

# **Technical Report South Lake Union Streetcar Project**

## **Social Elements**

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Prepared for:  
The City of Seattle Department of Transportation

Prepared by:  
Parsons Brinckerhoff, Inc.  
999 Third Avenue, Suite 2200  
Seattle, Washington 98104



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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

This Social Elements Technical Report follows federal guidelines for National Environmental Policy Act (NEPA) documents, as provided by Federal Highway Administration (FHWA) Technical Advisory T 6640.8A, *Guidance for Preparing and Processing Environmental and Section 4(f) Documents*, and FHWA's *Community Impact Assessment and Community Impact Mitigation: Case Studies*. The data and analysis supporting environmental justice information was prepared in consideration of Executive Order 12898 and the Civil Rights Act of 1964, and the Uniform Relocation Act of 1970. Guidance was also obtained from a joint Washington State Department of Transportation (WSDOT) and FHWA workshop manual titled *A Model for Conducting Environmental Justice Analysis*. Population and environmental justice data was obtained from statistics published by the federal Census Bureau and from state and local sources where appropriate.

## 1.2 Affected Environment

The proposed project would take place within Seattle's downtown commercial core, the Denny Triangle, and the South Lake Union neighborhood areas. The downtown area consists primarily of retail and commercial buildings densely occupying city blocks. The Denny Triangle and South Lake Union neighborhoods are north of downtown and consist of a variety of retail, commercial and residential buildings. 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 South Lake Union and Denny Triangle areas.

Minority and low-income groups reside within these neighborhood areas, but few residential uses occur along the proposed streetcar route. The project area is well-served by public service providers, and numerous utility lines are present above-ground and within existing roadways. Transit service operates on Westlake Avenue and Fairview Avenue in the project area. Some recreational, pedestrian and bicycle facilities are present in or near the area.

### **1.3 Impacts and Mitigation**

The greatest potential impacts associated with the proposed streetcar line would result from construction activities. Traffic delays and detours during construction could affect mobility in and between local neighborhoods, placing new streetcar tracks in roadways could temporarily disrupt local utilities, and construction congestion and lane closures could affect some nearby recreational facilities. Emergency service providers may also experience delays in responding to calls for service during construction. Changes in travel patterns and/or parking conditions may also occur, and could affect commercial and retail sales in the project area while construction activities are occurring.

After construction, few detrimental 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 population growth in these areas. Growth, as called for in the City's Comprehensive Plan, would add to the demand for public services and utilities. On the beneficial side, neighborhood revitalization may stimulate retail sales in the area, and the streetcar line could also increase tourist visitation and result in additional customers for local restaurants and businesses. The project may also increase the use of recreational facilities near the streetcar line and will support the City's goal of increasing transit use.

Mitigation measures would primarily address potential impacts during construction. Close coordination with service and utility providers, emergency services, businesses and residents will 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.

## **Chapter 2**

## **Introduction**

The South Lake Union Streetcar Project is intended to provide a new transit connection between the downtown area and the Denny Triangle and South Lake Union neighborhoods to the north. This Social Elements Technical Report describes existing conditions, potential impacts, and mitigation measures related to the proposed streetcar line. Chapter 6 (*Environmental Consequences*) discusses social and economic impacts during construction and operation of the project.

Potential social impacts reviewed include impacts on community cohesiveness, neighborhood patterns, population growth, and environmental justice. Impacts on public services and utilities, recreational facilities, and pedestrian/bicycle facilities in the area are also discussed. (Pedestrian and bicycle facilities are also addressed in the Transportation Technical Report.)

Economic impacts include impacts to the local economy and tax revenues, and impacts on businesses and employment are reviewed in order to identify potential adverse impacts.

Chapter 5 (*Affected Environment*) describes existing social characteristics and local economic conditions. Impacts (Chapter 6) are discussed in relation to construction activities for providing new tracks along the proposed route. Longer-term impacts related to introducing the streetcar line to the Denny Triangle and South Lake Union neighborhoods are also discussed. Mitigation measures are also identified, based on these potential impacts (Chapter 7). Chapter 8 discusses the cumulative impacts of the proposed project in combination with other projects in the area and also describes secondary or indirect impacts.



## 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/5<sup>th</sup> 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

This technical report analyzes the social elements of the South Lake Union Streetcar Project, following Federal Highway Administration (FHWA) guidelines for compliance with the National Environmental Policy Act (NEPA). The following documents provided guidance for this report: FHWA Technical Advisory T6640.8A *Guidance for Preparing and Processing Environmental and Section 4(f) Documents*, FHWA *Community Impact Assessment and Community Impact Mitigation: Case Studies*, and the Washington State Department of Transportation (WSDOT) *Environmental Procedures Manual* (March 2004). The data and analysis used to evaluate potential environmental justice issues is provided in consideration of Executive Order 12898, the Civil Rights Act of 1964, and the Uniform Relocation Act of 1970. Much of the population and demographic analysis was obtained through statistics available from the United States Census Bureau (Census Bureau, 2000).

The primary approach to analyzing population and demographic data follows the outline provided in the WSDOT *Environmental Procedures Manual*. Based on this manual's outline, community growth and cohesion, population and demographics, environmental justice (including minority and low-income populations), social services, recreation, and pedestrian/bicycle facilities were reviewed. A variety of Census data was collected, including areas such as population, racial composition, household characteristics, and household income. Specific data from Census information was used to describe project area characteristics. In some cases, the geographic boundaries for the Census blocks extended beyond the immediate project area, but block information provided the best source of data on population characteristics. The *City of Seattle Comprehensive Plan 2004 Update* (Seattle, 2004) and the South Lake Union, Denny Triangle, and Downtown Commercial Core neighborhood plans were consulted for additional background on local trends and conditions, and to determine city services and facilities that may be affected.



## ***Chapter 5***

## ***Affected Environment***

This section discusses existing social conditions within the study area. Population trends, demographic characteristics, existing services and recreational facilities, and pedestrian, bicycle and transit facilities are described. Data on the potential presence of environmental justice population groups in the area is also presented.

### **5.1 Community Cohesion**

The proposed project corridor lies primarily within Seattle's South Lake Union and Denny Triangle neighborhood planning areas. Neighborhood areas are shown in Figure 5-1.

The project's southern terminus is adjacent to the downtown commercial core.

The South Lake Union area is characterized by a mix of industrial, commercial, and residential uses. Within the overall planning area, residential uses accounted for only 3 percent of the land uses in 1998 (Seattle, 1999a). Although the area has grown in recent years and more residential uses have been added, commercial, retail, and office uses remain the primary types of uses in this area. Beginning south of Denny Way, the Denny Triangle planning area would include the southern portion of the proposed streetcar route. This area contains a mix of commercial and residential uses and is one of the city's oldest neighborhoods.

Both of these areas have grown in recent years as new development is directed toward urbanized areas. The Valley Street/Fairview Avenue N. portion of the streetcar route is an important east/west arterial in the north project area, and Westlake Avenue is a primary north/south arterial between downtown and South Lake Union. As such, these streets have important roles in linking the two planning areas and providing mobility in the project area.

Population characteristics are shown in Table 5-1. The census data indicates that nearly 90 percent of the project area residents are in renter-occupied units, and the median household income is less than the city median and much less than the county median. Approximately 9 percent of the population is disabled and 6 percent are over 65 years old. Almost 25 percent of the study area population is transit-dependent (Census Bureau, 2000).

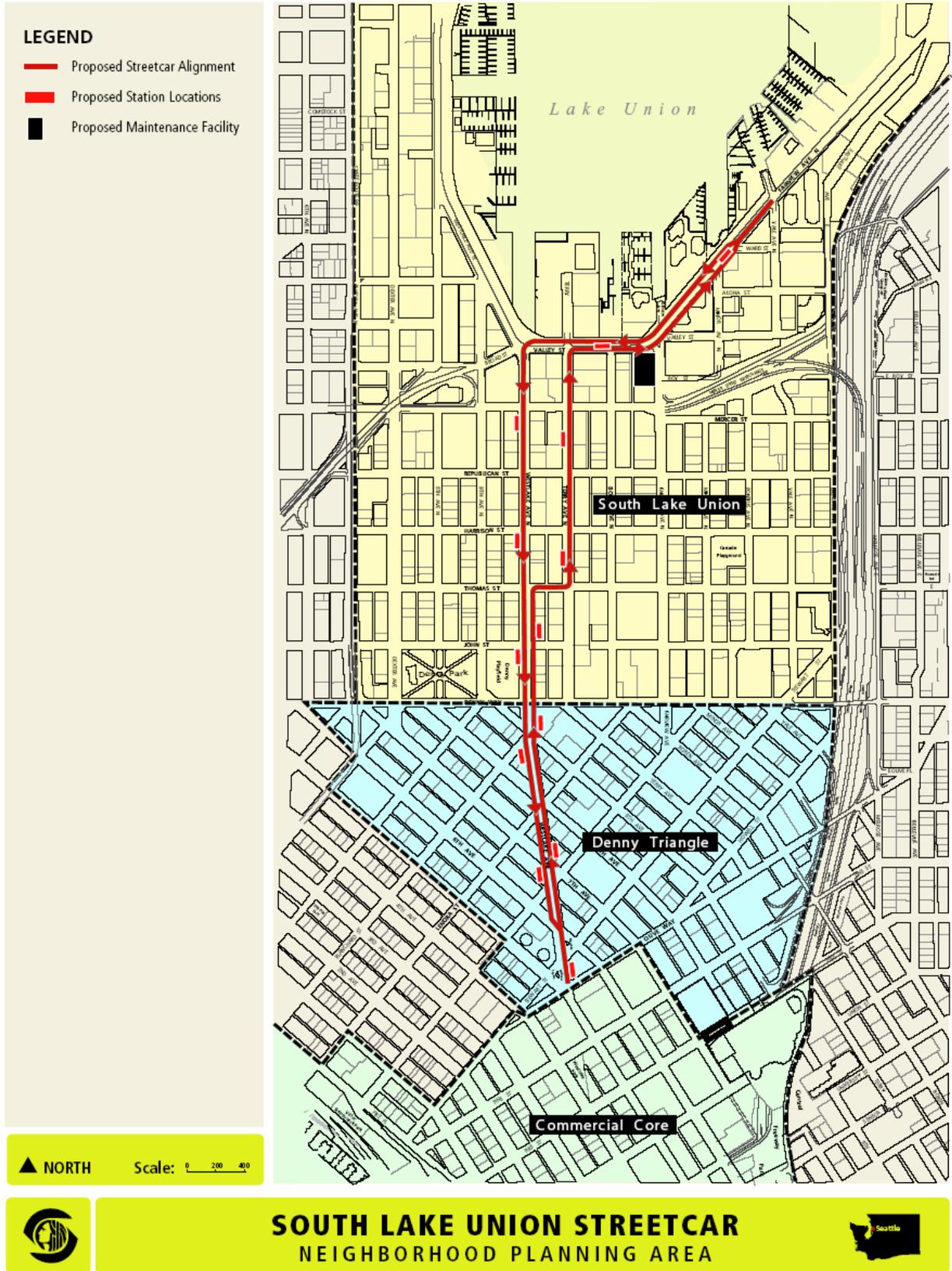


Figure 5-1: Neighborhood Planning Area

## 5.2 Regional and Community Growth

The proposed project area follows a corridor that begins in downtown Seattle and extends north to the South Lake Union neighborhood (Figure 3-1). The area is highly urbanized, consisting primarily of retail and commercial enterprises, with a few residential uses distributed along the route. The population in Seattle and the larger King County region has been growing during recent decades. Table 5-2 provides population data for the County, City and the project area Census tracts. Census tracts included in the evaluation are shown in Figure 5-2.

**Table 5-1: Population Characteristics**

	<b>Study Area Census Tracts</b>	<b>Seattle</b>	<b>King County</b>
Persons with Disability	450	90,998	462,393
Over 65 Years of Age	337	67,807	181,772
Owner-Occupied housing units	326	125,165	425,451
Renter-Occupied housing units	2,532	133,334	285,465
Median Household Income	\$30,256	\$45,736	\$53,157
Transit Dependent	1,291	91,536	66,244

Source: U.S. Census Bureau, 2000

**Table 5-2: Community Population Growth**

<b>Location</b>	<b>1990</b>	<b>2000</b>	<b>% Increase 1990-2000</b>	<b>2004 Estimated Population*</b>
King County	1,507,305	1,737,034	15.24%	1,788,300
Seattle	516,259	563,374	9.1%	572,600
Study Area Census Tracts	2,796	5,231	87.0%	N/A

\*From OFM estimate April 1, 2004

King County and Seattle have experienced considerable growth during the past decade. These population increases are reflected by Census data, and City and County populations are both expected to have increased since the 2000 Census was completed. The study area census tracts show even greater growth, consistent with new, multi-family development that has occurred in this area.

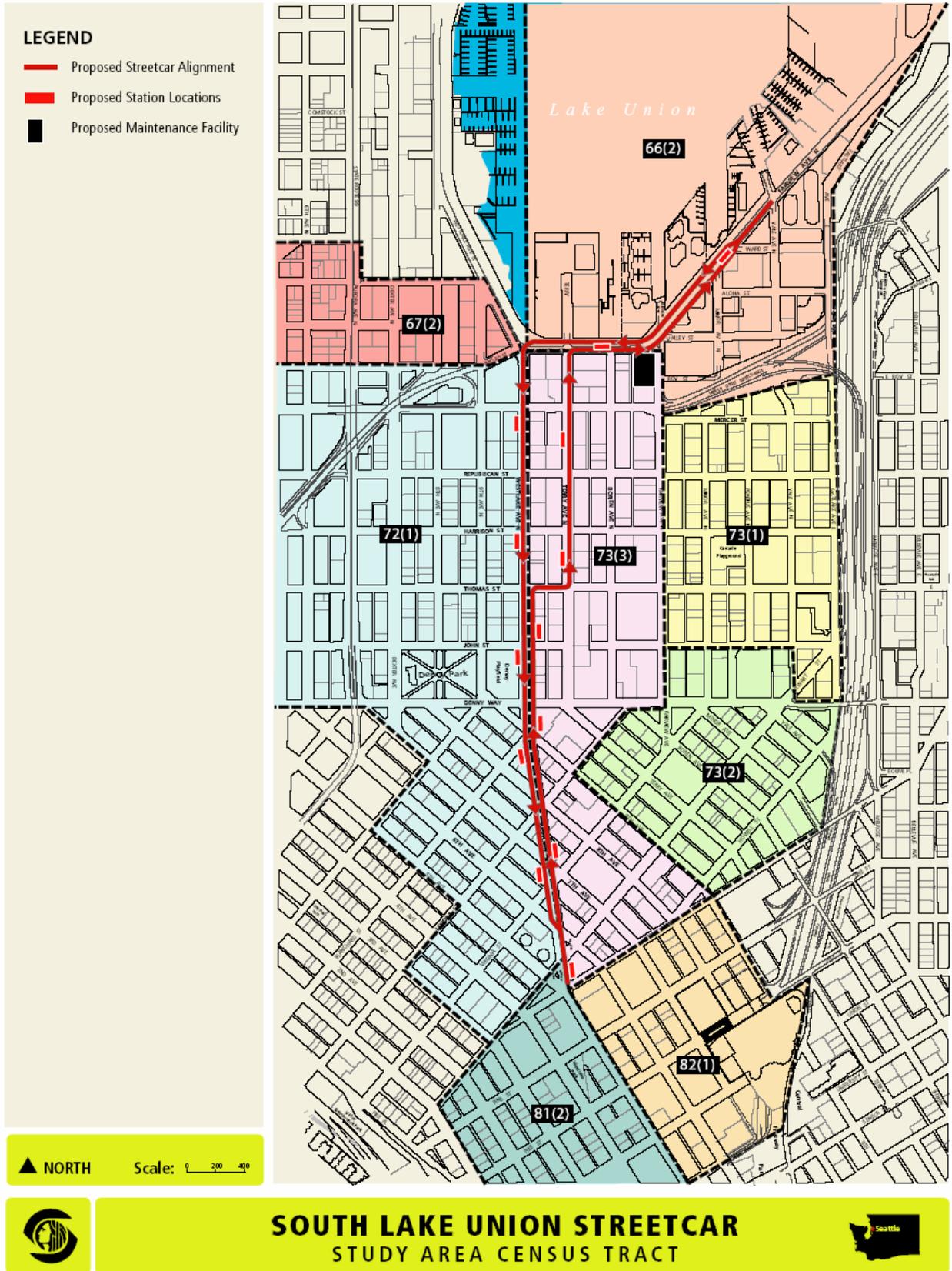


Figure 5-2: Census Tracts

### 5.3 Environmental Justice

Under Executive Order 12898 all federal actions must consider impacts on minority and low-income populations and provide mitigation where disproportionate adverse impacts would occur to these groups. Census information and other data were reviewed for the proposed project area to determine the presence of minority and low-income groups.

The project area includes residents from a variety of racial and ethnic groups. Racial characteristics for the project area and the greater city and county regions are provided in Table 5-3.

As the data shows, the study area population has a higher percentage of Black, American Indian/Alaskan, and Hispanic populations than the larger surrounding regional areas. As indicated in Table 5-4, approximately 29 percent of the study area population was at or below the poverty line in 1999 (this is the most recent date available in Census 2000 data). This is a higher percentage than that of the city or the county as a whole.

**Table 5-3: Study Area Racial Characteristics**

Area	White	Black or African American	American Indian & Alaska Native	Asian	Native Hawaiian & Pacific Islander	Some other race	Two or more races	Hispanic or Latino
King County	1,315,507 (76%)	93,875 (5%)	15,922 (0.9%)	187,745 (11%)	9,013 (0.5%)	44,473 (3%)	70,499 (4%)	95,242 (5%)
Seattle	394,889 (70%)	47,541 (8%)	5,659 (1%)	73,910 (13%)	2,804 (0.5%)	13,423 (2%)	25,148 (4%)	29,719 (5%)
Study Area Census Tracts	3,564 (68%)	807 (15%)	175 (3%)	293 (6%)	21 (0.4%)	116 (2%)	255 (5%)	359 (7%)

Source: U.S. Census Bureau, 2000

**Table 5-4: Poverty Status in 1999**

	Study Area Census Tracts	Seattle	King County
Population at or below poverty level	1,533	64,068	142,546
Percentage	29.3%	11.8%	8.3%

Source: U.S. Census Bureau, 2000

## **5.4 Public Services**

Public services that are located in or near the project area include the following.

### **5.4.1 Schools and Churches**

No public schools are located in the project area. The nearest public schools to the area are Lowell Elementary School at 1058 E. Minor Street (approximately 1.5 miles to the east), McClure Middle School at 1915 First Avenue East (approximately 1 mile to the east), and the Center School at 305 Harrison Street (approximately 1 mile to the west).

Three private schools are located near the proposed streetcar route:

Morningside Academy at 201 Westlake Avenue North is located in the central portion of the project route. It includes a school for elementary and middle school students, many with learning disabilities, and a teachers' academy.

Cornish College of the Arts at 1000 Lenora Street is near the eastern limit of the southern project area. This is a four-year college offering Bachelor of Music and Bachelor of Fine Arts degrees with a core curriculum of humanities and sciences.

Spruce Street School, located at 411 Yale Avenue near the northeastern project limits, is an independent non-sectarian private elementary school serving Kindergarten through 5<sup>th</sup> grade. This school is scheduled to move to a new location at 914 Virginia Avenue in fall 2005. The new location will be near the southeastern project area limits.

The Unity Christian Church is located at 299 8<sup>th</sup> Avenue N., approximately one quarter mile west of the proposed streetcar route.

### **5.4.2 Police**

The Seattle Police Department provides law enforcement and emergency support to the project area. The Department has over 1,200 sworn officers and is divided into five precincts. The nearest precinct to the project area is the West Precinct located at 810 Virginia Avenue, approximately one block east of the main project route on Westlake Avenue. The Department also provides a Downtown Service Center next to the West Precinct at 820 Virginia Avenue. The main Seattle Police Headquarters is located downtown with the Seattle Justice Center at 610 Fifth Avenue (Parametrix, 2004).

The Seattle Police Department maintains records of crimes in the city according to census tracts. The proposed project area includes six tracts, and these have been further divided into block groups to define the project area more precisely. Because of this subdivision, crime statistics provided at the larger tract level include data outside the immediate project area. Crimes in the city are typically divided into Part I and Part II Crimes. Part I Crimes are more serious and include felonies such as homicide, rape, robbery, aggravated assault, burglary, theft, auto theft and arson. Part II Crimes include all other crimes such as simple assault, vandalism, forgery, prostitution, drug and liquor violations, weapons offenses, disorderly conduct, loitering, and other offenses.

Census tract data indicates that a total of 7,599 Part I Crimes occurred in the tracts including the project area during 2003. Through June of 2004, the same tracts reported a

total of 3,257 Part I Crimes. For Part II Crimes, a total of 5,810 crimes occurred in 2003, and through June 2004, 2,512 crimes occurred within the project area tracts. In general, crime rates, including violent crimes, throughout the city have been slowly declining since the 1990s. However, two exceptions have been property crimes and auto thefts which have continued to rise in the city (Seattle Police Dept., 2004).

#### **5.4.3 Fire and Emergency Medical**

The Seattle Fire Department serves the study area for fire and emergency medical services. The Fire Department employs over 1,100 uniformed and non-uniformed personnel serving at 35 stations throughout the city. The Department has at its disposal 33 fire engines, 11 ladder trucks, five aid units (basic life support), seven medic units (advanced life support), two air trucks, two fireboats, two hose wagons, and one foam trailer (Parametrix, 2004).

The nearest fire station to the proposed streetcar route is Station No. 2 at 2334 4th Avenue, approximately one-half mile from Westlake Avenue. Other stations near the downtown area would also be available for fire and medical emergencies. Emergency service is generally dispatched from the station nearest the call site, although other stations may also respond. The Fire Department generally maintains response times under five minutes for emergencies.

#### **5.4.4 Public Transit**

Metro Transit provides bus service throughout King County, including service to the project area. Metro has a fleet of over 1,300 vehicles which includes standard and articulated coaches, electric trolleys, dual-powered buses, hybrid diesel-electric buses, and streetcars. Metro serves over 100 million riders annually within its service area (Metro, 2004). Current transit service in the area is provided by Metro routes 8, 17, 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. Route 17 travels between downtown and Ballard via Westlake Avenue every 30 minutes. 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. All of these routes operate more frequently during peak hours (Parsons Brinckerhoff, 2004b).

#### **5.4.5 Other Services**

In addition to the services described previously, two social service facilities have been identified in the southeastern project area:

Washington Library for the Blind, 821 Lenora Street. This library provides tape-recorded books for the blind, including books in large print, on cassettes and records, and in Braille. Tape machines and players are also provided.

Seattle VET Center, 2030 9th Avenue. This Veteran's Administration facility provides mental health assessments and readjustment counseling for Vietnam-era veterans and other veterans of periods of armed conflict. Services include short-term groups to deal with stress and self-esteem issues, longer-term focus groups, referrals for government benefits, and referral services for homeless veterans.

## **5.5 Utilities**

### **5.5.1 Electrical Power**

Seattle City Light supplies electrical power to Seattle residents and businesses and also serves some parts of King County beyond the north and south city limits. Seattle City Light is a municipal electric utility serving approximately 131 square miles and generating 70 percent of the energy it sells to retail customers from its own facilities. Seattle City Light is responsible for approximately 657 miles of 115-kilovolt and 230 kilovolt transmission lines. These transmission lines carry power to city substations and over 3,100 circuit miles of distribution lines within the city deliver power from the distribution stations to over 350,000 customers. The utility presently has the capacity to generate an annual average output of approximately 1,900 megawatts of hydroelectric generation (Parametrix, 2004).

Within the project area, the Seattle City Light Transmission and Distribution System consists of a combination of overhead and underground electrical lines. In the downtown area Seattle City Light maintains a unique and complex network distribution system. In the area of the proposed project route south of Denny Way, this network system is underground. In the area of the proposed route north of Denny Way, the Distribution System is both overhead and underground. Along Valley Street and Fairview Avenue N. in the northern project area, a major transmission line and distribution feeder runs on overhead poles along the north and west curb lines, respectively. Collectively, the entire Seattle City Light distribution system is designed and operated to minimize the likelihood that problems in one area will affect the entire system, but the system is still treated as an integrated whole.

### **5.5.2 Water**

The Seattle Public Utilities Department provides water to over 1.3 million customers in King County. Water is provided through two surface water sources: The Cedar River and the South Fork Tolt River. Approximately 70 percent of the city's water comes from the Cedar River and 30 percent is provided by the Tolt River. Seattle Public Utilities manages a distribution system that includes transmission and distribution mains, fire hydrants, water services and service lines, meters, corrosion protection systems and valves, water meters, and water valve chambers. The Public Utilities Department is responsible for inspecting, repairing, operating and maintaining the water systems for the city (Parametrix, 2004).

Generally, water lines are located from three to six feet underground and typically run parallel beneath streets, in various locations but primarily close to the curb line. Smaller pipes and other utilities are often less than three feet underground.

### **5.5.3 Sewer and Storm Drainage**

The City is within a combined sewer area. The King County Department of Natural Resources Wastewater Treatment Division provides sewage treatment services for the city. Seattle Public Utilities inspects, repairs, operates and maintains sewer pipes in the city. Wastewater is conveyed to King County's Westpoint Treatment Plant, which processes an average of 199 million gallons per day (Parametrix, 2004). Pipelines and other conveyance facilities are owned, operated and maintained by Seattle Public Utilities or the King County

Wastewater Treatment Division. Individual sewer service lines are owned privately according to the properties they serve.

Generally, sewer and storm drain pipes are located at least six feet below the surface and typically run parallel beneath streets, in various locations ranging from the center of the roadway to the edges. Smaller pipes are often less than three feet underground.

Both combined and separated sewer and storm drain lines are located along the project alignment.

#### **5.5.4 Natural Gas**

Puget Sound Energy provides natural gas service to the city and serves more than half the residents of the entire state over a 6,000-square-mile service area. Most of their 620,000 customers are located in the western portion of the state. Puget Sound Energy maintains a system that includes transmission and distribution pipelines, pressure controls, service lines, and meters.

#### **5.5.5 Telecommunications**

Local phone service in Seattle is provided by Qwest. Generally, phone lines are located within the street right-of-way, aboveground in most areas on utility poles, and underground in some areas, including part of the downtown area. Qwest also maintains fiber-optic cable lines in the city.

Comcast is the primary provider for cable television and cable internet services in the city. Several other private providers also have fiber-optic cables and/or long-distance and other lines downtown, including 360 Networks, Level 3, City of Seattle Fiber Optics, Time Warner, Global Crossing, Metromedia Fiber Network Services, MCIWorldCom, Terrabeam, Sprint and others.

The City of Seattle Department of Information Technology (DoIT) also provides telecommunications, phone, data network capability, and cable management services downtown. The Department maintains a system to connect city computers and departments, and operates and maintains the City's private phone network and telecommunications and data network functions (Parametrix, 2004).

Generally, fiber-optic cables and telephone lines are often less than three feet underground.

### **5.6 Recreation**

The Seattle Parks Department administers and maintains parks and recreational facilities throughout the city. The City's parks and recreation system includes open space, parks, boulevards, trails, beaches, lakes and creeks, recreational, cultural, environmental, and educational facilities, as well as a broad number of recreational community programs. Two parks are located within the project area: Denny Park and South Lake Union Park.

Denny Park is located at Westlake Avenue and Denny Way and provides 6.4 acres of open space with walking paths and benches. The Parks Department Administration building is also located at Denny Park.

South Lake Union Park is located at 860 Terry Avenue North along the southern shore of Lake Union, immediately north of Valley Street. This 12-acre park was recently dedicated in July 2000 and provides a unique facility in the city. The Center for Wooden Boats is located here and provides a “hands-on” maritime museum where visitors can see early maritime artifacts and learn a variety of skills related to boating history. Boat building and rentals, sea chantey sings, craft demonstrations, historic vessels, children's programs, sailing classes, and festivals are all part of plans for the park. Future improvements will include open space, walking paths, and landscaping for park areas.

Two small public squares are also located near the southern terminus of the proposed streetcar route. Westlake Square is located at 1900 Westlake Avenue North, and John McGraw Square is located at the intersection of Stewart Street and Westlake Avenue North. Each of these public spaces is approximately one-tenth acre in size and provides public benches in the downtown area.

The Denny Playfield, a privately owned field, is located along the western side of Westlake Avenue. This facility provides a full basketball court and grass playfield area.

## **5.7 Pedestrian and Bicycle Facilities**

Because the project area is quite urbanized, most streets have sidewalks in good condition. One exception is along the north portion of Valley Street, where sidewalks are in disrepair and less appealing for pedestrians. Traffic volumes along Westlake Avenue, Valley Street, and Fairview Avenue can be high, particularly during peak hours. Limited signalized crossings are available, which may require walking a few extra blocks to cross safely in some areas. Sidewalks are provided along the entire length of Westlake Avenue from downtown to Valley Street.

A pedestrian pathway is located around the south end of Lake Union. This path follows Westlake Avenue, then travels along Valley Street to a limited extent before connecting along Fairview Avenue. The path is not signed and is comprised of a combination of sidewalks, asphalt, crushed gravel and wooden boardwalks that are not continuous and not well defined in places. Although primarily intended for pedestrians, bicycles are permitted on this pathway.

There are no formal bicycle routes along the proposed streetcar route. The nearest street with a defined bicycle lane is Dexter Avenue North, approximately one-quarter mile west of Westlake Avenue North. Although there are no designated facilities for bicycles along Westlake Avenue and Fairview Avenue, bicycles commonly use these streets as connections to downtown from the north. Harrison Street, which crosses Westlake Avenue in the north-central portion of the project area, is commonly used by bicycles for east/west travel, but no bicycle facilities are provided for this use. Traffic, particularly at peak-hour times, is an impediment to bicycle use on all streets in the project area. As indicated previously, bicycles also use the pathway around the southern portion of Lake Union.

## 5.7 Economics

### 5.7.1 General Economy

Seattle has one of the most diverse economies in the region. The three highest revenue generating companies and top employers in the greater Seattle area are The Boeing Company, Costco Wholesale Corporation, and Microsoft Corporation, which contribute to combined annual revenues of over \$106 billion (2000) and 103,000 employees. Other major businesses in terms of revenue and employment include Weyerhaeuser, Washington Mutual, Paccar, Safeco, Nordstrom, Puget Sound Energy, Airborne Freight, Amazon.com, Alaska Air Group, Starbucks, T-Mobile, Expeditors International of Washington, AT&T Wireless, Labor Ready, Safeway, Fred Meyer, Group Health Cooperative, Swedish Health, Bank of America, Multicare Health Systems, and Bon-Macy's (Parsons Brinckerhoff, 2004a).

Tourism is Washington State's fourth-largest industry and is a critical part of Seattle's economy, particularly in the project area. In 1999, 27 million out-of-state visits generated \$5.28 million in travel expenditures, \$220 million in state tax receipts, and \$118.8 million in local tax revenues. Key attractions and services tied to the Seattle Central Business District (CBD) include the Washington State Convention and Trade Center, Norwegian Cruise Line homeport, Seattle Center (1962 World's Fair site) and the Space Needle, Pike Place Market, Seattle Aquarium, Pioneer Square, the International District, and various waterfront activities, shopping venues, hotels, and restaurants.

Professional sports teams including Seahawks football, Mariners baseball, SuperSonics basketball, Sounders soccer, and Storm basketball also call Seattle home. International commerce also plays a large role in the local economy. In 1999, two-way trade through the Port of Seattle amounted to over \$106 billion. Freight arrives at seaport cargo and vessel handling terminals (Terminals 5, 18, and 46), the Seattle-Tacoma International Airport, and Fishermen's Terminal (Parsons Brinckerhoff, 2004a).

### 5.7.2 Seattle Business Districts

The proposed project route lies within or near three primary business districts in the city. The beginning of the route in the southern project area is within the Westlake retail/commercial center. This area is dominated by Westlake Center, a four-story retail and food pavilion that includes local, national, and international retailers. Other retail establishments within several blocks of Westlake Center include Nordstrom's flagship store, Pacific Place Center, and Bon-Macys.

The southern terminus of the project area is also adjacent to the northern portion of the city's downtown Central Business District (CBD). The CBD functions as the financial hub of the larger Seattle region and is comprised of a concentration of high-rise office buildings, including over 80 buildings totaling approximately 22.5 million rentable square feet of space. Many of the region's largest service-related industries are located here, including Bank of America, Wells Fargo, Washington Mutual, Aetna Insurance,

and the law firms of Preston Gates and Ellis, and Perkins Coie. Corporate headquarters include Washington Mutual, Northern Life Insurance, and the Simpson Companies.

The central section of the project route travels through the Denny Triangle, which contains a mix of commercial, office and residential uses. The new federal courthouse is located in the neighborhood, as are old and new residential buildings.

The northern project route is within the South Lake Union Urban Center. This district includes biotechnical and mixed-use office space combined with housing. It also includes the 12-acre South Lake Union Park.

Other business districts located near the proposed project route include the Seattle Center to the west and the Pike Place Market, Waterfront District, Pioneer Square, and International District to the south.

### **5.7.3 Employment**

A variety of employment types exist within the city and the greater project area. The employment data available includes information for the city and for individual forecast analysis zones (FAZs) throughout the city. The FAZ where the project would occur covers a greater area than the immediate project area, but it does characterize employment in and near the proposed project area. Generally, the regional economy is diverse with an emphasis on service industries. Employment derived from retail trade and government/education sectors also plays an important role in the regional economy.

Regionally, the number of jobs has more than doubled during the past three decades. In 2000, 39.3 percent of the region's jobs were in service industries. Within Seattle, 47.5 percent of the jobs were in the services sector. The next highest employment sectors for the region are retail trade (18.1 percent), government/education (16.2 percent), and manufacturing (13.6 percent). Seattle's second-highest employment sector is slightly less diverse, with government/education providing 17.6 percent of the jobs (PSRC, 2003).

Table 5-5 provides a summary of employment types in recent decades and projected employment numbers for 2010 and 2020. Within King County, Seattle, and the project area FAZ, employment is expected to grow by 2020, with the largest gain expected to occur in the services sector in all three regions. The greatest declines in employment are expected to occur within the manufacturing and trade/transport/utilities sectors.

**Table 5-5: Past and Future Employment (Number/Percent of Jobs)**

<b>Area/Sector</b>	<b>1990</b>	<b>2000</b>	<b>2010 (forecast)</b>	<b>2020 (forecast)</b>
<b>King County</b>	972,567	1,196,043	1,351,220	1,516,898
Manufacturing	17.4%	12.4%	10.0%	8.6%
Trade/Transport/Utilities	14.4%	14.4%	13.5%	13.9%
Retail Trade	14.0%	17.6%	16.5%	16.4%
Services	36.3%	42.3%	46.3%	48.2%
Government/Education	17.8%	13.4%	13.7%	12.8%
<b>Seattle</b>	469,802	540,419	603,027	658,409
Manufacturing	10.2%	7.4%	5.4%	4.8%
Trade/Transport/Utilities	14.7%	12.6%	11.8%	12.4%
Retail Trade	13.8%	14.9%	13.8%	13.6%
Services	43.5%	47.5%	51.2%	52.2%
Government/Education	17.8%	17.6%	17.8%	17.1%
<b>Project Area FAZ</b>	40,864	47,228	61,478	71,195
Manufacturing	11.6%	10.1%	7.6%	7.0%
Trade/Transport/Utilities	23.4%	17.7%	14.1%	15.5%
Retail Trade	9.7%	11.8%	10.5%	9.1%
Services	44.4%	49.4%	58.6%	60.9%
Government/Education	10.8%	10.9%	9.2%	7.4%

Source: PSRC, 2003

#### **5.7.4 Unemployment Rates**

The unemployment rate is typically used as a general indicator of economic conditions, with increases in unemployment rates occurring during business declines and decreases during periods of business growth. The civilian worker unemployment rate is calculated as the number of unemployed persons and is expressed by percentage of the civilian labor force. The civilian labor force includes all non-military, non-institutional personnel who can be classified as employed or unemployed.

Table 5-6 provides a profile of recent unemployment rates in the state, county and the metropolitan area. Generally, unemployment rates in the region have matched the rates of the nation as a whole fairly closely, with one recent exception. During 1997, the local unemployment rate dropped substantially below the national average as the local economy experienced strong gains. Since that time, local unemployment rates have remained more consistent with state and regional averages. Although more specific data was not available for the proposed project area, it is expected that unemployment rates within this area would be similar to those of the metropolitan area.

**Table 5-6: Average Annual Unemployment Rates**

Area	2000	2001	2002	2003	2004
Washington State	5.2%	6.4%	7.3%	7.0%	6.1%*
King County	3.6%	5.1%	6.5%	6.6%	5.4%*
Seattle/Everett/Bellevue	3.2%	5.8%	6.0%	6.1%	5.0%**

\*Through November 2004, not seasonally adjusted

\*\*Through October 2004, not seasonally adjusted

Source: Washington Employment Security Dept (2003), U.S. Dept. of Labor, 2004

### **5.7.5 Revenues and Expenditures**

The City of Seattle relies on a variety of taxes to fund state and local government programs. These taxes include a combined state and local sales and use tax, a business and occupation (B&O) tax, public utility and property taxes, and several other excise, real estate, and estate taxes.

A combined state and local retail sales tax is collected on the selling price of tangible personal property. A use tax is assessed on the market value of using tangible personal property and services for which the sales tax has not been paid. The retail sales and use tax applies to most items purchased by consumers, but does not apply to food items or prescription drugs.

The amount of the retail sales and use tax varies by locality. The state tax base is 6.5 percent, but each locality can assess additional taxes. The combined state and local tax rate for the study area is 8.8 percent, which also includes a Regional Transit Authority tax.

The City allocates financial resources into a variety of accounting entities (identified as funds or subfunds) to account for revenues and expenditures. Operating expenditures for services such as police and fire are accounted for in the General Subfund. For the City of Seattle’s endorsed 2004 budget, retail sales tax revenues account for \$121.4 million which is 18 percent of the General Subfund Revenue. Utility services and most personal services (e.g., medical, dental, legal, barber) and real estate are not subject to these taxes.

Within King County, sales and use taxes account for 43 percent of the total taxes collected as revenue. According to the 2002 adopted budget, King County estimated collecting \$323.4 million in sales and use taxes for the 2002 fiscal year (Parsons Brinckerhoff, 2004a).

The King County food and beverage tax is collected in addition to the state and local retail sales tax for restaurants, taverns, and bars. This adds 0.5 percent to the 8.8 percent sales tax levied at these types of establishments.

### **5.7.6 Business and Occupation Tax and Public Utility Tax Revenues**

Most businesses operating in Washington State are subject to the business and occupation (B&O) tax. The B&O tax is typically assessed on the gross income, proceeds of sales, or

value of doing business. Contractors doing construction work for federal agencies are classified as government contractors for B&O tax purposes. Contractors are subject to the B&O taxes. Typically, the measure of tax is the gross contract price (WAC 458-20-17001).

According to the City of Seattle's endorsed 2004 budget, B&O taxes account for \$113.8 million (18 percent) of the General Subfund Revenue. The City also levies a tax on the gross income derived from sales of utility services by privately-owned utilities within Seattle, including telephone, steam, cable communications, natural gas, and refuse collection. These business tax revenues on utilities account for \$116.7 million (17 percent) of the General Subfund Revenue (Parsons Brinckerhoff, 2004a).

### **5.7.7 Property Tax Revenues**

Real and personal property is subject to property tax. Real property includes land and any improvements (i.e., buildings) attached to the land. The primary characteristic of personal property is mobility. Examples of personal property are machinery, equipment, supplies, and furniture. Personal property tax typically applies to personal property used when conducting business.

Property tax is a combined state and local tax. The 2002 property taxes in the project area range from \$13.65 to \$14.42 per thousand dollars of assessed value. The state portion of these property taxes is \$2.99 dollars per thousand of assessed value, with the rest apportioned to many taxing districts. Within King County, property taxes account for 50 percent of the total taxes collected as revenue. According to the 2002 adopted budget, King County estimated \$356 million in property taxes for the 2002 fiscal year. Property tax revenues in the City of Seattle's endorsed 2004 budget account for \$176.7 million, which is approximately one-quarter of the General Subfund Revenue (Parsons Brinckerhoff, 2004a).

### **5.7.8 Other Taxes and User Fees**

Various other taxes are assessed at the state and local levels, which include excise tax on hotels and motels, admission to entertainment and recreation events, food and beverages, fuels, cigarettes, tobacco products, liquor, timber, rental cars, and others. In Seattle, a Convention and Trade Center tax (7.0 percent) is levied on all lodging establishments with 60 or more rooms/spaces. This tax is also levied in Bellevue and elsewhere in King County at various tax rates.

Other local excise taxes include municipal business taxes and licenses. The sale of most real property is subject to a real estate tax paid by the seller. Other taxes levied by the state or local municipalities include an estate and transfer tax, vehicle licensing fee, and watercraft excise tax. No personal income tax is levied in the state of Washington.

### **5.7.9 Revenues from Paid On-Street Parking and Public Garages**

Revenues from paid on-street parking spaces (parking meters and pay stations) are deposited in the City of Seattle's General Fund, which is used for essential government services citywide. Seattle Municipal Code (SMC 11.16.300) also grants authority to the

City's Traffic Engineer to "establish areas where parking is regulated by parking payment devices, and the time limit for parking therein; order installation or removal of parking payment devices where it is determined upon the basis of an engineering and traffic investigation that the installation or removal of such devices is necessary to aid in the regulation, control, and inspection of the parking of vehicles; and designate the parking space or spaces for which a parking payment device is to be used by signs or appropriate markings upon the pavement and or the curb."

There are approximately 9,000 citywide paid parking spaces. The average annual revenue per parking meter is approximately \$1,125. Parking meters within the Seattle CBD account for half of the City's annual revenue from parking meters. Parking meters for downtown Seattle from Denny Way to S. Atlantic Street and from Interstate 5 (I-5) to Elliott Bay represent approximately 70 percent of the City's total parking meter revenue. The city began replacing parking meters with pay stations in 2004. At the same time, hourly rates were increased from \$1.00 to \$1.50. According to the City's 2004 Budget, revenue generated from parking meters and hoods was approximately \$11.74 million in 2003, and this amount increased to \$13.82 million in the 2004 Adopted Budget.

The City of Seattle collects an annual license fee from operators of public garages. Public garages include both buildings and uncovered lots (SMC 6.48). The annual license fee, in addition to the business license fee, is either \$13.50 per stall or \$90 per 1,000 square feet of floor or ground space contained in a parking garage or lot and used for parking or storage purposes. The commercial parking license fee, collected annually, was estimated to raise about \$0.6 million for the City of Seattle.

The City of Seattle also receives sales and B&O tax revenue from short-term and long-term off-street parking (less than 30 days). The sales tax rate is 8.8 percent and the B&O rate for parking is 0.215 percent (Parsons Brinckerhoff, 2004a).

## ***Chapter 6*** ***Environmental Consequences***

### **6.1 Operation**

#### **6.1.1 Community Cohesion**

Because the proposed project route would follow Westlake Avenue for most of its distance before turning eastward in the northern project area near Lake Union, it would be located near the center of the two planning neighborhoods in which it would occur. The proposed route would serve both of these neighborhoods. At its southern terminus, the proposed project would form a connection to the Downtown planning area from the South Lake Union and Denny Triangle neighborhoods, rather than directly affecting downtown land uses and the community there.

Residential uses are scattered in the project area and are not the dominant land use type. Thus, the addition of a new streetcar facility along the proposed route is not expected to result in a disruption to the cohesiveness of residents dwelling in the area. The main streets it would occupy (Westlake Avenue, Valley Street, and Fairview Avenue) are principal arterials and already serve as primary transportation routes for travel between the local neighborhoods. The proposed project would support this function, and likely reinforce it by providing another travel mode for local residents. Because of existing traffic volumes on these streets, the addition of a streetcar route is expected to be far less disruptive to the community than if the roadway were not already a local traffic and transit route.

In addition to promoting travel along the route, the streetcar would also facilitate connections between South Lake Union and downtown Seattle. This connection may serve as a unifying feature between these areas for local residents. To the extent that the streetcar would help develop this unity, it could assist in establishing a more cohesive resident and tourist identity for the neighborhoods it would serve.

The project could have a slightly greater potential for some change in community cohesion along Terry Avenue North. This road is classified as a local access street between Denny Way and Mercer Street, and therefore serves a somewhat more limited traffic function than the other streets along the proposed route. Presently, Terry Avenue North has less traffic than the other principal arterials the streetcar would use, and it provides local access mostly for business and industrial land uses. There is currently no transit use along this street.

The City of Seattle has developed design guidelines for Terry Avenue North that are intended to facilitate its future use as a primary north-south pedestrian corridor and limited-volume access street. The Terry Avenue design guidelines recognize the streetcar as a key part of the Terry Avenue streetscape and incorporate the streetcar tracks and stops into the design plan. The proposed project would facilitate the proposed pedestrian use of this street by providing a readily-accessible transit choice for travel between Terry Avenue North and other nearby downtown destinations. It would also facilitate pedestrian use of Terry Avenue North by stressing pedestrian and transit access rather than motor vehicle access.

### **6.1.2 Regional and Community Growth**

Seattle's Comprehensive Plan identifies growth targets of 16,000 new jobs and 8,000 new households for the South Lake Union Urban Center. The streetcar project will help accommodate this growth by providing local transit service and connecting to the regional transit system.

### **6.1.3 Environmental Justice**

The proposed streetcar is not expected to have negative impacts on low-income or minority populations. Although Census information indicates that minority and low-income population groups may be present in the greater project vicinity, residential buildings would not be displaced or otherwise affected by operation of the streetcar. The streetcar would provide an additional transit choice for local residents on short trips in or near the project area, and would provide a connection to the regional transit system. It could also offer an additional means of access to social service facilities near the streetcar route. No disproportionate adverse impacts to environmental justice groups are expected to occur.

### **6.1.4 Public Services**

#### **6.1.4.1 Schools and Churches**

The proposed project would not affect public schools. No public schools are located within the project area, and the nearest are nearly one mile from the proposed streetcar route. The private schools located in the project area would likely benefit from the additional transportation connection the streetcar would provide. Otherwise, operation of the streetcar is not expected to interfere with school activities. Churches in the project area would not be affected.

#### **6.1.4.2 Police**

The proposed project may only moderately affect police services in the project area. Operation of the streetcar is not expected to result in substantial impacts on police service. It is possible that an accident or crime-related incident may take place involving the streetcar, however the risk of such occurrences would not be substantially higher than presently exists for the public bus system now operating in the area. If the streetcar introduces more tourists to the South Lake Union area, there may be a moderately greater need for police presence there, but the streetcar alone would not greatly increase this potential need and it is not expected to result in a large increase in potential calls for service along the proposed route. Operation of the streetcar would not impair emergency responses or otherwise affect response times to the project area. By introducing more visitors to the project area, the streetcar would also increase the public presence in the area. This would potentially provide increased surveillance along the route, thereby decreasing opportunities for criminal activities in the area.

#### **6.1.4.3 Fire and Emergency Medical**

Potential impacts to fire and emergency medical services would be similar to those associated with police services. Operation of the streetcar would not greatly affect the need for fire or emergency medical services in the project area. Because of its urban

location, the streetcar route is already well-served by fire and emergency services, and the presence of the streetcar would not greatly affect these services. Some additional calls for service may be generated in the event of an accident involving the streetcar, but the streetcar system is not expected to substantially increase the risk of accidents in the project area. No substantial impact on response times is expected to result from the proposed streetcar route. Placement of overhead electrical wires for the streetcar route will ensure adequate clearance to adjacent structures for Fire Department equipment.

#### **6.1.4.4 Transit**

The proposed streetcar is not expected to result in negative impacts to transit service in the project area. It would provide an additional transit service for local riders between downtown and South Lake Union. Bus service would continue to operate in the project area, and its use for commuting and longer trips is not expected to be negatively affected by streetcar operations. The streetcar would also enhance transit access to elderly and disabled riders by meeting Americans with Disabilities Act (ADA) accessibility requirements.

#### **6.1.4.5 Utilities**

Numerous utilities exist in the project area and along the proposed streetcar route. It is expected that operation of the streetcar will have little or no impact on utilities in the area. It is envisioned that utility work would be scheduled either during streetcar non-operational hours, or streetcar services would be temporarily suspended in cases of emergency repair, or service work, or other immediate or planned needs for maintenance. A more detailed discussion of access impacts for utilities is provided in the Construction Impacts section of this report (Section 6.2). A separate Stormwater Technical Memo prepared for this project provides additional information on stormwater facilities.

#### **6.1.4.6 Recreation**

It is not likely that the proposed project would adversely affect recreational facilities in the project area. The streetcar would not be expected to disrupt or interfere with recreational activities at local parks. South Lake Union Park and Denny Park, the primary recreational resources in the area, offer different experiences for their users and it is not likely that improved transit connections between these facilities would alter their uses. For more casual visitors such as tourists who may desire to visit one or both parks, the streetcar would provide an easy connection to both facilities.

As South Lake Union Park develops in the future, an improved connection for downtown visitors may lead to increased awareness and use of facilities there. Because a streetcar ride may be considered a recreational experience by itself, the proposed project would add to existing recreational opportunities in the project area and facilitate travel between activities for local and tourist users. To the extent that the streetcar route may help familiarize riders with existing park facilities, visitor use of these parks may be increased.

#### **6.1.4.7 Pedestrian and Bicycle Facilities**

Existing pedestrian facilities could experience more use as a result of the proposed streetcar route. Depending on the exact location of streetcar stops, persons using the streetcar would be more likely to also use sidewalks to reach destinations along the route.

Trail use in the South Lake Union area may also increase somewhat, since the streetcar would provide an additional means of reaching existing paths. Despite the lack of formal bicycle lanes along Westlake Avenue, Fairview Avenue, and Valley Street, bicycle use does occur in this area and the streetcar tracks may affect bicyclists using the street for commuting or recreational purposes. On Westlake Avenue between Stewart and Thomas streets, where bicyclists would have the most potential conflict with the streetcar tracks, bicyclists will be directed to use alternate routes.

### **6.1.5 Economics**

Operation of the streetcar could have moderate beneficial impacts on transit revenues. By providing a new transit route, it is expected to result in additional transit revenue.

The local economy could also benefit from the proposed streetcar route. Businesses along the proposed route may experience increased patronage once the streetcar is operational. Increases in streetcar ridership may result in new visitors to restaurants and stores along the route, particularly near South Lake Union where park facilities may become more attractive to summer tourists and existing restaurant and hotel facilities may benefit from visitor increases. Patronage of local businesses may increase as a result of providing new streetcar service between the South Lake Union and downtown.

To the extent that the new streetcar is perceived as a local benefit in the project area, it may be expected to have positive impacts on local property values. In Portland where a similar streetcar project was built, an appraiser's study indicated that property values along the route increased from two to ten percent due to the streetcar.

Only two business displacements would occur as a result of construction of the proposed streetcar maintenance facility. The facility would be constructed on three parcels that the City currently owns. The maintenance facility would be constructed on portions of the parcels not needed for the other project. One business operates as a leaseholder. Because this property is already owned by the City, construction of the maintenance base would not result in the conversion of private property to publicly owned property. The proposed streetcar project is not expected to result in any long-term loss of property tax revenues in the project area.

On-street parking may be affected by the proposed streetcar route. Depending on the exact location of tracks and proposed streetcar stops, the project could displace some on-street parking spaces. Up to 45 unmarked informal parking spaces in the railbank area north of Valley Street may be eliminated. No private or metered spaces would be eliminated in this area. Other parking impacts would 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 would result in a loss of up to 33 parking spaces. Nearby parking is expected to be sufficient to address needs in the project area and parking changes are not expected to substantially alter business revenues.

### **6.1.6 Relocations**

The Uniform Relocation Assistance and Real Property Acquisition Policies Act (Uniform Act) of 1970 (PL 91-646, 42 USC 4601 et seq., as amended) ensures fair and equitable treatment of people whose real property is acquired or who are displaced as a result of a

federal or federally assisted project. Government-wide regulations provide procedural and other requirements (appraisals, payment of fair market value, notice to owners, etc.) for the acquisition of real property, and provides for relocation payments and advisory assistance in relocating people and businesses.

One business displacement would occur as a result of City use of property for the proposed streetcar maintenance facility. The City currently owns this property. This business occupies this property as a leaseholder. It would be eligible for relocation assistance as required under the Uniform Act.

## **6.2 Construction**

### **6.2.1 Community Cohesion**

Construction activities for the proposed project are expected to last approximately 12 to 18 months. The proposed project could result in temporary impacts on mobility within local neighborhoods during construction activities. Local lane closures and detours would occasionally occur along the proposed route, and noise and dust from construction activities could be noticeable in some locations. Construction impacts would not take place simultaneously along the entire project corridor, so disturbances associated with these activities would be limited in location and duration as new tracks are provided for the proposed route. Although detours may be needed in some locations, neighborhood cohesion would not be seriously affected and it is expected that mobility in the area would not be greatly impaired for long periods of time.

### **6.2.2 Regional and Community Growth**

Construction activities would not likely affect regional and community growth. Although some residents may refrain from driving in the area during construction periods, the construction of new streetcar tracks would not likely affect growth during the expected 12- to 18-month construction period.

### **6.2.3 Environmental Justice**

Environmental justice population groups near the project route would be affected by lane closures, detours, and dust and noise from construction activities in the same manner as other local residents. Noise and dust impacts would likely affect only a two-block area at a time along the 1.3 mile project route. These groups are not expected to be inconvenienced by these activities to a greater extent than the local population as a whole. These populations may be somewhat more transit-dependent than the overall population, and local bus routes may be slowed or delayed moving through the project area during construction. This impact would affect all transit users equally, and would be temporary in time and location as new tracks are laid along the proposed route. Thus, a minor impact may occur on local mobility but it is not expected to disproportionately affect environmental justice groups. Additional information on construction impacts is available in the Noise and Transportation technical reports for this project.

#### **6.2.4 Public Notification**

The project has been presented at numerous public meetings (approximately 25) starting in 2003, including community open houses, community council meetings, and City Council briefings, all of which provided opportunities for public comment.

Community council meetings included eight meetings with South Lake Union Friends and Neighbors (SLUFAN) Community Council. This group is made up of business owners, residents, property owners, and representatives from non-profits and institutions in the area most affected by the streetcar project and is the city-recognized community council for the neighborhood. At these meetings, City staff provided project information, answered questions, and received feedback on issues such as funding, routing, design, and operations.

The City hosted two public open houses about the project in February 2005 to present information about the route and project design and to encourage feedback from the public. Approximately 60 people attended open houses held on February 24 and 28, 2005. The open houses served as an opportunity to show business owners, residents and other interested parties the proposed stop locations and station designs for the South Lake Union Streetcar. It also provided a forum for people to speak directly with the project team, get their questions answered and provide meaningful feedback on the proposed plans. The open houses were advertised in the following ways:

- Over 2,000 flyers were mailed to the project mailing list.
- Approximately 35 flyers were hand delivered to businesses along the proposed alignment.
- A notice was posted on the South Lake Union Streetcar project web site (<http://www.cityofseattle.gov/transportation/slustreetcar.htm>).
- An e-mail invitation was provided to SLUFAN and other neighborhood groups for them to forward to their members.

Open house attendees had the opportunity to view boards showing the proposed alignment, stop locations and station design prototypes. Project staff was on hand to speak with members of the public and listen to their questions and concerns. A fact sheet providing a brief overview of the project's objectives and plans was also available. Attendees were encouraged to access the project website for more detailed information.

The project has also been presented at four City Council meetings during the past year, all of which provided opportunity for public comment. No major concerns have been expressed by agencies. A few members of the public have expressed concern about whether the project should be a priority given other needs in the city, but no major concerns about specific project impacts have been expressed.

### **6.2.5 Public Services**

The primary impact on public service providers in the project area during construction would result from potential delays and detours on local roadways affected by construction activities. No public schools are located along the project route, so these impacts are not expected to have direct effects on those schools or students. The private schools and the church near the project route may experience temporary impacts associated with noise from construction activities. Dust from construction may also temporarily affect the private school on Westlake Avenue. These impacts would be limited in duration as construction takes place along the route. Indirectly, persons having to use a portion of the project route to reach school destinations may be affected by congestion and detours associated with the movement and use of construction equipment and vehicles. These delays are not expected to greatly impair local mobility, and access to private schools in the area would be maintained.

Police, fire and emergency medical providers may also be affected by detours and delays associated with construction activities. Travel times along the primary streetcar route and associated intersections may be slowed, causing a related potential decrease in response times for police, fire, and emergency service calls. These delays are not expected to be severe and would not affect the entire project route at one time.

As indicated previously, public transit routes along the streetcar route would also be affected by changes in traffic conditions during construction activities. Detours and/or delays could affect travel times, and some bus stops may need to be temporarily relocated during construction. These impacts would be limited to Westlake Avenue North and an approximate three-block area along Fairview Avenue North. Relocation of trolley bus wires and strain poles could be required, however trolley lines in the area are limited to Fairview Avenue North. These changes are not expected to severely alter transit service in the area and would not occur beyond construction times.

The Washington Library for the Blind and the Seattle VET Center are both located adjacent to but not directly along the proposed streetcar route. Visitors to these service locations may be affected by detours, delays, dust and noise associated with construction activities in the southern project area. These impacts are not expected to be severe and would not directly affect access to these locations. However, disabled visitors may require special attention in adjusting to detours or other changes in the area that their disabilities may not allow them to detect or traverse as readily as would able-bodied residents.

### **6.2.6 Utilities**

Construction activities may result in disruptions to utility services and/or the need to relocate utilities in some areas along the proposed route. Most activities related to placement of the streetcar tracks would require excavation to approximately 12 to 18 inches, with some deeper excavations needed for track drains. Localized utility construction activities, however, may occur at depths of six to fifteen feet below the existing grade, increasing the likelihood that utility lines may be encountered during construction. Utility relocation could require roadway reconstruction in certain locations that extends up to curb to curb.

According to current plans, the primary utilities likely to be encountered along the proposed streetcar route include water, sewer, storm drain, natural gas and electrical ductbanks and

vaults. Potential disruptions would be temporary and of short duration, however where relocations might be needed, these impacts may take somewhat longer to resolve. Pressurized utility line undercrossings (such as water or natural gas lines) may be cased where required by utility providers. It is expected that the track slab would be designed to span the maximum trench width required to repair or maintain lines or services.

The streetcar alignment, track slab, and operational criteria design are being assembled to minimize public utility construction impacts. Alignment choices place a high priority on existing utility locations. Temporary short-term suspension of streetcar operations are anticipated to be balanced with minimized utility relocation and modifications. No long term impacts on utility services are expected once construction is complete.

In general, existing waterlines would require excavation at specific points, including potential waterline crossings of the streetcar alignment, or relocation may be needed. Appropriate construction measures will be taken in the proximity of waterlines.

Limited sewer and storm drain manholes and inlets may require modification or relocation to allow for maintenance access. Privately owned side sewers may be affected in some locations and depending on their condition, may need to be repaired or replaced by the property owner.

In addition to disruption of existing facilities, new stormwater detention facilities would be needed. New detention pipes are planned at up to five separate locations along Westlake Avenue North and Terry Avenue North. Placement of these facilities during construction may affect other utilities nearby. A stormwater vault is also proposed, to accommodate potential runoff from the maintenance facility. No long term impacts on utility services are expected once construction is complete.

Modifications to private utilities are anticipated and will be performed by the private utility companies at their cost.

### **6.2.7 Recreation**

Construction activities may affect travel to and from local parks in the project area. Noise and dust from construction activities may also affect park users. These impacts are not expected to directly affect park use or activities, and would be limited in their duration and location as construction occurs along the streetcar route. Temporary access provisions may be needed for South Lake Union Park during construction, but activities there are not expected to require park closures. Noise and dust from construction activities may also disturb some recreational users of trails and park facilities near the proposed streetcar route. Some users may avoid these facilities during construction activities, but once construction is completed existing users would be expected to return.

Similar impacts may also occur at the privately owned Denny Playfield and may affect recreational use of this facility. As with public facilities, after construction, no long-term impacts on the playfield are anticipated from streetcar operations.

### **6.2.8 Pedestrian and Bicycle Facilities**

Construction activities may affect pedestrians and bicyclists using the proposed streetcar route or traveling in the project area. As indicated previously, bicyclists and walkers may be affected by noise and dust from construction activities. Depending on the exact area of construction, portions of the pedestrian path at the south end of Lake Union could be closed briefly during portions of proposed construction activities. To avoid closures, potential detour routes around construction areas may also be considered for this facility.

### **6.2.9 Economics**

Travel patterns could be temporarily disrupted by construction activities in the project area, which may affect local businesses. Delays and detours could occur, and this may affect the use of local roadways by some commuters and other visitors to the area. Some businesses may experience reductions in customers while construction is taking place, but this potential impact is not expected to substantially change local revenues and would not be expected to result in severe hardships for local retailers.

Another impact that could reduce sales revenues during construction is the potential loss of on-street parking. Construction activities may require temporary closure of access to on-street parking spaces. As construction proceeds, this would affect different parts of the route at different times, and is expected to be of short duration in any given area. This loss of access to on-street parking spaces may temporarily inconvenience potential patrons. However, because the streetcar design would minimize disturbances to off-street parking, this impact is not expected to affect a large number of existing parking spaces.

A short-term increase in local employment associated with construction of the proposed project could help offset possible changes in sales revenues. Direct employment from the project would likely be limited to construction jobs and associated wages for workers primarily from the local construction industry. Overall, the demand for construction workers for this project would be expected to represent only a fraction of the construction work force available locally.

The project may also result in some indirect demand for workers from local or regional construction suppliers for the project, although such demand would likely be small because of the relatively small size of this project. The total demand for all workers associated with this project would be expected to have short-term economic benefits, but it would not substantially stimulate or otherwise influence the greater local or regional economy.

Localized impacts during construction are not expected to greatly influence property values in the project area. Although short-term increases in traffic congestion, noise and dust may occur from construction activities, these impacts would be limited in duration and would not change the long-term values associated with local properties.

The total contribution to overall revenues from construction of this project is not expected to have a large impact on local or regional sales tax revenues. This is not to say that the completed project will not contribute to redevelopment in the area and therefore increased tax revenues.



## **Chapter 7**

## **Mitigation**

This section discusses the potential mitigation measures recommended to avoid or reduce the social impacts from the project identified in Chapter 6.

### **7.1 Operation**

The business displaced by the project would be eligible for relocation assistance as required under the Uniform Relocation Assistance and Real Property Acquisition Policies Act (Uniform Act) of 1970 (PL 91-646, 42 USC 4601 et seq., as amended).

Bicyclists will be directed to alternate routes where streetcar track placement in the roadway is not compatible with bicycle use.

### **7.2 Construction**

Businesses and residents in the project area should receive advance notification of project schedules, potential detours, and changes in pedestrian, bicycle, or transit routes associated with construction activities along the project route.

Emergency service providers would also be provided with information on lane closures, detour routes and construction schedules. Provisions should be made for emergency vehicle travel in the project area during construction periods, to assure that access is not blocked and emergency response times would be affected as little as possible.

To minimize the potential effects of noise and dust on recreational facilities, construction schedules could be coordinated with South Lake Union Park event times to avoid sensitive time periods.

City of Seattle standards and specifications would be followed, along with other relevant state and federal regulations, for construction of new utilities in the project area.

A utility relocation plan will be prepared to identify existing, temporary and new locations for utility lines. This plan will allow for a detailed description of potential utility disruptions during construction. Utilities would be reviewed to determine facilities that need to be protected and supported in place during construction.

Coordination with utility providers will be required to assure minimization of potential disruptions and provide information on construction schedules and sequencing. Temporary connections to businesses and residences that may be affected by disruptions will be required.

Contractors would coordinate with businesses to provide access at alternative times if access to loading docks would be temporarily blocked.

Detour and temporary signage plans for staged work could be developed in cooperation with affected businesses and a public information effort would be implemented to emphasize that businesses would remain open in construction zones.

Pedestrian detour routes would be ADA compliant.



## **Chapter 8**                      **Secondary/Cumulative Impacts**

The proposed project may contribute to secondary and cumulative impacts from projects and development that may occur in and near the project area. Generally, secondary impacts are indirect impacts that may result from a proposed action, and cumulative impacts are the effects from a proposed project's actions combined with those of other project actions in the area.

The City has planned several transportation projects that may affect downtown traffic conditions, including some located within portions of or near the proposed streetcar project area. Three of these projects could affect the proposed streetcar line. The South Lake Union Park project (proposed construction between 2007 and 2009) could affect the northern portion of the proposed streetcar line. The Mercer Corridor Project would be completed by 2010 and would cross the northern portion of the streetcar area near Lake Union. The Seattle Monorail construction is proposed from 2006 to 2009 and could affect the southern streetcar area near Westlake Avenue and Olive Way. The Link Light Rail project between downtown and Sea-Tac would be completed by 2010 and may also affect the southern streetcar area.

Development projects may also take place on land parcels adjacent to the proposed streetcar line, and could contribute to cumulative impacts in the project area. Land uses associated with these projects may also influence conditions after their construction, which may have an impact on other social elements in the project area. This chapter discusses the potential impacts associated with these potential transportation and development projects.

### **8.1 Community Cohesion**

Community cohesion could be affected by the streetcar project and other projects that may take place along the proposed streetcar route. If construction periods for the proposed Mercer Corridor and South Lake Union Park projects occur at the same time as the streetcar construction, traffic congestion, detours and delays could be noticeable in the northern portion of the proposed streetcar project area. In a similar manner, the proposed Monorail expansion could combine with streetcar construction to affect congestion near the southern project limits of the proposed streetcar line. This may make it difficult to move from one area to another during construction activities, which could affect the unity of local neighborhood areas until the construction period is complete.

The streetcar and other improvements are intended in part to support efforts to revitalize these areas and enhance their desirability as a place to live, shop, and relax. The streetcar will contribute to unification South Lake Union, the Denny Triangle, and Downtown. Depending on other measures the City might pursue, this unity could help integrate these neighborhoods more closely with an extended image of downtown Seattle. Although this may tend to blur the separate identities within these neighborhoods, it may also bring residents together and increase the cohesiveness of these groups within an enlarged view of the downtown area.

## 8.2 Regional and Community Growth

The proposed project is intended to support planned growth in the project area. It could contribute to a secondary impact by helping introduce more individuals to the project area. For persons considering moving to the Downtown, Denny Triangle and South Lake Union areas, the streetcar may be viewed as another amenity in these neighborhoods along with other roadway and development projects being proposed there. As indicated by the Seattle Streetcar Network and Feasibility Analysis (Parsons Brinckerhoff, 2004b) streetcar lines in general have also been focal points for new development with a transit-friendly orientation. The streetcar's presence may also contribute to the viability of local business and recreational facilities and may help increase their popularity with tourists and residents of the area, which may have an additional "attractive value" for some individuals.

As indicated previously in the discussion of community cohesion, as efforts to revitalize these neighborhoods take place, their popularity may increase. Ultimately, this may lead to renewed interest in the neighborhoods and the overall downtown region as a place to live. The streetcar would be expected to have a part in these larger changes and when combined with other efforts would accommodate this potential transformation.

## 8.3 Environmental Justice

In combination with other projects and improvements that may take place near the proposed streetcar route, this project may increase the construction disruption on the local neighborhood. The streetcar alone is not expected to substantially affect environmental justice groups, but congestion, detours and delays could affect all local residents, including these groups. This impact is not expected to result in substantial or disproportionate impacts on environmental justice groups.

The potential long-term changes in community cohesion and population growth described previously may affect environmental justice groups. While not a direct effect of the streetcar, if the area is revitalized low-income individuals who may reside near the project area could be affected by upward changes in property values. Over time, unless provisions are made for affordable housing in the area, low-income individuals may be displaced as more affluent persons move into new or modernized buildings.

## 8.4 Public Services

Depending on the timing of local projects, traffic congestion and delays during construction could affect response times for emergency service providers using project-area streets. With appropriate coordination with service providers and construction schedules, these effects are not expected to severely limit service providers' ability to access nearby businesses or land uses. Once other projects have concluded, improvements, (particularly those associated with local roadways) would be expected to improve travel conditions and future response times in the area. Neighborhood revitalization may also increase demand for some services, but the potential magnitude of the proposed streetcar's contribution is expected to be minimal in relation to the larger increase that may accompany new development.

## 8.5 Utilities

The streetcar project would contribute to the potential need for utility disruptions or relocations in the project area. As indicated in the *Construction Impacts* section, it is likely that some utility lines could be encountered during construction. This likelihood would increase incrementally when considered in combination with other projects that may take place. This impact is not expected to substantially affect utility provisions for the area, although it may result in an increase in the number of utility disruptions that may take place, or an increase in the length of time over which disruptions could affect nearby businesses and residential uses. Beyond potential construction encounters, cumulative impacts are not expected to result in a direct impact on demand or delivery of utility services in the project area. The secondary impact on demand associated with potential revitalization of local neighborhood areas would be greater, but the streetcar line would only be one factor in influencing the revitalization.

## 8.6 Recreation

Few direct impacts on recreational facilities are likely in the project area. The streetcar would contribute to recreational opportunities by providing access to recreational facilities in the project area.

## 8.7 Pedestrian and Bicycle Facilities

Cumulative impacts on pedestrian and bicycle facilities would be similar to those described for recreational facilities. An incremental increase in the potential to affect these resources may occur during construction. The streetcar project may also add to a potential increase in use of pedestrian facilities in particular, as more individuals access areas along the proposed route (either as a result of riding the streetcar or through increased residential growth) in areas served by the streetcar line.

## 8.8 Economics

Along with other projects that may occur in the area, during construction the streetcar project would cumulatively contribute to traffic congestion and delays or detours that could affect nearby businesses. Some customers may find it difficult to reach businesses during the construction period, and this difficulty may be extended in locations where more than one project would be taking place simultaneously. The combined effect could result in temporary sales losses and a decrease in revenues for affected businesses.

The streetcar project would also contribute to efforts to revitalize the Denny Triangle and South Lake Union neighborhood areas. As improvements are made to these neighborhoods, it is possible that property values would increase and local businesses may experience increases in customers and resulting sales. These impacts would contribute to an improved vitality and increased revenues for businesses in the project area. This could lead to increased sales revenues from local businesses and improved economic conditions in the area.



## Chapter 9

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