Technical Report
South Lake Union Streetcar Project

Land Use and Visual Quality

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The City of Seattle Department of Transportation

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Chapter 1 Abstract/Summary

The proposed South Lake Union Streetcar Project would provide a new streetcar line between the downtown Seattle commercial core and South Lake Union. The proposed route would follow Westlake Avenue north from Olive Way and continue east on Valley Street and Fairview Avenue N., ending near Ward Street. Portions of the route would also travel on Terry Avenue N. between Thomas and Valley streets and in railbank along Valley Street. The approximate length of the proposed streetcar line would be 1.3 miles in each direction. The project would include associated stormwater and maintenance facilities.

1.1 Studies, Coordination and Methodology

1.1.1 Land Use

The land use analysis for the South Lake Union Streetcar project is based on existing land use patterns and future development trends in the project area. The project area for land use consists of the Denny Triangle and South Lake Union neighborhoods. Land use information was obtained through discussions with City planning staff and examination of relevant plans and policies.

1.1.2 Visual Quality

The methodology for assessing visual quality was adapted from the Federal Highway Administration (FHWA)'s *Visual Assessment for Highway Projects* (FHWA-HI-88-054) manual. Although not required, the FHWA methodology was used for this assessment, because the streetcar would be built into an existing linear transportation facility (roadway) with a similar range of issues.

The City of Seattle Department of Planning and Development was consulted in identifying key viewpoints. Seattle's policies and regulations on scenic routes and protected views were also taken into account.

1.2 Affected Environment

Seattle has been experiencing steady population growth in recent years. Redevelopment within portions of these neighborhood areas has occurred, and efforts continue toward revitalization of the Denny Triangle and South Lake Union neighborhoods.

1.2.1 Land Use

The Denny Triangle neighborhood contains a broad range of land uses that vary from high-rise office buildings to parking lots or low-rise structures. Hotels, office buildings, automobile sales dealerships, and a variety of other commercial uses share the area with older manufacturing buildings, a mix of housing types, and numerous surface parking lots. Several new large-scale office and residential buildings have recently been built.

The South Lake Union neighborhood comprises a diverse mix of commercial, office, warehouse, light manufacturing, and water-dependent land uses. An increasing number of residential buildings are being built. In addition, several biotechnology (bio-tech) and high technology (high-tech) offices have been developed in the central and north end of this neighborhood.

1.2.2 Visual Quality

The presence of views outward to surrounding areas and distant natural features is an important aspect of Seattle's unique identity. In many areas of the City including the project area, surrounding natural features remain visible from several viewpoints. Expansive views of Lake Union, the surrounding green hillsides of Queen Anne Hill and Capital Hill, and distant mountains introduce natural visual elements into an urban environment and also lend a sense of openness and relief. The limits of the visual environment in the project area are defined by geography and the built and natural environments from which the proposed project may be visible and where streetcar riders may have views.

In the project area, the viewshed is shown as a band of two or three blocks centered on the alignment. However, some views may extend beyond the limits shown. The project viewshed includes a broad spectrum of man-made elements, land forms, and visual settings that come together to form a viewshed of urban character. The viewshed is influenced by the strong linear character of Westlake Avenue and the surrounding street grid.

Key viewpoints were selected within this viewshed and along the proposed streetcar route, to illustrate where a substantial number of viewers and project features would be visible. Although the field of view depicted by each viewpoint is limited, the visual analysis considers the entire field of view.

1.3 Impacts and Mitigation

The greatest potential impacts associated with the proposed streetcar line would result from construction activities. Traffic delays, detours, and the visibility of construction equipment and activities could affect businesses and local neighborhoods. After construction, few adverse impacts are expected. The new streetcar line could support revitalization efforts in the Denny Triangle and South Lake Union neighborhoods, which would have an incremental effect on redevelopment activities. Growth, as called for in the City's Comprehensive Plan, would continue to increase development densities.

1.3.1 Land Use Impacts

Stations and new left turn-lanes would result in elimination of some curbside parking at those locations. Although some on-street parking spaces would be eliminated, the streetcar would increase accessibility to businesses along the route.

New businesses and residential development may be attracted to locate near streetcar stations to take advantage of improved access. The streetcar maintenance facility would

have minimal impacts on local businesses, because it would be located adjacent to the industrial commercial area to the south and outside of the neighborhood commercial area along the Westlake corridor.

1.3.2 Visual Quality Impacts

The proposed streetcar line would be a new linear and visually evident feature in the project viewshed. However, these linear forms would blend with the existing visual character. Although the streetcar's overhead electrical system and supporting poles would intrude into some views, other types of overhead wires are common and visible in many areas of the project viewshed.

Impacts to regional views from downtown Seattle, Queen Anne Hill, Lake Union and Capitol Hill are expected to be low, because the streetcar's operating system and stations would not be readily distinguishable from other elements of the visual context.

The streetcar maintenance facility, station shelters, tracks, and overhead electrical system would have a low effect on viewers and existing views in the project viewshed, and changes in visual character would not be substantial.

1.3.3 Mitigation Measures

Mitigation measures would be needed, primarily to address potential impacts during construction. Close coordination with businesses and residents would be necessary to provide advance notice of construction schedules and potential detour routes. Public outreach efforts should be provided to inform local businesses and residents of construction activities.

Design and construction of the maintenance facility and other project elements such as shelter placement, seating and signage would be reviewed by city and state historic preservation officers. These improvements would also be consistent with design guidelines for the area where they would be located. The relationship of the maintenance facility to surrounding land uses would be considered in the design, layout of on-site operations, landscaping, and screening of the facility.

Chapter 2 Introduction

2.1 Land Use

The land use analysis for the South Lake Union Streetcar project describes existing land use, development trends, effects that are most likely to occur, and possible mitigation measures. Development trends are of particular importance in the streetcar project corridor because of recent redevelopment activities and changing land use patterns.

In spring 2003, Seattle's Mayor Greg Nickels launched the South Lake Union Action Agenda, which identifies infrastructure and neighborhood improvements to support growth in jobs and housing in the neighborhood. The City subsequently approved the land use code amendments envisioned to accommodate the unique characteristics of research and development laboratories in the South Lake Union area, and redesignated this neighborhood as an Urban Center. Proposed revisions to the City's Land Use Code would increase height limits and encourage increased housing densities in the Denny Triangle area.

2.2 Visual Quality

The visual quality assessment for the South Lake Union Streetcar project describes the character of the existing visual environment, the potential visual impacts of the proposed project, and potential mitigation measures. Mitigation measures include ways to avoid or minimize visual quality impacts and restore or enhance visual quality. As part of this assessment, the City of Seattle Comprehensive Plan, Land Use Code, and State Environmental Policy Act (SEPA) policies were reviewed to identify visual resources. The City's SEPA policies include an Inventory of 87 public view sites protected under SEPA (SMC 25.05.675).

Chapter 3 Project Description

The City of Seattle, in cooperation with the U.S Department of Transportation Federal Transit Administration (FTA), proposes to construct a new streetcar line to serve the downtown, Denny Triangle and South Lake Union areas of Seattle. This line would provide local transit service, connect to the regional transit system, accommodate economic development, and contribute to neighborhood vitality. The project elements and construction are discussed in detail in the *South Lake Union Streetcar Project Description Memo* (Parsons Brinckerhoff, March 2005).

The proposed South Lake Union Streetcar would begin in the vicinity of the intersection of Westlake Avenue and Olive Way/5th Avenue in downtown Seattle (see Figure 3-1). It would 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 would 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 would be constructed entirely within existing right-of-way.

The streetcar would share the street with automobile traffic. 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 3-1, streetcar stops would typically be side-platform corner-curb bulbs located within the parking lane at the far side of an intersection. Two stops would 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 would 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 would be approximately 100 x 70 feet. Two additional yard storage tracks would also be provided. Daily vehicle maintenance and inspections and minor repairs would be completed at the facility.

In the typical construction method for the streetcar track system, the top 12 to 18 inches of pavement would be removed and replaced with rail-embedded reinforced concrete slabs within a trench approximately eight feet wide. This project would also involve upgrading the stormwater detention system in several locations.

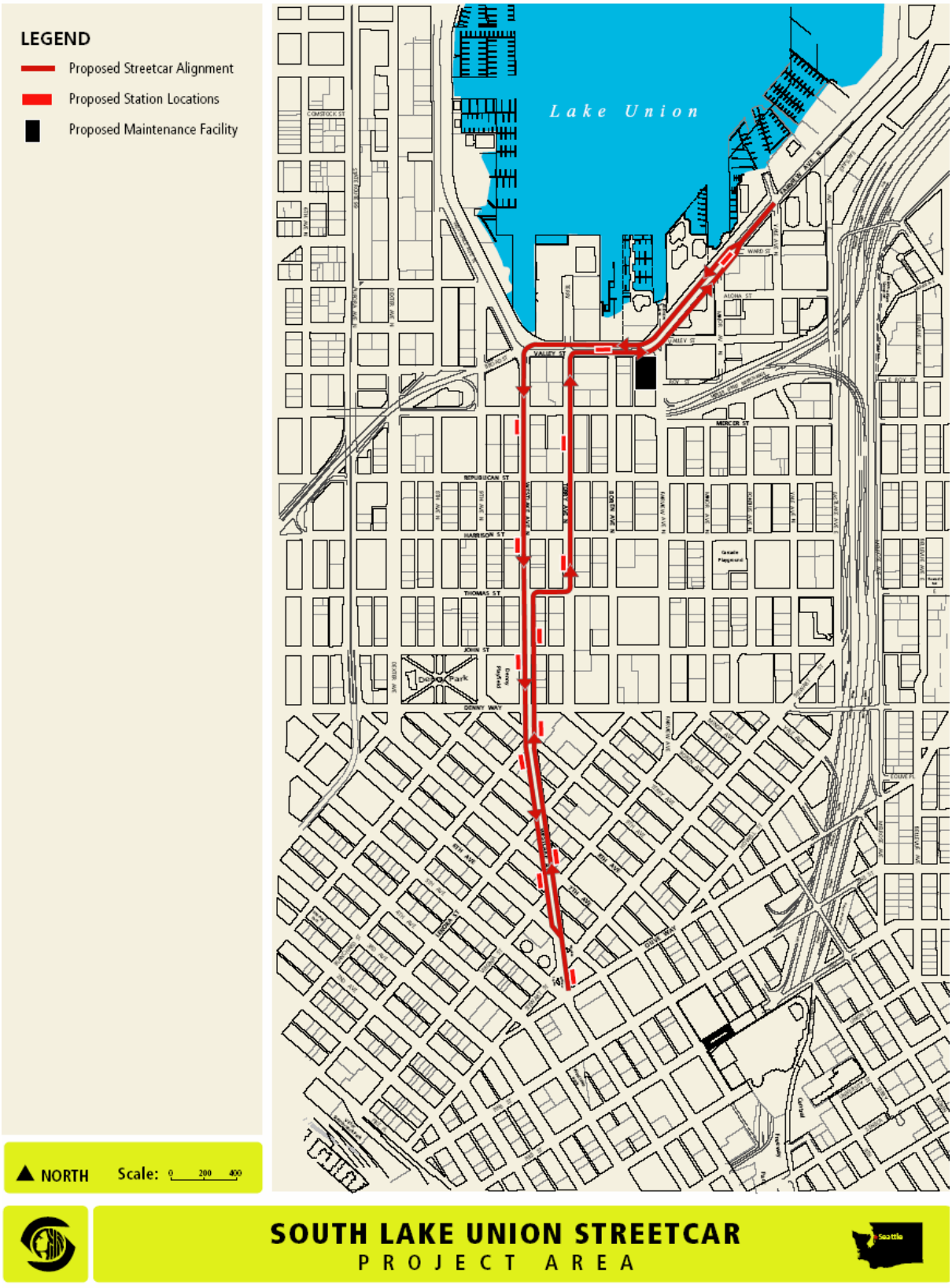

Figure 3-1: Project Area

Chapter 4 Methodology

4.1 Land Use

The land use analysis for the South Lake Union Streetcar project is based on existing land use patterns and future development trends in the project area. The project area for land use consists of the Denny Triangle and South Lake Union neighborhoods. Land use information was obtained through discussions with City planning staff and examination of the following relevant plans and policies:

- Vision 2020 and Destination 2030
- King County Countywide Planning Policies
- Seattle Comprehensive Plan
- Seattle Municipal Land Use Code
- Denny Triangle Neighborhood Plan
- South Lake Union Neighborhood Plan
- Draft Terry Avenue North Design Guidelines
- South Lake Union Design Guidelines

4.2 Visual Quality

The methodology for assessing visual quality was adapted from the Federal Highway Administration (FHWA)'s *Visual Assessment for Highway Projects* (FHWA-HI-88-054) manual. FHWA's methodology was developed on behalf of communities adjacent to proposed transportation projects, to give adequate consideration to the potential visual impacts resulting from highway projects. This methodology has become an accepted framework for describing and analyzing the subjective visual experience and developing the context of visual quality analyses.

The FHWA methodology was used for this assessment, because the streetcar would be built into an existing linear transportation facility (roadway) with a similar range of issues. Project impacts are evaluated with respect to the visual conditions that currently exist. Impacts are also considered for views of and from the streetcar line.

The City of Seattle Department of Planning and Development was consulted in identifying key viewpoints. Seattle's policies and regulations on scenic routes and protected views were also taken into account.

Visual quality is the value assessment of the viewer's visual experience, and the expected change in quality after the proposed project is constructed. The visual impact assessment describes the following:

- The existing visual environment and proposed changes in terms of the landscape's vividness (memorability or distinctiveness);
- Intactness (integrity of visual order in the natural and man-made landscape); and
- In locations where there is unity in the landscape (a harmonious mix of elements), elements of the proposed project that do not fit with the overall landscape.

The assessment of visual quality uses a gradient (from low to high) to assess visual quality impacts within the project viewshed. This assessment is based on a combination of broad criteria, including the visual experience of the pedestrian, transit rider, and motorist; the type of views (i.e. scenic, panoramic, etc.); the overall visual quality; and the scale and contrast of elements.

This assessment rates visual impacts as low, moderate, or high according to the following definitions:

Low contrast between the scale or character of the project elements and the existing environment has no impact to low impacts on viewer groups, who would not likely notice visual change or expect a scenic view. Minor shadow impacts, or light and glare may occur.

Moderate contrast between the scale and character of the project elements and the existing environment is noticeable but not dramatic. Moderate impacts would affect viewer groups who are somewhat aware of and sensitive to visual change. Moderate shadow impacts or light and glare may occur.

High contrast between the scale or character of the project elements and the existing environment would affect viewer groups who are sensitive to visual change and expect attractive views or surroundings. Substantial shadow impacts or light and glare may occur.

Chapter 5 Affected Environment

5.1 Land Use

The City's Comprehensive Plan, *Toward a Sustainable Seattle*, is a 20-year policy plan completed in 1994 (updated in 2004) that articulates a vision of how Seattle will grow. The Comprehensive Plan makes policy choices and provides a flexible framework for future planning and development. This Plan emphasizes an "urban village" strategy, which seeks to promote and reinforce the pattern of growth in dense, mixed-use urban centers and several smaller "urban village" neighborhood districts throughout the city. The Plan includes 20-year growth targets for the urban centers and villages. The Comprehensive Plan satisfies requirements of the Washington State Growth Management Act and fits within King County's framework of Countywide Planning Policies. Transit uses are strongly encouraged in Seattle's Comprehensive Plan, especially transit systems that connect urban centers, villages, and manufacturing/industrial centers. Relevant land use plans and policies are discussed in Appendix A of this report.

The Seattle Land Use Code designates a variety of land use districts or zones that guide development by regulating the type and density of uses permitted. Existing land uses and zoning are shown in Figure 5-1. The South Lake Union shoreline area is subject to special shoreline provisions that apply within the shoreline environment. The City's zoning and shoreline codes have been adapted to be consistent with the Comprehensive Plan's goals and policies, as required by the Washington State Growth Management Act (GMA).

5.1.1 Denny Triangle Neighborhood

5.1.1.1 Land Use Patterns

The Denny Triangle is generally bounded by Denny Way on the north, Interstate 5 (I-5) on the east, 5th and 6th avenues on the west, and Olive Way and Pike Street on the south. Westlake Avenue, Stewart Street, and Olive Way are the neighborhood's primary thoroughfares, and Stewart Street and Olive Way serve as major accesses to the north end of downtown from I-5. The Denny Triangle is a designated Urban Center Village and serves as a gateway into downtown Seattle from the north.

The Denny Triangle contains a broad range of land uses that vary from high-rise office buildings to parking lots or low-rise structures. Existing land uses are shown in Figure 5-1. Hotels, office buildings, automobile sales dealerships, and a variety of other commercial uses share the area with older manufacturing buildings, a mix of housing types, and numerous surface parking lots. Several new large-scale office and residential buildings have recently been built.

Larger land uses of note include the 1700 Seventh Avenue building, Marsh and McLennan building, Bell Plaza building, Metropolitan Park office towers, and the Westin, Camlin, and Vance hotels. Several small hotels, motels, and residential towers are also located in the area. The new Federal Courthouse, West Precinct police station, Convention Place transit station, Westlake transit station, and Westlake Monorail station are major public use facilities.

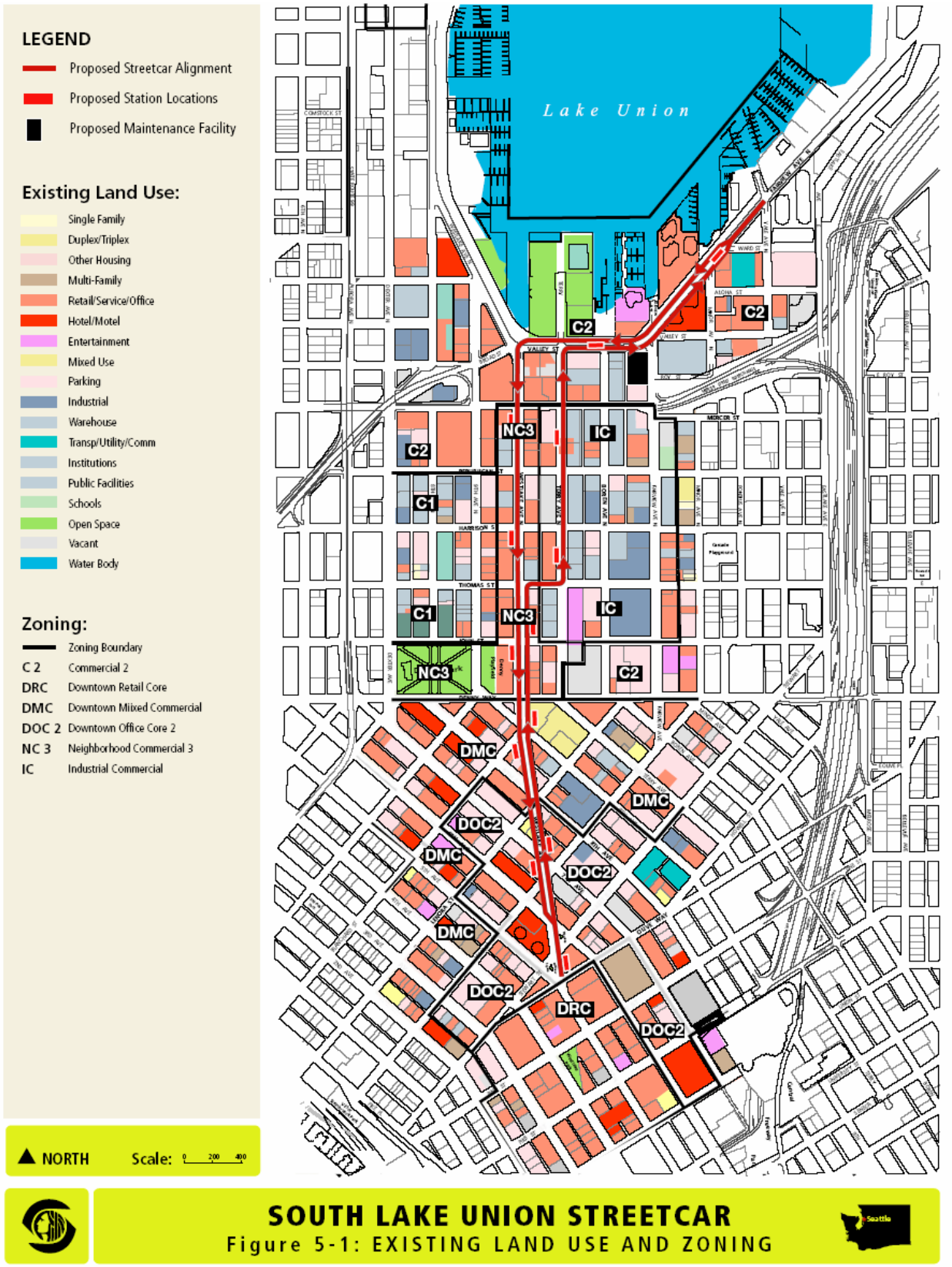

Figure 5-1: Existing Land Use and Zoning

5.1.1.2 Zoning Designations

The Denny Triangle contains two zoning designations: the Downtown Office Core (DOC) 2-300 zone and the Downtown Mixed Commercial (DMC) zone. These zones are intended to accommodate a wide range of uses and are differentiated primarily by the density of the buildings permitted. Numerical suffixes to zoning designations indicate building height limits within the zone (e.g. DOC 2-300). Existing zoning is shown in Figure 5-1.

The DOC 2-300 zone is intended to accommodate substantial office densities and provide a transition between the DOC 1-450 zone to the south and less dense land uses in areas to the north. Office uses are a primary emphasis, along with other commercial uses, retail shopping, and services. The emerging development trend in the DOC 2-300 zone includes a combination of lower bulky structures such as the Washington State Convention Center exhibition halls and Pacific Place retail center (which occupy a block or more on the edge of the retail core) and taller towers built on smaller sites of a half-block or less.

The DMC zone is intended for "lower-scale" office, retail and commercial uses that support the Office Core, along with housing and associated commercial services. Buildings heights are limited, to provide a transition between the higher density office core and the surrounding lower-density neighborhoods.

5.1.2 South Lake Union Neighborhood

5.1.2.1 Land Use Patterns

South Lake Union is generally bounded by the south end of Lake Union, I-5 on the east, Denny Way on the south, and Broad Street/Seattle Center and Aurora Avenue N. (SR-99) on the west. Existing land uses are shown in Figure 5-1. The neighborhood comprises a diverse mix of commercial, office, warehouse, light manufacturing, and water-dependent land uses. An increasing number of residential buildings are being built. In addition, several biotechnology (bio-tech) and high technology (high-tech) offices have been developed in the central and north end of this neighborhood. The City's Comprehensive Plan currently designates South Lake Union as an Urban Center, meaning that it is considered a good location for employment and housing.

The traffic corridors linking I-5 to the Seattle Center and the north end of downtown Seattle are a dominant presence in the South Lake Union neighborhood. Traffic-laden Mercer Street runs east/west through this area, dividing the primarily commercial and water-dependant uses to the north and commercial and residential areas to the south. North/south streets such as Terry Avenue N., Boren Avenue N., and Fairview Avenue N. provide view corridors to Lake Union.

Prominent structures near the South Lake Union shoreline area include the Associated General Contractors (AGC) building, Center for Wooden Boats, Naval Reserve Armory, Maritime Heritage Center, Lake Union Dry Dock, Lake Union Steam Plant (now ZymoGenetics), Fred Hutchinson Cancer Research Center, and the red brick Craftsman Press building (redeveloped as Shurgard Storage). Other notable structures in the area include the Seattle Times Building, Recreational Equipment Incorporated (REI), I-5 to the east, and the Seattle Center complex west of Aurora Avenue N. (SR 99).

The Cascade community occupies the eastern portion of the South Lake Union neighborhood. Over time, residential uses in this area have been replaced by parking lots, warehouses, and office buildings. Currently, residential uses co-exist with office, commercial, and industrial uses. Existing retail establishments are primarily suppliers of office equipment and products, automotive parts, and building materials. Wholesale distributors, commercial laundries, and printing/publishing are prevalent industries.

South Lake Union has experienced substantial redevelopment over the last ten years, with an increasing number of bio-tech and high-tech companies.

5.1.2.2 Zoning Designations

South Lake Union includes areas zoned for light-industrial, commercial, and residential development. Existing zoning is shown in Figure 5-1. The zoning in many areas allows for a mix of uses, including housing. The Neighborhood Commercial (NC 3) zone along Westlake Avenue N. is pedestrian-oriented and permits offices, retail, and light manufacturing with certain size restrictions. Height limits are limited to 125 feet along Westlake Avenue N. from Denny Way to Mercer Street. Taller buildings are allowed near Seattle's commercial core and decrease northward toward Lake Union, with the lowest height areas along the shoreline. The Commercial 2 (C2) zone is auto-oriented and permits offices, retail, parking and light/general manufacturing. Institutional uses, parks, and playgrounds are also permitted. Housing in this zone requires conditional use approval. The Industrial Commercial (IC) zone is an industrial zone that permits office, retail, parking, and light/general manufacturing. Parks and playground s are also permitted. Housing is generally prohibited in this zone.

Parts of South Lake Union are within the shoreline district, which is an overlay zone that regulates land within 200 feet of the shoreline. The shoreline district comprises five shoreline zones. The upland area where the streetcar would run is designated Urban Stable (US). The US overlay zone permits outright water-dependent and water-related retail, warehouses, light/general manufacturing, public facilities, and parks.

5.1.3 Development Trends

Substantial growth is anticipated in both the Denny Triangle and South Lake Union neighborhoods. Given the substantial number of underdeveloped parcels in the Denny Triangle and the potential for assembling large half- and full-block sites, it is reasonable to expect substantial changes in the overall scale of development in the future. Core areas of the Denny Triangle are likely to become a mix of residential, commercial, and office uses that will compliment other new development such as the planned Cornish School campus. Redevelopment activity is already occurring in the eastern portion of the Denny Triangle, the central portion of the South Lake Union, and further east along Eastlake Avenue. Considering that much of the land in these neighborhoods is underdeveloped at current zoning, new development would likely create major changes in the area's visual character. With this increased density, the demand for open space and pedestrian circulation is expected to increase.

Growth in the South Lake Union neighborhood has resulted in low- to mid-rise buildings, with mixed-use emphasizing commercial development along the lakefront. The core areas of South Lake Union between Mercer and Thomas streets and Westlake Avenue N and Fairview Avenue N. have become a hub for bio-tech and residential uses. Westlake Avenue N. will likely see substantial new residential development integrated with a variety of street-level commercial and office uses. The University of Washington recently relocated some of its research facilities to South Lake Union, anticipating substantial growth opportunities. The Cornish School of the Arts also recently moved their Capitol Hill campus to the Denny Triangle. A focus for new development in this neighborhood is the planned transit-oriented development around the Convention Place Transit Station. Several full-block commercial and mixed-use projects are proposed in this area.

The City's vision for South Lake Union is a place where people can live and work. Proposed land use and zoning changes would encourage housing development in a pedestrian-oriented, mixed-use neighborhood, while respecting the area's commercial history. Proposed rezones and Municipal Land Use Code amendments include the following:

- Rezoning portions of the neighborhood to the Seattle Mixed (SM) zone, which is the new zone name for the current Seattle Cascade Mixed (SCM) zone.
- Amending rezone criteria to allow broader use of the SM zone in other areas.
- Requiring design review for new development in the Industrial Commercial (IC) zone until this zone is reconsidered as part of a city-wide examination of industrial areas.
- Updating standards for the SM zone related to pedestrian oriented design, such as the transparency of street-level facades and upper-level setbacks.

The City is currently considering redevelopment of the Mercer/Valley corridor. With the preferred alternative, Mercer Street would provide a two-way connection between the Seattle Center and I-5. Valley Street would be converted to a smaller local street, serving the park and providing pedestrian amenities. Other components of proposed traffic improvements in the South Lake Union area include the reconfiguration of Westlake Avenue N. and 9th Avenue N. from a one-way couplet to two-way streets. The ongoing transportation study is looking for ways to enhance bicycle and pedestrian access and provide streetscape improvements along the Westlake corridor and portions of Terry Avenue N., Valley Street, and Fairview Avenue N.

The City is also working to comprehensively review policies and development regulations that govern commercial areas in an effort called the Neighborhood Business District Strategy (NBDS). The NBDS project is intended to improve prospects for business and residential development throughout the City's mixed-use urban villages and centers.

5.1.4 Project Route Segments

The streetcar route would extend north from its terminus between Olive Way and Stewart Street, through the Denny Triangle and South Lake Union neighborhoods, to the north terminus at the intersection of Fairview Avenue N. and Ward Street. This section describes

the specific land uses adjacent to the streetcar route by segment, beginning at the southern terminus. The primary land use for each segment is summarized in Table 5-1.

5.1.4.1 Westlake Avenue North Segment

Westlake Avenue N. provides a direct connection from downtown to South Lake Union and north to the Westlake and Fremont areas. Land use along the Westlake Avenue N. corridor is comprised of low- and mid-rise offices and warehouses, although recent development has been of a larger scale. South of Denny Way, land uses are office and commercial, transitioning to commercial and warehouse north of Denny Way. Surface parking, retail, and some light manufacturing are also located in this segment. Most development is low-density and oriented to the automobile. Buildings are typically four stories tall. Retail is the largest single type of land use.

Table 5-1: Primary Land Uses

Route Segment	Primary Land Use
Westlake Ave. (Olive Way to Denny Way)	Downtown Office and Commercial
Westlake Ave. N. (Denny Way to Valley Street)	Neighborhood Commercial: Denny Way to Mercer Street Commercial: Mercer Street to Valley Street
Terry Ave. N.	Commercial: Valley Street to Mercer Street Industrial Commercial: Mercer Street to John Street
Thomas Street	Neighborhood Commercial: Terry Avenue N. to Westlake Avenue N.
Valley Street	Commercial: Westlake Avenue N to Fairview Avenue N.
Fairview Ave. N.	Commercial: Valley Street to Ward Street
Source: City of Seattle, 2005.	

5.1.4.2 Thomas Street Segment

Land uses on Thomas Street include warehouses, light industry, and surface parking lots. Thomas Street is a through-street that connects to north/south arterials such as Westlake Avenue N. and Fairview Avenue N.

5.1.4.3 Terry Avenue North Segment

Terry Avenue N. is a local access street that runs north from Denny Way across Valley Street and into South Lake Union Park. It runs parallel to Westlake Avenue N., which has higher traffic volumes and more commercial and retail development. By contrast, Terry Avenue N. is a non-arterial street that is industrial in character. Land uses in the Terry Avenue N. segment include warehouse, retail, wholesale, food production, light manufacturing, and office. The street is centrally located in the emerging concentration of new buildings that are mostly dedicated to biotech research. Many non-conforming uses currently exist along this street. Specifically, loading docks are located at or near lot lines, so trucks extend into the street right-of-way while loading and unloading. This use is expected to continue until redevelopment occurs.

5.1.4.4 Valley Street and Fairview Avenue North Segments

Valley Street serves as a primary connection from 1-5 to the Seattle Center and surrounding neighborhoods such as Queen Anne, Ballard, the Magnolia/Interbay manufacturing center, and north downtown. Fairview Avenue N. is a principal arterial serving as a major connection to/from the Eastlake and University District neighborhoods and South Lake Union/downtown Seattle. To the north, water-dependant uses such as yacht sales and boat repair and supply businesses coexist with several restaurants and small commercial and office uses. South Lake Union Park and the Maritime Heritage Center are also located along the Lake Union shoreline. Smaller-scale commercial uses are south of S. Valley Street. ZymoGenetics, the Marriott Residence Hotel, Fred Hutchinson Cancer Research Center, and Shurgard Storage facility are near Fairview Avenue N.

5.2 Visual Quality

5.2.1 Visual Policies, Regulations, and Guidelines

5.2.1.1 Protected Views and Public Viewpoints

The City's State Environmental Policy Act (SEPA) policies (SMC 25.05.675) provide the authority to preserve views and character-defining visual resources and elements from significant public viewpoints, parks, scenic routes, and view corridors. Among the 87 viewpoints designated by these policies, approximately 26 locations have views of the downtown skyline and/or views across downtown toward natural features like Mt. Rainier, the Olympic mountains, or Elliott Bay. Protected views include those of Lake Union. No significant viewpoints listed in SMC 25.05.675 are located in the project area.

5.2.1.2 View Protected Landmarks

The City's SEPA policies specify that "it is the City's policy to protect public views of historic landmarks designated by the Landmarks Preservation Board which, because of their prominence of location or contrast of siting, age, or scale, are easily identifiable visual features of their neighborhood or the City and contribute to the distinctive quality or identity of their neighborhood or the City." The City has identified 23 designated landmarks for public view protection. Of these landmarks, the Camlin Hotel, Frederick & Nelson Building (Nordstrom), and Times Square Building are located in the project viewshed and visible from various points along the proposed streetcar route. Designated landmarks outside the project viewshed but also visible from the route include the Space Needle and Queen Anne High School. Although designated view protected landmarks contribute to the downtown area's overall visual and architectural quality, more viewers experience these landmark buildings from a distance of one or two blocks, where the viewer can appreciate the quality of the building within its urban context.

5.2.1.3 Designated Scenic Routes

The City's SEPA policies address the protection of public views from City streets designated as scenic routes. "It is the City's policy to protect public views of significant natural and human-made features: Mount Rainier, the Olympic and Cascade mountains, the downtown skyline, and major bodies of water including Puget Sound, Lake Washington, Lake Union, and the Ship Canal from public places consisting of the specified viewpoints, parks, scenic

routes, and view corridors" (SMC 25.05.675 P.2.a.i. and Attachment 1). The City's SEPA policy for designated scenic routes does not identify view locations along these routes. Westlake Avenue N., Valley Street, and Fairview Avenue N. are designated scenic routes that are part of the proposed streetcar route. The scenic routes are oriented toward the aesthetic qualities and distant views of Lake Union, which include South Lake Union Park, the Maritime Heritage Center, and the Center for Wooden Boats.

Assessments of view conditions on scenic routes consider the observer and the direction of travel in relation to the view. Although Lake Union is visible from the designated scenic routes described in the previous paragraph, observers in vehicles are traveling in traffic, which may limit the duration of views to brief glimpses. Pedestrians and bicyclists would have a similar visual experience but for a longer duration, and potentially an expanded scope and direction of views.

5.2.1.4 Design Guidelines

The South Lake Union Design Guidelines are intended to reinforce the neighborhood's character and protect the qualities that a neighborhood values most in the face of change. The guidelines identify the intersections of Westlake Avenue N./Denny Way and Fairview Avenue N./Valley Street as "gateways." Gateways are transitional locations intended to mark an entry or departure point to a neighborhood through the use of architectural elements, streetscape features, landscaping and/or signage. The guidelines also identify Westlake Avenue N., Terry Avenue N., Valley Street, and South Lake Union Park as "heart locations." Heart locations serve as the perceived center of commercial and social activity within a neighborhood. These locations also provide identity and give form to the neighborhood. These sites are given a high priority for improvements such as pedestrian lighting, public art, special paving, and landscaping.

The *Draft Terry Avenue North Street Design Guidelines* supplement the *South Lake Union Design Guidelines* and further clarify development standards to be used on Terry Avenue N. These guidelines recommend that Terry Avenue N. should be rich in pedestrian amenities, such as low-level lighting, special paving and landscaping, art and public open space. The guidelines also envision Terry Avenue N. as a key point of entry into the redeveloped South Lake Union Park.

5.2.2 Existing Visual Environment

This section describes the existing visual environment of the proposed project. Seattle's downtown skyline is a composition that includes clusters of buildings, water, and individual landmark structures. The composition of these elements defines the image for the viewer and varies depending on the direction and distance of the viewpoint.

The presence of views outward to surrounding areas and distant natural features is an important aspect of Seattle's unique identity. In many areas of the City including the project area, surrounding natural features remain visible from several viewpoints. Expansive views of Lake Union, the surrounding green hillsides of Queen Anne Hill and Capital Hill, and distant mountains introduce natural visual elements into an urban environment and also lend a sense of openness and relief.

The limits of the visual environment in the project corridor are defined by geography and the built and natural environments from which the proposed project may be visible and where streetcar riders may have views. This area of visibility is called a viewshed, as depicted in Figure 5-2**.** In the project area, the viewshed is shown as a band of two or three blocks centered on the alignment. However, some views may extend beyond the limits shown.

The project viewshed includes a broad spectrum of man-made elements, land forms, and visual settings that come together to form a viewshed of urban character. Key viewpoints were selected within this viewshed and along the proposed streetcar route, to illustrate where a substantial number of viewers and project features would be visible (Table 5-2). Although the field of view depicted by each viewpoint is limited, the visual analysis considers the entire field of view.

The project corridor's existing visual quality is discussed in following sections, organized by route segments. The key viewpoints shown in Figure 5-2 and listed in Table 5-2 are intended to represent the entire corridor as viewed from various key locations along the streetcar route.

Table 5-2: Key Viewpoints – Location and Direction

Photograph / Viewpoint	Approximate View Location	View Direction
1	Intersection of Westlake Avenue and Stewart Street	North on Westlake Avenue
2	West side of Westlake Avenue, just south of 9th Avenue	South on Westlake Avenue past the 8th Avenue intersection.
3	West side of Westlake Avenue N. at the intersection of John Street	North on Westlake Avenue N.
4	Intersection of Terry Avenue N. near the intersection of John Street	North on Terry Avenue N.
5	West side of Westlake Avenue N. just south of the Valley Street intersection	North on Westlake Avenue N.
6	Intersection of Fairview Avenue N. and Minor Street	Southwest on Fairview Avenue N.

Source: Parsons Brinckerhoff, 2005.

The photographs shown in Figure 5-3 through Figure 5-8 represent the scale of structures in relationship to other objects, and aspects of the viewshed as seen from the key viewpoints. These figures also show visual simulations that represent elements of the streetcar project. The visual simulations are discussed in the *Impacts* section of this report (Chapter 6).

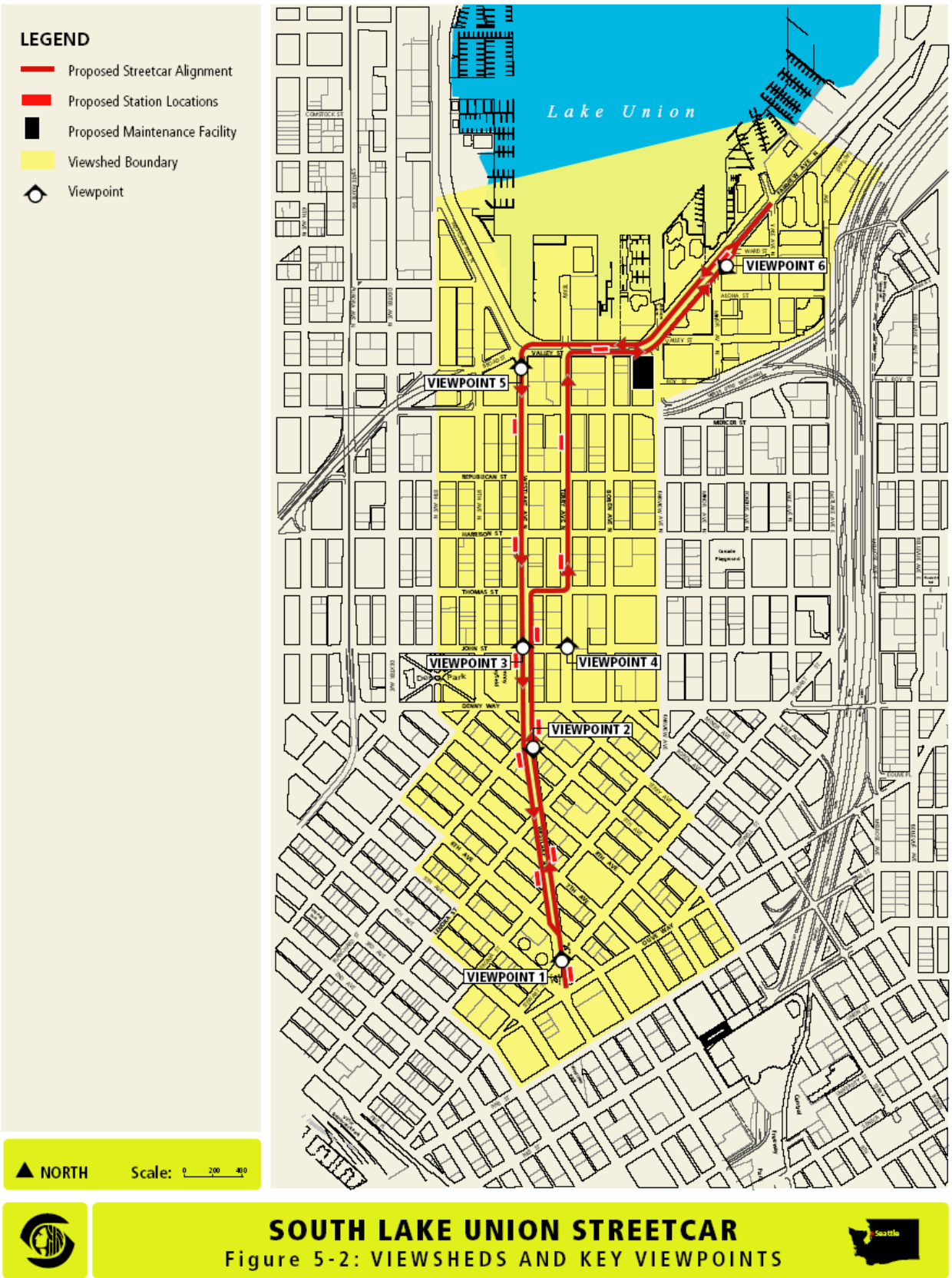

Figure 5-2: Viewsheds and Key Viewpoints

Figure 5-3: Viewpoint 1 and Visual Simulation

Figure 5-4: Viewpoint 2 and Visual Simulation

Figure 5-5: Viewpoint 3 and Visual Simulation

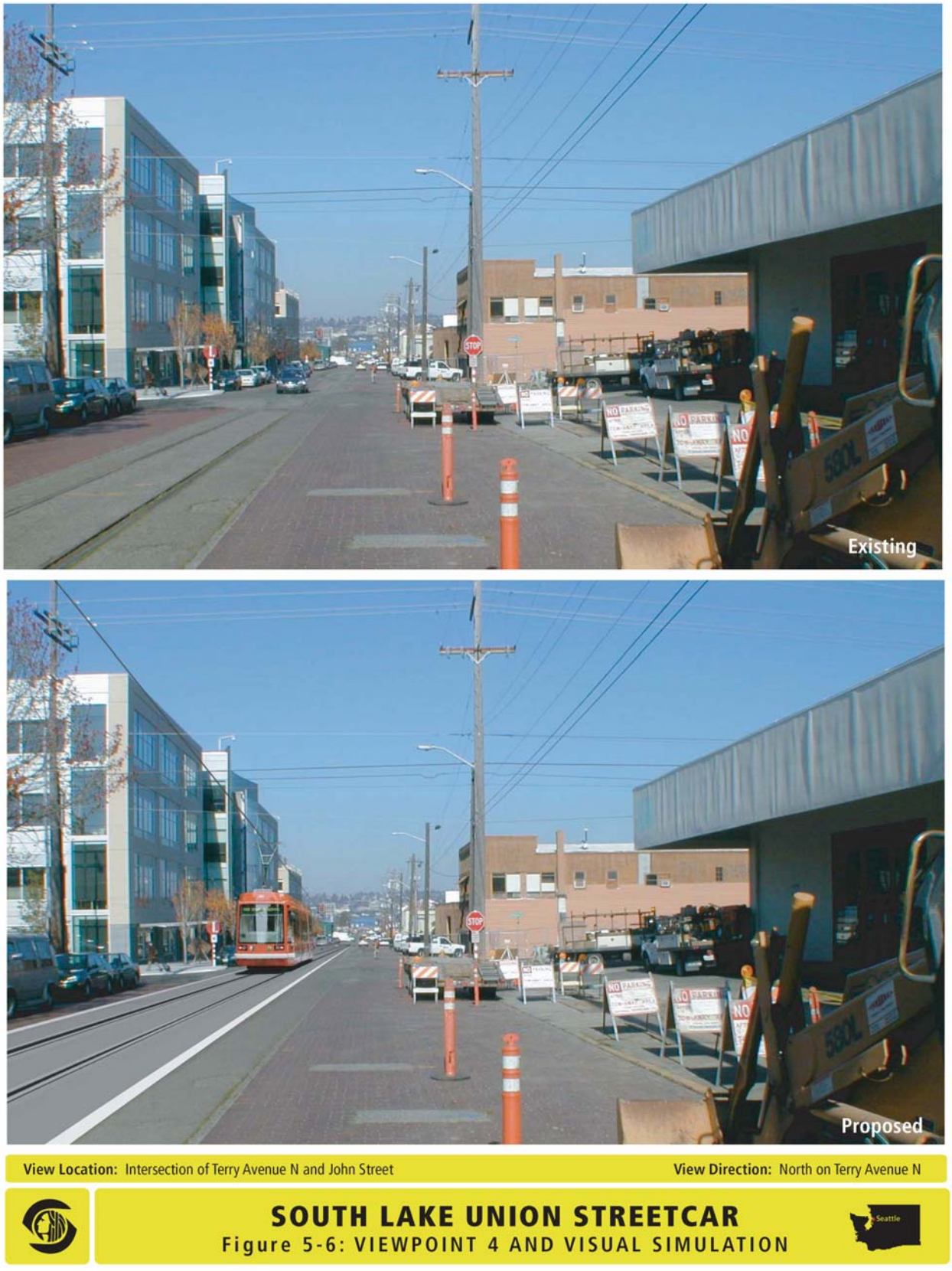

Figure 5-6: Viewpoint 4 and Visual Simulation

Figure 5-7: Viewpoint 5 and Visual Simulation

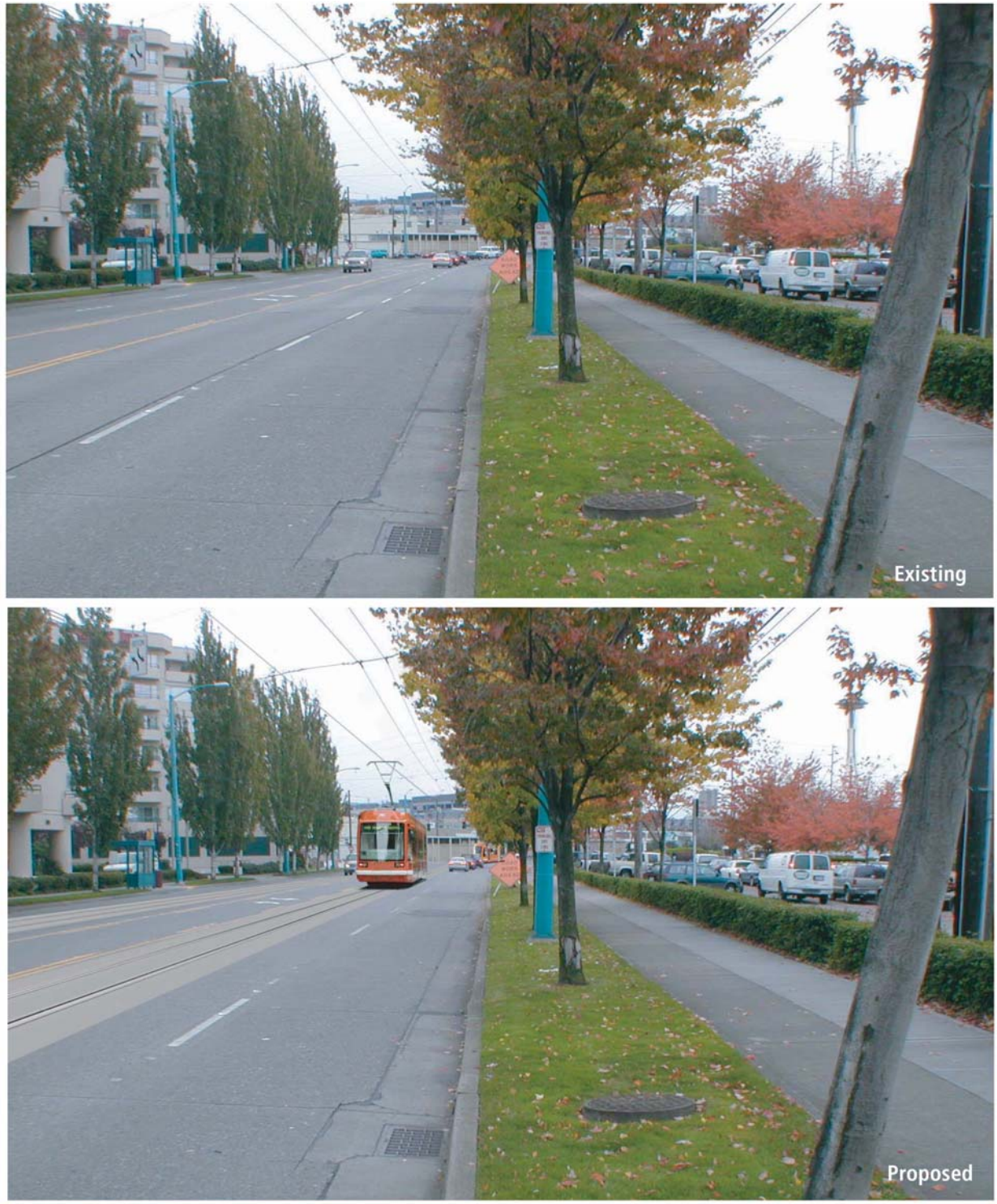

Figure 5-8: Viewpoint 6 and Visual Simulation

5.2.2.1 Westlake Segment (Westlake Avenue and Westlake Avenue North)

This segment's terrain is relatively flat but slopes down toward Lake Union. Urban development is continuous along Westlake, ranging from high-rise buildings at Olive Way to low- and mid-rise buildings further north toward Lake Union. Recent development is intermittent between Denny Way and Mercer Street and includes one- to four-story buildings. Open areas where views are not limited by buildings are associated with Denny Park, Denny Playfield, and intermittent surface parking lots. Denny Playfield is not a publicly owned park.

The roadway consists of four lanes with on-street parking, and a sidewalk on each side. Intersecting east and west streets are noticeably narrower. Notable overhead facilities include light standards and electrical distribution lines. Vegetation consists primarily of street trees and minimal ornamental plantings in commercial areas.

Views within this segment tend to be south to north, from the City's skyline to Lake Union and beyond. Distant scenic views are limited by the scale and density of development but include the Space Needle, Queen Anne Hill, Aurora Bridge, I-5/Lake Washington Ship Canal Bridge, and Capitol Hill. Greenbelts cover much of the visible steep slopes on Queen Anne Hill and Capitol Hill.

The visual experience for pedestrians varies. Westlake is a wide arterial and a largely auto-oriented environment, lacking a distinct neighborhood identity. Although scenic views are available in this segment, pedestrians' aesthetic experience along the proposed alignment is diminished by traffic, an abundance of parking lots, and the lack of landscape improvements. Commercial and transportation signage, signalization, street lighting, and overhead utilities also create a moderate degree of visual clutter. The viewer's expectation for unique or high quality visual experience in this segment is expected to be moderate as a result of these factors.

5.2.2.2 Thomas Street Segment

The section of Thomas Street between Westlake Avenue N. and Terry Avenue N. is flat. Thomas Street ends at Terry Street. Development on both sides of the roadway consists of surface parking lots and two- and three-story warehouse buildings fronted by sidewalks, light standards, and electrical distribution lines. Views are limited by the scale and density of development but include the Space Needle and Queen Anne Hill. The viewer's expectation for a unique or high quality visual experience in this segment is expected to be low to moderate.

5.2.2.3 Terry Avenue North Segment

The terrain of Terry Avenue N. is similar to Westlake Avenue N.: relatively flat and sloping down toward Lake Union. Urban development is intermittent and on-street parking and surface parking lots occur at various locations. Most buildings within this segment range from one to four stories in height and the tallest buildings are on the west side of the street. These buildings also tend to be the newer, with more extensive use of steel concrete and incorporating more glass surfaces.

The history of this street is visible in its abandoned railroad tracks and original brick roadway surface. Parts of Terry Avenue N. have no sidewalks, with parked cars abutting buildings and trucks jutting into the street while loading and unloading. Overhead

facilities include light standards and electrical distribution lines. Recent development includes four-story office buildings.

Views within this segment are similar to the Westlake Avenue N. segment, with a primarily south to north orientation from the City's skyline to Lake Union and beyond. Distant scenic views are limited by the scale and density of development to the west and a hillside to the east. However, the Space Needle, Queen Anne Hill, Aurora Bridge, I-5/Lake Washington Ship Canal Bridge, and Capitol Hill are visible in the distance.

The visual experience for pedestrians along the proposed alignment is diminished by traffic, lack of sidewalks, and the lack of landscape improvements. Parked cars abutting buildings and trucks jutting into the street also create a substantial amount of visual clutter. The viewer's expectation for unique or high quality visual experience in this segment is expected to be low as a result of these factors.

5.2.2.4 Valley Street and Fairview Avenue North Segment

The terrain in this segment is flat. The South Lake Union Park, Maritime Heritage Center, and Center for Wooden Boats are located north of Valley Street, along the Lake Union shoreline. South Lake Union Park provides an open view of the lake and views of downtown buildings to the south. In this area, the streetcar line would be in the railbank area parallel to Valley Street.

Urban development is continuous along Fairview Avenue N., with mid-rise buildings of five to seven stories on the south side and smaller-scale buildings along the shoreline. Intermittent views of the lake are experienced by pedestrians and bicyclists, and from vehicles traveling on the roadway.

Valley Street and Fairview Avenue N. consist of five to six lanes. Sidewalks and planting strips are not continuous along Valley Street. In contrast, Fairview Avenue N. has sidewalls, planting strips and street trees from its intersection with Valley Street and continuing beyond Yale Street. Intersecting streets provide direct views across Lake Union. Notable overhead facilities include light standards and electrical distribution lines.

Although this segment offers are scenic views of Lake Union, the downtown skyline and surrounding Queen Anne Hill and Capitol Hill, the aesthetic experience for pedestrians is diminished along the Valley Street segment by frequent traffic congestion and the lack of continuous pedestrian-oriented improvements such as sidewalks and landscaping. In contrast, Fairview Avenue N. has less traffic congestions and includes sidewalks and landscape planting strips with street trees. The viewer's expectation for unique or high quality visual experience in this segment is expected to be moderate to high.

5.2.2.5 Viewshed Light and Glare

Major sources of light and glare in all segments of the proposed project viewshed include vehicle headlights and street lights. Most parking lots rely on street lighting and do not contribute to ambient light conditions. Other visible sources of light include office buildings and commercial store fronts and signage. Levels of visible light are fairly consistent along the project corridor because street lights are provided on most streets. The greater intensity of development along the Westlake (between Denny Way and Mercer Street) and Fairview Avenue N. segments results in increased light levels in those areas.

Chapter 6 Environmental Consequences

6.1 Operation

6.1.1 Land Use

6.1.1.1 Land Use Plans and Policies

Coordination of land use and transportation is a key component of the Washington State Growth Management Act (GMA), and expanded public transit is an important element of the region's overall transportation plan. The proposed streetcar project would connect areas of employment and residential development in South Lake Union with Downtown Seattle and would further the GMA's goals. The proposed project is consistent with the GMA in that it would accommodate growth within the urban area (more specifically in Seattle's urban centers) and provide a transportation alternative to the single-occupant vehicle (SOV). It would also support the multi-modal transportation system approach set forth in the countywide planning policies. Relevant land use plans and policies are discussed in Appendix A of this report.

The proposed project is consistent with Seattle's Comprehensive Plan because it directs service to urban villages and to the downtown urban core. These are areas where the City has made plans for growth and prioritized the connection of those areas to each other and to the urban core. The proposed project would link urban centers within the City of Seattle and provide connections to other transit modes at Westlake Center and the Downtown Seattle Transit Tunnel. As such, it would be an important component in the City's transportation system.

Implementation of the proposed project would improve mobility and the efficient movement of people by providing better connectivity between neighborhoods. The proposed project would also provide increased support for land use plans that promote higher residential densities and increased employment. The streetcar stations would be developed consistent with the City's Comprehensive Plan and Land Use Code (Title 23 of the Seattle Municipal Code).

6.1.1.2 Land Use Changes

The streetcar would operate in existing traffic lanes, except at Valley Street where both tracks would be located in the existing railbank north of the street. Some curbside parking spaces would be displaced to accommodate turning lanes or streetcar stops.

Stations would serve the increasing land use densities occurring in the project area. They would be located to provide connectivity with other transit stops and convenient access to public attractions such as the Lake Union shoreline and South Lake Union Park. Station locations are shown on Figure 5-1.

The Fairview Avenue N. (Fred Hutchinson Campus) station would be located in the center of the roadway. The Valley Street station (near South Lake Union Park) would be located in the existing railbank. Other stations would consist of platforms located in the parking lane,

primarily at intersections. Stations and new left turn-lanes would result in elimination of some curbside parking at those locations. Although some on-street parking spaces would be eliminated, the streetcar would increase accessibility to businesses along the route.

The streetcar maintenance facility is proposed to be located at the southwest corner of Fairview Avenue N. and Valley Street. The current use of this site is a boat sales showroom and other retail use. These uses would be displaced and the existing buildings demolished. The property is zoned Commercial 2 40 (C2 40). 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 may be permitted as a conditional use. Conditional uses are subject to the procedures described in 23.47.006 and Chapter 23.76 of the Municipal Code.

Fairview Avenue N. and Valley Street are identified in the neighborhood's *Design Guidelines* as "heart locations," perceived as centers of commercial and social activity within a neighborhood. The maintenance facility's relationship to the heart location designation and surrounding land uses would be considered in the design, layout of on-site operations, landscaping, and screening of the facility. The proposed maintenance facility would meet the C2 40 zone development standards.

6.1.1.3 Indirect Local Business Impacts

Currently, Westlake Avenue N. functions as a major arterial through a neighborhood commercial area. Valley Street and Fairview Avenue N. are also arterials that provide access to land uses along the Lake Union shoreline and circulation around the lake. Terry Avenue N. and Thomas Street provide local access. The proposed streetcar terminus near Westlake Center would provide a connection to the Westlake station (Downtown Seattle Transit Tunnel), a regional transit hub for buses, monorail, and future light rail. Streetcar riders may choose to visit commercial businesses near the station.

New businesses and residential development may be attracted to locate near streetcar stations to take advantage of improved access. The streetcar maintenance facility would have minimal impacts on local businesses, because it would be located adjacent to the industrial commercial area to the south and outside of the neighborhood commercial area along the Westlake Avenue N. corridor.

6.1.2 Visual Quality

This section discusses the proposed project's potential visual impacts. The discussion refers to views from key viewpoints (see Table 5-2 and Figure 5-2 in Chapter 5) and project simulations (see Figure 5-3 through Figure 5-8 in Chapter 5). Visual simulations were prepared for each segment to illustrate the project area's future appearance, as seen from key viewpoints. These locations were selected to represent the range of views of the proposed project and to help assess impacts. Changes in views and visual impacts were determined by comparing the existing visual quality with the change that would be expected with the proposed project. Although the simulations are limited in their field of view, the entire field of view has been considered in the assessment of visual quality. The simulations depict how the completed project may look during operation.

To understand and predict viewers' responses to the project's effects on visual resources, it is essential to identify the viewers who will see the project and the aspects of the visual environment that they are most likely to respond to. Viewer response is analyzed in terms of viewer exposure and viewer sensitivity, or the expectation a viewer would have for a visual experience in a given area. These two elements work together.

Viewer exposure refers to the physical location of the viewer groups, the number of people exposed to a view, and the duration of their view. This includes the streetcar riders, roadway users, and people in the surrounding area.

Viewer sensitivity is the degree to which a viewer expects a particular visual setting in an area, based on the existing environment and the extent to which visual elements are important to the viewer. Viewer sensitivity is affected by factors such as the activities a viewer is engaged in; the visual context; and the values, expectations, and interests of a group of people or a person involved in a particular activity or context.

Viewers working or living in the area would view the project area with maximum acuity and no constraints on field of vision. These viewers would notice the greatest amount of visual detail and would be the most sensitive to changes in views, since they would have the longest view duration. Viewers traveling through the project corridor on streetcars or in vehicles would experience views from a concentrated point, with reduced acuity and a narrowed field of vision. Generally, views from moving vehicles would be more simplified than stationary views. As a result, these viewers would be less sensitive to changes in views than slow-moving or stationary viewers.

6.1.2.1 Visual Policies Regulations and Guidelines

Protected Views and Public Viewpoints

Most views of downtown Seattle from the project area are distant, and changes to the visual environment resulting from the proposed project would not be obvious for viewers in the project area and may not even be noticeable to some. Views of Lake Union from Westlake Avenue N, Valley Street and Fairview Avenue N. would include additional overhead wires and support poles in the foreground and midground. However, views of the Lake are more distant and the effect on views and visual character would be minor. The occasional passing of a streetcar would be similar to exiting traffic experience on these streets. No significant protected public viewpoints listed in SMC 25.05.675 are located in the project area, and none would be affected by the proposed project.

View Protected Landmarks

Because views of the designated landmarks discussed in the previous section (*Affected Environment*) are distant from the project corridor, changes to the visual environment of those landmarks resulting from the proposed project would not be obvious and the designated landmarks would not be affected.

Designated Scenic Routes

Westlake (Westlake Avenue N. and Westlake Avenue), Valley Street, and Fairview Avenue N. are City-designated scenic routes for views of Lake Union and the South Lake Union Park. No public views of significant natural and human-made features identified

in SMC 25.05.675 P.2.a.i. and Attachment 1 would be blocked by the proposed project. The visual composition of the route corridor would include views of additional elements such as the overhead power system and streetcars, but the effect on views and visual character would be minor.

Design Guidelines

The proposed project would be designed to reinforce neighborhood character by integrating station locations and shelter placement with building facades and streetscape elements. It would support the "heart locations" at Westlake Avenue N., Terry Avenue N., Valley Street, and South Lake Union Park by increasing access to the commercial and social activity within the neighborhood.

The streetcar maintenance facility would be located at the southwest corner of the Fairview Avenue N. and Valley Street intersection, a "heart location." The relationship of the maintenance facility to the "heart" designation and surrounding land uses would be considered in the design, layout of on-site operations, landscaping, and screening of the facility.

The proposed project would also support the City's vision for Terry Avenue N. as a key point of entry into the redeveloped South Lake Union Park. It would travel through "gateways" at the intersections of Westlake Avenue N./Denny Way and Fairview Avenue N./Valley Street.

6.1.2.2 Viewshed Impacts

The prototypical streetcar vehicle would be 66 feet long and 8 feet wide. Streetcars would be the most prominent and distinguishable addition to the visual environment. However, they would blend well with existing commercial and bus traffic and would not appear out of context.

Streetcar stations would be located along the project route at intervals of approximately 1,000 feet or every other block. Shelters would be located at all stations, but would be optional where building sidewalk canopies exist. They would consist of a glass roof supported by a single metal column. Independently-supported glass windscreens and benches would be provided as conditions indicate. Roof and windscreens would be glass planes with minimal structure to maximize sightlines.

The streetcar's overhead electrical system would consist of power lines and supporting poles, similar to those used by electric trolley buses. Power poles would be tapered and approximately 24 feet in height, with horizontal-support bar span wires. The support structure and overhead wires would intrude into some views, but other overhead wires are visible in many areas of the project viewshed. The addition of the streetcar overhead electrical system would have little effect on existing views (see Figure 5-3 through Figure 5-8 in Chapter 5).

The proposed streetcar line, with its tracks, overhead wires and station platforms, would be a new linear element and a visually evident feature in the project viewshed. However, the stronger linear forms would blend with the existing visual character, which is influenced by the strong linear character of Westlake Avenue and the surrounding street grid.

Impacts to regional views from downtown Seattle, Queen Anne Hill, Lake Union and Capitol Hill are expected to be low, because the streetcar's operating system and stations would not be readily distinguishable from other elements of the visual context.

Viewshed Light and Glare

Site lighting at the maintenance facility would be the primary source of light and glare. Streetcar headlights would also be a new source, but may not be evident since streetcars would operate in the existing roadway with many other vehicles. These sources of light and glare would not create a safety hazard or interfere with views, especially given the corridor's existing urban context.

Westlake Segment (Westlake Avenue N and Westlake Avenue)

Although the flat terrain currently allows extended views of Lake Union, mid-ground views are partially obstructed by development along the shoreline. Intermittent view obstructions would be created by streetcars for viewers on streets and sidewalks, and in buildings. However, these views would be similar to existing bus traffic. View obstructions for viewers traveling on streetcars would vary depending on their location.

The existing visual environment and visual simulations showing the overhead electrical system and support poles in this segment are depicted in Figure 5-3 through Figure 5-5 **(**Chapter 5). A contrast between the scale of the proposed project elements and the existing environment would result, but viewer groups are not likely to notice a change in visual character or expect a scenic view. The primary change in visual character would be an increase in overall pedestrian and vehicular activity. Visual impacts in this segment are expected to be low.

The trend toward larger-scale commercial and office development in this corridor would further reduce the potential for visual contrast between the existing visual environment and proposed streetcar elements.

Thomas Street Segment

No visual simulations were prepared for this short segment between Westlake Avenue N. and Terry Street. Thomas Street's existing character is very similar to Terry Avenue N., and visual impacts would also be similar to those discussed for Terry Avenue N. The Thomas Street segment includes no stations, and visual impacts from the overhead power supply elements would be low given the predominantly industrial setting and existing overhead wires. The primary change in visual character would be an increase in overall pedestrian and vehicular activity.

Terry Avenue North Segment

The existing visual environment consists of warehouses, parking lots, and railroad tracks embedded in the roadway. Recent redevelopment has introduced modern four-story office buildings that contrast noticeably with the overall industrial character. The existing visual environment and visual simulation showing the overhead electrical system and support poles in this segment are depicted in Figure 5-6 **(**Chapter 5). The contrast between the scale and character of project elements and the predominantly industrial setting would be noticeable since the streetcar improvements would be new elements in the visual

environment. In addition, viewer groups would be somewhat aware of and sensitive to this visual change due to the segment length and extended views north and south. However, the streetcar elements would fit within the overall context and visual impacts would be moderate. View obstructions for viewers traveling in streetcars and for other viewers in the area would be similar to those described previously for the Westlake segment.

Valley Street and Fairview Avenue North Segments

Views of South Lake Union Park and Lake Union are experienced from streets and surrounding buildings in this segment. However, many of these views are intermittent and partially obstructed by development along the shoreline. Intermittent view obstructions would be created by streetcars for viewers on streets and sidewalks or in buildings. However, these views would be similar to existing traffic. View obstructions for viewers traveling on streetcars would vary depending on their location.

The existing visual environment and visual simulations representing project elements are depicted in Figure 5-8 (Chapter 5). As shown in Figure 5-7, the streetcar overhead wires and support poles on Valley Street would be visible but would not block views of Lake Union or South Lake Union Park. The streetcar overhead electrical system and support poles on Fairview Avenue would be in addition to the existing overhead electrical system for electric trolley buses, and their appearance would be similar (see Figure 5-8). An existing overhead electrical system for electric trolley buses does not exist in other segments of the streetcar route.

Views across Valley Street and Fairview Avenue N. toward Lake Union would be altered by the presence of overhead wires, support poles, and station shelters. However, these elements would create a minor contrast with the existing environment, and viewer groups are not likely to notice a substantial change in visual character or expect a scenic view. Shelters would have glass roofs and windscreens supported by a single column, which would blend with the existing streetscape. Visual impacts in this segment are expected to be low.

Maintenance Facility

The streetcar maintenance facility would be located at the southwest corner of Fairview Avenue N. and Valley Street. Figure 6-1 shows how the maintenance building could appear on that site. The building would be approximately 100 feet by 70 feet, and 30 feet high. A platform mounted on the roof would be used for servicing the streetcar's electrical components. The bulk and scale of the structure would be similar to other buildings in the area and would be in context with nearby commercial and industrial uses.

Some of the streetcar maintenance operations would be performed in the fenced maintenance facility yard and would be visible from surrounding buildings, streets and sidewalks. Parked streetcars and overhead electrical wires would also be visible.

Figure 6-1: Maintenance Facility Sketch

6.2 Construction

6.2.1 Land Use

Construction impacts would include increased local vehicle traffic, dust, noise, and construction lighting. Construction activities could temporarily affect pedestrian access and parking to some businesses and residences along the streetcar route. Business impacts would include temporary loss of on-street parking in construction areas. Deliveries to and from businesses could also be affected. However, sidewalks would remain open and pedestrians would be able to access businesses along the construction route.

6.2.2 Visual Quality

Construction-related signage and heavy equipment would be visible at and in the vicinity of construction sites. Short-term changes to the visual character of areas adjacent to the alignment would result from introduction of the following construction elements:

- Construction vehicles and equipment
- Clearing and grading activities resulting in exposed soils until replanting or repaving occurs
- Erosion control devices such as silt fences, plastic ground cover, and straw bales
- Dust, exhaust, and airborne debris in areas of active construction
- Stockpiled excavated material
- Staging areas used for equipment storage and construction materials
- Evening construction, if needed, could affect residents by exposing them to glare from unshielded light sources or by increasing light levels.

Construction impacts would be greatest at station locations and at the maintenance facility site.

Chapter 7 Mitigation

7.1 Operation

7.1.1 Land Use

Design and construction of the maintenance facility and other project elements such as shelter placement, seating and signage would be reviewed by city and state historic preservation officers. These improvements would also be consistent with design guidelines for the area where they would be located.

7.1.2 Visual Quality

In addition to features incorporated into the proposed project such as integrating the facility with area redevelopment plans (particularly stations), the following mitigation measures should be considered:

- The maintenance facility and stations would incorporate source shielding for exterior lighting, to ensure that the light source is not directly visible from residences and businesses, and to limit spillover light and glare.
- Where appropriate and practical, the overhead electrical system with electrical transmission and distribution lines may be consolidated with other overhead utilities and street lighting.

7.2 Construction

7.2.1 Land Use

- The City would work with business groups, neighborhood associations, and property owners to minimize short-term construction-related impacts to businesses. They would be notified of any planned closures or service disruptions.

7.2.2 Visual Quality

- Temporary lighting impacts could be reduced by shielding light sources and by aiming and shielding to reduce spillover lighting.

Chapter 8 Secondary/Cumulative Impacts

8.1 Land Use

The proposed project and other transit projects (i.e., the Seattle Monorail Project and Sound Transit's light rail, commuter rail, and Regional Express bus) would be consistent with the City's policies to concentrate and intensify urban development. In accordance with regional and local plans and policies, these projects combined with the streetcar project would provide mobility and access options that could accommodate higher densities and reduce land consumption. It is anticipated that there would be limited or no overlap of the streetcar construction schedule with other major projects in the project vicinity.

Cumulative or secondary growth impacts may occur along the streetcar route due to the area's strong redevelopment potential. Localized intensification of land use would occur consistent with adopted plans, policies, and regulations. Overtime, this intensification may occur at station nodes. Land use and neighborhood impacts would be minor, compared with the overall level of cumulative effects anticipated due to other past, present, and reasonably foreseeable substantial future development projects.

8.2 Visual Quality

The visual change from the proposed project and reasonably foreseeable redevelopment could include larger buildings, greater visual scale, and a higher pedestrian orientation than currently exists. In most locations, the proposed streetcar line would be visibly compatible with this more concentrated urban development. No substantial secondary or cumulative impacts are anticipated.

Chapter 9 References

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Appendix A Consistency with Land Use Plans and Policies

The land use plans and policies consistency analysis in this section presents an overview of each plan and/or policy that is applicable to the South Lake Union Streetcar Project. It provides a brief discussion of the proposed project's consistency with each planning document. The analysis begins with state and regional land use plans, followed by local land use plans including neighborhood plans.

A.1 Washington State Growth Management Act and King County Countywide Planning Policies

The Washington State Growth Management Act (GMA) was adopted in 1990 and amended in 1991 and 1993. The GMA provides a comprehensive framework for managing growth and coordinating land use development with the construction of transportation facilities and other infrastructure in the Puget Sound region. The GMA emphasizes transportation facility planning and encourages development of multimodal transportation systems that are based on regional priorities and coordinated with local comprehensive plans. The GMA's intent is to guide the development of local comprehensive plans and development regulations by directing growth to urban areas, reducing sprawl, and encouraging development of efficient transportation systems. Local, county, and regional plans in the State of Washington are required to be consistent with the GMA.

The GMA mandates that comprehensive plans address land use, capital facilities, utilities, housing, rural lands, and transportation. The transportation element must be consistent with and implement the land use element. The GMA also sets forth concurrency requirements to "ensure that those public facilities and services necessary to accommodate development shall be adequate to serve the development at the time…and enforce ordinances that prohibit development approval, if the development causes the level of service on a transportation project to decline below standards adopted in the transportation element…" The GMA also mandates that each plan's goals, objectives, policies, and strategies be in agreement within each document.

When making decisions about accommodating future growth, the acknowledgement of a fundamental relationship between transportation investments and land use development is inherent in regional plans and policies. Under growth management principals, urban lands and the urban growth areas defined around them are areas where future growth and development would be directed. The general intent is to direct most development to urban growth areas and limit the amount of development allowed to occur in rural areas. To meet these goals, local jurisdictions have developed plans and policies intended to achieve the level of density and type of infrastructure provided within urban areas.

To further guide the preparation of comprehensive plans, GMA requires that appropriate jurisdictions develop multi-county and county-wide planning policies. Consistent with GMA provisions, the *King County Countywide Planning Policies* serve as the framework for the County and *Seattle's Comprehensive Plan*. GMA and county-wide planning policies establish urban growth areas, where most growth and development is designed to occur. The county-wide planning policies provide a common basis for each jurisdiction preparing and adopting comprehensive plans within King County, including the City of Seattle. The following county-wide planning policy (FW -18) is of particular note:

> "The land use pattern shall be supported by a balanced transportation system that provides for a variety of mobility options. This system shall be cooperatively planned, financed, and constructed. Mobility options shall include a high-capacity transit system which links the Urban Centers and is supported by an extensive high-occupancy vehicle system, local community transit system for circulation within the Centers and to the non- center Urban Areas, and non-motorized travel options."

The county-wide planning policies also encourage a transit system that is consistent with adopted land use plans. The county-wide planning policies encourage local jurisdictions to direct growth to urban centers and urbanized areas that have existing infrastructure capacity.

South Lake Union Streetcar Project Consistency:
Coordinating land use and transportation is a key component of GMA planning, and expanded public transit is an important element of the region's overall transportation plan. The proposed project is located entirely within the City of Seattle, which has adopted a comprehensive plan and is implementing regulations consistent with GMA provisions. The proposed project would connect South Lake Union's centers of employment and housing with those in downtown Seattle and would further the GMA's goals. The proposed project is consistent with GMA because it would accommodate growth within the urban area (and more specifically in Seattle's urban centers) and provide a transportation alternative to the single-occupant vehicle (SOV).

The proposed project is also consistent with the multimodal transportation system approach set forth in the "King County Countywide Planning Policies," because it would provide a local community transit system for circulation within and between the city's urban centers. As such, it would be a key element of a balanced regional transportation system.

A.2 *Vision 2020* and *Destination 2030*

Vision 2020, prepared by the Puget Sound Regional Council (PSRC), is the long–range growth and transportation strategy for the Central Puget Sound region. Vision 2020 provides guidance for the region's land use and transportation planning decisions. First adopted in 1995 and then amended in 1996, Vision 2020 proposes a regional growth management strategy that includes identifying and maintaining urban growth areas, supporting compact communities, focusing growth in designated urban centers, and redeveloping urban transportation corridors. Vision 2020's focus is to contain growth,

concentrate new employment into urban centers, and link the centers with a high-quality multimodal transportation system. Vision 2020 contains many goals and policies that are directly and indirectly applicable to the proposed project. One major policy is to "develop and maintain efficient, balanced, multimodal transportation systems which provide connections between urban centers and link centers with surrounding communities..."

The Metropolitan Transportation Plan (MTP), updated in 2001 and now called Destination 2030, is a key tool for implementing Vision 2020. Destination 2030 is the regional transportation planning document that serves as the basis for state and federal transportation expenditures within the region. The transportation-related plans of the cities, counties, transit agencies, and the region form the basis for the Destination 2030 plan.

South Lake Union Streetcar Project Consistency:
The proposed project would be an element of an overall transportation system serving the City of Seattle. Stations would be convenient to users as they would be located in high pedestrian-use areas; and these areas are planned for growth. The proposed route south of Valley Street comprises areas with underutilized residential or commercially zoned properties; and the streetcar line could indirectly support infill development and redevelopment. The proposed project would also provide a transit alternative, thereby supporting the regional growth planning objective to provide rapid transit for the Central Puget Sound region.

A.3 City of Seattle Land Use Plans and Policies

A.3.1 Seattle's Shoreline Master Program

Seattle's Shoreline Master Program is adopted pursuant to the Shoreline Management Act. Operating in much the same way as a zoning code, the Shoreline Master Program regulates development on shorelines of the state. This includes regulation of uplands within 200 feet of the ordinary high water mark of those jurisdictional shorelines. (Jurisdictional shorelines are water bodies larger than 20 acres, and streams and rivers with greater than 20 cubic feet per second mean annual flow). The Seattle Shoreline Master Program specifies shoreline zones, permitted uses, and development standards. The regulations in the Shoreline Master Program only apply within the Shoreline District. Similarly, the City's adopted Shoreline Master Program shoreline goals and policies only apply to those portions of project within the Shoreline District itself, unless specifically stated differently in the Shoreline Master Plan (SMC 60.208).

South Lake Union Streetcar Project Consistency:
A portion of the streetcar tracks on Fairview Avenue N. and Valley Street would be located within 200 feet of the Lake Union shoreline and within the US - Urban Stable shoreline designation, which would require a Shoreline Substantial Development Permit. Under SMC 60.208, new rail transit facilities in the Shoreline District must use an existing roadway or rail corridor. Existing railroad tracks may also be expanded in existing rail corridors. Rail transit facilities are also required to provide a means for the public to overcome the physical barrier created by the facility and gain access to the shoreline.

A.3.2 Seattle's Comprehensive Plan: Toward a Sustainable Seattle (2004-2024)

Although neighborhood planning documents are advisory to the City, the *Seattle's Comprehensive Plan* goals and policies are official City policy. This land use planning document was originally published in 1994 and has been updated on many occasions, most recently in December 2004. This most recent update was the State Growth Management Act's required ten-year plan update. The updates included specific land use goals and policies for transportation, economic development, and specific objectives for the City's neighborhood planning areas.

Seattle's Comprehensive Plan goals and policies that support the proposed South Lake Union Streetcar Project include the following:

"TG1: Ensure that transportation decisions, strategies and investments are coordinated with land use goals and support the urban village strategy."

"TG9: Provide programs and services to promote transit…and walking … to help reduce car use and non-SOV modes."

"TG14: Increase transit ridership, and thereby reduce use of single-occupant vehicles to reduce environmental degradation and the societal costs associated with their use."

"T25: Pursue a citywide intermediate capacity transit system that connects urban centers, urban villages, and manufacturing/industrial centers."

"T26: Pursue a citywide local transit system that connects homes and businesses with neighborhood transit facilities."

"T4: Provide sufficient transportation facilities and services to promote and accommodate the growth this Plan anticipates in urban centers, urban villages, and manufacturing/industrial centers while reducing reliance on single-occupancy vehicles."

"T5: Establish multi-modal hubs providing transfer points between transit modes in urban centers and urban villages."

"LG46: Develop a transportation network that supports and enhances use of and access to the shoreline."

"LU245: Provide public transportation convenient to the shoreline."

"TG28: Recognize and promote the urban village strategy when making transportation investments."

"CF1: Plan capital facilities investments strategically, in part by striving to give priority to areas experiencing or expecting the highest levels of residential and employment growth when making discretionary investments for new facilities…"

"T74: Fund projects, programs and services with a combination of local and non-local funds including: contributions from other entities that benefit from an investment, such as property owners nearby an investment…"

South Lake Union Streetcar Project Consistency:
The proposed South Lake Union Streetcar Project is consistent with the City of Seattle's land use plans and policies, which are applicable citywide and to the Denny Triangle and South Lake Union neighborhoods. It would improve mobility for residents living in both the downtown core and these two neighborhoods. Adding a streetcar route through these neighborhoods would expand transit services to neighborhoods currently lacking adequate transit service. The streetcar also connects with other transit modes at the Westlake Center (south terminus) that serve both the city and the region. The streetcar would also help accommodate substantial future office, commercial, residential, and light industrial development planned for these neighborhoods, which have been designated as urban centers for future growth. Over the next 20 years, the South Lake Union urban center is expected to have an increase in households second only to the city's downtown urban center. In addition, the uniqueness of the proposed a streetcar would help to develop a special community identity and sense of place for the Denny Triangle and South Lake Union neighborhoods.

For downtown and Denny Triangle and South Lake Union residents, the streetcar route would travel between Seattle's downtown core to recreational and open space amenities along the Lake Union waterfront. Proposed streetcar stops would be spaced approximately two blocks apart, which would provide convenient access for residents, visitors, shoppers, and employees. Where possible, these stops would be located within close proximity of or shared with bus stops.

Construction of the proposed streetcar would occur within the existing right-of-way and would share the right-of-way with other vehicles. Required roadway improvements would result in only a minor reduction of on-street parking spaces, so there would be little adverse effects to retail businesses along the streetcar route. The roadway improvements associated with streetcar facilities would improve sidewalks and crosswalks for pedestrian safety and convenience.

Moreover, the cost of the cost of constructing the streetcar line is proposed to be substantially funded by neighborhood property owners along the streetcar route. These property owners, the neighborhoods, and the city would receive benefits. This is consistent with city policy to seek funding from alternative sources.

A.3.3 City of Seattle Neighborhood Plans

Neighborhood plans augment the *Seattle's Comprehensive Plan* city-wide perspective, to more specifically address individual neighborhood planning areas. The proposed project would be located in the Denny Triangle and South Lake Union neighborhoods. The following sections provide an overview of the subarea plans for these neighborhoods and discuss the streetcar project's consistency with these plans.

Denny Triangle Neighborhood Plan

The Denny Triangle Neighborhood Planning Committee adopted the Denny Triangle Neighborhood Plan in September 1998. The neighborhood is generally located in the northeast corner of the downtown area, and is bounded by Denny Way on the north, 1-5 on the east, Pike Street on the south, and 5th Avenue on the west. The Plan addresses five main elements: key integrated activities, housing, land use, urban form, and transportation.

The Denny Triangle Neighborhood Plan goals and policies that support the proposed South Lake Union Streetcar Project include the following:

"DEN-P11: Support redevelopment of Westlake Avenue as a boulevard."

South Lake Union Streetcar Project Consistency:
The proposed project would support future development and may help encourage roadway improvements to Westlake Avenue.

"DEN-P12: Designate and support the development of Green Streets in the neighborhood."

South Lake Union Streetcar Project Consistency:
By supporting future development, the proposed project would indirectly encourage the achievement of pedestrian/open space improvements such as Green Streets.

"DEN-G4: Reduce external transportation impacts while improving internal access and circulation."

South Lake Union Streetcar Project Consistency:
The streetcar would be an efficient alternative to single-occupancy vehicles (SOV). It would improve mobility in the neighborhood and serve to connect South Lake Union and Seattle's downtown urban core. The proposed project would also direct service to urban villages and the downtown urban core. The City has planned for growth in these areas and prioritized the connection of these areas to each other and to the urban core. The proposed project would link urban centers within the City of Seattle and provide connections to other transit modes at Westlake Center.

"DEN-P-14: Encourage the integration of Westlake Avenue into the neighborhood physically, aesthetically, and operationally, while maintaining its arterial functions."

South Lake Union Streetcar Project Consistency:
The proposed streetcar route on Westlake Avenue would provide a central and unifying focus for the neighborhood, and its function as an arterial would be maintained.

"DEN-P15: Use partnership with transit providers to improve the basic transit route structure, system access and connectivity to better serve the neighborhood."

South Lake Union Streetcar Project Consistency:
The streetcar would connect to the regional transit hub at Westlake Center, which provides access to buses, monorail, and future light rail.

South Lake Union Neighborhood Plan

The South Lake Union Neighborhood Planning Committee adopted the *South Lake Union Neighborhood Plan* in September 1998. The neighborhood is generally bounded by the shoreline of Lake Union to the north, Eastlake Avenue E. to the east, Denny Way to the south, and Aurora Avenue N. to the west. The Plan focuses on three components: neighborhood character, parks and open space, and transportation. The principle concerns identified in the Plan include intersection, street, and transit improvements, and a comprehensive parking solution.

The focus of the Plan's neighborhood character discussion primarily involves strategies to provide additional housing incentives, particularly in the Cascade District. The plan does not address the proposed streetcar project. However, locating the streetcar project within this neighborhood could further promote the residential character of this district by providing an alternative to automobile access downtown.

The *South Lake Union Neighborhood Plan*'s specific goals and policies that support the proposed South Lake Union Streetcar Project include the following:

"SLU-G3: A neighborhood with an efficient east/west transportation corridor that serves the neighborhood and sub-regional needs."

South Lake Union Streetcar Project Consistency:
The proposed project would provide an east/ west connection along Valley Street. However, the service would be primarily north/south, with a connection to the regional transportation hub at the Westlake station. The line would provide additional transit connections to downtown and would serve an area undergoing rapid and widespread redevelopment.

"SLU-P13: Encourage Mercer Street/Valley Street improvements that support development of South Lake Union Park, city-owned parcels, and other adjacent properties."

South Lake Union Streetcar Project Consistency:
The proposed project would improve transit service and mobility in the Mercer Street vicinity. South Lake Union Park and other city-owned parcels and properties would be served by several stations along the route, including one at South Lake Union Park.

"SLU-P14: Favor a set of improvements that are reasonably fundable and that do not require excessive new right-of-way."

South Lake Union Streetcar Project Consistency:
The streetcar route would be entirely within existing street right-of-way, which would reduce construction costs. In addition, property owners in the neighborhood have committed to provide substantial funding towards the construction of the streetcar.