



Airport Way South Viaduct Over Argo Railroad Yard Seattle, Washington

SEPA Checklist

October 14, 2010

STATE ENVIRONMENTAL POLICY ACT (SEPA) ENVIRONMENTAL CHECKLIST

A. BACKGROUND

1. Name of proposed project, if applicable:

Airport Way South Viaduct Over Argo Railroad Yard

2. Name of applicant:

Seattle Department of Transportation (SDOT)

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

Ken Lee, P.E.
SDOT
P.O. Box 34966
Seattle, WA 98124-4996
Telephone: (206) 684-3514

4. Date checklist prepared

October 14, 2010

5. Agency requesting checklist:

SDOT

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

Construction is scheduled to begin in early 2011 and is estimated to be completed in 16 months.

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

No, there are no plans for future additions, expansion, or further activity related to or connected with this proposal.

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

Several technical memoranda and other reports have been prepared to inform the design of the project throughout its development. These documents are available upon request to the SDOT contact listed above.

- a. *Phase I Environmental Site Assessment – Airport Way South Viaduct Over Argo Railroad Yard*, Shannon and Wilson, Inc., January 9, 2009

- b. *Archaeological Monitoring for City of Seattle Department of Transportation's Geotechnical and Environmental Sampling of the Airport Way South Viaduct Over Argo Railroad Yard Project*, Historical Research Associates, Inc., September 2009
- c. *Traffic Technical Memorandum – Airport Way South Viaduct Over Argo Railroad Yard*, HNTB Corporation, January 11, 2010
- d. *Phase II Environmental Site Assessment – Airport Way South Viaduct Over ARGO Railroad Yard*, Shannon and Wilson, Inc., May 27, 2010
- e. *Technical Memorandum – Impact of South Park Bridge Closure on AWSV Detour Routes*, HNTB Corporation, June 4, 2010
- f. *Final Geotechnical Report – Plans, Specifications, and Estimates Phase – Airport Way South Viaduct Over ARGO Railroad Yard*, Shannon and Wilson, Inc., June 8, 2010
- g. *Shallow Soils Assessment – Airport Way South Viaduct*, HWA GeoSciences, Inc., August 20, 2010

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

There are no other applications pending for governmental approval of other proposals directly affecting the property covered by this proposal.

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

- National Pollution Discharge Elimination System (NPDES) Construction Stormwater General Permit – Washington State Department of Ecology
- Street Use Permit – SDOT

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. (Lead agencies may modify this form to include additional specific information on project description.)

The project will rehabilitate the Airport Way South Viaduct, which carries the Airport Way S four-lane arterial over the Burlington Northern Santa Fe (BNSF) Railway mainline tracks and Union Pacific Railroad (UPRR) Argo Rail Yard near the eastern edge of the Duwamish Manufacturing/Industrial Center. During the project it is expected that the Airport Way South Viaduct will be closed for up to 13 months. Please see the attached vicinity map (Figure 1) for the project location.

The project will remove the existing north and south retained-fill and timber approach structures to the viaduct and replace them with retained-fill wall structures at the same location. In addition, the project will remove and replace the existing concrete main span bridge deck. Seismic retrofits will include girder seat extensions and steel jacketing around the tops of the bridge columns along the main span.

Construction will also involve reconstruction of existing roadway and sidewalks adjacent to the project and storm drain improvements, including the installation of a new water quality treatment facility. As mitigation for the bridge closure, the project will repave S Lucile St from Maynard Ave S to Airport Way S and make spot repairs to Denver Ave S and S Dawson St before the viaduct will be closed for construction. In addition, the project will repave Airport Way S between S Lucile St and S Hardy St during the viaduct reconstruction. Existing fiber optic lines, water lines, and power poles will need to

be relocated prior to the beginning of construction on this project. The relocations will be done by the utility owners and will not be included in this project.

Approaches

The north and south approaches will have 11-foot wide inside and 12-foot wide outside (curb) lanes with a total 46-foot curb-to-curb width. Approach sidewalks will typically be at least six feet wide and separated from travel lanes by a traffic barrier. The outside of the sidewalks will have a pedestrian railing.

The north approach structure will have two sections: a 354 foot long retained-fill section with precast concrete panel walls beginning at the Airport Way S surface roadway grade and a 70-foot long bridge span between the fill section end abutment and the existing main viaduct bridge structure. The total length of the north approach structure is 424 feet. The existing Airport Way S pavement will be removed and replaced with cement concrete pavement for about 107 feet north from the approach structure, in the Summerville Place intersection to the east and a private driveway to the west. Cement concrete pavement will also be removed and replaced on Summerville Place in front of the new north approach retaining wall.

The south approach structure will have two sections: a 424 foot long retained-fill section with precast concrete panel walls beginning at the Airport Way S surface roadway grade and a 31-foot long bridge span between the fill section end abutment and the existing viaduct bridge structure. The total length of the south approach structure is 455 feet. The existing Airport Way S and S Lucile St intersection pavement will be removed and replaced with cement concrete pavement for about 40 feet south from the approach structure. Asphalt concrete pavement will be removed and replaced in the public access road to the east of the Airport Way South bridge approach in front of the new retaining wall. The maximum south approach structure height is about 24 feet above the surrounding ground.

The final design of the structural earth retaining walls will be completed by the wall manufacturer. In general, the retained-fill walls will be built up in alternating layers of wall reinforcement and backfill for structural earth wall. Precast concrete wall panels will then be hung on the face of the wall to provide an architectural finish. Once the walls are complete, all the finishing work would be completed on the project including paving, placing traffic barrier, curb, sidewalks, pedestrian railing, pavement markings, illumination, signal modifications, permanent signing, constructing new storm drain systems, and constructing a permanent stormwater water quality treatment facility/Best Management Practice (BMP).

Main Span Bridge

The total length of the main span bridge is 824 feet and it has two ten-foot wide inside lanes, two eleven-foot wide outside lanes, and two six-foot wide sidewalks. The existing sidewalk and pedestrian railing on the main span will remain in place.

The staging and methods of the approach and main span bridge demolition and construction will be determined by the contractor. It is anticipated that at least one of the existing timber approaches will need to remain in place for construction access during the main span deck demolition and replacement. One possible staging approach would be to demolish the main span deck starting from the south end moving towards the north, while maintaining the existing timber north approach structure for

construction access for debris removal. The main span deck replacement would then be constructed from the south to the north simultaneously as the existing deck is removed. Once the main span deck demolition is complete, the north approach structure would be completely demolished and the ground would be improved by compaction grouting. Once the main span deck replacement is complete, the south approach structure would then be completely demolished and the ground would be improved by compaction grouting. The new piers and the retained fill walls would be constructed after the ground improvement is complete.

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

The project is located along Airport Way S between Summerville Place and S Hardy St and along S Lucile Street between Maynard Avenue S and Airport Way S near the Georgetown neighborhood of Seattle, Washington. It is within Section 20, Township 24 North, Range 4 East, W.M. The project is primarily within the existing City of Seattle street right of way, but will require temporary and permanent construction easements from several properties to the west of the viaduct for construction access and future maintenance.

B. ENVIRONMENTAL ELEMENTS

1. Earth

- a. General description of the site (circle one):** Flat, rolling, hilly, steep slopes, mountainous, other...

The project site beneath and around the bridge is flat.

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

The steepest slope on the site is approximately 5.7 percent, the slope of the viaduct approaches. The surrounding ground is flat.

- 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 prime farmland.**

The project corridor consists of modified land (mainly fill) underlain by more than 100 feet of alluvium. The fill is 5 to 7 feet thick along the south approach and 5 to 12 feet thick along the north approach. The alluvium ranges from gravel to sand to silt and clay, with related peat and other organic deposits, and is intercalated with marine sand.

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

No, there are no surface indications or history of unstable soils in the project vicinity.

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

During replacement of the viaduct an estimated 8,300 cubic yards of material will be excavated for the placement of wall and structural footings and trenching for utility conveyance and facilities. An estimated 23,100 cubic yards of fill material will be placed for structural and utility trench backfill. Fill material is expected to be primarily borrow that is brought onsite from an approved source.

There will be minimal filling or grading associated with repaving activities along S Lucile St, S Dawson St, Denver Ave S, and Airport Way S.

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

There will be a potential for erosion during construction activities that expose soils, particularly during pavement removal and excavation. However, due to the flatness of the site and the use of Best Management Practices (BMPs) to control sediment and water the potential for erosion will be minimal.

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

Nearly 100 percent of the project site will be covered with impervious surfaces after project construction. There will be no net increase to the amount of existing impervious area.

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

A Temporary Erosion and Sediment Control (TESC), Stormwater Pollution Prevention Plan (SWPPP) and Spill Prevention, Control, and Countermeasures (SPCC) plan will be followed during construction as required by the National Pollution Discharge and Elimination System (NPDES) Construction Stormwater General Permit and the *City of Seattle Standard Specifications for Road, Bridge, and Municipal Construction*. BMPs from the TESC Plan and the SWPPP will be implemented to minimize erosion on the project site. The contractor will be required to implement, inspect, maintain, and modify if needed, all BMPs that are on the site to ensure maximum protection from erosion. All temporary erosion and sediment controls will be consistent with the *City of Seattle Stormwater Manual, Vol. 2: Construction Stormwater Control Technical Requirements Manual*.

As the proposed retained-fill approach structures will be much heavier than the timber trestle structures they replace, the project will densify the surrounding soil through a high-pressure injection of grout to prevent ground settlement. This will reduce the amount of settlement to two inches or less from an estimated 12 to 16 inches that would otherwise occur.

2. Air

- a. **What types of emissions to the air would result from the proposal (i.e., dust, automobile, odors, industrial wood smoke, greenhouse gases) during construction and when the project is completed? If any, generally describe and give approximate quantities if known.**

Demolition of the existing approach pavement, timber trestles, and concrete retaining walls, and excavation for wall footings, grade beams and utilities will release dust and exhaust fumes from diesel and gasoline fueled equipment. Demolition and excavation activities will last approximately 13 months. These construction activities would result in temporary emissions of pollutants. These emissions would vary from day to day, depending on the level of activity, specific operations, and weather conditions. Air quality is expected to return to normal after construction is completed.

The project will result in approximately 17,740 metric tons of carbon dioxide equivalent (MTCO_{2e}) from the cement used in construction, roadway reconstruction work, and truck trip fuel consumption during construction. Please see the Greenhouse Gas Emissions Worksheet (Figure 2) for an explanation of how the MTCO_{2e} was calculated.

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

No, there are no off-site sources of emissions or odor that will affect the project.

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

During construction, impacts to air quality will be reduced and controlled through implementation of standard federal, state, and local emission control criteria in accordance with the City's *Standard Specifications for Road, Bridge and Municipal Construction*. The City's specifications require that the contractor maintain air quality to comply with the National Emission Standards for Hazardous Air Pollutants. The following is a list of actions that may be used to reduce and control fugitive dust and vehicle emissions:

- Regular street cleaning as necessary.
- Reduce exhaust emissions by minimizing vehicle and equipment idling.
- Use phased development to keep disturbed areas to a minimum.
- Promptly clean up spills of transported material on public roads.
- Schedule work tasks to minimize disruption of the existing vehicle traffic on streets.
- Cover dirt, gravel, and debris piles as needed to reduce dust and wind-blown debris.

3. Water

- a. **Surface:**

- 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.**

No, there are no surface water bodies on or in the immediate vicinity of the project site.

- 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.**

Not applicable.

- 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.**

Not applicable.

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

No, the project will not require any surface water withdrawals or diversions.

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

No, the project does not lie within a 100-year floodplain.

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

No, the project will not discharge any waste material to surface waters.

b. Ground:

- 1) Will ground water be withdrawn, or will water be discharged to ground water? Give general description, purpose, and approximate quantities if known.**

Construction of the approach structures wall panels and grade beams and abutments will be above the groundwater, which is about 7 to 10 feet below ground surface. Groundwater level is anticipated to vary seasonally, rising during the wet winter months and falling during the summer.

Construction may encounter ground water during construction of the water quality treatment facility and connection to the existing 18-inch storm drain pipe beneath Airport Way S, north of the north approach. If groundwater enters the excavation dewatering will be necessary.

- 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 or runoff will be discharged into the ground.

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 primary source of runoff from the project site is storm water. Runoff will be collected from the viaduct and directed to the combined sanitary and stormwater system at the south end (Airport Way S at S Lucile St) and to the separate storm drain system at the north end, which discharges directly to the Duwamish Waterway at the Diagonal Avenue S storm drain outfall. Runoff flowing south to the combined system is treated at the King County West Point Wastewater Treatment Plant. Runoff flowing north through the outfall will first pass through a stormwater treatment filter to remove contaminants before entering the Duwamish.

Stormwater runoff from S Lucile St flows to the combined sanitary and stormwater system, while runoff from S Dawson St and Denver Ave S drains to the combined system or is discharged to the Duwamish, depending on the location within the street. The project will not change the existing drainage patterns on S Lucile St, S Dawson St, or Denver Ave S.

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

Building material and waste debris could enter groundwater through accidental spills during project construction or operation, particularly during excavation activities. Water runoff that contains spilled hazardous material could enter the Duwamish Waterway through the separate stormwater drainage system.

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

A TESC, SWPPP, and SPCC plan will be developed and followed during construction as required by the NPDES Construction Stormwater General Permit and the *City of Seattle Standard Specifications for Road, Bridge, and Municipal Construction*. BMPs from the TESC Plan and the SWPPP will be implemented to reduce and control runoff onto and from the project site. The contractor will be required to implement, inspect, maintain, and modify if needed, all BMPs that are on the site to ensure maximum protection from runoff water impacts. All stormwater controls will be consistent with the *City of Seattle Stormwater Manual, Vol. 2: Construction Stormwater Control Technical Requirements Manual*.

After construction, runoff from pollution-generating impervious surfaces will be treated before discharge to the separate storm drain system for the north portion of the project. Runoff from the south portion of the project will be collected by the combined sewer system and treated at the King County West Point Wastewater Treatment Plant.

4. Plants

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

- deciduous tree: alder, maple, aspen, other
- evergreen tree: fir, cedar, pine, other
- shrubs
- grass
- pasture
- crop or grain
- wet soil plants: cattail, buttercup, bullrush, skunk cabbage, other
- water plants: water lily, eelgrass, milfoil, other
- other types of vegetation (Himalayan blackberry)

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

The existing landscaped traffic island at Airport Way S and S Lucile St will be removed and replaced with similar landscaping. The existing island has about 690 square feet of landscaping with one tree and low height shrubs. The tree will be protected and retained during construction. In addition, approximately 6,000 square feet of vegetation—primarily blackberry vine and other weedy plants—will be removed from beneath and adjacent to the existing south and north approaches.

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

There are no threatened or endangered plant species on or near the project site.

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

The project will preserve the existing tree on the traffic island will replace the existing plantings with native shrubs.

5. Animals

a. Circle any birds and animals which have been observed on or near the site or are known to be on or near the site (indicated by **bold, underlined font):**

birds: hawk, heron, eagle, **songbirds**, other:
mammals: deer, bear, elk, beaver, other:
fish: bass, salmon, trout, herring, shellfish, other:

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

There are no threatened or endangered animal species on or near 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. The project site is devoid of major vegetation such as shrubs or trees that would provide habitat for migratory birds; the project will not impact any migratory species.

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

No impacts to wildlife are expected; therefore no measures are necessary.

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.

Electric energy will be used for roadway lighting and traffic signal operation.

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

No, the project will not affect the potential use of solar energy by adjacent properties.

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

There are no energy conservation features included in this project. As no energy impacts are anticipated no measures to reduce or control energy impacts are proposed.

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.

Contaminated Materials have been identified within the Project Site and include contaminated soils, creosote treated timbers, biological waste beneath the existing bridge approaches, and assumed lead-based paint on the steel portions of the bridge structure. Lead-based may also be present in the soil directly beneath the bridge. Some amount of paint removal will be required to prepare existing steel members for concrete deck panel replacement and steel elements.

Petroleum hydrocarbons, volatile organic compounds (VOCs), semi-VOCs and polycyclic aromatic hydrocarbons (PAHs) and metals were detected in the soil and groundwater within the boundaries of the Project Site. Cadmium was detected at a concentration characteristic of dangerous waste in one soil sample collected from a borehole outside the Project Site boundaries. Concentrations of carcinogenic-PAHs, lead and cadmium were detected at concentrations exceeding MTCA Method A Cleanup levels in soil samples collected within the Project Site.

Trichloroethylene (TCE), arsenic, chromium and lead were detected above their respective

MTCA Method A Cleanup level in groundwater samples collected beneath the northern and southern approach of the viaduct.

The Owner has submitted analytical data to the Department of Ecology to obtain a Contained in Designation for the management of potentially contaminated soil, which would allow the contractor to dispose of the excavated soils as non-Dangerous Waste. The Contractor is responsible for reviewing and following the requirements of the Designation as it pertains to the management of contaminated materials for the project.

There are six groundwater monitoring wells beneath the south approach that were installed as part of a previous private investigation. These wells will be decommissioned and removed by the owner before the project commences.

1) Describe special emergency services that might be required.

Typical emergency response services (fire and emergency medical) would be required in the event of a construction accident related to a hazardous material spill from construction activity. No other special services would be required.

2) Proposed measures to reduce or control environmental health hazards, if any:

To address possible accidents related to the use of hazardous materials during construction the contractor will develop a site-specific health and safety plan, which will prescribe BMPs to minimize and control environmental health hazards. An SPCC plan will prescribe actions to be taken in the event of a spill; the contractor will be required to immediately contain the spill and begin cleanup procedures.

The project will follow all laws and regulations concerning the disposal of excavated material. The project contract specifications will contain requirements to monitor and characterize potentially contaminated soil and groundwater and will specify procedures for handling and disposal of material above MTCA cleanup levels and material as identified as Dangerous Waste (defined by Chapter 173-303-100 WAC).

b. Noise

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

The project is in an area with transportation noise from train operation on the BNSF mainline tracks, the UPRR Argo Yard, Interstate 5 (I-5) and city streets. The project is not noise sensitive and will not be affected by area noise.

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

There will be temporary noise from construction equipment on the site. Construction noise during the replacement of the viaduct will be created from equipment such as dump trucks,

excavators, cranes, concrete mixer, and pavement scarifiers. At a distance of 50 feet, the noise level generated by most construction activities will range from approximately 75 dBA to 95 dBA¹. Impact and vibratory pile drivers may be used during reconstruction of the viaduct (not for the repaving components of the project), which could result in periodic, short-term noise levels up to 110 dBA at 50 feet.

Noise from construction equipment may occur between the hours of 7 am and 10 pm weekdays, and 9 am to 10 pm weekends during construction. A noise variance will be obtained from the Seattle Department of Planning and Development for any work outside normal construction hours.

Traffic will be the source of long-term noise from the project. The project will not add travel lanes and is not expected to result in an increase in traffic volume or noise from existing conditions.

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

SMC 25.08.425, which prescribes limits to noise and construction activities, will be fully enforced while the project is under construction. The following measures may be used to minimize noise impacts during construction:

- Whenever possible, operation of heavy equipment and other noisy activities will be limited to non-sleeping hours.
- Effective mufflers will be installed and maintained on equipment.
- Equipment and vehicle staging areas will be located as far from residential areas as possible.
- Idling of power equipment will be minimized.

The majority of the construction will take place within a heavy industrial zone adjacent to and over BNSF Railway mainline tracks and the UPRR Argo Rail Yard and in close proximity to I-5. Noise generated from replacement of the viaduct is expected to attenuate to background levels before reaching any sensitive receptors, which include Maple Elementary School and single family residences between 700 and 900 feet away. Noise generated by repaving activities will occur closer to residences but will be temporary and transitory in nature, as work progresses along the roadways.

8. Land and shoreline use

a. What is the current use of the site and adjacent properties?

The site is a railroad and highway transportation corridor with adjacent industrial, commercial, and rail transportation and utility corridor uses.

¹ This range is based on construction noise emission data found in the Federal Highway Administration (FHWA) *Construction Noise Model User's Guide*. This data is often cited by FHWA and the Washington State Department of Transportation in discussions of impacts from construction noise.

b. Has the site been used for agriculture? If so, describe.

The site has not been used for agriculture in recent history.

c. Describe any structures on the site.

The site has existing timber trestle approach structures to the concrete and steel viaduct over railroad tracks. The beginnings of the north and south approach structures are retained earth fill in cast-in-place concrete walls. Structures along roadways include signal and electrical utility poles.

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

The two existing viaduct approach structures will be demolished. Both approaches include retained earth fill and timber trestle sections. Sections of existing roadway and driveway pavement will be removed north of the north approach and south of south approach for approach structure and utility construction. Similarly, sections of existing roadway will be removed and replaced as part of the roadway reconstruction along S Lucile St.

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

The site, which includes the viaduct and repaving areas, is zoned primarily as Industrial General (IG) 1 U/85 and IG2 U/85. Properties on the west side of Airport Way S are zoned Commercial 2-40 and Neighborhood Commercial 3-40 between S Nebraska St and S Hardy St.

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

The City of Seattle Comprehensive Plan Future Land Use Map designates the Airport Way S Viaduct site and surrounding area as "Industrial Areas." Airport Way S including the viaduct has a "Major Truck Street" classification and an "Industrial Access Street" Street Type in the Transportation Strategic Plan.

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

Not applicable.

h. Has any part of the site been classified as an "environmentally sensitive" area? If so, specify.

The entire site is mapped as a liquefaction prone Environmentally Critical Area.

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

There will be no residences or work space created as part of this project.

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

The project will not displace any people.

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

None required. Olympic Foundry currently has a Street Use Permit for 14,149 square feet of material storage under the north approach trestle. Olympic Foundry will be contacted at least 30 days before their permit is revoked and the area under the trestle is needed for the approach replacement.

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

The project will replace and repair existing transportation facilities. As it will not change any land use or zoning classification no measures are proposed.

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

The project will not provide housing.

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

The project will not eliminate any housing.

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

There will be no impacts to housing, therefore no measures are needed.

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

The north and south approach roadways will be about 26 feet above ground at their highest locations, similar to the existing approaches. Pedestrian barriers and railings on the outside of the approach will be about five feet above the roadway and light standards and luminaries will be about 30 feet above the roadway.

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

The existing timber trestles allow views from adjacent industrial properties under the approach roadways. These views are presently nearly completely obstructed under the north approach by the material stored there, and partially obstructed under the south approach by parked vehicles. The replacement approaches will have panel-covered fill material with no view under the roadway. The existing bridge railing with wire mesh allowing views from the roadway will be replaced with similar open railing.

The replacement structures will have the same roadway height as the existing structure and will not alter views over the top of the structure.

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

The cast-in-place and precast wall panels will have a textured treatment to improve the aesthetics of the approach structures. New pedestrian and traffic railings will be consistent with the overall design of the existing bridge. The project will use standard Seattle City Light utility poles, mast arms and luminaries, with a color to be approved by the City.

11. Light and glare

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

Overhead roadway illumination and vehicle lights will be the source of nighttime light and glare from the project.

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

No, light or glare from the project will not be a safety hazard or interfere with views.

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

Existing off-site sources of light or glare will not affect the project.

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

The project will not have light or glare impacts, therefore no measures are needed.

12. Recreation

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

There are no formal recreational facilities within the immediate vicinity of the project. However, Airport Way S is shown on the Seattle Bicycling Guide Map as an unmarked, unsigned arterial connector for cyclists.

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

Airport Way S would not be available for recreational bicycle use during construction.

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

In addition to motorized vehicle detours routes and information programs, bicyclists would be directed to alternate routes. 1st Ave S to the west of the project will likely be a designated alternate

bicycle route during construction as it is currently a designated bicycle route with shared lane pavement markings (sharrows).

13. Historic and cultural preservation

- a. Are there any places or objects listed on, or proposed for, national, state, or local preservation registers known to be on or next to the site? If so, generally describe.**

There are no places or objects listed on, or proposed for, national, state, or local preservation registers known to be on or next to the site. The project area is not within a National Register of Historic Properties (NRHP) or City of Seattle historic district.

The City of Seattle Landmarks Preservation Board has determined it is unlikely the Airport Way South Viaduct would meet the standards for designation as an individual landmark.

- b. Generally describe any landmarks or evidence of historic, archaeological, scientific, or cultural importance known to be on or next to the site.**

The Georgetown neighborhood of Seattle contains several historic residences, commercial buildings, and industrial buildings, as found on Seattle Department of Neighborhoods and Washington Department of Archaeology and Historic Preservation historic property inventories. However, there are no NRHP or City Landmark properties adjacent to the project area.

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

No measures are proposed. Project construction along S Lucile St, S Dawson St, Denver Ave S, and Airport Way S, including replacement of the viaduct, will remain within city street right-of-way and easement areas and will not impact any historic properties.

14. Transportation

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

Airport Way S is a north-south principal arterial west of and parallel to I-5 between Tukwila and downtown Seattle. S Lucile St is an east-west collector arterial at the south end of the Airport Way South Viaduct, connecting to East Marginal Way S on the west and 15th Ave S on Beacon Hill to the east.

- b. Is the site currently served by public transit? If not, what is the approximate distance to the nearest transit stop?**

King County Metro Routes 106, 131, and 134 travel along Airport Way S through the project area. There are no stops on the viaduct. Northbound and southbound stops are located immediately north of the viaduct and within 600 feet south of the viaduct. Sound Transit commuter rail runs along BNSF mainline tracks beneath the viaduct. Transit does not run along S Lucile St.

c. How many parking spaces would the completed project have? How many would the project eliminate?

The project will not provide additional parking spaces or remove any formal parking. However, the project will remove the open right-of-way area beneath the south approach structure, which is currently used for informal parking.

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

The project will not require any new roads or streets. In addition to rehabilitating the viaduct, the project will reconstruct concrete and asphalt elements of Airport Way S and S Lucile St, as described above. Temporary signal timing revisions along the detour route may be required to improve the flow of re-routed traffic.

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

The project is in the immediate vicinity of rail transportation. The viaduct crosses BNSF Railway mainline tracks used by BNSF freight, Sounder commuter rail, and Amtrak passenger rail services. The project also crosses and is adjacent to UPRR tracks in the Argo Yard used for freight services.

f. How many vehicular trips per day would be generated by the completed project? If known, indicate when peak volumes would occur.

The completed project will not generate any additional trips beyond those existing.

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

The project will designate a motorized vehicle detour route during construction period. Pedestrian and bicycle travel detour routes will also be designated. Public outreach will be conducted to inform viaduct users and area businesses and residents of pending viaduct closures and alternate routes. Access to adjacent businesses and properties will be maintained during construction with periodic short term closures to be coordinated with the owners.

The Seattle Department of Transportation is in discussion with King County on service revisions to routes 106, 131, and 134 during full closure of the viaduct.

During the bridge closure, traffic congestion will increase along the detour route, resulting in reduced levels of service and increased wait times at intersections. However, SDOT will monitor traffic conditions throughout the construction period and adjust traffic signal times and phasing as necessary to improve traffic flow to the extent feasible.

15. Public services

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

The project will not result in an increase need for public services. It will not change any existing land use, generate additional trips, or promote additional development. The project will, however, temporarily impact some public services, such as King County Metro Transit, fire, police, and medical services during closure of the viaduct.

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

SDOT will work closely with police, fire and medical emergency services during the closure of the viaduct to ensure that service response times remain at acceptable levels. For example, Opticom signal prioritization systems will be installed along the traffic detour route to allow fire department vehicles right-of-way through signalized intersections. As an emergency vehicle approaches an intersection along the detour route, a sensor on the vehicle will trigger the traffic signal to turn green, allowing the vehicle to pass.

Utility relocation work would be required for the City of Seattle water line located on the east side of the north approach structure. Construction of a new water quality treatment facility and storm drain system could require modifications to the existing storm drain system and side sewers serving adjacent properties. No other disruptions of major utilities are anticipated. Any short-term disruption of service connections will be coordinated with affected property owners and tenants.

16. Utilities

- a. **Circle utilities currently available at the site: electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other.**
- b. **Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.**

The project will use electricity provided by Seattle City Light for traffic signals and lighting, water for fire hydrant systems, the combined sewer system for drainage to the south and the storm drain system for drainage to the north. Seattle Public Utilities provides water, sewer and storm drain utilities. Project construction will require connections to these systems.

No disruption of major utilities are anticipated. Any short-term disruption of service connections will be coordinated with affected property owners and tenants.

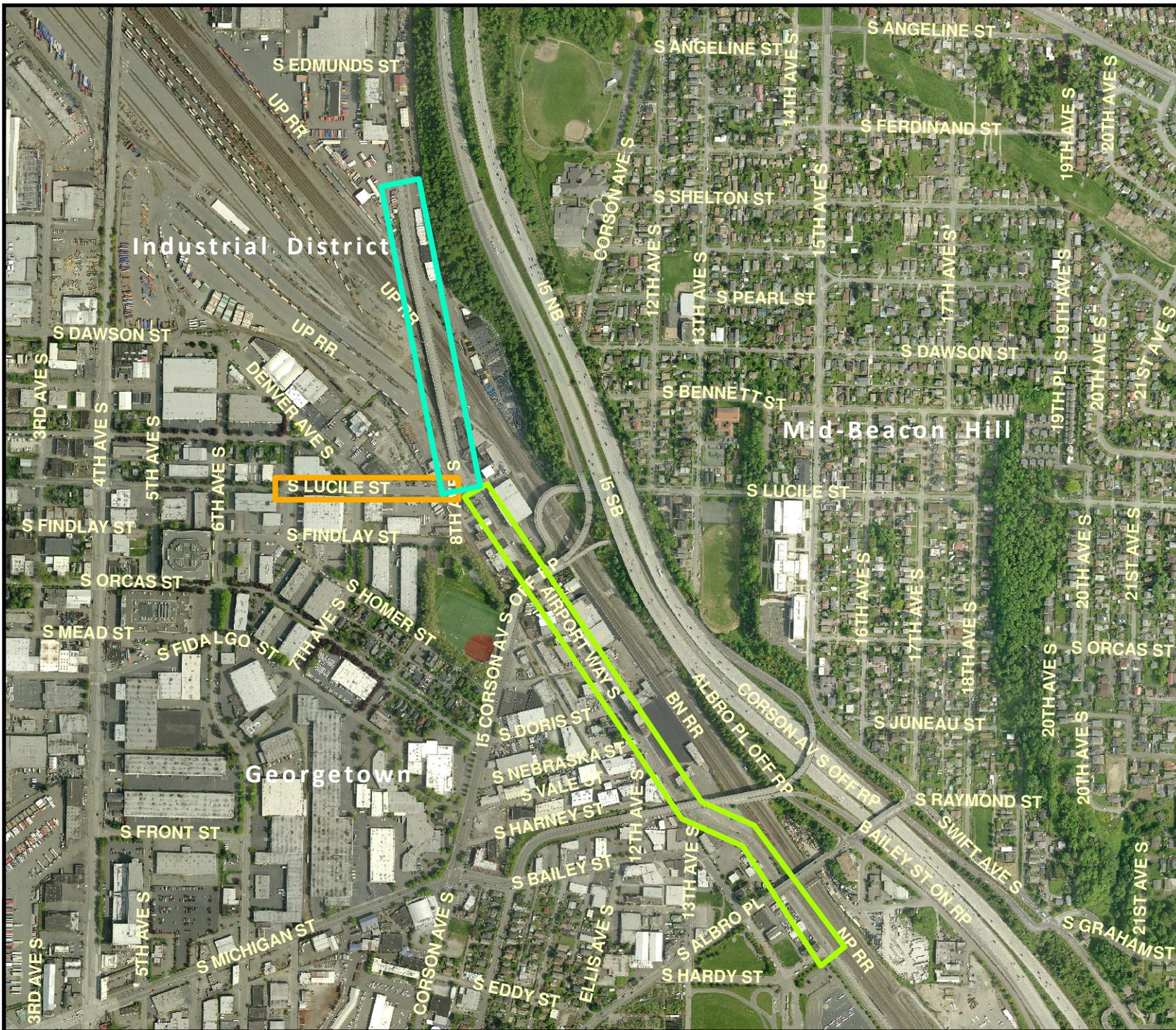
The project is adjacent to and over a high pressure natural gas transmission pipe owned by Puget South Energy. While the project is designed to avoid disruption of or impact to this utility, It is possible that the structural earth wall may cause settlement to the gas line. The gas line will be monitored for settlement during construction. If the settlement exceeds the acceptable threshold, the gas line may need to be uncovered by excavation during construction to provide settlement mitigation to protect the pipe.

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: *Ken Lee*

Date Submitted: *10/15/2010*



Airport Way South Viaduct Over Argo Railroad Yard

- Mainspan and approach replacement
- S Lucile St repairs
- Airport Way S repairs



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Coordinate System:
 State Plane, NAD83-91,
 Washington, North Zone
 Orthophoto Source:
 Pictometry 2007

PLOT DATE : Oct 14, 2010
 AUTHOR : Mark Mazzola



Figure 1 - Vicinity Map

**Airport Way South Viaduct Over Argo Railroad Yard
Figure 2**

Greenhouse Gas Emissions Worksheet

| | <i>VMT for project¹</i> | <i>gallons fuel/mile²</i> | <i>lbs CO₂e/ gallons fuel³</i> | <i>MTCO₂e for fuel use</i> |
|---|--|--|---|---|
| Material haul | 237,000 | 0.250 | 26.55 | 714 |
| Worker commute | 160,000 | 0.050 | 24.30 | 88 |
| Construction equipment | 12,800 (hours) | 4 (gal/hour) | 26.55 | 39 |
| Total | | | | 841 |
| | <i>Cubic yards of concrete</i> | <i>lbs cement/cubic yard of concrete</i> | <i>MTCO₂e/ ton of cement⁴</i> | <i>MTCO₂e for cement use</i> |
| Approach walls | 3,719 | 600 | 0.97 | 1,082 |
| Main span deck and roadway | 1,122 | 600 | 0.97 | 327 |
| Total | 4,903 | 600 | 0.97 | 1,427 |
| | <i>Square Feet of Roadway Reconstruction</i> | | <i>MTCO₂e/1,000 sf of asphalt or concrete pavement⁵</i> | <i>MTCO₂e for roadway reconstruction</i> |
| Approaches | 55,680 | | 50 | 1,958 |
| S Lucile St, S Dawson St, Denver Ave S | 49,900 | | 50 | 2,495 |
| Airport Way S | 203,861 | | 50 | 10,193 |
| Total | 309,441 | | 50 | 15,472 |
| Total Metric Tons of CO₂ equivalent | | | | 17,740 |

Data sources:

1. Vehicle miles travelled (VMT) for viaduct demolition, placement of mainspan bridge deck, approach fill and construction of panel walls, and other items, and worker commute over the 16-month construction period.
2. Gallons of fuel per mile: This is the assumed average fuel consumption for heavy trucks (diesel fuel) importing and exporting material, and personal vehicles (gasoline fuel) for worker commuting. On-site construction equipment such as cranes and earth moving equipment is assumed to consume diesel fuel at a 4 gallon per hour rate.
3. Pounds of CO₂ equivalent per gallon of diesel: The CO₂ emissions estimates include the extraction, transport, and refinement of petroleum as well as their combustion. (*Life-Cycle CO₂ Emissions for Various New Vehicles*. 2006. RENew Northfield.)
4. Metric tons of CO₂ equivalent per ton of cement: This figure represents a national weighted average for cement production in the U.S., as presented in *CO₂ Emissions profile of the U.S. Cement Industry* (L. Hanle, US EPA; K. Jayaraman, ICF Consulting), presented at the 13th International Emission Inventory Conference, "Working for Clean Air in Clearwater" in 2004. Available: <<http://www.epa.gov/ttn/chief/conference/ei13/index.html#ses-2>>.
5. Metric tons of CO₂ equivalent per 1,000 sf of asphalt or concrete production: Based on King County's conservative estimate for the embodied emissions over a development's life cycle. (Meil, J. *A Life Cycle Perspective on Concrete and Asphalt Roadways: Embodied Primary Energy and Global Warming Potential*. 2006; Park, K, Hwang, Y., Seo, S., M.ASCE, and Seo, H., "Quantitative Assessment of Environmental Impacts on Life Cycle of Highways," *Journal of Construction Engineering and Management*, Vol 129, January/February 2003; Stripple, H. *Life Cycle Assessment of Road. A Pilot Study for Inventory Analysis*. Second Revised Edition. IVL Swedish Environmental Research Institute Ltd. 2001; Treloar, G., Love, P.E.D., and Crawford, R.H. "Hybrid Life-Cycle Inventory for Road Construction and Use." *Journal of Construction Engineering and Management*. January/February 2004.)