

SEPA ENVIRONMENTAL CHECKLIST

A. BACKGROUND

1. Name of proposed project, if applicable:

South Lake Union Streetcar Project

2. Name of applicant:

City of Seattle

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

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4. Date checklist prepared:

April 2005

5. Agency requesting checklist:

City of Seattle, Department of Planning and Development

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

Construction of the proposed streetcar line and associated facilities is planned to take approximately 12-18 months and the start of streetcar operation is planned to occur in 2007.

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

Other extensions of the City of Seattle streetcar system may occur in the future. A possible extension of the South Lake Union line north to the Eastlake neighborhood and the University District is being studied. Separate environmental review would take place for an extension of the line.

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

The following documents have been prepared in support of this project, and are attached to this checklist:

- *Seattle Streetcar Network and Feasibility Analysis*, Seattle, Washington, Parsons Brinckerhoff in association with Nelson Nygaard Consulting Associates and URS Corporation, June 30, 2004.
- *South Lake Union Streetcar Project, Air Quality Technical Report*, Seattle, Washington, Parsons Brinckerhoff, March 2005.
- *South Lake Union Streetcar Project, Project Description*, Seattle, Washington, Parsons Brinckerhoff, March 2005.

- *South Lake Union Streetcar Project, Geology and Soils Technical Report*, Seattle, Washington, GeoEngineers, March 2005.
- *South Lake Union Streetcar Project, Cultural and Historical Resources Technical Report*, Seattle, Washington, Parsons Brinckerhoff, April 2005.
- *South Lake Union Streetcar Project, Land Use and Visual Quality Technical Report*, Seattle, Washington, Parsons Brinckerhoff, March 2005.
- *South Lake Union Streetcar Project, Noise and Vibration Technical Report*, Seattle, Washington, Parsons Brinckerhoff, March 2005.
- *South Lake Union Streetcar Project, Phase I Environmental Site Assessment Technical Report*, Seattle, Washington, Parsons Brinckerhoff, March 2005.
- *South Lake Union Streetcar Project, Section 4(f) Evaluation Technical Report*, Seattle, Washington, Parsons Brinckerhoff, March 2005.
- *South Lake Union Streetcar Project, Social Elements Technical Report*, Seattle, Washington, Parsons Brinckerhoff, March 2005.
- *South Lake Union Streetcar Project, Stormwater Technical Report*, Seattle, Washington, Parsons Brinckerhoff, March 2005.
- *South Lake Union Streetcar Project, Transportation Technical Report*, Seattle, Washington, Parsons Brinckerhoff, March 2005.

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.

A NEPA EA is being prepared for the Mercer Corridor Project, which crosses the project area at Mercer and Valley Streets.

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

The following is a list of potential permits that may be required for the proposed project:

National Historic Preservation Act, Section 106 Approval
 Shoreline Substantial Development Permit
 National Pollutant Discharge Elimination System (NPDES) Baseline General Permit for Construction
 City of Seattle Clearing and Grading Approval
 City of Seattle Drainage Approval
 City of Seattle Side Sewer Permit for Temporary Dewatering on Construction Sites
 King County Waste Discharge Approval
 City of Seattle Building Permit
 City of Seattle Demolition Permit
 Puget Sound Clean Air Agency Demolition Notice
 City of Seattle Street Use Permit

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 City of Seattle proposes to construct a new streetcar line to serve the downtown, Denny Triangle and South Lake Union areas of Seattle. This line will provide local transit service, connect to the regional transit system, accommodate economic development, and contribute to neighborhood vitality.

The proposed South Lake Union Streetcar will begin in the vicinity of the intersection of Westlake Avenue and Olive Way/5th Avenue in downtown Seattle (see Figure 1). It will extend north through the Denny Triangle and South Lake Union neighborhoods and terminate in the vicinity of Fairview Avenue N. and Ward Street near the Fred Hutchinson Cancer Research Center. The line will connect these neighborhoods and destinations with the regional transit hub at Westlake Center, which will be a major connection point for light rail, buses and monorail. The length of the proposed streetcar line is approximately 1.3 miles in each direction (2.6 track miles total) and the tracks and stops will be constructed entirely within existing right-of-way. The project will include three new traffic signals.

The streetcar will share the street with automobile traffic except along Valley Street where the tracks will be in the existing railbank area north of the street. Initially, the streetcar is expected to operate for 15 hours per day (roughly 6 AM to 9 PM), with fifteen minutes between cars. Ultimately, the system is expected to operate for 18 hours per day (roughly 5 AM to 11 PM), with ten minutes between cars.

As shown in Figure 1, streetcar stops will typically be side-platform corner-curb bulbs located within the parking lane at the far side of an intersection. Two stops will be center platform configurations: one within Fairview Avenue N. at the Fred Hutchinson campus and one in the railbank north of Valley Street adjacent to South Lake Union Park.

Bi-directional, low-floor, single-car, articulated streetcars are proposed. They are typically 66 feet long, 11.5 feet high, and 8 feet wide and run on standard gauge tracks. The streetcar will be powered by an overhead electrical system similar to those used by streetcars in cities such as Tacoma, Washington and Portland, Oregon.

A maintenance facility at the southwest corner of Fairview Avenue N. and Valley Street is also planned as part of this project. The maintenance facility building will be approximately 100 x 70 feet. Two additional yard storage tracks will also be provided. Daily vehicle maintenance and inspections and minor repairs will be completed at the facility.

LEGEND

- Proposed Streetcar Alignment
- Proposed Station Locations
- Proposed Maintenance Facility



▲ NORTH Scale: 0 200 400



**SOUTH LAKE UNION STREETCAR
PROJECT AREA**



Figure 1: Project Area

The construction method for the streetcar track system will involve removal of the top 12 to 18 inches of pavement and replacement with rail-embedded reinforced concrete slabs within a trackway trench approximately eight feet wide. The construction process is similar to street repaving and will include:

- Removing of existing pavement,
- Placing track rails in their appropriate alignment and profile,
- Pouring and curing concrete in the trench
- Matching track slab to existing pavement
- Re-striping the roadway, and
- Reopening that section of roadway to traffic.

Construction of the maintenance facility could require up to 6 feet of excavation for the structure and track facilities, with augured piles of up to 40 feet in depth. Excavation for stormwater detention facilities, track drains, traction power substations, and utility relocations will also require excavations up to 15 feet deep.

Typically, two lanes of traffic (or parking and one lane of traffic) will be closed during construction. The estimated construction period for the South Lake Union Streetcar is 12-18 months.

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 proposed streetcar line will be located in the South Lake Union and Denny Triangle areas of Seattle, Washington. The south terminus station will be in the vicinity of the intersection of Westlake Avenue and Olive Way in downtown Seattle (see Figure 1). The rail tracks will extend north through the Denny Triangle and South Lake Union neighborhoods and the north terminus station will be located in the vicinity of Fairview Avenue N. and Ward Street near the Fred Hutchinson Cancer Research Center. The length of the proposed streetcar line will be approximately 1.3 miles in each direction, or 2.6 track miles total.

The specific alignment of the streetcar line and the stations locations are described below:

- The southern terminus of the South Lake Union Streetcar line will be at the intersection of Westlake Avenue and Olive Way. The station at the southern terminus will be located on the sidewalk on the east side of Westlake Avenue, between Olive Way and Stewart Street. The southern terminus will be served by a single track that operates in a dedicated streetcar lane in one of the existing northbound traffic lanes. For this short section of the route, both the northbound and southbound streetcars will use the same track.
- The streetcar will operate in both directions on two separate tracks in Westlake Avenue from 6th Avenue to Thomas Street.

- At Thomas Street the northbound track will turn east one block to Terry Avenue N., where it will continue north on the west side of Terry Avenue N. to Mercer Street.
- At Mercer Street, the northbound track will cross to the east side of Terry Avenue N. in order to maintain two-way traffic operations on Terry Avenue N. between Mercer and Valley streets.
- The southbound track will travel on the west side of Westlake Avenue North between Thomas and Valley streets.
- At Valley Street, both the northbound and southbound tracks will be located in the existing railbank on the north side of Valley Street.
- Where Valley Street meets Fairview Avenue N., the two tracks will cross traffic lanes on Fairview Avenue N. and will continue northerly in the center of the street.
- The north terminus stations will be located near the intersection of Fairview Avenue N. and Ward Street near the Fred Hutchinson Cancer Research Center.
- A short section of a single rail track will extend beyond the north terminus station to approximately Yale Avenue N. to allow the northbound streetcars to change direction and travel in the southbound tracks.

B. ENVIRONMENTAL ELEMENTS

1. Earth

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

The entire corridor of the proposed South Lake Union Streetcar Project will traverse nearly flat topography. The land gently slopes from the city's downtown area down to the shores of Lake Union.

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

The maximum slope along the streetcar corridor is approximately 3-5 percent grade.

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.

Nearly all of the land is developed with roadways, buildings (residential, commercial, and light industrial), and parking lots. Much of the streetcar corridor area was originally a prairie with a creek, but the area was filled at the beginning of the 20th century with the re-grading of hillsides in the Denny and Belltown neighborhoods. As such, the soils in the project area are unconsolidated soils. There are no agricultural soils or prime farmland along the streetcar corridor.

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

There are no surface indications or history of unstable soils in the immediate vicinity of the proposed corridor for the streetcar. However, much of the area was filled and the original shoreline was several blocks south of the existing shoreline. As a result, the area is identified as an area that could experience liquefaction during an earthquake.

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

Excavation or grading activities will be associated with the construction of the rail tracks, the station platforms, the detention facilities, the electrical substations, and the maintenance facility. The following paragraphs describe the activities involved in the construction of each of these elements of the proposed project.

TRACK. The construction of the rail tracks will involve excavating a shallow trench approximately 8-9 feet wide, an estimated 12-18 inches deep, and approximate 2.6 miles long. Materials (asphalt, concrete, roadway base materials, and potentially subsurface soils) will be removed from the streetcar route. A new base of crushed rock will be added, if necessary, the new rails will be laid in this shallow trench, and concrete will be poured to fix the rails in place and to match surrounding pavement height. No re-profiling of roadways will occur except at intersections where adjustments may be needed to accommodate cross streets. In total, an estimated 7,000 cu. yds. of material will be excavated. The shallow trench will be filled with rock base and concrete with embedded rails.

STATIONS. An estimated 11-13 station platforms will be constructed along the streetcar route. This will involve removing existing pavement to a depth of approximately 12-18 inches for the approximate 90 feet length of the station, including curb transitions. No re-grading will occur. The total estimated excavation for these project elements will be an estimated 650 cu. yds.

DETENTION FACILITIES. Up to five concrete pipe detention facilities could be installed along the streetcar route. The detention facilities would be between 36-60 inches in diameter and 80-160 feet in length, and several feet below the roadway surface. Asphalt, roadway base, and subsurface soils would be removed. The pipe detention facilities would be placed horizontal and roughly parallel to the roadway surface. In total, up to 2,200 cu. yds. of materials would be excavated for these detention facilities. Crushed rock base would be placed below the pipe detention facility, the pipe and associated elements would be installed, and then the trench would be backfilled and repaved to match surrounding pavement.

SUBSTATIONS. Additional material will need to be excavated for the installation of the two electrical traction substations (the third substation will be constructed as part of the maintenance facility). These substations are manufactured as self-contained utility buildings approximately 10 feet wide by 20 feet long and approximately 12 feet high. The facilities will be located near the southern terminus and near the intersection of Westlake and 9th streets. The excavation footprint for these facilities will be approximately 10 feet by 20 feet for the building plus an additional 5 feet in all directions for installation of a grounding mat. Conduits will be laid and a concrete pad will be constructed to match surrounding ground level. An estimated 70 cu. yds. of materials will be excavated for the two sites. In addition, up to 280 cu. yds. of materials will be excavated for the installation of the poles used to support the electrical overhead conductor system for streetcar operation.

MAINTENANCE FACILITY. Construction of the maintenance facility will occur on a developed parcel, but some grading is anticipated to level the entire site. Excavation will be required to install a concrete pipe detention facility (approx. 230 cu. yds.) and a traction substation (approx. 75 cu. yds.). Grading on the site for the maintenance facility building, tracks, and inspection pits will also be needed (approx. 2,500 cu. yds.). The conceptual engineering for site preparation for the maintenance facility includes the construction of a retaining wall approximately 4 feet in height along the south side of the property.

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

Construction of the proposed South Lake Union Streetcar Project will generally not involve clearing of undeveloped land. The corridor is within existing paved roadways (except for a small area in the railbank north of Valley Street) for the rail tracks or developed property for the maintenance facility. Construction activities, however, will involve removal of surface asphalt, concrete, roadway base materials, and subsurface materials. This excavation could result in erosion, in particular stormwater run-off from the stockpiles of excavated materials.

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

At this time, the vast majority of the route of the streetcar line (estimated at 90%) is covered with impervious surface and located within street right-of-way. This value is expected to change by less than 1 percent as a result of the project. These rights-of-way are paved with asphalt and most have curbs, gutters, and sidewalks. The new tracks for the streetcar as well as stormwater detention vaults will be constructed in these impervious paved roadways. For a small segment of the line, the new rail tracks will be installed within a railroad track corridor (railbank). This portion of the corridor is considered pervious as the track will be constructed on ballasted ties with a crush rock base.

Approximately 145,000 square feet of existing impervious roadway surface will be removed and replaced with new track-embedded roadway surface. Approximately 32,000 square feet of impervious surface including a parking lot and two buildings will be demolished and replaced with new impervious surface including the proposed maintenance building and paved vehicle storage area. Less than 5,000 square feet of additional new impervious surface will be created where proposed streetcar stops coincide with existing landscape strips.

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

Temporary Erosion and Sediment Controls will be used during construction to ensure that excavated soils and construction materials are not deposited on city streets or flowing into city conveyance piping. These measures will also prevent sediment-laden water from flowing into Lake Union. Controls on stormwater during construction will include:

- A stormwater pollution prevention plan and spill prevention plan will be prepared and followed to meet the requirements of the Seattle Municipal Code 22.800, and the City of Seattle Standard Plans and Specifications for Municipal Construction.
- Staging of construction equipment shall not occur in any sensitive or critical area.
- The contractor will be required to follow the City of Seattle Standard Specification for Road, Bridge, and Municipal Construction (section 1-07.5, Prevention of Environmental Pollution and Preservation of Public Natural Resources). The contractor also will follow the Regional Road Maintenance Endangered Species Act Program Guidelines for maintenance category “Road Way Surface” (1.24-1.27) and outcome categories “to Reduce Potential for Soil from Becoming Water or Airborne” (page 2.18), “Filter/Perimeter Protection” (page 2.19), and “Reducing Water Velocity/Erosive Force” (page 2.21).
- The contractor shall provide inlet protection in accordance with city requirements.
- Catch basin filters will be used in catch basins located downgradient of each of the project sites to prevent sediments and construction-related pollutants from entering the storm drainage system during construction. Periodic maintenance and replacement of filters will be required.
- Trucked stockpiles will be covered with impervious barriers for protection from rain, mitigating any erosion or runoff.

2. Air

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

The proposed streetcar project will result in minor amounts of dust and particulates added to the air in the project vicinity during construction only.

The project, after construction, will meet state and federal air quality standards. Carbon monoxide levels were predicted for the project area and will be less than ambient air quality standards. The streetcar will use electricity and will not have emissions. Work at the maintenance facility could emit incidental quantities of air pollution from the operation of repair equipment, i.e. welding.

- 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 air emissions or odor that will affect either the construction or operation of the proposed streetcar project.

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

Air pollutant emissions from construction of the streetcar project will be controlled by requiring contractors to meet the requirements of the Puget Sound Clean Air Agency.

All structures to be demolished will be evaluated for asbestos containing materials. If asbestos is found, the contractor will follow EPA and Puget Sound Clean Air Agency (PSCAA) regulations for removal and disposal.

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.***

The project lies within 120 feet of Lake Union, which is a freshwater lake that is connected to both Lake Washington (via Portage Bay and the Washington Ship Canal) and Puget Sound (via Salmon Bay and the Chittenden Locks). In the northern segment of the proposed South Lake Union Streetcar Project, the tracks are located in the rail bank right-of-way of Valley Street at the southern end of the lake more than 110 feet from the waterfront. The tracks continue northeasterly along Fairview Avenue E. to Ward Street where the new rail tracks will be more than 100 feet from the Lake Union waterfront.

- 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.***

As described above, the construction of streetcar tracks on Valley Street and Fairview Avenue N. will be located within 200 feet from the shore of Lake Union in two areas. These two areas lie within the railbank along Valley Street between approximately Westlake

Avenue N. and Terry Avenue N. and on Fairview Avenue N. between approximately Minor Avenue N. and Yale Avenue N. (see Figure 1).

Under SMC 60.208 new rail transit facilities in the shoreline area must use an existing roadway or rail corridor. Existing railroad tracks may also be expanded in existing rail corridors. For the proposed streetcar project, the new rail tracks will be installed on the existing railbed (preserved in railbank) located on the north side of Valley Street. On Fairview Avenue N., the new rail tracks will be located in the center of the roadway.

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

No fill or dredge material will be placed in or removed from surface water or wetlands.

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

Neither the construction nor operation of the proposed South Lake Union Streetcar Project will require withdrawals or diversions of surface water.

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

No portion of the proposed streetcar project, either tracks or the maintenance facility, will be located within the 100-year floodplain.

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

The proposed streetcar project does not involve any direct discharge of waste materials 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.***

During construction of the detention facilities temporary dewatering may be necessary due to the anticipated depth of construction and the high ground water level.

- 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.***

Neither the construction nor the operation of the South Lake Union Streetcar Project will require the discharge of waste material into the ground.

c. Water Runoff (including stormwater)

1) Describe the source of runoff (including stormwater) 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 proposed streetcar project tracks and the maintenance facility traverse or are located in six different drainage basins. Stormwater run-off from the streets, including stormwater flowing across the streetcar tracks, will flow into sub-basin inlets and into the City of Seattle conveyance piping system that takes waters to the regional water treatment plant. That portion of the streetcar tracks located north of Fairview Avenue N., however, is located in a stormwater sub-basin that is conveyed to an existing outfall to Lake Union. This outfall is managed under City of Seattle municipal NPDES Permit as Lake Union is a designated water body to receive stormwater. Stormwater run-off from the proposed maintenance facility will also be collected and directed to flow into outlets to the City's conveyance system and to the Westpoint water treatment plant.

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

Neither the construction nor operation of the proposed streetcar project will result in waste materials entering ground or surface waters.

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

The measures described above to prevent erosion also will protect water quality. These measures are:

- A stormwater pollution prevention plan and spill prevention plan will be prepared and followed to meet the requirements of the Seattle Municipal Code 22.800, and the City of Seattle Standard Plans and Specifications for Municipal Construction.
- Staging of construction equipment shall not occur in any sensitive or critical area.
- The contractor will be required to follow the City of Seattle Standard Specification for Road, Bridge, and Municipal Construction (section 1-07.5, Prevention of Environmental Pollution and Preservation of Public Natural Resources). The contractor also will follow the Regional Road Maintenance Endangered Species Act Program Guidelines for maintenance category "Road Way Surface" (1.24-1.27) and outcome categories "to Reduce Potential for Soil from Becoming Water or Airborne" (page 2.18), "Filter/Perimeter Protection" (page 2.19), and "Reducing Water Velocity/Erosive Force" (page 2.21).
- The contractor shall provide inlet protection in accordance with city requirements.
- Catch basin filters will be used in catch basins located downgradient of each of the project sites to prevent sediments and construction-related pollutants from entering the storm drainage system during construction. Periodic maintenance and replacement of filters will be required.
- Trucked stockpiles will be covered with impervious barriers for protection from rain.

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

The project area is an urbanized area. Vegetation in the area is primarily ornamental shrubs and trees, including street trees, and manicured grass. Along the south shore of Lake Union (outside of the area that will be disturbed by the project), there is some native vegetation.

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

The installation of the streetcar line rail tracks and station in the railbank area will require removal of some planted grass. Construction of streetcar stops could require removal of some existing streetscape vegetation (shrubs and/or trees) at proposed stop locations. No native vegetation will be affected.

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

No threatened or endangered plant species are known to be on or near the site.

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

New streetscape will be installed at each of the proposed streetcar stations. A street tree is proposed to be planted to either side of the station shelter and low shrubs will be planted between the shelter and the sidewalk.

For the maintenance facility, a site plan will be developed that may include landscaping. It is anticipated that street trees will likely be planted along the north (Valley Street) and east (Fairview Avenue N.) sides of the property.

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:

Birds: hawk, heron, eagle, songbirds, other: seagulls, Canada geese

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 Federally listed threatened or endangered species present in the project area. Bull trout and Puget Sound Chinook salmon are found in Lake Union which is more than 100 feet from the project.

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

The project site is not part of a migration route.

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

Mitigation measures discussed above to reduce potential impacts to water quality also will reduce the potential for impacts to wildlife.

6. Energy and Natural Resources

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

Electricity will be used to operate the streetcar along the track. In addition, electricity and natural gas will be used at the maintenance facility. These energy sources will be used to heat and light the building as well as operate equipment used in maintenance and repair of the streetcar vehicles.

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

The proposed project, including the operation of the streetcars or the maintenance facility, will not affect any existing or potential future use of solar energy by adjacent property owners. The streetcar vehicles will not affect insolation (solar energy reaching the earth) to properties adjacent to the streetcar route, the same as any other similarly sized vehicle. The proposed maintenance facility building will have two stories and will be approximately 30 feet in height. This is similar to existing surrounding buildings. Moreover, the surrounding area is zoned Commercial-2 and the maximum building height is 40 feet.

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

The streetcar will provide an alternative to the use of gasoline fueled automobiles. Energy conservation features required by the City's Building Code will be incorporated into the maintenance building design.

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.

1) Describe special emergency services that might be required.

Potential environmental health hazards from this project could occur during construction of the proposed South Lake Union Streetcar Project. During construction, the excavation of the

roadway right-of-way as well as grading and excavation at the maintenance site could involve spoils that contain hazardous materials. These will be found in the subsurface soils that may be contaminated either at the site or from up-gradient contaminated properties. In addition, demolition of the existing structures at the proposed site for the maintenance facility and site preparation could involve handling of asbestos, lead-based paint, and/or underground storage tanks.

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

- Project specifications will be developed specifying how contamination will be addressed if encountered during construction. Conditions on the discovery and management of hazardous substances will be included as a condition of the City issued Street Use Permit.
- Vapor surveys (i.e. photo-ionization detection) will be performed during construction activities in the areas near former and current leaking underground storage tanks (LUST).
- If not already completed, two structures planned for demolition will undergo a thorough site reconnaissance, including a visual survey of building materials containing lead-based paint (LBP), lead, asbestos-containing materials (ACM), and polychlorinated biphenyls (PCBs).

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 noises that currently exist in the project area that could adversely affect the construction or operation of the proposed South Lake Union Streetcar Project. Routine noises associated with urban areas with heavy commercial and light industrial land uses are currently audible along the streetcar corridor and at the maintenance facility.

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.*

During construction, there will be slightly elevated sources of noise along the streetcar route. These noises will be associated with construction vehicles, traffic detours, and operation of construction equipment. Construction is expected to be completed during daytime hours (7 a.m. to 10 p.m. weekdays and 9 a.m. to 10 p.m. weekends) and within City of Seattle construction noise limits (Seattle Municipal Code 25.08.425).

On a long-term basis, the operation of the proposed streetcar will result in little additional noise. Noise levels were evaluated using widely accepted FTA procedures and criteria for evaluating transit projects, and no noise impacts are predicted to occur. See the *South Lake Union Streetcar Project Noise and Vibration Technical Report* for additional details.

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

Measures will be evaluated during project design to control wheel squeal.

8. Land and Shoreline Use

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

The Denny Triangle and South Lake Union neighborhoods have a broad mix of land uses and a wide variety of uses exist on properties along the streetcar route. The area has been growing recently and more residential uses are being introduced, but commercial, retail, and office uses remain the primary land use types in this area.

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

No, neither the streetcar corridor nor the site of the proposed maintenance facility have been used for agriculture.

c. Describe any structures on the site.

There are two buildings currently on the three parcels that comprise the proposed site for the streetcar maintenance facility. The building on the corner is a one-story, dark wooden framed building. The building appears to cover the entire parcel. The current occupant has a showroom for motor boat sales. The parcel to the south is a parking lot used by the business at the southernmost parcel. The mid-block building is a two-story, light-colored stucco building and currently vacant.

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

Two buildings located on the proposed site of the maintenance facility will be demolished to allow for construction of the building and yard for the proposed maintenance facility. No other structures will be demolished for the proposed streetcar project.

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

The project will occur within three neighborhood areas: South Lake Union, Denny Triangle, and the Downtown Commercial Core. The South Lake Union area is characterized by a mix of industrial, commercial, and residential uses. City land use zones in this area include Neighborhood Commercial (NC) 3, Industrial Commercial (IC), Commercial (C) 1, and C2. The Denny Triangle area contains a mix of commercial and residential uses. City land use zones in this area consist of Downtown Office Core (DOC) 2, Downtown Mixed Commercial (DMC) and NC3. The Downtown Commercial Core is comprised of the central business, retail and financial districts with a variety of commercial, office and retail uses. City land use zones in this area include DOC2 and DMC. The proposed project is consistent with this zoning.

The streetcar maintenance facility is proposed to be located at the southwest corner of Fairview Avenue N. and Valley Street. The property is zoned C2 with a 40 foot height limit. The C2 40 zone is auto-oriented and permits offices, retail, parking and light/general manufacturing. The maintenance facility is considered as a transit maintenance base and is permitted as a conditional use.

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

Similar to the zoning classifications discussed above, several comprehensive plan designations regulate the development and use of adjacent properties. These comprehensive plan designations include the Commercial Mixed-Use designation in South Lake Union area and the Downtown Area designation south of Denny Way. Other related goals and policies in the City's Comprehensive Plan support the development of a streetcar line. The streetcar project is consistent with policies calling for expansion of public transit in the city, construction

of infrastructure to support anticipated commercial and residential development, development of pedestrian-friendly environments, and use of alternative funding sources (a Local Improvement District).

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

Only two small portions of the streetcar route traverses land located within the City of Seattle shoreline area for Lake Union. Where the southbound streetcar turns from Valley Street to Westlake Avenue N., the rail tracks will be located in the shoreline area for a distance of approximately 300 feet. The closest point to the designated shoreline will be approximately 60 feet. Then between Minor Avenue N. and Yale Avenue N. the rail tracks again extend into the shoreline area. At this location, the rail tracks will extend into the designated shoreline area an estimated 500 feet with the closes point approximately 100 feet from the designated shoreline.

The current shoreline master program designation for the two segments of the rail tracks that extend into the shoreline area is US – Urban Stable. The construction of the streetcar line in the shoreline area is permitted when the rail transit use is located in existing transportation corridors and does not create barriers for access to the shoreline. The proposed site for the maintenance facility is located on a property that is outside the jurisdiction of the City of Seattle shoreline master program.

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

That portion of the streetcar route along Valley Street and Fairview Avenue N. along the Lake Union waterfront is currently designated a seismic liquefaction zone. This area has unconsolidated fill and the current shoreline extends north of the historic shoreline of Lake Union. Due to these modifications from the original landform, this portion of the streetcar corridor lies within an area that potentially could experience liquefaction during an earthquake.

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

The proposed South Lake Union Streetcar Project would employ vehicle drivers as well as maintenance workers and inspectors. For the initial phase of operation, two vehicles would be operational 7 days per week for an estimated 15 hours per day. Assuming one worker, the driver, on each streetcar vehicle, the streetcar would require an estimated 9 drivers. This estimate includes workers to cover full-time shifts, part-time shifts, weekend shifts, and replacement shifts when others are sick or on vacation.

Maintenance workers, track inspectors, and ticket inspectors would also be required. Maintenance workers would need to keep the maintenance facility operational each hour that the streetcar is operational, i.e. 15 or 18 hours per day. An estimated 5 workers would be required. This estimate includes workers for full-time shifts, part-time shifts, weekend shifts, and replacement shifts when others are sick or on vacation. Track and station inspectors and ticket inspectors would also be required, but not necessarily full time. Some of these workers also could be others already employed by the operating agency, and not exclusively working for the streetcar line.

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

The streetcar project will displace one business currently located at the site of the maintenance facility. The total number of workers who could be displaced will be approximately 10-20 persons.

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

To reduce potential displacement impacts, the City of Seattle will give advance notice to the building tenant for the need to vacate the property consistent with existing lease agreements. In addition, mitigation for the business being displaced will comply with the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 as amended, and the Washington Relocation Assistance-Real Property Acquisition Policy Act of 1971 as amended.

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

The City of Seattle has determined that the proposed South Lake Union Streetcar Project is consistent with the Washington Growth Management Act, the King County Countywide Planning Policies, the King County Comprehensive Plan, the City of Seattle Comprehensive Plan, the City of Seattle Shoreline Management Program, and the Denny Triangle and South Lake Union neighborhood planning policies. The project is also part of the local Metropolitan Transportation Plan *Destination 2030*.

9. Housing

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

No housing units will be provided as part of the proposed South Lake Union Streetcar Project.

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

No housing units will be eliminated by the construction or operation of the proposed South Lake Union Streetcar Project.

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

There are no impacts to housing, therefore, not mitigation measures are proposed.

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?

For the proposed South Lake Union Streetcar Project, the highest structure will be the maintenance facility building. This building will be two stories (approximately 30 feet) high. The tallest element along the streetcar route will be the suspended overhead conductor system, which will be approximately 18-20 feet above the level of the street grade. This is similar in height of other overhead “wires” and not below height restrictions on these designated freight routes.

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

Along the streetcar route, the overhead electrical system will have little effect on existing views. The overhead conductor system will blend with the other overhead “wires,” including those for telephone, cable, and electric power. The proposed streetcar stations will be constructed along the existing sidewalk pavement and will not substantially affect views. Trees and shrubs planted at the stations will enhance the pedestrian environment, though they could affect some views. The height of the proposed maintenance facility building will be approximately 30 feet, which is similar to the existing building located on the southern parcel of the maintenance facility and is similar in height to many existing adjacent and nearby buildings. The building will not alter or obstruct views in the immediate vicinity. For security reasons, a screening fence (approximately 6-8 feet in height) will be installed around the maintenance facility site.

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

No measures are proposed to reduce or control aesthetic impacts.

11. Light and Glare

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

The proposed streetcar vehicles will have lights similar to headlights of automobiles, trucks, and buses. The streetcar stations will not have any additional lighting other than existing street lighting. The maintenance facility will have exterior lighting for security as well as operation of the facility between 15 and 18 hours per day. Such exterior lighting will be installed outside of all building doors, supply receiving areas, outside work areas, and the site entrances. All exterior lighting will be directed down and will use directional shields to minimize light and glare.

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

The anticipated exterior lighting at the maintenance facility will not be a safety hazard. The use of directional, shielded lighting will also avoid or minimize potential light or glare affecting views from close proximity to the maintenance facility.

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

There are no existing off-site sources of light or glare that will affect the operation of the South Lake Union Streetcar Project.

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

Other than using directional, shielded exterior lighting, no additional measures are proposed to reduce or control light or glare.

12. Recreation

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

There are several recreational amenities located along the streetcar corridor. The City's South Lake Union Park is located adjacent to the project at the northern end of the proposed streetcar route. The park provides open space, walking areas, and is home to the Maritime Heritage Center, which provides crafts, boat rentals, sailing classes and information on the city's maritime history. Denny Park is located on Denny way between Dexter Avenue N. and 9th Avenue N. It has landscaped open space, walking paths, and benches. Denny Playfield (private facility) is located one-half block west of the proposed streetcar line on Denny Way between 9th Avenue N. and Westlake Avenue N. This park has a basketball court and an adjacent grass playfield. Near the proposed southern terminus station of the streetcar line, there are also two small public squares. These two properties are Westlake Square and McGraw Square, both small triangular parcels at the intersection of Westlake Avenue and Stewart and the intersection of Westlake Avenue and 6th Avenue.

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

No recreational uses will be displaced by the streetcar route.

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

Temporary short-term disruptions in access to South lake Union Park may occur during construction. Information will be provided to local residents and the public regarding construction schedules and activities, including detours in the project area.

After construction, the streetcar route will provide additional access to existing recreational facilities, especially the Lake Union waterfront. The streetcar will also provide a recreational amenity in the project area.

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 three historic properties located adjacent to the proposed streetcar route and/or maintenance facility that are listed on national, state, or local preservation registers. The Times Building (also known as Times Square Building) is listed in the National Register of Historic Places (NRHP) and is designated a City of Seattle Landmark. The Ford Assembly Plant and the McGraw Square Park have been designated City of Seattle Landmarks. No historic properties are known to be proposed for a national, state, or local preservation register.

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

The South Lake Union Streetcar Project corridor is located in an area that includes several historic topographic features, including the former shorelines of Lake Union, an inland prairie habitat historically south of Lake Union, and upland forests. Ground surfaces and

shorelines were extensively modified through grading, land leveling, and filling as Seattle's population grew and the area developed. In particular, the area was filled with substantial amounts of spoils from the Denny Regrade and other debris in the early 20th century. In addition, the shoreline of Lake Union was modified and today it is several blocks north of the historic shoreline.

In addition, there are several old brick sewer lines buried in the project area. They were constructed between 1880 and the early 1900s. An oviform (egg-shaped) brick sewer is buried under Westlake Avenue between 8th Avenue and Republican Street, though a portion has been abandoned and is no longer in use. Another similar sewer line is buried under Valley Street between Boren Avenue N and Fairview Avenue N. In addition, the Metro main trunk line buried under Republican Street crosses both Terry Avenue N. and Westlake Avenue N. is an old brick sewer. Each of these lines is substantial in size and is 22 inches or more in width and 33 inches or more in height; they are approximately 15-20 feet below the street level.

The potential for encountering archaeological material during construction is low, but damage could occur to the historic brick sewer lines. The construction of the streetcar rail tracks will only excavate the top 12-18 inches of material in the public road. The construction of the maintenance base will involve excavation up to approximately 6 feet and excavation for the six stormwater detention facilities could be up to 15 feet in depth. Potential archaeological material that could be encountered would be of two types: 1) historic fill dating to the late 19th and 20th centuries, and 2) earlier and perhaps prehistoric materials below the historic fill. This fill, however, are likely to be disturbed, undifferentiated fill where intact sites and/or features are not anticipated. North of Republican Street, excavation could possibly encounter prehistoric archaeological materials, however, the depth of any intact archaeological materials, while not precisely known, is not expected to be within the range of excavation required for the proposed project. Careful planning for siting and construction of the new detention facility for the Westlake Avenue segment between Virginia and Republican Streets and the substation proposed in the vicinity of Westlake Avenue N. and John Street will avoid or minimize potential adverse impacts.

Historic buildings and structures, however, are located in the project's Area of Potential Effect (APE). A total of 97 buildings were identified as being located within the APE. Of these buildings, 62 were built in or prior to 1956 and were confirmed as within the APE. A total of 23 buildings were previously documented with no formal determination of eligibility, and an additional 35 buildings were recorded for the first time as part of this survey.

In total, 15 of the 62 buildings documented are either listed, have been determined eligible for, or are recommended eligible for inclusion in the National Register of Historic Places (NRHP). Table 1 lists these properties. The Times Building is listed in the National Register of Historic Places (NRHP) as well as the City of Seattle Landmarks. The Ford Assembly Plant, has been listed as a City of Seattle Landmark and has been determined eligible for inclusion in the NRHP. The McGraw Square Park has been listed as a City of Seattle Landmark, but is not likely eligible for listing on the NRHP. The Northern Pacific Freight Depot is not likely eligible for listing on the NRHP due to loss of integrity, but may be eligible for listing as a City of Seattle Landmark. An additional 13 properties are recommended for eligibility on the NRHP, but no determinations have been made. Of these properties, the McKay Ford Dealership is very likely eligible for listing on the NRHP. All properties eligible for NRHP listing are also considered eligible for City of Seattle Landmark status. Table 1 provides information about all of these properties.

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

Because no adverse operational impacts are anticipated to occur, no mitigation measures will be required.

The following measures will reduce or eliminate potential for effects on cultural or historic resources during construction:

An archaeological monitoring and treatment plan will be prepared prior to construction. The plan will address procedures in case of unanticipated discoveries, notification procedures if discoveries are found, authority to stop construction, and procedures to evaluate and recover any intact materials.

The State and City Historic Preservation Officers will be afforded the opportunity to review the designs of the streetcar stations and maintenance facility, in an effort to avoid visual impacts to historic properties.

Table 1: Properties Listed, Determined Eligible, or Recommended Eligible

| Bldg # | Parcel # | Name | Address | Year Built | Listing Status | NRHP Eligibility Recommendation |
|--------|------------|--------------------------------|--------------------------------|------------|----------------|---------------------------------|
| 3 | 659000385 | Times Building | 414 Olive Way | 1916 | NR, SL | (listed) |
| 4 | 659000381 | McGraw Square Park | 5 th Ave/Stewart St | 1913 | SL | Not Eligible |
| 5 | 659000085 | Medical Dental Building | 505 Olive Way | 1925 | | Eligible* |
| 16 | 659000710 | Western Auto Supply | 2004 Westlake Ave | 1923 | | Eligible* |
| 17 | 659000715 | West Lake Hotel | 2008 Westlake Ave | 1907 | | Eligible* |
| 18 | 659000755 | Craftsman Press | 2015 8th Ave | 1924 | | Eligible* |
| 20 | 659000740 | Larned Apartments | 2030 7th Ave | 1909 | | Eligible* |
| 22 | 660000575 | Cosmopolitan Motors | 2030 8th Ave | 1925 | | Eligible* |
| 36 | 1986200125 | Durant Motor Co. | 333 Westlake Ave N | 1923 | | Eligible* |
| 41 | 1983200230 | Firestone Tire | 400 Westlake Ave N | 1929 | | Eligible* |
| 47 | 1983200095 | Hemphill School | 503 Westlake Ave N | 1919 | | Eligible* |
| 51 | 4088803385 | W. O. McKay Ford Dealership | 609 Westlake Ave N | 1922 | | Eligible* |
| 56 | 4088803240 | Brace Lumber | 965 Valley St | 1935 | | Eligible* |
| 68 | 1986200185 | Northern Pacific Freight Depot | 970 Thomas St | 1912 | | Not Eligible* |
| 70 | 1986200450 | Kelly Goodwin Hardwood | 310 Terry Ave N | 1914 | | Eligible* |
| 72 | 1986200380 | Fred Rogers Building | 200 Terry Ave N | 1954 | | Eligible* |
| 81 | 1984200035 | Ford Assembly Plant | 700 Fairview Ave N | 1914 | SL | Determined Eligible |

SOURCE: *South Lake Union Streetcar Project, Cultural and Historical Resources Technical Report*, Seattle, Washington, Parsons Brinckerhoff, February 2005.

NR – Listed, National Register

SL – Seattle Landmark

* may be eligible as a City of Seattle Landmark

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.

The proposed streetcar project includes the construction of rail tracks and stations on public streets and is described in detail above in the project description. The streetcar line will travel north from Westlake Avenue and Olive Way to Thomas Street where the northbound tracks will turn east on Thomas Street, and then continue north on Terry Avenue N. to Valley Street. The southbound tracks will stay on Westlake Avenue N. between Thomas and Valley Streets. The line continues northerly from Valley Street to Fairview Avenue N. at Ward Street where the northern terminus station will be located. The maintenance facility will be located on the southwest corner of Valley Street and Fairview Avenue N. The streetcar vehicles will enter the maintenance facility from Valley Street via a rail track spur off of the main tracks on Valley Street. Workers at the maintenance facility will also drive both private and work vehicles in and out of the site via the same access off of Valley Street. An access, however, will also exist for supply and equipment deliveries from the alley between Fairview Avenue N. and Boren Avenue N. This access will be located in the southwest corner of the site and will allow direct unloading into the building on the site. The nearest highway access is the Mercer Street Interchange, which allows both northbound and southbound access to I-5.

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

Route 17, currently serves the Westlake Avenue corridor from Denny Way to Valley Street. This route provides service between the Loyal Heights/Ballard area and downtown Seattle and also transitions into the Route 23 to serves parts of south Seattle in the Rainier Valley area. Peak-hour headways on the Route 17 are approximately 15 minutes.

Other Metro transit service in the area is provided by Metro routes 8, 26, 28, 66, and 70 (71, 72, and 73 at night and on Sundays). Route 8 is the Denny Way cross-town route that connects Capitol Hill and Queen Anne every 30 minutes during most time periods. Routes 26 and 28 connect downtown with Fremont and other neighborhoods, and combined they operate every 15 minutes on Dexter. The Route 66 Express bus operates every 30 minutes between Roosevelt and downtown, with limited stops on Eastlake Avenue. Routes 70, 71, 72, and 73 combine to provide 15-minute frequency on Fairview Avenue N.

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

Construction of the streetcar project will eliminate some parking spaces in the project area. The largest impact will be in an informal parking area in the existing railbank area north of Valley Street, where up to 45 unmarked, informal parking spaces may be eliminated. No private or metered spaces will be eliminated in this area. Other parking impacts will result from installing curb bulbs at streetcar stops; this is expected to result in the loss of up to 12 spaces total. The conversion of Westlake to two-way also will result in a loss of up to 33 parking spaces. The removal of this parking would not cause an impact because there is available parking capacity within the study area, including pay lots at the following locations, which are within one to two blocks of most eliminated street parking:

- North of Valley Street at Boren Avenue N.

- Northeast corner of Terry Avenue N. and Republican Street
- North and south of Harrison Street between Terry Avenue N and Boren Avenue N
- Between Westlake Avenue N and Terry Avenue N between Thomas Street and Harrison Street
- Southeast corner of Thomas Street and Westlake Avenue N.
- Northeast corner of Westlake Avenue N. and Denny Way, and
- Southeast corner of Westlake Avenue and 8th Avenue.

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).

As described in the project description, the proposed project is a public transit streetcar project that will be constructed in the existing public road right-of-way. No new roads or streets will need to be constructed for this project.

Roadway improvements will be required along much of the streetcar route. Construction of the rail tracks will require excavation of a shallow trench and pouring a concrete pad where roadway pavement previously existed. No re-profiling of the roadway will occur. The elevation of the rail track pad will match surrounding roadway pavement, except along Valley Street, where tie and ballast will be used.

The construction of the 13 streetcar stations will require modification of existing curbs, gutters, and sidewalks. The sidewalks will be re-constructed to extend into the roadway for a length approximately equal to the length of the streetcar vehicle, approximately 66 feet. Where station will be located mid-block, sidewalks will gradually curve out to make the station platform on both sides of the station. Where stations will be located at the far side of a block, sidewalks will curve out to the station platform on the near side and at the far side will gradually curve back to meet the corner radius of the intersecting street. The stations located at Valley Street and Boren Avenue N. and Fairview Avenue N. and Ward Street, however, are center platforms. Here, concrete platforms elevated approximately 6-12 inches will be installed. These station platforms will be equal to approximately the length of the streetcar vehicle. A short concrete ramp on one or both ends of the station platform will allow pedestrians to walk down from the station platform to the street level to use street crosswalks.

Traffic signals and channelization will be modified at several intersections. These intersection changes will include new signals at the intersections of Fairview Avenue N. and Ward Street, Valley Street/Terry Avenue N., and Mercer Street/Terry Avenue N. The existing signal at Valley Street and Fairview Avenue N. will be modified to accommodate the daily streetcar movements in and out of the maintenance base.

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

The proposed South Lake Union Streetcar Project will not occur in the immediate vicinity of any operational water or rail transportation services. Prior rail tracks on the north side of Valley Street and in Terry Avenue North were abandoned years ago. The proposed streetcar rail tracks will be located in the old City-owned railbank right-of-way north of Valley Street.

Private and commercial marinas are located along much of the south end of the Lake Union waterfront, but generally 1-2 blocks from the streetcar route. The Center for Wooden Boats at 1010 Valley Street is located immediately east of the South Lake Union Park opposite the intersection of Boren Avenue N. and Valley Street. Adjacent and to the east, there are several private marinas are also located waterward of the project area.

The only air transportation services in close proximity to the streetcar project is the Kenmore Air Harbor located on the Lake Union waterfront opposite the intersection of Westlake Avenue N. and 8th Avenue N. This is more than two blocks west of the closest portion of the streetcar route. The seaplanes operated by Kenmore Air fly from both the north and the south, depending on wind direction, to land at the south end of Lake Union. Contact was made with representatives of Kenmore Air and they did not have any concerns about potential adverse effects from the project as no streetcar project element will intrude into their airspace for landings.

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

The schedule for the streetcar vehicles is initially proposed to operate 15 hours per day, 7 days per week. Vehicles will operate at 15-minute headways, which will require just two streetcar vehicles to be operating approximately equally spaced along the streetcar route. This operating schedule will result in approximately 65 streetcar round-trips per day. Long-term operational goals will be to have the streetcar system operating 18 hours per day with 10 minute headways. This will require three streetcar vehicles to be operating simultaneously.

The only automobile vehicle trips generated by the completed streetcar project could be those associated with the several workers at the maintenance facility. Initial operations of the maintenance facility will employ up to 5 workers to keep the maintenance facility in operation for the 15 hours per day, 7 days per week. It is anticipated that some workers may drive their private vehicles to the maintenance facility and park for the duration of the shift. Most work activities will be at the maintenance facility. Approximately 25 trips per day are anticipated into or out of the maintenance facility. The period just before and after shift changes will be the time when most trips will be generated.

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

The proposed South Lake Union Streetcar Project is a public transit project and will not result in adverse impacts to transportation. Rather, this project will accommodate existing and anticipated residents, workers, and visitors traveling between downtown Seattle and the south end of Lake Union.

During construction, short-term temporary roadway detours will be needed to reroute traffic. Advance notice concerning these detours should be given to the public and should be coordinated with public transportation providers.

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 proposed streetcar line and its maintenance facility will not result in an increased need for public services.

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

Travel times could be affected during construction. This could impact public services such as fire, police, and emergency services. Emergency service providers, businesses, and residents of the project area will be provided with information on lane closures, detour routes and construction schedules.

16. Utilities

a. Circle utilities currently available at the site: electricity, natural gas, water, refuse service, telephone, storm drain, 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.

Utilities needed as part of the South Lake Union Streetcar Project will be associated with the maintenance facility and providing power for the streetcar. These utilities will be the usual urban utility services including the following: electricity, natural gas, water, refuse service, telephone, storm drain, and sanitary sewer.

The Seattle Public Utilities will provide water, storm drainage, sanitary sewer, and contracted garbage service. Seattle City Light will provide electricity. Puget Sound Energy will provide natural gas. Telephone service could be provided by any number of telecommunications companies including: AT&T, MCI, Comcast, Sprint, Quest, or another.

City of Seattle standards and specifications will be followed, along with utility provider, Washington State, and Federal regulations, as appropriate, for the construction of new utilities in the project area. In addition, the access to utility facilities should be planned and provided for future maintenance needs.

The operation of the streetcar vehicles will only require electricity. As described above, three electrical traction substations will be installed along the route to transform high voltage power from Seattle City Light transmission lines to the correct voltage for streetcar operation (750volts). The power will be distributed from the substations via underground conduits to the overhead conductor system strung about 18-20 feet above the street level. The substations and overhead conductors will be maintained by King County Metro, the intended operator of the streetcar line. All required improvements will be installed per Seattle City Light standards.

During construction, a number of utilities currently embedded in the public street right-of-way along the streetcar route could be affected by excavation activities. The following measures will be taken to minimize such disruptions:

- Impact equipment will not be used for pavement removal within 100 feet of known fragile cast-iron water mains or within 25 feet of other fragile underground utilities or historic buildings.
- Coordination with utility providers and preparation of a utility relocation plan will assure minimization of potential disruptions and provide information on construction schedules and sequencing. When more than a short service disruption would occur, temporary connections to businesses and residences will be provided.

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: 

Date Submitted: 4/12/05