

## TRANSPORTATION

### *AFFECTED ENVIRONMENT*

#### OVERVIEW

The study area is used for a wide range of residential, commercial, industrial, transportation and entertainment purposes. It is strategically located adjacent to Downtown, Port of Seattle, a manufacturing and industrial center, and two stadium/exhibition facilities, and contains diverse neighborhoods with a mix of uses. It is served by a number of transportation networks—interstate highway, arterial and local streets, bus transit, passenger rail, commuter rail and freight-oriented rail—that provide accessibility serving the full spectrum of transportation needs. The networks are subject to Downtown employee commuting, truck and rail freight movement, event traffic and local traffic patterns. Due to the interaction of these patterns, conditions can become congested during morning and evening peak periods and at other times.

This transportation section is based on a consultant evaluation of transportation impacts contained in Appendix G to this Draft EIS. This section addresses the topics of arterial street system performance, transit system performance, freight movement, pedestrians, bicyclists and management of stadium event-related traffic. The next section in this chapter addresses parking-related impacts, which are also addressed in Appendix G to this Draft EIS.

The section is organized to document existing conditions, predict future conditions with and without rezones in 2030, assess the transportation-related impacts of the EIS rezone alternatives, and identify possible strategies that would mitigate identified adverse impacts. The following illustrates the organization of the section:

#### **Existing Conditions (Affected Environment)**

- Arterial Street System
  - AM and PM Peak Hour traffic volumes and vehicle travel characteristics
  - Corridor operations and travel speeds
  - Intersection operations
- Transit
- Freight Movement
- Pedestrians and Bicyclists
- Event Traffic Management

#### **Environmental Impacts**

- Travel forecasts for the No Action and Action Alternatives
- Arterial street system impacts
  - 2030 Forecast traffic volumes, AM and PM Peak Hours
  - Vehicle travel characteristics
  - Corridor operations and travel speeds, AM and PM Peak Hours
  - Intersection operations, AM and PM Peak Hours
- Transit
- Freight Movement
- Pedestrians and Bicyclists
- Event Traffic Management

#### **Mitigation Strategies**

- A range of possible mitigation strategies to address identified impacts

#### **Significant Unavoidable Adverse Impacts**

- A summation of unavoidable impacts

## ARTERIAL STREET SYSTEM

### Street Network

The largest arterial corridors within the study area's street network serve the highest traffic volumes while supporting several different types of travel modes. Table 3-35 summarizes the characteristics of these corridors. See Appendix G for further description of corridors.

**Table 3-35**  
**Street Network Corridor Characteristics**

Corridor	Classification	Direction	Lanes <sup>1</sup>	2007 AWDT <sup>2</sup>	Speed Limit	Sidewalks
<b>North-South Corridors</b>						
1st Avenue S (Yesler Way to S Spokane St)	Principal Arterial / Minor Arterial <sup>3</sup>	NB SB	2 2	25,000	35	Both Sides
2nd Avenue Extension S (James St to 4th Ave S)	Principal Arterial	NB SB	- 3	13,000	30	Both Sides
3rd Avenue S (James St to S Jackson St)	Minor Arterial	NB <sup>4</sup> SB	2 2	7,500	30	Both Sides
4th Avenue S <sup>5</sup> (S Washington St to S Spokane St)	Principal Arterial	NB SB	3 2	29,000	30	Both Sides
Rainier Avenue S (S Jackson St to S Dearborn St)	Principal Arterial	NB SB	2 2	31,000	30	Both Sides
<b>East-West Corridors</b>						
S Jackson St (Alaskan Way S to Rainier Ave S)	Principal Arterial	EB WB	2 2	16,500	30	Both Sides
S Dearborn St (Airport Way S to Rainier Ave S)	Principal Arterial	EB WB	2 2	21,500	30	One Side
S Royal Brougham Way (Alaskan Way S to 4th Ave S)	Principal Arterial	EB WB	2 3	12,000	30	Both Sides
S Atlantic Street (Alaskan Way S to 4th Ave S)	Principal Arterial	EB WB	2 2	19,000	30	Both Sides

Source: *The Transportation Strategic Plan, 2005 Update* (SDOT, August 2005), field survey (March 2007), The Transpo Group (July 2007)

1. The number of lanes varies especially at intersection approaches. Reported is the mid block number of lanes excluding parking lanes.
2. Average Weekday Daily Traffic Volumes. Displays the highest measured daily traffic volumes along the corridor segment.
3. 1st Avenue S is classified as Principal Arterial south of Alaskan Way Viaduct Ramps and Minor Arterial North of AWW Ramps.
4. 3rd Avenue S is SB only between Yesler Way and S Washington St and between 2nd Avenue Ext S and S Jackson St.
5. 4th Avenue is NB only between 2nd Avenue Ext S and S Washington St.

### Peak Hour Traffic Volumes

Traffic volume data were collected for the study area to evaluate existing weekday traffic conditions during both the AM and PM peak hours, which typically have the highest volumes and levels of congestion in the study area (see Figure 3-41 for 2007 volumes). During the AM peak hour, traffic volumes are highest heading toward Downtown employment centers along corridors such as 1st Avenue S., 4th Avenue S. and Rainier Avenue S. During the PM peak hour, the highest traffic volumes are the reverse of the AM peak hour, also including S. Dearborn Street, S. Jackson Street, SR 519 at S. Atlantic Street, and ramps from I-90 at 4th Avenue S. However, the corridor segments in the southern part of the study area typically have the same number of vehicles in each direction during the PM peak hour as they do during the AM peak hour. In this area and further south, industrial and commercial land uses generate vehicle trips going both northbound and southbound to access the major freeways.

### Vehicle Travel Characteristics

Analysis of travel patterns indicates that during both the AM and PM peak hours, through-traffic accounts for more than 90 percent of the traffic on the South Downtown road network. This means these trips have neither origins nor destinations in the study area.

- In the AM peak hour, the average number of trips having their origin or destination within the study area is about 6,800 person trips, or 3,400 vehicle trips.
- In the PM peak hour, the average number of trips having their origin or destination within the study area is about 10,600 person trips, or 5,600 vehicle trips.

(See Tables 4-2 and 4-3 in Appendix G for more information).

### **Corridor Operations and Travel Speeds**

Arterial level of service (LOS) and average speeds are the primary criteria to measure performance along major corridors. The travel-time based “arterial level of service” measure ranging from letter grades of “A” through “F” is based on guidelines of the *Highway Capacity Manual* (Transportation Research Board, 2000), and is summarized as follows:

<b><u>LOS</u></b>	<b><u>Description of Operations</u></b>	<b><u>Average Travel Speed</u></b>
A	Describes primarily free-flow operations at average travel speeds, usually about 90% of the free flow speed (FFS) for the given street class. Vehicles are completely unimpeded in their ability to maneuver within the traffic stream. Control delay at signalized intersections is minimal.	>30
B	Describes reasonably unimpeded operations at average travel speeds, usually about 70% of the FFS for the street class. The ability to maneuver within the traffic stream is only slightly restricted, and control delays at signalized intersections are not significant.	>24-30
C	Describes stable operations, however, ability to maneuver and change lanes in mid-block locations may be more restricted than LOS B, and longer queues, adverse signal coordination, or both may contribute to lower average travel speeds of about 50% of the FFS for the street class.	>18-24
D	Borders on a range in which small increases in flow may cause substantial increases in delay and decreases in travel speed. LOS D may be due to adverse signal progression, inappropriate signal timing, high volumes, or a combination of these factors. Average travel speeds are about 40% of FFS.	>14-18
E	Characterized by significant delays and average travel speeds of 33% or less of the FFS. Such operations are caused by a combination of adverse progression, high signal density, high volumes, extensive delays at critical intersections, and inappropriate signal timing.	>10-14
F	Characterized by urban street flow at extremely low speeds, typically one-fourth of the FFS. Intersection congestion is likely at critical signalized locations, with high delays, high volumes and extensive queuing.	<10

**For Class III Streets:**  
Typical free flow speed:  
35 mph

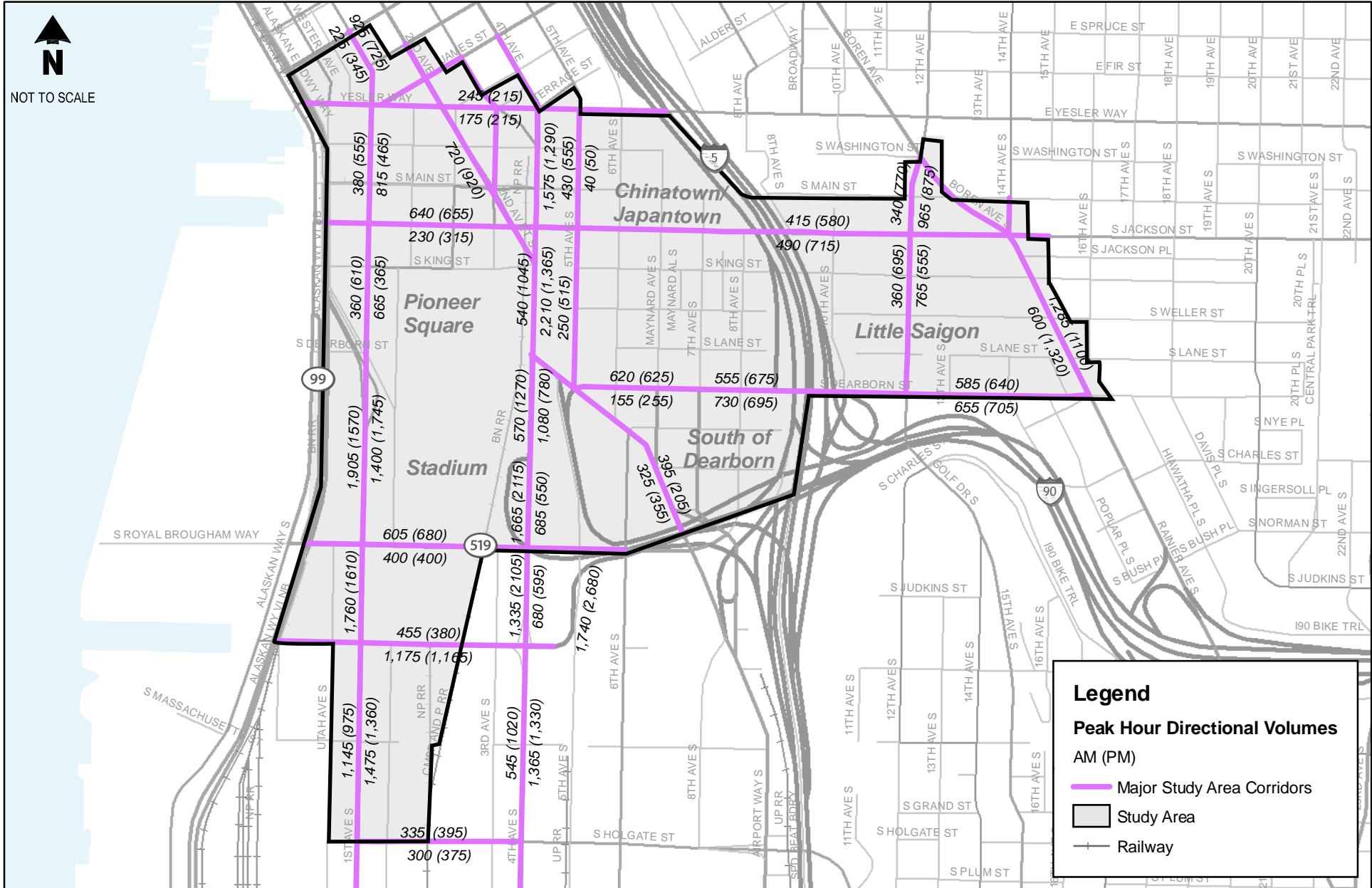


Figure 3-41  
2007 Weekday AM & PM Peak Hour Traffic Volumes

Table 3-36 summarizes the 2007 existing conditions for level of service and average speed in the AM and PM peak hour.

During the AM peak hour, most study area corridors are experiencing some level of congestion, with several locations operating below LOS D. This can occur due to the operations at a few intersections that may operate poorly and create higher average delays. For example, Rainier Avenue S. operates at LOS E due to congestion at its intersections with S. Dearborn Street and S. Jackson Street. The 2<sup>nd</sup> Avenue Extension S. operates at LOS F due to the signal time-related delays incurred at the intersection with S. Jackson Street. Among the east-west corridors, S. Royal Brougham Way and S. Atlantic Street experience low performance. The levels of service along both corridors are exacerbated by the delays at the 1<sup>st</sup> Avenue S intersections caused by traffic using these corridors to access the Alaskan Way Viaduct as well as traffic from the Viaduct to I-90. Speeds are particularly low along these two corridors due to the closely spaced intersections with Occidental Avenue S. Furthermore, the rail crossing along S Royal Brougham Way also contributes to the total delays along this corridor.

**Table 3-36  
Corridor Operations and Speeds (2007 Existing Conditions)**

Corridor/Arterial <sup>1</sup>	AM Peak				PM Peak			
	LOS <sup>2</sup>		Speed <sup>3</sup> (mph)		LOS <sup>2</sup>		Speed <sup>3</sup> (mph)	
	NB	SB	NB	SB	NB	SB	NB	SB
<b>North – South Corridors</b>								
1st Avenue S	D	C	15	19	D	D	16	16
2nd Avenue Extension S	- <sup>4</sup>	F	- <sup>4</sup>	8	- <sup>4</sup>	F	- <sup>4</sup>	9
3rd Avenue S	D	D	12	10	C	E	14	8
4th Avenue S	D	D	15	17	D	E	16	13
Rainier Avenue S	E	E	12	13	E	F	12	9
<b>East – West Corridors</b>	<b>EB</b>	<b>WB</b>	<b>EB</b>	<b>WB</b>	<b>EB</b>	<b>WB</b>	<b>EB</b>	<b>WB</b>
S Jackson Street	E	F	12	10	E	E	11	11
S Dearborn Street	E	E	11	11	F	F	9	8
S Royal Brougham Way	F	F	7	5	F	F	8	7
S Atlantic Street	E	F	11	7	E	F	11	10

Source: The Transpo Group (July 2007)

1. Corridor extents are listed in Table 4-1 of Appendix G.
2. Arterial Level of Service based on the Highway Capacity Manual, Transportation Research Board, 2000 methodology for urban arterials.
3. Arterial speed in miles per hour which includes the average speed delay encountered at each signalized intersection along the corridor as well as delays at mid-block sections.
4. 2nd Avenue Extension S is one-way southbound.

During the PM peak hour, delays are observed particularly in the southbound direction of the north-south corridors, leaving Downtown, including 1<sup>st</sup> Avenue S., 3<sup>rd</sup> Avenue S., 4<sup>th</sup> Avenue S., and Rainier Avenue S.

- Delays along 1<sup>st</sup> Avenue S. mainly occur at the intersections of S. Royal Brougham Way and S. Atlantic Street where the Downtown outbound traffic joins the traffic from the industrial areas south of the study area, which results in delays at each of the intersections. S. Atlantic Street is a particularly critical connection conveying 1<sup>st</sup> Avenue S. traffic to eastbound I-90 via S. Atlantic Street (SR 519).
- Delays along 4<sup>th</sup> Avenue S. are caused by traffic delays at the intersections with S. Jackson Street and S. Royal Brougham Way.
- Along Rainier Avenue S, the intersections with S Dearborn Street and S Jackson Street experience delays which contribute to the low speeds and LOS especially in the southbound direction.

- Delays on the east-west corridors are mainly along S. Atlantic Street and eastbound S. Royal Brougham Way and S. Jackson Street, caused by traffic heading toward I-90 and the Rainier Valley. Delays at 1<sup>st</sup> Avenue S., and due to intersection spacing and a rail crossing contributes to a share of the delays along the S. Atlantic Street and S. Royal Brougham Way corridors as well.

### **Intersection Operations**

Table 3-37 illustrates the number of intersections, among the 49 signalized study area intersections, that operate below LOS D for the AM and PM peak hours. The level of service (LOS) is a standard measure of intersection performance that describes the average delay encountered by vehicles entering the intersection. Intersection LOS is measured on a scale from “A” to “F” as summarized below.

<b><u>LOS</u></b>	<b><u>Average Control Delay</u></b> <b>(seconds/vehicle)</b>	<b><u>General Description (signalized intersections)</u></b>
A	< or = 10	Free flow
B	>10 - 20	Stable flow (slight delays)
C	>20 - 35	Stable flow (acceptable delays)
D	>35 - 55	Approaching unstable flow (tolerable delay, occasionally wait through more than one signal cycle before proceeding)
E	>55 - 80	Unstable flow (intolerable delay)
F	>80	Forced flow (jammed)

During the AM peak hour, the only intersection operating at LOS F is 1st Avenue S./S. Atlantic Street. Delays are observed on all approaches to the intersection, and traffic queues spill back to “upstream” intersections. Delays are also observed at the intersection of 1st Avenue S./S. Royal Brougham Way that operates at LOS E causing queues that can block adjacent intersections and driveways. These intersections play a key role in moving local traffic from 1st Avenue S. to 4th Avenue S. and to the Alaskan Way Viaduct and I-90 (e.g., primarily pass-through traffic). The intersection of 1st Avenue S./S. Holgate Street also operates at a LOS E due to the heavy northbound traffic in the AM peak hour. Other intersections operating at LOS E are 3rd Avenue/Yesler Way and 4<sup>th</sup> Avenue S./S Jackson Street. The delays at these intersections are the result of a high number of northbound vehicles entering the Downtown area, primarily commuters, that are conflicting with the westbound volumes.

**Table 3-37  
2007 Existing Intersection Operations Along the Major Corridors**

Corridor/Arterial <sup>1</sup>	Number of Signalized Intersections	Number of Signalized Intersections Operating below LOS <sup>2</sup> D	
		AM Peak Hour	PM Peak Hour
<b>North – South Corridors</b>			
1st Avenue S	10	3	3
2nd Avenue Extension S	5	0	0
3rd Avenue S	2	1	1
4th Avenue S (NB)	10	1	1
4th Avenue S (SB)	7	0	0
Rainier Avenue S	2	0	0
<b>East – West Corridors</b>			
S Jackson Street	10	1	1
S Dearborn Street	9	0	0
S Royal Brougham Way	5	1	1
S Atlantic Street	2	1	1

Source: The Transpo Group (July 2007)

1. Corridor extents are as listed in Table 4-1 of Appendix G.
2. Level of Service based on the *Highway Capacity Manual*, Transportation Research Board, 2000

As shown in Table 3-37, the same number of intersections operate below LOS D in both the AM and PM peak hours. However, these are not necessarily the same intersections given the difference in travel patterns between the AM peak hour (with a majority of northbound and westbound traffic) and the PM peak hour (with a majority of southbound and eastbound traffic). The only intersection operating at a LOS F in the PM peak hour is at 4<sup>th</sup> Avenue S./S. Jackson Street which is due, in particular, to the volume of traffic on 4<sup>th</sup> Avenue S., the low amount of signal green time devoted to eastbound vehicles and the coordination with the 2<sup>nd</sup> Avenue Extension S./ S. Jackson Street intersection.

The intersections operating at LOS E in the PM peak hour are 1<sup>st</sup> Avenue S./S. Atlantic Street and 1<sup>st</sup> Avenue S./S. Royal Brougham Way. Both intersections have a high number of southbound left turns (e.g., toward 4<sup>th</sup> Avenue S) that conflict with northbound traffic, reducing the amount of signal green time to serve both movements. The intersection of 4<sup>th</sup> Avenue S./S. Royal Brougham Way also operates at LOS E due mainly to the amount of signal green time dedicated to the southbound movement, which serves over 2,000 vehicles an hour.

## TRANSIT

The Seattle Transit Plan identifies an “Urban Village Transit Network” (UVTN) to serve the City’s urban villages and neighborhoods. The identified UVTN corridors are the focus of the Transit Plan and are envisioned to be a network of high quality, reliable transit corridors. The primary transit corridors evaluated as part of this analysis include 1<sup>st</sup> Avenue S., 2<sup>nd</sup> Avenue Extension S., 3<sup>rd</sup> Avenue, 4<sup>th</sup> Avenue S., 5<sup>th</sup> Avenue S./E3 Busway and S. Jackson Street.

The study area is well served by a variety of transit that include local bus routes (King County Metro), regional bus routes (Sound Transit and partners), ferries (Washington State Ferries), commuter rail (Sound Transit), and intercity passenger rail (Amtrak Cascades). This analysis of transit service concentrates on the performance of local transit, with performance measures drawn from those developed as part of the Seattle Transit Plan. See Appendix G for more information about the various types of available transit service.

The transit service performance measures include *frequency*, *span of service*, *travel speed* and *passenger loading*.

- *Frequency*: the maximum scheduled gap between consecutive buses on the route, which should reflect the maximum waiting time a customer could experience at a bus stop before a bus arrives. The “passing” threshold is 15 minutes, meaning buses arrive every 15 minutes or more frequently.
- *Span of service*: the hours in the day that a service runs at minimum acceptable frequencies of 15 minutes or less. The scoring threshold is 12 hours of service.
- *Travel speed*: Transit travel (operating) speed is expressed as a Percentage of Posted Speed Limit (%PSL). The “passing” threshold is 30% of the posted speed limit.
- *Passenger loading*: This threshold measures the service capacity and comfort experienced by the passenger. It is expressed as a ratio of passengers to bus capacity (e.g., 1.0 = 100% of seated capacity). The “passing” threshold is 0.9 or 90% occupancy. The measurement is made based on the load that occurs about 85% of the time on the most crowded route during the most crowded time period.

Table 3-38 summarizes current bus transit performance.

**Table 3-38**  
**Bus Performance Measures (2006)**

Corridor	From	To	Frequency (Minutes)	Service Span (Hours)	Speed (Percent)	Passenger Load (Ratio)
1st Ave S	Yesler Way	S R. Brougham Way	9.58	17.50	32.2%	1.20
1st Ave S	S R. Brougham Way	S Holgate St	8.95	18.00	41.3%	1.27
2nd Ave Ext S	Cherry St	4th Ave S	4.20	21.00	22.4%	1.01
3rd Ave S	James St	S Jackson St	1.60	21.00	17.5%	0.91
4th Ave S	Yesler Way	S R. Brougham Way	2.82	20.90	30.0%	1.30
5th Ave S (E3)	S R. Brougham Way	S Holgate St	5.00	18.00	43.0%	1.15
12th Ave S	Boren Ave S	S Dearborn St	12.85	10.20	33.7%	0.94
Rainier Ave S	S Washington St	S Dearborn St	85.61 <sup>1</sup>	16.00	33.6%	0.60
Yesler St	1st Ave S	6th Ave S	16.16	16.22	26.9%	0.51
S Jackson St	1st Ave S	8th Ave S	11.08	16.45	16.2%	0.86
S Jackson St	8th Ave S	Boren Ave S	4.65	19.83	22.8%	0.99
<b>City of Seattle Passing Thresholds</b>			<b>15.00</b>	<b>12.00</b>	<b>30.0%</b>	<b>0.90</b>

Source: *City of Seattle/King County Metro UVTN Monitoring Report 2006*.

Note: Shading indicates measures that are below the identified passing threshold. The performances are based on an average of the segments comprising the identified corridor.

1. Local bus routes along Rainier Avenue S. typically turn left at S. Jackson Street, so there are very few local routes along the segment of Rainier Avenue S. between S. Jackson Street and Yesler Way. Therefore the frequency value along this segment appears much higher than others.

Information in Table 3-38 indicates that most of the studied corridors meet the service frequency thresholds, and most have a relatively long period of day when transit service is available. However, in some of the more congested corridors, travel speeds fall below the passing thresholds. Also, several of these corridors are rated as deficient in passenger loading performance. Travel speeds are influenced by Downtown congestion, longer dwell times and closely spaced intersections. Passenger loading ratios indicate relatively crowded conditions during peak times on a majority of these corridors. However, if standing room was factored into the ratio, most of these corridors would probably be able to meet the passenger loading threshold standard. See Appendix G for a lengthier discussion of these measures of bus performance for existing conditions.

## FREIGHT MOVEMENT

This section provides information about the type and volume of truck trips observed on study area corridors, existing major freight routes and their operating conditions. South Downtown (including south of the study area) contains a large amount of industrial lands, including Port of Seattle properties and container ship yards, railroad intermodal yards, and other businesses that rely upon the movement of trucks and freight. The arterials within the study area provide an important connection for freight transportation and are heavily used by trucks.

### **Freight Generators**

The study area and surrounding areas generate a substantial amount of freight and truck traffic. Currently the mix of general industrial and industrial/commercial land uses comprise about half the total land surface within the study area. Many industrial and warehousing businesses are located in the vicinity along with other commercial activities and public services that use trucks or rail. The Greater Duwamish Manufacturing and Industrial Center is another major truck generator adjacent to the study area. This center is expected to accommodate at least 10% of Seattle's new employment over the next 20 years, or nearly 15,000 new jobs. Besides providing a home for the Port of Seattle's container terminals, the Greater Duwamish area is also home to King County International Airport (KCIA), located five miles south of Downtown Seattle. The Greater Duwamish and South Downtown areas also include several operations facilities that support city municipal functions. These agencies, including Seattle Public Utilities, City Light and Seattle Department of Transportation (SDOT), run truck fleets that operate all over the City. The businesses and companies in the study area and the Duwamish provide warehousing, distribution, and construction services necessary for residential, commercial and industrial land uses throughout the region.

The study area is adjacent to a major truck generator: the Port of Seattle. In fact, the Port of Seattle is one of the top three containerized cargo load centers in the Western Hemisphere, and accommodates six container terminals. One of the terminals, T-46, is located along Alaskan Way S. at the western boundary of the study area. Other major terminals such as T-25 and T-30 are located along E. Marginal Way. The Port anticipates opening T-25 and T-30 for container uses in the near future. The increased future activities for these terminals will result in additional truck traffic through the study area. However the additional truck trips due to the reactivation of T-25 and T-30 are assumed to have minimal impact along corridors such as S. Atlantic Street as illustrated in the *Terminal 30 Cargo Reactivation Report*<sup>1</sup>.

Most freight is shipped through the port by intermodal containers that are transferred to or from railcars or trucks on the dock. At the intermodal yards, containers are transferred to and from railcars. Trucks transport the cargo to and from Port terminals and the warehousing and distribution centers. In 2002, Terminal 46 produced an average of 1,250 daily truck trips<sup>2</sup> with approximately 30 percent of those trips having a regional destination. Regional access to the terminal is provided by SR 519 and S. Spokane Street from both the viaduct level and the surface roadway, then along surface streets.

The City's arterial street system is crucial to a functioning regional international trade system. Major truck streets have been identified by the City to maintain acceptable freight mobility and access to the area (see Figure 3-42). Major arterials such as 1<sup>st</sup> Avenue S., 4<sup>th</sup> Avenue S., S. Atlantic Street, S. Dearborn Street and Airport Way S. provide access to the industrial businesses within and surrounding the study area. Many of the businesses that generate a majority of the truck trips are located outside the study area, but depend on travel through the study area to access the regional highway system, Southeast and Central Seattle neighborhoods, Downtown Seattle and areas north of Downtown.

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<sup>1</sup> *Terminal 30 Cargo Reactivation*, Heffron Transportation, Inc, September 18, 2006.

<sup>2</sup> *Container Terminal Access Study, Year 2003 Update*, Heffron Transportation, Inc., October 2003

## **Major Truck Routes**

The City of Seattle and WSDOT have defined several of the major corridors within the study area as major truck routes. These designated truck routes provide access between the industrial lands within the study area and the state highway system, while also facilitating travel between the industrial lands and the Port terminals.

### **Truck Route Designation (WSDOT)**

The Washington State Freight and Goods Transportation System (FGTS) is a classification system adopted by WSDOT and used to classify state highways, county roads and city streets according to the average annual gross truck tonnage they carry. The FGTS classifies roadways using five freight tonnage classifications, T-1 through T-5, as follows:

- **T-1:** more than 10 million tons per year
- **T-2:** 4 million to 10 million tons per year
- **T-3:** 300,000 to 4 million tons per year
- **T-4:** 100,000 to 300,000 tons per year
- **T-5:** at least 20,000 tons in 60 days

Among those five classes, the system has distinguished “Washington’s Strategic Freight Corridors” that carry four million or more gross tons of freight annually (i.e., T-1 and T-2 classes). Tonnage values are estimated from truck traffic count data and converted into average weights by truck type. The FGTS 2005 update designated 43 strategic freight corridors in Seattle, some of them located in the study area. These corridors are listed in Table 3-39.

**Table 3-39**  
**WSDOT Designated “Strategic Freight Corridors”**

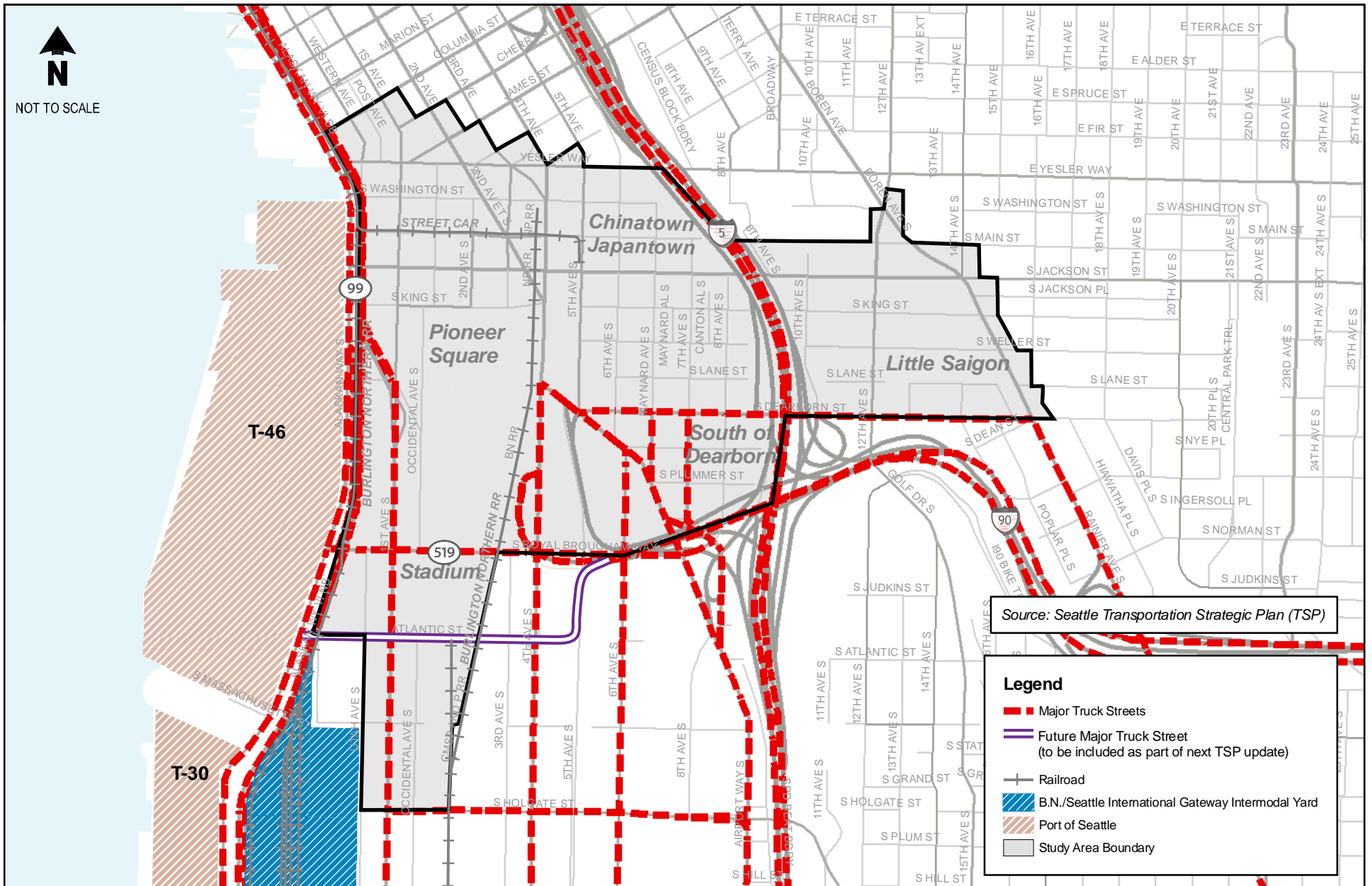
<b>Route Name</b>	<b>Begin</b>	<b>End</b>	<b>2005 FGTS Class<sup>1</sup></b>
4 <sup>th</sup> Ave S	E Marginal Way S	S Royal Brougham Way	T-1
Airport Way S	4 <sup>th</sup> Ave S	S City Limit S	T-1
Alaskan Way S	E Marginal Way S	Yesler Way	T-1
S Dearborn St	Airport Way S	Rainier Ave S	T-1
S Royal Brougham Way	4 <sup>th</sup> Ave S	Airport Way S	T-1

Source: *Washington State Freight and Goods Transportation System 2005 Update*

1. FGTS = Freight and Goods Transportation System

### *Major Truck Streets Designation (City of Seattle)*

The City of Seattle designates all arterials as truck streets and has also identified certain streets as Major Truck Streets. The Major Truck Streets are defined as primary routes in the Transportation Strategic Plan for the movement of good and services and serve both local and non-local truck traffic. They accommodate freight movement through the City, and to and from major freight traffic generators. Trucks in excess of 10,000 pounds of Gross Vehicle Weight are discouraged from using non-arterial (local) streets unless they have a justifiable reason for traveling there. The City uses the street designation as an important criterion for street design, traffic management decisions, and pavement design and repair. The Major Truck Streets across the study area are shown in Figure 3-42. Almost all major north-south arterial streets (Alaskan Way, 1st Avenue S., 4th Avenue S., 6th Avenue S., Airport Way S., and Rainier Avenue S.) have been designated as Major Truck Streets. Rainier Avenue S. is an important arterial that



Livable South Downtown

Figure 3-42  
Major Truck Streets

provides truck connections to southeast Seattle neighborhoods. Four east-west arterials (S. Dearborn Street, S. Royal Brougham Way, and S. Holgate Street) are also designated as Major Truck Streets. These routes support and facilitate travel to I-5, the Alaskan Way Viaduct, and SR 519. Since the TSP was adopted prior to S. Atlantic Street being extended to SR 519, it is not officially a Major Truck Street. The City plans to include this corridor as a Major Truck Street when the TSP is next updated.

The freight and trucking community is very concerned about activities or projects that might impact the Major Truck Streets. It is important that these corridors continue to serve trucks and freight and provide efficient access to the major industrial land uses within and surrounding the study area. They are key corridors that provide access to the regional highway system and other City neighborhoods, and should accommodate the unique operations and maneuverability that large trucks require.

### Truck Volumes

Vehicle classification count surveys were conducted in early 2007 for several of the major truck routes throughout the study area. A list of the corridors is shown in Table 3-40. Traffic was classified by tube counters based on the Federal Highway Administration (FHWA) vehicle classification system. In addition, 24-hour video was conducted along Airport Way S. and 6<sup>th</sup> Avenue S. to validate the information. Table 3-40 summarizes the total truck volumes for each corridor.

**Table 3-40**  
**Average Daily Truck Volumes and Percent of Total Daily Traffic**

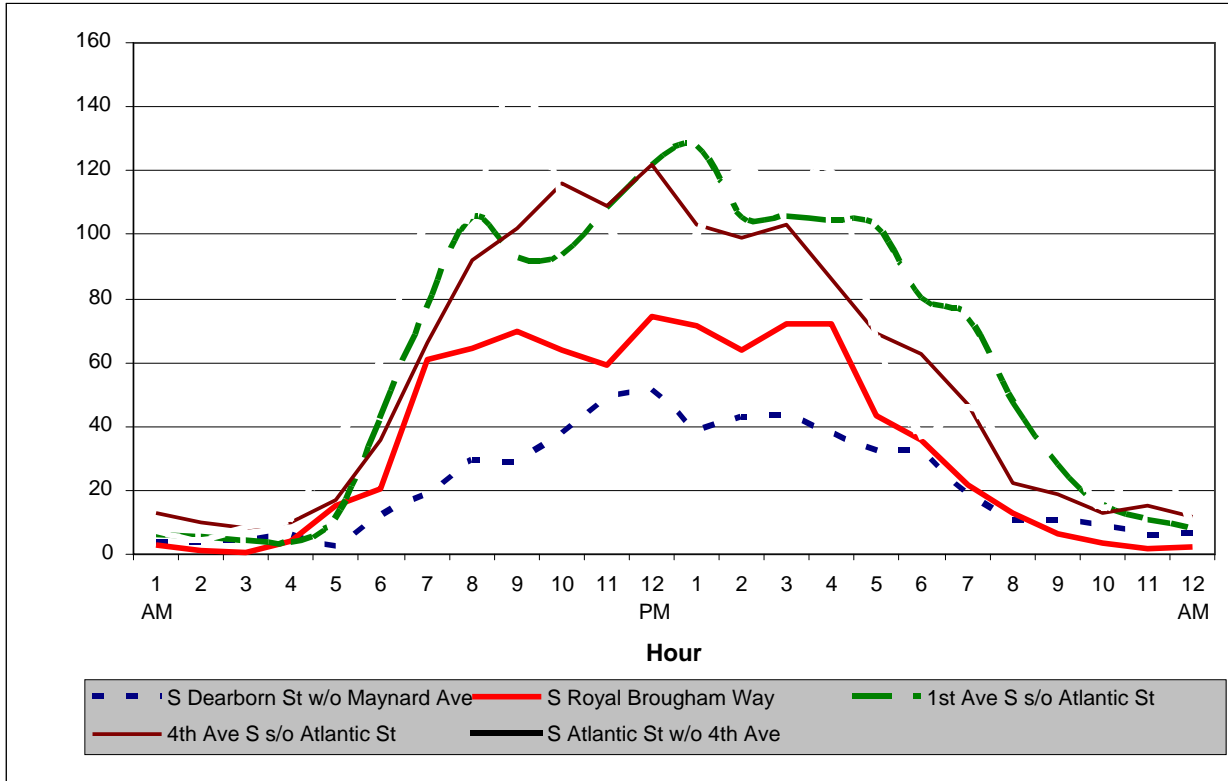
Corridor	Truck Volume		Truck Volume Both Directions	% of Total Daily Traffic <sup>2</sup>
	NB	SB		
<b>North-South Corridors</b>				
Airport Way S (e/o <sup>3</sup> 5 <sup>th</sup> Ave)	100	155	255	2.9%
1st Ave S (n/o <sup>3</sup> Royal Brougham)	800	540	1,340	4.1%
1st Ave S (s/o <sup>3</sup> Atlantic St)	525	955	1,480	7.1%
4th Ave S (n/o <sup>3</sup> Royal Brougham)	490	560	1,050	4.9%
4th Ave S (s/o <sup>3</sup> Atlantic St)	875	480	1,355	5.3%
6th Ave S (s/o <sup>3</sup> Airport Way S)	50	50	100	1.9%
<b>East-West Corridors</b>				
	<b>EB</b>	<b>WB</b>		
S Atlantic St (w/o <sup>3</sup> 4 <sup>th</sup> Ave) <sup>1</sup>	1,000	495	1,495	8.0%
S Dearborn St (e/o <sup>3</sup> 6 <sup>th</sup> Ave)	225	315	540	6.0%
S Royal Brougham Way (w/o <sup>3</sup> 4 <sup>th</sup> Ave) <sup>1</sup>	295	555	850	7.2%

Source: Based on field traffic counts (2007)

1. Based on 2005 traffic count
2. Daily truck volume divided by total daily traffic volume
3. e/o = east of; n/o = north of; s/o = south of; w/o = west of

In general, trucks represent between 2 and 8 percent of all vehicles over a 24-hour weekday. The largest numbers of trucks are along the S. Atlantic Street, 1<sup>st</sup> Avenue S. and 4<sup>th</sup> Avenue S. corridors. These corridors provide access to SR 99 and SR 519 and therefore serve more trucks throughout the day. The traffic count data also indicate that corridors such as S. Dearborn Street and Airport Way S. serve a somewhat lesser volume of truck traffic than the other corridors evaluated. This is likely because the section of Airport Way S. north of S Royal Brougham Way primarily provides access to the Downtown area, while S. Dearborn Street connects with I-5 and the Rainier Valley and has less regional truck trips. Even though the S. Dearborn Street corridor serves just over 500 trucks a day, that number represents nearly 6 percent of all vehicles and is a higher percentage than many of the other corridors. The distribution of daily truck traffic over a 24-hour timeframe is shown in Figure 3-43 for each corridor.

**Figure 3-43**  
**Daily Distribution of Trucks**  
**(hourly truck volumes)**



Source: Based on field traffic counts (2007)

The data indicate that truck activity mostly occurs during daytime hours between 8:00 am and 4:00 pm. Generally, truck volumes decline between the hours of 4:00 pm and 7:00 pm and represent a small fraction of afternoon peak commuter traffic. The truck peak occurs almost in the middle of the day whereas the peak for all traffic occurs in the afternoon commuting hours. Table 3-41 provides truck peak hours and truck peak volumes with corresponding percent of total traffic in the same periods along the major arterials in the study area. The truck percent reported in Table 3-41 is highest during the day and can comprise of 10 to 11 percent of the total vehicular traffic.

































































































