SR 519 Intermodal Access Project Phase 2: South Atlantic Corridor

Public Services and Utilities Technical Memorandum

Prepared for

U.S. Department of Transportation
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Prepared by

CH2MHILL

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Acronyms and Abbreviations

	B
BMP	best management practice
BNSF	Burlington Northern Santa Fe
	C
CEQ	Council on Environmental Quality
	E
EA	Environmental Assessment
	F
FHWA	Federal Highway Administration
	K
kV	kilovolt
	M
mgd	million gallons per day
	N
NEPA	National Environmental Policy Act
	P
PSE	Puget Sound Energy
	S
SCL	Seattle City Light
SFD	Seattle Fire Department
SPD	Seattle Police Department
SPU	Seattle Public Utilities
SR	State Route
	T
TMP	Transportation Management Plan
	W
WSDOT	Washington State Department of Transportation
WSP	Washington State Patrol

Glossary of Technical Terms

Public service – Fire, police, communications, water/stormwater, sewer/solid waste, and other governmental services or utilities as elements of the built environment to be considered during the environmental review process.

Utility – Privately, publicly, or cooperatively owned lines, facilities, and systems for producing, transmitting, or distributing communications, cable television, electric power, light, heat, gas, oil, crude products, water, steam, waste, stormwater not connected with highway drainage, and other similar commodities, including any fire or police signal systems, street lighting systems, and traffic control system interties, which directly or indirectly serve the public (WSDOT Utilities Manual [M 22-87], Chapter 2).

Summary

What is the proposed project and why is it needed?

The Washington State Department of Transportation (WSDOT) proposes to construct improvements to State Route 519 (SR 519) in Seattle as Phase 2 of the SR 519 Intermodal Access Project. The project would include three components:

- A proposed new Interstate 90 (I-90) off-ramp to South Atlantic Street (I-90 off-ramp)
- A proposed new South Royal Brougham Way railroad overpass (BNSF Railway overpass)
- Roadway widening along the existing South Atlantic Street east of First Avenue South and improvements to the intersection of First Avenue South and South Atlantic Street

SR 519 is an important thoroughfare for cars, trucks, and pedestrians in Seattle's South of Downtown (SODO) district. In 2004, WSDOT opened Phase 1 of the SR 519 project, consisting of the South Atlantic Street overpass (Edgar Martinez Drive) and a new on-ramp from South Atlantic Street to I-5 and I-90. The Proposed Action (SR 519 Intermodal Access Project – Phase 2: South Atlantic Corridor) would complete the SR 519 project by providing a direct westbound connection from the I-5/I-90 freeway system to the Seattle waterfront and Port of Seattle. Currently, westbound traffic from the freeway exits at Fourth Avenue South and follows a circuitous route to South Atlantic Street to cross safely over the BNSF Railway tracks located just east of Safeco Field and Qwest Field. Vehicular and pedestrian traffic on South Royal Brougham Way must use an at-grade railroad crossing. New

roadway structures are needed to allow vehicles and pedestrians to reach their destinations safely, quickly, and directly.

The Proposed Action would connect the existing westbound off-ramp from I-5 and I-90 to the current South Atlantic Street overpass, and it would construct improvements at the intersection of First Avenue South and South Atlantic Street and widen South Atlantic Street to accommodate traffic along this new route. A grade-separated crossing over the railroad tracks at South Royal Brougham Way would also be built.

This project would increase traffic mobility and safety by improving connections between Interstates 5 and 90 and Port of Seattle terminals, the Washington State Ferries terminal at Colman Dock, waterfront commercial interests, and the stadium area. The project would also allow people to walk more safely to and from the stadium area.

What is the affected environment?

The proposed SR 519 Intermodal Access Project: Phase 2 is located in the city of Seattle in King County, Washington. The affected environment for public services includes fire protection, emergency medical service, and police protection. The City of Seattle provides fire protection, emergency medical service, and police protection services within the project study area. The BNSF Railway also provides police protection within the study area. Solid waste and recycling collection is handled by private firms under contract to Seattle Public Utilities.

Potentially affected utilities in the study area include electrical power, natural gas, water, wastewater, stormwater, and telecommunications.

The project team identified all the public services and utilities that would provide service or are located or travel within 1,000 feet of the project limits. This 1,000-foot boundary defines the study area for public services and utilities.

How were the effects of the project on public services and utilities analyzed?

The project team identified the public services and utilities that have designated service areas within the study area or provide services or would respond to calls within the study area. The project team then determined the effects of the Proposed Action and the No Build Alternative by reviewing the existing conditions and the proposed project design to identify any areas of potential effects.

What effects on public services and utilities would occur during construction of the project, and what mitigation is proposed?

During construction of the project, response and travel times of fire, emergency medical, and police vehicles through the study area would increase during construction-related traffic slowdowns. For example, South Royal Brougham Way would have to be closed intermittently during construction of the proposed BNSF Railway overpass to allow certain construction activities (for example, drilling the foundation shafts and placing the superstructure girders). However, access would be maintained for emergency vehicles at all times. For much of the construction timeframe, South Royal Brougham Way would be kept open, but reduced to single-lane traffic in both directions.

The project might require the temporary or permanent relocation of utilities. This will be determined during the detailed design phase of the project.

Measures to mitigate effects on public services and utilities during construction could include:

- Preparing and implementing a Transportation Management Plan (TMP). Items in the TMP could include the installation of signal preemption through construction zones and posting signs to show detour routes if temporary road closures are required.

- Providing the fire department, police department, and other service providers, including Seattle Public Utilities, with advance notice of construction schedules to allow for coordination and to minimize the effects of road closures on response and travel times.
- If any waterline relocations or shutdowns are required that might affect water supply for fire suppression, notifying and coordinating with the fire department and Seattle Public Utilities , and establishing alternate supply lines prior to any break in service.
- If water supply and power must be turned off, establishing fire watches or stationing a fire truck in the vicinity, as required.
- Scheduling construction during off-peak travel hours to minimize traffic congestion during peak travel hours.
- Avoiding construction during events at Safeco Field, Qwest Field, or the Qwest Field Event Center and coordinating with staff of these facilities, as well as the Seattle Police Department, prior to construction to minimize construction-related effects.
- Before construction starts, coordinating with the BNSF Railway regarding limits on construction activities overhead of the railroad right-of-way from October to December every year; BNSF does not allow construction activities in their right-of-way during this timeframe.
- Verifying the exact locations and depths of underground utilities prior to construction, including potholing.
- Coordinating with the utility providers, including Seattle Public Utilities, to consider the location of utilities during detailed design. The objective would be to avoid or minimize conflicts, disruption of service, and disruption of or restrictions on access, maintenance, and repairs during construction and operation of the project.
- To mitigate for the poor soils in the area, coordinating with the utility agencies, including Seattle Public Utilities, on

construction techniques to minimize construction-related effects, such as vibrations which could damage or destroy utility lines.

- If utility relocations are required, establishing service agreements for reimbursement of utility relocation costs and sequencing of the design and construction work.
- Notifying area businesses and residents of utility interruptions, if any are required, by providing a schedule of construction activities in those areas.

What effects on public services and utilities would occur during operation of the project, and what mitigation is proposed?

During operation, the Proposed Action would have beneficial effects on public services. By improving the movement of westbound traffic and removing conflicts between vehicle and rail traffic, the project would reduce traffic congestion through the study area and could also reduce response and travel times for public service vehicles. The addition of an elevated crossing of the BNSF Railway right-of-way at South Royal Brougham Way would provide a new uninterrupted route for public service vehicles. The new railway overpass would be designed to current seismic standards to prevent or withstand damage during an earthquake. The new I-90 off-ramp to the existing Phase 1 overpass at South Atlantic Street would provide a shorter and more direct connection from the freeway system to the Seattle waterfront.

The new railway overpass at South Royal Brougham Way would not affect the large subsurface utilities there (96-inch-diameter combined sewer and 72-inch-diameter stormwater pipeline). Construction would avoid these utilities, and the foundations for the overpass structure would be located to avoid placing any additional pressure on them from the weight of the structure or horizontal pressures resulting from an earthquake.

Because the Proposed Action would not induce growth (see the Land Use Discipline Report for further information), it would

not indirectly increase demands on public services and utilities. Other new developments would require public services and utilities to be in place before they are occupied or used.

Would the project contribute to cumulative effects on public services and utilities?

Past and present urban development has produced an ongoing cumulative effect by increasing demand for public services and utilities in and near the SR 519 study area. This trend is expected to continue in the reasonably foreseeable future. The Proposed Action would help to alleviate the cumulative effect of continuing development and its growing demand on public services by improving transportation (reducing traffic conflicts and congestion) and safety in the study area and possibly by reducing the response and travel times of public service vehicles.

The Proposed Action would make a beneficial, incremental contribution to water quality by providing additional stormwater treatment facilities.

Refer to the Water Resources Technical Memorandum for further information on effects related to water resources.

In the short term, other construction projects are likely to occur while the Proposed Action is under construction, most notably replacement of the south portion of the Alaskan Way Viaduct (SR 99). WSDOT would closely coordinate the two construction projects to minimize disruptions to the provision of public services and utilities.

Are any of the identified effects considered substantial?

A substantial effect to public services and utilities would occur if:

- The project impeded emergency services access or response times.
- The project permanently disrupted any utility service.

The project team did not identify any effect of the Proposed Action on public services and utilities that would be considered substantial.

What effects on public services and utilities would occur if the Proposed Action is not built?

The No Build Alternative would not improve the east-west movement of traffic or provide a new crossing over the BNSF Railway tracks. The response and travel times of fire, emergency medical, and police services, as well as other public service vehicles, would remain at their current levels or increase with population growth and increasing congestion from vehicular and rail traffic. Because there would be no change to existing utilities in the study area, no effects on utilities are anticipated.

Chapter 1 Introduction

1 Why are public services and utilities considered in this report?

Local governments and private companies provide public services and utilities to the residents and businesses within their service boundaries. Public services considered in this technical memorandum include fire protection, emergency medical service, police protection, and solid waste and recycling disposal. Utilities discussed include electricity, natural gas, telecommunications, water, wastewater, and stormwater.

This report was prepared as supporting documentation for a National Environmental Policy Act (NEPA) Environmental Assessment. NEPA (42 USC 4321 et seq.) requires that all actions sponsored, funded, permitted, or approved by federal agencies undergo planning to ensure that environmental considerations are given due weight in project decision-making. If a project has the potential to affect public services and utilities by increasing demand beyond the capability of service providers or by disrupting service, NEPA requires that public services and utilities be considered in an environmental document. The State Environmental Policy Act (SEPA) and its implementing regulations (WAC 197-11) mandate a similar procedure for state and local actions, and public services and utilities are listed among the elements of the built environment to be considered (WSDOT, 2004a).

In addition, construction may interfere temporarily with fire, emergency, and police services or may require relocation or adjustment of utility lines or facilities.

2 What are the key points of this report?

Construction of the Proposed Action would produce temporary road closures and traffic delays that could slow the provision of public services and briefly interrupt utilities. WSDOT and its contractors would employ a variety of mitigation measures to avoid or minimize disruptions to service. After the project was completed, beneficial effects on travel by public service vehicles would result from improved east-west traffic flow and the construction of a new vehicle and pedestrian crossing over the BNSF Railway tracks, which could reduce response and travel times. Neither the Proposed Action nor the No Build Alternative would have a long-term effect on utilities.

Chapter 2 Description of Alternatives

SR 519 is an important thoroughfare for cars, trucks, and pedestrians in Seattle's South Downtown (SODO) district (Exhibit 2-1). In 2004, WSDOT opened Phase 1 of the SR 519 project, consisting of the South Atlantic Street railroad overpass (Edgar Martinez Drive South) and a new eastbound on-ramp from South Atlantic Street to I-5 and I-90. The overpass separates road and railway traffic at Third and Fourth Avenues South and improves access to the freeway system from important waterfront facilities such as the Port of Seattle terminals, railroad freight yards, and the Washington State Ferries terminal at Colman Dock.

New South Atlantic Street overpass built in SR 519 Phase 1

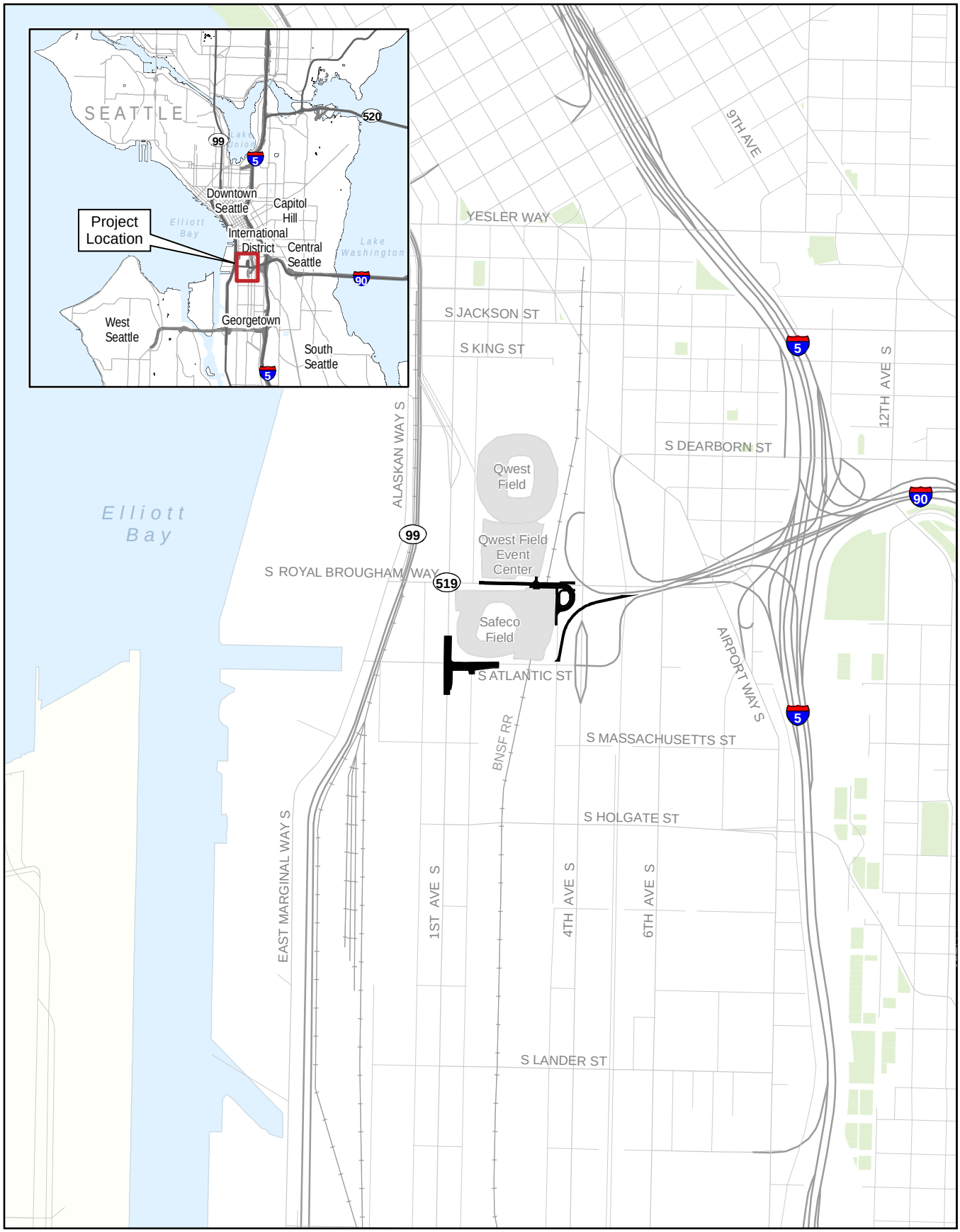
The Phase 1 project had four main components which:

- Provided the eastbound connection from the waterfront to I-5 and I-90 via South Atlantic Street
- Removed the old eastbound I-90 ramp on Fourth Avenue South
- Made improvements to South Atlantic Street between First Avenue South and the Alaskan Way South/East Marginal Way intersection
- Constructed the South Weller Street Pedestrian Bridge

When Phase 1 opened, eastbound freight, ferry, and event traffic immediately moved more freely, because connections from the Port of Seattle, waterfront, and stadium area to the freeway system were improved.

1 Why is the Phase 2 project needed?

SR 519 provides a vital roadway system for east-west traffic through Seattle, but it currently does not assist in the efficient westbound movement of cars, trucks, trains, and pedestrians through Seattle's SODO district. The route passes through an area that has changed so much in recent years that the roadway arrangement is not well suited to present conditions.



Source: City of Seattle (2007) and King County (2006)

Stadiums

Project

N

0 1,000 Feet

Exhibit 2-1
Vicinity Map

A new design and new roadway structures are needed to allow vehicles and pedestrians to reach their destinations safely, quickly, and more directly.

This project would help to resolve several issues:

- Safety concerns from traffic and people crossing surface-level railroad tracks in the stadium area
- The expected increase in rail traffic and pedestrian crossings at South Royal Brougham Way when Sound Transit Central Link light rail service begins in 2009, resulting in safety concerns and travel delays
- Poor westbound access between I-5/I-90 and the Seattle waterfront, especially the Port of Seattle terminals and the Washington State Ferries terminal at Colman Dock
- Delays in moving products between Port of Seattle terminals and local, regional, and national markets

2 What is the purpose of the project?

This project would improve traffic mobility and safety by improving westbound connections between I-5/I-90 and the Port of Seattle terminals, the Washington State Ferries terminal at Colman Dock, waterfront commercial interests, and the stadium area. The project would allow people to walk more safely to and from the stadium area.

The purpose of the project is to:

- Provide a more direct route between I-5/I-90 and the Seattle waterfront, so that westbound freight, commuters, and local traffic can move more safely and efficiently through the stadium area
- Improve safety and reduce railroad and vehicle delays at the surface-level rail crossing on South Royal Brougham Way west of Fourth Avenue South
- Improve safety for people walking to events, work, and neighborhood destinations

- Reduce truck and rail traffic conflicts so that freight operators can move products more efficiently between Port of Seattle terminals and markets

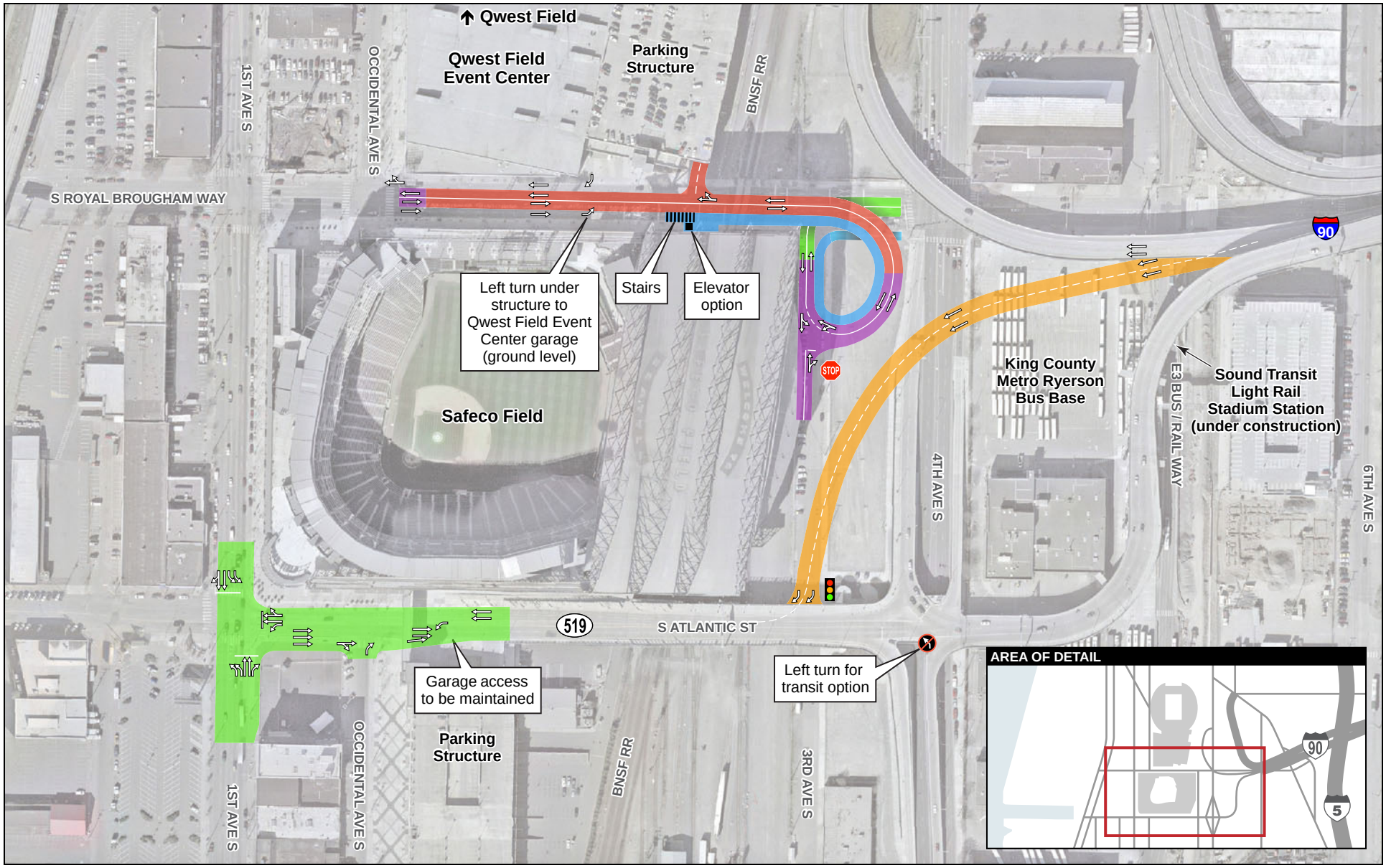
3 What are the project alternatives?

Two alternatives were analyzed for this report: the Proposed Action and the No Build Alternative. The Proposed Action, which has been designed to meet current and projected future traffic conditions, was developed following the completion of an earlier NEPA Environmental Assessment and associated Finding of No Significant Impact (FONSI) (USDOT et al., 1997) and builds on the more recent screening and evaluation of 21 preliminary Phase 2 options by WSDOT in a feasibility study (KPFF et al., 2006).

Proposed Action

The Proposed Action (SR 519 Intermodal Access Project Phase 2: Atlantic Corridor) would connect the existing westbound off-ramp from I-5 and I-90 to the existing South Atlantic Street overpass. It would also provide improvements at the intersection of First Avenue South and South Atlantic Street to accommodate traffic more efficiently along the route. In addition, it would build a grade-separated crossing over the railroad tracks at South Royal Brougham Way. These proposed improvements are described in more detail below and are illustrated on Exhibit 2-2. Traffic flow with the proposed improvements in place is shown in Exhibit 2-3. All proposed improvements would comply with the Americans with Disabilities Act of 1990 (ADA).

I-90 Off-Ramp to South Atlantic Street. A new two-lane elevated ramp connection would be built from westbound I-90 to terminate at a signalized T-intersection on the South Atlantic Street railroad overpass.

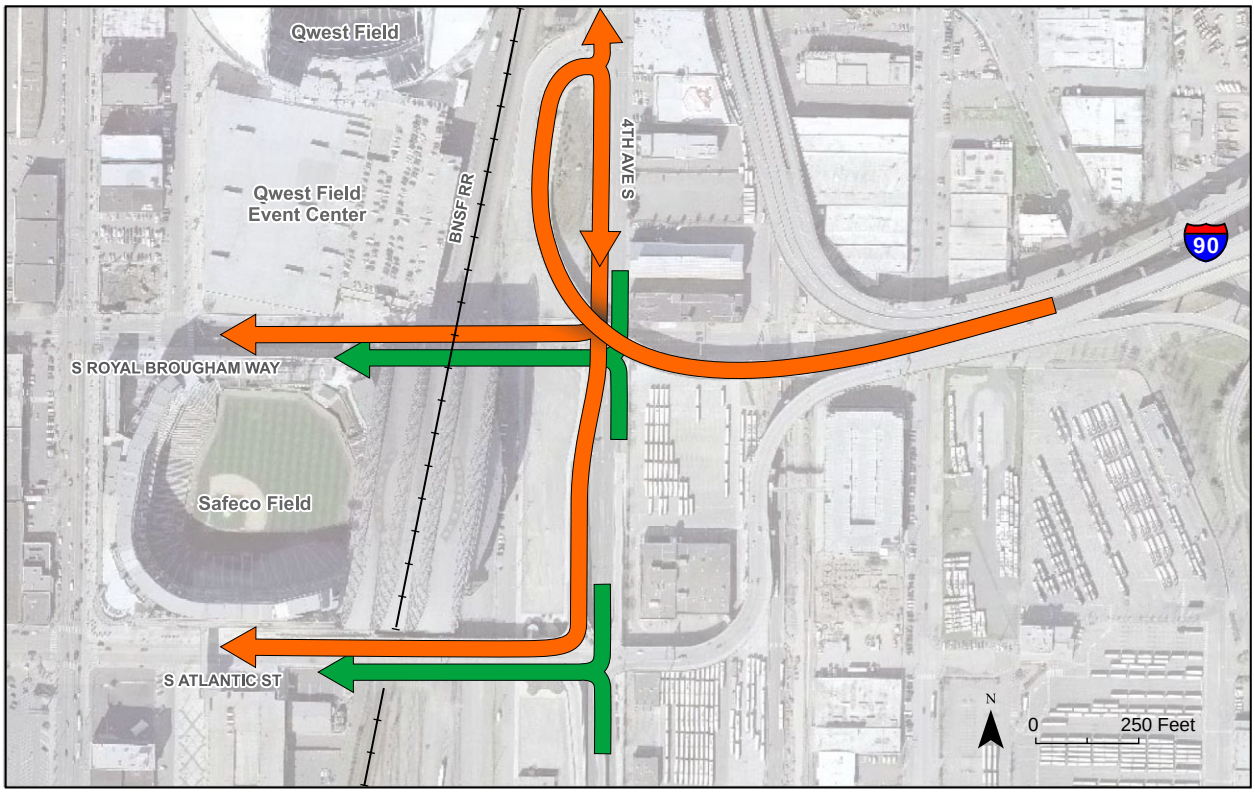


Arterial Bridge
Elevated Ramp
Pedestrian Bridge
Surface Improvements
Fill Embankment

N

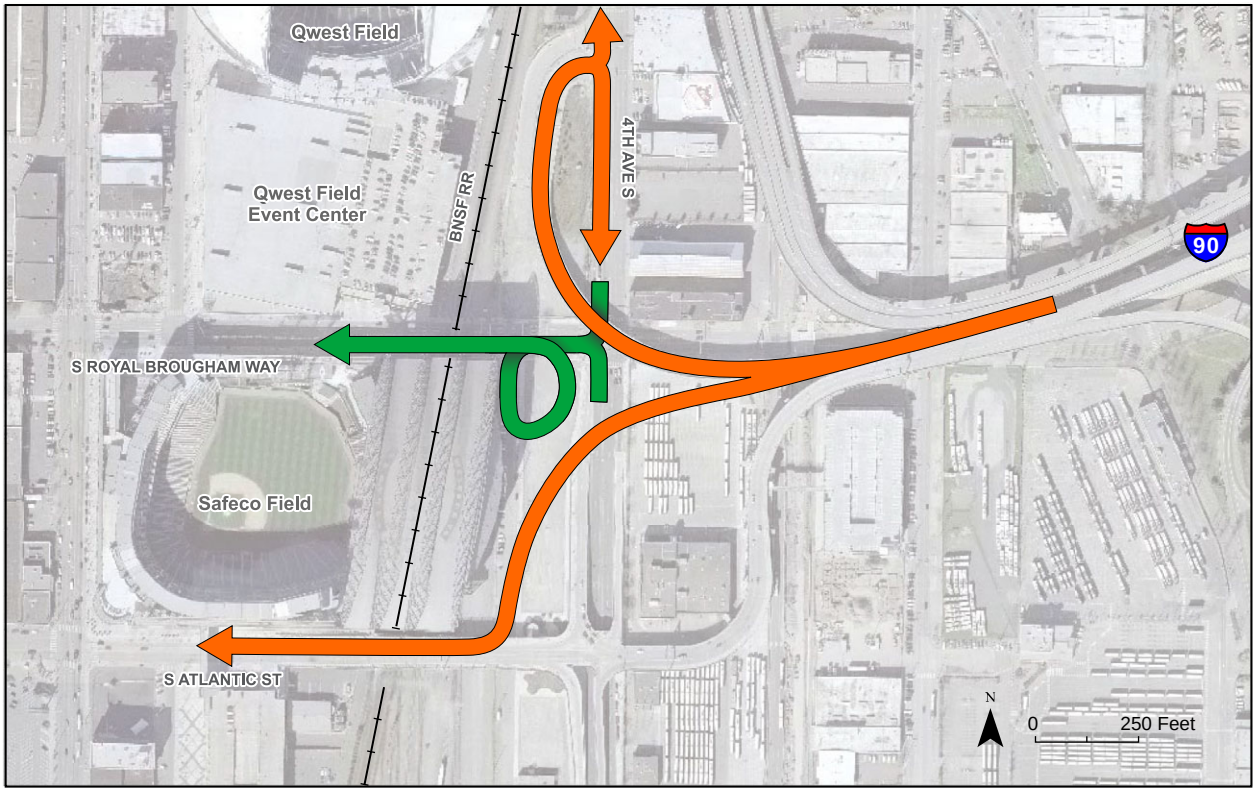
0 250 Feet

Exhibit 2-2
Project Elements



Existing Westbound Regional Routes
Existing Westbound Local Routes

Existing Westbound Travel Routes



Proposed Westbound Regional Routes
Proposed Westbound Local Routes

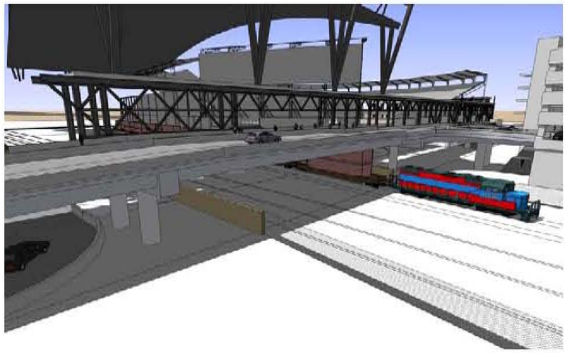
Proposed Westbound Travel Routes

Exhibit 2-3
Existing and Proposed Westbound Travel Routes

The new South Atlantic Street connection would serve westbound freeway traffic exiting I-90 and I-5. The new ramp would be entirely elevated, passing over Fourth Avenue South and Third Avenue South and connecting to the South Atlantic Street overpass southeast of Safeco Field. Exiting northbound I-5 traffic would be routed to South Atlantic Street, while exiting southbound I-5 traffic would have the option of using either the new off-ramp to South Atlantic Street or the existing I-90 off-ramp to Fourth Avenue South.

South Royal Brougham Way Railroad Overpass. The South Royal Brougham Way at-grade railroad crossing would be closed, but it could possibly be opened to public services in the event of a major emergency in the vicinity. A new two-lane elevated structure would be built, connecting Occidental Avenue South to Third Avenue South. The new overpass would transport vehicular, pedestrian, and bicycle traffic over the railroad tracks and provide a new connection and entrance from South Royal Brougham Way to the second level of the Qwest Field Event Center parking garage. The new ramp would accommodate local two-way traffic and provide ADA-compliant access.

Proposed ramp at east end of South Royal Brougham Way railroad overpass



South Royal Brougham Way existing at-grade railroad crossing (left) and proposed overpass (right)

Improvements to the Intersection of First Avenue South and South Atlantic Street. The project would widen the intersection by adding additional turn lanes to each approach. Existing parking lanes along First Avenue South would be converted into travel lanes, with a new eastbound lane added to South Atlantic Street. Sidewalks along the southern edge of

South Atlantic Street east of First Avenue South would be relocated to the south to accommodate the added eastbound lane.

Construction Components

Construction of the SR 519 Phase 2 project could take about 3 years, and WSDOT is exploring ways to accelerate this schedule. Construction would involve three project components:

- Improvements to the intersection of First Avenue South and South Atlantic Street could begin first, with construction starting in 2009 and lasting 6 to 9 months.
- Construction of the new I-90 ramp connection to the South Atlantic Street overpass could last 15 to 18 months and could begin as improvements to the intersection of First Avenue South and South Atlantic Street are underway.
- Construction of the new South Royal Brougham Way railroad overpass, most likely beginning in 2010, could overlap with construction of the new I-90 off-ramp and last 18 to 21 months.

Proposed Construction Schedule

Access for emergency service vehicles would be maintained at all times. A construction management plan (CMP) would be developed to optimize the sequencing of the SR 519 Phase 2 project elements. The CMP would identify approaches that best

coordinate with and minimize unwanted effects on the following:

- Stadiums and Event Center activities
- Port of Seattle container operations
- Washington State Ferries
- BNSF Railway mainline and yard operations, AMTRAK mainline operations, and Sound Transit commuter rail operations
- Sound Transit Link light rail operations, Sounder commuter rail service, and Regional Express bus operations
- King County Metro Ryerson Bus Base operations and Metro bus service throughout the affected area, including through-routes operating within the area, and access to the bases and downtown Seattle transit tunnel
- Greater Duwamish Manufacturing and Industrial Center freight operations

Temporary construction staging areas would be required to store equipment and materials during construction. A gravel lot owned by WSDOT, bounded by South Atlantic Street and South Royal Brougham Way, and Third Avenue South and Fourth Avenue South, would serve as the primary construction staging area for the SR 519 Phase 2 project. This lot is vacant, and no adverse environmental effects are expected from staging at this location. Other temporary staging areas would be determined through consultation with King County and the City of Seattle during project design.

No Build Alternative

Under the No Build Alternative, the three proposed Phase 2 components discussed above would not be built. Westbound traffic exiting from I-5 and I-90 would continue to flow as shown in Exhibit 2-3.

4 What permits would be required to build the project?

The SR 519 Phase 2 project would be built under close regulatory scrutiny. WSDOT would apply to the State of Washington, King County, and the City of Seattle for a number of permits and approvals. They would most likely include, but not necessarily be limited to:

- National Pollutant Discharge Elimination System (NPDES) Construction Stormwater General Permit (Washington State Department of Ecology)
- Wastewater Discharge Approval (King County)
- Street Use Permit (City of Seattle)
- Side Sewer Permit (City of Seattle)
- Noise Variance (City of Seattle)

WSDOT will confirm the requirement for these and other permits as engineering design and construction planning proceed in coordination with the permitting authorities.

Chapter 3 Affected Environment

1 What is the study area for public services and utilities and how was it selected?

The Proposed Action is located within the city of Seattle. Seattle's public services and utilities include fire protection, emergency medical service, police protection, solid waste and recycling collection, and an array of public and private utilities (electricity, natural gas, telecommunications, water, wastewater, and stormwater). The project team used a 1,000-foot radius around the project limits to identify any public service or utility facilities and/or service boundaries that might be affected by the Proposed Action (Exhibit 3-1). The project team also identified the public services and utilities that have service boundaries that include the study area or provide services directly to the study area.

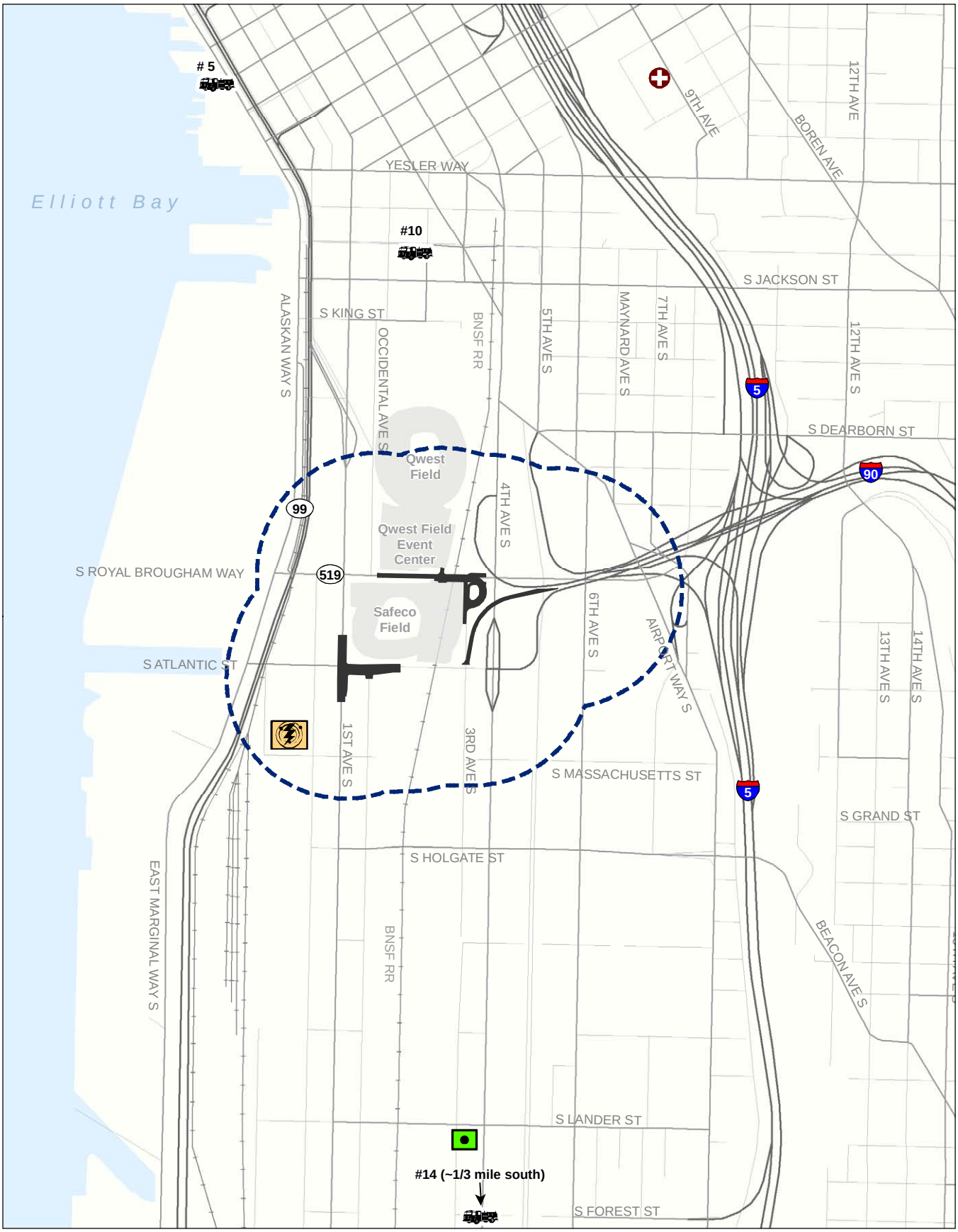
Refer to the Transportation Discipline Report for information on public transportation.

This technical memorandum provides the information identified in Chapter 457 (Social and Economic) of the WSDOT *Environmental Procedures Manual* (WSDOT, 2007) needed to document the potential effects, both positive and negative, on the public service and utility elements within the study area.

Public Services

Fire and Emergency Medical Service

The Seattle Fire Department (SFD) responds to all fire and emergency medical service calls in Seattle. There are 33 SFD fire stations located throughout Seattle supported by 1,030 uniformed and 70 non-uniformed employees. Three fire stations are located close to the study area and would respond to calls from within the study area.



Source: City of Seattle (2007) and King County (2006)

Fire Station

Medic One

Recycling and Transfer Station

PSE Substation

Study Area (1,000' Radius)

Project

N

0 1,000 Feet

Exhibit 3-1
Public Services

Exhibit 3-1 shows the stations nearest to the study area, and Exhibit 3-2 provides additional information on the fire stations and emergency medical services.

EXHIBIT 3-2. FIRE STATIONS AND EMERGENCY MEDICAL

Station #	Address	Equipment
10 (Department Headquarters)	301 Second Avenue South	Engine company, ladder company, aid unit, and the primary Hazmat Unit
14[a]	3224 Fourth Avenue	Ladder company, aid unit, and rescue unit
5	925 Alaskan Way	Engine company, fireboat
Medic One (Headquarters)	325 Ninth Avenue	Two Medic units

[a]Not shown on Exhibit 3-1. Station location is approximately 1/3 mile south of South Lander Street.

Source: Seattle Fire Department, 2007.

A new station to replace Station 10 is currently under construction within the block bounded by Yesler Way, Washington Street, Fourth Avenue, and Fifth Avenue. Once completed, Station 10 operations would be relocated to this new location. City-wide, the average response time (from the time the units are dispatched to arrival at the scene) for the SFD is 4.31 minutes (SFD, 2007).

Harborview Medical Center, located at 325 Ninth Avenue (Exhibit 3-1), is the headquarters for the SFD's Medic One Program and is the Level 1 Trauma facility for Seattle. Medic One provides advanced life support activities and responds to all fires, hazardous materials calls, and rescue calls within the study area.

Police

The Seattle Police Department (SPD) provides law enforcement and responds to 911 emergency calls in Seattle. The SPD consists of five precincts (North, West, East, South, and Southwest) and employs approximately 1,200 officers and 700 civilian employees (SPD, 2006). The West Precinct, located at 810 Virginia Street (north of the study area), provides police service to the study area. The boundaries of the precinct are Puget Sound and Elliott Bay on the west, Interstate 5 (I-5) on the east, Ship Canal and Lake Union on the north, and Spokane Street on the south. SPD provides enhanced

police service, including traffic control, during special events in the Stadium Area. SPD headquarters, which does not function operationally as a precinct, is located at 610 Fifth Avenue (outside of the study area and not shown in Exhibit 3-1).

In addition to the SPD, other law enforcement agencies provide police protection in the study area:

- The Washington State Patrol (WSP) patrols and responds to calls along SR 99, SR 519, Interstate 90, and I-5. These sections of roadway are patrolled by District 2 – North Seattle Detachment located at 811 East Roanoke (north of the study area). Three sergeants and 25 troopers are assigned to the North Seattle Detachment (WSP, 2006).
- BNSF Railway maintains a Police Solutions Team which is provided police authority from state and local governments. The Police Solutions Team is active in all forms of police duty and investigates all crimes committed on railroad property.
- King County Sheriff's deputies travel arterials in the study area to respond to Metro Transit calls, and the Port of Seattle police also use the arterials as a corridor from SeaTac International Airport to the Seattle waterfront.

Solid Waste/Recycling

Seattle Public Utilities (SPU) contracts with two private firms, Waste Management, Inc., and Rabanco (a subsidiary of Allied Waste Services), to collect residential and commercial solid waste generated in Seattle. These firms collect solid waste, recycling, and yard waste for all residential customers. However, the solid waste contracts do not cover recycling services for commercial firms. Private companies provide most of the commercial recycling in Seattle.

Roadways in the study area are used for solid waste hauling; however, no recycling or transfer stations are in the study area. The Rabanco Recycle & Transfer Station is located south of the study area at 2733 Third Avenue South (Exhibit 3-1).

Utilities

Electricity

Seattle City Light (SCL), a City-owned electric utility, provides electric power to consumers within the study area. All SCL-owned generating facilities are currently hydroelectric and, based upon water conditions, generate between 56 percent and 75 percent of the power supplied for its consumers. For its additional power requirements, SCL purchases power from the Bonneville Power Administration and other suppliers in the Pacific Northwest. SCL owns and maintains approximately 657 miles of 115-kilovolt (kV) and 230-kV transmission lines that carry power to the 14 principal substations (City of Seattle, 2005). In the study area, overhead transmission lines run parallel to Massachusetts Street and south from Colorado Avenue and an underground transmission line runs beneath First Avenue South and SR 99. These transmission lines carry power to the Massachusetts substation, a principal substation located at Colorado Avenue and Massachusetts Street (Exhibit 3-1).

Natural Gas

Puget Sound Energy (PSE) provides natural gas service to the study area. PSE serves close to 700,000 natural gas customers in Washington State. Natural gas is transported into PSE's service area in large interstate pipelines owned and operated by a different company, and PSE distributes natural gas to its customers through PSE-owned gas mains and service lines. There is a 6-inch high-pressure service line underneath South Royal Brougham Way in the study area.

Telecommunications

Qwest Communications is the principal provider of local telephone and internet services throughout the Seattle area (City of Seattle, 2005). Telephone lines are typically located within street rights-of-way, above-ground on utility poles, or underground in trenches or duct banks often shared with other utilities. In addition, Qwest and a number of other organizations, including Sprint/Nextel, Worldcom/Verizon, 360 Networks, Allstream, ELI/Integra Telecom, TimeWarner, XO Communications, and the City of Seattle Department of

Information Technology, have fiber optic cables running through the study area. The majority of the fiber optic cables are located underneath the sidewalks.

There are a number of cellular telephone providers in Seattle that use towers to transmit their signals, but no cellular towers are located in the study area.

Cable

Two companies hold franchises for cable communications in Seattle, Comcast and Millennium Digital Media. These companies provide cable television, internet service, and long distance telephone services in Seattle.

Water

Seattle Public Utilities (SPU) provides direct retail water service to about 630,000 people in the city of Seattle, parts of Shoreline, and small areas just south of the city limits (SPU, 2007). Seattle Public Utilities also sells water wholesale to 25 neighboring cities and water districts serving another 720,000 people. Drinking water comes from two major water supply sources in the Cascade Mountains (east of Seattle), the Cedar River Watershed and the South Fork of the Tolt River Watershed. In addition, a small amount of water comes from the Highline Well Field located north of Seattle-Tacoma International Airport.

The water system is comprised of transmission and distribution mains, fire hydrants, water services and service lines, corrosion protection systems and valves, and water valve chambers. SPU inspects, repairs, operates, and maintains the water system. Within the study area, a 24-inch water line runs under First Avenue South. In addition, there is a 16-inch line beneath Occidental Avenue South on the south side of South Atlantic Street. There are 12-inch lines under Fourth Avenue South and portions of South Royal Brougham Way and South Atlantic Street.

Wastewater

The King County Department of Natural Resources Wastewater Treatment Division provides sewage treatment services to Seattle and most of King County. King County's

service area is divided into west and east regions, with wastewater from the west region being conveyed to its West Point Treatment Plant and wastewater from the east region going to the Renton Treatment Plant. Wastewater from the study area flows to the West Point Treatment Plant. The conveyance facilities (i.e., pipelines, pumps, and flow and odor control facilities) in Seattle that carry wastewater to King County interceptors (large diameter pipelines that convey wastewater to the treatment facilities) are owned, operated, and maintained by SPU. A major 96-inch combined stormwater and wastewater sewer line, owned and operated by King County, is beneath and parallel to South Royal Brougham Way.

Stormwater

SPU manages Seattle's stormwater management facilities in addition to the sanitary wastewater systems. Wastewater and stormwater that enter combined systems (combined sewage and stormwater flows) in Seattle are conveyed via the King County interceptor system to the West Point Treatment Plant. Separate stormwater-only systems drain directly to Lake Union, Elliott Bay, Lake Washington, and other designated receiving water bodies. A 72-inch stormwater pipeline is beneath and parallel to South Royal Brougham Way. When stormwater flows exceed the capacity of the combined sewer system, excess flows are diverted and discharged to Elliott Bay and other locations without treatment through the outfall at South Royal Brougham Way.

Refer to the Water Resources Technical Memorandum for further information on stormwater management within the SR 519 study area.

Chapter 4 Environmental Consequences and Mitigation Measures

1 How were the effects on public services and utilities analyzed?

The project team reviewed existing conditions and the proposed project design to identify areas of potential concern and to analyze the effects of the construction and operation of the Proposed Action on public services and utilities. The project team considered vehicular travel through the study area and how any additional traffic would affect any public service vehicles. They also considered whether construction of the Proposed Action would have any negative effect on utilities.

2 How would project construction temporarily affect public services and utilities in the study area?

Construction of the Proposed Action would last for approximately three years, from 2009 to 2012, and would be completed in three components (see Chapter 2) so that no single area would be under construction for the entire construction period.

Refer to the Transportation Discipline Report for information on the effects to public transportation.

Proposed Action

Direct Effects

Direct effects are caused by a project and occur at the same time and place as the project.

During construction, temporary lane closures and detours could increase response and travel times of emergency service providers and could affect the collection routes for other public service providers. South Royal Brougham Way would be reduced to one lane of traffic in both directions during construction of the vehicle and pedestrian overpass. Certain

construction activities, including drilling the foundation shafts and placing the superstructure girders, would require temporary closure of the roadway between Occidental Avenue South and Fourth Avenue South; however, access would be maintained for emergency service vehicles at all times. Construction of improvements to the south end of the SR 99 Alaskan Way Viaduct would occur during the same period (2009-2012) as construction of the SR 519 improvements (WSDOT, 2004b). Increases in construction-related traffic congestion could increase response and travel times for fire, emergency medical, police, and other public service vehicles, especially if construction activities occurred during events at Safeco Field, Qwest Field, or the Qwest Field Event Center.

Utilities could be affected during construction, depending on their location, their depth below the ground, the materials they are made of, and the nature of the construction activities. Depending on final design, construction may require the relocation or protection of utilities and may require the need to temporarily interrupt utility service to utility customers. Dewatering would also be required because of the shallow water table.

Refer to the Water Resources Technical Memorandum for more information on dewatering.

Construction-related activities, such as drilling shafts and pile driving, could damage utilities if the locations are misidentified or unknown, or if construction causes settlement or vibrations. Construction-related activities could also affect access for utility service providers near the construction areas by creating detours, delays, and temporary displacement of parking or loading areas.

Indirect Effects

Indirect effects are those effects that are caused by a project and are later in time or further removed in distance, but are still reasonably foreseeable. There would be no indirect effects related to public services and utilities during construction.

No Build Alternative

Under the No Build Alternative, there would be no construction-related effects on any of the public services and utilities in the study area.

3 How would the project permanently affect public services and utilities in the study area?

Permanent effects are those effects that would occur after construction has been completed.

Proposed Action

Direct Effects

The Proposed Action would improve the east-west movement of traffic through the study area by adding a more direct connection between interstate highways 5 and 90 and the Seattle waterfront, and it would remove conflicts between vehicles, pedestrians, and rail traffic at South Royal Brougham Way. The new aerial ramp connecting interstate highways 5 and 90 directly to South Atlantic Street would improve traffic flow between the central waterfront area, Washington State Ferries terminal, Port of Seattle terminals, and the freeway system. The addition of an overpass above the BNSF Railway tracks at South Royal Brougham Way would allow uninterrupted crossing by public service vehicles, which could reduce response and travel times. The Transportation Discipline Report provides more detailed information on traffic patterns in the study area and how they would be affected by the Proposed Action.

What are permanent effects on public services and utilities?

Examples of permanent effects on public services include increased demands placed on fire services, emergency medical services, police services, and solid waste facilities and services. Examples of permanent effects on utilities include design elements that may affect capacity, disrupt service, or impair access and maintenance functions.

The Proposed Action would not affect utilities over the long-term, although temporary construction-related interruptions could occur. The Water Resources Technical Memorandum describes stormwater treatment that would be part of the Proposed Action.

Refer to the Water Resources Technical Memorandum for more information on permanent water resource effects.

Indirect Effects

The Proposed Action would directly improve traffic flow, but it is not expected to have indirect effects on public services and utilities. It would not induce growth in the study area, Seattle, or King County that would increase the demand on or for public services and utilities.

No Build Alternative

The No Build Alternative would not improve the east-west movement of traffic or provide a new crossing over the BNSF railway tracks; therefore, the response times of fire, emergency

medical, and police services, as well as other public service vehicles, would either remain at their current levels or potentially increase (refer to the Transportation Discipline Report for more complete information). Because there would be no changes to existing utilities in the study area, no effects would occur.

4 What could be done to avoid or minimize adverse effects of the Proposed Action on public services and utilities?

During construction of the Proposed Action, WSDOT would coordinate closely with public service and utility providers to ensure that traffic flow is maintained and services are uninterrupted.

Construction Mitigation

Recommended mitigation measures to avoid or minimize adverse effects could include:

- Preparing and implementing a Transportation Management Plan (TMP). Items in the TMP could include the installation of signal preemption through construction zones and posting signs to show detour routes if temporary road closures are required.
- Providing the fire department, police departments, and other public service providers, including Seattle Public Utilities, with advance notice of construction schedules to allow for coordination and to minimize the effects of road closures on response and travel times.
- If any waterline relocations or shutdowns are required that may affect water supply for fire suppression, notifying and coordinating with the fire department and Seattle Public Utilities, and establishing alternate supply lines prior to any break in service.
- If water supply and power must be turned off, establishing fire watches or stationing a fire truck in the vicinity, as required.

- Notifying and coordinating with the Seattle Police Department to ensure adequate staffing during construction for traffic control and pedestrian movement.
- Scheduling construction during off-peak travel hours to minimize traffic congestion during peak travel hours.
- Avoiding construction during events at Safeco Field, Qwest Field, or the Qwest Field Event Center and coordinating with members of these facilities, as well as the Seattle Police Department, prior to construction to minimize any construction-related effects.
- Before construction starts, coordinating with the BNSF Railway regarding limits on construction activities overhead of the railroad right-of-way from October to December every year; BNSF does not allow construction activities in their right-of-way during this timeframe.
- Field verifying the exact locations and depths of underground utilities prior to construction, including potholing in identified locations.
- Coordinating with the utility providers, including Seattle Public Utilities, to consider the location of utilities during detailed design. The objective would be to avoid or minimize conflicts, protection of existing utilities, disruption of service, and disruption of or restrictions on access, maintenance, and repairs during construction and operation of the project.
- If utility relocations are required, establishing service agreements for reimbursement of utility relocation cost and sequencing of the design and construction work.
- To mitigate for the poor soils in the area, coordinating with utility agencies, including Seattle Public Utilities, on techniques to minimize construction-related effects, such as vibrations, which could damage or destroy utility lines.
- Notifying area businesses and residents of utility interruptions, if any are required, by providing a schedule of construction activities in those areas.

- Preparing a Subsurface Utility Engineering plan, consisting of key elements such as existing locations, potential temporary locations (if required), and potential new locations for utilities (if required). The plan would include the sequence and coordinated schedules for utility work and detailed descriptions of any service disruptions, potential construction methods, and best management practices to be incorporated. This plan would be reviewed and discussed with affected utility providers prior to the start of construction to reduce effects.

Operational Mitigation

No mitigation would be required during operation of the project.

5 Are any of the identified effects considered substantial?

A substantial effect to public services and utilities would occur if:

- The project impeded emergency services access or responsiveness.
- The project resulted in permanently disrupting any utility service.

No substantial effects on public services or utilities have been identified.

Chapter 5 Cumulative Effects

1 What are cumulative effects, and why are they important?

Cumulative effects are important because they help us to understand the project in terms of a "bigger picture." They can reveal possible unintended consequences of the Proposed Action or No Build Alternative that might not be apparent when we look at the project by itself. Because of this, cumulative effects help us to evaluate how sustainable the project is likely to be in future years, and how it might interact with other projects that are planned but have not been built yet.

What are cumulative effects?

Cumulative effects are impacts on the environment that result "from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. Defined by FHWA and Council on Environmental Quality (CEQ) regulations (40 CFR 1508.7)" (WSDOT, 2006)

2 How did the project team identify expected cumulative effects on public services and utilities?

The study team identified expected cumulative effects of the Proposed Action and No Build Alternative by following a process recommended by the President's Council on Environmental Quality (CEQ, 1997) and as identified in Chapter 412 of the WSDOT *Environmental Procedures Manual* (WSDOT, 2007). First, the team considered how past and present actions have already affected the study area. Those past and present developments have changed public services and utilities from their original conditions and continue to influence current trends. Next, the expected direct and indirect effects of the Proposed Action or No Build Alternative on public services and utilities, discussed in Chapter 4, were added. Finally, the probable effects of other reasonably foreseeable future actions that are planned but not yet built were considered. The project team combined past and present actions and RFFAs with the expected direct and indirect effects

of each of the two alternatives to produce a cumulative picture of how public services and utilities might be affected, with and without the Proposed Action, in the future.

Past and Present Actions

Past and present urban development has produced an ongoing cumulative effect by gradually increasing demand for public services and utilities in and near the SR 519 study area. The SR 519 study area is located within the Greater Duwamish Manufacturing and Industrial Center (City of Seattle, 2006). *Toward a Sustainable Seattle*, the City's comprehensive plan as amended through 2005 (City of Seattle, 2005), and the *Greater Duwamish Manufacturing and Industrial Center Plan* (Greater Duwamish Planning Committee, 1999) consistently emphasize industrial activities as the preferred and dominant land use within the area. Their policies prioritize manufacturing, warehousing, marine uses, transportation, utility, construction, and similar uses. SR 519 is the essential transportation route for moving freight between the Seattle waterfront and interstate highways 5 and 90. Consequently, a major purpose of the Proposed Action is to ensure that freight moves efficiently through the study area in the future.

At the same time, Safeco Field, Qwest Field, and the Qwest Field Event Center are regional magnets for major public gatherings and support a growing commercial base in the study area. Especially during home games and major exhibitions, event-related traffic, pedestrians, railway operations, and commuter traffic can combine during the evening peak hours and cumulatively produce highly congested conditions (City of Seattle, 2006). Transportation conflicts and the proliferation of non-industrial developments in industrial areas are two of the critical issues identified in the *Seattle's Industrial Lands: Background Report* (City of Seattle, 2007b). The Proposed Action would improve these conditions by providing a direct connection from Interstates 5 and 90 to the SR 519 Phase 1 ramp over South Atlantic Street, diverting freight and commuter traffic that currently mixes with event traffic, pedestrians, and rail traffic directly from the freeway system to the Seattle waterfront.

In addition, urban development is increasing in portions of the South Downtown area immediately north of the study area. This South Downtown area, which includes Seattle's International District/Chinatown/Little Saigon neighborhood, and a part of the stadium area in the Greater Duwamish Manufacturing and Industrial Center, is currently the subject of a major planning effort by the City of Seattle's Department of Planning and Development. An EIS currently in preparation will examine future growth scenarios under different zoning alternatives. The final EIS is scheduled to be issued early in 2008 with legislation forwarded to decision makers in the fall of 2008 (City of Seattle, 2007c).

Completion of Phase 1 of the SR 519 Intermodal Access Project resulted in positive effects on public services and utilities by improving mobility in the study area for east-west traffic and providing a new crossing over the BNSF Railway tracks at South Atlantic Street. The Port of Seattle terminals, Qwest Field, and Safeco Field have substantial volumes of traffic, and the stadiums and event center bring many pedestrians into the study area during sporting and other events. Before these large-scale developments could be built, however, the appropriate level of public services and utilities had to be determined and provided to ensure that existing services would be adequate and that no additional demands beyond existing levels would be placed on them. Federal, state, and local agencies reviewed permit applications to ensure that public services and utilities could meet the needs of the new facilities. As a consequence, the current or baseline provision of public services and utilities in the study area is adequate to meet existing conditions.

Direct and Indirect Effects of the Proposed Action

As discussed in Chapter 4, the Proposed Action would have temporary negative effects on public services and utilities during construction. These effects would be minimized through mitigation measures such as those discussed in Chapter 4. During operation there would be beneficial effects on public services and no effects on utilities.

Direct and Indirect Effects of the No Build Alternative

As discussed in Chapter 4, the No Build Alternative would not produce direct or indirect effects that would contribute to cumulative effects on public services and utilities.

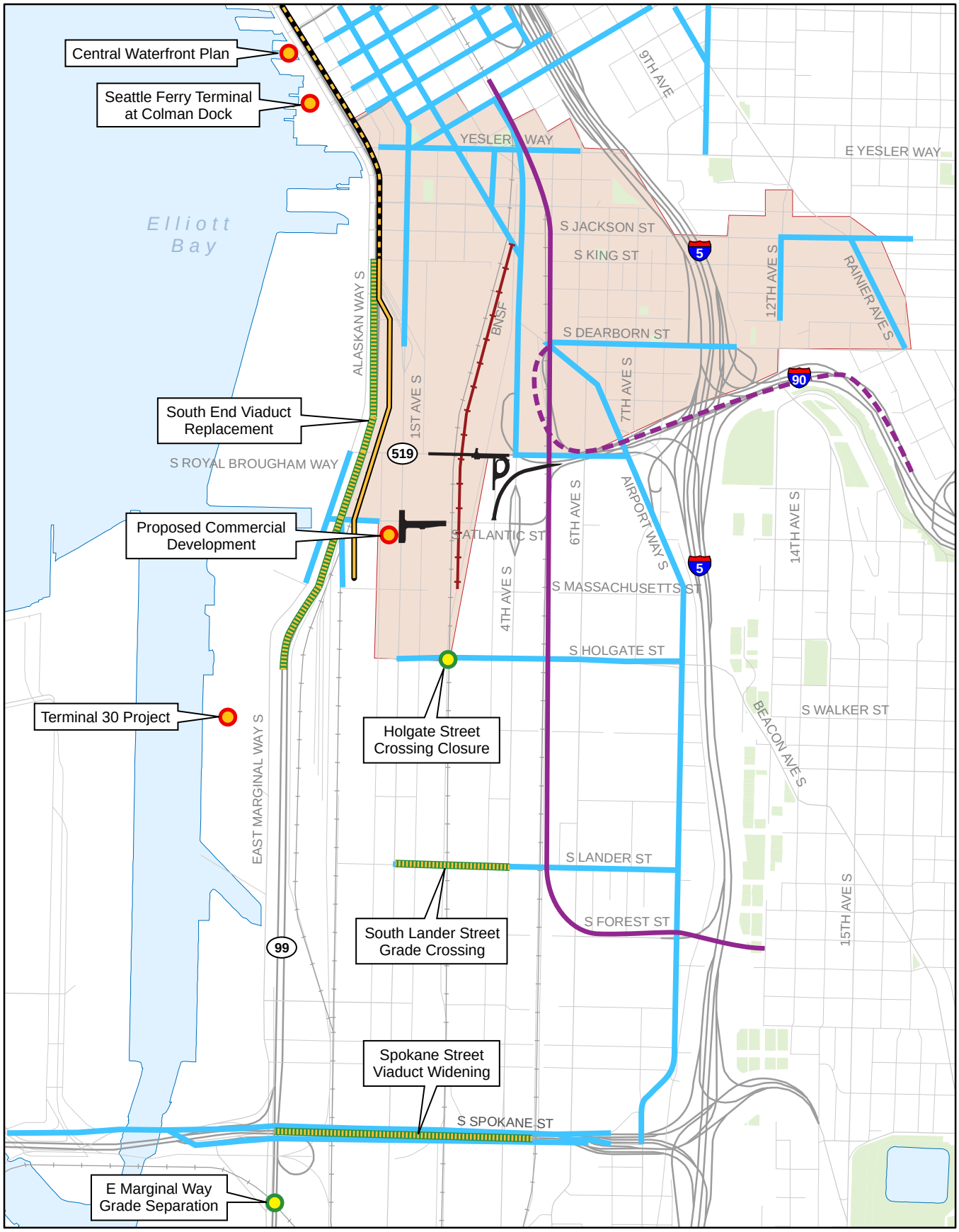
Reasonably Foreseeable Future Actions

Exhibit 5-1 shows approximate locations of reasonably foreseeable future actions that could add to or interact with the Proposed Action to contribute to cumulative effects on public services or utilities. Exhibit 5-2 briefly summarizes information about these projects. They include, but are not limited to:

- The South Holgate Street to South King Street Viaduct Replacement Project, and the two-phase Electrical Line Relocation Project, which are Moving Forward projects within the Alaskan Way Viaduct and Seawall Replacement Program
- The South Spokane Street Viaduct project
- Completion of BNSF Railway track improvements
- Sound Transit light rail projects
- Closure of the South Holgate Street rail crossing
- Conversion of the Port of Seattle's Terminal 30 to a container terminal
- The East Marginal Way Grade Separation Project
- The City of Seattle's Central Waterfront Plan
- The City of Seattle's Bridging the Gap paving projects
- Washington State Ferries Terminal Improvements at Colman Dock

With respect to public services and utilities, the projects most likely to interact with the Proposed Action are the planned repair and/or replacement of the south portion of the SR 99 Alaskan Way Viaduct between South Holgate Street and South Royal Brougham Way and the Electrical Line Relocation Project, not shown in the exhibits, which will relocate two transmission lines and five feeder lines from the Alaskan Way

Viaduct to Western Avenue South and First Avenue South. Both of these projects are part of the Moving Forward: Early Safety and Mobility Projects for the Alaskan Way Viaduct. Replacement of the south portion of SR 99 Alaskan Way Viaduct is scheduled for construction from 2009 to 2012, the same time frame as the Proposed Action, and the South End Alaskan Way Viaduct Replacement Project would be located immediately west of the proposed SR 519 improvements (WSDOT, 2004b). The Electrical Line Relocation project is scheduled to begin in 2008 and be completed by 2009, so it might not overlap with construction of the Proposed Action. As other projects, unknown now, are developed in the future, they would require their own environmental assessments and planning to avoid placing an excessive cumulative demand on public services and utilities. In addition, the projects would require communication between WSDOT and the various public services and utilities agencies to ensure there are no excessive cumulative demands.



Source: City of Seattle (2007) and King County (2006)

- Project
- Livable South Downtown Study Area (Approx.)
- BNSF Railway Completion
- Electrical Line Relocation Phase 1 and Phase 2
- Sound Transit Central Link
- Proposed Sound Transit East Link
- Bridging the Gap Paving Project
- Road Project
- Development Project

N

0 1,000 Feet

Exhibit 5-1
Reasonably Foreseeable Future Actions

EXHIBIT 5-2. REASONABLY FORESEEABLE FUTURE ACTIONS IN OR NEAR THE STUDY AREA

Project[a]	Location	Purpose	Proponent	Expected Construction Time Frame[b]
South Holgate Street to South King Street Viaduct Replacement Project	SR 99 from South Holgate Street to South King Street	Build new SR 99 between South Holgate Street and South King Street. Includes South Atlantic Street and South Royal Brougham Way grade separation, detour routes, and temporary connections	Washington State Department of Transportation	2009-2012
Electrical Line Relocation	Phase 1: South Massachusetts Street to South King Street Phase 2: South King Street to Union Street	Remove network distribution lines and transmission lines that are located under the existing Viaduct before it is demolished	Washington State Department of Transportation	Phase 1: Construction scheduled for 2008-2009. Phase 2: To be determined.
Completion of BNSF Railway Improvements	King Street Station to South Royal Brougham Way	Reduce rail transportation conflicts along the BNSF right-of-way; increase safety at the BNSF crossing of South Royal Brougham Way	BNSF Railway	Improvements at South Royal Brougham Way have been completed; with additional improvements along the BNSF right-of-way currently in progress.
Central Link Light Rail	Downtown Seattle to Sea-Tac Airport	Provide light rail service between downtown Seattle and Sea-Tac Airport	Sound Transit	2008-2009
East Link Light Rail	Downtown Seattle to Redmond	Provide light rail service between downtown Seattle, Mercer Island, Bellevue, and Redmond	Sound Transit	Construction not scheduled. Environmental impact statement scheduled for release in fall 2009.
Proposed Commercial Development	South side of South Atlantic Street between First Avenue South and Utah Avenue South	Provide office and retail uses	Gull Industries	2010-2012
Livable South Downtown Planning Study	The study examines growth and planning issues specific to Pioneer Square, the Chinatown/ International District (including the Little Saigon area east of I-5), and the northernmost edges of the Greater Duwamish Manufacturing and Industrial Center.	Stimulate housing and related development consistent with the Mayor's Center City Seattle strategy	City of Seattle, Department of Planning and Development	Environmental impact statement and legislative proposals in 2008
Closure of South Holgate Street at BNSF Railway Crossing	South Holgate Street at the BNSF Railway crossing	Eliminate conflicts between rail and vehicle traffic.	City of Seattle, Department of Transportation	Construction not scheduled

EXHIBIT 5-2. REASONABLY FORESEEABLE FUTURE ACTIONS IN OR NEAR THE STUDY AREA

Project[a]	Location	Purpose	Proponent	Expected Construction Time Frame[b]
South Lander Street Grade Separation	South Lander Street between First Avenue South and Fourth Avenue South	Improve safety and traffic flow by constructing a roadway bridge for vehicles, bicycles, and pedestrians over the BNSF Railway tracks.	City of Seattle, Department of Transportation	2009-2011
South Spokane Street Viaduct Widening	South Spokane Street from Sixth Avenue South to West Seattle Bridge	Improve traffic safety and upgrade the structural and seismic performance of the viaduct that connects I-5 to the West Seattle High Level Bridge. Construct a new eastbound loop ramp to Fourth Avenue South, to the south of South Spokane Street.	City of Seattle, Department of Transportation	Seismic retrofit, median barrier installation, and street-level utility relocations have been completed. Viaduct widening and ramp construction is scheduled to start in 2008 and would be constructed in phases as funds become available, so exact construction range not known.
Bridging the Gap Paving Projects	Seattle arterial streets	As part of a larger program, the paving projects will resurface, restore, or replace approximately 300 lane-miles of arterial streets; rehabilitate or replace 3-5 bridges and seismically retrofit 5 additional bridges; repair or restore approximately 144 blocks of existing sidewalks; build approximately 117 blocks of new sidewalks; rehabilitate approximately 50 stairways; and restripe about 5,000 crosswalks.	City of Seattle, Department of Transportation	2006-2013
Central Waterfront Plan	South Atlantic Street to West Thomas Street along the shoreline edge of the Center City	Following replacement of the existing Alaskan Way Viaduct, construct new parks and open spaces, shoreline and habitat improvements, improved linkages to the downtown core, *and* transit connections, *and implement* land use and regulatory changes.	City of Seattle	Presently in planning process. Construction will begin with the removal of the viaduct and will be ongoing for several years.

EXHIBIT 5-2. REASONABLY FORESEEABLE FUTURE ACTIONS IN OR NEAR THE STUDY AREA

Project[a]	Location	Purpose	Proponent	Expected Construction Time Frame[b]
Terminal 30 Conversion	East Marginal Way South between approximately South Holgate Street and South Lander Street	Terminal 30 had been used for cruise operations but will be converted back to its original use as a container terminal. This and the adjacent Terminal 25 will provide 70 acres for container use.	Port of Seattle	2007-2009
East Marginal Way Grade Separation Project	East Marginal Way South just south of South Spokane Street	Provide a north- and southbound grade separation on Duwamish Avenue South, relocating East Marginal Way through this corridor to improve access among Port of Seattle terminals, rail yards, and industrial warehouses.	Port of Seattle	2006-2008
Washington State Ferries Terminal Improvements at Colman Dock	Pier 54 at Seattle Waterfront on Alaskan Way South	Upgrade structures and facilities and increase capacity.	Washington State Department of Transportation	Construction not scheduled. For 2008-2009, focus will be on system-wide planning and coordination with nearby projects, including the proposed SR 519 Phase 2.

[a]Only major planned projects are listed. Many other projects that could be implemented in the reasonably foreseeable future are not shown.
[b]Dates are approximate.
Sources: General information from the WSDOT, City of Seattle, Port of Seattle, and Sound Transit websites.

3 Would the Proposed Action contribute to cumulative effects on public services and utilities?

Proposed Action

Construction-related effects of the Alaskan Way Viaduct Replacement Project would add to short-term construction effects of the Proposed Action, because both projects would be under construction within the same time frame, resulting in a construction-related cumulative effect on public services and utilities between 2009 and 2012. These effects could include additional increases in response and travel times due to increased congestion. With multiple projects occurring in the area and the potential for a number of utility relocations or temporary bypasses, cumulative effects on utilities in the form of disruptions to service delivery could occur if coordination does not occur between WSDOT and the affected utility agencies during design and construction.

The Electric Line Relocation project is scheduled to be completed in 2009, so it might not overlap with the Proposed Action. In addition, the relocation project would develop and implement mitigation measures which would minimize contributions to construction-related cumulative effects. Over the long term, the Proposed Action would make a beneficial contribution to public services, helping to reduce the long-term cumulative effect of continuing development on public services.

The Proposed Action would make a small beneficial contribution to water quality where stormwater is discharged by providing the additional stormwater treatment facilities.

Refer to the Water Resources Technical Memorandum for further information on cumulative effects on water resources.

No Build Alternative

The project team does not expect any cumulative effects on public services and utilities to be associated with the No Build Alternative.

4 How will cumulative effects on public services and utilities be monitored, mitigated, and managed?

Cumulative effects are produced by the contributions of many different projects and activities managed by private firms and governmental agencies. For that reason, the Proposed Action or No Build Alternative would contribute only a small addition to the overall cumulative effects on public services and utilities described above. Construction-related mitigation measures such as those listed in Chapter 4 would avoid or minimize contributions of the Proposed Action to cumulative effects that would occur during the 2009-2012 construction period. WSDOT would coordinate the construction of the Proposed Action with all applicable agencies to minimize effects on public services and utilities. Additionally, there are opportunities for the various agencies to work together on mitigation solutions, which could include a joint project to address local drainage issues.

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