. The LMP plan was developed with a public process and recommendations included lighting the southwest athletic field.

SPS proposes to replace the existing synthetic turf and install lights at the existing southwestern most athletic field to be available for use by fall 2020. The site plan with the location of the proposed lights is shown on Figure 1. The proposal would not change school enrollment or any other facilities on the site, but would allow increased use of the athletic field for scholastic and non-scholastic recreational activities scheduled to end by 9:45 P.M., with lights automatically turned off at 10:00 P.M. Usage levels of the facilities are expected to increase with the added ability to hold practices and some competitive games later in the day during the school year. Although not currently planned, the lights could be used in the morning (after 7:00 A.M.) for scholastic practices. Based on the joint-use agreement[2] between Seattle Public Schools and Seattle Parks & Recreation (which is expected to be extended for another year), scholastic athletics on the field are expected to end between 5:30 and 6:45 P.M. As a result, the primary increase in field use due to the lighting project would be non-scholastic recreational athletics scheduled through Parks such as youth and adult soccer, baseball and softball, lacrosse, and ultimate (frisbee), occurring after school-use and until 9:45 P.M.

1 Friends of Jane Addams & Johnson+Southerland, February 12, 2018.
2 *An Agreement for the Joint Use of Facilities between The Seattle School District No.1 and Seattle Parks and Recreation 2016 – 2019*, Jointly prepared by: Seattle Parks and Recreation and the Seattle School District No. 1, January 31, 2017.

Source: DA Hogan, Color Layout Plan - Sheet JA-1.0, November 25, 2019.

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Figure 1

Site and Lighting Plan

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2. BACKGROUND CONDITIONS

This section presents the existing and future conditions without the proposed project. The impacts of the proposal project were evaluated against these base conditions. Year 2020 was selected as the future horizon year for the analyses, because this is when the field improvement and lighting project is scheduled to be completed, and athletic activities could begin occurring later in the evenings. For comparison, and to provide an analysis of potential new traffic and parking impacts, year 2020 without-project conditions assume the existing field would remain unlit. The following sections describe the existing roadway network, traffic volumes, traffic operations (in terms of levels of service), traffic safety, transit facilities, non-motorized facilities, and parking.

The selection of the off-site study area intersections was based on the travel routes used to access the off-street and nearby on-street parking including:

- NE 115th Street / 31st Avenue NE
- NE 115th Street / 34th Avenue NE
- NE 113th Street / 31st Avenue NE
- NE 113th Street / 34th Avenue NE
- NE 110th Street / 30th Avenue NE
- NE 110th Street / 31st Avenue NE
- NE 110th Street / 34th Avenue NE
- NE 110th Street / 35th Avenue NE

2.1. Transportation Network

2.1.1. Existing Network

Roadway classifications and speed limits are based on the City's *Street Classification Map*.[3] Seattle's default arterial speed limit is 25 miles per hour (mph), unless otherwise posted; the default non-arterial speed limit is 20 mph. The site location and vicinity are shown on Figure 2. The following describes key roadways in the site vicinity.

NE 110th Street is a two-lane, east-west Collector Arterial that provides access between Sand Point Way NE to the east and Lake City Way NE (SR-522) to the west. There is curb and sidewalk on the south side between Lake City Way NE and 35th Avenue NE. Parallel parking is permitted on the south side between 30th and 35th Avenues NE with restrictions for school-bus only during peak morning and arrival periods. Along the north side of NE 110th Street, there is a mix of painted walkway (between 34th and 35th Avenues NE), some paved and gravel shoulder used for parking, and a segment with a drainage ditch where parking is prohibited. The shoulder west of 34th Avenue NE is signed for school-load only during morning and afternoon peak periods. West of 30th Avenue NE to Lake City Way, the roadway has no shoulders and parking is not allowed on either side of the street. Traffic signals control its intersections with Lake City Way NE and 35th Avenue NE. Both intersections have pedestrian crosswalks on all legs and pedestrian signals. The intersection at 30th Avenue NE is all-way-stop-controlled. The speed limit is 30 mph; however, there is a school zone speed limit near the site that is in effect when children are present. There are raised, marked, and signed crosswalks located on the east leg of the intersection with 31st Avenue NE and the west leg at 34th Avenue NE. There is a posted advisory speed limit of 15 mph for the raised crosswalks.

35th Avenue NE is a two/three-lane minor arterial (one lane in each direction with turn pockets at select intersections) that provides north-south access between Lake City and Bryant/University Village. The roadway has parallel parking on both sides and sections with bike lanes or "sharrows" (pavement markings indicating motorists and bicyclists should share the lane) for bicycle travel in both directions.

[3] Seattle Department of Transportation (SDOT), Street Classification Maps (http://seattlecitygis.maps.arcgis.com), accessed July 2019.

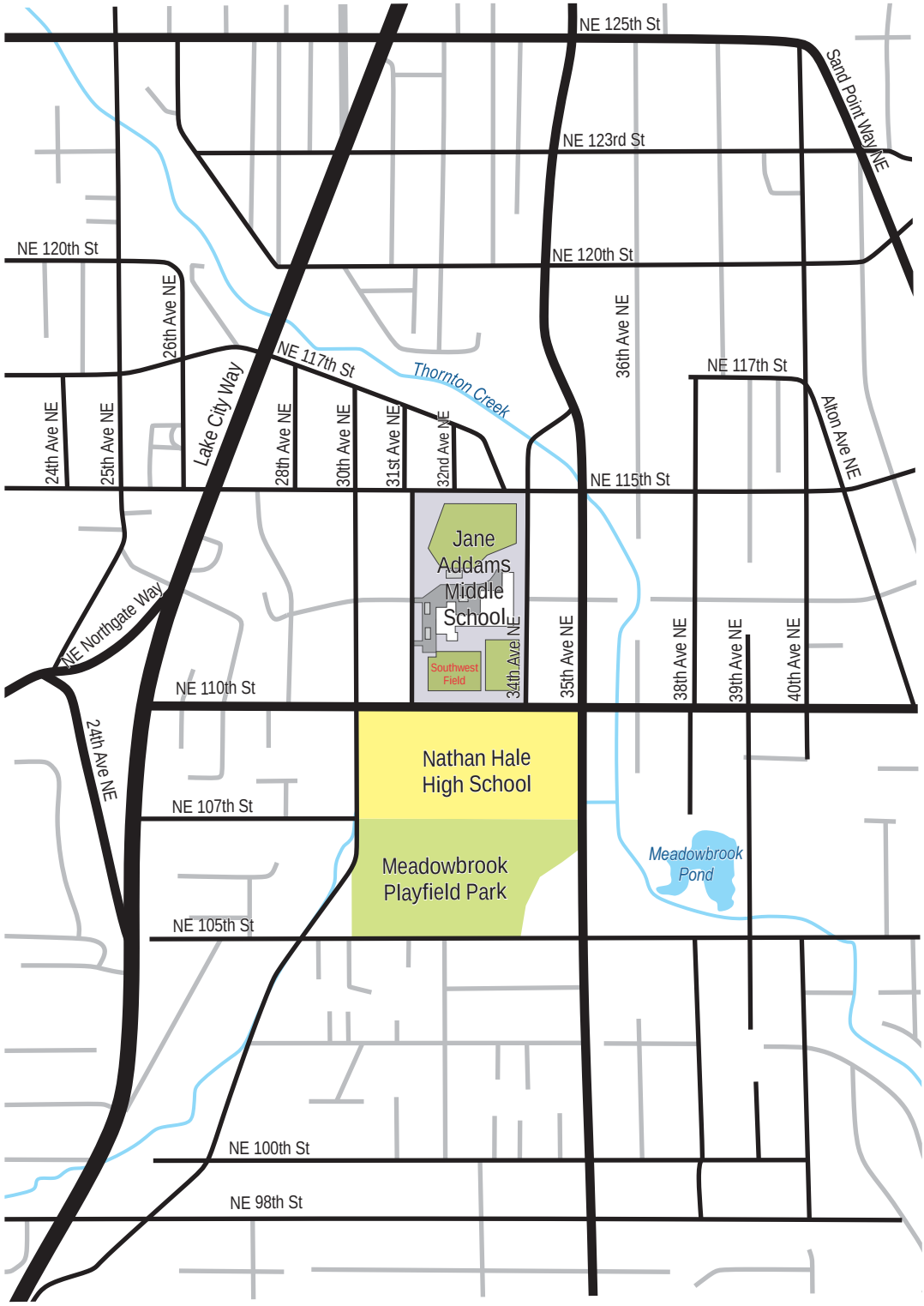

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Figure 2

Site Location and Vicinity

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There are curbs, gutters, and sidewalks on both sides of the street. Its intersection with NE 110th Street is signalized. There is a signed and marked crosswalk with rectangular rapid flashing beacons (RRFB) located just south of Nathan Hale High School at the Meadowbrook Community Center. The speed limit is 30 mph; however, there is a school zone beacon system indicating a 20-mph speed limit near NE 110th Street that is in effect when the beacons are flashing.

34th Avenue NE is a local access street which provides north-south access between NE 110th Street on the south and bends to intersect with 35th Avenue NE on the north. It is aligned along the east side of the Jane Addams Middle School site. The roadway has segments with gravel shoulders and paved walkways on both sides, curb and sidewalk (primarily adjacent to the school site), and gravel shoulders with no walkway. The roadway has speed bumps and the speed limit is 20 mph; there is a school zone (20 mph) speed limit in effect near the site when children are present.

31st Avenue NE is a local access street which provides north-south access between NE 110th Street on the south and connects to NE 117th Street to the north. It is aligned along the west side of the Jane Addams Middle School site. The roadway has segments with gravel shoulders, curb and sidewalk, or paved shoulders along the east side; there are some segments on the west side with wider gravel shoulders. The roadway has speed bumps and the speed limit is 20 mph; there is a school zone (20 mph) speed limit in effect near the site when children are present.

NE 115th Street is Collector Arterial between Lake City Way NE and 35th Avenue NE; it serves as a local access street east and west of this segment. It is aligned along the north side of the Jane Addams Middle School site. Adjacent to the site, there is a paved asphalt walkway on the south side that is separated from the roadway by a landscape strip. The speed limit is 30 mph; however, there are speed bumps adjacent to the school with an advisory speed limit of 15 mph. There is a school zone beacon system indicating a 20-mph speed limit near the school site that is in effect when the beacons are flashing.

2.1.2. Planned Improvements

The following documents were reviewed to determine if any planned transportation improvements could affect the roadways and intersections near Jane Addams Middle School by 2020 when the field lighting project is planned to be completed.

City of Seattle's Adopted 2019-2024 Capital Improvement Program (CIP)[4]and its ***Proposed 2020-2024 – Capital Improvement Program (CIP)***[5] – No specific improvements to the transportation network were identified in the site vicinity.

Adopted Seattle Bicycle Master Plan (BMP)[6] – The plan recommends new north-south protected bicycle lanes along 35th Avenue NE between NE 68th Street and NE 125th Street. The plan also recommends an in-street local connector along NE 110th Street between Alton Avenue NE and 30th Avenue NE. A '*neighborhood greenway*' (low-speed, low-volume street designed to be shared by pedestrians, bicycles, and vehicles) is recommended south of the site along NE 105th Street between 40th Avenue NE and Ravenna Avenue NE. The *Seattle BMP – 2019-2024 Proposed Implementation Plan*[7], which defines the priorities of the projects, indicates that the Seattle Department of Transportation (SDOT) initiated installation of protected bike lanes on 35th Avenue NE in conjunction with a paving project, but after considerable community engagement, SDOT determined not to proceed with the installation of the bike facilities at this time. It plans instead to

4 City of Seattle, Updated Sep. 2018.
5 City of Seattle, Updated Sep. 2018.
6. City of Seattle, March 2015.
7 SDOT, DRAFT March 28, 2019.

focus corridor improvements on pedestrian safety and additional improvements to the 39th Avenue NE greenway.

Neighborhood Greenway Work Plan[8] – This plan, covering the years from 2015 to 2020, does not identify any additional greenways, beyond those identified in the *BMP*, planned in the site vicinity.

Levy to Move Seattle – Workplan Report[9] – This document outlines SDOT's workplan to deliver citywide transportation projects and services funded in part or in full by the *Levy to Move Seattle* (approved by voters in 2015). The nine-year workplan (2016 to 2024) documents achievements and challenges and sets the agency's plan for future years. SDOT's Neighborhood Street Fund program, which is now funded by the Levy to Move Seattle pays for transportation projects that are identified and prioritized by the community. Among the 2019 projects selected, one was a sidewalk improvement on NE 110th Street between 34th and 35th Avenues NE.

None of the identified transportation improvements are expected to affect the study area lane geometry or intersection capacity by 2020. Therefore, the existing roadway and intersection configurations were assumed to remain unchanged for the 2020 analysis.

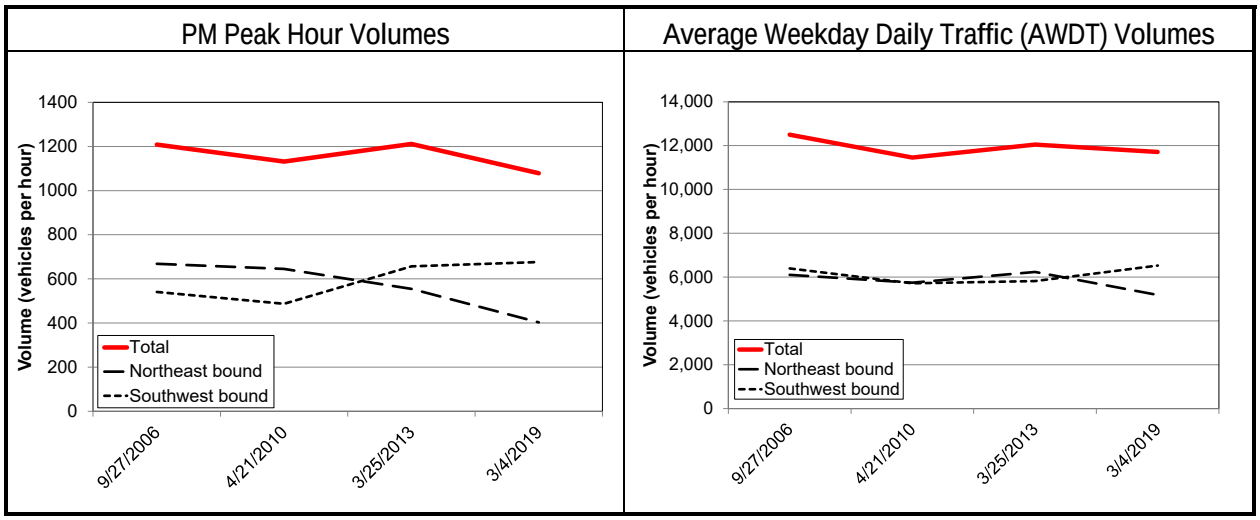
[8] https://www.seattle.gov/transportation/projects-and-programs/programs/greenways-program/work-plan, March 2019.
[9] SDOT, November 2018.

2.2. Traffic Volumes

2.2.1. Historical Traffic Volumes

SDOT has conducted traffic counts on 35th Avenue NE at or near NE 110th Street several times since 2006, including most recently in March 2019. These counts were compiled to determine how PM peak hour and daily traffic volumes in the study area have changed in the past 12 years. Figure 3 shows the PM peak hour and weekday daily volumes from 2006 to 2019. The counts indicate relatively stable volumes over the 12+-year period, with an overall decline in daily volumes of about 0.5% annually. During that period, average PM peak hour volumes decreased by about 1% per year.

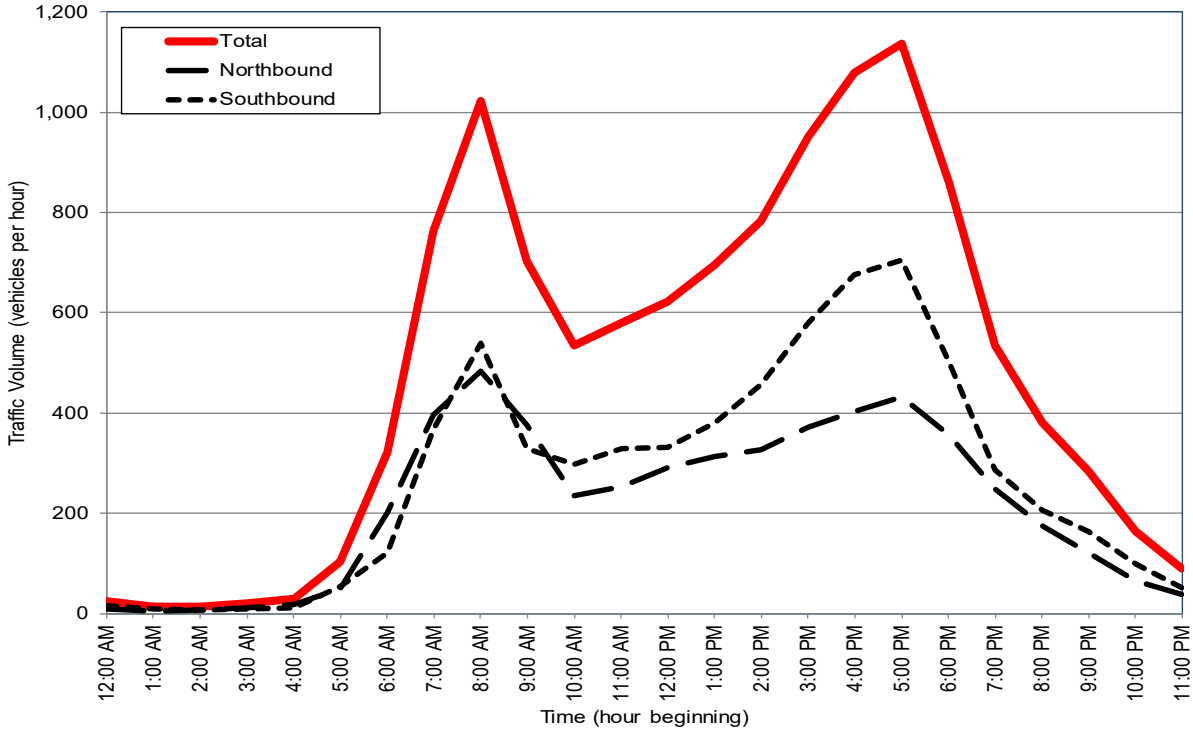
Figure 3. Traffic Volumes on 35th Avenue NE at NE 110th Street – 2006 to 2019



Source: SDOT Traffic Count Database, December 2019.

Traffic count data on 35th Avenue NE at NE 113th Street were also compiled to determine how volume changes by time of day. SDOT's most recent data were collected in March 2019. These data, shown on Figure 4, are typical of most arterials in Seattle with distinct morning and afternoon peak periods that correspond to peak commuter travel. In the hours following the commuter PM peak hour (the highest hour between 4:00 and 6:00 P.M.), traffic volumes decline at a rapid rate. The volume from 6:00 to 7:00 P.M. is about 24% lower than the PM peak hour. The volume from 7:00 to 8:00 P.M. is about 53% lower than the PM peak hour, and it is about 66% lower from 8:00 to 9:00 P.M.

Figure 4. Hourly Traffic Volumes on 35th Avenue NE south of NE 113th Street – March 2019



Source: Average weekday volumes from counts performed by SDOT on 35th Avenue NE at NE 113th Street, March 5-7, 2019.

2.2.2. Existing Background Traffic Volumes

Weekday PM peak hour and early evening turning movement traffic counts were conducted on Thursday, November 7, 2019, at the eight study area intersections. All counts were performed from 4:00 to 8:00 P.M. and include the period in which the proposed field lights could result in increased traffic at the school site. There was a variety of early afternoon and evening events occurring at both Jane Addams Middle School and Nathan Hale High School on the day of the counts. At Jane Addams, there were varsity and junior-varsity girls soccer practices, ultimate practice, science support in the library until 5:30 P.M., and a jazz concert in the auditorium from 7:00 to 9:00 P.M. At Nathan Hale, there was a home varsity volleyball match at 7:00 P.M. (versus Eastside Catholic) and a fall play production in the performing arts center from 7:00 to 9:00 P.M.

The count data indicate that the peak hour volumes during the four-hour count period varied somewhat by location, with peaks at most intersections (6 of 8 locations) occurring from 5:00 to 6:00 P.M., and two from 4:00 to 5:00 P.M. Similar to the hourly data presented in the previous section, the turning movement counts at the NE 110th Street / 35th Avenue NE intersection confirm that arterial volumes decline considerably after the commuter PM peak hour (down 23% in the 6-7 P.M. hour and down by 55% in the 7-8 P.M. hour). At intersections closer to the two schools where overall volumes are much lower, volumes during the 6:00 to 7:00 P.M. hour were similar to the 5:00 to 6:00 P.M. hour due to activity associated with the events listed above at both school sites.

Based on observed traffic patterns and schedules for other lighted athletic fields, participants and spectators at the fields often arrive or depart the site during both the commuter PM peak hour and the 6:00 to 7:00 P.M. hour. These are often the time periods when scholastic athletics (such as baseball, softball, and soccer practices) finish and non-scholastic community uses begin. Therefore, based on the count data collected for this analysis and typical lighted athletic field usage patterns, the commuter PM peak hour and the 6:00 to 7:00 P.M. hour were selected for detailed operational analysis. As noted

previously, it is possible that the field lights could be used in the morning for scholastic practices; however, there are no current plans for this use. Potential traffic impacts of morning field use are expected to be minimal because of the limited participants (students only, no spectators) and limited number of days that lights would be needed.

During the data collection effort, the east leg of NE 110th Street at 35th Avenue NE was closed due to drainage and sidewalk improvements that were underway by SDOT. The volumes and turning movements were corrected to reflect normal operations based on historical roadway segment and intersection turning movement data. Figure 5 presents the existing (2019) PM peak hour traffic volumes within the study area; Figure 6 presents the existing early evening (6:00 to 7:00 P.M.) traffic volumes. These volumes are representative of conditions with many typical after-school activities and events occurring at both schools.

2.2.3. Existing Site-Related Traffic Volumes

Jane Addams Middle School currently generates traffic during the PM peak hour and early evening hour. Traffic generation by middle schools during the PM peak hour and early evening hour on non-event nights can be related to after-school student activities or athletics, and may include some staff leaving for the day. However, they also are often related to community use of school facilities (e.g. use of the gymnasium or meeting spaces for groups such as Boy Scouts and Girl Scouts) or athletic fields.

Counts of the main site driveway and intersections surrounding the site (included as part of the data collection effort described previously) reflect conditions with afternoon and evening events including use of the athletic fields. During the analysis hours, school-generated traffic at the access driveway on 34th Avenue NE (opposite NE 113th Street) consisted of 33 trips (5 in, 28 out) during the PM peak hour and 35 trips (26 in, 9 out) during the early evening (6:00 to 7:00 P.M.) hour. These trips were most likely associated with some of the activities at the school, including use of the existing athletic fields. Additional school-generated traffic during these hours also likely occurred to and from on-street parking surrounding the site, and was captured in the study-are traffic counts.

2.2.4. Forecast Without-Project Traffic Volumes

The Jane Addams Middle School field improvements project is expected to be completed by fall 2020. As described in the previous section, in recent years historical volumes have declined by an average of 0.5% to 1% per year. Some new residential and commercial development in the larger vicinity could contribute to increased traffic in the study area. To account for this potential growth and consistent with the recent area growth trends, a compound annual growth rate of 1% was applied for one year to reflect volumes at the end of 2020. Although increases from development are primarily expected to affect the higher-volume arterials (35th Avenue NE and NE 110th Street), this assumption was applied to existing non-site-related volumes at all of the study area intersections. This rate accounts for possible general background traffic increases and traffic generated by new development in the vicinity. The 2020-without-project PM peak hour and early evening hour traffic volumes are shown on Figure 7 and Figure 8, respectively.

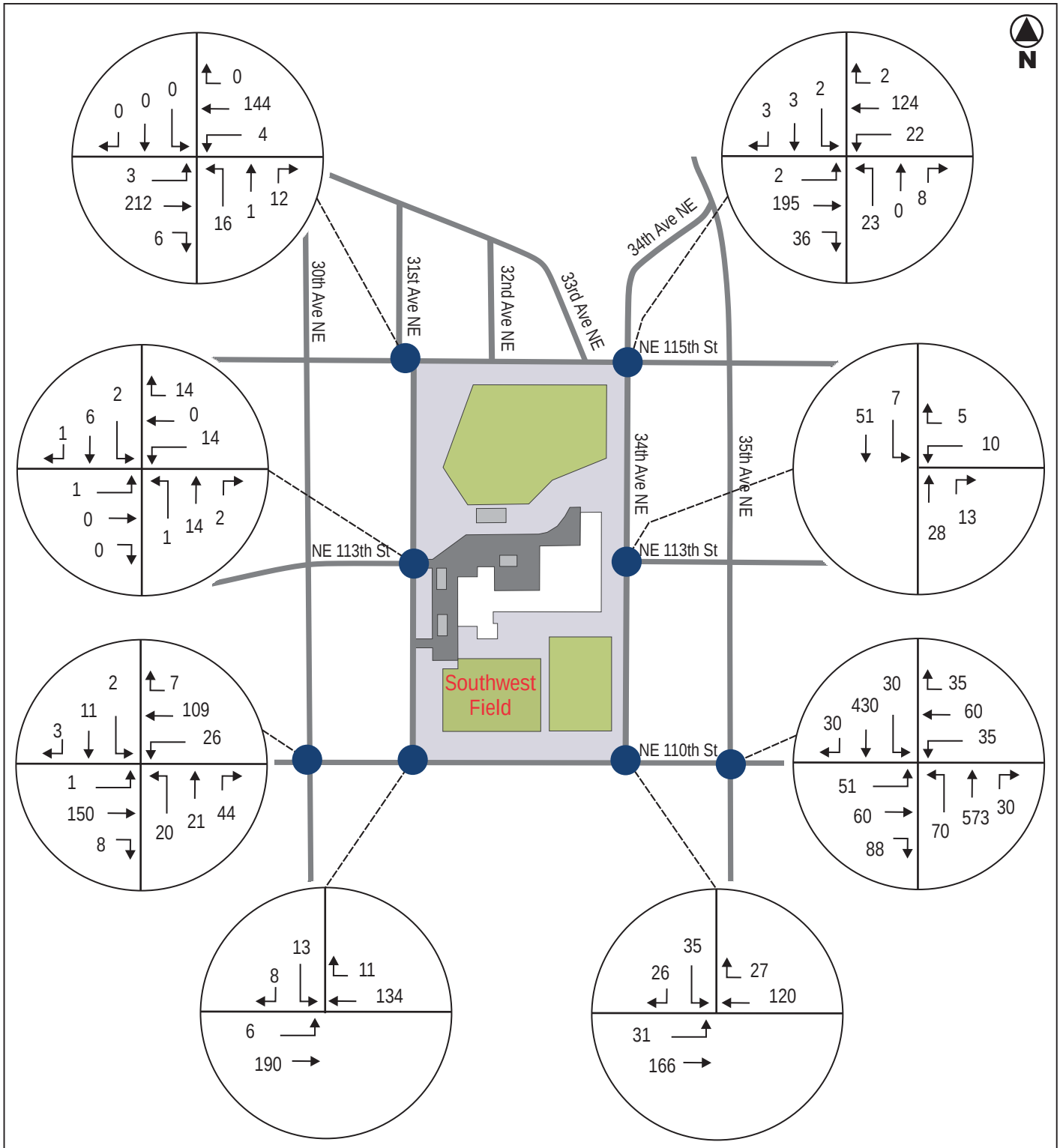


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Figure 5
Existing (2019) Traffic Volumes
PM Peak Hour

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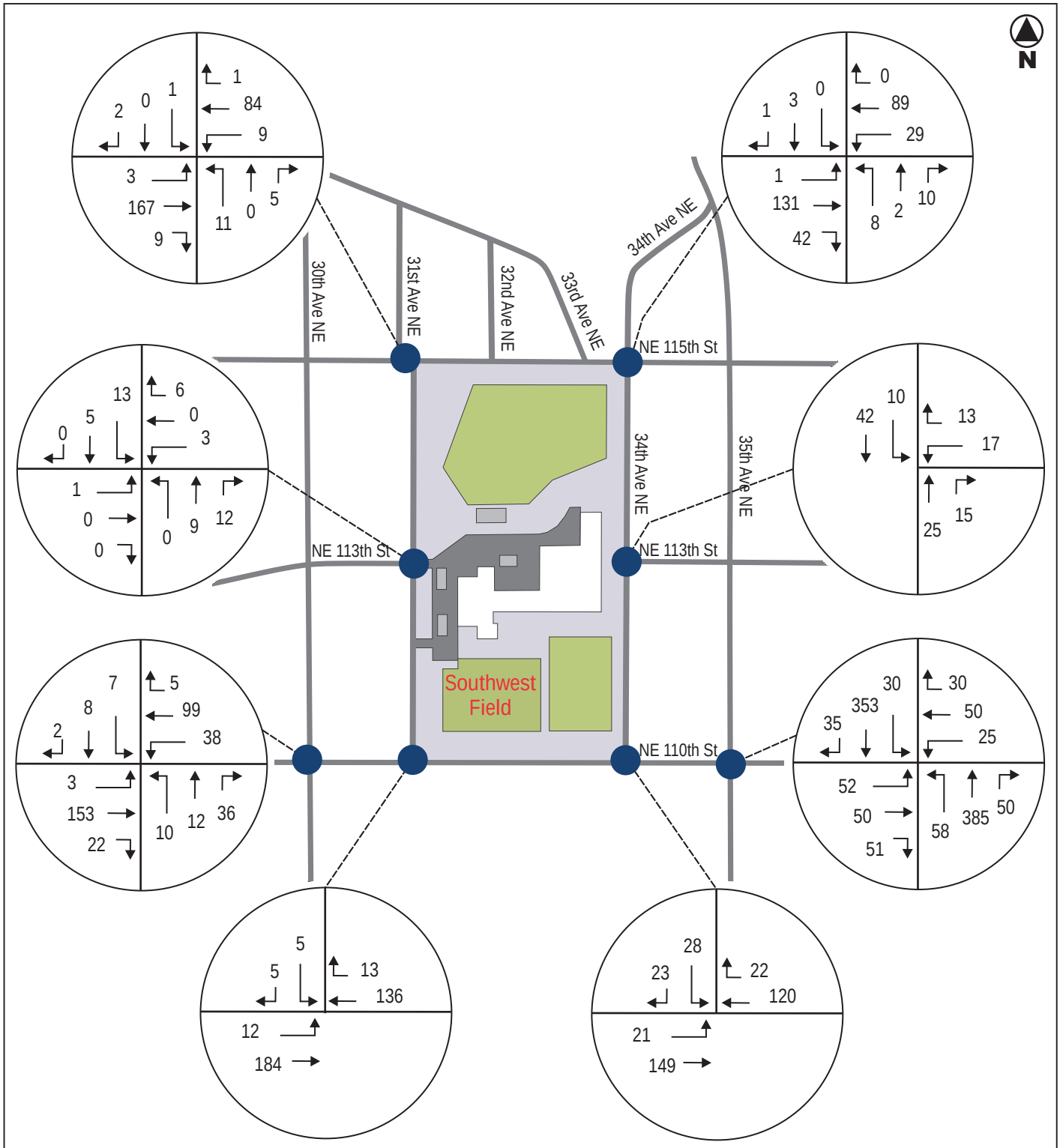

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Figure 6
Existing (2019) Traffic Volumes
Early Evening Peak Hour

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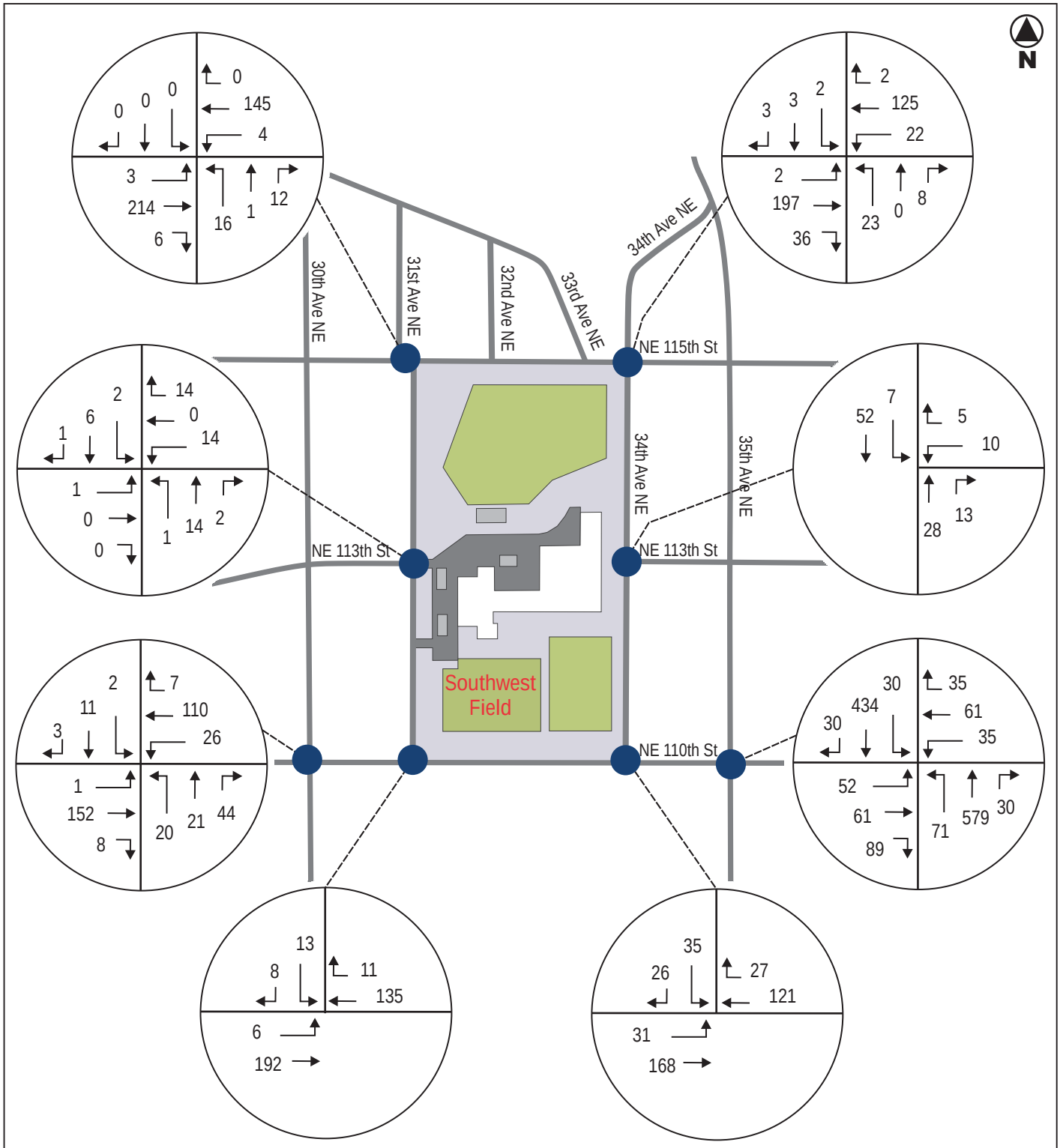

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Figure 7
Forecast (2020) Without-Project Traffic Volumes
PM Peak Hour

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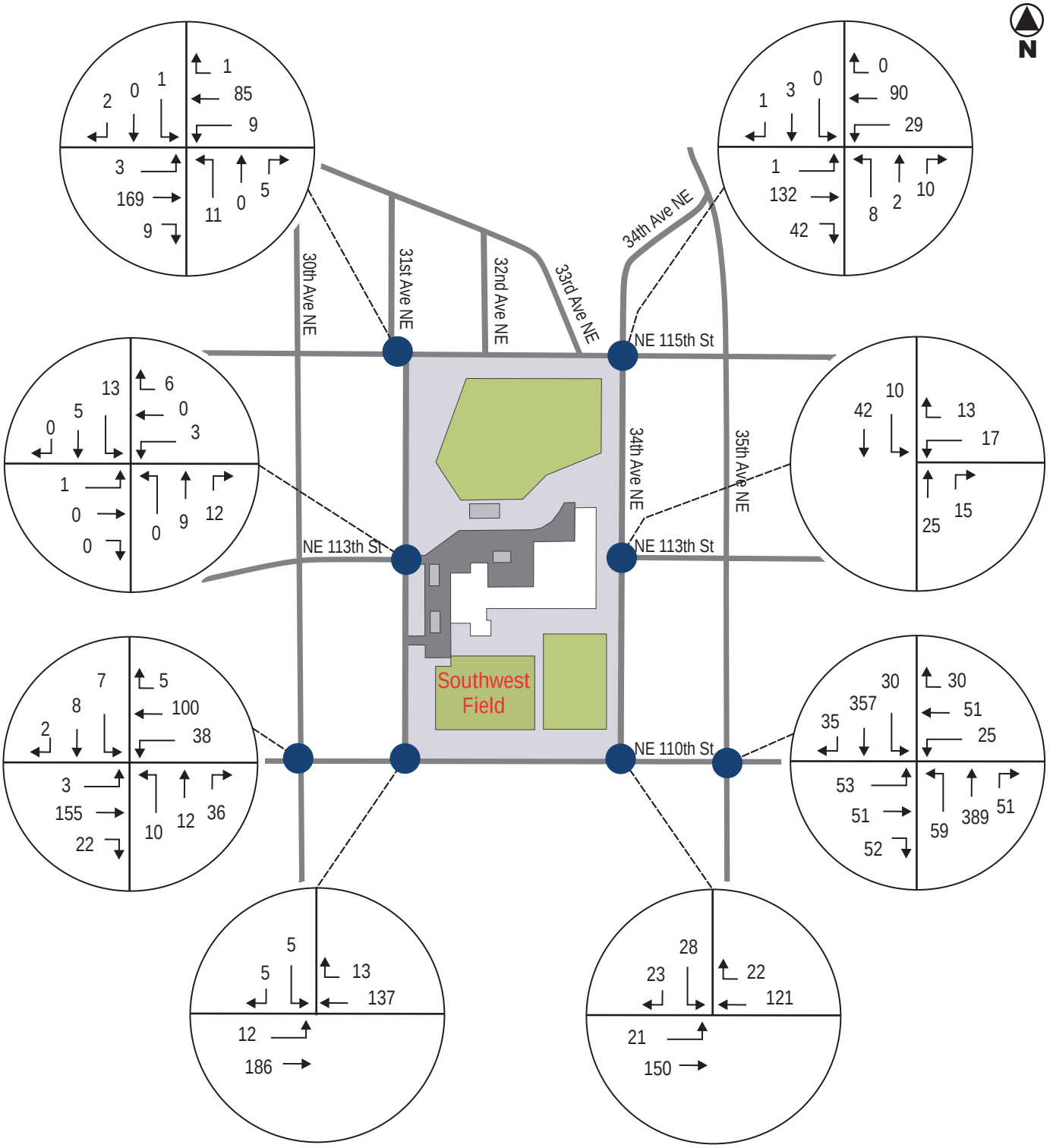

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Figure 8
Forecast (2020) Without-Project Traffic Volumes
Early Evening Peak Hour

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2.3. Level of Service

Level of service (LOS) is a qualitative measure used to characterize traffic operating conditions. Six letter designations, "A" through "F," are used to define level of service. LOS A is the best and represents good traffic operations with little or no delay to motorists. LOS F is the worst and indicates poor traffic operations with long delays. The City of Seattle does not have adopted intersection level of service standards; however, project-related intersection delay that causes a signalized intersection to operate at LOS E or F, or increases delay at a signalized intersection that is projected to operate at LOS E or F without the project, may be considered a significant adverse impact. The City may tolerate delays in the LOS E or F range for minor movements at unsignalized intersections where traffic control measures (such as conversion to all-way-stop-control or signalization) are not applicable or desirable.

Levels of service for the eight off-site study area intersections were determined using the methodology in the *Highway Capacity Manual, Sixth Edition.*[10] Appendix A includes level of service thresholds and definitions for signalized and unsignalized intersections. Delay calculations rely on complex equations that consider a number of variables. For example, delay at signalized intersections is determined based on a combination of variables including: the quality of progression, cycle length, green ratio, and a volume-to-capacity ratio for the lane group or approach in question. Delay at unsignalized intersections is determined for vehicles that must stop or yield for oncoming traffic. That delay is related to the availability of gaps in the main street's traffic flow and the ability of a driver to enter or pass through those gaps. All level-of-service calculations were performed using the *Synchro 10.3 (Build 122)* traffic operations analysis software. Input data for this analysis, including geometric characteristics were collected during field observations; signal timing was based on timing cards provided by SDOT. These conditions are expected to stay the same in the future analysis year. Results for unsignalized intersections were reported using the *HCM 6* module; levels of service for the signalized intersection were reported using the *Synchro* module which refines *Highway Capacity Manual* methods to account for more detailed driving behavior and signal operations.

Table 1 summarizes existing (2019) and forecast 2020-without-project levels of service at the off-site analysis intersections for both the PM peak hour and early evening hour conditions. As shown, all intersections currently operate at LOS B or better and are expected to continue at those levels in 2020 without the project. All movements at the unsignalized intersections operate at LOS B or better during both periods. The projected growth in background traffic is expected to add negligible delay (estimated at less than 0.1 second or less) by 2020.

[10] Transportation Research Board [TRB], 2016.

Table 1. Level of Service Summary – Existing (2019) and 2020 Without-Project Conditions

Intersections	PM Peak Hour (various [1])				Evening Peak Hour (6:00–7:00 P.M.)			
	Existing (2019)		2020 w/o project		Existing (2019)		2020 w/o project	
Signalized	LOS [2]	Delay [3]	LOS	Delay	LOS	Delay	LOS	Delay
35th Ave NE & NE 110th St	B	11.6	B	11.7	B	10.7	B	10.8
All-Way-Stop Controlled	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**
30th Ave NE & NE 110th St	A	8.5	A	8.6	A	8.7	A	8.8
Two-Way-Stop Controlled	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**
31st Ave NE & NE 115th St	A	1.1	A	1.1	A	1.3	A	1.3
Eastbound Left Turn	A	7.5	A	7.5	A	7.4	A	7.4
Westbound Left Turn	A	7.8	A	7.8	A	7.7	A	7.7
Northbound Movements	B	12.8	B	12.9	B	11.7	B	11.8
Southbound Movements	n/v [4]		n/v [4]		A	9.6	A	9.6
34th Ave NE & NE 115th St	A	1.9	A	1.9	A	2.0	A	2.0
Eastbound Left Turn	A	7.5	A	7.5	A	7.4	A	7.4
Westbound Left Turn	A	7.9	A	7.9	A	7.7	A	7.7
Northbound Movements	B	13.2	B	13.3	B	10.9	B	10.9
Southbound Movements	B	11.8	B	11.8	B	11.2	B	11.2
31st Ave NE & NE 113th St / N Dwy	A	4.8	A	4.8	A	3.5	A	3.5
Northbound Left Turn	n/v [4]		n/v [4]		n/v [4]		n/v [4]	
Southbound Left Turn	A	7.3	A	7.3	A	7.3	A	7.3
Eastbound Movements	A	8.8	A	8.8	A	9.0	A	9.0
Westbound Movements	A	8.7	A	8.7	A	8.7	A	8.7
34th Ave NE & NE 113th St [5]	A	2.4	A	2.4	A	2.3	A	2.3
Southbound Left Turn	A	7.4	A	7.4	A	7.3	A	7.3
Westbound Movements	A	9.2	A	9.2	A	9.2	A	9.2
NE 110th St & 31st Ave NE	A	0.9	A	0.9	A	0.7	A	0.7
Eastbound Left Turn	A	7.6	A	7.6	A	7.7	A	7.7
Southbound Movements	B	10.5	B	10.5	B	10.5	B	10.5
NE 110th St & 34th Ave NE	A	2.6	A	2.6	A	2.7	A	2.7
Eastbound Left Turn	A	7.7	A	7.7	A	7.7	A	7.7
Southbound Movements	B	11.6	B	11.6	B	11.8	B	11.9

Source: Heffron Transportation, Inc., December 2019.

1. *The PM peak hour for each individual intersection was evaluated.*
2. *Level of service.*
3. *Average seconds of delay per vehicle.*
4. *n/v = no volume counted for these movements.*
5. *Uncontrolled intersection evaluated as stop-controlled for east leg based on field observations.*

2.4. Parking

On-street parking at and around the Jane Addams Middle School site was surveyed to determine the existing parking supply and occupancy. This information was then used to estimate how parking occupancy could be affected by new parking demand generated by the proposed athletic field lighting project (which is presented later in Section 3.7). The following sections describe the on-street parking supply as well as the current parking occupancy and utilization rates.

2.4.1. Methodology and Study Area

A detailed on-street parking study was performed and supply was documented according to the methodology outlined in the City of Seattle's Tip #117.[11] Although Tip #117 was created for another purpose, it outlines the City's preferred methodology to determine the number and type of on-street parking spaces that may exist within a defined study area, and how much of that supply is currently utilized at different times of the day. This analysis was completed to document the existing supply and how it is currently utilized.

The study area for the on-street parking analysis included all roadways within an 800-foot *walking* distance from the school site, as is typically required by the City of Seattle for evaluations of new development for SEPA review. The 800-foot walking distance results in a study area that extends just west of 28th Avenue NE, north to NE 117th Street, just north of NE 107th Street, and just west of 38th Avenue NE. The study area consists primarily of single-family residences. Almost all of the residences within the study area have some off-street parking capacity such as driveways and/or garages. The majority of residents actively use these spaces for vehicle parking; however, some also use on-street parking. Details about parking supply and demand are provided in the following sections.

Existing On-Street Parking Supply

Within the study area, 35th Avenue NE, and NE 110th Street between 34th Avenue NE and 35th Avenue NE, have curbs and gutters on both sides. Along these streets, parking supply was considered to exist on both sides unless otherwise signed. The majority of streets in the study area do not have curbs. On-street parking capacity for these streets was evaluated based on street and shoulder widths. The study area was separated into individual block faces. A block face consists of one side of a street between two cross-streets. For example, the north side of NE 113th Street, between 34th and 35th Avenues NE is one block face (identified as 'CE' for this study). The study area and block face designations are shown on Figure 9.

Each block face was measured and analyzed to determine the number of legal on-street parking spaces. First, common street features—such as driveways, fire hydrants, and special parking zones—and their buffer requirements were identified. No on-street parking capacity was assumed within 30 feet of a signalized or marked intersection, within 20 feet of an uncontrolled intersection, within 15 feet on either side of a fire hydrant, or within 5 feet on either side of a driveway or alley. The remaining unobstructed lengths between street features were converted to legal on-street parking spaces using values in the City's Tip #117.

It should be noted that the curb-face values in TIP #117 reflect variable parking space lengths. Based on extensive past experience of Heffron Transportation preparing on-street parking studies, it has been observed that increased use of smaller cars and the tendency for drivers to park closer together in areas with higher utilization can result in more parking supply than would be suggested by the Tip #117 guidance. Detailed parking supply by block face is provided in Appendix B.

[11] Seattle Department of Planning and Development, Tip 117, *Parking Waivers for Accessory Dwelling Units*, Updated May 12, 2011.

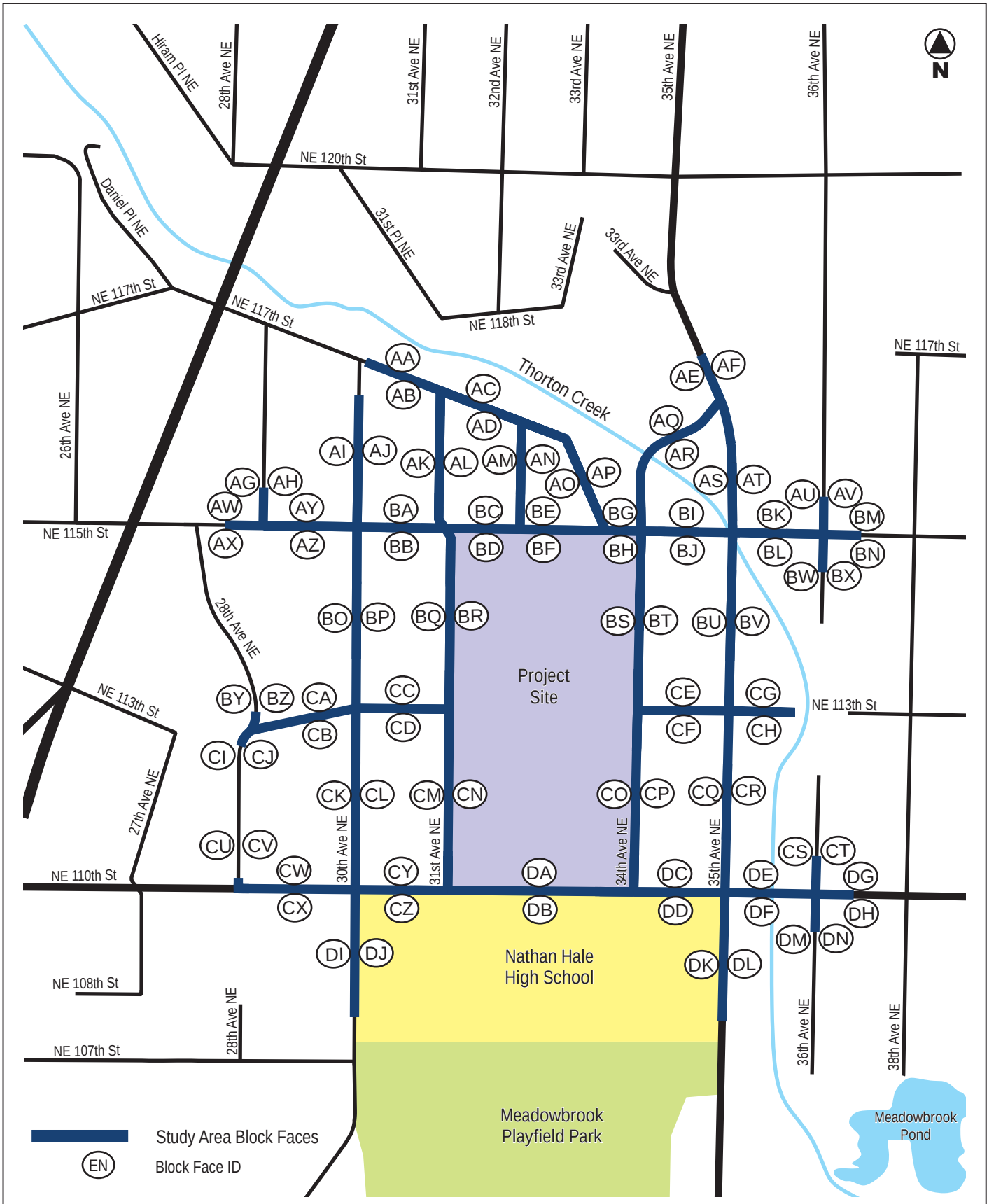

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Figure 9
Study Area for On-Street Parking Occupancy Surveys

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The parking supply survey determined that there are 768 on-street parking spaces within the study area and 621 have no restrictions. After accounting for spaces that have use restrictions (Metro-Bus-only), the total supply is 763 spaces in the early weekday evening and 768 spaces in the later weekday evening, 767 spaces in the early Saturday evening, and 768 spaces in the later Saturday and both Sunday evening periods.

Existing On-Street Parking Occupancy

Existing parking occupancy counts within the study area were performed in December 2019. Occupancy counts on school-day evenings were performed during times when the future use of the lighted southwest athletic field could generate added parking demand. The counts were conducted in the early evening (between 5:45 and 6:45 P.M.) and later evening (between 8:15 and 9:15 P.M.) to reflect conditions that could be affected by new scholastic and recreational athletics under the lights. The counts were performed on Tuesday, December 3, Thursday, December 5, Saturday, December 7, and Sunday, December 8, 2019. The counts for each day were compiled and averaged. The results of the parking occupancy surveys are summarized in Table 2. Detailed summaries of the on-street parking occupancy by block face for all counts are provided in Appendix B.

On-street parking utilization was calculated using the methodology described in Tip #117; it is the number of vehicles parked on-street divided by the number of legal on-street parking spaces within the study area or on a specific block face. The study area utilization totals are summarized in Table 2.

Table 2. On-Street Parking Occupancy Survey Results – Fall 2019

	Weeknights			Weekend Evenings		
Date	Tues., 12/3 [a]	Thurs., 12/5 [b]	Average	Sat., 12/7 [c]	Sun., 12/8	Average
Early Evening (5:45 to 6:45 P.M.)						
Supply	763	763	763	767	768	768
Occupancy	201	176	189	162	155	159
% Utilization	26%	23%	25%	21%	20%	21%
Evening (8:15 p.m. to 9:15 P.M.)						
Supply	768	768	768	768	768	768
Occupancy	149	123	136	185	161	173
% Utilization	19%	16%	18%	24%	21%	23%

Source: Heffron Transportation, Inc., December 2019.

a. Field observations noted that between 75 to 100 lacrosse players and parents occupied Jane Addams lighted field (southeast) during the early evening period. There was a boys basketball try-out in the JAMS gym until 5:30 P.M. There was a high school orchestra rehearsal at the Nathan Hale Performing Arts Center from 7:00 to 8:00 P.M.

b. Field observation noted that between 65 to 85 lacrosse players and parents occupied Jane Addams lighted field (southeast) during the early evening period. There was a boys basketball try-out in the JAMS gym until 5:30 P.M. and an evening theater performance of "Much Ado About Nothing" by Theater at Jane Addams (TAJA) in the JAMS auditorium from 7:00 to 9:00 P.M. There was a high school wind ensemble and orchestra concert at the Nathan Hale Performing Arts Center from 7:00 to 9:00 P.M.

c. There was an evening theater performance of "Much Ado About Nothing" by Theater at Jane Addams (TAJA) in the JAMS auditorium from 7:00 to 9:00 P.M.

As noted in the table above, the parking occupancy counts were conducted on several evenings when there were also other events occurring at both Jane Addams Middle School and Nathan Hale High School, including use of the southeast lighted field, activities in the Jane Addams gymnasium, and concert events at both sites. Therefore, the observations are representative of cumulative event conditions for the site vicinity. The counts indicated on-street parking in the study area during the early

evening weeknight period was 25% utilized (an average of 189 vehicles parked) and 18% utilized (an average of 136 vehicles parked) during the later evening period. During the weekend evenings observations, on-street parking was 21% utilized (an average of 159 vehicles parked) in the early evening, and 23% utilized (an average of 173 vehicles parked) in the later evening. For the purpose of evaluating the potential on-street parking impacts associated with new development, the City considers utilization rates of 85% or higher to be effectively full. Within the study area, unused parking ranged between 562 and 645 spaces over the eight observation periods.

2.4.2. Off-Street Parking

Field-related and school event parking demand also occurs in the Jane Addams main lot (which has 121 spaces) located centrally on the site and accessed from 31st Avenue NE. There is a locked gate linking the lot to 34th Avenue NE that was locked during all observations. There are two off-street spaces located at north side of the Jane Addams site. Parking demand counts were also conducted within the Nathan Hale lot (42 spaces) that is accessed from NE 110th Street, since this lot is proximate to the southwest athletic field proposed to be lighted. Parking occupancy counts, summarized in Table 3, were performed on the same dates and times as the on-street counts presented previously.

Table 3. Off-Street Parking Demand Survey Results – Fall 2019

		Weeknights			Weekend Evenings		
Time Period / Lot	Supply	Tues., 12/3 [a]	Thurs., 12/5 [b]	Average	Sat., 12/7 [c]	Sun., 12/8	Average
Early Evening (5:45 to 6:45 p.m.)							
Jane Addams North	2	closed	closed	closed	closed	closed	closed
Jane Addams Main Lot	121	10	11	11	0	0	0
Nathan Hale Lot	42	18	8	13	0	2	1
Total	165	28	19	24	0	2	1
Unused Spaces		137	146	142	165	163	164
Evening (8:15 p.m. to 9:15 p.m.)							
Jane Addams North	2	closed	closed	closed	closed	closed	closed
Jane Addams Main Lot	121	1	closed	1	0	closed	0
Nathan Hale Lot	42	6	4	5	2	0	1
Total	165	7	4	6	2	0	1
Unused Spaces		158	161	159	163	165	164

Source: Heffron Transportation, Inc., December 2019.

a. Field observations noted that between 75 to 100 lacrosse players and parents occupied Jane Addams lighted field (southeast) during the early evening period. There was a boys basketball try-out in the JAMS gym until 5:30 P.M. There was a high school orchestra rehearsal at the Nathan Hale Performing Arts Center from 7:00 to 8:00 P.M.

b. Field observation noted that between 65 to 85 lacrosse players and parents occupied Jane Addams lighted field (southeast) during the early evening period. There was a boys basketball try-out in the JAMS gym until 5:30 P.M. and an evening theater performance of "Much Ado About Nothing" by Theater at Jane Addams (TAJA) in the JAMS auditorium from 7:00 to 9:00 P.M. There was a high school wind ensemble and orchestra concert at the Nathan Hale Performing Arts Center from 7:00 to 9:00 P.M.

c. There was an evening theater performance of "Much Ado About Nothing" by Theater at Jane Addams (TAJA) in the JAMS auditorium from 7:00 to 9:00 P.M.

As shown, during the fall 2019 counts, the off-street parking lots had relatively low demand with more than 137 unused spaces at all times. These conditions reflect the availability of off-street parking at times when the field lighting could result in new parking demand. As shown, the highest level of

demand occurred during the early evening period on Tuesday, December 3, 2019, during a large lacrosse game/practice. Even with this activity, the off-street lots had unused capacity for up to 137 additional vehicles. As noted in the prior section, the on-street parking occupancy within 800 feet of the site during this same period found utilization of 26% with 562 unused spaces.

2.5. Traffic Safety

Collision data for the study area intersections and roadway segments were obtained from SDOT's Open Data Portal for the period between January 1, 2016, and the most recent records available as of November 4, 2019 (3.8 years). The data were examined to determine if there are any unusual traffic safety conditions that could impact or be impacted by the proposed project. Table 4 below summarizes the collision data.

Unsignalized intersections with five or more collisions per year and signalized intersections with 10 or more collisions per year are considered high collision locations by the City. As shown, all of the study area intersections averaged less than one collision per year, and none meet the criteria for a high collision location for the period of time evaluated. None of the reported collisions resulted in fatalities. Overall, these data do not indicate any unusual traffic safety conditions.

Table 4. Collision Summary (January 1, 2016 through November 4, 2019)

Intersections	Rear-End	Side-Swipe	Right Turn	Left Turn	Right Angle	Ped / Cycle	Other	Total for 3.8 Years	Average/ Year
Signalized Intersections									
NE 110th St & 35th Ave NE	0	0	0	0	1	1	0	2	0.5
Unsignalized Intersections									
NE 115th St&/ 31st Ave NE	0	0	0	0	0	0	0	0	0.0
NE 115th St & 34th Ave NE	0	0	0	0	1	0	0	1	0.3
NE 113th St & 31st Ave NE	0	0	0	0	0	0	0	0	0.0
NE 113th St & 34th Ave NE	0	0	0	0	0	0	0	0	0.0
NE 110th St & 30th Ave NE	0	0	0	0	0	0	0	0	0.0
NE 110th St & 31st Ave NE	0	0	0	0	0	0	0	0	0.0
NE 110th St & 34th Ave NE	0	0	0	0	0	0	0	0	0.0

Source: City of Seattle Department of Transportation, https://data-seattlecitygis.opendata.arcgis.com/datasets/collisions, November 16, 2019.

2.6. Transit Facilities & Service

King County Metro Transit (Metro) provides bus service in the vicinity of Jane Addams Middle School. There are Metro bus stops located less than 500 feet east of the site serving northbound and southbound buses on 35th Avenue NE at the NE 110th Street intersection. Both stops have shelters and are served by Metro's **Routes 64** and **65**. Route 64 provides weekday express (peak-period, peak-direction) service between Jackson Park, Lake City, Wedgwood, University District, and Downtown Seattle. It operates with 7 trips to Downtown Seattle in the morning between about 5:30 and 8:15 A.M., and 9 trips from Downtown Seattle in the afternoon between about 3:30 and 8:00 P.M. During these periods, the headways (time between consecutive buses) are between 20 and 40 minutes. Route 65 provides service between Jackson Park and the University of Washington with all-day service seven-days per week. It operates with headways of 10 to 15 minutes for most of the day, and 30 to 60 minutes after midnight.

There are also stops located about 1,500 feet to the west of the site on Lake City Way NE at NE 110th Street, served by Metro Routes 309, 312, and 372.

Metro's 2016 draft *Long Range Plan*[12] indicates possible service improvements for routes on both 35th Avenue NE and Lake City Way NE with added express, RapidRide, and frequent-service additions; however, those changes may not occur by 2020.

Seattle Public Schools provides yellow bus, door-to-door, Metro, and cab service. Eligibility for District-provided transportation depends on several factors including grade level and proximity to assigned schools.

2.7. Non-Motorized Facilities

2.7.1. Existing Conditions

As described in the *Roadway Network* section, the non-motorized facility network in the study area is incomplete, with some segments that have sidewalks or paved walkways and others without. There is a sidewalk along the south side of NE 110th Street between Lake City Way NE and 35th Avenue NE. There are also paved walkways along the Jane Addams Middle School frontage of 31st Avenue NE, NE 115th Street, and part of 34th Avenue NE. There are marked, signed, and raised crosswalks on NE 110th Street at the intersections with 31st and 34th Avenues NE. There are also crosswalks marked on 31st and 34th Avenues NE (at NE 113th and NE 115th Streets).

2.7.2. Planned Improvements

As described previously, the City has plans to develop new north-south protected bicycle lanes along 35th Avenue NE between NE 68th Street and NE 125th Street and an in-street local connector along NE 110th Street between Alton Avenue NE and 30th Avenue NE. However, those improvements are not expected to be complete by 2020 when the field improvements are planned to be complete and ready for use.

The LMP described previously also includes conceptual plans for a running loop around the site (including a crushed rock path on the south side of the field fences), addition of bike racks and covered bike parking, widened pathways, and diagonal walkways to better accommodate pedestrian and bicycle circulation. The campus running loop is intended to enhance student and community access to the upper fields and to address challenges with access to the northern upper slope area. The running loop concept consists of gate management to accommodate student and community pedestrian access, refreshing the existing walkway around the fields, and adding a soft-surface running path that traverses the slope and is part of the campus running loop. At this time, these improvements are scheduled for summer 2021.

[12] King Country Metro; Draft *Long Range Plan*; 2016.

3. PROJECT IMPACTS

This section describes the conditions that would exist with the Jane Addams Middle School field improvement project. The forecast 2020 without-project traffic volumes were increased to account for new trips that could be generated by activities associated with the proposed field lighting. Level-of-service analyses were performed to determine the proposed project's impact on traffic operations in the study area. Potential impacts to parking, safety, and transit are also addressed.

3.1. Transportation Network

No changes to the roadway network are proposed as part of the field lighting project.

3.2. Traffic Volumes

This section describes the estimated increases in traffic that could occur as a result of increased use of the athletic field made possible by the field lighting project. As noted previously, the joint-use agreement between Seattle Public Schools and Seattle Parks & Recreation allows for the shared use of school and park facilities throughout Seattle. Under this agreement, which is expected to be extended for 2020, District-identified fields are reserved for school activities on Saturday from 8:00 A.M. to noon and on weekdays after school (typically until 6:30 or 6:45 P.M.), throughout the school year. Non-scholastic activities scheduled through Parks may occur outside of those periods.

3.2.1. Scholastic Athletics Activities

Typical Event Types, Frequency, Times, and Participation

Currently, the Jane Addams Middle School athletic fields are used by students for daytime physical education classes, Monday through Friday from 8:00 A.M. until 2:30 P.M., as well as for athletic practices from 3:45 P.M. until about 5:30 P.M. Jane Addams Middle School athletic programs that use the fields for after-school practices include girls' soccer and co-ed ultimate (frisbee) in the fall months (September to November), and boys' soccer and co-ed track in the spring months (March to May). Games and competitions are currently held off-site on Saturdays. There are no outdoor middle school scholastic sports during winter months. The proposed field lights could allow middle school activities to extend to 5:30 P.M. in late fall and early spring, which natural lighting does not allow.

Nathan Hale High School uses the Jane Addams fields predominately for girls' soccer in the fall and boys soccer and lacrosse in the spring. They may also be used occasionally for ultimate. In some cases, football may use the fields, if another program (e.g. soccer) has a game at the main Nathan Hale field.[13] High school practices are typically between 3:45 and to 6:45 P.M.; soccer games are scheduled to begin at 4:00 or 4:30 P.M. lacrosse games may occur on weekdays at beginning at 4:00 or 6:00 P.M. The existing athletic facilities have some small portable bleacher seating to accommodate spectators for practices or competitions; spectators often stand on sidelines. There are no Washington Interscholastic Activities Association (WIAA) sanctioned outdoor sports during winter months—some high schools, including Nathan Hale High School, have club activities such as ultimate, which could occur at the Jane Adams field during winter. The field lights are expected to extend the use of the southwest field for the Nathan Hale High School activities described above.

Participation levels and attendance for these scholastic athletic activities fluctuate based on the sport, level of competition, team success, and day of week. In Spring 2015, Heffron Transportation performed observations of participants and spectators for several high-school-level games/matches for another field lighting project. Table 5 summarizes the observed scholastic sports competitions, locations, opponents,

[13] Email communication, D. Haskins – Athletic Director, Teacher & Coach, Nathan Hale High School, Dec. 10, 2019.

date, time, numbers of participants (total from both schools), and ranges in numbers of spectators. As shown, most activities have between 30 and 60 participants (athletes, coaches, trainers, and support staff) with between about 35 and 135 spectators.

Table 5. Scholastic Athletic Events Observed – Spring 2015

Activity / Location / Teams	Date/Time of Observation	Participants [1]	Spectators [2]	Total
Varsity Baseball / Kennedy-Tyee	April 6, 2015; 4:00-6:00 P.M.	38	55 to 69	93 to 107
Varsity Soccer / Starfire-Hazen	April 6, 2015; 6:00 -7:00 P.M.	53	104 to 133	157 to 186
Varsity Soccer / Kennedy-Highline	April 16, 2015; 4:30 -6:00 P.M.	49	75 to 125	124 to 174
Lacrosse / Kennedy-Seattle Academy	April 25, 2015; 1:00-3:00 P.M.	57	78 to 80	135 to 137
Baseball C-Team / Kennedy-Nathan Hale	April 25, 2015; 1:00-3:00 P.M.	43	33 to 38	76 to 81
Varsity Soccer / Starfire / Kennedy-Tyee	April 28, 2015; 6:00-7:00 P.M.	49	74 to 75	123 to 124
Average of Observations		48	70 to 87	118 to 135

Source: Heffron Transportation, Inc., April 2015.

1. *Participants include players, substitutes, coaches, support staff (e.g. trainers), referees, ticket staff, press-box personnel, and concession staff.*
2. *Range of spectators observed during several counts during game.*

Traffic Generation

The field is already used regularly for high school soccer, softball, ultimate, lacrosse, and football practice activities. However, the proposed lights would extend the hours in which the southwestern field could be used during several months of the year. This would allow some activities that are currently scheduled elsewhere, due to field conflicts and darkness, to occur at the Jane Addams Middle School site. SPS and Nathan Hale staff have indicated that scholastic use of the southwest field would continue to include Jane Addams Middle School for after-school soccer and ultimate practice in spring and fall seasons (with no outdoor scholastic sports during the winter season). Nathan Hale High School could use the field more frequently for the same types of activities that currently occur. Seattle's high school soccer and lacrosse seasons extend into late fall and begin in early spring. As a result of recently implemented later start and dismissal times for high schools, after-school athletics are occurring later in the day and it is expected that some soccer, lacrosse, and ultimate practices or games, as well as occasional football practices could occur under the lights on the southwest field. This activity could result in new trips being generated during the commuter PM peak hour as a practice or game could begin or end during that time and participants and spectators would arrive at or leave the site. It is noted that this potential increase in activity and traffic due to the field lights would be limited to about two to four months per year, since natural lighting conditions during the remainder of the fall and spring do not require use of field lights until after most scholastic activities end.

The potential impact of added scholastic athletics (e.g. soccer or lacrosse games or practices) that would generate traffic during the commuter PM peak hour was evaluated. Traffic generation observations performed at Kennedy Catholic High School during and after the games confirmed the typical range of traffic generated by these types of events. Observations of traffic flows at Kennedy High School after games indicated that the athletic events generated trips at rates ranging from about 0.30 to 0.58 trips per person (participant plus 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 the 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, the Nathan High School site is served by Metro transit bus routes. Field observation found that students, family members, and some school staff use these transit options for trips to and from the school. Therefore, the estimates assuming that all trips occur by vehicle are likely conservatively high for this site location.

3.2.2. Recreational (Non-Scholastic) Athletics Activities

Typical Event Types, Frequency, Times, and Participation

During times when the field is not reserved for use by Jane Addams Middle School or other Seattle Public Schools activities, it would continue to be available to community users and would be scheduled through the Seattle Parks & Recreation Department. Non-scholastic youth and adult athletic activities that currently occur include soccer, football, ultimate, lacrosse, little league baseball, and softball. The Jane Addams southwest field is expected to continue to be used for these activities without or with the lighting project. Athletic practices and games can be scheduled until at least 8:30 P.M. in late spring and summer. When not reserved for scholastic athletics, weekend games also take place beginning at 9:00 A.M. and last until about 4:00 P.M. in early spring, extending to 9:00 P.M. by May.

The field lighting project is expected to result in increased usage for non-scholastic recreational activities. Youth and adult athletics could be added during late fall, winter, and spring months and scheduled after 5:30 P.M. until 9:45 P.M. Some of these activities would be new to the site. The southwest field could be scheduled consecutively on any given night. As a result, it is estimated that two youth and/or adult athletic activities could be added on an average weekday or weekend evening (during times when natural lighting conditions do not currently allow them).

Historical spectator and participant counts performed for youth and adult athletic activities were used to estimate potential traffic generation for these activities. Counts were performed at four youth baseball games and three youth soccer matches in 2000. These counts were supplemented with new counts performed at Ingraham High School in January 2017. The number of adults (driving age), including coaches and officials was between 30 and 60. Based on numerous observations, adult recreational soccer matches (men's and co-rec games) typically draw between 23 and 30 people (including participants, spectators, and referee). The participants and spectators at evening athletic activities were observed in January 2017 at Ingraham High School's fields. These activities consisted of a high-school sports practice and two non-scholastic recreational activities (one practice and one game). The observations, presented in Table 6, are representative of typical participant and spectator levels for the majority of new activities that would be made possible by the proposed field lighting project.

Table 6. Athletic Events Observed – Winter 2017

Activity / Location / Teams	Date/Time of Observation	Participants [1]	Spectators [2]	Total
Ultimate (Frisbee) / Ingraham HS / Practice	Jan 23, 2017; 6:45-7:30 P.M.	30	0	36
Soccer / Ingraham HS / SYSA Practice [3]	Jan 23, 2017; 6:45-7:30 P.M.	80 to 88	20	100 to 108
Soccer / Ingraham HS / GSSL Game [4]	Jan 23, 2017; 6:45–7:30 P.M.	22 to 27	0	22 to 27
Average of Observations		44 to 48	20	51 to 57

Source: Heffron Transportation, Inc., January 2017.

1. *Participants include players, coaches, support staff (e.g. trainers), referees, ticket staff, press-box personnel, and concession staff.*
2. *Range of spectators observed during several counts during game.*
3. *SYSA = Seattle Youth Soccer Association*
4. *GSSL = Greater Seattle Soccer League*

Traffic Generation

On an average day, the proposed field lighting project would allow for two additional non-scholastic recreation athletic activities the southwest field between 5:30 and 9:45 P.M. Based on data collected for adult and youth athletics, an average game or practice is estimated to generate approximately 60 vehicle trips (30 inbound and 30 outbound). This estimate assumes most adults drive to these activities in separate vehicles, which is typical for adult recreational soccer and is likely conservatively high for most youth sports activities since some youth carpool with other players. The added trips would likely occur during the times between consecutively scheduled games. For example, if a Nathan Hale girls soccer practice or game was scheduled consecutively with an adult recreational game, the first activity could begin at 5:30 P.M. and the next at 7:00 P.M. The highest traffic generation would be expected during the 6:00 to 7:00 P.M. hour when participants and spectators from the first activity would leave the site and the spectators and participants from the next would arrive.

3.2.3. Combined Project Trip Generation for Analysis

Based on the analysis presented in the previous sections, the estimated worst case for traffic generation during the two analysis periods—the commuter PM peak hour and the early evening hour—were estimated. The worst-case increase in traffic during the commuter PM peak hour is expected to occur as a high school athletic practice or game ends (up to 55 outbound trips) and the spectators and participants of a recreational game arrive (estimated at 25 in and 5 out). In total, this would result in an estimated 85 trips during the commuter PM peak hour.

During the early evening hour between 6:00 and 7:00 P.M., consecutive recreational activities on the field are estimated to generate a total of 60 trips (30 in, 30 out). The estimated net increases in field-lighting-related traffic are presented in Table 7. Trips were assigned to the local roadways based on existing traffic patterns derived from the traffic counts during each period and are shown on Figure 10.

Table 7. Net New Trip Generation from Jane Addams Southwest Field Lighting Project

	PM Peak Hour			Early Evening Hour (6:00 to 7:00 P.M.)		
Field	In	Out	Total	In	Out	Total
Soccer / Softball Field	25	60	85	30	30	60

Source: Heffron Transportation, Inc., December 2019.

It is noted that these estimated increases in trips would only be new to the site and local roadways for part of the year—primarily from about October until early March. During the remainder of the year, natural lighting conditions allow for field use during these times without the need for field lights. The field is already used by Nathan Hale High School sports practices until 6:30 or 6:45 P.M. and for recreation athletics from until to 8:30 P.M. or later during parts of the year when natural lighting allows. As a result, this analysis evaluates potential impacts that are already occurring (or that could occur without the project) from late spring through early fall when natural lighting allows, but would simply occur on more days of the year.

3.2.4. Forecast With-Project Traffic Volumes

The project trips described in the previous section were added to the forecast without-project traffic volumes to estimate volumes with the project for each analysis hour. The traffic counts used as a basis for this analysis already comprised traffic generated by other nearby and adjacent athletic facilities as well as events at both Nathan Hale High School and Jane Addams Middle School in November 2019. The forecasts represent cumulative estimates of with-project traffic on event nights. The resulting with-project traffic forecasts are shown on Figure 11 for the commuter PM peak hour, and on Figure 12 for the early evening hour (between 6:00 and 7:00 P.M.).

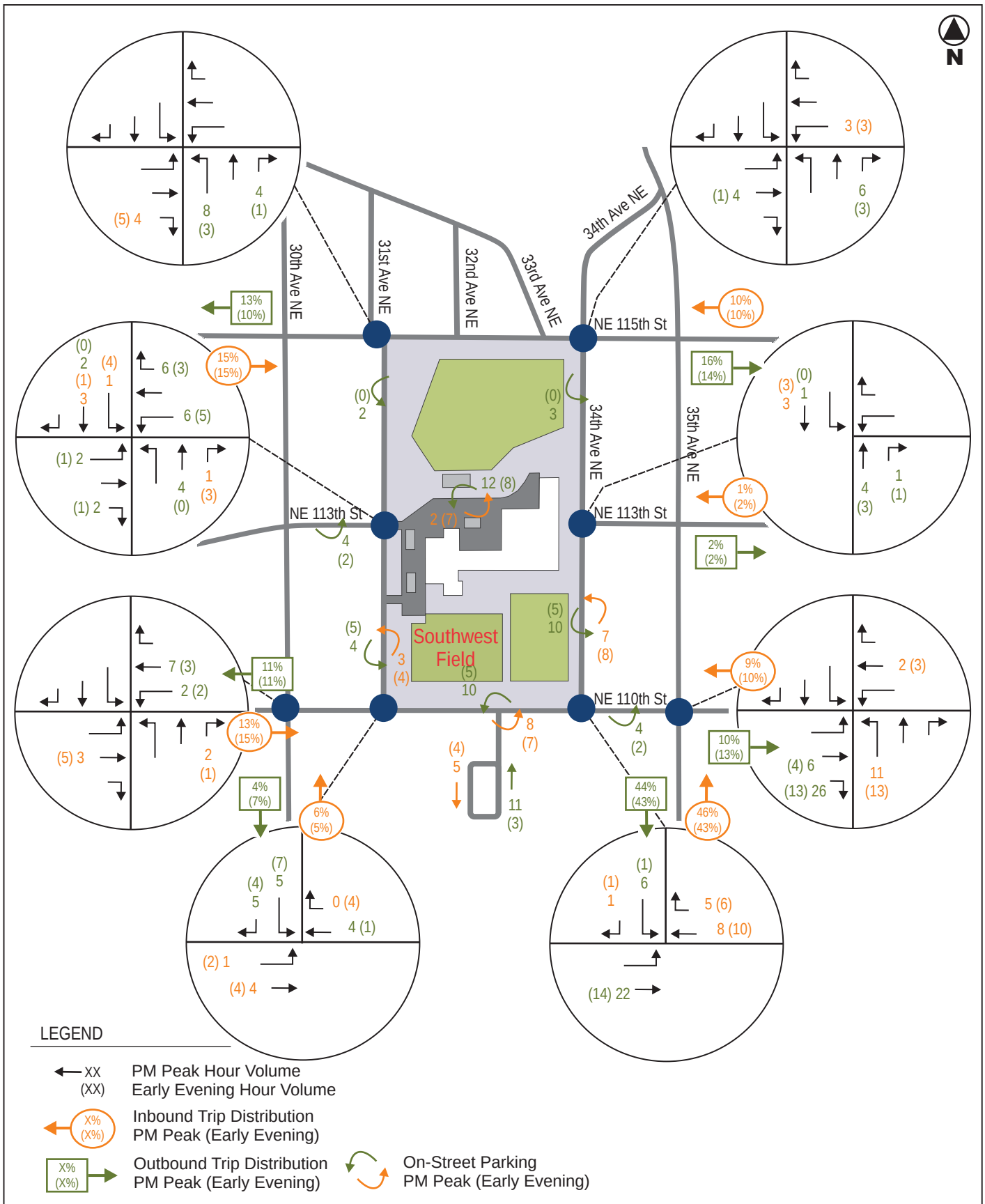

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Figure 10
Project Trip Assignments
PM Peak Hour and Early Evening Hour

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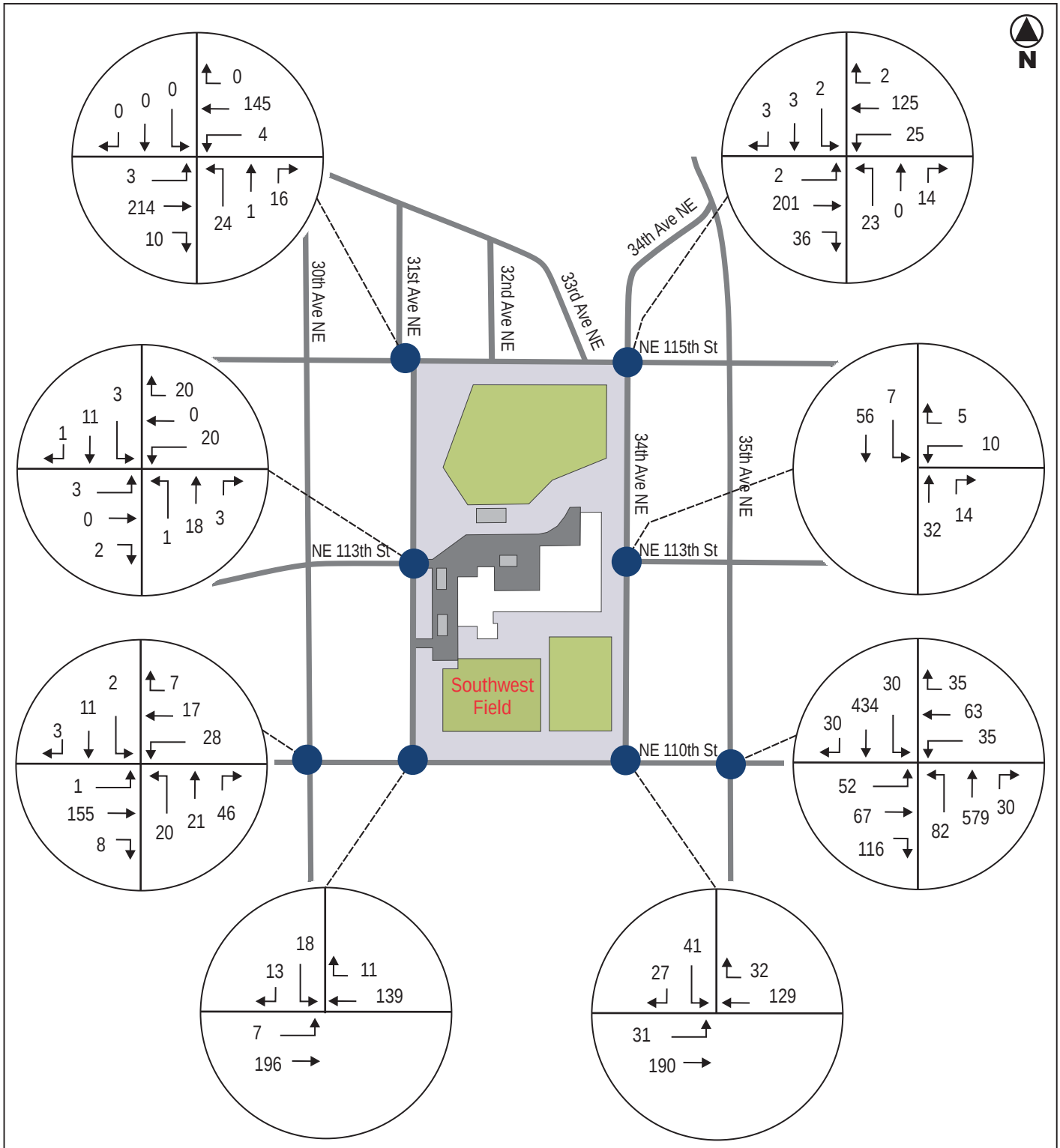

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Figure 11
Forecast (2020) With-Project Traffic Volumes
PM Peak Hour

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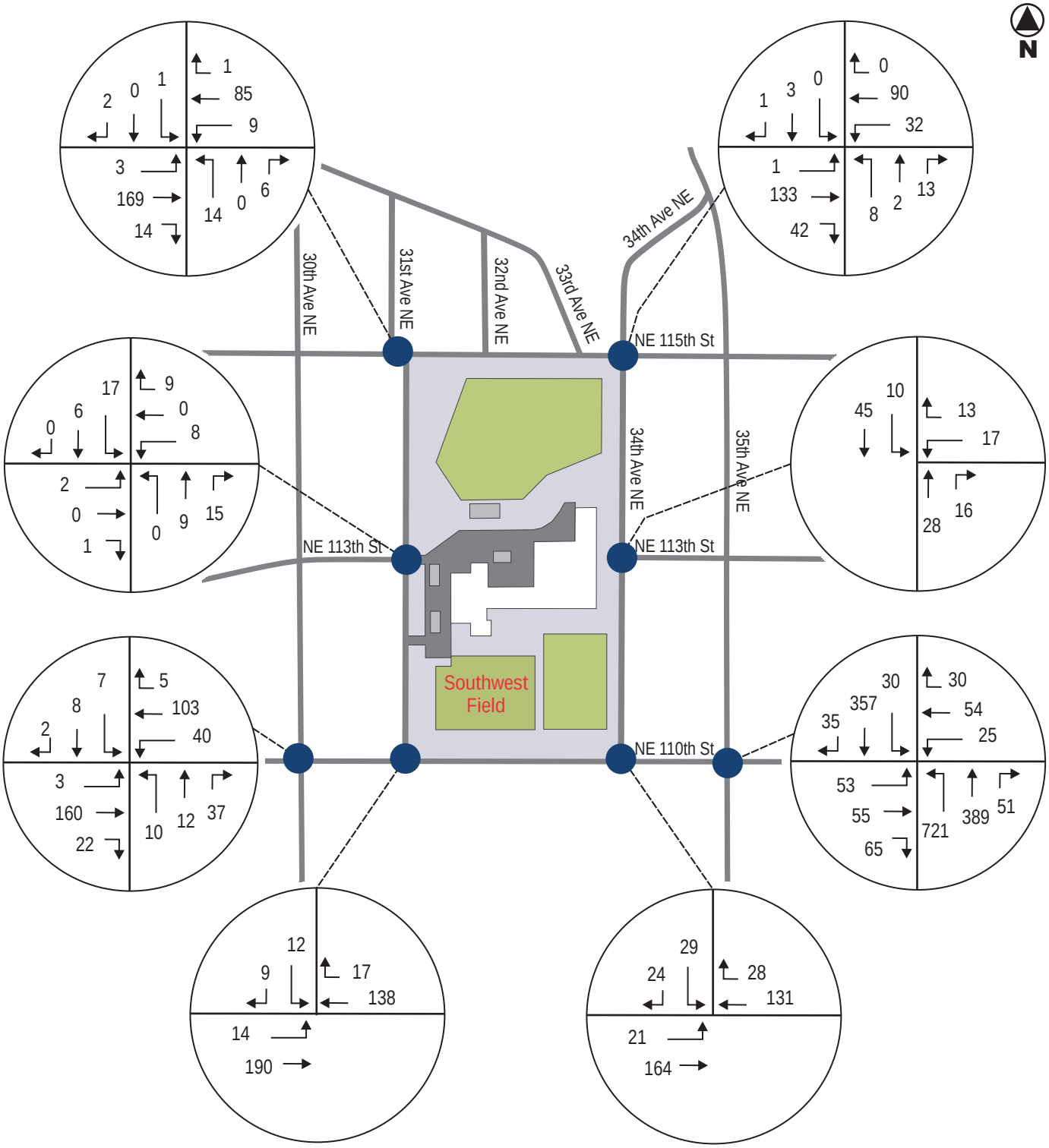

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Figure 12
Forecast (2020) With-Project Traffic Volumes
Early Evening Hour

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3.3. Traffic Operations Impacts

Intersection levels of service for future with-project conditions were determined using the same methodology described previously for existing and future without-project conditions. Table 8 shows the results of the analysis of the off-site study area intersections; levels of service for the without-project conditions are shown for comparison.

Table 8. Level of Service Summary – Forecast 2020 Conditions Without- and With-Project

Intersections	PM Peak Hour (various [1])				Evening Peak Hour (6:00–7:00 P.M.)			
	Without Project		With Project		Without Project		With Project	
Signalized	LOS [2]	Delay [3]	LOS	Delay	LOS	Delay	LOS	Delay
35th Ave NE & NE 110th St	B	11.7	B	12.1	B	10.8	B	11.0
All-Way-Stop Controlled	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
30th Ave NE & NE 110th St	A	8.6	A	8.6	A	8.8	A	8.9
Two-Way-Stop Controlled	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
31st Ave NE & NE 115th St	A	1.1	A	1.5	A	1.3	A	1.5
Eastbound Left Turn	A	7.5	A	7.5	A	7.4	A	7.4
Westbound Left Turn	A	7.8	A	7.8	A	7.7	A	7.7
Northbound Movements	B	12.9	B	13.3	B	11.8	B	11.9
Southbound Movements	n/v [4]		n/v [4]		A	9.6	A	9.7
34th Ave NE & NE 115th St	A	1.9	A	2.0	A	2.0	A	2.2
Eastbound Left Turn	A	7.5	A	7.5	A	7.4	A	7.4
Westbound Left Turn	A	7.9	A	7.9	A	7.7	A	7.7
Northbound Movements	B	13.3	B	13.0	B	10.9	B	10.8
Southbound Movements	B	11.8	B	11.9	B	11.2	B	11.2
31st Ave NE & NE 113th St / N Dwy	A	4.8	A	5.4	A	3.5	A	4.4
Northbound Left Turn	n/v [4]		n/v [4]		n/v [4]		n/v [4]	
Southbound Left Turn	A	7.3	A	7.3	A	7.3	A	7.3
Eastbound Movements	A	8.8	A	8.8	A	9.0	A	8.9
Westbound Movements	A	8.7	A	8.9	A	8.7	A	8.9
34th Ave NE & NE 113th St [5]	A	2.4	A	2.3	A	2.3	A	2.2
Southbound Left Turn	A	7.4	A	7.4	A	7.3	A	7.4
Westbound Movements	A	9.2	A	9.3	A	9.2	A	9.2
NE 110th St & 31st Ave NE	A	0.9	A	1.3	A	0.7	A	1.2
Eastbound Left Turn	A	7.6	A	7.6	A	7.7	A	7.7
Southbound Movements	B	10.5	B	10.6	B	10.5	B	11.0
NE 110th St & 34th Ave NE	A	2.6	A	2.7	A	2.7	A	2.6
Eastbound Left Turn	A	7.7	A	7.7	A	7.7	A	7.8
Southbound Movements	B	11.6	B	12.1	B	11.9	B	12.3

Source: Heffron Transportation, Inc., December 2019.

1. *The PM peak hour for each individual intersection was evaluated.*
2. *Level of service.*
3. *Average seconds of delay per vehicle.*
4. *n/v = no volume counted for these movements.*
5. *Uncontrolled intersection evaluated as stop-controlled for east leg based on field observations.*

As shown, the proposed project is expected to add some delay but is not expected to change the overall level of service at any of the analysis intersections. The one- and two-way-stop controlled intersections would continue to operate at LOS A overall and all movements would continue to operate at LOS B or better during both periods. The site access intersection (at the JAMS school driveway on 31st Avenue NE) is expected to continue operating at LOS A with the project.

3.4. Traffic Safety

The project would increase traffic at the study-are intersections and statistically, the number of collisions could increase as traffic increases. However, the project does not include any changes to the roadway network that are expected to result in new adverse safety concerns.

3.5. Transit

It is likely that some of the new trips generated as a result of the field lighting project would occur by transit, the number is likely to include students and family members that already commute to and from the site by transit. Most of the new transit trips generated as a result of the field lighting project are expected to occur outside of peak commute hours and are not expected to adversely impact transit service or facilities in the vicinity.

3.6. Non-Motorized Facilities

Based on observations of scholastic athletic activities, participants may drive, be driven, or be bused to the site (for visiting schools) for games/matches. Spectators, such as parents or friends, typically arrive via automobile. Similarly, most of the new participants and spectators using the site for non-scholastic recreational activities are expected to arrive via automobile. However, some could arrive on foot or bicycle from the local neighborhood or nearby transit stops. As a result, the proposed field lighting project may result in small increases in pedestrian or bicycle activity to the site beyond what occurs today. The school site vicinity has pedestrian walkways and crosswalks used by students; therefore, no adverse impacts are expected for the small number of pedestrians that could walk to the field.

3.7. Parking Demand and Occupancy

The proposed field lighting project does not include any physical changes to the existing parking supply (on-street or on-site).

The additional scholastic and non-scholastic athletics activities made possible by the field lighting project are expected to generate some additional parking demand that may occur on-site or on nearby streets. For most scholastic games/matches, the visiting team's school buses may be parked in the bus loading area along the south side of NE 110th Street or the west side of 34th Avenue NE. Participants and spectators who drive to the site for scholastic and non-scholastic athletics may use on-site parking or on-street parking in the site vicinity.

Average attendance/participation is expected to range from 118 to 135 persons per scholastic athletic event and 50 to 60 for non-scholastic athletic activities. The combined peak number of added attendees and participants on site that would occur for a short time between consecutive activities is estimated to range from 168 to 195 persons. Observations for the Kennedy High School field improvements project in spring 2015 indicated that the athletic events generate parking demand at rates ranging from about 0.6 to 0.7 vehicle per participant/spectator. However, those rates do not reflect the higher levels of transit use that occur at and around the Nathan Hale High School site, due to its proximity to Metro transit stops and service. Mode-of-travel data for the site area were derived from 'Journey-to-Work' survey

results from the year *2010 Census* compiled by the PSRC. These surveys were conducted 10 years ago and may underestimate current transit use. From these surveys, results for residents living in Transportation Analysis Zones (TAZs) 11 and 13 (the zones that include and surround the project site) indicate that at the time of the 2010 census, about 20% of residents living in these zones commuted by transit, walking, or biking; about 13% of employees working the area used one of those non-automobile modes. For high school students, the percentages are expected to be higher, since 40% to 50% are not old enough to drive. To reflect some use of transit for the high-school scholastic athletic events at the site, the observed demand rates from the other school sites were reduced by 35% for application at the site. No adjustments were made for the demand rates applied to non-scholastic adult or youth activities at this site. At the adjusted rates, the peak demand is estimated to range from about 76 to 103 vehicles during the short period between activities—between 5:15 and 5:45 P.M. It is likely that much of the scholastic-related demand during those periods would already be in the vicinity or in Nathan Hale High School parking lots since students, coaches, and trainers often stay at the site after school for practices and games. Outside of these periods, total demand is expected to range from 30 to about 60 vehicles.

The parking demand estimates described above reflect parked vehicles of spectators as well as participants (e.g., coaches, players that driver, referees/umpires, trainers, support staff, etc.).

As described previously, the data collected from the on-site parking lots at Jane Addams Middle School found 137 to 165 unused spaces and on-street parking occupancy near the facility averaged about 26% with about 575 unused spaces. The addition of 76 to 103 vehicles during the short overlapping peak periods could be accommodated by the unused supply and on-street-parking occupancy rates are expected to remain well below 85%—the level considered to be effectively full by the City of Seattle. Since the demand counts and existing occupancy rates were collected on evenings when the adjacent lighted field was being used for athletic activities and when other events were being held at both Jane Addams Middle School and Nathan Hale High School, these results reflect the potential cumulative impacts of the proposed field lighting project with concurrent events.

It is acknowledged that there could be occasional evenings with very large events at one or both schools that result in higher levels of on-street and on-site demand and utilization; however, these are likely to occur only a few times per year.

4. SUMMARY AND RECOMMENDATIONS

Seattle Public Schools proposes to install field lights at the southwest Jane Addams Middle School athletic field to be available for use by winter 2020. The project would allow increased use of the athletic field for scholastic and non-scholastic recreational activities. Usage levels of the facility are expected to increase with the added ability to hold practices and some competitive games later in the day during the school year. The primary increase in field use due to the lighting project would be non-scholastic recreational athletics scheduled through Seattle Parks & Recreation, such as youth and adult soccer, baseball and softball, lacrosse, and ultimate. The field lights could increase weeknight and weekend use during winter months from sunset until 9:45 P.M. (lights would be scheduled to turn off at 10 P.M.). Jane Addams Middle School use of the field, which already occurs until about 5:30 P.M. when natural light allows, could be extended to other parts of the year (late fall and early spring). Nathan Hale High School could also use the field for practices and/or games that require use of lights (especially at the start of the Spring sports season in late February and early March).

The increase in traffic during the commuter PM peak hour is expected to be up to 85 trips (25 in, 60 out), not including any adjustment for transit use. During the early evening hour between 6:00 and 7:00 P.M., consecutive recreational activities on the field could generate a total of 60 trips (30 trips in, 30 trips out). These estimated increases in trips would only be new to the site and local roadways for part of the year—primarily from about October until early March. During the remainder of the year, natural lighting conditions allow for field use during these times without the need for field lights. As a result, these trips are already occurring (or could occur) without the project from late spring through early fall when natural lighting allows but would simply occur on more days of the year.

The proposed project could add some delay to the off-site study-area intersections but is not expected to change the overall level of service at any of the analysis intersections.

The project is expected to generate some additional parking demand that is not currently occurring at the site. The peak demand is estimated to range from about 76 to 103 vehicles during the short period between consecutive activities—between 5:15 and 5:45 P.M. It is likely that much of the scholastic-related demand during those periods would already be in the vicinity or in Nathan Hale High School parking lots since students, coaches, and trainers often stay at the site after school for practices and games. Outside of these periods, total demand is expected to range from 30 to about 60 vehicles. Unused on-site and on-street parking can and does accommodate the demand from individual activities on the field.

The observations performed during evenings with events indicate the combined demand from the events and from added activities on the athletic field would not generally increase utilization in the area to 85% or higher. It is acknowledged that there could be occasional evenings with very large events at one or both schools that result in higher levels of on-street and on-site demand and utilization; however, these are likely to occur only a few times per year.

Based on these analyses, the project would not result in significant adverse impacts to traffic or parking within the study area. It is recommended that the District, Jane Addams Middle School, and Nathan Hale High School ensure that the on-site parking lots are open and available for users during all times that the field is scheduled for use. No other mitigation would be required to accommodate the project.

APPENDIX A

LEVEL OF SERVICE DEFINITIONS

Levels of service (LOS) are qualitative descriptions of traffic operating conditions. These levels of service are designated with letters ranging from LOS A, which is indicative of good operating conditions with little or no delay, to LOS F, which is indicative of stop-and-go conditions with frequent and lengthy delays. Levels of service for this analysis were developed using procedures presented in the *Highway Capacity Manual, Sixth Edition* (Transportation Research Board, 2016).

Signalized Intersections

Level of service for signalized intersections is defined in terms of average delay for all vehicles that travel through the intersection. Delay can be a cause of driver discomfort, frustration, inefficient fuel consumption, and lost travel time. Specifically, level-of-service criteria are stated in terms of the average delay per vehicle in seconds. Delay is a complex measure and is dependent on a number of variables including: number and type of vehicles by movement, intersection lane geometry, signal phasing, the amount of green time allocated to each phase, transit stops and parking maneuvers. Table A-1 shows the level of service criteria for signalized intersections from the *Highway Capacity Manual, Sixth Edition.*

Table A-1. Level of Service for Signalized Intersections

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

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

Unsignalized Intersections

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

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

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

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

APPENDIX B

PARKING UTILIZATION STUDY DATA

Project **Jane Adams Middle School - Field Lighting**

				Parking Supply										
Block Face ID	Street Name	Street Segment	Side of Street	Unrestricted Parallel Parking	Disabled	Metro Buses Only 6-9a, 3-6p Mon-Fri	30min L/U 7a-6p Exc Sun-Hol	School Bus Only 7a-9a, 2-4p Exc Sat/Sun/Hol	15 min School Load Only 7a-9a, 2p-4p Exc Sat/Sun/Hol	No Parking Schools Days, 8a-5p	Angled Parking	**Available Parking Spaces 5:45p**	**Available Parking Spaces 5:45p - Saturday**	**Available Parking Spaces 8:15p and allday Sunday**
AA	NE 117TH ST	30TH AVE NE AND 31ST AVE NE	N	6	0	0	0	0	0	0	0	**6**	**6**	**6**
AB	NE 117TH ST	30TH AVE NE AND 31ST AVE NE	S	6	0	0	0	0	0	0	0	**6**	**6**	**6**
AC	NE 117TH ST	31ST AVE NE AND 32ND AVE NE	N	9	0	0	0	0	0	0	0	**9**	**9**	**9**
AD	NE 117TH ST	31ST AVE NE AND 32ND AVE NE	S	10	0	0	0	0	0	0	0	**10**	**10**	**10**
AE	35TH AVE NE	34TH AVE NE AND 800' Boundary	W	1	0	0	0	0	0	0	0	**1**	**1**	**1**
AF	35TH AVE NE	34TH AVE NE AND 800' Boundary	E	6	0	0	0	0	0	0	0	**6**	**6**	**6**
AG	28TH AVE NE	NE 115TH E ST AND 800' Boundary	W	0	0	0	0	0	0	0	0	**0**	**0**	**0**
AH	28TH AVE NE	NE 115TH E ST AND 800' Boundary	E	2	0	0	0	0	0	0	0	**2**	**2**	**2**
AI	30TH AVE NE	NE 115TH ST AND 800' Boundary	W	10	0	0	0	0	0	0	0	**10**	**10**	**10**
AJ	30TH AVE NE	NE 115TH ST AND 800' Boundary	E	6	0	0	0	0	0	0	0	**6**	**6**	**6**
AK	31ST AVE NE	NE 115TH ST AND NE 117TH ST	W	12	0	0	0	0	0	0	0	**12**	**12**	**12**
AL	31ST AVE NE	NE 115TH ST AND NE 117TH ST	E	15	0	0	0	0	0	0	0	**15**	**15**	**15**
AM	32ND AVE NE	NE 115TH ST AND NE 117TH ST	W	11	0	0	0	0	0	0	0	**11**	**11**	**11**
AN	32ND AVE NE	NE 115TH ST AND NE 117TH ST	E	12	0	0	0	0	0	0	0	**12**	**12**	**12**
AO	33RD AVE NE	NE 115TH ST AND 32ND AVE NE	W	22	0	0	0	0	0	0	0	**22**	**22**	**22**
AP	33RD AVE NE	NE 115TH ST AND 32ND AVE NE	E	15	0	0	0	0	0	0	0	**15**	**15**	**15**
AQ	34TH AVE NE	NE 115TH ST AND 35TH AVE NE	W	12	0	0	0	0	0	0	0	**12**	**12**	**12**
AR	34TH AVE NE	NE 115TH ST AND 35TH AVE NE	E	20	0	0	0	0	0	0	0	**20**	**20**	**20**
AS	35TH AVE NE	NE 115TH ST AND 34TH AVE NE	W	13	0	0	1	0	0	0	0	**13**	**13**	**14**
AT	35TH AVE NE	NE 115TH ST AND 34TH AVE NE	E	11	0	0	0	0	0	0	0	**11**	**11**	**11**
AU	36TH AVE NE	NE 115TH ST AND 800' Boundary	W	3	0	0	0	0	0	0	0	**3**	**3**	**3**
AV	36TH AVE NE	NE 115TH ST AND 800' Boundary	E	3	0	0	0	0	0	0	0	**3**	**3**	**3**
AW	NE 115TH ST	28TH W AVE NE AND 28TH E AVE NE	N	2	0	0	0	0	0	0	0	**2**	**2**	**2**
AX	NE 115TH ST	800' Boundary AND 28TH E AVE NE	S	1	0	0	0	0	0	0	0	**1**	**1**	**1**
AY	NE 115TH ST	800' Boundary AND 30TH AVE NE	N	11	0	0	0	0	0	0	0	**11**	**11**	**11**

Project **Jane Adams Middle School - Field Lighting**

				Parking Supply										
Block Face ID	Street Name	Street Segment	Side of Street	Unrestricted Parallel Parking	Disabled	Metro Buses Only 6-9a, 3-6p Mon-Fri	30min L/U 7a-6p Exc Sun-Hol	School Bus Only 7a-9a, 2-4p Exc Sat/Sun/Hol	15 min School Load Only 7a-9a, 2p-4p Exc Sat/Sun/Hol	No Parking Schools Days, 8a-5p	Angled Parking	**Available Parking Spaces 5:45p**	**Available Parking Spaces 5:45p - Saturday**	**Available Parking Spaces 8:15p and allday Sunday**
AZ	NE 115TH ST	28TH E AVE NE AND 30TH AVE NE	S	8	0	0	0	0	0	0	0	**8**	**8**	**8**
BA	NE 115TH ST	30TH AVE NE AND 31ST AVE NE	N	0	0	0	0	0	0	0	0	**0**	**0**	**0**
BB	NE 115TH ST	30TH AVE NE AND 31ST AVE NE	S	5	0	0	0	0	0	0	0	**5**	**5**	**5**
BC	NE 115TH ST	31ST AVE NE AND 32ND AVE NE	N	0	0	0	0	0	0	0	0	**0**	**0**	**0**
BD	NE 115TH ST	31ST AVE NE AND 32ND AVE NE	S	0	0	0	0	0	0	0	0	**0**	**0**	**0**
BE	NE 115TH ST	32ND AVE NE AND 33RD AVE NE	N	0	0	0	0	0	0	0	0	**0**	**0**	**0**
BF	NE 115TH ST	32ND AVE NE AND 33RD AVE NE	S	0	0	0	0	0	0	0	0	**0**	**0**	**0**
BG	NE 115TH ST	33RD AVE NE AND 34TH AVE NE	N	0	0	0	0	0	0	0	0	**0**	**0**	**0**
BH	NE 115TH ST	33RD AVE NE AND 34TH AVE NE	S	0	0	0	0	0	0	0	0	**0**	**0**	**0**
BI	NE 115TH ST	34TH AVE NE AND 35TH AVE NE	N	8	0	0	0	0	0	0	0	**8**	**8**	**8**
BJ	NE 115TH ST	34TH AVE NE AND 35TH AVE NE	S	7	0	0	0	0	0	0	0	**7**	**7**	**7**
BK	NE 115TH ST	35TH AVE NE AND 36TH AVE NE	N	5	0	0	0	0	0	0	0	**5**	**5**	**5**
BL	NE 115TH ST	35TH AVE NE AND 36TH AVE NE	S	5	0	0	0	0	0	0	0	**5**	**5**	**5**
BM	NE 115TH ST	36TH AVE NE AND 800' Boundary	N	0	0	0	0	0	0	0	0	**0**	**0**	**0**
BN	NE 115TH ST	36TH AVE NE AND 800' Boundary	S	1	0	0	0	0	0	0	0	**1**	**1**	**1**
BO	30TH AVE NE	NE 113TH ST AND NE 115TH ST	W	10	0	0	0	0	0	0	0	**10**	**10**	**10**
BP	30TH AVE NE	NE 113TH ST AND NE 115TH ST	E	15	0	0	0	0	0	0	0	**15**	**15**	**15**
BQ	31ST AVE NE	NE 113TH ST AND NE 115TH ST	W	10	0	0	0	0	0	0	0	**10**	**10**	**10**
BR	31ST AVE NE	NE 113TH ST AND NE 115TH ST	E	25	0	0	0	0	0	0	0	**25**	**25**	**25**
BS	34TH AVE NE	NE 113TH ST AND NE 115TH ST	W	10	0	0	0	0	13	0	0	**23**	**23**	**23**
BT	34TH AVE NE	NE 113TH ST AND NE 115TH ST	E	21	0	0	0	0	0	0	0	**21**	**21**	**21**
BU	35TH AVE NE	NE 113TH ST AND NE 115TH ST	W	24	0	0	0	0	0	0	0	**24**	**24**	**24**
BV	35TH AVE NE	NE 113TH ST AND NE 115TH ST	E	17	0	0	0	0	0	0	0	**17**	**17**	**17**
BW	36TH AVE NE	DEAD END 5 AND NE 115TH ST	W	3	0	0	0	0	0	0	0	**3**	**3**	**3**
BX	36TH AVE NE	DEAD END 5 AND NE 115TH ST	E	2	0	0	0	0	0	0	0	**2**	**2**	**2**

Project **Jane Adams Middle School - Field Lighting**

				Parking Supply										
Block Face ID	Street Name	Street Segment	Side of Street	Unrestricted Parallel Parking	Disabled	Metro Buses Only 6-9a, 3-6p Mon-Fri	30min L/U 7a-6p Exc Sun-Hol	School Bus Only 7a-9a, 2-4p Exc Sat/Sun/Hol	15 min School Load Only 7a-9a, 2p-4p Exc Sat/Sun/Hol	No Parking Schools Days, 8a-5p	Angled Parking	**Available Parking Spaces 5:45p**	**Available Parking Spaces 5:45p - Saturday**	**Available Parking Spaces 8:15p and allday Sunday**
BY	28TH AVE NE	NE 113TH ST AND 800' Boundary	W	0	0	0	0	0	0	0	0	**0**	**0**	**0**
BZ	28TH AVE NE	NE 113TH ST AND 800' Boundary	E	0	0	0	0	0	0	0	0	**0**	**0**	**0**
CA	NE 113TH ST	28TH AVE NE AND 30TH AVE NE	N	9	0	0	0	0	0	0	0	**9**	**9**	**9**
CB	NE 113TH ST	28TH AVE NE AND 30TH AVE NE	S	12	0	0	0	0	0	0	0	**12**	**12**	**12**
CC	NE 113TH ST	30TH AVE NE AND 31ST AVE NE	N	8	0	0	0	0	0	0	0	**8**	**8**	**8**
CD	NE 113TH ST	30TH AVE NE AND 31ST AVE NE	S	14	0	0	0	0	0	0	0	**14**	**14**	**14**
CE	NE 113TH ST	34TH AVE NE AND 35TH AVE NE	N	7	0	0	0	0	0	0	0	**7**	**7**	**7**
CF	NE 113TH ST	34TH AVE NE AND 35TH AVE NE	S	4	0	0	0	0	0	0	0	**4**	**4**	**4**
CG	NE 113TH ST	35TH AVE NE AND DEAD END 3	N	4	0	0	0	0	0	0	0	**4**	**4**	**4**
CH	NE 113TH ST	35TH AVE NE AND DEAD END 3	S	4	0	0	0	0	0	0	0	**4**	**4**	**4**
CI	28TH AVE NE	800' Boundary AND NE 113TH ST	W	0	0	0	0	0	0	0	0	**0**	**0**	**0**
CJ	28TH AVE NE	800' Boundary AND NE 113TH ST	E	0	0	0	0	0	0	0	0	**0**	**0**	**0**
CK	30TH AVE NE	NE 110TH ST AND NE 113TH ST	W	0	0	0	0	0	0	18	0	**18**	**18**	**18**
CL	30TH AVE NE	NE 110TH ST AND NE 113TH ST	E	15	0	0	0	0	0	0	0	**15**	**15**	**15**
CM	31ST AVE NE	NE 110TH ST AND NE 113TH ST	W	10	0	0	0	0	0	0	0	**10**	**10**	**10**
CN	31ST AVE NE	NE 110TH ST AND NE 113TH ST	E	0	0	0	0	0	12	15	0	**27**	**27**	**27**
CO	34TH AVE NE	NE 110TH ST AND NE 113TH ST	W	0	0	0	0	30	0	0	0	**30**	**30**	**30**
CP	34TH AVE NE	NE 110TH ST AND NE 113TH ST	E	12	0	0	0	0	0	0	13	**25**	**25**	**25**
CQ	35TH AVE NE	NE 110TH ST AND NE 113TH ST	W	26	0	0	0	0	0	0	0	**26**	**26**	**26**
CR	35TH AVE NE	NE 110TH ST AND NE 113TH ST	E	11	0	0	0	0	0	0	0	**11**	**11**	**11**
CS	36TH AVE NE	NE 110TH ST AND 800' Boundary	W	2	0	0	0	0	0	0	0	**2**	**2**	**2**
CT	36TH AVE NE	NE 110TH ST AND 800' Boundary	E	4	0	0	0	0	0	0	0	**4**	**4**	**4**
CU	28TH AVE NE	NE 110TH ST AND 800' Boundary	W	0	0	0	0	0	0	0	0	**0**	**0**	**0**
CV	28TH AVE NE	NE 110TH ST AND 800' Boundary	E	0	0	0	0	0	0	0	0	**0**	**0**	**0**
CW	NE 110TH ST	28TH AVE NE AND 30TH AVE NE	N	0	0	0	0	0	0	0	0	**0**	**0**	**0**

Project **Jane Adams Middle School - Field Lighting**

				Parking Supply											
Block Face ID	Street Name	Street Segment	Side of Street	Unrestricted Parallel Parking	Disabled	Metro Buses Only 6-9a, 3-6p Mon-Fri	30min L/U 7a-6p Exc Sun-Hol	School Bus Only 7a-9a, 2-4p Exc Sat/Sun/Hol	15 min School Load Only 7a-9a, 2p-4p Exc Sat/Sun/Hol	No Parking Schools Days, 8a-5p	Angled Parking	**Available Parking Spaces 5:45p**	**Available Parking Spaces 5:45p - Saturday**	**Available Parking Spaces 8:15p and allday Sunday**
CX	NE 110TH ST	28TH AVE NE AND 30TH AVE NE	S	0	0	0	0	0	0	0	0	**0**	**0**	**0**
CY	NE 110TH ST	30TH AVE NE AND 31ST AVE NE	N	0	0	0	0	0	0	3	0	**3**	**3**	**3**
CZ	NE 110TH ST	30TH AVE NE AND 31ST AVE NE	S	0	0	0	0	10	0	0	0	**10**	**10**	**10**
DA	NE 110TH ST	31ST AVE NE AND 34TH AVE NE	N	0	0	0	0	0	14	0	0	**14**	**14**	**14**
DB	NE 110TH ST	31ST AVE NE AND 34TH AVE NE	S	0	0	0	0	26	0	0	0	**26**	**26**	**26**
DC	NE 110TH ST	34TH AVE NE AND 35TH AVE NE	N	6	1	0	0	0	0	0	0	**7**	**7**	**7**
DD	NE 110TH ST	34TH AVE NE AND 35TH AVE NE	S	11	0	0	0	0	0	0	0	**11**	**11**	**11**
DE	NE 110TH ST	35TH AVE NE AND 36TH AVE NE	N	6	0	0	0	0	0	0	0	**6**	**6**	**6**
DF	NE 110TH ST	35TH AVE NE AND 36TH AVE NE	S	5	0	0	0	0	0	0	0	**5**	**5**	**5**
DG	NE 110TH ST	36TH AVE NE AND 800' Boundary	N	1	0	0	0	0	0	0	0	**1**	**1**	**1**
DH	NE 110TH ST	36TH AVE NE AND 800' Boundary	S	2	0	0	0	0	0	0	0	**2**	**2**	**2**
DI	30TH AVE NE	800' Boundary AND NE 110TH ST	W	0	0	0	0	0	0	0	0	**0**	**0**	**0**
DJ	30TH AVE NE	800' Boundary AND NE 110TH ST	E	16	0	0	0	0	0	0	0	**16**	**16**	**16**
DK	35TH AVE NE	800' Boundary AND NE 110TH ST	W	11	0	4	0	0	0	0	0	**11**	**15**	**15**
DL	35TH AVE NE	800' Boundary AND NE 110TH ST	E	12	0	0	0	0	0	0	0	**12**	**12**	**12**
DM	36TH AVE NE	800' Boundary AND NE 110TH ST	W	1	0	0	0	0	0	0	0	**1**	**1**	**1**
DN	36TH AVE NE	800' Boundary AND NE 110TH ST	E	0	0	0	0	0	0	0	0	**0**	**0**	**0**
			TOTAL	**608**	**1**	**4**	**1**	**66**	**39**	**36**	**0**	**763**	**767**	**768**

Project **Jane Adams Middle School - Field Lighting**

				Supply			Parking Occupancy											
							Weekday						Weekend					
							5:45 PM			8:15 PM			5:45 PM			8:15 PM		
Block Face ID	Street Name	Street Segment	Side of Street	Available Parking Spaces 5:45p	Available Parking Spaces 5:45p - Saturday	Available Parking Spaces 8:15p and allday Sunday	Tues 12/3	Thurs 12/5	Average	Tues 12/3	Thurs 12/5	Average	Sat 12/7	Sun 12/8	Average	Sat 12/7	Sun 12/8	Average
AA	NE 117TH ST	30TH AVE NE AND 31ST AVE NE	N	**6**	**6**	**6**	5	4	5	5	4	5	7	6	7	7	9	8
AB	NE 117TH ST	30TH AVE NE AND 31ST AVE NE	S	**6**	**6**	**6**	2	1	2	0	0	0	1	1	1	1	2	2
AC	NE 117TH ST	31ST AVE NE AND 32ND AVE NE	N	**9**	**9**	**9**	1	1	1	3	1	2	2	3	3	3	3	3
AD	NE 117TH ST	31ST AVE NE AND 32ND AVE NE	S	**10**	**10**	**10**	0	0	0	0	0	0	0	0	0	0	0	0
AE	35TH AVE NE	34TH AVE NE AND 800' Boundary	W	**1**	**1**	**1**	0	0	0	0	0	0	0	0	0	0	0	0
AF	35TH AVE NE	34TH AVE NE AND 800' Boundary	E	**6**	**6**	**6**	0	0	0	1	1	1	0	0	0	0	0	0
AG	28TH AVE NE	NE 115TH E ST AND 800' Boundary	W	**0**	**0**	**0**	0	0	0	0	0	0	0	0	0	0	0	0
AH	28TH AVE NE	NE 115TH E ST AND 800' Boundary	E	**2**	**2**	**2**	2	1	2	2	2	2	2	3	3	2	2	2
AI	30TH AVE NE	NE 115TH ST AND 800' Boundary	W	**10**	**10**	**10**	7	8	8	7	8	8	7	7	7	9	6	8
AJ	30TH AVE NE	NE 115TH ST AND 800' Boundary	E	**6**	**6**	**6**	3	5	4	4	4	4	2	5	4	5	6	6
AK	31ST AVE NE	NE 115TH ST AND NE 117TH ST	W	**12**	**12**	**12**	1	4	3	4	3	4	2	3	3	1	3	2
AL	31ST AVE NE	NE 115TH ST AND NE 117TH ST	E	**15**	**15**	**15**	4	4	4	6	4	5	5	4	5	5	5	5
AM	32ND AVE NE	NE 115TH ST AND NE 117TH ST	W	**11**	**11**	**11**	2	5	4	3	3	3	4	5	5	3	5	4
AN	32ND AVE NE	NE 115TH ST AND NE 117TH ST	E	**12**	**12**	**12**	7	7	7	7	7	7	6	8	7	6	8	7
AO	33RD AVE NE	NE 115TH ST AND 32ND AVE NE	W	**22**	**22**	**22**	2	1	2	0	2	1	2	1	2	2	2	2
AP	33RD AVE NE	NE 115TH ST AND 32ND AVE NE	E	**15**	**15**	**15**	2	1	2	2	0	1	2	0	1	1	1	1
AQ	34TH AVE NE	NE 115TH ST AND 35TH AVE NE	W	**12**	**12**	**12**	2	2	2	1	2	2	4	3	4	1	3	2
AR	34TH AVE NE	NE 115TH ST AND 35TH AVE NE	E	**20**	**20**	**20**	3	1	2	1	1	1	1	0	1	2	1	2
AS	35TH AVE NE	NE 115TH ST AND 34TH AVE NE	W	**13**	**13**	**14**	3	3	3	1	2	2	2	3	3	2	1	2
AT	35TH AVE NE	NE 115TH ST AND 34TH AVE NE	E	**11**	**11**	**11**	2	0	1	1	1	1	0	1	1	1	0	1
AU	36TH AVE NE	NE 115TH ST AND 800' Boundary	W	**3**	**3**	**3**	1	0	1	0	0	0	1	0	1	0	0	0
AV	36TH AVE NE	NE 115TH ST AND 800' Boundary	E	**3**	**3**	**3**	0	0	0	0	0	0	0	0	0	0	0	0
AW	NE 115TH ST	28TH W AVE NE AND 28TH E AVE NE	N	**2**	**2**	**2**	2	2	2	2	2	2	2	2	2	2	2	2
AX	NE 115TH ST	800' Boundary AND 28TH E AVE NE	S	**1**	**1**	**1**	3	2	3	1	1	1	1	1	1	2	2	2
AY	NE 115TH ST	800' Boundary AND 30TH AVE NE	N	**11**	**11**	**11**	0	0	0	0	0	0	1	0	1	0	1	1
AZ	NE 115TH ST	28TH E AVE NE AND 30TH AVE NE	S	**8**	**8**	**8**	3	4	4	4	4	4	3	4	4	2	3	3
BA	NE 115TH ST	30TH AVE NE AND 31ST AVE NE	N	**0**	**0**	**0**	0	0	0	0	0	0	0	0	0	0	0	0
BB	NE 115TH ST	30TH AVE NE AND 31ST AVE NE	S	**5**	**5**	**5**	0	0	0	0	0	0	0	0	0	0	0	0
BC	NE 115TH ST	31ST AVE NE AND 32ND AVE NE	N	**0**	**0**	**0**	0	0	0	0	0	0	0	0	0	0	0	0
BD	NE 115TH ST	31ST AVE NE AND 32ND AVE NE	S	**0**	**0**	**0**	0	0	0	0	0	0	0	0	0	0	0	0

Project **Jane Adams Middle School - Field Lighting**

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							5:45 PM			8:15 PM			5:45 PM			8:15 PM		
Block Face ID	Street Name	Street Segment	Side of Street	Available Parking Spaces 5:45p	Available Parking Spaces 5:45p - Saturday	Available Parking Spaces 8:15p and allday Sunday	Tues 12/3	Thurs 12/5	Average	Tues 12/3	Thurs 12/5	Average	Sat 12/7	Sun 12/8	Average	Sat 12/7	Sun 12/8	Average
BE	NE 115TH ST	32ND AVE NE AND 33RD AVE NE	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BF	NE 115TH ST	32ND AVE NE AND 33RD AVE NE	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BG	NE 115TH ST	33RD AVE NE AND 34TH AVE NE	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BH	NE 115TH ST	33RD AVE NE AND 34TH AVE NE	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BI	NE 115TH ST	34TH AVE NE AND 35TH AVE NE	N	8	8	8	0	0	0	1	0	1	2	1	2	2	0	1
BJ	NE 115TH ST	34TH AVE NE AND 35TH AVE NE	S	7	7	7	1	0	1	1	1	1	2	0	1	2	0	1
BK	NE 115TH ST	35TH AVE NE AND 36TH AVE NE	N	5	5	5	1	1	1	1	1	1	4	4	4	3	4	4
BL	NE 115TH ST	35TH AVE NE AND 36TH AVE NE	S	5	5	5	0	0	0	0	0	0	0	0	0	0	0	0
BM	NE 115TH ST	36TH AVE NE AND 800' Boundary	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BN	NE 115TH ST	36TH AVE NE AND 800' Boundary	S	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0
BO	30TH AVE NE	NE 113TH ST AND NE 115TH ST	W	10	10	10	0	1	1	1	1	1	0	0	0	0	0	0
BP	30TH AVE NE	NE 113TH ST AND NE 115TH ST	E	15	15	15	3	1	2	3	2	3	3	4	4	3	4	4
BQ	31ST AVE NE	NE 113TH ST AND NE 115TH ST	W	10	10	10	0	0	0	0	0	0	0	0	0	0	0	0
BR	31ST AVE NE	NE 113TH ST AND NE 115TH ST	E	25	25	25	1	0	1	1	0	1	0	1	1	0	1	1
BS	34TH AVE NE	NE 113TH ST AND NE 115TH ST	W	23	23	23	10	3	7	2	1	2	0	1	1	14	1	8
BT	34TH AVE NE	NE 113TH ST AND NE 115TH ST	E	21	21	21	9	3	6	8	5	7	4	9	7	12	10	11
BU	35TH AVE NE	NE 113TH ST AND NE 115TH ST	W	24	24	24	2	1	2	3	1	2	4	6	5	4	5	5
BV	35TH AVE NE	NE 113TH ST AND NE 115TH ST	E	17	17	17	3	5	4	5	5	5	3	7	5	5	6	6
BW	36TH AVE NE	DEAD END 5 AND NE 115TH ST	W	3	3	3	0	0	0	0	0	0	1	0	1	1	0	1
BX	36TH AVE NE	DEAD END 5 AND NE 115TH ST	E	2	2	2	0	1	1	0	1	1	0	0	0	0	0	0
BY	28TH AVE NE	NE 113TH ST AND 800' Boundary	W	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BZ	28TH AVE NE	NE 113TH ST AND 800' Boundary	E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CA	NE 113TH ST	28TH AVE NE AND 30TH AVE NE	N	9	9	9	2	1	2	0	1	1	2	1	2	1	0	1
CB	NE 113TH ST	28TH AVE NE AND 30TH AVE NE	S	12	12	12	1	1	1	1	0	1	3	0	2	0	0	0
CC	NE 113TH ST	30TH AVE NE AND 31ST AVE NE	N	8	8	8	0	0	0	0	0	0	0	0	0	0	0	0
CD	NE 113TH ST	30TH AVE NE AND 31ST AVE NE	S	14	14	14	1	2	2	1	1	1	1	2	2	2	2	2
CE	NE 113TH ST	34TH AVE NE AND 35TH AVE NE	N	7	7	7	1	1	1	1	1	1	3	0	2	1	0	1
CF	NE 113TH ST	34TH AVE NE AND 35TH AVE NE	S	4	4	4	2	0	1	0	0	0	6	0	3	0	1	1
CG	NE 113TH ST	35TH AVE NE AND DEAD END 3	N	4	4	4	0	1	1	0	1	1	1	0	1	1	0	1
CH	NE 113TH ST	35TH AVE NE AND DEAD END 3	S	4	4	4	1	2	2	1	1	1	1	2	2	0	2	1

Project **Jane Adams Middle School - Field Lighting**

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Block Face ID	Street Name	Street Segment	Side of Street	Available Parking Spaces 5:45p	Available Parking Spaces 5:45p - Saturday	Available Parking Spaces 8:15p and allday Sunday	Tues 12/3	Thurs 12/5	Average	Tues 12/3	Thurs 12/5	Average	Sat 12/7	Sun 12/8	Average	Sat 12/7	Sun 12/8	Average
CI	28TH AVE NE	800' Boundary AND NE 113TH ST	W	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CJ	28TH AVE NE	800' Boundary AND NE 113TH ST	E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CK	30TH AVE NE	NE 110TH ST AND NE 113TH ST	W	18	18	18	0	1	1	2	0	1	2	0	1	1	1	1
CL	30TH AVE NE	NE 110TH ST AND NE 113TH ST	E	15	15	15	5	7	6	8	7	8	4	7	6	4	7	6
CM	31ST AVE NE	NE 110TH ST AND NE 113TH ST	W	10	10	10	1	3	2	6	4	5	5	4	5	5	4	5
CN	31ST AVE NE	NE 110TH ST AND NE 113TH ST	E	27	27	27	0	0	0	0	0	0	0	0	0	0	0	0
CO	34TH AVE NE	NE 110TH ST AND NE 113TH ST	W	30	30	30	24	23	24	11	1	6	8	0	4	16	0	8
CP	34TH AVE NE	NE 110TH ST AND NE 113TH ST	E	25	25	25	32	15	24	11	11	11	12	9	11	11	11	11
CQ	35TH AVE NE	NE 110TH ST AND NE 113TH ST	W	26	26	26	6	8	7	5	6	6	9	12	11	7	12	10
CR	35TH AVE NE	NE 110TH ST AND NE 113TH ST	E	11	11	11	3	4	4	5	4	5	4	7	6	4	4	4
CS	36TH AVE NE	NE 110TH ST AND 800' Boundary	W	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0
CT	36TH AVE NE	NE 110TH ST AND 800' Boundary	E	4	4	4	0	2	1	0	2	1	0	0	0	1	0	1
CU	28TH AVE NE	NE 110TH ST AND 800' Boundary	W	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CV	28TH AVE NE	NE 110TH ST AND 800' Boundary	E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CW	NE 110TH ST	28TH AVE NE AND 30TH AVE NE	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CX	NE 110TH ST	28TH AVE NE AND 30TH AVE NE	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CY	NE 110TH ST	30TH AVE NE AND 31ST AVE NE	N	3	3	3	0	0	0	0	0	0	0	0	0	0	0	0
CZ	NE 110TH ST	30TH AVE NE AND 31ST AVE NE	S	10	10	10	0	0	0	0	0	0	0	0	0	0	0	0
DA	NE 110TH ST	31ST AVE NE AND 34TH AVE NE	N	14	14	14	9	6	8	0	0	0	0	0	0	0	0	0
DB	NE 110TH ST	31ST AVE NE AND 34TH AVE NE	S	26	26	26	12	5	9	0	1	1	0	0	0	0	0	0
DC	NE 110TH ST	34TH AVE NE AND 35TH AVE NE	N	7	7	7	3	6	5	2	3	3	6	5	6	5	5	5
DD	NE 110TH ST	34TH AVE NE AND 35TH AVE NE	S	11	11	11	1	2	2	3	1	2	1	2	2	2	4	3
DE	NE 110TH ST	35TH AVE NE AND 36TH AVE NE	N	6	6	6	1	2	2	1	2	2	3	2	3	4	3	4
DF	NE 110TH ST	35TH AVE NE AND 36TH AVE NE	S	5	5	5	1	2	2	1	1	1	3	1	2	3	2	3
DG	NE 110TH ST	36TH AVE NE AND 800' Boundary	N	1	1	1	1	3	2	2	0	1	1	1	1	2	1	2
DH	NE 110TH ST	36TH AVE NE AND 800' Boundary	S	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0
DI	30TH AVE NE	800' Boundary AND NE 110TH ST	W	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DJ	30TH AVE NE	800' Boundary AND NE 110TH ST	E	16	16	16	2	1	2	0	0	0	0	0	0	0	0	0
DK	35TH AVE NE	800' Boundary AND NE 110TH ST	W	11	15	15	0	0	0	0	0	0	2	3	3	4	1	3
DL	35TH AVE NE	800' Boundary AND NE 110TH ST	E	12	12	12	4	5	5	3	3	3	3	3	3	4	3	4

Project **Jane Adams Middle School - Field Lighting**

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Block Face ID	Street Name	Street Segment	Side of Street	**Available Parking Spaces 5:45p**	**Available Parking Spaces 5:45p - Saturday**	**Available Parking Spaces 8:15p and allday Sunday**	Tues 12/3	Thurs 12/5	Average	Tues 12/3	Thurs 12/5	Average	Sat 12/7	Sun 12/8	Average	Sat 12/7	Sun 12/8	Average
DM	36TH AVE NE	800' Boundary AND NE 110TH ST	W	**1**	**1**	**1**	1	1	1	3	1	2	1	1	1	2	2	2
DN	36TH AVE NE	800' Boundary AND NE 110TH ST	E	**0**	**0**	**0**	0	0	0	1	1	1	1	0	1	2	0	1
			TOTAL	**763**	**767**	**768**	**201**	**176**	**189**	**149**	**123**	**136**	**162**	**155**	**159**	**185**	**161**	**173**

Project **Jane Adams Middle School - Field Lighting**

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Block Face ID	Street Name	Street Segment	Side of Street	Available Parking Spaces 5:45p	Available Parking Spaces 5:45p - Saturday	Available Parking Spaces 8:15p and allday Sunday	Tues 12/3	Thurs 12/5	Average	Tues 12/3	Thurs 12/5	Average	Sat 12/7	Sun 12/8	Average	Sat 12/7	Sun 12/8	Average
AA	NE 117TH ST	30TH AVE NE AND 31ST AVE NE	N	**6**	**6**	**6**	83%	67%	75%	83%	67%	75%	117%	100%	109%	117%	150%	134%
AB	NE 117TH ST	30TH AVE NE AND 31ST AVE NE	S	**6**	**6**	**6**	33%	17%	25%	0%	0%	0%	17%	17%	17%	17%	33%	25%
AC	NE 117TH ST	31ST AVE NE AND 32ND AVE NE	N	**9**	**9**	**9**	11%	11%	11%	33%	11%	22%	22%	33%	28%	33%	33%	33%
AD	NE 117TH ST	31ST AVE NE AND 32ND AVE NE	S	**10**	**10**	**10**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AE	35TH AVE NE	34TH AVE NE AND 800' Boundary	W	**1**	**1**	**1**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AF	35TH AVE NE	34TH AVE NE AND 800' Boundary	E	**6**	**6**	**6**	0%	0%	0%	17%	17%	17%	0%	0%	0%	0%	0%	0%
AG	28TH AVE NE	NE 115TH E ST AND 800' Boundary	W	**0**	**0**	**0**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
AH	28TH AVE NE	NE 115TH E ST AND 800' Boundary	E	**2**	**2**	**2**	100%	50%	75%	100%	100%	100%	100%	150%	125%	100%	100%	100%
AI	30TH AVE NE	NE 115TH ST AND 800' Boundary	W	**10**	**10**	**10**	70%	80%	75%	70%	80%	75%	70%	70%	70%	90%	60%	75%
AJ	30TH AVE NE	NE 115TH ST AND 800' Boundary	E	**6**	**6**	**6**	50%	83%	67%	67%	67%	67%	33%	83%	58%	83%	100%	92%
AK	31ST AVE NE	NE 115TH ST AND NE 117TH ST	W	**12**	**12**	**12**	8%	33%	21%	33%	25%	29%	17%	25%	21%	8%	25%	17%
AL	31ST AVE NE	NE 115TH ST AND NE 117TH ST	E	**15**	**15**	**15**	27%	27%	27%	40%	27%	34%	33%	27%	30%	33%	33%	33%
AM	32ND AVE NE	NE 115TH ST AND NE 117TH ST	W	**11**	**11**	**11**	18%	45%	32%	27%	27%	27%	36%	45%	41%	27%	45%	36%
AN	32ND AVE NE	NE 115TH ST AND NE 117TH ST	E	**12**	**12**	**12**	58%	58%	58%	58%	58%	58%	50%	67%	59%	50%	67%	59%
AO	33RD AVE NE	NE 115TH ST AND 32ND AVE NE	W	**22**	**22**	**22**	9%	5%	7%	0%	9%	5%	9%	5%	7%	9%	9%	9%
AP	33RD AVE NE	NE 115TH ST AND 32ND AVE NE	E	**15**	**15**	**15**	13%	7%	10%	13%	0%	7%	13%	0%	7%	7%	7%	7%
AQ	34TH AVE NE	NE 115TH ST AND 35TH AVE NE	W	**12**	**12**	**12**	17%	17%	17%	8%	17%	13%	33%	25%	29%	8%	25%	17%
AR	34TH AVE NE	NE 115TH ST AND 35TH AVE NE	E	**20**	**20**	**20**	15%	5%	10%	5%	5%	5%	5%	0%	3%	10%	5%	8%
AS	35TH AVE NE	NE 115TH ST AND 34TH AVE NE	W	**13**	**13**	**14**	23%	23%	23%	8%	15%	12%	15%	21%	18%	14%	7%	11%
AT	35TH AVE NE	NE 115TH ST AND 34TH AVE NE	E	**11**	**11**	**11**	18%	0%	9%	9%	9%	9%	0%	9%	5%	9%	0%	5%
AU	36TH AVE NE	NE 115TH ST AND 800' Boundary	W	**3**	**3**	**3**	33%	0%	17%	0%	0%	0%	33%	0%	17%	0%	0%	0%
AV	36TH AVE NE	NE 115TH ST AND 800' Boundary	E	**3**	**3**	**3**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AW	NE 115TH ST	28TH W AVE NE AND 28TH E AVE NE	N	**2**	**2**	**2**	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
AX	NE 115TH ST	800' Boundary AND 28TH E AVE NE	S	**1**	**1**	**1**	300%	200%	250%	100%	100%	100%	100%	100%	100%	200%	200%	200%
AY	NE 115TH ST	800' Boundary AND 30TH AVE NE	N	**11**	**11**	**11**	0%	0%	0%	0%	0%	0%	9%	0%	5%	0%	9%	5%
AZ	NE 115TH ST	28TH E AVE NE AND 30TH AVE NE	S	**8**	**8**	**8**	38%	50%	44%	50%	50%	50%	38%	50%	44%	25%	38%	32%
BA	NE 115TH ST	30TH AVE NE AND 31ST AVE NE	N	**0**	**0**	**0**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
BB	NE 115TH ST	30TH AVE NE AND 31ST AVE NE	S	**5**	**5**	**5**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
BC	NE 115TH ST	31ST AVE NE AND 32ND AVE NE	N	**0**	**0**	**0**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
BD	NE 115TH ST	31ST AVE NE AND 32ND AVE NE	S	**0**	**0**	**0**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

Project **Jane Adams Middle School - Field Lighting**

				Supply			Parking Utilization											
							Weekday						Weekend					
							5:45 PM			8:15 PM			5:45 PM			8:15 PM		
Block Face ID	Street Name	Street Segment	Side of Street	Available Parking Spaces 5:45p	Available Parking Spaces 5:45p - Saturday	Available Parking Spaces 8:15p and allday Sunday	Tues 12/3	Thurs 12/5	Average	Tues 12/3	Thurs 12/5	Average	Sat 12/7	Sun 12/8	Average	Sat 12/7	Sun 12/8	Average
BE	NE 115TH ST	32ND AVE NE AND 33RD AVE NE	N	0	0	0	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
BF	NE 115TH ST	32ND AVE NE AND 33RD AVE NE	S	0	0	0	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
BG	NE 115TH ST	33RD AVE NE AND 34TH AVE NE	N	0	0	0	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
BH	NE 115TH ST	33RD AVE NE AND 34TH AVE NE	S	0	0	0	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
BI	NE 115TH ST	34TH AVE NE AND 35TH AVE NE	N	8	8	8	0%	0%	0%	13%	0%	7%	25%	13%	19%	25%	0%	13%
BJ	NE 115TH ST	34TH AVE NE AND 35TH AVE NE	S	7	7	7	14%	0%	7%	14%	14%	14%	29%	0%	15%	29%	0%	15%
BK	NE 115TH ST	35TH AVE NE AND 36TH AVE NE	N	5	5	5	20%	20%	20%	20%	20%	20%	80%	80%	80%	60%	80%	70%
BL	NE 115TH ST	35TH AVE NE AND 36TH AVE NE	S	5	5	5	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
BM	NE 115TH ST	36TH AVE NE AND 800' Boundary	N	0	0	0	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
BN	NE 115TH ST	36TH AVE NE AND 800' Boundary	S	1	1	1	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
BO	30TH AVE NE	NE 113TH ST AND NE 115TH ST	W	10	10	10	0%	10%	5%	10%	10%	10%	0%	0%	0%	0%	0%	0%
BP	30TH AVE NE	NE 113TH ST AND NE 115TH ST	E	15	15	15	20%	7%	14%	20%	13%	17%	20%	27%	24%	20%	27%	24%
BQ	31ST AVE NE	NE 113TH ST AND NE 115TH ST	W	10	10	10	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
BR	31ST AVE NE	NE 113TH ST AND NE 115TH ST	E	25	25	25	4%	0%	2%	4%	0%	2%	0%	4%	2%	0%	4%	2%
BS	34TH AVE NE	NE 113TH ST AND NE 115TH ST	W	23	23	23	43%	13%	28%	9%	4%	7%	0%	4%	2%	61%	4%	33%
BT	34TH AVE NE	NE 113TH ST AND NE 115TH ST	E	21	21	21	43%	14%	29%	38%	24%	31%	19%	43%	31%	57%	48%	53%
BU	35TH AVE NE	NE 113TH ST AND NE 115TH ST	W	24	24	24	8%	4%	6%	13%	4%	9%	17%	25%	21%	17%	21%	19%
BV	35TH AVE NE	NE 113TH ST AND NE 115TH ST	E	17	17	17	18%	29%	24%	29%	29%	29%	18%	41%	30%	29%	35%	32%
BW	36TH AVE NE	DEAD END 5 AND NE 115TH ST	W	3	3	3	0%	0%	0%	0%	0%	0%	33%	0%	17%	33%	0%	17%
BX	36TH AVE NE	DEAD END 5 AND NE 115TH ST	E	2	2	2	0%	50%	25%	0%	50%	25%	0%	0%	0%	0%	0%	0%
BY	28TH AVE NE	NE 113TH ST AND 800' Boundary	W	0	0	0	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
BZ	28TH AVE NE	NE 113TH ST AND 800' Boundary	E	0	0	0	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
CA	NE 113TH ST	28TH AVE NE AND 30TH AVE NE	N	9	9	9	22%	11%	17%	0%	11%	6%	22%	11%	17%	11%	0%	6%
CB	NE 113TH ST	28TH AVE NE AND 30TH AVE NE	S	12	12	12	8%	8%	8%	8%	0%	4%	25%	0%	13%	0%	0%	0%
CC	NE 113TH ST	30TH AVE NE AND 31ST AVE NE	N	8	8	8	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
CD	NE 113TH ST	30TH AVE NE AND 31ST AVE NE	S	14	14	14	7%	14%	11%	7%	7%	7%	7%	14%	11%	14%	14%	14%
CE	NE 113TH ST	34TH AVE NE AND 35TH AVE NE	N	7	7	7	14%	14%	14%	14%	14%	14%	43%	0%	22%	14%	0%	7%
CF	NE 113TH ST	34TH AVE NE AND 35TH AVE NE	S	4	4	4	50%	0%	25%	0%	0%	0%	150%	0%	75%	0%	25%	13%
CG	NE 113TH ST	35TH AVE NE AND DEAD END 3	N	4	4	4	0%	25%	13%	0%	25%	13%	25%	0%	13%	25%	0%	13%
CH	NE 113TH ST	35TH AVE NE AND DEAD END 3	S	4	4	4	25%	50%	38%	25%	25%	25%	25%	50%	38%	0%	50%	25%

Project **Jane Adams Middle School - Field Lighting**

				Supply			Parking Utilization											
							Weekday						Weekend					
							5:45 PM			8:15 PM			5:45 PM			8:15 PM		
Block Face ID	Street Name	Street Segment	Side of Street	Available Parking Spaces 5:45p	Available Parking Spaces 5:45p - Saturday	Available Parking Spaces 8:15p and allday Sunday	Tues 12/3	Thurs 12/5	Average	Tues 12/3	Thurs 12/5	Average	Sat 12/7	Sun 12/8	Average	Sat 12/7	Sun 12/8	Average
CI	28TH AVE NE	800' Boundary AND NE 113TH ST	W	0	0	0	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
CJ	28TH AVE NE	800' Boundary AND NE 113TH ST	E	0	0	0	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
CK	30TH AVE NE	NE 110TH ST AND NE 113TH ST	W	18	18	18	0%	6%	3%	11%	0%	6%	11%	0%	6%	6%	6%	6%
CL	30TH AVE NE	NE 110TH ST AND NE 113TH ST	E	15	15	15	33%	47%	40%	53%	47%	50%	27%	47%	37%	27%	47%	37%
CM	31ST AVE NE	NE 110TH ST AND NE 113TH ST	W	10	10	10	10%	30%	20%	60%	40%	50%	50%	40%	45%	50%	40%	45%
CN	31ST AVE NE	NE 110TH ST AND NE 113TH ST	E	27	27	27	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
CO	34TH AVE NE	NE 110TH ST AND NE 113TH ST	W	30	30	30	80%	77%	79%	37%	3%	20%	27%	0%	14%	53%	0%	27%
CP	34TH AVE NE	NE 110TH ST AND NE 113TH ST	E	25	25	25	128%	60%	94%	44%	44%	44%	48%	36%	42%	44%	44%	44%
CQ	35TH AVE NE	NE 110TH ST AND NE 113TH ST	W	26	26	26	23%	31%	27%	19%	23%	21%	35%	46%	41%	27%	46%	37%
CR	35TH AVE NE	NE 110TH ST AND NE 113TH ST	E	11	11	11	27%	36%	32%	45%	36%	41%	36%	64%	50%	36%	36%	36%
CS	36TH AVE NE	NE 110TH ST AND 800' Boundary	W	2	2	2	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
CT	36TH AVE NE	NE 110TH ST AND 800' Boundary	E	4	4	4	0%	50%	25%	0%	50%	25%	0%	0%	0%	25%	0%	13%
CU	28TH AVE NE	NE 110TH ST AND 800' Boundary	W	0	0	0	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
CV	28TH AVE NE	NE 110TH ST AND 800' Boundary	E	0	0	0	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
CW	NE 110TH ST	28TH AVE NE AND 30TH AVE NE	N	0	0	0	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
CX	NE 110TH ST	28TH AVE NE AND 30TH AVE NE	S	0	0	0	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
CY	NE 110TH ST	30TH AVE NE AND 31ST AVE NE	N	3	3	3	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
CZ	NE 110TH ST	30TH AVE NE AND 31ST AVE NE	S	10	10	10	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
DA	NE 110TH ST	31ST AVE NE AND 34TH AVE NE	N	14	14	14	64%	43%	54%	0%	0%	0%	0%	0%	0%	0%	0%	0%
DB	NE 110TH ST	31ST AVE NE AND 34TH AVE NE	S	26	26	26	46%	19%	33%	0%	4%	2%	0%	0%	0%	0%	0%	0%
DC	NE 110TH ST	34TH AVE NE AND 35TH AVE NE	N	7	7	7	43%	86%	65%	29%	43%	36%	86%	71%	79%	71%	71%	71%
DD	NE 110TH ST	34TH AVE NE AND 35TH AVE NE	S	11	11	11	9%	18%	14%	27%	9%	18%	9%	18%	14%	18%	36%	27%
DE	NE 110TH ST	35TH AVE NE AND 36TH AVE NE	N	6	6	6	17%	33%	25%	17%	33%	25%	50%	33%	42%	67%	50%	59%
DF	NE 110TH ST	35TH AVE NE AND 36TH AVE NE	S	5	5	5	20%	40%	30%	20%	20%	20%	60%	20%	40%	60%	40%	50%
DG	NE 110TH ST	36TH AVE NE AND 800' Boundary	N	1	1	1	100%	300%	200%	200%	0%	100%	100%	100%	100%	200%	100%	150%
DH	NE 110TH ST	36TH AVE NE AND 800' Boundary	S	2	2	2	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
DI	30TH AVE NE	800' Boundary AND NE 110TH ST	W	0	0	0	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
DJ	30TH AVE NE	800' Boundary AND NE 110TH ST	E	16	16	16	13%	6%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%
DK	35TH AVE NE	800' Boundary AND NE 110TH ST	W	11	15	15	0%	0%	0%	0%	0%	0%	18%	20%	19%	27%	7%	17%
DL	35TH AVE NE	800' Boundary AND NE 110TH ST	E	12	12	12	33%	42%	38%	25%	25%	25%	25%	25%	25%	33%	25%	29%

Project **Jane Adams Middle School - Field Lighting**

				Supply			Parking Utilization											
							Weekday						Weekend					
							5:45 PM			8:15 PM			5:45 PM			8:15 PM		
Block Face ID	Street Name	Street Segment	Side of Street	Available Parking Spaces 5:45p	Available Parking Spaces 5:45p - Saturday	Available Parking Spaces 8:15p and allday Sunday	Tues 12/3	Thurs 12/5	Average	Tues 12/3	Thurs 12/5	Average	Sat 12/7	Sun 12/8	Average	Sat 12/7	Sun 12/8	Average
DM	36TH AVE NE	800' Boundary AND NE 110TH ST	W	**1**	**1**	**1**	100%	100%	100%	300%	100%	200%	100%	100%	100%	200%	200%	200%
DN	36TH AVE NE	800' Boundary AND NE 110TH ST	E	**0**	**0**	**0**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
			TOTAL	**763**	**767**	**768**	**26%**	**23%**	**25%**	**19%**	**16%**	**18%**	**21%**	**20%**	**21%**	**24%**	**21%**	**23%**

Appendix B: Noise Memorandum

ESA

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memorandum

date March 23, 2020

to Jeannette Imanishi, Seattle Public Schools

from Aaron Booy and Madeline Remmen, ESA

subject Jane Addams Middle School Field Lighting– Existing Noise Conditions and Potential Post-Project Noise Conditions

Seattle Public Schools (SPS) is proposing to install athletic field lighting at multiple school locations in the Seattle School District (District) under the Buildings, Technology and Academics/Athletics IV Program (BTA IV) and Building Excellence V (BEX V) funding. Jane Addams Middle School has two existing athletic fields; located at 11051 34th Ave NE, Seattle, WA 98125 in the Meadowbrook/Lake City neighborhood of Seattle. The western field has been identified for lighting under the BEX V funding, while the eastern field was previously lighted during a separate project.

The height limit for light poles in residential areas is 30 feet (Seattle Municipal Code [SMC] 23.46.020). The proposed pole heights for the Jane Addams western athletic field would be 70 and 80 feet, depending on pole location. City code permits light poles at public school athletic fields to exceed the maximum permitted height up to a maximum of 100 feet if the Director of Seattle Department of Construction and Inspections (SDCI) determines that the additional height is necessary to ensure adequate illumination and that light and glare are minimized to the extent practicable (SMC 23.51B.002(D)(6)). When a lighting project associated with the exception for taller poles extends the duration of use of the athletic field, SPS must address and mitigate potential impacts, including increased duration of noise, traffic, and parking demand. This memorandum was prepared to document the existing evening noise conditions at Jane Addams Middle School and presents results of noise monitoring and technical analysis of environmental noise impacts that may result from implementation of the athletic field lighting project at Jane Addams Middle School. The memorandum also evaluates compliance with the environmental sound level limits established by SMC 25.08.410.

Methods

Methods for gathering information needed to support review of existing and potential post-project environmental noise included representative noise measurements near residences adjacent to the field, noise measurements at other SPS sites with existing lighted fields, and analysis of measurement results. ESA's noise specialists documented existing noise levels at Jane Addams Middle School, establishing existing environmental noise conditions and the basis for analysis of potential project impacts. Noise levels at Miller Playfield, an existing lighted athletic field that adjoins the Edmond S. Meany Middle

School site to the north, were recorded during a scheduled athletic event to provide a point of comparison of the noise environment associated with a lighted athletic field facility.

Noise measurements were completed on January 24, 2017, January 28, 2020 and February 3, 2020 at Jane Addams Middle School and on February 3, 2020 and February 11, 2020 at Miller Playfield. The areas immediately surrounding the Jane Addams Middle School western athletic field are characterized as single-family residential and adjoining SPS facilities. Nathan Hale High School is located directly to the south, across NE 110th Street, with the associated Nathan High athletic field (with existing lighting) located directly to the southeast. As noted previously, to the east of the Jane Addams western playfield is the eastern playfield (which has existing lighting). Originally completed as part of environmental review for earlier SPS athletic field lighting projects, noise measurements were taken on January 24, 2017 adjacent to the eastern field. These measurements are included in this memo, as they provide direct comparison between noise levels adjacent to the two existing fields at Jane Addams Middle School. To the north of the athletic fields is the Jane Addams Middle School building, with associated parking areas, walkways, and landscaping. The closest residential uses are located to the west of the lighting project athletic field, across 31st Avenue NE.

The area surrounding the Miller Playfield athletic field is characterized as predominantly SPS and City Park facilities as well as single-family and multi-family residential land uses. The closest residential uses are located to the east of the athletic field, across 21st Avenue E. Miller Playfield was used as a point of comparison because the surrounding land uses are similar, especially with consideration of the closest proximity residences and the similar character of the respective roadways (31st Avenue NE and 21st Ave E) at the two sites. In addition, evening athletic activities anticipated to occur at Jane Addams would be similar to activities that currently occur at Miller Playfield.

Measurement locations were chosen to record outdoor environmental sound levels near representative noise sensitive receivers (residential properties) in areas adjacent to the school athletic fields. Measurement locations were established within right-of-way areas approximating, to the greatest extent possible, the setback between the respective athletic fields and the nearest adjacent residential properties. The time period for measurements was also identified to be representative of existing conditions during evening and early nighttime hours, the period of time during which the noise environment surrounding the Jane Addams Middle School western athletic field is anticipated to change due to the field lighting project. The short-term measurements were conducted between 6:00 p.m. and 10:00 p.m. The results are intended to approximate the potential nighttime noise increase that could be associated with the lighting of Jane Addams Middle School's western athletic field.

A Metrosonics Model db308 sound level meter was used for short-term noise level measurements recorded on January 24, 2017. A Larson Davis Sound Track LXT sound level meter was used for the all other short-term noise measurements completed. Figure 1 shows the western noise monitoring site (adjacent to the project field) and eastern noise monitoring site (adjacent to the existing lighted field). The western site fronts the residence at 11017 31st Avenue NE immediately west of the Jane Addams baseball/soccer field on the western side of 31st Avenue NE. The eastern site fronts the residence at 11020 34th Ave NE immediately east of the Jane Addams soccer field on the eastern side of 34th Avenue NE (Figure 1). The noise measurement location at Miller Playfield for all measurements was fronting the residence at 226 21st Avenue E immediately east of the athletic field on the eastern side of 21st Avenue E.

For all measurements, the noise meter was located approximately 5 feet above ground surface and the noise level was measured and recorded for a period of 15 minutes at each short-term survey location. The precision sound level meters were calibrated immediately prior to each measurement date to ensure accuracy. The meters were programmed to record the maximum (Lmax), average (Leq), L10, and L90 noise levels over a 15-minute period for the 2020 measurements and a 10-minute period for the 2017 measurement. L10 and L90 are standard measurements that represent the noise levels that are equaled or exceeded for 10 percent and 90 percent of the time for each measurement, respectively. Measurements were completed adjacent to the Jane Addams and Miller Playfield on two occasions. Measurements were also completed adjacent to the existing lighted field at Miller Playfield. Summarized results for each location are shown in Table 1 below.

All noise measurement days were specifically chosen to avoid recent or active precipitation (rain and wet pavement increase environmental noise associated with vehicular traffic). However, during the second measurement on January 28th, 2020 at Jane Addams, at approximately 8:39, slight precipitation fell as rain and a slight increase in road noise was observed. Weather was typical for the months during which measurements were completed, with no significant winds or unseasonal temperatures. Additionally, no significant noise generating activity or other atypical activities were occurring at Jane Addams Middle School, Miller Playfield, or surrounding uses during any of the monitoring periods.

Existing Noise Environment

The results of the short-term noise measurements at Jane Addams Middle School generally reflect existing evening/early nighttime noise conditions, which are quiet[1] and influenced by activities surrounding residential land uses and roadways near the school athletic field site. Results of noise measurements are presented in Table 1.

Based on short-term noise measurements adjacent to the western Jane Addams athletic field on January 28th and February 3, 2020, the predominant existing noise sources observed in the project area were vehicular traffic and overhead air traffic. Occasional domestic activity from adjacent residential properties also was noted as contributing to the existing noise environment. These noise sources were also observed during the short-term noise measurements completed on January 24, 2017 adjacent to the eastern Jane Addams (lighted) athletic field. In addition, during these measurements organized sports were occurring on the eastern Jane Addams field and the Nathan Hale High School athletic field, with audible intermittent noise from whistles and yelling. The activities on the Nathan Hale athletic field were more audible than those on the eastern Jane Addams field. Vehicular traffic, honking, and overhead airplanes remained the dominant noise sources noted for these earlier measurements.

During the measurements vehicular traffic on 31st Avenue NE, 34th Avenue NE and NE 110th Street was observed. NE 110th Street is a two-lane Collector Arterial with parking on the south side of the street (SDOT, 2020). Collector Arterials are defined as "roadways that collect and distribute traffic from Principal and Minor Arterials to local access streets or provide direct access to destinations" (City of Seattle, 2019). The speed limit when passing Jane Addams Middle School is 20 mph in the school zone when children are present and 30 mph when children are not present, which field observations confirmed were generally obeyed. 31st Avenue NE, which passes between the project athletic field and

[1] Noise levels considered quiet are based off of the HUD Exchange Noise Guidebook published in 2009 and available at: https://www.hudexchange.info/resource/313/hud-noise-guidebook/

the residences to the west, is designated as a local access street, and was observed to have lower levels of vehicular traffic than NE 110th Street during noise measurements.

Table 1. Noise Measurements (dBA)

Short-term Measurement Period	Leq	Lmax	L10	L90	Observations
Jane Addams Middle School western Athletic Field (adjacent to the project field)					
January 28, 2020					
#1 – 8:20 – 8:35 p.m.	50.6	66.1	53.5	43.2	Airplanes, cars, people talking, cyclists, dogs barking, sports whistle
#2: 8:37 – 8:52 p.m.	50.9	65.7	53.5	44.7	Airplanes, people talking, sports whistle *Note that it started to rain during this measurement and increased road noised from water present on roadway was observed
February 3, 2020					
#1- 6:10 - 6:35p.m.	52.3	69.2	54.9	44.6	Airplanes, cars, dog barking, people talking, people yelling in distance
#2- 6:26 – 6:41 p.m.	51.6	69.1	52.9	43.1	Airplanes, cars, dog barking, people talking, people yelling in distance,
#3 9:18 – 9:33 p.m.	53.2	70	56	40.7	Airplanes, cars, people talking, sirens, car door closing
Jane Addams Middle School eastern Athletic Field (existing lighted field, during adult soccer game on January 24, 2017)					
#1 – 8:32 – 8:42 p.m.	50.9	55.1	53.0	48.0	Cars passing at 25 mph, yelling on field, whistling, cars honking on NE 110 St, another athletic field with practice games occurring across NE 110 St.
#2: 9:12 – 9:22 p.m.	52.4	56.4	54.0	49.0	Cars passing at 25 mph, yelling on field, whistling, ball hitting fence, airplane, cars honking on NE 110 St, another athletic field with practice games occurring across NE 110 St
Miller Playfield (Meany Middle School adjoins to the north) - during adult soccer games					
February 3, 2020					
#1 – 8:22 – 8:36 p.m.	54.7	72.0	59.5	46.4	Traffic (cars and busses on E Thomas St.), airplanes, yelling on field, sports whistle, dog walkers on sidewalk
#2 - 8:40 – 8:55 p.m.	56.0	68.6	60.0	45.3	Traffic (cars and busses E Thomas St.), airplanes, yelling on field, sports whistle
February 11, 2020					
#1 – 8:30 – 8:45	58.4	72.3	61.8	48.2	Traffic (cars and busses on E Thomas St.), airplanes, yelling on field, sports whistle, people walking and talking on sidewalk, sirens
#2 – 8:46 – 9:01	55	64.8	58.9	48.0	Traffic (cars and busses on E Thomas St.), airplanes, yelling on field, sports whistle, people walking and talking on sidewalk, sirens, distant train horn, skate boarders

Notes:

- Noise is typically measured in units called decibels (dB). For the purposes of environmental analysis noise is commonly quantified as "A weighted" decibels (dBA), which corresponds to the frequencies that are audible to the human ear. Use of the dBA frequency is consistent with SMC 25.08.090).
- Leq or the "equivalent sound level" is used to describe noise over a specified period of time in terms of a single numerical value. The Leq of a time-varying signal and that of a steady signal are the same if they deliver the same acoustic energy over a given time. The Leq may also be referred to as the average sound level.
- Lmax is the instantaneous maximum noise level during a given period of time; Lmax events commonly occur momentarily, such as a loud passing motorcycle or child yelling nearby the noise meter, and within an urban environment with variable noise sources are inherently higher than the Leq level measured for a given period of time.
- L10 and L90 are standard measures that represent the noise levels that are equaled or exceeded 10 percent and 90 percent of a specified time period, respectively.

The existing evening and early nighttime noise environment at Jane Addams Middle School is generally quiet, with measurements ranging from 50.6 to 53.2 Leq (dBA) at both measurement locations. These noise levels are consistent with evening and nighttime hours within urban environments, especially for areas primarily supporting residential uses, adjacent to school and park facilities, and not located within a ¼ mile of any major freeway. Within this range, the higher measurements occurred when more cars drove by the noise monitoring location on 31st Avenue NE and 34th Avenue NE. Additionally, during monitoring on January 24, 2017 and January 28, 2020, soccer games were occurring on the Nathan Hale High School athletic field, so sports whistles and shouting were observed during the measurements. The eastern monitoring site is located significantly closer to the Nathan Hale athletic field resulting in noise generating activities to be more predominate than at the western site. During the February 3, 2020 measurement, no organized sports activities took place on the Nathan Hale athletic field.

No organized sports activities took place on the existing lighted field at Jane Addams Middle School during the 2020 noise monitoring periods; therefore, noise measurements taken on January 28 and February 3 are anticipated to be representative of the quietist conditions adjacent to the nearest residential receptors. Peak noise levels (measured Lmax levels reported in Table 1) ranged from 65.7 to 70 dBA. Short-term peaks were associated with passing vehicles on 31st Avenue NE and overhead air traffic. On January 28, 2020, a soccer game occurred on the Nathan Hale athletic field located to the southeast of the monitoring location. Noise such as sports whistles and shouting were observed, but residential activity, vehicular traffic, and air traffic were the dominant noise sources observed.

The results of the short-term noise measurements at Miller Playfield generally reflect existing noise conditions, which are also generally quiet and primarily influenced by vehicular traffic and overhead air traffic. Active soccer games occurring on the lighted playfield and domestic activities surrounding and within the residential land uses also contributed to the noise environment. The roadway south of the lighted athletic field (E Thomas St) is classified as a Minor Arterial (SDOT, 2020). Minor Arterials are defined as "roadways that distribute traffic from Principal Arterials to Collector Arterials and access streets" (City of Seattle, 2019). The speed limit when passing Miller Playfield on E Thomas St is 25 mph. 21st Avenue E, which passes between the project athletic field and the residences to the east, is designated as a local access street, and during noise measurements had lower levels of vehicular traffic than E Thomas Street. 21st Avenue E is a one-way street for vehicular traffic in the southbound direction. Observations of noise-generating activity during all measurement periods adjacent to Miller Playfield showed traffic on E Thomas Street and 21st Avenue E and overhead air traffic as predominant noise sources, with intermittent athletic field activity such as yelling, whistles, and ball kicking also contributing to the noise environment.

Anticipated Noise and Potential Effects

The City of Seattle Noise Ordinance (SMC Chapter 25.08) regulates noise in the City. Noise is typically defined as an unwanted sound that can disrupt quality of life (EPA, 2019). The City sets exterior sound level limits according to the land use of both the property generating the noise (the source) and the property receiving the noise (Table 2; SMC Chapter 25.08.410). From one property to another when both properties are within a residential district, the maximum allowable noise during weekday daytime and evening hours (7:00 a.m. to 10:00 p.m.) is limited to 55 Leq (dBA). This is the maximum noise that may be generated from a specific property that is experienced by another property (not the cumulative noise from all surrounding properties and activities). Normal vehicular traffic, including garbage trucks, are exempt from the noise requirements set forth in SMC 25.08. 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 nighttime hours, maximum allowable noise from one property to another within residential districts is reduced to 45 Leq (dBA). Jane Addams Middle School, the athletic field, and surrounding residences are mostly located within residential districts per City of Seattle Zoning.

Table 2. Exterior Sound Level Limits

District of Sound Source	Residential Receiving Property (Experiencing the Noise)	
	7a.m. – 10 p.m. Limit (Leq)	10 p.m.– 7a.m. Limit (Leq)
Residential	55 dBA	45 dBA
Commercial	57 dBA	47 dBA
Industrial	60 dBA	50 dBA

Source: SMC Chapter 25.08.410

For noise sources that are not continuous, higher levels are allowed for short durations. The code specifies that shorter duration noises up to 15 dBA above the continuous limit are allowable, as long as the hourly Leq exterior sound level limit is not exceeded (SMC 25.08.410.B).

Potential noise impacts to residential properties surrounding the Jane Addams Middle School western athletic field were predicted based on review of existing conditions and anticipated noise from proposed late evening athletic activities. Measurements completed adjacent to the eastern Jane Addams lighted athletic field was selected as the primary point of comparison, as other environmental conditions remain very similar between the eastern field and the western field. Miller Playfield was selected as an additional point of comparison because ESA determined that conditions surrounding the Miller Playfield were similar and applicable for further estimating future noise that would be expected surrounding the western Jane Addams athletic field. The roadways surrounding the Miller Playfield athletic field are a combination of neighborhood arterials and local access streets, which are conducive to speeds that would be similar to those observed at Jane Addams Middle School, allowing for reasonable comparison of conditions between the two schools and potential implications of the Jane Addams field lighting project.

For purposes of this evaluation, a noise impact would potentially occur where the anticipated noise from field lighting during late evening athletic events would exceed the exterior sound level limits established by SMC 25.08.410. Based on this review, a cumulative noise impact associated with the anticipated athletic events, vehicular traffic, overhead air traffic and other noise generating activities in the project area could potentially result in a slight exceedance of the 55 Leq (dBA) limit at adjacent residences between 7 p.m. and 10 p.m. That said, activities associated with athletic events alone are not expected to exceed the sound level limit. Based on observations during late evening athletic events occurring at the lighted eastern Jane Addams athletic field in January 2017 and at the lighted Miller Playfield athletic field in February 2020, it is anticipated that noise from vehicular traffic at Jane Addams will remain the dominant noise source. It is expected that noise from late evening athletic activities will change the character of noise experienced at the closest residential receptors; however, the contribution of noise directly from lighted athletic field activities will be below the 55 Leq (dBA) limit established by the Seattle Noise Ordinance. Field lights would be turned off by 10:00 p.m. and all athletic activities would be scheduled to end by 9:45 p.m.

The nearest residential setback from the western athletic field is approximately 75 feet from the edge of the field across 31st Avenue NE to the property line of the residential receptor. Noise levels during evening athletic activities are anticipated to be similar to those measured at the eastern monitoring location in 2017, and generally below the levels recorded at Miller Playfield. At the eastern Jane Addams site, the setback was also approximately 75 feet across 34th Avenue NE to the property line of the receptor. At this location, noise levels during short-term measurements were within the same range as those measured to the west of the western field (Table 1), confirming observations of vehicular traffic as the dominant noise source whether or not athletic activities are occurring on adjacent fields.

Noise levels at Miller Playfield ranged from 54.7 to 58.4 Leq (dBA) and had a setback of approximately 80 feet from the edge of the field to the noise monitoring location. The three setbacks provided at the respective school athletic fields and the other contributing environmental noise sources were considered when determining the potential future noise levels at Jane Addams Middle School. Environmental noise sources such as air traffic were more frequent and audible at Miller Playfield. Additionally, noise from vehicular traffic and busses on E Thomas Street were also observed and audible during measurements at Miller Playfield. Therefore, it was determined that anticipated future noise levels experienced by the nearest residential properties at Jane Addams would be less than those at Miller Playfield.

Changes in the noise environment for residences to the north and east of the project athletic field are not anticipated to be perceptible, due to the presence of Jane Addams Middle School buildings and the eastern field. New noise created from activities occurring on the projects (western) athletic field are not anticipated to result in a cumulative change in noise already experienced by residential receptors in proximity to the adjacent eastern lighted field at Jane Addams and/or southern lighted field at Nathan Hale High School.

According to SMC 25.08.400, noise limits are established for noise generated on one property as experienced on adjacent surrounding properties. Since these environmental noise limits are not cumulative, only noise generating activities from the athletic field would be considered in determining compliance with the noise ordinance. This would exclude all noise caused by domestic activity in the area as well as vehicle and air traffic noise when determining if the field is compliant with the noise ordinance. That said, even with the contribution of other existing noise sources (including organized

athletic activities on the eastern athletic field and/or at the Nathan Hale High School athletic field, nearby vehicular traffic, overhead airplanes, and residential noise), it is anticipated that the cumulative noise levels would generally remain below the 55 Leq (dBA) limit at residential receptors to the west.

The noise measurements performed at Jane Addams in January 2017 while organized athletic activities were occurring on both the eastern Jane Addams field and at the Nathan Hale field showed noise levels similar to those measured in February 2020 to the west of the project field. January 2017 measurements were between 50.9 and 52.4 Leq (dBA), while the range to the west of the project field in February 2020 was 50.6 to 53.2 Leq (dBA). Consistency of these measurements further verifies that vehicular traffic is the dominant noise source surrounding the Jane Addams Middle School athletic fields, whether organized athletic activities are occurring or not. Additionally, the January 2017 measurements occurred while multiple organized athletic activities were occurring in the immediate vicinity, both on the eastern Jane Addams field and on the Nathan Hale field to the south. As such, it is not anticipated the project would result in cumulative impacts exceeding the 55 Leq (dBA) limit if organized athletic activities were occurring on both of the Jane Addams Middle School athletic fields.

While the character of environmental noise and specific events (whistles, loud yells) during athletic activities would likely be perceptible at adjacent residential properties, especially those immediately surrounding the athletic field, these activities would all be of short duration (generally no more than a few seconds for any given event). Based on measurements at Miller Playfield (in 2020) and at the eastern Jane Adams monitoring location (in 2017) during soccer games, discrete events are not anticipated to exceed approximately 60 dBA. The highest noise levels for discrete events were associated with a loud vehicle on an adjacent street and overhead air traffic (not associated with athletic field activities), while the loudest athletic event noise levels were associated with yelling on the field. These levels would be within the limits established by SMC 25.08.410.B, which allows for short duration noises up to 15 dBA above the continuous limit as long as the hourly Leq exterior sound level limit is not exceeded.

Conclusions

Results of this assessment show that while evening use of the lighted western athletic field at Jane Addams Middle School could result in a slight increase in overall environmental noise, it is anticipated that levels would remain below the 55 Leq (dBA) limit established by the Seattle Noise Ordinance for the five adjacent residential properties to the west. Even if occasionally the noise environment achieved the 55 Leq (dBA) threshold level, this would be due to cumulative noise impacts from dominant noise sources, including vehicular traffic and overhead air traffic, as well as athletic events at all of the nearby lighted fields and other noise generating activities in the project area. While the increase in environmental noise and the character of noise is anticipated to be noticeable for residences to the west of the field, late evening athletic activities occurring before 10:00 p.m. are anticipated to be consistent with environmental noise limits of the Seattle Noise Ordinance (SMC 25.08), since the events alone are not expected to exceed the environmental noise limit. For residences to the north and west of the athletic field, further separated from the athletic field by Jane Addams Middle School buildings and the existing eastern lighted field, changes in the noise environment resulting from the project are not anticipated to be perceptible.

References

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

Seattle Department of Transportation (SDOT). 2020. Seattle Roadway Classification Map. Available at: http://seattlecitygis.maps.arcgis.com/apps/webappviewer/index.html?id=a808f790a24e474d86ecde00dae81cee Accessed on February 13, 2020.

Appendix C: Light & Glare Report

Jane Addams Middle School
Athletic Field Lighting

Light and Glare Report

April 1, 2020

Prepared for:

Seattle Public Schools
Capital Projects
Seattle, Washington

Prime Consultant:

Lighting Consultant:

Proposal

The existing multi-purpose field at Jane Addams Middle School is proposed to be lighted.

The design levels for the field lighting are proposed at a Class IV level of play. Class IV is the lowest recommended level listed in RP-8 (Recommended Practice for Sports Lighting) by the Illuminating Engineering Society of North America. The soccer field is designed to an average maintained lighting level of 29 foot-candles. The baseball field is designed to an average maintained lighting level of 48 foot-candles for the infield and 29 foot-candles for the outfield. The lighting system is designed using a .95 design factor to achieve the initial lighting levels.

These lighting design levels meet current practices for both the City of Seattle and Seattle School District for the lighting of athletic fields. The proposed lighting levels will be consistent with recently lighted fields at Robert Eagle Staff Middle School, Roosevelt High School and Ballard High School.

Existing Codes and Policies

Section 23.51B.002 (Public schools in residential zones) of the Seattle Municipal Code limits the height of lighting standards in Single Family and Lowrise zones. Section D-6-a permits light standards up to a maximum 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". In addition, Section 23.46.020 (Light and glare standards) paragraph A of the Seattle Municipal Code also requires that "Exterior lighting be shielded or directed away from adjacent uses". Also, current City of Seattle guidelines recommend that athletic field spill light not exceed 1.0 foot-candles initial at residential property lines.

To comply with existing codes an exemption to the height limit is requested. This exemption will ensure adequate illumination and reduce the amount of impacts from light and glare into the neighborhood.

Existing Conditions

A survey of the existing site was conducted on January 15th, 2020. The school site is located within a residential community along NE 110th Street between 34th Avenue NE and 31st Avenue NE. The field is located on the south side of the school site next to the existing lighted soccer field. The field is adjacent to residential homes across 31st Avenue NE. Nathan Hale High School borders the school site to the south across NE 110th Street.

The field is at a similar elevation to the adjacent properties surrounding the proposed field. There is a gradual increase in elevation for the properties extending north of the school site. There is a row of deciduous trees along the south side of the field and additional deciduous trees the west and east. The main school building is on the north side of the existing fields.

Existing Homes West of Proposed Field

Existing Homes West of Proposed Field

Existing Homes East of Existing Lighted Soccer Field

Existing Homes East of Existing Lighted Soccer Field

Jane Addams MS Building North of Proposed Field

Nathan Hale HS South of Existing Fields

Existing Light and Glare

A survey of the existing lighting in the area was conducted on January 2nd, 2020. Light readings were taken on the school site surrounding the fields and on several residential streets.

The existing light sources on the school site consist of the lighted soccer field, site lighting, building perimeter lighting, and portable building lighting on the west side of the main school building. The primary components of the lighting are the high wattage soccer field lights on eight 80' poles surrounding the field. Other lighting components are wall pack lights and floodlights mounted to the school building, wall pack lights on the portable buildings and pole mounted floodlights located in the parking lot. The soccer field lighting system was not turned on during this site visit.

Existing parking lot floodlight

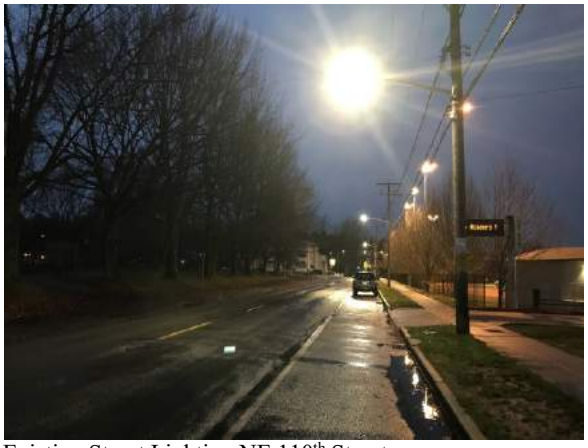
Existing lights mounted to school and portable buildings

Existing wall pack lights on restroom
Lighted Nathan Hale HS football field in background

Existing building floodlight. Soccer field light pole in foreground

The existing light sources surrounding the site are typical for a suburban residential area. The primary component of the lighting is associated with streetlights surrounding the school. The streetlights along NE 110th Street are LED cobra head style mounted to existing utility poles at an approximate height of 30' above grade. The residential streetlights along 34th Avenue NE and 31st Avenue NE are LED cobra head style mounted to existing utility poles at an approximate height of 20' above grade. The balance of the lighting is associated with adjacent residential properties with porch\yard lights and interior lighting visible through windows.

The exception for existing light sources surrounding the site are the high wattage lights mounted to eight 80' and 90' poles surrounding the football field. The lighting at this field is similar to the existing lighted soccer field at Jane Addams MS except it has a larger lighted surface area.



Existing Street Lighting NE 110th Street

Existing Street Lighting 31st Avenue NE

Existing Street Lighting 34th Avenue NE

Existing Football Field Lighting Nathan Hale HS

Various measured lighting levels on and surrounding the site are as follows (Foot-Candles).

Wall Pack Light on Restroom Building	8.0 ft-c (Max Horizontal)
Wall Pack Light on Portable Building	13.0 ft-c (Max Horizontal)
Floodlight on School Building	4.5 ft-c (Max Horizontal)
Streetlight – NE 110th Street	14.0 ft-c (Max Horizontal)
Streetlight – 31st Avenue NE	4.0 ft-c (Max Horizontal)
Streetlight – 34th Avenue NE	4.0 ft-c (Max Horizontal)
Nathan Hale HS Football Field	15.0 – 40.0 ft-c (Horizontal)

Proposed Equipment

The athletic field lighting system will consist of seven galvanized steel poles with LED shielded floodlights. Two of the poles will be 70’ tall (baseball infield) and five of the poles will be 80’ tall (soccer field\baseball outfield).

The proposed lighting for the baseball infield consists of 11 - 600 watt shielded LED floodlights. The floodlights will be mounted on the two 70’ poles located at the baseball infield. Each of these two poles will have 1 additional 575 watt shielded LED floodlight mounted at a height of 15’above grade and aimed above the field. One additional low wattage “full cutoff” area light will be mounted at a height of 30’ above grade on each pole.

The proposed lighting for the soccer field\baseball outfield consists of 26 - 900 watt shielded LED floodlights. The floodlights will be mounted on the five 80’ poles located on the north and souuth sides of the field. Each of these two poles will have 1 additional 575 watt shielded LED floodlight mounted at a height of 15’above grade and aimed above the field. One additional low wattage “full cutoff” area light will be mounted at a height of 30’ above grade on each pole.

Seattle Public Schools has proposed to use an athletic field lighting system designed to mitigate the negative impacts of light and glare. The proposed system consists of the latest technology available on the market for shielded LED floodlights designed for the lighting of athletic fields.

The use of high efficiency LED arrays provide more precise control of light to be delivered to the field. The reflector and shielding design further reduce the amount of light transmitted off site and into the atmosphere. The floodlights utilize an additional external visor mounted to the floodlight that extends in front of the floodlight. The floodlight design is similar to “full cutoff” style lights as they dramatically limit the amount of light that is emitted above the plane of the floodlight. The proposed lighting system is similar to recently lighted fields at Robert Eagle Staff Middle School, Roosevelt High School and Ballard High School.

Shielded LED Floodlight used at Roosevelt\Ballard HS Football Fields

Unshielded LED Floodlight

Analysis

The proposed lighting system will increase the amount of light in the area during evening hours. The primary impacts of the lighting system are direct glare, reflected glare, spill light (light trespass), and "sky glow".

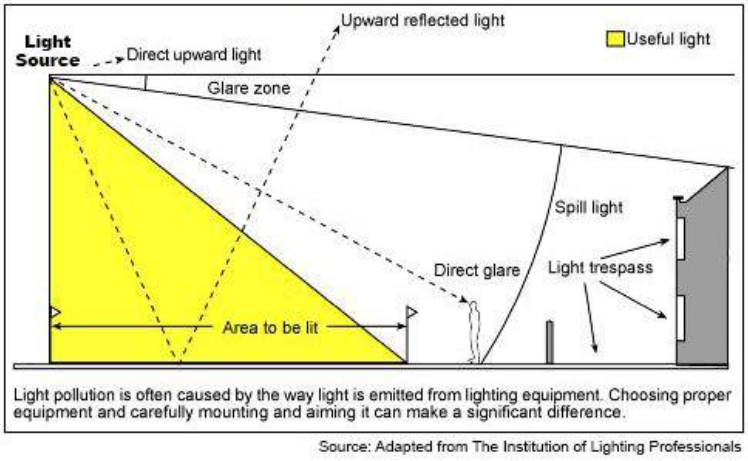


Diagram illustrating Direct-Glare, Spill Light and Light Trespass

GLARE

The athletic field lighting system will generate visible glare. The primary sources of glare from the proposed lighting system consist of direct glare from the floodlights and reflected glare (luminance) off the poles, floodlights, athletic field surface, and surfaces around the playing field.

The amount of glare that is present correlates directly to how much of the floodlight lamp and reflector can be observed. The intent of Seattle Municipal Code Section 23.24.020 is to have floodlight luminaires directed as far down as possible to reduce the amount of glare that is visible from off-site locations.

To reduce the amount of glare that is visible off-site the floodlights will need to be mounted higher than 30 feet. At a height of 30 feet the visibility of the high wattage LED's and reflectors from the adjacent residences is excessive. With the increased mounting heights floodlights will have steeper aiming angles resulting in more effective use of the floodlight shields. A smaller portion of the floodlight reflectors and lamps will be visible off site with the increased height.

Direct glare will be visible from all directions overlooking the site. The amount of glare visible depends on proximity to the site, orientation of the floodlights, distribution of intervening buildings, terrain or vegetation that would block the glare. The impacts of direct glare are extremely difficult to quantify, as varying conditions such as existing ambient light levels and current atmospheric conditions will vary the impact. Elevation differences between the level of the sports field lights and the viewpoint is a key determinant in the existence of glare at any given viewing location.

To maximize glare reduction, the owner is providing additional mitigation with the use of "full cutoff" style LED floodlights that provide the most advanced light control and shielding currently available in the sports lighting industry. Additional reduction in direct glare is also provided by internal shielding of the LED diodes. The additional shielding nearly eliminates direct view of the very bright LED's from off-site viewing locations.

Off-site exposure of low to moderate levels of direct glare is primarily to the three residences directly west of the proposed field across NE 31st Street. These properties are close to the fields with direct exposure to the light poles and floodlight assemblies. The direct glare visible at these residences is primarily due to a small portion of the light from four floodlights aimed in that direction on two of the proposed light poles. Other residential properties adjacent to the fields will have low to minimal exposure to direct glare. Residential properties that are located farther away from the field will have minimal to no direct glare impacts.

Reflected glare would be visible from all directions overlooking the site, depending direct views into the site, exposure to poles\floodlights, distribution of intervening buildings, terrain or vegetation that would block the glare. Of the surfaces that are visible from off site locations, the synthetic athletic field surface would be the greatest contributor to reflected glare. The reflected light off the floodlight housings, floodlight visors and poles would be a lesser contributor.

The residential properties that border the school site on the east and west side of the fields have the greatest amount of exposure to reflected glare. These properties are close to the fields with direct exposure to the field surfaces, adjacent grass\pavement surfaces, light poles, and floodlight assemblies. The main component of the impact is the light reflected off the synthetic turf field surface.

Residential properties that are located farther away from the field will have low to minimal reflected glare impacts. These properties will have limited to no direct views of the playing surface due to their location away from the fields. 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. This is true even though reflected glare from the floodlights and tops of the poles will be visible at greater distances due to their elevation above the field.

Glare from unshielded floodlights (Edmonds-Woodway HS)

Direct glare reduction with use of similar LED floodlights

The increased mounting heights for the athletic field lighting poles will dramatically decrease the overall amount of glare visible from off-site locations as compared to using 30' pole height. The use of the latest generation of shielded floodlights will dramatically reduce the amount of visible glare compared to standard shielded and unshielded LED floodlighting systems. It is critical that taller poles are used to minimize glare as much as practical. At 30-foot mounting heights the surrounding residences will be more fully exposed to excessive levels of direct glare from the floodlights.

SPILL LIGHT

The athletic field lighting system will generate minimal amounts of spill light. Spill light impacts will only be located at three residential properties directly west of the proposed field across NE 34th Street. The maximum amount of spill light at this location is 0.70 foot-candles.

The increase in pole height from 30 feet to 70\80 feet tall will dramatically reduce the amount of spill light generated by the lighting system. The higher pole heights allow the floodlights to be aimed down to the athletic field and away from the adjacent properties. This height also provides for greater effectiveness of the internal\external shielding on the floodlights to control the emitted light and prevent light escaping beyond the site.

The increased mounting heights increase the angle of aiming below the horizontal level of the floodlights. At a mounting height of 30 feet this project would require aiming angles of 13.0 degrees (worst case) and 19.2 degrees (best case) below the horizontal plane of the floodlight. The increased mounting height to 70\80 feet will provide for aiming angles of 31.6 degrees (worst case) and 42.9 degrees (best case) below the horizontal plane of the floodlight.

The use of steeper aiming angles allows for less direct light to be delivered beyond the boundaries of the playing surface. The external shielding blocks more direct light and more light is delivered to the field with the use of increased mounting heights. The proposed taller mounting heights are typical for this application and similar to many existing installations throughout the City. The use of shorter mounting heights is typical to the lighting of driving ranges which requires that light is delivered over hundreds of feet down range to light the back of a golf ball to distances over 300 feet.

The vertical spill light from the field lighting has been calculated along the adjacent residential property lines on the east and west sides of the site. The light readings are calculated in foot-candles. The calculated light readings do not account for the existing trees and vegetation that will provide some screening to reduce spill light at the property lines

At the standard mounting height of 70\80 feet the maximum amount of measurable light delivered along the west property line is 0.70 foot-candles. At the standard mounting height of 70\80 feet the amount of measurable light delivered along the east property line is 0.00 foot-candles.

At the non-standard mounting height of 30 feet the maximum amount of measurable light delivered along the west property line is 6.50 foot-candles. At the non-standard mounting height of 30 feet the amount of measurable light delivered along the east property line is 0.90 foot-candles.

The increased mounting height will dramatically reduce the maximum spill light at the residential property lines as compared to using 30' pole height. Increased mounting height also reduces spill light to meet recommended practice of maximum of 1.0 foot-candles set by the City of Seattle.

SKY GLOW

The athletic field lighting system will generate a minimal amount of "sky glow". The "sky glow" impacts will be at locations near the fields.

The amount of "sky glow" that is visible from a lighting system is difficult to quantify. There is no current method to calculate "sky glow" but it is recognized that there is a direct correlation to the amount of direct and reflected light that is emitted into the atmosphere. The amount of visible "sky glow" is dependent on a multitude of factors. Several factors include the amount of ambient light that exists, darkness of the night sky, amount of moonlight, atmospheric conditions, level of cloud ceiling, amount particulate matter, location of the observer and age of the observer.

To reduce the amount of "sky glow" that is visible the floodlights will need to be mounted higher than 30 feet. At a height of 30 feet the amount of direct light emitted into the atmosphere is excessive. With the increased mounting heights floodlights will have steeper aiming angles resulting in more effective use of the external shields. Most of the total light output will be directed down to the field with the increased mounting height.

To maximize "sky glow" reduction the owner is providing additional mitigation with the use of "full cutoff" style LED floodlights that provide the most advanced light control and shielding currently available in the sports lighting industry. The use of this equipment will also block a significant amount of direct light that is emitted into the atmosphere.

Based on the existing conditions and the limited impact expected for the project, the impact of the project on "sky-glow" evident in the surrounding area will likely be small. "The appearance of "sky-glow" will be very minor with heavy low overcast skies and be most prevalent during conditions of dense fog.

Due to the dramatic reductions in the amount of up-light generated there will be a zone of darkness above the field. This creates a safety hazard for baseball play to safely track balls hit high into the air. This will require the use of up-lights for the baseball field lighting system similar to the up-lights used at the recently lighted baseball field at Robert Eagle Staff Middle School. Two lower wattage floodlights will be mounted at a height 25' on six of the baseball field poles and be aimed above the field. These will provide the minimal amount of light necessary for safe play.

The increased mounting heights for the athletic field lighting poles will decrease the overall amount of "sky-glow" visible as compared to using 30' pole height. The use of the latest generation of shielded floodlights will dramatically reduce the amount of direct light emitted into the atmosphere compared to the older shielded floodlighting systems. It is critical that taller poles are used to minimize "sky-glow". The amount of "sky-glow" visible will be localized to the area above the field and immediate vicinity. The amount of "sky-glow" generated will be typical of the recently lighted field using LED floodlights at Ballard High School and Roosevelt High School and will be much less as compared to the amount generated using 30' poles.

<u>Controls</u>

The new athletic field lighting system will be connected to a fully programmable control system with remote operation. There will be separate switches installed to manually operate the lights at the site if necessary. The field lights will be on a separate lighting zone with a separate switch. This will allow the field lights to be turned off after play is completed. The area lights are on a separate zone and will remain on for a short time after each event to provide ample light for egress from the site.

FLAG NOTES:

1. VERTICAL SPILL LIGHT CALCULATION IN FOOT-CANDLES AT A HEIGHT OF 3'-0" ABOVE GRADE.
2. HORIZONTAL SPILL LIGHT CALCULATION IN FOOT-CANDLES AT A HEIGHT OF 3'-0" ABOVE GRADE.
3. ISO FOOT-CANDLE LINE AT 1.0 FOOT-CANDLES.

LEGEND:

- FLOODLIGHT POLE
- FLOODLIGHT WITH GLARE CONTROL SHIELDING, 900 WATT LED, 480 VOLT
- FLOODLIGHT WITH GLARE CONTROL SHIELDING, 600 WATT LED, 480 VOLT
- UPLIGHT WITH GLARE CONTROL SHIELDING, 575 WATT LED, 480 VOLT
- AREA LUMINAIRE, 130 WATT LED, 480 VOLT, FULL CUTOFF

POLE AND FLOODLIGHT SCHEDULE

POLE	HEIGHT	FLOODLIGHTS	UPLIGHTS	AREA LIGHTS
A2	70'	5	1	1
A3	70'	6	1	1
C1	80'	5	1	1
C2	80'	6	2	1
C3	80'	5	1	1
S1	80'	4	1	1
S2	80'	6	2	1
		37	9	7

SPILL LIGHT CALCS
SCALE: AS INDICATED

0 15 30 60 90
1 inch plotted — Feet
If measurement is other than 1 inch then the plot is reduced.

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REVISION	DATE

SEATTLE PUBLIC SCHOOLS

JANE ADDAMS MIDDLE SCHOOL ATHLETIC FIELD IMPROVEMENTS

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31353
REGISTERED
PROFESSIONAL ENGINEER

NORTH

0 20' 40'
SCALE: 1" = 20'

PROGRESS SET

DATE	01-16-20
SCALE	
DRAWN	JTW
CHECKED	CBF

FIELD LIGHTING SPILL LIGHT PLAN - STANDARD POLE HEIGHT

SHEET

ESPL1

SPILL LIGHT CALCS
SCALE: AS INDICATED

0 15 30 60 90 Feet
1 inch plotted
If measurement is other than 1 inch then the plot is reduced.

FLAG NOTES:

1. VERTICAL SPILL LIGHT CALCULATION IN FOOT-CANDLES AT A HEIGHT OF 3'-0" ABOVE GRADE.
2. HORIZONTAL SPILL LIGHT CALCULATION IN FOOT-CANDLES AT A HEIGHT OF 3'-0" ABOVE GRADE.
3. ISO FOOT-CANDLE LINE AT 1.0 FOOT-CANDLES.

LEGEND:

- ○ FLOODLIGHT POLE
- △ FLOODLIGHT WITH GLARE CONTROL SHIELDING, 900 WATT LED, 480 VOLT
- ▲ FLOODLIGHT WITH GLARE CONTROL SHIELDING, 600 WATT LED, 480 VOLT
- ⚠ UPLIGHT WITH GLARE CONTROL SHIELDING, 575 WATT LED, 480 VOLT
- ■ AREA LUMINAIRE, 130 WATT LED, 480 VOLT, FULL CUTOFF

POLE AND FLOODLIGHT SCHEDULE

POLE	HEIGHT	FLOODLIGHTS	UPLIGHTS	AREA LIGHTS
A2	29'	5	1	1
A3	29'	6	1	1
C1	29'	5	1	1
C2	29'	6	2	1
C3	29'	5	1	1
S1	29'	4	1	1
S2	29'	6	2	1
		37	9	7

Stantec
4100 194th Street SW Suite 400
Lynnwood Washington 98036-4613
(206) 667-0555

REVISION	DATE

SEATTLE PUBLIC SCHOOLS

JANE ADDAMS MIDDLE SCHOOL ATHLETIC FIELD IMPROVEMENTS

DA HOGAN
119 1st Avenue South, Suite 110
Seattle, Washington 98104
p. 206.285.0400
f. 206.285.0480

CHRISTOPHER B. FOLTZ
STATE OF WASHINGTON
31353
REGISTERED PROFESSIONAL ENGINEER

NORTH

0 20' 40'
SCALE: 1" = 20'

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DRAWN	JTW
CHECKED	CBF

FIELD LIGHTING SPILL LIGHT PLAN - 29' POLE HEIGHT

SHEET
ESPL1A

File: ESPL1A.dwg Plotted by: jwittmier Date: 17-Jan-20 10:16:15am
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Appendix D: View Assessment Photo Pages

Appendix D. View Analysis Photo Pages

Jane Addams Middle School Athletic Field

February 17, 2020

Following are four representative photographs of the existing view conditions present at Jane Addams Middle School athletic fields.

Photos 1 and 3 include existing lights for the southeast field which will be similar in height and style to the lighting proposed at the southwest field at Jane Addams Middle School.

Photo 1. View of Jane Addams Middle School southwest athletic field, taken from the northwest corner of the field, looking southeast. February 17, 2020. Existing lighting for the southeast field provides an example of the proposed lighting height and style for the southwest field.

Photo 2. View of Jane Addams Middle School athletic field, taken from the southeast corner of the field, looking northwest across field. February 17, 2020.

Photo 3. View of Jane Addams Middle School athletic field, taken from the southwest corner of the field, looking northeast across field. February 17, 2020. Existing lighting for the southeast field provides an example of the proposed lighting height and style for the southwest field.

Photo 4. View of Jane Addams Middle School athletic field, taken from the northeast corner of the field, looking southwest across field. February 17, 2020.